



Central Square: subtleties make for special lighting

Fighting flicker

Lighting the BRT system in Dar es Salaam



JC147
Decorative
pendant



www.radiant.co.za

JOHANNESBURG

72, 5th Street, Wynberg
Tel: +27 (0)11 386 0000

CAPE TOWN

Cnr Koeberg Road & Platteklouf Road Montague. Unit 5,
West Building, Topaz Boulevard, Montague Park, Milnerton
Tel: +27 (0)21 521 2500

DURBAN

The Decorum Centre, Shop 3
1300 Umgeni Road, Durban
Tel: +27 (0)31 263 0096

EdSpace



Town planners around the world too often neglect the potential of night-time lighting. By combining expertise in all areas of urban design, cities can use night-time lighting to become more enjoyable, more sociable, safer, healthier and easier to get around. In compiling its 2015 report, *Cities alive: rethinking the shades of night*, Arup brought together experts of different disciplines to discuss the importance of lighting and what needs to be considered when planning a city. The report, the substance of which is featured in our article on page 10 of this issue, takes a holistic view of urban lighting and focuses on four key issues: people, technology, space and process.

Designed along the lines of New Urbanism principles, Central Square in Menlyn Maine, Pretoria, is a mixed-use development and the only green 'city' in Africa. Its prime feature is a piazza enhanced by public artworks, water features and trees, and bordered by eateries and coffee shops. It is a popular meeting place designed to make people feel comfortable while they enjoy the outdoor weather of one of South Africa's best climates. The lighting, by Pamboukian Lightdesign, combines creativity, science and technology to make the space enjoyable, sociable, safe and easy to negotiate.

Rather than flood lighting the square or introducing street lighting, projected gobo mood lighting, directed from two nine metre high masts, adds interest to the surface texture as light and shadow fill the space. People walk through brush strokes of light. The most striking features of the lighting design, however, are the surfaces of the glass panel boxes that light the ramp of the underground parking by day. Fittings, placed over a metre below ground, emanate a hue of colour from below as part of the piazza surface and, on a slow program, the LED colour changes from whitish blue through shades of blue. Both Anthony Tischhauser and João Viegas of Pld commented on the success of this installation and how much people have enjoyed the blue light. João gives a wonderful description of children running and jumping in the light as they would in water. He says the children illustrated 'an honest appreciation' of the design. This, surely, is as worthy an acknowledgement of one's work as one could want. And an excellent illustration of what the Arup report would hope to achieve.

Till next time!

Karen

Editor: Karen Grant (crownmag@crowm.co.za)

Advertising manager: Carin Hannay (carinh@crowm.co.za)

Layout: Adel JvR Bothma

Circulation: Karen Smith

Cover: Piazza on Central Square, Menlyn Maine. Photograph by João Viegas, Pld

Published by Crown Publications cc

PO Box 140, Bedfordview, 2008 - Tel: +27 (0)11 622 4770 Fax: +27 (0)11 615 6108 - Website: www.crown.co.za

ABC 3rd quarter: 3 625

Printed by: Tandym Print

All issues of Lighting in Design can be viewed on our website.

Visit www.lightingindesignmagazine.co.za

GERMAN ENGINEERED
LIGHTING



REQUEST YOUR COPY OF THE
2017 SLV BIG WHITE CATALOGUE

marketing@magnetgroup.co.za
www.slv-lighting.co.za

PHELIA
ITEM: 133300

LEADING EUROPEAN LIGHTING BRAND

www.slv-lighting.co.za


By Magnet Group

KZN PRO-PARTNER
COBINLIGHT: +27 31 312 1460

GAUTENG PRO-PARTNERS
DIVA LUCE: +27 11 787 1999 | GLO LIGHTING: +27 11 447 3667
COOL LIGHTING: +27 12 653 4240

EASTERN CAPE PRO-PARTNER
UNIQUE LIGHTING: +27 41 363 5007

WESTERN CAPE PRO-PARTNERS
OKAVANGO LIGHTING: +27 21 982 8124 | ELDC: +27 21 448 8684
NEWPORT LIGHTING: +27 21 447 0049 | PLUMSTEAD ELECTRICAL: +27 21 715 3151

Inside ...



EDspace

Editor's comment.



Playing in the light on the piazza

The most striking features on the piazza of the Central Square development in Menlyn Maine are the surfaces of glass panel light boxes that emanate colour from below as part of the piazza surface.



Lighting the urban night-time – how light shapes 24-hour cities

For its report, *Cities alive: Rethinking the shades of night*, Arup brought together experts from different disciplines to discuss the importance of lighting and what needs to be considered when planning cities.



Lighting design: Necessity or nice-to-have?

Retief Coetzer of BEKA Schröder outlines his reasons for believing that lighting design is a necessity.



Fighting flicker: New technology brings back a very old problem

Flicker in light sources is an old problem made new again in the age of LEDs. Craig DiLouie outlines possible solutions for eliminating this annoying, even debilitating, problem.



Lighting solutions increase efficiencies

Lighting solutions increase efficiencies by addressing common sources of wasted time and resources.



Translucent concrete used in thermal spa

The thermal saltwater spa in Bad Staffelstein is topped with a light transmitting concrete 'cave'.



Lighting at the Mall of Africa

The lighting here, by Regent Lighting Solutions, offers pleasant, inviting and sustainable spaces.



Products

Playing in the light on the piazza

JV

JV





The Central Square development in the heart of Menlyn, Pretoria, is a 'New Urban' city precinct, or multi-use development, comprising shopping centre, office space, hotel and health club, all brought together by a central open air triangular piazza, which is bordered by restaurants, coffee shops and pubs, and further enhanced by trees, water features and public artworks. A park runs through the entire city precinct and alongside Central Square offering a space for people to relax and refresh. Pamboukian Lightdesign (PlD) was invited to design the lighting plan for Central Square and the piazza.

The shopping centre was designed as an internal 'high street'. It is tiled in granite, with wood and stucco plastered bulkheads. Every shop has a front of steel, aluminium and wood, all in shades of charcoal. A glass roof with intermediate ceiling panels ensures there is an abundance of natural light.

"During day light hours," says João Viegas of PlD, "natural light from the roof along with the sliding doors of the two internal courtyards make you feel as though you are outside. To ensure there is also sufficient light at night, we uplit the ceiling between the skylights to break the contrast from daylight. This we did using 14.4 W linear batons which become an architectural feature at night when they complete the visual threshold once you can no longer see through the glass roof. We also created an articulated feature along the fascia with scallops of light, and glass lanterns hanging from the ceiling add a festive element"

The outside façade is uplit and the wall behind the glass façade backlit so the façade punches through. On the northern and western sides up/down lights emphasise the rhythm of the architecture by illuminating the vertical supports. Strip lighting divides the square from the walkway. PlD also designed the pathway lighting and the streetlights, the latter with special bases able to withstand un-

successful parking attempts by visiting customers.

Central Square, however, is about the piazza and here the atmospheric lighting by PlD was conceived as the basis to all activity from blue hour into the night. The most striking features are the surfaces of glass panel light boxes that by day light the ramp of the parking level below, one of three. Originally thought of as translucent glass, the lighting designers suggested a frosted glass, which would hide the fittings – situated over a metre under the ground and in effect lighting an entire well – emanating a hue of colour from below as part of the piazza surface. The LED colour changes from a whitish blue through shades of blue light on a slow program.

"This utilitarian idea," says Anthony Tischhauser of PlD, "turned into something very beautiful. People mill around and the blue light shines up their legs ... they love it". Viegas agrees wholeheartedly adding that children particularly illustrate an honest appreciation of the design. "They delight in the light on the square, running around and jumping on it, just as they would in water."

An exhibition of 31 sculptures by Anton Smit aims to make art part of people's daily experience. Interaction is encouraged and there are QR codes alongside the sculptures which visitors can scan if they would like to read about or buy them. The sculptures lift the space and the awareness of art. Again, there is movement here as children run up to them and, in the case of the central piece, play on the mound upon which it is mounted.

In-ground fittings light the trees and the sculptures from below. As opposed to flood lighting the square, or introducing street lighting, projected gobo mood lighting – directed from two 9 m high masts – adds interest to the surface texture. Light and shadow fill the space as the masts emit soft light through the trees and onto the square, and brush the top of the sculpture to lift out its features.

Viegas and Tischhauser believe that the gobos



LEDVANCE

LEDVANCE.COM



Success
the easy
way



The new LEDVANCE® LED luminaires.
Redefining the standard to advance light
with and for you.

Light is personal

The standard. Redefined.

The new LEDVANCE® LED luminaires.

LEDVANCE® LED luminaires are the new no-frills choice whenever you simply need the right light for common applications. They have all the features necessary for a professional's everyday work: high efficacy, proven quality and easy installation.

LEDVANCE® luminaires. Success the easy way.

LEDVANCE
OSRAM





Menlyn Maine is South Africa's first green, mixed-use city precinct. As a partner of the Clinton Climate Initiative, it is one of 16 green 'cities' being built in various countries, and the only one in Africa. In line with Menlyn Maine's exceptional sustainability benchmarks, all buildings in the precinct are set to be rated 4 Green Star SA or higher by the Green Building Council of South Africa. It is also targeting a LEED ND certification for the precinct.

have worked well, they light different patterns on different things. The ground, in essence, is floodlit, but without the glare. People walk through brush strokes of light and where it comes through a tree it mimics would it would be like to walk through a forest or green space. "It is the subtleties," says Tischhauser, "that make the lighting special."

On the north side of the square, a change in material indicates that a granite wall has become

a timber bench, which draws a line between public and semi-private space and creates pockets of space within the square. Viegas explains that people use these benches to enjoy a cigarette, wait for someone or have a private conversation. "A strip of warm white LED lighting gives people privacy but they are not entirely in the dark. It is very important to have human-centric light that is warm and soft," he says.



REGENT
LIGHTING
SOLUTIONS

NEW ARRIVALS!

Evolving the design of light.



THIA BOLLARD LIGHTING

Designed to operate a LED up to 15W or 2 x 15W with an asymmetrical light distribution. Modular optical lenses allows for various lens options for different applications.



MODRA AMENITY LIGHTING

Designed to operate a range of LED's up to 40W. Available as post mounted or wall mounted. A uniquely designed Rotor Bracket allows for adjustment on the horizontal plane.

MISO WALL LIGHTING

Recessed luminaire designed to fit into brick dimensions. Designed to operate a range of LEDs. Galvanised steel mounting box for installation allows for adjustable mounting at different plaster thicknesses.



South African Lighting **Solutions** & Luminaire **Manufacturing** Company

www.regentlight.co.za

Cnr Springbok & Main Reef Road, Longdale, Johannesburg | +27 11 474-0171/2 | projects@regentlight.co.za

Evolving the design of light.



NP



NP



NP



NP



JV



JV



JV

Another long bench emphasises a pedestrian route that passes in front of the hotel to a node on the internal streets. The strip lighting is just above the paving, defining direction.

On the southern side a huge steel tree by Marcel Gunther stands high. First designed for Christmas festivities it now is tuned for individual celebrations. The lighting is adapted on each occasion. Between events the lighting runs through a series

of sequences during an evening adding an engaging element to the square.

Central Square has become a popular venue and gets very busy at night. More and more it will become the central urban element in the greater Menlynn development as the casino comes into operation and the planned hospital opens. The lighting in the square has played no small role in its success. **LiD**

Lighting the urban night-time – how light shapes 24-hour cities

Lighting designers have joined fellow urbanists to rewrite the night. It is time to consider life after dark. Today's cities are alive 24 hours. Yet all too often town planners apply their work only to the daylight hours. They neglect the potential of night-time lighting to shape urban life after dark and support 24/7 economies.

With darkness accounting for 50% of the world's time, that potential is huge. Well-designed night-

time lighting can influence the way you use and enjoy a city, the way you move around its streets and even the way you feel.

The power of night-time lighting

Have you ever stopped, for instance, to wonder why you take a certain route home at night or feel safe here but not there? Chances are it has to do with how public spaces are lit.

The right night-time lighting can make shift workers feel safe on after-dark commutes. It can make you more likely to walk or take public transport. And it can encourage you to socialise outdoors at night, contributing to the city's night-time economy.

Arup lighting designer and urbanist Leni Schwendinger, Associate Principal, Lighting, makes the point that: "Night-time is fundamentally different from daytime. In many hotter climates, it provides the best conditions for people to use outdoor urban spaces. So it deserves its own design approach, and thinking harder and smarter about street lighting is a vital part of this."

Industry collaboration

So what makes effective night-time lighting? Answering this question involves understanding things like how people want to use city spaces, how light affects our bodies and our behaviours, and why we need darkness too.

Florence Lam, Arup Fellow and Global Lighting Design Leader, emphasises the potential for more carefully considered city lighting. "Urban lighting isn't just about meeting safety needs through code compliance, or achieving an aesthetic effect. It presents a significant opportunity to fundamentally improve the quality of life for urban citizens. Properly considered, lighting can positively impact the 'total architecture' of our cities; reinforcing urban design principles, enhancing cultural experiences and encouraging social interaction."

Creating effective night-time lighting requires



Light and the night-time economy: View from The Peak overlooking Hong Kong's Central District.

expertise in lighting design, urban planning and sociology. In researching its report, *Cities Alive: Rethinking the Shades of Night*, released in 2015, Arup brought together experts from different disciplines to discuss the importance of lighting and what needs to be considered when planning our cities. By combining expertise in all areas of urban design, cities can use night-time lighting to become more enjoyable, more sociable, safer, healthier and easier to get around.

The report is a product of collaboration between the Arup Lighting team and the Foresight + Research + Innovation team, the firm's internal think-tank and consultancy. It involved a wide range of internal and external experts.

Opportunities in city lighting

In the foreword to the report, Lam reminds us that more than half the world's population currently lives in cities and the United Nations estimates this figure will rise towards 70% by 2050. However, she suggests that: "Despite this increasing urbanisation, we are not using our cities and towns to their fullest potential. Once shops and offices close for the evening, levels of activity in urban centres drop. Night-time presents challenges to cities globally, be it for reasons of safety and fear, lack of destination or attraction.

"While the urban renaissance of the past 20 years has increased the number of people living in city centres, this has not always successfully translated into the notion of a '24-hour' city. What has been missing is a considered approach to strategic planning and design for night-time. A holistic approach to urban lighting could help create vibrant, prosperous, safe, and inclusive places for those who live, work and play in cities – at all hours."

Lam further highlights how new technologies have opened up fresh opportunities, not only through innovations such as LEDs, but also, Arup believes, in the potential future development of lighting that is responsive to changing nightscapes. "We will see cities' lights change depending on time and usage patterns of the public realm after dark – articulating what we call the different 'shades of night'"

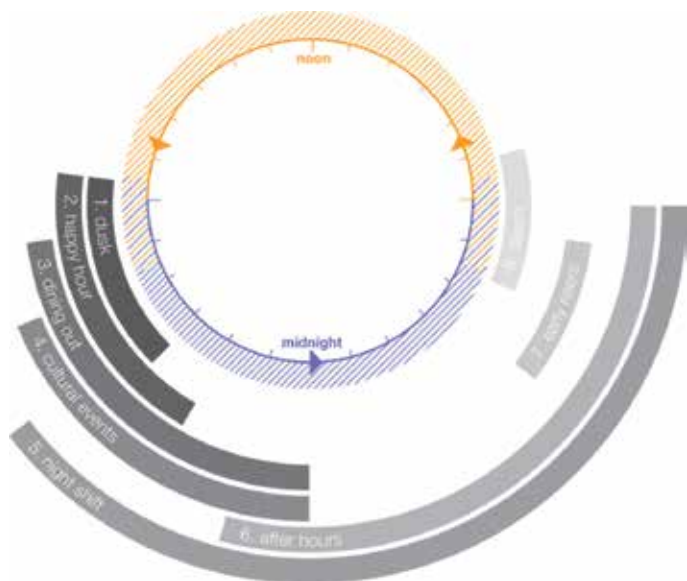
Cities Alive: Rethinking the Shades of Night takes a holistic view of urban lighting, defining it as the totality of all lighting in a city's public realm. This includes traditional forms of street lighting and other publicly provided illumination as well as ambient light from advertising, building interiors and other artificial sources.

Recognising cities as enormously diverse and complex adaptive systems, the report explores the future of cities at night and the role lighting solutions can play in enabling healthy, inclusive and sustainable urban lifestyles. It focuses on four key opportunities:

- People: human experience and needs
- Technology: smart and responsive systems
- Space: context and place
- Process: collaborative and integrated design

Contextually, taking the human experience as a driver for design decisions, it considers light and the human experience along three key themes.

- *Human activity and spaces at night*: enjoyment, engagement and fun in the public realm at night; how can the public realm cater for inclusive experiences while also considering work and leisure requirements?
- *Movement, access and urban intelligence*: places and spaces for improved night-time mobility and social behaviour; how can light act as an enabler to make spaces more accessible and usable at night?
- *Rhythms and qualities of light*: socially and environmentally sustainable places; how can light help in creating environments that promote wellbeing and respond to current and future social needs?



Dusk to dawn: The eight shades marked are typical of an urban area in the western hemisphere, such as New York. Cities, with their seasonal, cultural and climatic variations, will chart their own shades of night depending on local use of public space during the darkened hours, changing street life and commercial or other opening/closing hours within city districts.



SHUFFLE

CONNECTING PEOPLE TO THEIR SOCIAL ENVIRONMENT

More efficient. Smarter. Interactive. Connected. The digital revolution is here to serve people in a more and more challenging world. The Shuffle is much more than a lighting column. It connects people to their environment. Always.



OWLET IoT

THE NEXT GENERATION OF CITY MANAGEMENT

The Owlet IoT City Management System, which is based on Open Standards, can interact with larger smart city platforms. In fact, Owlet IoT is not only a high performing remote lighting management system, it can also exchange data or interoperate with neighbouring systems such as traffic management sensors, environmental monitoring systems or security devices.

FOR MORE INFORMATION:



@BEKASchreder | +27 11 238 0000
www.beka-schreder.co.za/owlet-iot

BEKA
Schröder 

YOUR PARTNER BEYOND LIGHT

Within each of these themes, a number of considerations are addressed.

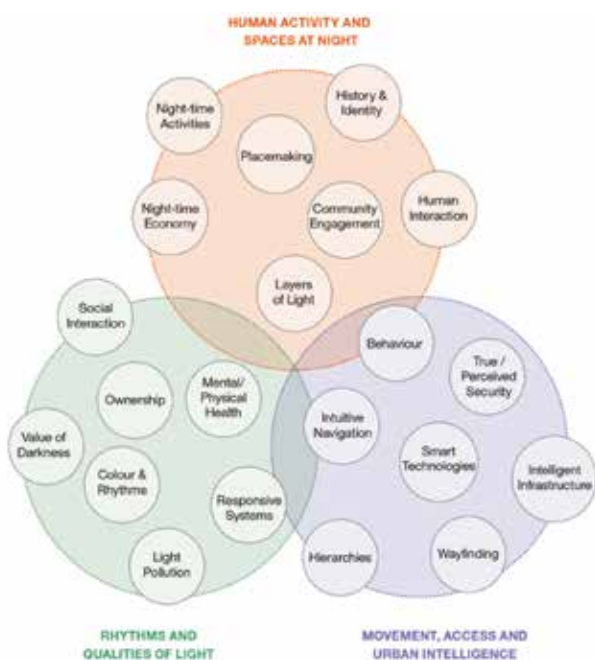
Human activity and spaces at night

Facilitating the night-time economy

Many cities and businesses already understand the economic implications of a flourishing night-time economy and recognise that public spaces play a vital role in the social and economic life of communities.

A successful public realm enables human interactions to take place. In the United Kingdom it has been found that meaningful improvements in the public realm can help generate investments from the private sector and increase trade in urban areas.

Public realm considerations are the most powerful tool for designing cities that work for their inhabitants. The report suggests that to create and enhance vital, functional public spaces, we need to gain a better understanding of the way different demographic groups want to use and experience the city. It proposes that time be given to public participation in planning urban lighting where specific districts or neighbourhoods are considered, highlighting the importance of site-specific lighting programmes that enhance legibility, safety and city enjoyment and also respond to the context, locality and users of the space.



The diagram illustrates key themes and considerations explored in the Cities Alive report in the context of Light and the Human Experience.

Designing for multiple activities and social interactions

At the same time it highlights the need for flexible public space, designed to accommodate a myriad activities and social interactions and adaptable to as yet undefined uses, while maintaining the functional requirements of a city space.

Using the different layers of light

Light and art are recognised as powerful tools to create an atmosphere for a place; successful place making creates a canvas for people to explore and fill with life.

“Illumination acts as a backdrop for the spectrum of human activity after dark. Its immense power includes the ability to ‘effortlessly’ alter spaces; as a medium, it allows designers to play with shades, colour and intensities.” Many lighting strategies follow established regulations and mainly consider the horizontal layer of light—how much light reaches the ground plane. In creating a thriving public realm, planning illumination for pedestrians is as important and different layers of light sources, from street lighting to ambient lighting, can be used to this purpose. The report suggests that, “Planners need to move away from a narrow concern with lighting roads to a holistic approach to illuminating places.”

Temporary lighting installations, interactive lighting and using light as art, are powerful ways to transform urban spaces. They can be key to urban regeneration. Events such as lighting festivals also serve to draw people to cities, promoting the city and boosting commercial activity.

Movement, access and urban intelligence

Light and positive human behaviour

The report cites Wilson and Kelling’s ‘broken windows theory’ which points to the importance of a well-maintained urban environment to combat anti-social behaviour, highlighting a close correlation between crime and the physical condition of neighbourhoods: the more derelict and damaged an environment the more likely people are to care less about their surroundings. In this context, it refers to another study by researchers at Eindhoven University which looks at the application of interactive lighting to ‘de-escalate aggression’ and anti-social behaviour. The study aims to better understand how varying colour, intensity and dynamics of interactive lighting can influence people’s social interactions and perceptions. The research shows that lighting can trigger positive behaviour. As our knowledge of the

Sydney Vivid Festival,
2012: Temporary lighting
installations, interactive
lighting and light as art
are powerful ways to
transform urban spaces.



'hidden' benefits of lighting increases, new strategies to increase informal social control, reverse the 'broken window' effect, and nudge people towards certain 'desired' behaviours, can be developed.

Safety at night

The perception of safety is recognised as a critical component for urban life at night, with lighting playing an essential role in creating a safe environment. Generally speaking, lit places are safer than dark areas. However, the report argues for improved lighting rather than just more light and higher levels of illuminance. Enhanced illumination can also be a means to attract more people to a space, creating safety through presence and activity. Effective lighting for safety requires more than the basic illumination of space.

Connecting destinations and enabling wayfinding

Appropriate lighting can support safe transport experiences, easy navigation and legible wayfinding, all important elements of any urban night-time experience. Night-time wayfinding and navigation are shaped by fundamentally different factors to those of daytime. At night, the strategic integration of light sources into the urban fabric can improve people's orientation, providing guidance and direction.

Arup's lighting strategy for the Olympic Park in

London, for example, focused on the use of nodes and clearly highlighted destinations in combination with well-lit pathways. People's responses to light and darkness were harnessed to gather or dissipate people, adopting a natural approach to managing the movement and flow of people.

Lighting cities for people instead of cars

Many of our city structures and systems have evolved to serve car-based urban mobility; street lighting in particular often serves the needs of cars and their drivers and not pedestrians. Public lighting is typically focused on the amount of light that reaches the street, paying little attention to the pavement and pedestrian experience. The report suggests that with a growing shift towards integrated multi-modal transport systems and an increase in walking and cycling, urban lighting systems need to be tailored more towards the needs of pedestrians and cyclists. This is seen as applicable to the redesign of cities in developed regions and the rapid expansion of cities in emerging economies, where the car is still the growing influence and prevailing transport trend.

Facilitating public transport, walking and cycling

Beyond private individual mobility, lighting also plays a key role in effective and safe public trans-

port. In 2000, the *TransMilenio* Bus Rapid Transit system (BRT) in Bogota, Colombia, was launched. The aim was to increase the safety of the system in a city where public transport would not have been considered the safest transport option at the time. Today, the *TransMilenio* is the world's largest BRT system. The lighting strategy played an important role in ensuring that large parts of the network were lit at night, increasing safety for passengers and operators and making the scheme more attractive.

The opportunities of smart technology

With the continuing evolution of information and communication technology, as processors, sensors and the analysis of data become cheaper and more efficient, lighting systems and solutions will exist as smart and connected components of the Internet of Things. Coupled with advances in lighting technology itself, smart and responsive lighting environments are emerging where the level, intensity and impact of light can be controlled and adapted to environmental cues, behaviours or pre-programmed schedules. While these adaptive lighting environments are already an emerging trend within buildings, at the city-scale smart lighting systems are just starting to gain ground. The potential for smart lighting, its integration with other city systems such as traffic management, and possibly a capability to gather data on user behaviour or status of the city, is enormous.

Rhythms and qualities of light

Disconnected light sources and excess illumination

Urban lighting consists of a wide range of layers and sources of light, both public and private, which are usually separated through ownership and control. Public authorities are responsible for public lighting – street lighting, traffic lights and the illumination of public buildings and spaces – and this is mostly designed in isolation from adjacent private contribution of lighting, from advertising boards and the interiors of buildings. This often results in excess illumination conflicts and redundancies between public and private light.

The report suggests that new lighting guidelines should consider such conflicts and create frameworks that enable a more carefully curated and managed combination of all light sources to priori-

tise quality and perception rather than prescribed luminance of a surface.

The link between light and human health

Increasingly, we are learning how critical light is for our health and wellbeing. All light triggers physical and behavioural reactions in the human body. It can have beneficial or detrimental impacts on people, depending on the quality, type and intensity of light.

The colour of light is another factor that has a huge influence on people's wellbeing. The full range of white light spectrum is important for mental health, with different parts of the spectrum having positive impacts at different times of day. While blue light helps people wake up in the mornings, in the evenings warm red light provides the right signals to help us with the transition to sleep. Consequently, traditional ways of measuring light through the lux rating will become inadequate in the design of human-centric lighting solutions. In future, the report suggests, there will need to be a greater focus on the colour of light and its ef-



Safer public transport: Strategically lit stations and illuminated connecting routes have improved public safety, use and accessibility of Bogota's TransMilenio BRT system. Credit: Diego Bernal - CC-BY-NC-ND

Light the Way to Market Expansion

HKTDC Hong Kong International Lighting Fair

(Spring Edition) 2017 is a leading industry event which creates opportunities for participants to connect with buyers from all over the world. Its 2016 edition attracted nearly 20,000 buyers from 108 countries and regions, including such renowned names as TASCIBRA (Brazil), Globe Electric Company Inc (Canada), B&Q China (the Chinese mainland), Moebel Rieger GmbH & Co. KG (Germany), Crompton Greaves Limited (India), Landmark Group (UAE), and EpiCentre K (Ukraine).

Organised by the Hong Kong Trade Development Council (HKTDC), the fair hosted more than 1,300 exhibitors in 2016. The fair's exhibitor profile represents the industry trends in lighting, such as energy-efficient products with a strong focus on LEDs and smart lighting solutions, the new frontier of lighting technology.

Your Place in the Spotlight

To draw maximum attention from buyers, exhibitors are grouped in thematic zones. For 2017 these include Advertising Display Lighting, Avenue of Chandeliers, Business of IP Zone, Commercial Lighting, Decorative Lighting, LED & Green Lighting, Lighting Accessories, Parts & Components, Outdoor Lighting, and Trade Service & Publications.

Highlight Zones

Hall of Aurora is the perfect environment to attract buyers of branded collections.

LED & Green Lighting is one of the fastest-growing sectors in the lighting industry.

World of Professional and Industrial Lighting encompasses a variety of situation-specific lighting, providing a showcase for lighting for warehousing stadiums and other commercial purposes, safety lighting and emergency lighting.

Avenue of Chandeliers creates a stunning showplace for the chandelier lighting which is so desirable to buyers.

Advertising Display Lighting offers a themed space for lighting products used for advertising, promotions or marketing purposes.

Events around the Fair

The Networking Reception is an international gathering of lighting professionals in an informal atmosphere to relax, exchange notes and make new contacts. A programme of seminars and forums explores many aspects of the lighting industry, from lifestyle trends to emerging markets.



April 2017, Peak Sourcing Month

April sees a number of important fairs in Hong Kong. They create a synergy of trading opportunities.

- 13-16 April HKTDC Hong Kong Electronics Fair (Spring Edition)
- 13-16 April HKTDC International ICT Expo
- 20-23 April HKTDC Hong Kong Houseware Fair
- 20-23 April HKTDC Hong Kong International Home Textiles and Furnishings Fair
- 27-30 April HKTDC Hong Kong Gifts & Premium Fair
- 27-30 April Hong Kong International Printing & Packaging Fair

First-time overseas buyers are entitled to exclusive travel incentive.

Pre-registration is required.
Please contact HKTDC at Tel: (27 10) 590 7976 or
E-mail: johannesburg.consultant@hktcdc.org for details.

HKTDC Hong Kong International Lighting Fair (Spring Edition) 2017

Date: 6-9 April 2017

Venue: Hong Kong Convention and Exhibition Centre

Reserve your admission badge
and save HK\$100!

Web: www.hktcdc.com/ex/hklightingfaire/18

Wap: hktcdc.com/wap/lightse/T119



fect on specific spaces and contexts. A growing understanding of how different parts of the light spectrum affect human behaviour, sleep cycles, performance and health will pave the way for novel lighting solutions and spaces that encourage specific physical and behavioural responses. In office buildings, for example, circadian lighting systems are emerging that can actively support more creative, healthy and productive employees.

The report notes Cambridge, Massachusetts, as one of the first cities to develop a street lighting strategy based on circadian cycles. Controlled through a wireless system, lighting infrastructure within a specific street can autonomously dim or brighten according to predefined criteria and environmental triggers. The system is projected to consume less energy than the previous street lighting and creates an improved colour rendition of the night-time environment.

The need for light and darkness

Recognising that both light and darkness are equally important to our health and wellbeing, the 24-hour city should not aim simply to recreate the day at night. The role of night-time lighting, including how much light is required and desirable, needs to be carefully considered.

Light pollution and the increasing illumination of our cities have fuelled a debate on the need for dark skies and their validity for urban areas. Research shows that night-time lighting has increased by an average of 6% per year, with increases of up to 20% in some cities. In the United States, it has been found that excess light from unshielded outdoor lighting fixtures contributes substantially to wasted electricity and related carbon emissions. Greater consideration of local context and actual lighting needs – including public and private light sources – instead of blind reliance solely on standards to design public lighting, could help reduce ‘unnecessary’ and excess light sources.

Integrating urban night-time with environmental rhythms

The report also looks at developments for smart streetlights that, for example, use sensors to adjust brightness levels in accordance with the moon’s luminance, dimming or turning off lights completely as the moon gets brighter. Excessive light pollution has spurred the argument for ‘dark habitats’ in urban areas, such as city parks and green corridors, giving night-time space to nocturnal creatures to support environmental resilience and the quality of life in cities.



Diurnal time lapse, Sydney Harbour. A growing understanding of how different parts of the light spectrum affect human behaviour and wellbeing opens up new opportunities for lighting systems that relate to circadian cycles. Credit: ©Tim Carr/Arup Lighting

Night-time design

Leni Schwendinger presents the case for considered night-time design, saying that urban lighting itself has expanded into a re-envisioned profession of ‘night-time design’ which seeks to increase opportunities for citizens to inhabit and use public space at night.

The closing chapter draws on the collaborative research work done to set out action steps that would support a more integrated night-time design approach and lighting experience and enable a realisation of the opportunities identified upfront. No longer limited to purely functional considerations in the planning and design of cities and moving beyond the concept of ‘the more light the better’ to a more granular and refined understanding of the qualities and characteristics of light offers opportunities to create lighting solutions that respond to context, people and locality, says Schwendinger.

This approach recognises lighting as a fundamental contributor to healthier, safer, more resilient and more enjoyable urban environments. It recognises too the value of darkness and of understanding and responding to the different shades of night.

Acknowledgement to Arup for all information provided. Photographs and diagrams courtesy of Arup, unless otherwise noted.

Cities Alive: Rethinking the Shades of Night. The full report is available to download from the Arup website: http://www.arup.com/services/lighting_design

IGNORANCE CAN BE COSTLY

A SAFEhouse Guide to the Regulation of Electrical Products



Tel: +27 11 396 8140
info@safehousesa.co.za
www.safehousesa.co.za

There is a good deal of confusion and misunderstanding about:

- Which regulations are applicable to which electrical products and services
- The roles of authorities such as the National Regulator for Compulsory Specifications (NRCS), the SABS and the Department of Labour.

The SAFEhouse Association has produced a guide to help specifiers, suppliers and users determine the standards and regulatory requirements applicable to electrical products and services covered by legislation.

Download a free copy of the SAFEhouse Guide to the Regulation of Electrical Products from www.safehousesa.co.za

Download free copies of SAFEhouse guides from www.safehousesa.co.za

Guides contain helpful information on:

- Regulatory references & requirements
- Technology
- Indications of risk in using substandard products and services



To find out what you can do to avoid or reduce the risks that result from using sub-standard, dangerous electrical products, consult SAFEhouse guides or visit www.safehousesa.co.za for some recommendations.

The SAFEhouse Association is a non-profit, industry organisation committed to the fight against sub-standard, unsafe electrical products.

For more information contact:

Barry O'Leary: Tel: 011 396 8251
Email: barry.oleary@safehousesa.co.za

Pierre Nothard: Tel: 011 396 8140
Email: pierren@safehousesa.co.za

www.safehousesa.co.za

SAFEhouse
Suppliers you can trust

SAFEhouse members have signed a code of conduct: Your assurance of commitment to offer only safe electrical products.



Lighting design

Necessity or nice-to-have?

This interesting question is one developers, architects and engineers would do well to ask themselves. At a recent IESSA meeting held in Johannesburg, Retief Coetzer of BEKA Schröder outlined his reasons for believing that lighting design is a necessity.

Light is a powerful tool that can enhance a space, improve productivity, provide ambience and beautify the gloomiest of rooms and spaces. Lighting is essential for all areas and sectors of life with specialised areas of the profession including sports; roads and urban areas; commercial and office space; area, landscape and ambience; industry; tunnels and aesthetics. A professional lighting design will incorporate the creative, the scientific and the technological aspects of light and lighting.

All lighting processes start with a creative vision and a prediction of how the final installation will appear. Once this has been decided, a qualified designer with an understanding of how light works will be able to put together a design scheme using the correct luminaires in an optimal manner. Applying expertise, an adherence to up-to-date, relevant lighting standards ensures the safety and health of those in the environment in question. An awareness of comfort will guarantee over-illumination and glare are eliminated or reduced substantially. An understanding of function will dictate that the correct luminaire is used, and familiarity with 'prediction' will give an indication of how many luminaires should be used, the cost of the installation, total power consumption and, ultimately, total cost of ownership.

When it comes to sports lighting, lighting design will ensure that the vertical lighting levels are

of a value necessary for television broadcasting cameras. For roads, lighting design is needed to ensure compliance with SANS 10098-1/2 values. In an office environment, a good lighting design will provide healthy, uniform illumination that complies with glare ratings and standards. A knowledge of relevant standards is also essential for industrial lighting, where safety of employees is critical; and lighting design is required for tunnel lighting to ensure adherence to the CIE curve and different zones within a tunnel. Coetzer says that lighting design is possibly not essential for aesthetics but is advisable for visual prediction thereof (others would argue that it is primarily for aesthetics that good lighting design is essential).

Coetzer asked four colleagues what they thought was the value of lighting design.

Antony Londt, Gibbs, said he believed lighting design saved time; proved performance and sold luminaires.

Quintin Neveling, BEKA Schröder, said lighting design met and exceeded client expectations; assisted with budgeting and keeping informed, and sold luminaires.

Rui Silva, BEKA Schröder, said lighting design ensured compliance with standards; took into account comfort and the human aspect, and improved productivity and mood.

Morena Chabalala, BEKA Schröder, believes that lighting design saves money and energy and that lighting designers provide the best design possible with the client in mind.

The conclusion: Lighting design is a necessity and not merely a nice-to-have. **LID**



Fighting flicker: New technology brings back a very old problem

by Craig DiLouie

Flicker in light sources is an old problem made new again in the LED age. Its effects range from annoying to debilitating, and solving it can be challenging. Even defining flicker is difficult. Whether a problem is likely to occur depends on the light source, lighting conditions, how sensitive occupants are to it and the tasks being performed.

The solution is to ensure proper installation to minimise chances of electrical noise, choose LED products with high-quality drivers, and pair these products with compatible dimming controls. Last year, the Institute of Electrical and Electronics Engineers (IEEE) issued recommendations for minimising flicker based on existing metrics, though this data is under-reported in product information. New metrics are on the horizon that should help manufacturers test and describe their products. Meanwhile, specifiers should evaluate partners and their products carefully and test products for themselves.

Defining flicker

Photometric flicker is the modulation of light source output or intensity over time. Its source may be external or internal to the lighting system. Disturbances to a light source's electrical input, such as noise or transient events, can produce flicker. Alternatively, flicker may be an inherent characteristic of the lighting system itself.

Flicker may be visible or stroboscopic. Visible flicker is modulation of light output or intensity that is perceivable under static conditions (non-moving observer and light source). Stroboscopic flicker, which may be visible or invisible, is perceptible only if the light source or user is in motion. Stroboscopic flicker is particularly concerning when it makes rotating industrial machinery appear to slow or stop. This happens when the object moves at the same (or multiple of the) frequency as the modulation. A related phenomenon is the phantom array effect, in which flicker is made perceptible by the motion of the observer's eye.

In some cases, visible flicker can be desirable. Candlelight's playful quality is a good example. In most general lighting applications, it can be a problem.

Variations in supply voltage can cause flicker and

severity depends on factors such as light source type, extent of the voltage change, how often the voltage changes, and the lamp's gain factor – how much the light source's intensity changes in response to a change in voltage.

A final factor is ambient light level. Lower light levels make a light source's modulation easier to see. Dimming can cause flicker or make it more visible.

"Highly detail-based tasks, especially those illuminated with a single light source, or applications with low light levels, are more likely to generate complaints around visible flicker," says Ethan Biery, LED engineering leader, Lutron Electronics Co., Coopersburg, Pa. "Tasks that involve motion or moving objects are more likely to experience the effects of stroboscopic flicker. Overall, however, the effects of flicker are highly dependent on the observer."

Flicker is generally noticeable up to about 80 Hz. Above that, it is not visible to most people. The on/off cycles fuse into a steady and continuous source of light. However, even if flicker is not visible, it can still produce a nervous system response at frequencies of 125 Hz or higher. As a result, invisible flicker affects some people, though they don't know flicker is the cause. Stroboscopic effects can occur at frequencies from 80 - 2000 Hz. Studies suggest flicker is a contributor to eyestrain, blurred vision and impaired visual task performance and a small percentage of the population is particularly susceptible.

An old problem returns

All ac light sources produce flicker. For decades, magnetic-ballasted fluorescent lighting systems imposed objectionable flicker on workspaces. The adoption of electronic ballasts, most of which operate at a frequency of about 40 kHz, virtually eliminated the issue.

With the rise of LED lighting, flicker has re-emerged as an important industry issue. LEDs have no persistence, so any change in forward current produces a nearly instant change in light output and flicker can be more pronounced.

The majority of LED luminaires feature dimmable drivers and are often paired with dimming controls.

This can exacerbate flicker during deep dimming by significantly reducing ambient light levels, making flicker more noticeable. LEDs can produce flicker through interactions with line-voltage dimmers, which 'cut' the ac waveform during dimming, causing the LED to cycle rapidly. "The LEDs themselves are not the cause of flicker," says Yan Rodriguez, VP, product and technology, Acuity Brands Lighting. "It is the power supplies that cause the flicker in most products. If the driver is not designed well to deal with flicker, there are no controls that will make it better. Digital controls, whether wireless or wired, will not generally induce flicker in the system."

High-quality LED lamps and luminaires typically do not produce objectionable flicker. Nor, as mentioned, should LED products paired with digital controls or line-voltage dimmers rated as compatible with LED lighting. However, these drivers, which feature components added to manage output, impose a higher cost while requiring a larger driver size.

"Some in the LED industry have recognised the impact flicker has on people and have designed products that mitigate that impact," says Aaron Smith, director of technology, Finelite Inc., Union City, California. "However, other priorities, such as cost reduction, have stressed cost advantage over control performance."

Low-cost circuitry options such as rectifier, reverse-parallel or ac direct power supplies are prone to flicker. Products that are constrained in size, such as LED MR16 lamps, feature fewer filtering components and use analogue instead of digital circuitry, making them more susceptible to internal and external flicker.

Cost is not a sure determinant of whether the product will exhibit flicker and even a high-quality driver, if paired with an incompatible dimmer, may produce flicker.

"The problem with flicker in luminaires and lamps really does not fall into applications but rather cost, size and dimming requirements, in that order," Rodriguez says. "Generally speaking, low-end residential products, owing to their cost restraints, will use a power supply technology that is more prone to flicker, compared to more expensive multistage switching power supplies found in commercial products. Lamps, owing to their size constraints, will also employ topologies that are more prone to flicker. There are, of course, exceptions in a few high-end architectural lamps."

In the field, testing and solving a flicker problem is challenging. Although there are tools or methods that can be used to indicate flicker, there are, "unfortunately," says Biery, "no good field-measurement techniques for measuring flicker as it corresponds to human perception. The best tool is still the eye of an experienced lighting professional!"

A basic troubleshooting process can isolate whether the cause of the flicker is external (electrical) or internal (driver or driver interaction with a dimming control). Note if the flicker is constant or intermittent. If intermittent, does it occur in relation to another activity, such as a nearby elevator moving? Move the luminaire to another part of the building, and see if it is still flickering. The answers to these questions may indicate interference by an external source, which should be mitigated.

"In new installations, contractors should follow the recommended practice of separating wiring (including neutral wires) between lighting and non-lighting loads as much as possible," Biery says. "Likewise, control signals – especially analogue-based control signals, such as 0 – 10 V and phase control – should be run separately from the high-current power wires that supply electrically noisy sources. Common sources of electrical noise are motors, including those found in elevators, compressors and HVAC equipment."


If flicker occurs at dimming levels, evaluate the dimmer. If it's a line-voltage dimmer, consider replacing it with a dimmer that has been tested and confirmed to be compatible with the specific LED products being installed. Also, low-voltage digital controls are generally far less prone to flicker from external sources. Otherwise, the best way to avoid objectionable flicker is to specify LED products with high-quality drivers.

"If a lighting installation is demonstrating undesirable flicker, and the flicker is part of the fixture's normal operation, there is really nothing that can be done other than replacing the installation with a new luminaire with acceptable flicker performance," Smith says. "This has the potential to be a costly issue for commercial applications so it is vitally important that the luminaire be validated to have a low risk of producing flicker before installation. Ideally, this should be determined well upstream in the design phase of a project, long before any luminaires are delivered to a job site."

One way to do that is get educated and choose one's partners carefully, preferring trustworthy manufacturers that back their products. Ideally, specifiers will evaluate products based on standardised metrics.

"Flicker continues to be a challenging issue for the lighting industry, mostly because lighting product flicker performance information is practically non-existent for specifiers and contractors," says Smith. "There is also a bit of controversy regarding the exact metrics that should be applied to determine flicker. The most informed specifiers will do their own investigating, implementing best-practice design for their application, contacting manufacturers, measuring flicker using a flicker meter, and evaluating mock-ups and physical samples." LID

Craig DiLouie is a journalist and educator specialising in the lighting industry. His article was featured on: <http://www.ecmag.com/section/lighting/fighting-flicker>



Lighting solutions increase efficiencies in pharmaceutical manufacturing

Lean principles, a big trend in the pharmaceutical industry, emphasise using time and resources as efficiently as possible to reduce waste and focus instead on value-added activities. However, there are many ways time and resources can be wasted in the pharmaceutical factory. For example, ineffective error proofing and quality inspection procedures can result in product contamination and recalls, leading to material waste and wasted production time. In addition, communication throughout the factory can expend significant time and resources unless a there is solution in place to streamline messages.

A long-term solution to the challenge of waste must allow manufacturers to increase efficiency in the short term, and learn from inefficiencies and make data-driven adjustments for continuous improvement. The following are four examples of how lighting solutions can help to increase efficiency by addressing common sources of wasted time and resources in pharmaceutical manufacturing.

Inspection lighting can reduce wasted materials and production time

Reliable manufacturing of pharmaceutical products requires comprehensive inspections. It is extremely important to identify particulates or foreign substances of any size to avoid contamination and product recall. This is often accomplished by human visual inspection since automated inspection systems are not always feasible. But even manual inspections are prone to error, especially if lighting conditions are not ideal for visual verification.

Since many of the particulates are minute, it is important to have bright and highly uniform illumination in inspection stations so operators can effectively verify the quality of products (for example, confirming there are no contaminants present on an IV bag or glass vial). Fluorescent lamps tend to

flicker from changes in intensity, which could compromise inspection accuracy, and must be changed frequently. In contrast, bright, uniform LED lighting allows operators to detect minute particulates reliably and efficiently, improving quality control and reducing the risk of wasted time and materials.

Pick-to-light sensors reduce risk of error in assembly

Assembly processes can be streamlined through the use of light. For example, in kitting applications it is important to include all the correct parts in each kit, and errors can occur if there are many different parts to remember or if an operator becomes distracted. To reduce the risk of error (such as skipped or duplicate parts), pick-to-light sensors can be interfaced with a process controller programmed with the correct assembly sequence to guide the assembler to the correct parts in the correct order.

As the assembler takes a part in sequence and breaks the beam, the sensor detects that the part was removed and sends an output signal to the controller. The controller then verifies that the correct part was taken, and the controller signals the pick-to-light sensor of the next bin in the pick sequence to light up. If the assembler reaches into a bin out of sequence, the system can also be

configured to signal the assembler that an incorrect pick has occurred.

A pick-to-light system increases task efficiency by simplifying job training, increasing quality control (no skipped parts), and reducing the need for rework and inspections. It also speeds the resumption of work after breaks and other distractions.

Indicator lights streamline communication in the visual factory

Communication across the pharmaceutical factory can be a source of wasted time, and the visual factory allows for communication to occur seamlessly. For example, indicator lights can be used to indicate environmental status information for clean rooms like current temperature and humidity, i.e., green indicates the room is within normal limits, yellow indicates near threshold, and red indicates the room is outside the control limits. This allows employees to identify immediately rooms that need attention.

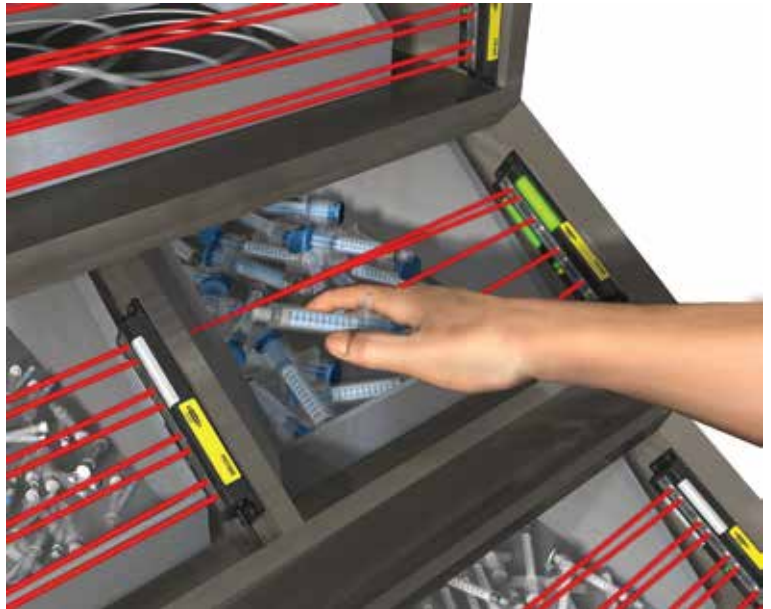
Indicator lights can similarly be used as visual guidance when assistance is needed on machines. The lights can be configured to indicate when a machine requires an action (such as replenishing labels). The use of indicator lights simplifies communication of problems and allows issues to be addressed quickly so normal operation can resume.

Wirelessly-connected lights enable overall equipment effectiveness (OEE)

To ensure efficient processes throughout the pharmaceutical factory, machine operators must quickly and easily determine the status of machines. Tower lights equipped with wireless communication capabilities display a visual indication of an event for immediate action; plus, they can transmit wireless alerts to operators outside of the visual range. This helps ensure that operational problems are identified and addressed immediately, regardless of whether or not the machine operator is physically present to see the visual indicator.

In addition, the wireless transmission of machine data can then be stored for long-term data logging and analysis, a critical capability of the IIoT. In other words, not only can operators respond to alerts quickly as they occur, but a history of alerts can be stored and analysed offline for use in OEE (Overall Equipment Effectiveness) calculations. This data can also be used for predictive maintenance, further saving costs and time.

Article supplied by RET Automation Controls



HKTDC Hong Kong International Lighting Fair

The 9th edition of the HKTDC Hong Kong International Lighting Fair (Spring Edition) will be staged from 6 to 9 April 2017, at the Hong Kong Convention and Exhibition Centre. Around 1 300 exhibitors are expected to join the fair, offering global buyers a one-stop sourcing platform for all finished products, parts and components.

LED lighting and smart technology continue to drive the industry

HKTDC Research conducted a survey on prospects for the lighting market at the end of 2016. Findings indicated that LED and related green lighting products (as chosen by 40% of respondents) continue to be viewed as the category with highest growth potential in 2017. In terms of LED product applications, respondents believed that indoor household lighting (32%) and smart lighting systems (21%) will see the largest increase in the coming two years. As regards future development, the majority of the respondents (84%) indicated that smart technology will drive the evolution of the lighting industry in the next two years.

Various thematic zones for easy sourcing

With energy efficiency being a significant trend in the global lighting industry, the LED & Green Lighting zone continues to be highlighted and features both functional and decorative LEDs and green lighting products.

The lighting industry is actively developing smart lighting technologies and products in response to the development of 'smart city and smart home' driven by the Internet of Things. In order to cater for market demand, the inaugural Smart Lighting & Solutions zone has been established this year, showcasing state-of-the-art lighting systems, remote control and smart lighting products. Furthermore, the inaugural Startup Zone has been set up for young designers and startups to showcase their original ideas and concepts, and to communicate with global industry players.

Another highlighted zone, **Hall of Aurora** provides an elegant setting for top-notch branded collections of lighting fixtures. Interior designers, architects and fashion-forward retailers can find top quality, trendy lighting products in this zone with leading brands including Viribright, Forest Lighting, Jaykal and SKY-LIGHTING.

The Avenue of Chandeliers spotlights splendid collections. Chandeliers in modern and traditional styles, undergoing a fashion resurgence, are desirable to interior decorators and stylists, as well as contractors outfitting hotels, restaurants, shopping malls and other developments. The World of Professional & Industrial Lighting will cover a broad range of situation-specific lighting, including lighting for warehousing, stadia and other commercial purposes, safety lighting and emergency lighting. Additional product zones include Advertising Display Lighting, Commercial Lighting, Outdoor Lighting and Lighting Accessories and Parts & Components.

Enlightening Events

Seminars and buyer forums have been organised to keep traders abreast of the latest market information. Co-organised with the Hong Kong Institution of Engineers - Electronics Division and Hong Kong Electronics & Technologies Association, the Asian Lighting Forum covers subjects such as global market trends and applications of smart lighting. In a range of informative events, buyers will share market insights at forums on business opportunities in different markets, and industry representatives will give the latest updates on lighting design trends.

The theme of the 10th Hong Kong Lighting Design Competition, organised by HKTDC, is 'Blooming Aura', which aims to stimulate participants' innovation and demonstrate the feeling of liveliness and vibrancy brought about by blooming lights. The Hong Kong Lighting Design Competition Award Presentation Ceremony will be held on Day 1 (6 April) of the fair and all winners' and finalists' works will be showcased on the Hall 1C Concourse for the duration of the fair.

For further information visit: www.hktdc.com/hklightingfairse



Translucent concrete used in makeover of thermal spa

The Obermain Therme public swimming bath in the Bavarian city of Bad Staffelstein is the site of Bavaria's best known hot springs, emerging from a 1600 m deep drilled spring. The thermal saltwater spa has recently been renovated and is topped with a light transmitting concrete 'cave', whose shell, shaped to resemble a natural salt crystal, is made out of LUCEM translucent concrete that glows with millions of fibre optic threads.

Prior to architectural firm Krieger Architekten Ingenieur's renovation of the spa, it featured a cave made of natural stone and covered with artificial palm trees. Popular but in need of modernisation, the cave was dispensed in favour of the new salt-crystal cave, a 5x7-metre space covered in a colourful LUCEM shell and integrated with a sound system overhead and massage jets in the water. The changing colours of the RGB LEDs in the shell echo the colours in the adjacent pool, which are easily activated and controlled by computer or smartphone.

Translucent concrete is an elegant and visually appealing material, with the ability to transmit light through thousands of fibre optics embedded within the panels. As a result, the panels, which appear to be heavy grounded natural stone, glow to look like a hovering light material when illuminated. The duality of the material gives a different ambience for space, use and users.

The architectural team completely renewed a 170 m² large pool with underwater-jets, a waterfall and a channel as a connection to an existing outside pool. The new highlight was designed with a cave in the shape of a salt crystal made with translucent concrete, allowing the new shell to light in different colours along with the water. Approximately 200 m² of light transmitting concrete was used.

The light shines through the surface of the translucent concrete using more than two million fibre optics. Within the double wall construction on a steel frame, programmable LEDs can be adjusted to create differently coloured mood lighting.

Transparent polycarbonate elements 2 cm thick were inserted as spacers between the steel frame and the light transmitting concrete panels to minimise shadow. In the centre of the 240 mm-thick steel frame two-sided RGB LED modules were installed. Developed and produced by LUCEM GmbH, the modules have been filled with epoxy resin to guarantee long life despite the ambient high humidity and salinity.

The RGB LEDs are activated and controlled via software by computer or smartphone, with lighting-scenarios ranging from static colours, through colour changing gradients to colour play in synch with the music.

The ambient lighting, special sound system and renovated spa create an ideal environment in which to unwind and take time to refresh, rejuvenate and revive.

Lucem Lichtbeton: www.lucem.de

Photo credits: LUCEM GmbH



Communicating brand values with light

Creating and maintaining values is the philosophy of construction company Otto Wulff GmbH. Started in 1932, the Hamburg-based company employs around 300 people and conducts business in the sectors of structural engineering, industrial and reinforced concrete construction and the restoration of old buildings. Its subsidiary Otto Wulff Projektentwicklung (OWP) GmbH is active in the construction and renovation of real estate in Hamburg and Berlin. As a developer, OWP implements housing construction and commercial projects of various sizes from concept to handover. The Otto Wulff Group therefore brings together the complete spectrum of construction disciplines under a single canopy and views itself as a brand committed to quality based on expertise, experience and performance. The new showroom at the company headquarters in Billstedt was intended to emphasise this claim to being a leader in its field and here constructors and investors get a good impression of the high-quality construction work of the group. The showroom also offers samples for selecting appropriate interior design features for individual projects.

Timm+Goullon Architects designed an elegant and modern flat-roof building with an inviting glass facade; Dirk Hollweg from lux100 provided the professional lighting design services. "In the case of OWP's new showroom, the lighting design provides a positive atmosphere and the light has an inviting, high quality character that communicates the leadership approach of Otto Wulff," says Hollweg, whose lighting design also provides guidance for customers in the 250 m² showroom. The space is split into

reception, waiting area, sales and meeting rooms, an area for sampling and selecting materials, a world of living and a bathroom exhibition. Hollweg's design is based on visual perception hierarchies: bright-dark contrasts or graduations in brightness establish a sense of drama, specifically emphasise individual areas in the space and enable these to come to the foreground. Other less brightly illuminated areas are more discreet and blend into the background. "Light allows me to order and classify, and that creates excitement while communicating the quality approach of the Otto Wulff brand," says Hollweg. He used 3000 K luminaires throughout the showroom, because "warm, directed light has a high quality appearance whereas cool, indirect light tends to be sober, functional and frequently boring". His qualitative approach to lighting design structures the space, emphasises individual zones and sets specific highlights, "like the sun's rays," with spotlights. The result: a superior and highly inviting atmosphere throughout the showroom.

Bright zones attract visitors

Individual areas are illuminated in a differentiated way to guide visitors through the exhibition. "Customers tend to move automatically to where it's brighter," explains the lighting designer. As a consequence, the wall panel with a striking Otto Wulff logo at eye-level seen by visitors in the entrance area is brightly and uniformly illuminated with a 24 W Optec wallwasher, transforming it into a central eye-catcher. A reception desk is situated on the right-hand side above which two decorative

All photographs by Frieder Bickel, Hamburg, © ERCO GmbH



Starpoint 8 W pendant luminaires with extra wide flood light distribution are installed. The wall area to the rear displays a 'welcome' greeting highlighted with a recessed Compact wallwasher. This area is significantly brighter than the opposite waiting area, giving visitors a clear signal to go towards the right. The lighting is unobtrusive in the waiting area to the left – an Optec spotlight with spot light distribution illuminates a side table next to the sofa, two Compact lens wallwashers illuminate the picture behind the sofa and a decorative task light adds a cosy touch.

Influencing the focus of customers

The tables in both meeting rooms are highlighted with light where consultants present designs and planning details as well as individual project information. "This focuses customers' attention on the sales discussion," explains Hollweg. In each case, only a single Skim recessed spotlight uniformly illuminates the table top without glare. A decorative task light positioned at eye-level on the shelf to the side emphasises the high quality appeal of the interior. The lighting design works with concise hierarchies of perception here as well: the focus with brightness and therefore attention is clearly on the table tops, whilst other areas in the space blend more into the background. "Rooms or spaces that are too uniformly illuminated create stress," says the designer. A living situation is simulated in the rear area of the showroom where decorative pendant luminaires and floor-standing uplights create a cosy atmosphere.

Exhibited building materials

Another important area in the showroom is dedicated to the display and selection of sample units and materials. The product display on the side wall in the centre of the showroom can be equipped with a selection of door hinges, window handles, light switches, tiles, wood samples and similar objects. "A 24 W Optec wallwasher provides high lumen output from above," says Hollweg, "and is close to the products to ensure optimum presentation without shadowing or glare".

The selection of materials and accessories for the various Otto Wulff construction projects is diverse, and the spectrum of colours and textures equally so. As such, the rendering of colours and materials as true as possible to natural was a further essential factor in the lighting design. The ERCO LED lighting tools installed in 3000 K warm white feature outstanding colour rendering and achieve true-to-life material appearances (RA ≥ 90).

The Otto Wulff Projektentwicklung showroom in Hamburg demonstrates how innate brand values such as quality and the spirit of innovation can be communicated with the aid of light.

ERCO GmbH: www.erco.com



Second generation COB LED packages

Samsung Electronics, a world leader in advanced component solutions, has announced its second generation of D-series chip-on-board (COB) LED packages. The second generation features the industry's highest light efficacy in COB lineups and is suitable for directional lighting applications such as multifaceted reflector (MR) lamps, parabolic aluminised reflector (PAR) lamps, spotlights, downlights and high bay lights.

The new D-series Generation 2 offers efficacy at 160 lm/W (5000 K CCT, 80 CRI, 85°C) – a significant improvement on the Generation 1 efficacy level of 150 lm/W. The Gen 2 additions greatly enrich Samsung's COB lineup by providing more extensive lighting source options for spot and most other directional lighting. The D-series Gen 2 also features about 50 percent lower thermal resistance than the first generation.

In addition, all 11 different wattage offerings in the D-series Gen 2 deliver high reliability and performance levels that meet DLC Premium standards (technical requirements for LED lighting solutions

suggested by DesignLights Consortium™). DLC standards are recognised in North America as a preferred means of evaluating LED lighting products in terms of performance and quality.

It is available for a wide range of colour rendering index levels from CRI 70+ to 90+, and for 'Vivid' lighting, providing colour spectrums that have been optimised for retail markets. This satisfies the need of many lighting designers to have richer, more vibrant colours.

**Samsung Semiconductor Europe GmbH:
+49(0)6196-66-3300**



Chinese consortium completes acquisition of LEDVANCE

The sale of LEDVANCE by OSRAM to a Chinese investment consortium, consisting of the strategic investor IDG Capital, the LED packaging manufacturer MLS Co., Ltd. (MLS) and Yiwu State-Owned Assets Operation Center (Yiwu), has been successfully completed, effective March 3, 2017 and with economic effect as of March 1, 2017. This follows the parties obtaining all necessary approvals from the relevant authorities.

Jes Munk Hansen, CEO of LEDVANCE, said they were pleased with the transaction, as MLS and LEDVANCE complement each other in an ideal way. "Through MLS," he said, "we gain access to cost-efficient and powerful LED components and will strengthen our market presence in Asia, especially in China. This supports the LEDVANCE strategy to expand its product portfolio, foremost in the areas of LED lamps and luminaires, and Smart Lighting. We look forward to pursuing the many new opportunities that the partnership with MLS brings," he said.

"It is great to be part of this exciting acquisition, as it brings together a leading Chinese LED manufacturer and a German lighting company with over 100 years of experience, strong brands, proven technology and international sales channels. What drives us as the majority owner within the investment consortium, is to leverage our global investment expertise and resources to help Chi-

nese companies and long-established companies from developed markets make the most of their joint market potentials," Antony Yu, Partner of IDG Capital, explained.

Sun Qinghuan, Chairman of MLS, is also delighted with the arrangement, saying: "We are looking forward to working with our colleagues at LEDVANCE. The experience and qualifications of LEDVANCE's management team and employees provide a strong basis for collaboration. We will be working closely together to strengthen our position as leaders in the global lighting market".

LEDVANCE and MLS will now focus on leveraging synergies. Through MLS, LEDVANCE gains access to cost-efficient LED components for its LED products and will be able to expand its market presence in China, the largest lighting market in the world. MLS, in turn, benefits from LEDVANCE's industry experience and its international market presence.

Based on an agreement with OSRAM, LEDVANCE will continue to use the OSRAM brand name for its products (SYLVANIA for USA and Canada). Intellectual property rights have been clearly allocated, so MLS and LEDVANCE can continue to drive innovations globally.

LEDVANCE: +27 (0)11 207 5600

Lighting the BRT route in Dar es Salaam

BEKA Schröder supplied a cost-effective lighting solution for the long awaited bus rapid transit (BRT) system in Dar es Salaam, Tanzania. The transit system is part of the 'Second Central Transport Corridor Project', the purpose of which is to support Tanzania's economic growth by providing enhanced transport facilities.

The implementation of the BRT system will consist of six phases, the first of which has been completed and began operations in May 2016. It has a total length of 21.1 km with dedicated bus lanes on three trunk routes and a total of 29 stations. Since the BRT system operates until late, adequate lighting levels were an essential part of the development to ensure commuters feel safe when using the service at night.

BEKA Schröder was awarded the tender to supply in excess of 1000 BEKASUN 250 W streetlight luminaires on 10 m stepped galvanised surface mounted poles. The company became the successful supplier because it was able to provide the client with the most cost-effective lighting solution per kilometre. With the assistance of the company's Applications Department, the original lighting design was significantly optimised by decreasing the number of luminaires and poles needed, while still achieving optimum lighting levels and uniformity.

The BEKASUN 250 W luminaires were supplied with 4Y lamp technology, which offers increased lamp life, and a substantial increase in lumen out-

put. By optimising the reflector system together with the 4Y lamp, the above-mentioned project used considerably fewer poles and luminaires per kilometre than any competitor, thus reducing capital and operating costs.

BEKA Schröder locally develops and manufactures lighting products, designed and suitable for Africa's harsh environmental conditions.

BEKA Schröder:
Paulo Mamede +27 (0)11 238 0038



Above: More than 1000 BEKASUN luminaires have been installed along Dar es Salaam's BRT route.



Left: Dar es Salaam's new BRT route, illuminated by BEKA Schröder's BEKASUN luminaires, is clearly visible from the skies.

Energy efficient lighting solution complements international brand

Busby is a leading wholesale and retail fashion group in South Africa. Busby Retail distributes extensive ranges of clothing, luggage, handbags, accessories, eyewear and footwear, all bearing international brand names, house brand names and private labels. The company is innovative and dynamic which led it to approach Solid State Lighting International (Pty) Ltd to provide guidance on an energy efficient LED lighting solution that would complement the Guess brand, store location (Sandton City) and customer profile while maintaining the quality and efficacy of lighting standards set by the brand internationally.

Customer challenge

Traditionally, Guess stores were designed using 70W and 35W Metal Halide lamps to provide high levels of illumination and a high colour rendering index with emphasis on illuminating the products on display. However, owing to stringent changes to the landlord's store design requirements, aimed at energy efficiencies required for new and retrofit stores, tenants were required to reduce their specific connected energy loads, in particular the lighting solutions used. To prevent this from resulting in a reduction in store light levels, a solution was required that would complement the

retail brand while falling within the landlord's shop fit-out specifications, which restricted the specific connected load of the store design to <math><34\text{ W/m}^2</math>.

The right lighting

Based on the existing store layout, the SSLI design team used Dialux to model Philips LED StyliD lamps using various combinations of beam angle, CCT and efficacy levels until the right lux levels were met and, in some cases, exceeded.

The Philips StyliD is a breakthrough LED concept combining design, the latest and most innovative LED technology and optical systems, and reliable heat management. StyliD offers substantial energy saving compared to halogen, quality light, complete stylistic freedom, and significant maintenance savings. A mix of narrow and wide beam angles and a mix of 3000 K and 4000 K CCT ensured SSLI achieved the highest CRI possible. Using the StyliD Compact Track Light provided a solution that fell within the landlord's shop fit-out specifications and significantly lowered the energy consumption and the specific connected load of the store design to <math><20\text{ W/m}^2</math>.

StyliD offered energy savings, excellent light quality, stylistic freedom, and maintenance savings.



Regent's lighting at the Mall of Africa

The Mall of Africa in Midrand, at close to 130 000m² GLA, is the largest single-phase shopping centre to be built in South Africa to date. Led by MDS Architecture, the design process aimed to fulfill client's desire to provide *the* mall in Africa.

The design inspiration for the mall and courts was drawn from the geological beauty of the continent. This formed the direction of the design and the inspiration for the mall interior, the aesthetics and the finishes, which were developed along this concept in a non-stylised manner.

The brief for the interior lighting was to use Maxi Linear fittings in the mall but to do something different from what had been done previously. The initial thought was to run the units in parallel but when this proved too expensive, Regent suggested staggering the fittings to ensure the plan fell within budget. The proposal was accepted.

LED lighting was used extensively and included Linear Maxi and Perox downlighters, which were combined to provide lighting and animation to the key centralised areas. The design means that natural light is maximised in the Mall in such a way that the comfort of shoppers is optimised.

Aptly named 'Forest Walk', the central spine of the Mall of Africa is reminiscent of the rain forests in central Africa. Featuring tropical elements, the Forest Walk follows the curve of the dramatic and expansive roof feature. At night, specialist animated lighting and pendants in the specially designed 'pods' add an even more subtle animation.

The external lighting of the mall consisted essentially of three elements:

- Highlighting the facades – Istria facade lighting was used here.
- Roadway lighting – Regent Lighting matched what had been used before.
- Landscape – the landscape design of the Waterfall Precinct integrates the surrounding urban street fabric with the Mall of Africa and the newly constructed central park.

The design provides pleasant, inviting, valuable and sustainable spaces for human use and enjoyment as an added experience when visiting the Mall of Africa.

Regent Lighting Solutions:
+27 (0)11 474 0171





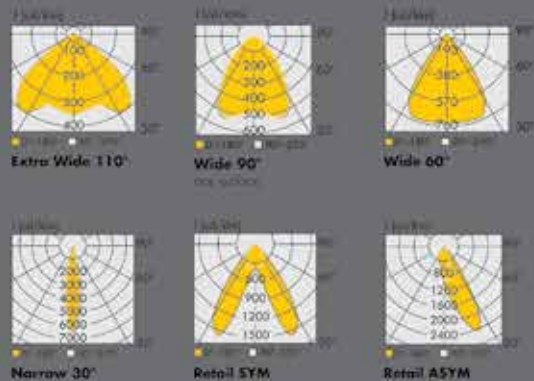
LED Line SMD Kit 3R

Our new LED Line SMD Kit 3R offers great versatility thanks to homogeneous LES and diverse light distribution options.

Our high performance PMMA optics are ideal for lighting the most diverse applications. A large selection of light distribution options with beam angles of 30°, 60°, 90° and 110° are available, as well as an asymmetrical and a batwing option.



- Long service life: 50,000 h (L80/B10)**
- Highly efficient: up to 186 lm/W**
- Length: 280 mm, 566 mm**
- Flexible light distribution by different optics**
- ZHAGA compliant hole distance**



Vossloh-Schwabe Deutschland GmbH
 Branch Office Johannesburg
 Phone +27-11-314 43 40
www.vossloh-schwabe.com

Ysalis switches and sockets launched in SA

Legrand's Ysalis switches and sockets have been launched in South Africa. The company's strategy to introduce a chic range of wiring devices to economy and standard market segments, meets local demand for sophisticated, yet affordable fittings with safe and reliable control features.

"The stylish Ysalis range has a contemporary design that enriches the décor of any home or office and provides easy and convenient control of lighting, air-conditioning and the television," says Sonja Leibbrandt, marketing and pricing manager, Legrand SA, part of the global Legrand Group. "Slim, curvy shaped plates, available in white and champagne, can be fitted with fluorescent indicators on the switches for improved comfort and safety in the dark.

"An important feature for the local market is that Ysalis sockets accommodate current and new South African standards for universal dimmer switches and data and USB sockets, as well as TV sockets for audio and video connections. The switches and sockets are fully compatible with Legrand trunking systems.

"It is impressive that the modular design allows any configuration to be adapted to suit present and future needs. With this system, it's not necessary to damage the wall to increase, remove or change the number of lighting points or connections – the same box and support frames are used to accommodate all modifications," says Leibbrandt.

The compact design of these mechanisms provides more space in the back box for easy wiring and, for enhanced safety, a spacer separates high and data currents. Various modules are available – from one to three modules, up to six modules – with double or triple pole switches. Universal dimmers are designed for new and existing installations, to dim incandescent and halogen loads, as well as compact fluorescent lamps and LEDs. For easy installation, data sockets are fitted with tool-less connectors, eliminating the need for punch down tools.

Legrand SA: +27 (0)11 444 7971



Photo credit: Eisenmann.

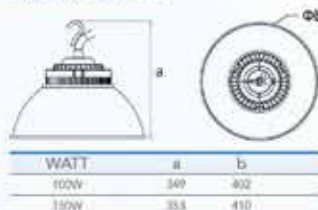


SIMPLE PROFESSIONAL LED SOLUTIONS

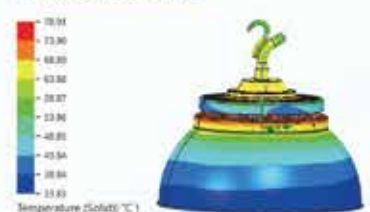
- The AC new technology, no external driver.
- Unique heatsink and super-light design.
- Advanced ergonomic light distribution. Suitable for various applications.
- High Transmittance lens and even light distribution.
- High luminous efficiency greater than 100Lm/W.

Application: Warehouse, workshop and supermarket, etc.

PRODUCT SIZE(mm)



THERMAL DISTRIBUTION





Mode Pendant (Photo Colin Faulkner)

Mode, Float and Zig-Zag series of fixtures

In keeping with Lightmaker Studio's design philosophy – the Mode, Float and Zig-Zag series of fixtures use classic forms, pure shapes and materials such as hand-finished brass and hand-blown glass to create sculpture-like modern pieces.

Varying sizes of blown glass spheres reach out in a rhythmic pattern on a single horizontal plane. Mode contrasts the movement of the globes with a lean and linear profile. When used in multiples at staggered elevations, the whole is more art-piece than light fixture. Used singly, Mode creates significant presence in a height-constrained space.

A rigid geometric grid in Float chandeliers balances a seemingly random pattern of globes. Float explores the contrast between the opulent brass and glass spheres and the highly defined horizontal orientation. While appearing to float, it redefines the chandelier into a semi-flush mount form.

Launched in 2016, Zig-Zag combines classic mid-century lighting forms with a striking, modern profile. Supported by a geometric brass frame, white globes emerge from brass cones, held at ninety-degree angles. While sculpture-like, Zig-Zag is also a functional light source, whether installed on the wall or the ceiling.

As a wall-mounted light source, Zig-Zag provides significant illumination beyond a traditional sconce. As a ceiling-mounted light source the fixture's low profile allows it to be used in rooms or passageways where ceiling heights are constrained.

Lightmaker Studio: www.lightmakerstudio.com



Zig-Zag
(Photo Lisa Petrole)



Float Chandelier
(Photo Colin Faulkner)

MEDO ceiling lights

Sheldon Payne, national sales manager – SLV believes that one of the most important elements of interior design is the selection of suitable light fittings to create the desired ambience in a home, office, restaurant or hotel. “Quite simply,” he says, “lighting needs to be functional while enhancing the mood, aesthetics and style of the décor”.

Global lighting trends change constantly to include advanced features for energy efficiency, illumination, materials and design developments. There are over 3 500 products in the German-engineered SLV portfolio, all with contemporary designs and new illumination technology. SLV lighting fixtures have elements that are individually adjustable to enhance the aesthetics and area illumination of any environment.

Surface mounted and recessed profiles and fittings and decorative lights and lamps can be styled personally with a selection of designs and colours to suit specific lighting and décor requirements.

The latest LED solutions and dimmable products with retrofit lamps are also available, as well as devices with integrated dimmable LEDs.

SLV’s wide range of pendant fittings includes the MEDO range of ceiling lights, which combine decorative and functional features necessary for homes, retail spaces and offices. The MEDO 40 fittings have an elegant material contrast of aluminium, steel and acrylic glass construction and can be installed individually, or in combination with differently sized luminaires in various colours.

MEDO 40 surface ceiling mounted luminaires are available in black, white, silver, grey and wine red. The LED module, with four lamps, gives a pleasing lighting effect and the integrated LED driver allows direct connection to the 230V mains supply. Other features of this ceiling light include an A+ energy efficiency class, maximum consumption of 31 W, a luminous flux of 640 lm, direct light distribution Curve 1 and rotationally symmetric light distribution Curve 3.

SLV lighting products are available in South Africa through the Magnet Group’s SLV Pro-Partners and also through the recently established SLV online store (www.slv-lighting.co.za), which provides an ideal platform for safe and convenient online shopping.

The easy-to-navigate website showcases SLV’s extensive portfolio, with different categories for indoor and outdoor products, accessories, lamps and electrical and mechanical components. The site includes pictures and descriptions of products, as well as pricing and delivery information.

The new SLV catalogue - Big White 2017 – is in stock and available to the local market. This comprehensive product directory highlights newly launched products and provides relevant information on how to select the right lights, suggested lamps and the perfect lighting concepts for every setting.

SLV: +27 (0)11 397 7936



LED

30 000 Hours



80% ENERGY SAVING

Opal Ceramic Golfball

30 000 Hours
240 Lumens
Warm White
3W



0% MERCURY



Environmentally Conscious Choice



With a retrofit option to suit your specific needs, being environmentally conscious has never been easier.

SAFE HOUSE
Suppliers you can trust

For a full range of lamps visit us online at www.eurolux.co.za and follow us on social media



Switch & save

The Eurolux range of high quality LED lamps brings both energy efficiency and environmental awareness into your living and working spaces. With it's 80% energy savings, it will also help ease the burden of ever-increasing energy costs.

Why LED?

80% Electricity Saving

80% Less Running Costs

80% Less Pollution

Features

15 000 or 30 000 Hours

Dimmable or Non-dimmable

Warm White or Cool White

High Brightness

eurolux

Lighting your way

Cape Town (Head Office):
9 Racecourse Road, Milnerton, 7441
Johannesburg: 10 Milkyway Avenue,
Linbro Business Park, Sandton, 2065

www.eurolux.co.za

LIGHTING the future!



The soon-to-be released Lascon Professional Lighting Catalogue is the most comprehensive catalogue to date and contains all of the latest lighting products for the professional, commercial and industrial sectors.



Contact our branches to request your copy.

Cape Town **021 440 7100**
Durban **031 573 9200**
Johannesburg **011 402 0251**

info@voltex.co.za www.voltex.co.za

[facebook.com/VoltexSA](https://www.facebook.com/VoltexSA) twitter.com/voltexsa

 **voltex**
lighting

adding value through innovation.

