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Newsletter

The Society of Light and Lighting
Part of the Chartered Institution of Building Services Engineers





President's Column

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The Unification of the Lighting Profession

Our discussions with the Institution of Lighting Engineers (ILE) are making real progress towards our goal of creating a single body for the lighting profession, with the working title 'The Institute of Lighting'. This name has been chosen to appeal to all 'Lighters', whether 'Engineers' or 'Designers'.

The 'Strategic Planning Group', comprising key members from the SLL, ILE and CIBSE, last met on Tuesday 7 October, to review progress to date and plan future actions. Both the SLL and ILE have similar operating committee structures and our aim is amalgamation of these committees.

Our respective 'Education and Membership' committees have been working together for some time and our educational activities are already closely in tune. We are currently reviewing our membership criteria. Our 'Technical and Publications' committees are starting to work together to avoid duplication and increase effectiveness. Our 'Communications and Promotions' committees have identified common ground and are working hard to coordinate events, and explore how it might be possible to bring together the 'LJ' and the SLL 'Newsletter' into a single publication in the future.

The regions of CIBSE and the ILE do not coincide geographically, but the will is there to work more closely together. We are seeing many joint events across the whole of the UK and Ireland and our Regional Lighting Representatives have been given the task of exploring these further. I am very encouraged

by the enthusiasm being shown by the regions of both bodies. In February 2009, our centenary celebrations begin and, I'm sure, they will be whole heartedly supported by our kindred bodies.

A prime objective for the profession and the industry is to 'speak with one voice' and the SLL, ILE, Lighting Industry Federation (LIF) and Lighting Association (LA) have held several liaison meetings with that goal in mind.

The Board of CIBSE has recently made a very positive proposal to the SLL – the formation of a 'Lighting Council' following the model of the 'Construction Industry Council' (CIC).

This council is not just aimed at the aforementioned bodies, but also would welcome the participation of the 'Professional Lighting Designers Association' (PLDA), 'International Association of Lighting Designers' (IALD), 'CIE UK' and the 'Lighting Education Trust' (LET). I very much welcome this CIBSE initiative.

Lighting is an essential discipline within Building Services. The prime purpose of forming a new body is to unify the profession, but also to ensure that not only does lighting remain a key activity within CIBSE, but that it is strengthened so as to give a better service to building services professionals who do not regard themselves as 'Lighters'.

I look forward to hearing your views and will keep you informed on our progress.

Patrick Baldrey

Secretary's Column



As the year draws to a close, it affords an opportunity for reflecting on achievements and successes over the past year. It's been quite a year for the Society. As you know I took the reins from Marie Dignan in February; my first day in the office was the day of Young Lighters' at ARC, so it was straight in at the deep end and it's been non-stop since!

This year's Young Lighters' enjoyed a record number of entries and this has been surpassed by the entries for 2009. The success of this competition means that we are now looking into the feasibility of staging Regional heats in the future. Ready Steady Light was another record-breaking event with more teams competing than ever before. We've been asked if Ready Steady Light can be staged elsewhere which is a great idea, but we would need support from a local educational institution. Rose Bruford College manage the event in terms of sites and power distribution and have a team of students working on the event. We're always open to suggestions so if you know anyone that might be able to stage it, we can look into it.

The Masterclasses continue to evolve; the 2008-9 series has been expanded to eight venues in nine months and they continue to be well attended. This year we have new speakers, Rory Marples from iGuzzini and Chris Wilkes from Holophane who join our regulars, Mike Simpson from Philips and Iain Macrae from Thorn. We are also really excited that PLDA are now partnering the series by providing the guest speaker for each event.

The London Sessional events continue to be a success. Over 80 people attended

the joint meeting with the ILE in October and the following week, over 40 people attended "The Future of Road Lighting" when Dr Steve Fotios and Professor Peter Boyce presented a fascinating evening on the research into mesopic vision and the possible implications for road lighting in the future.

As you will have read, the discussions between SLL and ILE have been continuing and we're working much more closely now than ever before. We're trying to develop a single diary to try to avoid clashes, but with so many committees and events, this is proving a challenge! There have also been three industry liaison meetings, where SLL comes together, not just with the ILE, but also the Lighting Industry Federation (LIF) and Lighting Association (LA).

Finally, I'm having surgery on a troublesome ankle in December; I'll still be working, but not in Balham as I'll be in plaster for three weeks. If you don't get the usual service from me during December, please forgive me.

I wish you all a Merry Christmas and look forward to celebrating our Centenary with you next year.

Liz
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Editorial



There is quite a mixed bag in this edition. For me, one of the big unresolved issues is how “green” cfl lamps are. The Health Protection Agency report together with the Lighting Association response makes for some interesting reading. One thing that bothers me is that the conflicting opinions come from just the people you would

expect. I am always suspicious of people who are against speed cameras because I have yet to meet one who is campaigning for higher speed limits. I want to hear from A&E doctors wanting higher speed limits and the motoring organisations asking for lower ones.

The cfl debate is the same. Everyone understands why lamp manufacturers prefer to sell a high value-added

product to low price, low margin gls lamps. Similarly, not being able to use T/H will be a real inconvenience to many lighting designers. I am not impugning anyone; I just don't think the case is clear cut. Some talk of LEDs leapfrogging cfls, but SSLs are not replaceable; the complete luminaire is thrown in the bin when the light source fails (only five years if used 24/7). How green is that?

The Ireland regions have joined forces and will have an award for Irish Lighter of the Year competition. We also review the short list of papers for the 2009 Young Lighters. The topics cover everything from buildings acting as lanterns at night to whether kinetic lighting can be considered to be a performer in its own right.

“Low carbon” is almost becoming meaningless through misuse, but we report on two serious contributions to the subject. CIBSE is holding its annual award for delivering low carbon savings in buildings. The other report is on a day's seminar on low carbon lighting design.

Hopefully, 2009 will not be as bad as the economic journalists are telling us. Enjoy your Christmas break.

Alan Tulla

Health Protection Agency statement on CFLi lamps Emissions from compact fluorescent lights

New research by the Health Protection Agency has shown that some energy saving compact fluorescent lights can emit ultraviolet radiation at levels that, under certain conditions of use, can result in exposures higher than guideline levels. The Agency and Government Departments are calling on the European Union, relevant product standards bodies and the lighting industry to consider how product standards for lights can be tightened up.

Given its research findings, the Agency is recommending some precautionary measures for the use of certain types of compact fluorescent light bulbs (CFLs). The Agency's view is that open (single envelope) CFLs shown in Fig. 1 should not be used where people are in close proximity – closer than 30 cm or 1 ft - to the bare light bulb for over 1 hour a day. The Agency advises that for such situations open CFLs should be replaced by the encapsulated (double envelope) type shown in Fig. 2. Alternatively, the lamp should be moved so that it is at least 30 cm or 1 ft away.

The Agency's Chief Executive Justin McCracken said, “This is precautionary advice and people should not be thinking of removing these energy saving light bulbs from their homes. We are advising people to avoid using the open light bulbs for prolonged close work until the problem is sorted out and to use encapsulated bulbs instead. In other situations where people are not likely to be very close to the bulbs for any length of time, all types of compact fluorescent light bulbs are safe to use.”

Not all open (single envelope) fluorescent light bulbs have significant UVR emissions but if people are in very close proximity to some of them, the exposure to bare skin is like being outside in direct sunlight. For example, Agency scientists found that when very close (2 cm, less than 1 inch) to some open CFLs, the UVR level can be equivalent to that experienced outside in the UK on a sunny day in the summer and so some precaution is warranted. When further away (over 30 cm or 1 ft), the UVR level is much lower and less than being outside on a sunny day in winter, which is not a concern.

Encapsulated (double envelope) compact fluorescent light bulbs (see Fig. 2), which look similar to traditional domestic light bulbs, do not emit significant amounts of UVR. The larger long tube “strip lighting” design fluorescent lights, commonly used in offices, workplaces and homes for many years, can also be used on ceilings without any special precautionary measures.

The precautionary advice from the Agency is interim advice. The Agency’s study has stimulated research into the problem by others and the Agency may issue further advice when more information is available. As a result of the Agency’s work the Government is pressing the EU to take account of the findings in future European legislation.

Exposure to UVR can cause particular problems for people suffering from some medical conditions, including Lupus. The Agency, Government and the lighting industry have met with patient groups to give advice on the use of compact fluorescent light bulbs and the availability of new technologies for low energy lighting. In addition, the Agency’s work has been taken into account by an EC scientific committee looking into the issue of light sensitivity. This committee published its opinion on 3 October 2008.

Lighting Association response to statement on HPA study

The Lighting Association has worked closely with the Health Protection Agency on the results of this study and the industry has commissioned a further independent laboratory study, which is currently underway, to investigate the claims.

The industry welcomes the precautionary measure which purely relates to single envelope compact fluorescent lamps (CFLs) for desk or task(1) lighting in very close proximity. The use of commonly available double envelope (2) type CFLs in these situations is considered entirely safe. CFLs of both types are regarded as entirely safe for general illumination (3). The precautionary measure requires that where people can be in very close contact (less than 30 cm) with non-shaded single envelope (4) light bulb for more than an hour at a time the CFL lamp should be replaced by a double envelope type. Alternatively it should be moved so that it is at least 30 cm or 1 ft away.

The lighting industry has been working with patient groups with light sensitive conditions and has advised on the use of compact fluorescent lamps and the availability of alternative new technologies for low energy lighting such as low energy halogen lamps.

Compact fluorescent energy saving lamps manufactured and put on the market by Lighting Association members fully comply with current European and national health and safety requirements.

1. Task lighting is lighting designed to illuminate work stations at close proximity.
2. Double envelope lamps are generally those which look like a conventional light bulb as they have a secondary

enclosure around the fluorescent tube.

3. General illumination is that which provides the main illumination for a room and not close proximity lighting for special tasks.
4. Single envelope lamps are those where the fluorescent tube is not shrouded by an outer layer, generally these are a series of straight tubes or a coiled tube.

Editor’s note: This is turning into a really controversial topic. Within the short time of its release, I have received two responses.

Paul Ruffles: “Looking at the HPA report I would have thought it obvious that if you are less than 2cm from a single envelope CFL for a period you would get some odd effects, but who is normally that close? You could say that if you put your hand less than 2cm from a kettle or saucepan you may experience heat stress (burns in English) and therefore all kettles and pan bodies should be of an insulated construction – except the bottom of pans of course! How about the uncontrolled IR radiation you would receive if you put your hand near a hob open flame or electric ring, etc, etc.....

Kevan Shaw adds the following: “There are issues particularly with cheaper Chinese lamps. Basically high quality lamps are generally phosphor coated after the tube has been formed. With a number of lamps the phosphor is applied before the tubes are formed to either a spiral or worse a double bent tube. In this case the phosphor is thinned on the bent sections in exactly the same way as happens with tight radius cold cathode fluorescent. The result is that there is UV emission through the thinned phosphor. I have also recently seen some Philips high output compact fluorescents where the tubes are pre coated and there is no phosphor at all at the ends of the tubes where they are joined together, in a downward facing mode these would give very significant UV output directly below them.

I am not happy that the Lighting Association will come back with reliable information. They are almost certainly going to come back with studies of lamps that have been submitted by manufacturers for their energy certification scheme. While these may not be the best lamps in the market they certainly are not the no-name Chinese lamps that are increasingly sold through many UK suppliers. The study they are reacting to by the Health Protection Agency is good and is totally independent and to my mind is to be believed no matter what the LA come back with.

I am working extensively on CFL issues wearing my hat as Director of Sustainability for the PLDA. I have just returned from New Zealand where I was addressing the IESANZ on this issue in relation to their MEPS programme and the recent Regulatory Impact Statement from the Australian Government. The HPA paper was released the day before I had to give my paper so I had a good look at it then. “

Report by Alan Tulla

Low Carbon Conference

This was organised by Emap, the publishers of Lighting magazine and endorsed by the SLL, ILE, PLDA and IALD. The theme was applying standards, guidance and regulations in practice.

Florence Lam who is a Director of Arup and leader of Arup Lighting in the UK, opened the proceedings with her talk on performance based lighting design. She spoke

first of what the challenges were for lighting designers and engineers and how their priorities would change in an “ecological age”. After developing the theme of performance based lighting design and optimising the whole rather than maximising a particular aspect she described the roof design and daylighting in three major airports. As an example, Stanstead airport has 10% roof glazing over the floor area, Hong Kong has 8% and Beijing just 6%.

There followed a couple of very interesting talks on energy regulations here and in the USA. Paul Littlefair from BRE said that he expected the next edition of Part L to increase the minimum delivered efficacy for luminaires to increase from 45/lm/w to 50 or even 55lm/w. If you think that you haven't read much on the EuP recently, that is because it has been snappily renamed as the Regulations on tertiary sector lighting products. The effect will be that pretty soon there will be no wire-wound ballasts nor lamps containing mercury.

Mark then compared our BREEAM & part L standards with those in the US such as LEED and IES 90.1. The main difference being that in Europe we tend to define luminaire efficacies whereas the US defined standards in terms on power density, watts per square foot. He also quoted the IALD definition “Sustainable lighting design meets the qualitative needs of the visual environment with the least impact on the visual environment”

During the discussion, someone asked if there was a definition of a zero carbon building. The short answer is no, but there were four types of definition. a) made from renewable materials and powered by renewable energy sources, b) the whole project uses carbon offset schemes, c) the building generates excess renewable energy which is fed back into the grid, d) it just uses electricity from a “green” supplier.

Tommy Goven from Fagerhult discussed BS EN 15193:2007 Energy performance of buildings. Energy requirements for lighting.

The role of lighting designers and engineers

- Problems cannot be solved by policy alone on a unidisciplinary basis, radical transformation is needed to attain a sustainable future
- Designers and engineers have global experience and influence, are adept at multidisciplinary team working
- Limited resource ... unprecedented challenge ... timescale <50 years
- Delivery of sustainable outcomes does not stop at design and performance specification; quality implementation and whole life system operational management.

ArupLighting

Strategies for entering an ecological age

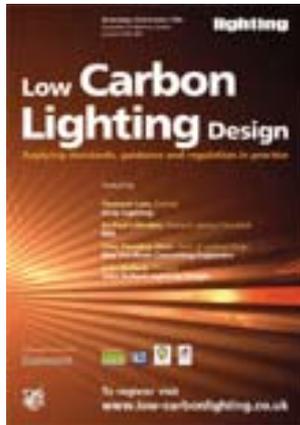
- Ecological Age objectives: CO₂ emissions reduction; carbon footprint reduction; human development improvement
- Biomimicry Principles – an extension of the sustainability principles where we balance economical, environmental and social impacts: **optimise not maximise**
- Regulation and social acceptability are factors which influence behaviour, but good design is needed to facilitate these new behaviours: **design for human performance**

ArupLighting

He then took this further by relating it to measures of lighting quality such as the VBE rating (more in the next NL). Maybe if we could find a way of calculating lighting quality, it would be possible to achieve the best quality/lowest energy schemes.

Any presentation by Miles Pinniger is worth listening to and his talk on maximising energy saving through lighting control systems was chock full of evidence based data. He is not a fan of Dali systems and showed us a Dali address map used for quite a small installation. Don't forget that each luminaire has a unique address and this means that if you are unlucky enough to have more than a couple of ballast failures, the whole system needs to be reprogrammed.

The ever ebullient John Bullock ended the day with his talk on incorporating energy efficiency into high-end residential housing. Basically, you have to sneak it in because energy saving isn't too high up on his clients'



priorities. He made a plea for lighting control systems that were much simpler to programme. Why does the manufacture's engineer have to drive 200 miles and use a laptop to make a couple of changes to a domestic system?

Overall, a very worthwhile day but my only gripe would be that the audience was almost entirely made up of lamp/luminaire manufacturers and lighting designers. I.e the conference preached to the converted. Several speakers made the point that these issues need to be addressed by the end-users such as facilities managers, maintenance engineers, boards of directors etc.

Lastly, I should mention that Osram was the Gold Sponsor with the drinks reception being sponsored by Concord.

Report by Alan Tulla.

CIBSE Low Carbon Performance Awards and Annual Dinner

There is just time to enter this competition. Closing date is the 30 November. For more details, go to www.100hours.co.uk/awards. The website also contains information on reducing your organisation's carbon footprint, workshops on reducing carbon emissions and preparation of EPCs & DECs.

Low carbon professionals, buildings and projects are to be rewarded at the 2nd annual CIBSE Low Carbon Performance Awards. Taking place at the Grosvenor House Hotel on 4th February 2009, the event celebrates proven achievements in delivering carbon savings in buildings.

Categories open to CIBSE Low Carbon Consultants and Low Carbon Energy Assessors

- New Build Project of the Year
- Refurbishment Project of the Year
- Innovation of the Year – design or technical
- Product Innovation of the Year
- Client of the Year
- Carbon Control Award

Categories open to participants in the 100 Hours of Carbon Clean up Campaign

- Best Carbon Saving Programme – public sector, education, healthcare buildings
- Best Carbon Saving Programme – commercial, industrial, retail and leisure buildings
- Best Carbon Saving Programme undertaken by a SME – commercial and industrial buildings
- Best Carbon Saving Programme undertaken by a SME – retail, leisure and other buildings
- Champion of Carbon Saving Champions

100% Design

For those of you have not been before, this is a huge exhibition held in Earls Court II showing the best of contemporary design. Lighting is only a very small part despite efforts by the organisers to increase its presence. The rest is devoted to furniture, plumbing, carpets, architectural ironmongery etc.

One of my favourite stands is the David Mellor cutlery. Year on year, he shows simple cutlery which is 100% functional and, at the same time, wonderful sculptural objects.

Most of the lighting comprises what one would loosely describe as lampshades and table lamps. Some are huge, there is a noticeable fashion for office block entrance halls to have them maybe >1m diameter and >2m high.

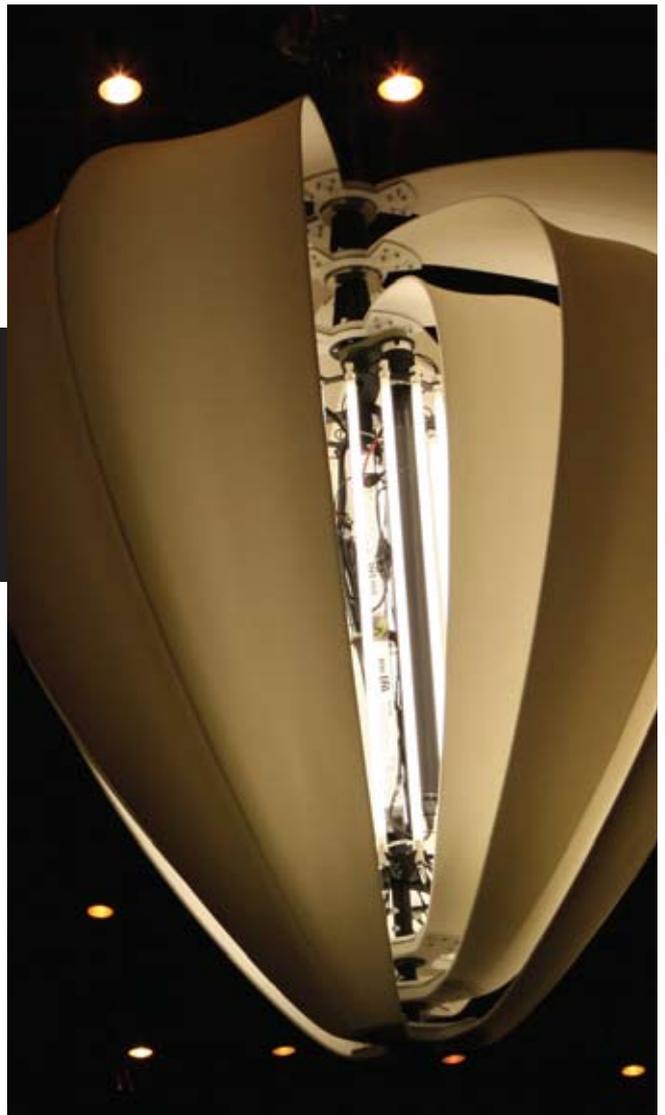
No surprise that LEDs featured strongly, but mainly building on what has gone before. Some claim Part L compliance, but with the actual SSL manufacturers' data showing variations of 35% from bin to bin, how do you know that what gets delivered is the same as what was tested?

If you think that cfl luminaires are dull, think again. For me, the really interesting stand was "Lighten Up" held in a long Hessian "cloche". It comprised of some really innovative domestic & commercial luminaires made from scrap or recycled materials using energy efficient lamps. What attracted me at first was the freshness of the designs. It was only after that I learnt of their green credentials. The stand was organised by [re]design, www.redesigndesign.org The Lighten Up exhibition is touring the UK and will visit six venues.

The other item that caught my eye was these moon sculptures. From an electrical engineering viewpoint, they are simply a collection of vertical fluorescent lamps. However, they are visually stunning as the leaves rotate and overlap revealing and concealing the light within. Each one contains 16 No 39w T5 lamps. They weigh about 180kg and are 1.6m high. Design was by Holgersen Llewellyn, www.holgersen-llewellyn.com.



Glow worm by Draigo Design. 100 bottle tops and some LEDs



What you can do with a cfl, a plastic squash bottle and a pair of tights. Design by Te Un Kim

CIBSE Southern Region



At the **Brighton** session, Michael Beale of Solar Technologies gave us a very interesting talk on PV cells for buildings. The current energy shortage, which doesn't go away just because the price of petrol drops, means that no-carbon power generation has obvious appeal. One

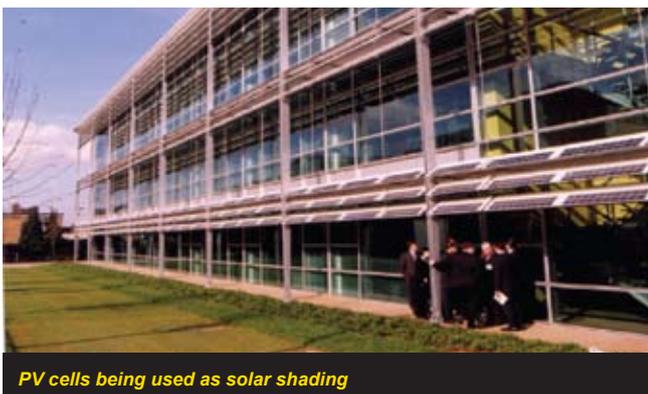
of the myths Michael wished to dispel was that PV is only useful in hot countries. Higher conversion efficiencies mean that even homes in central London, with less than ideal roof orientation, can benefit. There is also the great satisfaction for the owner in seeing their electricity meter run backwards as power goes back into the national grid.

The other advantage is that there are no moving parts or plumbing. Without wishing to knock other technologies, his view was that PV had the lowest total life cycle costs. Similarly, maintenance was much less compared with other systems.

Current fuel prices mean that all renewable technologies have very long paybacks even with the revenue generated by selling the power when you have a surplus. In Germany where these systems are much more heavily subsidised, the take-up had been much greater.



Semi-integrated PV roof



PV cells being used as solar shading



The **Southampton** session had Dave Long of Urbis Lighting talking about exterior architectural lighting. After a quick description of light sources such as metal halide and high pressure sodium he moved to his main argument which was that LEDs would soon replace

HID for most applications.

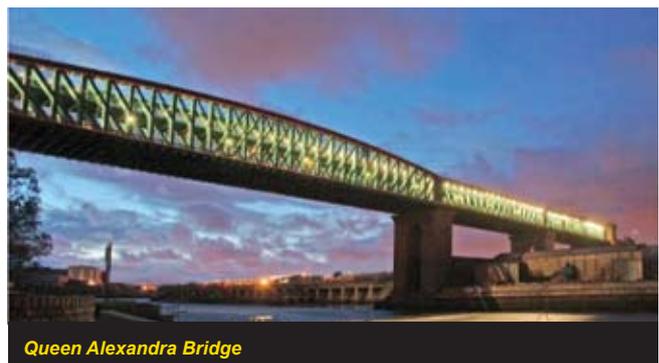
Firstly, the efficiency and power of LEDs were steadily increasing although he did point out that issues such as power droop and binning may act as a brake on their universal acceptance. The more interesting argument was that of luminaire efficiency. Although HID lamps could be 100lm/w, the effective efficiency was much less because a lot of the flux from the lamp has to be reflected (sometimes more than once) and the actual useful lumens was a lot less. LEDs are much more directional and use lenses which are generally more efficient than reflectors. Obviously, a LED having 50 lm/w with an LOR of 80% gives as much useful light as a 100lm/w HID in a luminaire with 40% LOR. Once LEDs become more efficient, the argument will have been won.

Of course, if you want to use saturated colours in your lighting, there is no contest because conventional white light HID sources "throw away" most of the light in the colour filter. Deep blues or reds only utilise about 10% of the available light. I.e a metal halide lamp is only producing 10lm.w.

Dave then showed some LED and HID floodlighting installations and did a very fair job in giving the pros and cons of each. Interesting, he said that the Queen Alexandra Bridge which won on this year's LDA which used 70w CDM could now be done for about a third of the power using LEDs.

Thanks are due to Laurie Socker for organising the events.

Report by Alan Tulla



Queen Alexandra Bridge

Irish Lighters Competition

Call for papers

At the Belfast Masterclass on 23 October, the Irish Lighter competition was jointly launched by Kevin Kelly and Jim Patton. CIBSE (ROI) has kindly donated 2000 Euro towards the organisation of the competition.

The competition is open to any designer, engineer or researcher in Ireland about an Irish project. Members of the SLL, ILE or anyone involved in the lighting industry are welcome to submit a paper.

Abstracts of 200 – 300 words should be submitted by 31 December to kevin.kelly@dit.ae. Kevin is happy to assist entrants with their proposals. The best abstracts will be selected by a peer review panel and this short list of entrants will be invited to submit a full paper/presentation by March 31st 2009.

The final event takes place on 30 April 2009

There will be five judges: a representative each from SLL London, ROI, NI plus two from sponsors. Criteria include: Originality/innovation, enhancement of visual environment, engineering design or data/evidence, environmental impact/sustainability, quality of professional writing & referencing, the final presentation.

Kevin Kelly is also looking for sponsors. If you would like to be involved with this event in any way at all, contact him at kevin.kelly@dit.ae.



CIBSE (ROI) chairman Gerard Keating handing over a cheque for 2000 Euro towards the organisation of the Irish Lighter 2009 competition to Kevin Kelly, competition co-ordinator



SLL members announcing details of the Irish Lighter competition outside the London HQ

Magaret Halstead

It is with great sadness that I have to report the death of Margaret Halstead on Monday 29th September. Margaret had been ill for some time and died peacefully at Chase Farm Hospital, Enfield.

Margaret was a pupil at Ealing Grammar School, where she became Head Girl. She studied for her degree at Acton Technical College, and obtained the BSc degree of the University of London. Her first appointment was with Atlas Lighting Ltd, which later became Thorn Lighting Ltd. She was to remain with them throughout her working years. At that time – in the early 1950's – women were not so readily accepted in the field of engineering as they are today. But everyone who had to deal with Margaret very soon developed a great regard for her skill and abilities. Not only did she prove to be an excellent scientist, but she had great wisdom, and a wonderful ability to get on with people. She first worked under Dr S T Henderson, on the development of fluorescent lamps, and became deeply involved with their colour and colour rendering properties. The calculations involved were massive, and at that period were mostly done on hand-cranked calculating machines. It says much for Margaret's hard work and patience that so much was achieved.

Margaret was soon recognised as an authority in this field, and was often called on to contribute to meetings and deliver

lectures. She was a staunch supporter of the Colour Group, becoming Secretary in 1971, and Chairman in 1979 – the first woman ever to hold that position. She excelled in both offices, and was the principal organiser of the York 1973 AIC conference, which was perfectly managed. Margaret had little time for political correctness, and I remember her annoyance when someone addressed her as 'Madam Chairperson'. As far as she was concerned, the office was that of 'Chairman' and nothing else.

She carried out much excellent research in the colour rendering field, in collaboration with the late Dorothy Morley – another spirited character. It was they who first applied statistical techniques to the acceptability of the colour rendering of light sources, producing a string of papers which remain as standard works today. This led her into international discussions over the development of a colour rendering index. There were many widely divergent and strongly held opinions about this, and the discussions dragged on for many years. The fact that an index ever appeared was largely due to Margaret's skill, tact and wisdom. She served as chairman of the CIE committee concerned, and of several others. She was awarded the



LR&T Vol 30 No 3

There are just four papers in this issue and two consider the very contemporary topics of glare and skyglow from exterior lighting installations. Both are from the Rensselaer LRC.

The most interesting one is a method known as OSP, Outdoor Site Lighting-Performance. It allows users to address three important aspects of light pollution – skyglow, light trespass and discomfort glare – quantitatively and at the same time. In essence, a calculation box is created between the public and private space with the top of the box being 10m above the highest luminous architectural element of the property.

The other LRC paper builds on this and discusses the assessment of discomfort glare from outdoor lighting installations.

The paper on direct and indirect lighting produced some interesting and pertinent comments on this ongoing research topic.

Finally, the paper by Debergh and Embrechts pursues the worthwhile objective of producing complete r-tables from a relatively small number of site measurements. The value of having r-tables based on actual road surfaces is obvious and to be welcomed.

Contents:

Proportions of direct and indirect indoor lighting – The effect on health, well-being and cognitive performance of office workers. KI Fostervold and J Nersveen.

Outdoor site-lighting performance: A comprehensive and quantitative framework for assessing light pollution. JA Brons, JD Bullough and MS Rea

Predicting discomfort glare from outdoor lighting installations. JD Bullough, JA Brons, R Qi and MS Rea

Mathematical modelling of reduced luminance co-efficients for dry road surfaces: N Debergh and JJ Embrechts

Correspondence: H Xu and X He

Book review: David Loe

Book Review

The Electric Light: Thomas Edison's Illuminating Invention.

The achievements of Thomas Edison have been well documented but this book is worth reading to appreciate not just the technical inventions but also Edison's desire to make his devices readily available to the public at large. Joseph Swan is also recognised for his early work in the development of the filament lamp and their commercial union rather than a protracted legal battle over patent infringements.

Although the filament lamp is finally reaching the end of its domination of the domestic lighting market, it is appropriate for the author to recognise that the development and distribution of electrical power was due to the desire for electric light and has enabled the invention of numerous electrical inventions to follow such as, television computers and modern communication.

It was commercial rivalry between Edison and Westinghouse in 1880s that led to a shocking demonstration that living beings were more likely to survive an electrical shock from direct current than from alternating current. Although killing animals was revolting to many of the spectators it became an official method of execution.

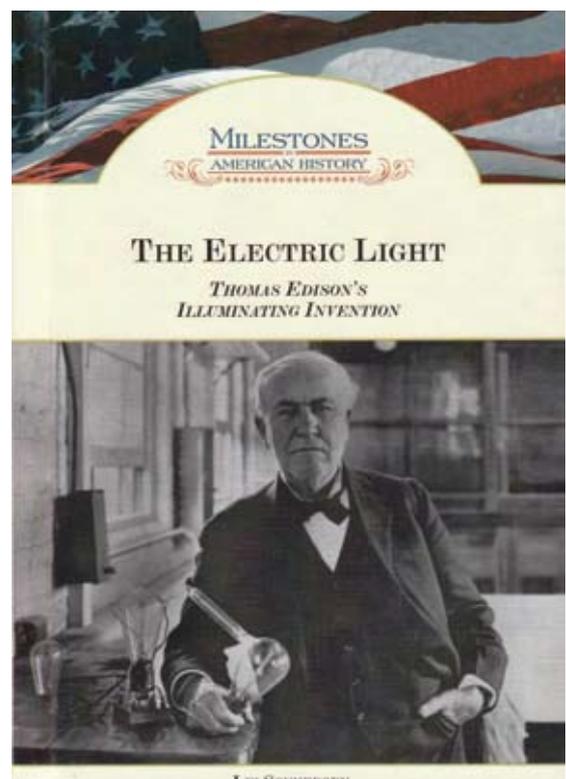
Today's society has benefited from more than Edison's inventiveness but also his determination and imagination to help reshape all our lives.

Review by Liz Sonneborn on behalf of publisher - Chelsea House Publishers, New York.

128 pages.

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In Brief

Ron Simons

The previous Editor of LR&T was presented with his Silver Medal at the President's dinner recently. A full report will be in the next Newsletter.

Gallium arsenide, used in some LEDs, has been listed as a material that can cause cancer

As of 1st August, Gallium arsenide, a semiconductor material that is a constituent in some LEDs, has been listed as a carcinogen by the Office of Environmental Health Hazard Assessment (OEHHA) of the California Environmental Protection Agency.

So what will be the impact on the LED industry? Not much really, except for additional labeling. Gallium arsenide (GaAs) has been around for years, and GaAs-based devices are found in a wide range of optoelectronic and electronic products, such as lasers for CD and DVD players, and RF power amplifiers in mobile phones.

Some high-brightness red and orange LEDs use GaAs as a starting material. However, many AlGaInP LED processes involve the removal of the GaAs material.

Most importantly, the vast majority of HB-LEDs manufactured today do not contain GaAs at all. Blue, green, UV LEDs, and white LEDs that contain blue or UV chips, are all based on the gallium nitride (GaN) material system. So far, no-one has suggested that GaN is toxic.

Contrasting shades of green

A representative from a major luminaire manufacturer came to see me the other day. Full of glowing tales of how

ecological the factory was. On-site CHP plant, luminaires of recycled aluminium, low VOC paints etc. All very impressive, until we went to fetch some literature from his company car – a 4.5l 4wd Chelsea tractor. To be fair, it was full of luminaire samples, boxes of leaflets and he couldn't have carried it all by public transport. On the other hand, there must be a better way of doing things. The contrast between image and action was just too glaring.

Long Life Presidents

At the last Past Presidents' Dinner, there were over 20 who turned up. Maybe we should rename the SLL as the Society of Long Life.

Michael Clark letter

Wrote to say that there was an error in his last letter where he stated that he was President of the IES from 1997 – 1998. It should have read 1977 – 1978.

Contrasting shades of green

Thinking of Freud, you know what he said comes between fear and sex? Funf. This works better verbally because you can't see the mis-spelling.

My favourite was Ronnie Scott who went to the doctor complaining of a limp. The doctor examined him and told him his problem was that he had an ageing hip joint. "I know that", replied Ronnie "but what about my limp?"

Events

18 Nov	London Sessional Paule Constable – The secret language of light Paule is one of Britain's leading lighting designers for opera and theatre
20 Nov	Masterclass Imperial War Museum, Duxford
27-28 Nov	7th National Lighting Conference, Istanbul, Contact alpin.yner@itu.edu.tr or www.atmk.org.tr
9 Dec	London Sessional + Drinks LEDs & Installations Penny Hatzi – Bartlett & Mo Islam – Osram Institute of Structural Engineers
20 Jan	London sessional Peter Raynham – 2008 Code
4 Feb	CIBSE Low Carbon Performance Awards Grosvenor House Hotel, London www.100hours.co.uk

4-5 Feb Arc 09 and Young Lighters

12 March Lighting Design Awards

Masterclasses are kindly sponsored by Holophane, iGuzzini, Philips and Thorn. Topics covered this year: "Optic design & Technology", Circadian Rhythms & Dynamic Light", LED update and Lighting controls", Light pollution". For details, see the website (www.sll.org.uk).

Mid Career College runs various courses across the whole spectrum of lighting and at sites across the UK. For the full list, see www.mid-career-college.ac.uk for details. Topics include: emergency lighting/Fire Safety and RRO, Retail & Display, using the 2008 Code for Lighting, BS7671, Part P & Part L.

LIF Courses: Details from John Huggill,
Tel 0208 529 6909, or email training@lif.co.uk