LIGHTING EQUIPMENT NEWS

SEPTEMBER 1991

In brief...

● **Commercial Lighting Systems** has been formed by Philip Cutting (previously with Connect Lighting), to operate as UK importer and distributor for Meyer low energy floodlights. Tel: 0489 581002.

● **Volex Accessories** has been acquired by Lindustries, a subsidiary of Hanson, for £8.8 million. The business will continue to trade as Volex and will be managed by Marbourn.

● **Nuthall Lighting** has been sold by Electrocomponents to a new management team headed by managing director Gwent Paylor.

● **Danlers** is a new company founded by Tony Kay (previously of Home Automation) to sell a range of innovative electronic products for lighting and environmental control.

● **Mattalex** is now UK distributor of exterior lighting equipment by Castaldi Illuminazione, Milan.

● **Searchlight Electric**'s telephone number in the *DLA Buyers' Guide 1991-92* should be 061-834 5452, not 061-834 5451.

● **Reyrolle Industrial Accessories** has changed its name to Bals Industrial Accessories following financial backing from Bals Electrotechnik, Germany.

● **Richmond Lighting** has moved to larger premises at 4 Wealdstone Road, Kimpton Industrial Estate, Sutton, Surrey SM3 9QN.

● **Moorlite Electrical** has received an order for over £1 million worth of lighting equipment for the Royal Bank of Scotland's new administrative premises in Edinburgh.

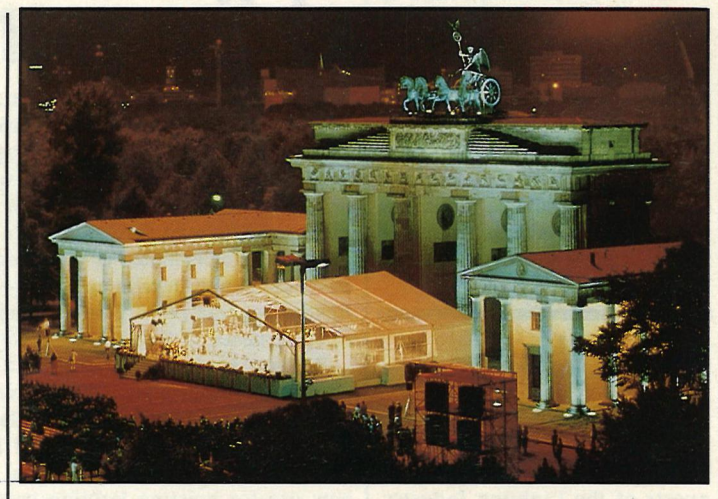
● **GTE** reports that sales of electrical products for the second quarter of 1991 were $529 million ($548 million in the same quarter last year). It says the decrease reflects lower sales of lighting and precision materials.

● **Menvier Swain Group**, in its preliminary results for the year ended 30 April 1991, reports pretax profits of £5 million (1990: £5.5 million) and turnover up 18% to £47.6 million. Operating profits in mainland Europe increased 25%.

● **Wholesale Fittings** is now trading as WF Electrical Distributors. In its preliminary results for the year ended 26 April 1991 pre-tax profit on ordinary activities was £4.264 million (£6.146 in 1990).

● **Ducati Energia**, Italy, has received BS5750 Part 2, and BS4017 approval, for its lighting capacitors which are available in Britain from Hale Instruments.

INSIDE THIS ISSUE



Landmark Berlin

On 6 August, Berlin celebrated the 200th anniversary of the Brandenburg Gate. Berlin's most famous landmark has recently been rennovated and provided with a brand new floodlighting installation, so it can now be seen in its full glory – by night as well as by day.

Philips Lighting presented the new lighting installation – valued at 700 000 DM – as a gift to the city of Berlin. It was designed in close cooperation with the city's conservation authorities.

When the Brandenburg Gate was completed in 1791, one of 18 city gates, its original name was the Gate of Peace. Now, following German reunification, Berlin's last surviving city gate appears particularly aptly named.

Different elements of the building are treated separately in lighting terms to provide contrast in the scheme. For instance, the existing 58 downlights in the two wings of the building have been relit with high pressure sodium lamps so that the light appears to shine from the inside of the building out, enhancing the pale coffee colour of the stone. By contrast, the greenish patina of the roof and the Quadriga, or victory sculpture, is made the dominant elememt of the building by using the intense white light of metal halide lamps.

The main arcade and the side buildings are uplit using spotlights sunk into the ground. Existing wall sconces have been restored by craftsmen and provided with new spotlights directed upwards to light the ceilings. Both wings have been lit from inside with halogen downlights and wall lights switched by remote infrared controls. These halogen fittings now show off to good effect a newly assembled art collection.

Sylvania expands HID manufacture in Europe

GTE Sylvania has expanded its high intensity discharge lamp manufacturing facilities in Europe following further investment in its Tienen, Belgium, factory.

The company's BriteArc and BriteBeam lamps for the film, television and discotheque markets are already being produced on the site, and plans are advanced for the manufacture of a new range of single ended discharge lamps.

Single ended BriteArc will combine the advantages of the standard lamp with the ability to to create lighting fittings which are mechanically simpler and which are able to achieve higher efficiencies through more effective use of reflectors. The new manufacturing unit includes a test and measurement unit.

German firm sets up in UK

Kotzolt Leuchten, Germany, has set up a subsidiary company in the UK called Kotzolt Lighting (UK) Ltd, as part of its plan to establish companies in all major European countries.

Its products include modular linear lighting systems, recessed and surface mounted luminaires, and structural ceiling systems. Kotzolt is also prepared to make "specials".

Ian Loader, previously with Program Lighting, is managing director of the new company.

Maclean Hunter for 'Energy Management'

Maclean Hunter Ltd is to publish the Department of Energy's magazine 'Energy Management', beginning with the September/October 1991 issue.

Energy Management is published bi-monthly, free of charge in the UK for energy managers, building managers, manufacturers, systems designers, energy technologists and others in the energy efficiency field.

Event to launch guide on teaching areas

A half-day seminar has been arranged to introduce *CIBSE Lighting Guide 5: The visual environment in lecture, teaching and conference rooms*. It will be held on 17 September commencing at 1.30pm at CIBSE's London headquarters.

Four speakers of international standing will present the technical and design content of the guide and speak on its practical implementation.

Essential information on both lighting requirements and design procedures is provided in the guide.

The seminar is therefore important to designers of lighting schemes, designers of decor for teaching spaces, teachers, conference facilities managers (including those in hotels), local authority education departments, and lighting manufacturers.

Programmes and registration forms are available from member services department at CIBSE, tel 081-675 5211.

Hilight postponed

Hilight 92 exhibition will be held from 10-12 November 1992 instead of in the spring.

The venue will be the Business Design Centre, London.

An associated conference will encourage participation at all levels, from basic workshops on lamp technology, through masterclasses on technical aspects of lighting, to the essential part played by lighting in today's building programme.

The Business Design Centre will organise the event with support from the International Association of Lighting Designers.

Principal feature of P&O's new liner, the Crown Princess, is a large dome which gives the prow of the ship the appearance of a dolphin's head. The dome, 8m high, houses the ship's casino. The structure, in ribbed aluminium, conceals indirect fluorescent lighting. Spotlights are used to accent furniture and other elements of the interior design.

The Crown Princess – 252m long; 53m (or 13 storeys) high; and 32m wide – is claimed to be the world's largest transatlantic liner. It was designed by Italian architect Renzo Piano, with lighting by Guzzini. In effect a floating city, the ship has 13 bridges, and 798 cabins including 50 suites. It can accommodate 1900 passengers and a crew of 600. The ship also includes a theatre capable of holidng 800, a cinema, a pizzeria, three swimming pools, a sauna, a beauty salon, two night clubs, a discotheque and libraries.

Now you see it – now you don't

Glass which switches from being clear to obscure at the touch of a switch has been used to entice visitors through the new ecology exhibition at London's Natural History Museum. The £2.5m exhibition aims to show visitors how we need to understand ecological processes to regulate man's impact on the natural world.

The glass with this extraordinary property is Priva-Lite, a laminated glass with a liquid crystal film between two layers of toughened glass. At the push of a switch, the microscopic crystals become active and the obscure glass becomes completely clear. When at rest, the crystals disperse, light is diffused and the glass turns obscure; it can then act as a screen for back projection.

So the glass forms an integral part of the exhibition, displaying back projected images and computer graphics which fade as the glass becomes clear. Vistors are drawn further into the exhibition as new displays appear and disappear as the glass screens alternate between clear and obscure. Switching occurs every 30 seconds, the average time an individual will spend at any one exhibit.

Comment on a new lighting award

Suggestions and views are being sought for a new lighting awards scheme that will incorporate the present EMILAS and National Lighting Awards.

Comments should be sent as soon as possible to Amanda Leweson at the Lighting Industry Federation, 207 Balham High Road, London SW17 7BQ.

A consultative document has been drawn up and a meeting will be held in October to discuss proposals received.

NEWS

State of the art lighting talks

The three-day lighting conference, *Lighting – the state of the art,* will be held alongside Light Fair at Wembley, London, from 22-24 October.

Industrial lighting will be the theme of the first day, which will consider the user's point of view, followed by two papers on lighting design. A similar pattern will be followed after lunch, but dealing with outdoor industrial lighting.

Retail lighting will be discussed on the morning of the second day, again starting with the user's point of view. This will be followed by sessions on lamps and luminaires.

In the afternoon, the subject will be commercial lighting, starting with the lighting designer's view and then considering controls, lamps and luminaires.

Papers on lighting for leisure and sports will be presented on the morning of the third day, with sessions on emergency lighting, lighting for VDTs, and lighting control and management in the afternoon.

Full details and application forms are available from IML Techpress on 0732 770049.

Lighting for entertainment

Five seminars are being staged during the Light and Sound Show at Olympia 2, London, from 8-11 September.

Lasers in entertainment, and MIDI for control of lighting and effects are the subjects on Monday 9 September. Topics on the Tuesday are Virtual reality demystified; Audio-CAD: tools or toys? and Track event.

In addition, there will be a series of master mixing sessions at the exhibition on Sunday 8 September. All levels of expertise will be catered for by the Music Factory's best mixers.

To book for the seminars, or for information about the exhibition, contact PLASA on 0323 410335.

To reserve a place at the mixing sessions ring DJ magazine on 071-387 3848.

Computers in electrical building services

South Thames College, in London, is running a computer course on Tuesday evenings starting in September.

This specially designed package will be useful to any one working in electrical building services. It includes design to the IEE Wiring Regulations, interior and exterior lighting design, planning by bar chart or critical path analysis, wordprocessing for tender letters and contracts, computer aided design for diagrams and the use of computers for estimating and tendering.

No previous computer experience is necessary. The course fee is £24 a term.

More details are available from Steve Smith, South Thames College, Wandsworth High Street, London SW18 2PP (081-870 2241).

Hear about the new wiring regs

A Symposium called What's new in the 16th Edition? will introduce the *16th Edition of the IEE Wiring Regulations* as a whole, highlighting significant changes.

Intended for electrical building services specifiers, designers, installers and contractors – at middle management level – the symposium will be held in London on 11 October, Manchester on 31 October, and Glasgow on 12 November.

Registration forms are available from the IEEIE, Savoy Hill House, Savoy Hill, London WC2R 0BS.

Standard on Ballasts

BS EN 60925:1991 *Specification for performance requirements for d.c. supplied electronic ballasts for tubular fluorescent lamps* has been published. It supersedes BS 5717:1984.

Copies are available from BSI Sales, Linford Wood, Milton Keynes, MK14 6LE.

Festoon lighting: a new standard

BSI has published BS6726 : 1991 *Specification for festoon and temporary lighting cables and cords.* It specifies requirements and dimensions for insulated cables and cords for operation at up to 300V.

This is a new edition rather than a full revision and incorporates technical changes to align with CENELEC HD21.8 S1 and HD22.8 S1. It supersedes BS6726:1986

Copies are available, price £38 (£19 to BSI members), from BSI Sales, Linford Wood, Milton Keynes, MK14 6LE.

Golf at the Wildernesse

Twenty-seven members and nine guests of the Lighting Industry Golf Society played at the Wildernesse Golf Club in July.

A foursome competition in the morning, for prizes presented by Henry Blake of Program Lighting, was won by N Tavare and J Payne, with T Smith and N Mehta second.

The main game of the day was the Stapleford competition, for which John Mears of Tridonic presented prizes. Jim Condron came first, with Barry Glazer second and Bruce Watts third.

All players received first tee gifts presented by David Proctor of GE Thorn.

The next meeting will be on 17 October at St George's Hill.

DIARY

SEPTEMBER

6-10
CIBSE summer meeting, Copenhagen. Theme: visual and aesthetic values. Details from Member Services Department, CIBSE, 081-675 5211.

8-11
Light and Sound Show, Olympia 2, London. Exhibition of equipment for the leisure and entertainment industries. Details from Philbeach Events 081-370 8174.

10
Street design. Exhibition in Leeds of street lighting and furniture. Details from 081-680 4200.

17
Photographing lighting installations. Evening meeting in central London arranged by CIBSE. Details from 081-675 5211.
Lighting in teaching spaces. Afternoon introductory seminar to Lighting Guide 5, to be held in London. Details from CIBSE, 081-675 5211.
The inside edge. An exhibition of British interior design at Concord Lighting showroom, London, until 28 September. Details from Aidan Walker, 071-837 1212.

24
Product safety and design for certification. A conference in London on electrical products. Details from ERA Technology, 0372 374151.

24-26
Lightex, International Convention Centre, Birmingham. Annual conference and exhibition of the Institution of Lighting Engineers. Details from ILE, 0788 576492.
Interior Design North, G-Mex Exhibition Centre, Manchester. Details from ID Exhibitions, 0895 622233.

OCTOBER

8
In the light of experience. CIBSE Lighting Division chairman's inaugural address. Evening meeting in central London. Details from CIBSE, 081-675 5211.
Bad lighting means poor productivity. Evening meeting in Ipswich arranged by CIBSE East Anglia region. Details from A N Rands, 0954 32277.

9
Lighting design – a link between engineer and architect. Evening meeting in Manchester organised by CIBSE North West region. Details from L Daniels, 061-248 7272.

10
Low energy lighting and its applications. Evening meeting in Kettering held by East Midlands region of CIBSE. Details from J G Ettison, 0629 580000.

11
What's new in the 16th Edition? Symposium in London organised by the Institution of Electronics and Electrical Incorporated Engineers. Details from 071-836 3357.

14
Light at the end of the tunnel. An evening meeting in Durham held by the North East Region of the ILE. Details from D Blackett, 15 Alnwick Road, Newton Hall, Durham DH1 5NL.

22-24
Light Fair 91. Exhibition and seminar programme at Wembley, London. Details from organisers IML Techpress, 0732 359990.
23-25

23-25
An introduction to lighting design. Three-day course at the Institute of Environmental Engineering, Southbank Polytechnic, London. Details from the director of the Centre, IoEE, 071-928 8989.

CIBSE

The Chartered Institution of Building Services Engineers

CIBSE young lighters of the year 1991

A year ago, *LEN* carried the first announcement of a new Lighting Division initiative, the CIBSE Young Lighters of the Year Scheme.

Anyone who was fortunate enough to attend the Lighting Division sessional meeting on 15 January will know how successful the first year's scheme was, and it is now a pleasure to "launch" the 1991 scheme, again with the enthusiastic patronage of Marlin Lighting.

The scheme is aimed at young lighters, under 30 years of age, who have something interesting, new – controversial even – to say about lighting and are prepared to air their views, knowledge or experience to an audience of lighting professionals.

Entrants are invited to prepare a paper on a lighting topic of their choice, with the objective of presenting it personally at a Lighting Division sessional meeting on 21 January 1992, in London. There are no restrictions on what aspect of lighting may be chosen – a case study, a lighting scheme of unusual interest, research or application, a new use for existing lighting products, a new product concept or design, or daylighting – so long as it is original, unpublished work. All young people in lighting may enter – engineers, designers, scientists, managers, representatives, students or trainees.

Rules and timetable

If you are interested in entering the 1991 Young Lighters of the Year Scheme, and you are within the age limit, here is what you should do:

☐ Notify CIBSE Lighting Division of your intention to enter. Ring the secretary, Karl Pike, on 081-675 5211.

☐ By 27 September 1991 send in a 300-500 word synopsis of your paper.

☐ CIBSE Papers Committee will then assess all synopses and invite selected entrants to write their papers in full.

☐ By mid-December 1991 invited entrants' full papers (3000-5000 words, or about 10/15 minutes, suitable for personal presentation at the Young Lighters of the Year special meeting) should be completed and sent to CIBSE for judging.

☐ CIBSE Papers Committee will select papers for presentation on 21 January, 1992.

Papers will be assessed on their content, originality of ideas, clarity of exposition, and presentation skills on 21 January.

CIBSE will award Young Lighters of the Year certificates to all entrants who are invited to give their full papers at the sessional meeting.

Patron for Young Lighters Scheme

Lighting Division approached a number of prominent lighting manufacturers about financial support for the scheme and was delighted to reach a three-year patronage deal with Marlin. Through John Foster, their managing director (sales and marketing), they have shown a great deal of sympathy with the aims and objectives of the scheme. Last year, they were generous enough to supplement the official CIBSE certificates with splendid gifts to the four finalists.

All enquiries about the scheme should be directed to Karl Pike, secretary, Lighting Division, at Delta House, 222 Balham High Rd, London SW12 9BS, tel: 081-675 5211 or fax: 081-675 5449.

Karl Pike,
Secretary, Lighting Division.

NEWS

Metal halide sells the motors

When the MHG Group took on their first Mercedes-Benz dealership in Bromley, South London, they invested over £1m in the refurbishment of the eight car showroom.

The major part of the lighting brief was to produce a uniform level of 700 lux at bonnet height throughout nearly 700 sq m. of sales area and to provide localised task lighting for the reception desk and the representatives' desks with an energy efficient and easy to maintain lighting system. Previously the showroom had been lit with fluorescent fittings which gave uniformity but produced a dull interior.

With the new metallic car colours, Reggiani found the metal halide light source to be the most effective for good colour rendering and dramatic effect. The 70W HQI-TS metal halide lamp, with its warm colour temperature of 3000K has been used in a recessed Downspot fitting. This luminaire adjusts from a fully recessed downlighter to a 60° directional spotlight.

An outer ring of low voltage Downspot fittings, fully recessed and adjustable to 60°, provides wallwashing around the perimeter of the showroom.

The Trolli low voltage suspended wire system provides an architectural centrepiece and task lighting over the central reception desk. The reception area forms a keynote in the interior design as all customers – even those wanting parts and service – are directed to the desk, encouraging more people into the showroom area. The two types of fitting chosen for the Trolli system were *Filo and Hengelo.*

A common problem with car showrooms is the uneven spread of natural light. Because cars are such large display items, sales areas necessarily have to be deep, leading to a reduction in illumination towards the back. This problem was overcome by opening up part of the rear ceiling with skylights. The reception and representatives' desks were placed under this area along with the Trolli task lighting system. Having natural light in the centre of the showroom provides a balance between artificial and north-facing natural light which floods in from two fully glazed walls.

In the rear offices, a uniform light level of 500 lux has been achieved with a bank of Zerbetto's Uno fittings. The white surface-mounted luminaires with their 58W 1500mm fluorescent tubes have louvres for optimal visual comfort and the eradication of glare.

Lighting Forum expanding

Following a change in its constitution, the Lighting Forum is aiming to bring together all agencies enthusiastic about lighting design. It is launching a campaign to encourage into membership people in lighting-related sectors, such as manufacturers, interior designers, architects, engineers and students.

The Lighting Forum is a group of professional designers, engineers and manufacturers who wish to improve communication between all facets of the industry, to everyone's mutual benefit, and for the comfort and pleasure of the end-user.

One of the Forum's current projects is formulating a standard range of symbols related to lighting equipment. Regular events illustrate developments and aspirations in contemporary lighting and it hopes soon to establish links around Europe.

A discussion on light, colour and perception is the next event, on 17 September.

For a data pack on the Lighting Forum, write to 29 Bedford Square, London WC1B 3EG.

Vic Crisp is new environment director

Dr Vic Crisp, well known for his research on lighting, has been appointed director, environment and energy at the Building Research Establishment. He will be responsible for a large part of BRE's continuing development as the main centre for research and advice on the impact of buildings on the environment.

In recent years, Dr Crisp has played a major role in the development of the BRE low energy office facility as a test bed for energy efficiency measures and building management systems. He has also taken the BRE lead in the development of a version of the BRE Environmental Assessment Method (BREEAM) to be applied to designs for superstores.

Reflections on energy saving

East Midlands Electricity is offering a trial of light reflectors for existing fluorescent strip lights or surface-mounted fixtures. Engineers will carry out light readings before and after the trial and recommend the most suitable system for particular applications.

The reflectors on offer from the company's electrical installation service, have a sputtered polyester coating and are not degraded by the ultraviolet light emitted by the fluorescent tube. The life expectancy of a properly installed and maintained light reflector is thus likely to be more than fifteen years.

According to EMB, energy bills can be reduced by up to half, and payback on installation cost is usually around two years.

Phone to switch your lighting

Telephone switching will be a feature of the lighting in at least one suite of offices at the prestigious Canary Wharf development in London's Docklands.

Advertising agency Ogilvy and Mather has specified a custom-built lighting control system for its new 9660m² offices. Designed by consultants Jaros Baum and Bolles, one of the many features of the system is Delmatic's telephone switching facility.

This enables staff in both cellular and open plan offices to control lighting locally and override automatic switching commands using their telephone.

For Peter Corfield, Ogilvy and Mather's group facilities director, this is a repeat order – he was responsible for the Delmatic system installed at British Technology Group headquarters, which resulted in energy savings of 60%.

The hunt is on for green buildings

The most environmentally friendly building of the year in the UK is being sought in a new competition sponsored by the Heating and Ventilating Contractors' Association and the *Independent on Sunday* newspaper.

Entries are invited from architects, consultants, contractors, building developers, owners or operators. Any non-domestic refurbished buildings or developments, as well as new buildings are eligible for entry. Closing date is 1 December 1991.

Wide judging parameters have been set for the competition, taking into account landscaping, resources used in construction, waste management, and health and welfare of occupants.

For further information and entry forms contact the HVCA on 071-229 2488.

Lighting on Fastrack system

Philips is the first lighting company to link its products and design techniques to the Fastrack database service.

This computer-aided design system enables architects and other specifiers to draw products at the touch of a button and facilitates the production of accurate, detailed drawings with minimum time and effort.

Interior designers' work on show

The inside edge is the title of an exhibition of British interior design to be held at Concord Lighting's London showroom from 17-28 September.

As well as displaying their work, 12 practices have been asked to illustrate their influences from the past and their visions for the future.

For more information ring Aidan Walker on 071-837 1212.

COMMENT

Whose energy are we protecting?

From the lighting point of view this is a very quiet time of the year. But on the political front, recent convulsions in the Soviet Union have made the 'silly season' frighteningly far from silly.

So how are the recent occurrences going to affect the central and eastern European markets that many lighting manufacturers have been trying to establish themselves in recently? That the coup failed so rapidly and so ignominiously allows us all to breath a sigh of relief. If its outcome means increased aid and more willingness to finance capital infrastructure in the former Eastern bloc countries then capital investment – not least in the lighting sector – may well receive a welcome boost.

The events themselves have led our colleagues in Germany to reassess their own market and its vulnerability to external factors. We could well benefit from doing the same in the UK. After all, in a market like the post-1992 single European market, our neighbours' concerns – and their political stability – inevitably have an effect on our own prosperity.

The distinction between what is our own and our European neighbours' is increasingly blurred – after all, that is the very basis of a single market. However, the recent moves towards an integrated energy market, which also bid fair to be stimulated or speeded up by the recent events in Russia, give rise to some concern.

The scenario is as follows. Almost half Europeam Energy requirements are met by non-EC countries. The level of dependence for the Community as a whole is approximately 70% in the case of oil, 35% for both natural gas and solid fuels; and this proportion is amost certain to increase in the future. So, for the EC as a whole, security of supply is a matter of strategic importance – expecially given the experience of the Gulf crisis earlier this year.

UK figures are rather different. Although some 60% of our oil comes from non-EC countries, only around 14% of natural gas supplies and solid fuel are supplied by external states. The level of dependence is thus – with the exception of oil – much less critical.

The aims of the proposed European Energy Charter cannot be faulted. It will aim to expand trade in this field, ensure maximum cooperation between nations and ensure the optimum use of a scarce resource. Many of the means to attain these objectives are equally uncontroversial: these include such commonsense measures as cooperation, joint research and development, and clear rules for the operation of companies in this field.

What should, however, make the UK – industry and citizens alike – pause to think is the proposed provision for the same access to energy resources for all signatory states. The results of such a provision could well make the fisheries disputes of the first decade of British EC membership seem small beer in retrospect, as British energy resources are increasingly drained off to serve Community needs. In this situation we really need to stop and weigh up the benefits. After all, whose energy is it anyhow?

LIGHTING EQUIPMENT NEWS

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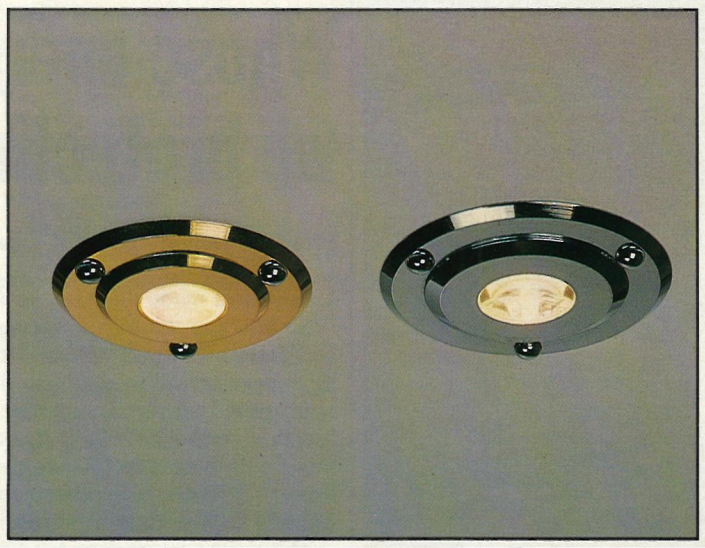
NEW PRODUCTS

Underwater lights for bathrooms



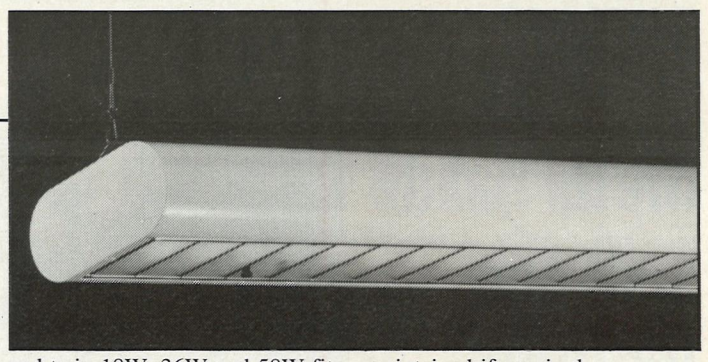
Shower-Lights has developed a low voltage tungsten halogen recessed light specially for use in bathrooms, showers, steam rooms and saunas, and also underwater in Jacuzzis, spa-baths and hot-tubs.

It is ingress protection rated IP68 and has a 12mm thick safety lens. The circular bezel-surround is solid brass finished in a choice of either chromium plate, 24ct gold (light or dark), white, or satin black.

There are two models in each finish: one is 111mm in diameter and accepts a 35W 12V lamp, the other has a 125mm diameter and uses a 50W 12V lamp.

Reader Service No 173

Luminaires are easily linked



Glamox Electric's Lumilink and Lumisingle fluorescent luminaires are manufactured using the latest automated laser welding technology, which means that on the exterior of the luminaire joins are almost invisible.

Inside, control gear is neatly tucked away to one side and, if required, balance units can be installed at the opposite end to ensure the unit hangs level.

Through wiring facilities are fitted as standard and a five-way terminal block is provided at each end of the luminaire so that terminations can be made simply and quickly.

The range is available in single and twin 18W, 36W and 58W fittings. There are three types of louvre: HG is a highly polished mirror louvre with wedge shaped crossblades, version LL is a matt finished wedge crossblade, and model GL is a white scalloped decorative crossblade.

The system can be extended by means of a double connector, which as well as being a link between two fittings, acts as a support point for them. The connector comes with five cores already in place, to ensure that through wiring continuity can be maintained if required.

Lumilink housing is in a choice of two designs: oval or bell, which are named from the end profile of the luminaire. For surface mounting, Lumisingle has all the features of Lumilink and comes in the oval design.

Adding flexibilty to the system the luminaires can be interspersed with the Glamox 85mm tube system, which is available with an integral track, allowing spotlights to be incorporated into the Lumilink lighting scheme.

Reader Service No 176

K System gives power to adapt

Telemecanique has developed the K System for designers of commercial and industrial premises who need to adapt or expand clients' lighting without costly and time-consuming alterations involving re-wiring.

The concept is simple. Transmitters and receivers are used with the company's standard Canalis busbar trunking. The transmitter communicates with the receivers using an integral bus in the trunking. Two basic functions are carried out in a single run of trunking: distribution of electrical power and switching of the transmitters and receivers incorporated in the tap-off units.

The key to the system is a series of removable, coded labels that "address" the signal from the transmitter to the desired receivers. An installation can have up to 255 receivers.

When the premises' layout is changed and a new lighting arrangement required, it can be achieved simply by changing the coded labels in the transmitters and receivers.

Installing Canalis K System at the fitting out stage prepares each floor for unforeseen alterations at a later date.

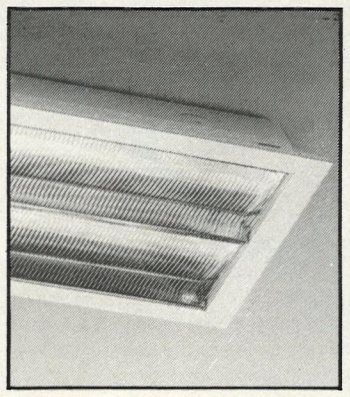
There are two versions: Canalis KL for office lighting and Canalis KNT for commercial and industrial premises using higher power ratings.

Reader Service No 174

Special optic gives controlled light distribution

The LIP range of recessed fluorescent luminaires from Generalux has an unusual optical system which is stated to give precise light control and a high level of visual comfort.

Linear louvres of polished aluminium are curved to give a "batwing" light distribution. Fitted between these louvres are clear acrylic panels with a ribbed appearance due to rows of linear prisms that direct as much light as possible downwards.



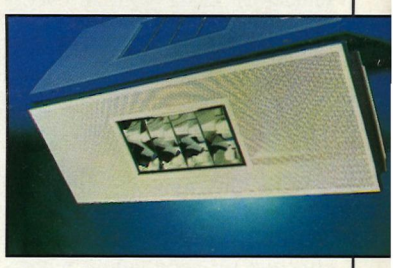
The luminaires, which are made by ITT Reiss International, Germany, have a white stove enamelled sheet steel housing. A hinged frame gives easy access for re-lamping. There is a wide range of options, including single, twin and four-lamp models.

Reader Service No 175

More freedom with Freestyle luminaires

New versions of the PLB Freestyle recessed luminaire from Moorlite enable the lighting and ceiling to be considered as one unit for the purposes of ceiling design and installation. This means that while the ceiling can be configured to follow building contours, the lighting remains integrated with the ceiling panels and still offers uniformity of illuminance.

The luminaire uses PL compact fluorescent lamps and simply clips into the panel either diagonally or parallel to the panel sides. The design allows the use of looping leads.

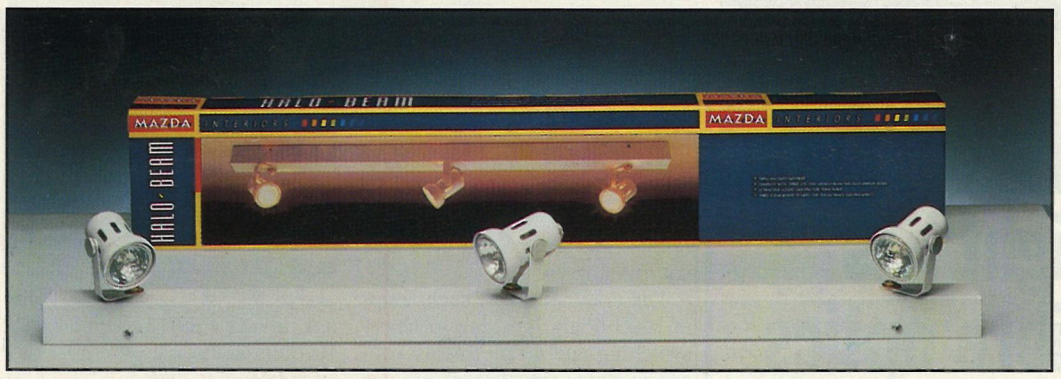


Where a ceiling is easily demountable for access to building services or to suit occupancy changes, the ceiling panel can be removed and replaced without the need to reinstall the luminaire.

This range of lighting is stated to fit any standard suspended ceiling system and can be modified for special ceilings.

Reader Service No 177

NEW PRODUCTS



Low voltage lightbar

A triple lightbar with tungsten halogen spotlights, designed for the domestic market has been launched by GE Thorn Lamps. It is complete with built-in transformer and supplied with three 35W low voltage lamps.

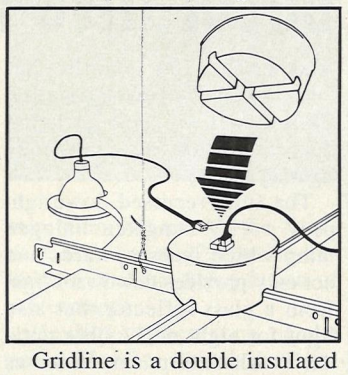
Mazda Halo-Beam has short circuit protection and automatic power adjustment when a lamp fails. It is ready to install, complete with fixing kit.

Available in a white finish, nett trade price of Halo-Beam is £105.

Reader Service No 151

Transformers plug into ceiling grid

Yorklite has introduced the Gridline transformer system to simplify the installation of remote, low voltage lighting transformers above suspended ceilings.



Gridline is a double insulated unit which is simply located at the intersection of the ceiling grid. It is a toroidal type and measures 55mm high by 100mm in diameter. Two ratings are available: 70VA and 100VA.

A range of downlights is also available fitted with cables and connectors ready to plug into the transformer, making installation quick and trouble free. This system eliminates the need for volt drop calculations.

Reader Service No 152

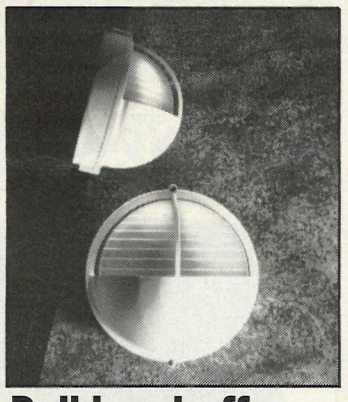
Emergency fitting uses 28W 2D lamp

Mattalex has released its maintained emergency luminaire called Square, which uses a 28W 2D lamp.

This self-contained fitting incorporates the latest super high temperature nickel cadmium batteries, together with heat sinks and adequate ventilation to ensure that the components are kept within the temperature parameters that allow the 28W lamp to continue to function in the event of an emergency.

The luminaire is stated to be particularly suitable for stairwells and mounting on solid ceilings. There are also slave versions and matching mains-only models.

Reader Service No 153



Bulkhead offers choice of light

A hemispherical bulkhead for amenity lighting, with a choice of light distribution, is available from Crescent Lighting. Called Bul, it is made by Simes, Italy.

It can be supplied with a visor, which gives an additional choice of upward, downward or sideways illumination.

There are two sizes: 180mm and 240mm diameter. It accepts either 10W or 18W PL type compact fluorescent lamps, or 60W or 100W GLS lamps. Ingress protection rating is IP54.

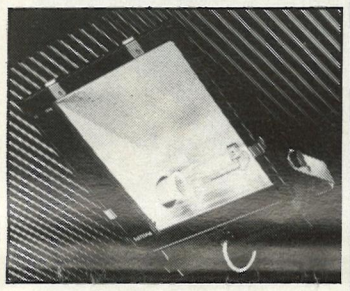
The housing is made of diecast aluminium, finished either black or white, and the diffuser is of sand-blasted glass.

Reader Service No 154

Floodlight has tight beam

A floodlight from Philips accepts either a 250W or 400W, high pressure sodium or metal halide lamp. Light is directed downwards in a tightly controlled beam, which means that very little light is wasted, there is less chance of people being troubled by glare, and environmental light pollution is minimised.

The luminaire has a glass



enclosure. Control gear is integral with the fitting.

It can be used outdoors at temperatures from –30°C to +40°C when used with a high pressure sodium lamp, or at temperatures down to –18°C with a metal halide lamp.

Applications include tennis courts, docks and railway stations.

Reader Service No 155

Automatic switch for outdoor lighting

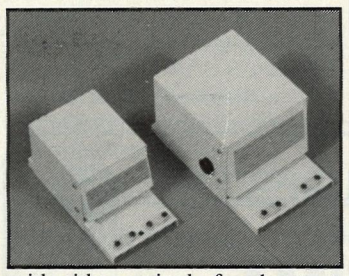
Twilight switch from Danlers automatically operates any type of outdoor mains lighting load up to 1500W (6A) using a photoelectric cell.

The polycarbonate housing measures only 66mm x 60mm x 33mm and the design is ingress protection rated IP54. It is suitable for domestic and commercial applications. Trade price is £17.85 plus VAT.

Reader Service No 156

Transformers offer choice of fuses

A range of low voltage lighting transformers from Douglas Electronic Industries can be ordered



with either a single fused output or a fuse for every 50W. Ratings range from 50W to 1000W. Thermal cutouts are fitted.

The units are stated to be easy to install. They are enclosed in epoxy powder coated, sheet steel cases. **Reader Service No. 157**

For more information on any of the products listed, circle the enquiry number on the free reader reply service card.

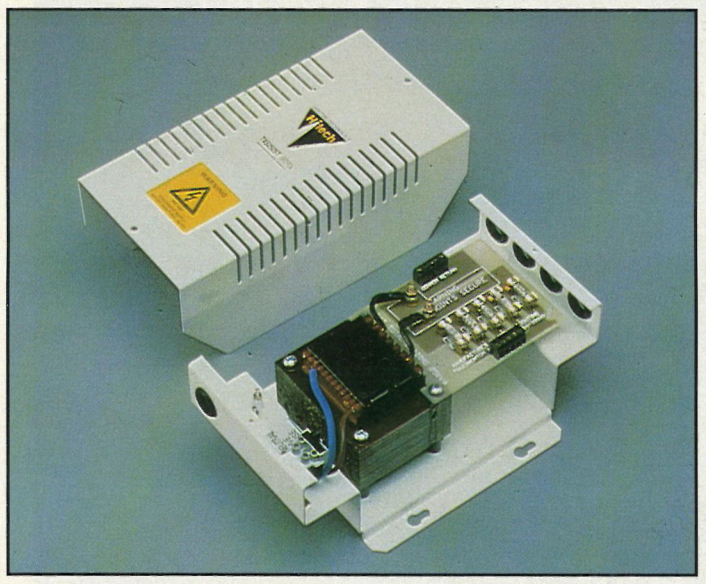
Transformers have extra features

Hitech's TXS range of transformers for low voltage lighting has been designed to a high technical specification.

Ergonomically styled for ease of handling, units also have welded seams for noise reduction. They have cable-clamped and fused primaries, and to encourage safer installation, multiple secondary fusing in 50VA increments.

In addition, all units incorporate "soft start" to extend lamp life.

The range consists of 13 models from 100VA to 750VA, four of which are designed for use



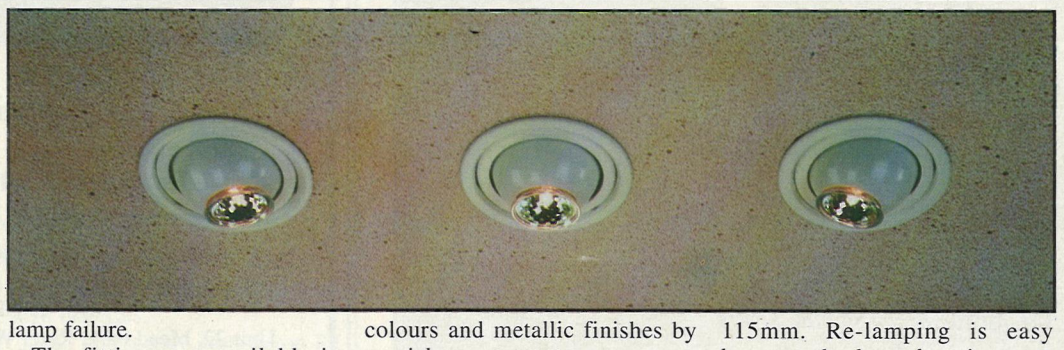
with Hitech lighting track.

Reader Service No 158

Low voltage eyeball

Microlights' re-designed, recessed eyeball spotlight is adjustable through 359° horizontally, 45° vertically and accepts the full range of low voltage 50mm dichroic lamps (plus the 75W lamp to special order).

The design is stated to ensure that the pinch temperature of the lamp does not rise above the critical level, to avoid premature



lamp failure.

The fittings are available in satin black, or white epoxy powder coated finish, with other colours and metallic finishes by special arrangement.

Overall dimensions are 125mm diameter with a recessed depth of 115mm. Re-lamping is easy because the lamp housing protrudes slightly.

Reader Service No 159

LIF LINE

Cutting energy consumption in local government

The case for energy efficiency is now stronger than ever. Environmental worries have been added to the ever-present cost arguments. The 1970s oil crises prompted local authorities to seek ways of reducing energy costs including fuel conversion and the implementation of a variety of efficiency measures including, of course, lighting. In 1984/5 the Audit Commission reviewed energy management in local government and found that many authorities had a good record. However, it was estimated that further reductions of at least 12% could be made in energy used in non-domestic buildings. This would quickly save £100m a year – and more in the long term.

However, by 1989, the Audit Commission claims that councils had only secured 31% of the medium term potential for energy saving, ie £23m a year.

Local authority annual energy bills are around £900m. Local authority tenants spend a further £2.5bn. and all this represents a significant amount of carbon dioxide.

The performance of individual authorities varies widely and while some authorities have secured short term savings, many others have made little progress. Local authorities need to invest more in energy saving measures, set up proper systems for monitoring the benefits and improve all aspects of energy management. There is undoubtedly substantial potential for greater energy efficiency in local government.

The local government estate represents a wide range of services – schools and training centres, swimming pools and sports complexes, libraries and museums, police and fire stations, sheltered housing, residential housing, office blocks and transport depots. This estate tends to have a high political and public profile and must not only be used efficiently, it must be seen to be used efficiently if government is to set the pace for energy efficiency in local industry and commerce, as well as convince community charge payers that they are getting value for money.

But proposed investment in energy efficiency must compete with other important claims on expenditure arising out of the multitudinous issues which local authorities have to deal with every day. As in the private sector, investment has to be justified by measurable results and beneficial payback. Even when resources have been allocated to energy management, the sudden and every-changing calls on local authorities and the re-assessment of priorities to meet unexpected new responsibilities can thwart the best laid plans.

This is where lighting comes in. Lighting can be both the most visible and the most neglected among building services. Too often it is allowed to deteriorate without proper regard to the effect that it can be having on producitivity, safety, security, worker morale and operating costs. Improved lighting is a highly visible indication that a local authority is making the proper investment in energy conservation, and also those other user benefits mentioned above. Proper standards of lighting are essential for safety, comfort and productivity.

Lighting has measurable benefits and an identifiable payback. Local authorities have accounted for a large number of the entries to the Energy Management in Lighting Award Scheme over the years, achieving savings from a typical 30% up to 80% or even 90%, together with much improved lighting levels, and other user benefits. The schemes often pay for themselves within 18 months.

The success of an energy-efficient lighting scheme depends on identification of the individual cost factors. Capital costs include the cost of the lighting equipment, installation costs, labour and materials. Operating costs will include replacement lamp costs, maintenance and cleaning costs, and electricity costs. Since electrical energy is the major cost factor in most lighting installations, it makes sense to install the most efficient light source suitable, together with high performance fittings, proper controls and energy management systems.

And in any case, any installation that is more than 20 years old is probably due for rewiring. Luminaires that are over ten years old will probably have deteriorated and in many cases, more efficient versions will be available making replacement a worthwhile investment.

Local authorities are limited by capital controls and, while this is a real problem, better energy management alone could make a huge difference to lighting costs. Ideally some initial capital investment will be required, but the new, efficient lighting installation should pay for itself in the long term.

Proper standards of lighting are essential for any organisation, and it is important for local authorities to identify the opportunities for cost redemption where possible. Expert advice is available from the Lighting Industry Federation, and also up to date information through our members in respect of product performance and the interchangeability of lamps and circuit components in view of the rapid rate of development in the lighting industry.

NEW PRODUCTS

Metal halide wall mounted uplight

A modern, wall mounted uplight from Staff Lighting's Brendel Prisma range uses a metal halide lamp.

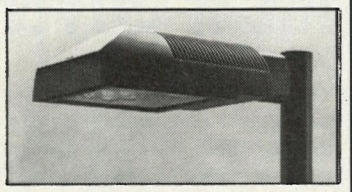
The trough shaped housing can be tilted on its bracket and the reflector is stated to ensure an even distribution of light. Control gear is integral with the luminaire.

The housing is either polished brass or white painted aluminium (specified RAL colours on request).

Applications include museums, showrooms and modern commercial interiors.

Reader Service No. 160

Lantern for residential areas



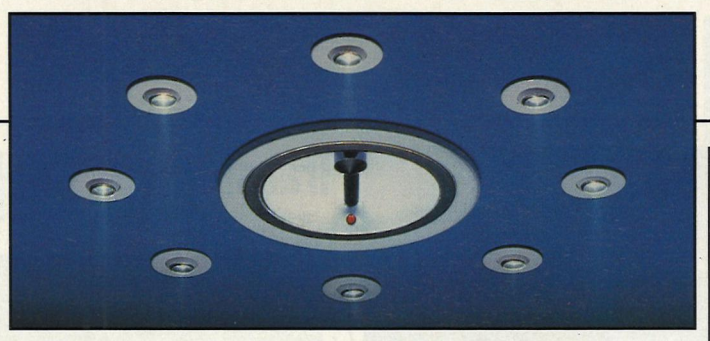
LDMS has an amenity lantern called Archetype for metal halide, high pressure sodium or mercury lamps up to 400W.

Installation and maintenance are stated to be simple for either single or multiple units. An internal draw-bolt system conceals all mounting hardware.

Replacing a lamp is facilitated by a single latch to open the lens frame and if control gear needs replacing, the entire electrical module snaps out without tools.

The four standard finishes are black, white, dark bronze and aluminium grey.

Reader Service No. 161



Emergency light has decorative fibre optics

Another Flex-Lite luminaire has been introduced by Existalite. This model, as well as being decorative, has an emergency lighting facility.

The fully recessed downlight uses a 12V tungsten halogen lamp which faces upwards and not only provides downward light from a glass reflector, but also light for eight or 12 fibre optic cables which terminate in lenses recessed into the ceiling in a circle around the downlight.

There is a choice of lenses and an advantage of the fitting is that the fibre optic lighting involves no extra running cost.

Both the main reflector and the reflector which is integral with the lamp are dichroic, which gives the luminaire extra sparkle.

Maintained emergency lighting can be provided either by a remotely located battery pack (up to 1m away) or by connecting the luminaire to a central battery system. **Reader Service No 162**

Doubling the life of LV lamps

Multiload Technology has introduced a device which is claimed to more than double the life of low voltage tungsten halogen lamps and reduce maintenance and running costs.

The nominal life of such lamps is 3000 hours, but due to heavy switching and erratic mains voltage loadings actual lamp life can be much shorter.

For a retail display installation of 10 x 50W dichroic lamps, the LC500 is stated to substantially reduce lamp replacement costs and pay for itself within a year.

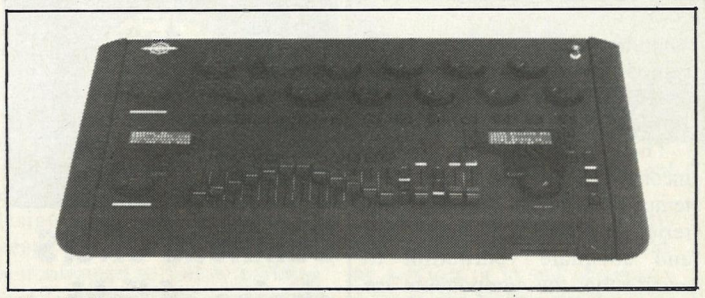
The "soft start" circuit eliminates initial high surge switch-on current and cuts down on equipment switch wear, saving on medium to long-term maintenance costs.

Voltage phase control circuitry is incorporated, allowing the voltage to be "tweaked" down. Voltage levels can be reduced still further, reducing energy consumption.

Other benefits include elimination of nuisance tripping of MCBs and fuses, increased short circuit safety protection because fuses and MCBs can be rated for the nominal lamp current, and elimination of high magnetic inrush current into transformers, adding to maintenance cost savings.

The LC500 is easily installed between the mains supply and low voltage transformers.

Reader Service No. 163



Multi-purpose lighting console

Celco is launching a 96-channel lighting control console.

The multi-purpose Navigator is suitable for applications ranging from stage to TV studio and is designed to drive dimmers, colour changers and moving lights.

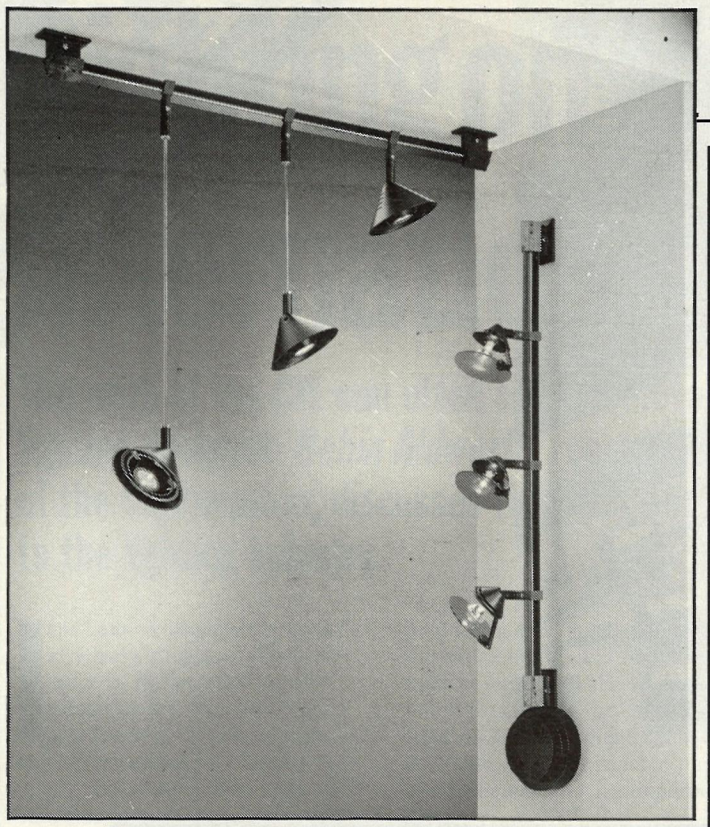
Input and output stages are digital and it is equipped with 512 dimmer/attribute channels, up to 480 memories and 120 sequences. One of its innovations is the scrolling preset, enabling the 96 channels to be accessed by sliding the control channels into view. Any number of Navigators can be linked together.

Practical aspects include plotting and editing features such as "copy", "group" and "gang" and the ability to preset groups of moving lights or colour changers for subsequent inclusion in a cue, which offers advantages when a cue needs updating later.

Navigator is fitted with DMX512 as standard, for the control of moving lights, colour changers and dimmers. To expand its usefulness and make programming even easier, it can be customised to control specific types of moving lights and colour changers, such as Summa, Lightpaint, Coemar and Intellabeam, by inserting a Personality Card into a slot. This automatically configures the onboard displays to show colour, position, gobo, etc. in useful terms such as 'red', '130°' and 'star'.

Other features include Schadow, flashbuttons, rotary encoders and also "pulldown" faders.

Reader Service No. 164



Modular lighting system

The Star, modular, low voltage lighting system made in Italy is available from Tally Ho Lighting. It is suitable for hotels, shops, offices and other display areas.

The linear modules are either suspended, ceiling mounted or wall mounted and can be connected to each other in straight runs or at angles by means of flexible couplers. They have a triangular profile with parallel, current carrying, metal rods on two sides.

There is a choice of three luminaires in diecast aluminium: basic spotlight with cone shaped reflector, mini spotlight, and mini spotlight with decorative diffusing glass held in front of the lamp by a metal arm. They can be suspended on rods of different lengths.

Matching spotlights are available on individual mounting plates.

Transformers are located either in round, surface mounted boxes, or remotely positioned.

Lamps rated at up to 50W can be used. The system accepts a maximum electrical loading of 500W on each module.

Reader Service No 165

Lighting control offers scene setting

Richmond Lighting has launched its first programmable lighting control, the Scene Management and Control System (TASMAC). It is available for controlled dimming of incandescent, low voltage and fluorescent circuits.

A minimum functioning system consists of one control plate and one dimmer. This is expandable to 100 plates and 100 dimmers. No additional scene setting control equipment is required.

One hundred scenes are available per system, with each scene fully variable between off and full on.

There is one common three-core, low voltage, bus link to all dimmers and control plates. The programmer is hand held.

An on-board real time clock allows fully automatic time management control. The system restarts to the last level after a power failure. A permanent memory makes batteries obsolete.

Fade rates are variable for every scene. Interfacing to external control sensors such as passive infrared is available. A manual override facility is provided on each dimmer. Each programmer has a comprehensive visual display.

Reader Service No 166

Unobtrusive LV lighting

Contacto low voltage display lighting system has been developed further and now includes tensioned, pvc sheathed cables to support the luminaires. Made by Belux, Switzerland, it is available in the UK from Lumino.

The cables run either vertically or horizontally. Luminaires are clipped on and electrical connection is made by two pins which pierce the pvc. Maximum loading per circuit is 250W. Brackets enable the cables to change direction.

Reader Service No 167

Longer lasting GLS lamps

Lampways' Triple Plus range of GLS lamps is designed to last over 3.5 times longer than normal GLS lamps.

Available in 40W, 60W and 100W ratings, with either BC or ES cap, there is a choice of pearl or clear finish. Lampways says that its quality testing ensures a long life and trouble free product. Point-of-sale material is available.

Reader Service No. 168

For more information on any of the products listed, circle the enquiry number on the free reader reply service card.

Emergency light gives a powerful beam

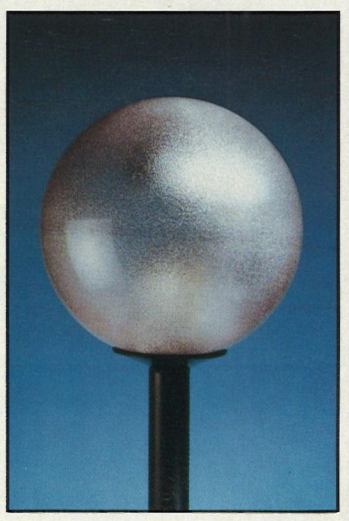
Microlights has a self-contained, emergency, recessed downlight that uses a low voltage 75W tungsten halogen lamp to give a tight, 10° beam angle that is stated to be visible through smoke.

Maintained and non-maintained versions of the Micropan are available using sealed lead acid batteries.

The emergency conversion kit can also be used with other luminaires.

Reader Service No 169

Sphere gives more light on road



A spherical outdoor luminaire which minimises upward light pollution and reduces glare has been developed by Urbis Lighting.

This high performance is achieved by fitting the company's optical system into the top of the sphere, so that maximum reflected light is directed downwards onto the road and footpath.

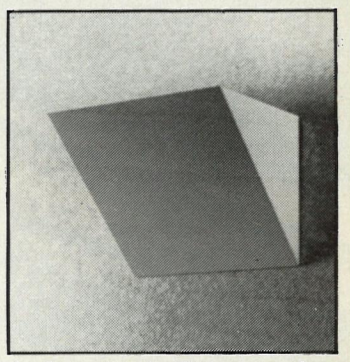
This light distribution is stated to allow greater spacing between columns and therefore fewer lanterns are required to produce the necessary lighting level in residential and amenity areas.

The Linford sphere has easily accessible control gear. A smooth outer surface collects minimum dirt and as the luminaire is sealed to IP54 rating this helps to reduce depreciation of performance.

Daytime appearance of the polycarbonate sphere has not been affected as internal frosting obscures the optical unit.

Reader Service No 170

Uplights use discharge lamps



Lightgraphix' simple, wall mounted uplights are available complete with a choice of lamp, which includes metal halide and White SON.

They are fitted with high efficiency aluminium reflectors and heat resistant clear glass covers.

The mild steel housings are epoxy resin powder coated in either white or black, with other colours to special order.

Mounting alternatives include single and twin fittings on free standing pedestals. They can also be suspended and used as pendants.

Reader Service No 171

Emergency downlights

Marlin has expanded its Matrix range of downlights to include emergency versions using compact fluorescent (PLC), metal halide and low voltage tungsten halogen lamps.

Maintained and sustained modes are available. To give the best performance, emergency models are restricted to those downlights with a wide beam distribution.

Reader Service No 172

WEMBLEY
CONFERENCE & EXHIBITION CENTRE

Where bright ideas come to light!

The Lighting Industry has at last, got the major national exhibition it deserves. Light Fair 91.

Light Fair 91, the definitive lighting exhibition, will take place at the prestigious Wembley Exhibition Centre, on the 22nd, 23rd and 24th October 1991. Every major participant in the Lighting Industry will be there. Light Fair has been designed as a forum for the best and brightest new products and ideas within the Industry. A single platform from which the most innovative companies can inform and inspire consultants, architects, designers, contractors, wholesalers and maintenance engineers.

A major national show demands a major national venue. Wembley Exhibition Centre, with its excellent facilities, is purpose built to fulfil that role. It's just a 13 minute tube ride from Central London, well served by motorway and has parking space for over 6,000 cars.

To discover how the definitive lighting exhibition will be throwing new light on the Lighting Industry's brightest ideas, simply phone the following office Hotline numbers:

Head Office: 0732 359990.
Midlands Office: 0675 467255.
Northern Office: 061 445 7729.

CIBSE

A series of 'Lighting – The State of the Art' seminars will take place in the Wembley Conference Centre at the same time as Light Fair '91. These will be organised by the Lighting Division of CIBSE and provide an opportunity to hear internationally-known speakers from the industry. Full details will appear in the trade press.

An IML Exhibition

LIGHT FAIR 91

22-24 OCTOBER 1991 · WEMBLEY ·

electrical PRODUCTS
Reader Service No. 8

Lighting on the international front

The work of the CIE can often seem remote to the average lighting designer. *Robin Aldworth,* recently elected president of the Commission, discusses the CIE's work and its relevance to the lighting industry.

It is almost impossible to say anything original about the range of feelings that are experienced when you are elected as President of the Commission Internationale de l'Eclairage (CIE). Everything that could be said has already been said with great eloquence by your predecessors over the previous 18 years. Nevertheless, my personal feelings of pride as a UK recipient of this international honour are no less for all that.

Without descending to undue chauvinism, I suggest that we can all feel some national satisfaction that Great Britain is the first member country to provide four presidents. (This does not include Dr Mike Marsden, who was based in Hong Kong during his term of office.) Up to now, Germany, Netherlands and USA have each held the Presidency on three occasions.

What is the CIE?

For the majority of people in the lighting industry, with their day to day involvement in designing or selling lighting, international bodies like the CIE can seem remote and the relevance of their activities unclear.

The objectives of the CIE include:

- providing an international forum for the discussion of all matters relating to the science, technology and art in the fields of light and lighting.
- developing basic standards for measurement and application design.
- publishing standards and reports and maintaining liaison with other international standards organisations.

How does it work?

The CIE Central Office is based in Vienna and each of the 36 members consist of a National Committee which must represent all light and lighting interests. In this country the National Illumination Committe (NIC) is chaired by Ken Scott of Thorn Lighting – he was also appointed CIE Treasurer in Melbourne – and the UK secretary is Ian Davies, who can be contacted through the CIBSE headquarters.

The administrative programme of the CIE is divided into four year terms, or quadrennia, which are marked by sessional meetings. The 22nd session was held this July in Melbourne, Australia, the next is planned for New Delhi in 1993.

At the sessional meetings, policy and budgetary issues and the election of officers for the next term are decided in the general assembly meeting of the member countries. The majority of the time, however, is taken up by an international lighting conference and meetings of the divisions and many technical commmittees where the programme for the past term is reviewed and the work for the next term is set up.

The CIE technical programme is carried out in 7 divisions covering: vision and colour; measurement; interior; transport and signalling; exterior; photobiology and photochemistry; and general aspects of lighting. The detailed work is carried out in over 100 technical committees.

The programme can be divided broadly into the two areas of fundamental research (covering such topics as vision, colour and metrology) and lighting application subjects. There is, of course, considerable interaction between these areas of activity, as one would expect. It is the responsibility of the officers and division directors to administer this programme on behalf of the general assembly, over the following 4 years.

How does the CIE affect you?

It is unfortunate that the words 'fundamental research' tend to bring a glazed look to many who would describe themselves as 'practical designers or engineers'. Yet, the seminal work of the CIE on colour, which led to the development of the Colour Rendering Index, and on vision with the Vλ eye response curve, which allows meaningful values of lamp lumen output to be calculated for all light sources, provides the basis of every calculation carried out by lighting engineers throughout the world.

The CIE also provides the international forum for researchers investigating, for example, glare in interior and exterior installations, visibility for road and tunnel lighting, light pollution and – perhaps less obviously – the testing and classification of sun creams.

In the field of international standardisation, the CIE is recognised by the ISO as the international standardisation body for lighting. From a parochial European point of view this impinges on the current intense activity in CEN as we approach the open market in 1992.

It is the declared policy of CEN and CENELEC to adopt appropriate international standards. In spite of this, a major cause of concern within CIE is the increasing pressure on lighting experts in Europe to concentrate on 'continental' rather than 'international' standards.

Progress 1987-1991

At Melbourne we were able to report on a very eventful and productive quadrennium. Notable achievements included:

- establishment of a permanently staffed central office in Vienna;
- publication of over 30 new reports;
- consolidation of an agreement on standardisation with ISO and IEC;
- official acceptance of the Commission into the transport division of the UN Economic Commission for Europe.

The sessional meeting also saw the launch of the International Daylight Measurement Programme. This CIE initiative, which started at the 21st session in Venice, has been jointly sponsored with the World Meterological Organisation.

The purpose is to build up a worldwide database to realise the efficient use of daylight in interior and exterior environments. With the increasing importance of energy management and controls linked to available daylight, this will impact more and more on the work of lighting designers in the coming years.

The July meetings marked the completion of work for a number of technical committees. The fruits of their labours will be seen in new CIE Technical Reports to be published in the next few months. These include:

- Road Lighting and Accidents;
- Decorative Floodlighting;
- Urban Area Lighting;
- Maintenance of Indoor Lighting;
- Lighting Education;
- Potential Hazards of Tungsten Halogen Desk Lamps.

For those who wish to know more of the recent and future programme, the British NIC will hold its annual meeting at Balham on 20th November where reports on the Melbourne Session and other CIE activities will be presented.

Future plans

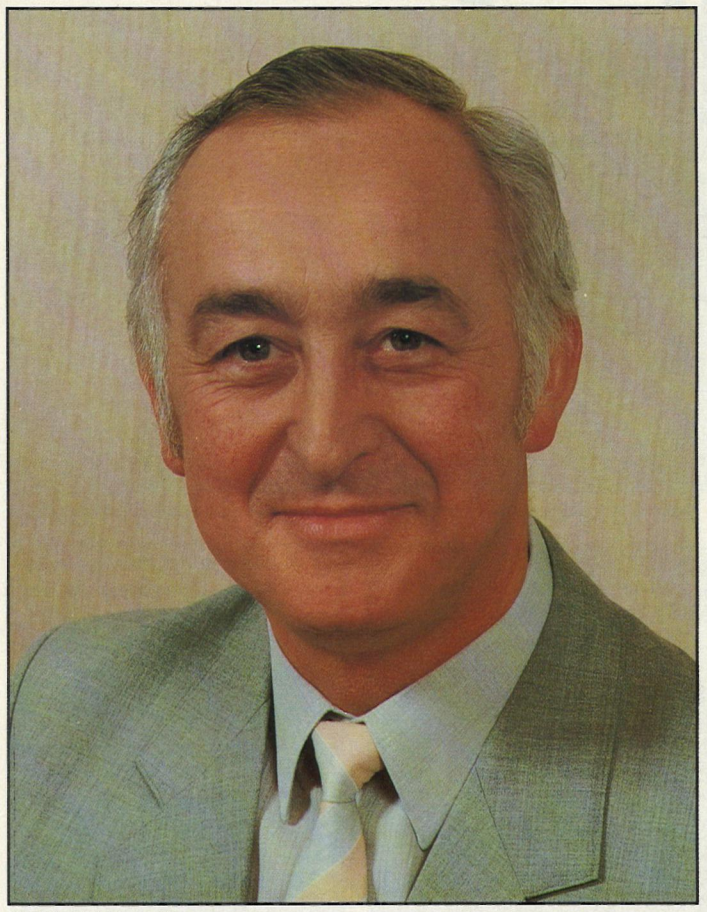
In the next four years the CIE will continue to develop its activities in fundamental, application and standardisation work. In spite of its importance, this latter area must be held in balance with the fundamental scientific programme which must also receive a reasonable share of the finite resources of finance and manpower available. The board of administration at Melbourne agreed particular areas of responsibility for Vice Presidents John Kaufmann (USA) and Genady Chakhparunians (USSR) to look into the long term planning of the technical programme and to investigate ways of improving effectiveness, efficiency and economy in implementing the programme.

The new CIE secretary, Jean Bastie (France) and Vice President Kohei Narisada (Japan) will be reporting on achieving a balance between fundamental and application aspects of the Commission's work. There are also plans to increase the CIE's membership representation in the Asia/Pacific basin.

A proposal to hold a seminar at the Central Office in Vienna in 1992 was accepted. This will provide delegates with an international overview of computer programmes used in illuminating engineering. Details of the programme will soon be available through the NICs in each member country.

It is only possible here to give a flavour of the diversity of activity within the CIE. In the next four years I can look forward to a hectic and stimulating time. But the president of any organisation can achieve very little on his own, and I am confident that I can count on the support of the officers and staff of the CIE.

However, to carry forward the full technical programme successfully, a matter of vital importance to the prosperity of the worldwide lighting community, we must continue to depend on the voluntary participation of individual CIE enthusiasts with the backing of their organisations in industry, the academic world and government. It will be a major part of my job to ensure that this invaluable resource is used efficiently.



Robin Aldworth

Uplighting for visual display areas

Designing uplighting installations to LG3 is not difficult once you grasp the basic principles. *Paul Ruffles*, of Buro Happold, explains how.

Since the introduction of LG3 in September 1989 there have been many general articles published about lighting VDT areas. Often these have concentrated on designing with downlighters, so I thought it was time I looked at some of the problems in designing with uplighters. One area I'm often asked about is the method for calculating the average ceiling luminance and maximum luminance over an uplighter. These calculations are fairly straightforward once you have grasped the basic principles and the reason for imposing the luminance limits in the first place.

The basic principles on which the lighting of rooms containing VDTs is based can be summarised as follows: limit the brightness of objects and surfaces beyond the screen; limit the range of luminance of the parts of the work station that the user has to look at in quick succession; and limit the luminance of screen reflections. Now, lets see how uplighting can meet these criteria.

A well designed uplighting scheme nearly always provides an evenly-lit working space with generally moderate illuminances on the main vertical surfaces. This, then, should satisfy the first two criteria. Limiting the luminance of screen reflections is the more difficult criterion to satisfy. For this, you need to ensure that the ceiling is not so bright that it throws a low luminance veil over the screen, and that the individual uplighters do not provide high brightness patches on the ceiling which could appear as distinct images on the screen.

Factors

Ceiling surface luminance depends on two factors: the surface reflectance and the illuminations of that surface. To keep the ceiling luminance fairly constant, both its reflectance and the illuminance of the ceiling should be kept as even as possible. A sudden bright mirror finish grille on an otherwise matt white ceiling or a bright splash of light on the ceiling or wall could show on a screen as a distinct and distracting object.

This is why, for uplighters, we set a maximum figure for both the average ceiling luminance and for the peak ceiling luminance. To comply with LG3: you should keep the average luminance of the ceiling and upper walls below 500 cd/m^2; keep the peak illuminance below 1500 cd/m^2; and ensure that the luminance changes slowly across the surfaces. This should ensure that for the typical screen and interior no distinct bright image will appear on the screen. There will, however, be an overall light haze over the screen caused by the lit ceiling. This may have to be offset on some screens by turning-up the screen character luminance.

Calculating average ceiling luminance

The guide says that to calculate the average ceiling luminance you can use the methods outlined in Technical Memorandum No.5 to determine the utilisation factor for the luminaire/ceiling geometry. From this you can use the lumen method to determine the illuminance on the ceiling and, hence, the luminance. This is quite correct, but is not an easy task. But there is a simpler way that will produce answers that err on the safe side. However, it is only totally applicable to areas where the output of nearly all the uplighters reaches the ceiling.

Let us assume that we have a large office space 20m by 15m with twelve evenly spaced uplighters lighting the ceiling. The room is not excessively high so we can assume that the majority of the output from the uplighters reaches the ceiling and only a little falls on the upper wall surfaces. So, we can assume that all the light output arrives at the ceiling.

Now, we know from our basic lighting theory that the light output ratio (LOR) is the ratio of the light that leaves the luminaire to that produced by the lamp. In the case of most uplighters this ratio is very high. Uplighters do not generally need tight glare control, as the light and reflectors are hidden from view.

Example

Let us assume that our uplights have a LOR of 85% and a lamp lumen output of 30 000. This means that 30 000 x 0.85 lumens will leave the uplight. As we have already assumed that all of this light will reach the ceiling, we can say that 25 500 lumens will reach the ceiling from each uplight. Twelve uplights on a 20m by 15m ceiling of 75% reflectance will give a luminance of:

$$B = \frac{12 \times 25\,500 \times 0.75}{20 \times 15 \times 3.14159}$$

which equals: 243.5 cd/m^2

This is well within the 500 cd/m^2 limit.

Calculating maximum luminance

To calculate the maximum luminance we revert back to a simple point source calculation. There is a case for using an area or linear source calculation if the uplighter 'bowl' diameter or length is large compared with the distance between the uplighters and the ceiling. For the majority of uplights, however, these formulae are not applicable as the 'bowl' is not a uniform diffuser. We will, therefore, consider here the case of a small standard discharge type uplighter "where the accuracy of the method is fairly good.

Let us take a room in which the ceiling height is 2.65m and the uplighter top is at 1.85m. The distance from the uplighter to the ceiling is 0.8m. The reflectance factor of the ceiling is 0.75, and the ceiling is fairly matt so we do not need to consider the effects of any specular reflection.

The formula for the luminance of a point over the uplighter is:

Luminance at a point

$$B_n = \frac{I \times \rho \times \cos\theta}{d^2 \times \pi}$$

or, more conveniently,

$$B_n = \frac{I \times \rho \times \cos^3\theta}{H^2 \times \pi}$$

Where H the height from the uplight to the ceiling = 0.8
As ρ, the ceiling reflectance factor, is 0.75:

$$B_n = \frac{I \times 0.75 \times \cos^3\theta}{0.8^2 \times 3.14159}$$

$$B_n = I \times \cos^3\theta \times 0.373$$

Now, using the data from uplight 1 at 5° intervals, with a lamp of 20.000 lumen output we obtain the results shown in Table 1.

You will see that, although the intensity I is fairly constant from θ = 0 to θ = 30°, the Cos^3 term decreases rapidly. Hence, the resultant luminance decreases as well. The calculation shows that the peak above one single uplight is comfortably below the limit of 1500 Cd/m^2. Even allowing for the contribution of neighbouring uplights the maximum luminance on the ceiling for this scheme should be acceptable.

If the ceiling height in the previous example had been 2.5m, rather than 2.65. the value for H would have been 0.65. This would have led to:

$$B_n = \frac{I \times 0.75 \times \cos^3\theta}{0.65^2 \times 3.14159}$$

$$B_n = I \times \cos^3\theta \times 0.565$$

This means that the luminance at any point will be more than 50% greater than in our first example, so our luminance at θ = 5°, would now be over the limit at 1609 Cd/m^2.

Overall, taking the contribution of neighbouring uplighters into account, this uplight, with the given lamp and ceiling type, should not be used with ceilings below about 2.6m if the peak ceiling luminance criteria is to be met.

Distribution

Now let us look at another uplight with roughly the same efficiency but with a different distribution. Going back to our original room with the ceiling at 2.65m and, using the data from the second uplight, again at 5° intervals, with a lamp of 20 000 lumen output, we obtain the results shown in Table 2.

If you compare the figures for B_n in the two tables, you will see that, although the two uplights have roughly the same total light output, the second one pushes more of its output off to the sides. In other words it has a wider spread.

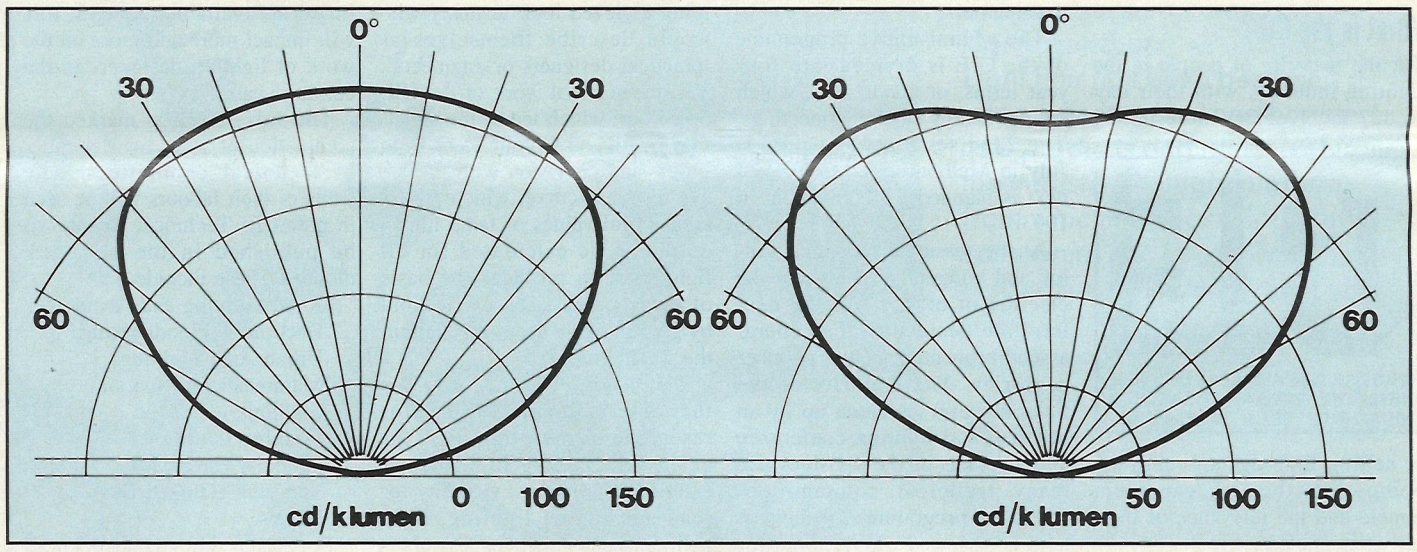
This can be seen from the two polar curves of the uplights. The second has a dip in the distribution directly over the uplight, where the cosine effect has little influence, and peaks to either side where the cosine term is dropping rapidly. The result of this is to even out the resultant luminance on the ceiling.

Batwing

It is always wise to look for an uplight that displays this type of batwing characteristic if you wish to achieve evenly lit ceilings without hot spots.

As you can see, the calculations for average and maximum luminance are not simple but neither are they particularly complex. Once you have carried out the calculations for one uplight scheme the next will be much easier. It is always wise to carry out these calculations, as to put in a scheme that does not comply with LG3 is likely to lead to complaints, certainly in areas where intensive use is made of the screens.

Paul Happold is chairman of the CIBSE Lighting Division Technical Committee.



Polar curves of uplights considered in calculations

TABLE 1

For θ = 0, I = 3210, Cos^{3}θ = 1.000, so B_n = 1197 Cd/m^2
For θ = 5, I = 3200, Cos^{3}θ = 0.989, so B_n = 1180 Cd/m^2
For θ = 10, I = 3180, Cos^{3}θ = 0.955, so B_n = 1133 Cd/m^2
For θ = 15, I = 3190, Cos^{3}θ = 0.901, so B_n = 1072 Cd/m^2
For θ = 20, I = 3200, Cos^{3}θ = 0.830, so B_n = 991 Cd/m^2
For θ = 25, I = 3120, Cos^{3}θ = 0.744, so B_n = 866 Cd/m^2
For θ = 30, I = 3060, Cos^{3}θ = 0.649, so B_n = 741 Cd/m^2
For θ = 35, I = 3020, Cos^{3}θ = 0.550, so B_n = 620 Cd/m^2
For θ = 40, I = 2960, Cos^{3}θ = 0.450, so B_n = 497 Cd/m^2

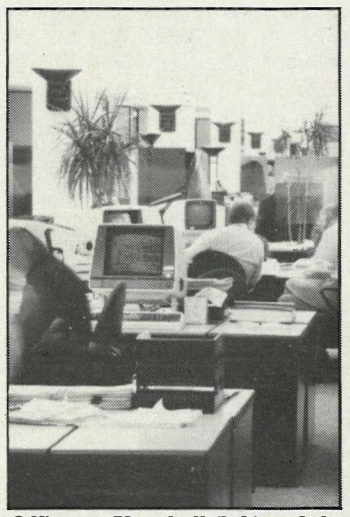
TABLE 2

For θ = 0, I = 2840, Cos^{3}θ = 1.000, so B_n = 1059 Cd/m^2
For θ = 5, I = 2880, Cos^{3}θ = 0.989, so B_n = 1062 Cd/m^2
For θ = 10, I = 2960, Cos^{3}θ = 0.955, so B_n = 1055 Cd/m^2
For θ = 15, I = 3080, Cos^{3}θ = 0.901, so B_n = 1035 Cd/m^2
For θ = 20, I = 3210, Cos^{3}θ = 0.830, so B_n = 994 Cd/m^2
For θ = 25, I = 3360, Cos^{3}θ = 0.744, so B_n = 933 Cd/m^2
For θ = 30, I = 3460, Cos^{3}θ = 0.649, so B_n = 838 Cd/m^2
For θ = 35, I = 3440, Cos^{3}θ = 0.550, so B_n = 705 Cd/m^2
For θ = 40, I = 3300, Cos^{3}θ = 0.450, so B_n = 553 Cd/m^2

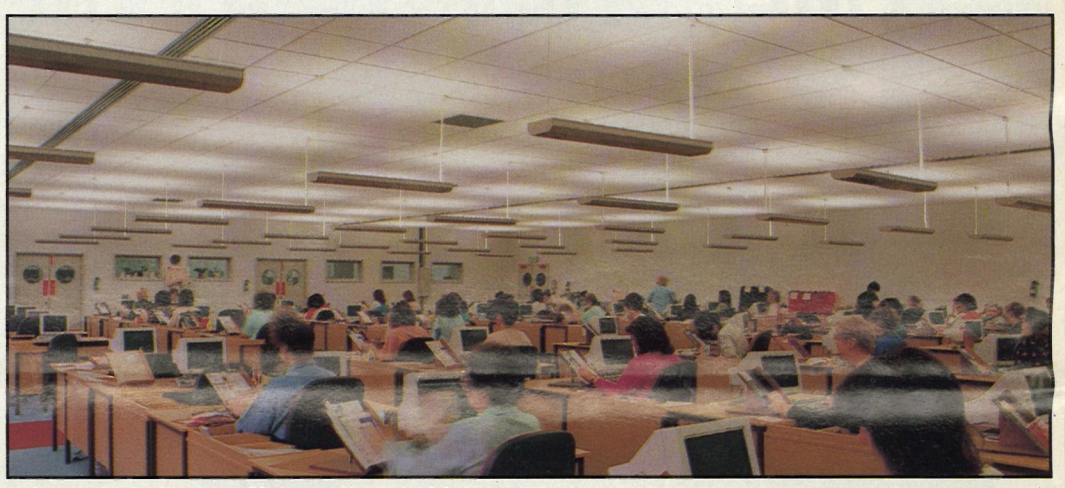
Lighting up the modern office

A lighting method which gives an evenly lit working space and only moderate illuminances on vertical surfaces – all this goes a long way to explain the popularity of uplighting in office areas where computers are used. We survey some recent lighting installations featuring uplighting.

Uplighters at Citibank are specially designed for dealing room use.



Offices at Vauxhall (left) and the Royal Trust Bank in Jersey are more conventional.



A large clerical area at Vernons Pools in Liverpool.

The popularity of uplighting has increased with the growing use of VDUs in the office environment. Using fairly simple design methods it is possible to minimise "hot spots" and prevent reflections in computer screens.

The negative side of the coin is that the quality of lighting achieved can be flat and lacking in interest. So a recent move has been to provide additional luminaires for interest, an approach which some of the schemes described below have adopted.

Uplighters were used to minimise glare on VDU screens in a city dealing room.

Lighting consultants and designers Electrolite combined with Quadrant Interiors to design and manufacture uplighters for Citibank.

The lighting scheme was designed to complement the bank's new desking system and provide a flexible and modern dealing room environment.

Compact fitting

Each luminaire uses two 150W metal halide lamps to provide maximum output from a very compact uplighter head, minimising visual obstructions. The luminaires achieve 500 lux at desk level and 300 lux ambient lighting.

Control gear is located in the base of the desk and is fully RFI screened to prevent interference with the sophisticated computer systems.

Feature wall lights follow the theme of the desk mounted units, using 26W PLC lamps with emergency options. Escape lighting uses 150W HQI/T wall lights, again following the same design.

All luminaires are cast in aluminium and polished, with moulded glass inserts in cobalt blue.

Reflectors are pressed from dimpled Anocoil to give maximum spread of light, with minimum hot spots on the ceiling.

Combination

Black finished uplighters complement a crisp modern interior at Vauxhalls. A combination of some 150 wall mounted, and 230 free standing Antena uplighters were used to light the company's new corporate headquarters in Luton, in a lighting scheme by Orgatech.

The uplighters, all in smooth hammered black finish, are each equipped with Osram 250W HQI-TS neutral white Deluxe metal halide lamps. The scheme produces an overall service illuminance of 300 lux at a colour temperature of 4300K.

Auxiliary lamp circuits, for instantaneous switch-on, are provided in 100 of the wall mounted units.

Local work station illuminance can be raised to 500 lux by 550 x 11W compact fluorescent task lights.

Lift lobbies are lit with wall mounted Antena fittings, using twin 24W compact fluorescent lamps, while stairways use Gemini wall mounted quarter sphere uplighters.

The use of wholly direct lighting is increasing in popularity. Surelux Lighting has used pendant uplighters in a large installation for Vernons Pools in Liverpool.

The luminaires, suspended one metre from the ceiling, are company standard extrusions, housing 4 x 36W Osram Dulux L, colour 21, lamps producing an even illuminance of 500 lux with facility for half switching to 250 lux.

Mixed light sources, with a predominance of uplighters, characterises a new, high-quality, bank development in Jersey.

One of the key features of the Royal Trust Bank of Canada's new offices, in St Helier, is the comprehensive lighting system designed and supplied by Thorn and installed by The Jersey Electricity Company.

Lighting designer Robert Mitchell's brief was to create an open, efficient environment - pleasing to staff and customers alike.

A variety of lighting systems have been used. Over fifty, free stading uplights with metal halide lamps serve the office areas. The versions chosen are slim, featuring an opal rim around the upper edge of the reflector bowl, and are sprayed a special cool-blue white.

Specials

Specially designed wall mounted uplights, with 16W 2D compact fluorescent lamps, supplement the free standing types in offices and corridor areas.

Other administrative areas are lit with 600mm square high performance modular recessed fluorescent fittings with low brightness louvres. A complex dimming and switching arrangement linked to these luminaires has been installed in the conference rooms. Many of the corridors are lit with 300mm square compact fluorescent luminaires with low brightness louvres. Selected fittings incorporate emergency lighting.

The scheme is designed to achieve a balance between functionality and initial impact. The light sources not only assist with the visual task, but also enhance the appearance of the furnishings.

Bankers can be expected to value energy efficiency, so an energy management system controls the lighting. Although the uplights are individually switched, the remaining lighting is controlled by a central programmable computer. Corridors, the entrance area and exits are, however, permanently lit with energy efficient compact fluorescent and low voltage luminaires.

At night the building is also externally lit with compact tungsten spotlights. Four decorative amenity lanterns, sourced from Thorn's Scandinavian operation, give a continental appearance.

Sweet and low

Low brightness is the key to employee comfort when working at VDU screens. *LEN* looks at recent examples of office lighting design

A more conventional approach to office lighting schemes is to use low brightness luminaires falling into Categories 1-3 of LG3. The choice of luminaire depends on the extent and density of use of VDUs within the office area.

Increasingly these luminaires need to be incorporated into commercial ceilings, many of which are also used for air handling. This requires both the coordination of building services and the ability of the luminaire either to handle return air or to cope with the cooling effect of air flow over its casing.

Training company, System Applied Technology, believed the accuracy and productivity of producing computer generated documents was directly related to the comfort of the office environment. So it specified high frequency recessed fluorescent fittings for its programming office.

The result was a transformation in office efficiency.

Appraisal

The fittings, with low-glare, wedge blade louvres, replaced standard opal diffusers and were installed after extensive appraisal of alternative systems – including uplighting and several types of recessed and surface-mounted fluorescent luminaires.

The choice was Sylvania Multiline 600m by 600mm recessed fittings with double optics specular VDT louvres, each containing four energy saving lamps.

At full usage, a 500 lux light level is achieved. When a lower lighting level is needed, for intensive VDT use, each fitting can be switched to operate only two of the lamps.

Moorlite Electrical created an entirely new luminaire design for Grand Buildings, the Victorian landmark in Trafalgar Square, formerly used as The Grand Hotel.

Grand Buildings is centred around a ground-to-roof atrium. The ground floor accommodates retail tenants and the mezzanine is split between retail and offices. The seven floors of offices around the atrium are left as an open plan shell for tenants to fit out.

Energy efficient, compact source fluorescent lamps are used in more than 6000 PLB luminaires designed for the metal pan demountable ceiling system. The 325 x 150mm single 24W lamp PLB luminaires give uniformity of illuminance and comply with CIBSE LG3 recommendations for high VDT usage.

TCS 660 luminaires from Philips, with pendant mounting and wiring-in facility, are used in the private sector housing offices of the Lancaster City Council.

Layout

Eight TCS665 and TCS664 luminaires are used in combination to form three oblong arrangements. They are mounted 500mm down from the 3.4m ceiling, level with the picture rail.

The two luminaire types have dark appearance mirrors, providing low-glare for VDU operations. The TCS665 has an uplighting facility, giving indirect ceiling illumination of 500 to 600 lux.

In Peugeot Talbot's head office in Coventry, nearly a thousand 1.5m 80W fluorescent fittings, dating back to 1960, have been replaced by 368 high performance fluorescent modular fittings from Thorn Lighting. The new fittings house three 36W tubes, operated by electronic ballasts and use low brightness Category 2 (PG3) louvres. The result is a dramatic reduction in lighting load from 92.3KW to 40.84 and an increase in illuminance from 350 to 500 lux. Overall, efficiency has improved six fold from 6.7 to 1.6 W/m^2/100 lux.

One of the biggest combined lighting and ceiling contracts to be undertaken by Ecophon International uses two thousand luminaires from the new Ecolux range. The ceiling system has been installed at Midland Equity New House in Southwark, London.

Architects RMJM wanted to create an impression of space using a ceiling system whch would incorporate specal lighting effects. They finally produced a system of 900 x 600 Focus Fine Line tiles spanning between rows of lights.

The lighting is a linear system consisting of special 1200 x 300 Forte Luminaires interspaced with infill louvres for air handling.

Over 800 purpose-made, return-air handling VDU luminaires were designed and manufactured by RADA Lighting to integrate with a special ceiling design in Bridewell House in Bristol.

They were designed to locate in prepared apertures, 1232mm by 257mm, in the metal ceiling tiles and to align with supply air grilles also pierced in the tiles.

The luminaires have RADA's Quasar-style VDU louvres to CIBSE recommendations, with wedge cross vanes and closed ends. Manufactured from high-grade aluminium, they are suitable for tri-phosphor lamps.

Most of the luminaires are twin 36W but there are also a number of single lamp models of the same 257mm width, needing special louvre design to achieve the required low brightness light distribution.

All the luminaires have a return air-handling facility and incorporate a removable reflector gear tray with low-loss control gear and electronic starters.

RADA also supplied 11W and 18W, 300mm square compact luminaires with a matching louvre and a 6W emergency lamp incorporated for escape routes. These were installed in the landings surrounding the atrium of the building.

Lighting in office areas – Grand Buildings, Trafalgar Square.

Compact luminaires used in the atrium at Bristol's Bridewell House.

Low brightness lighting at Peugeot Talbot's headquarters.

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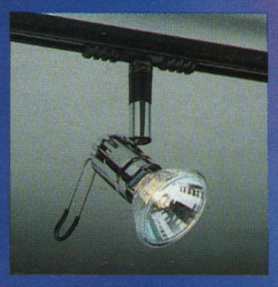

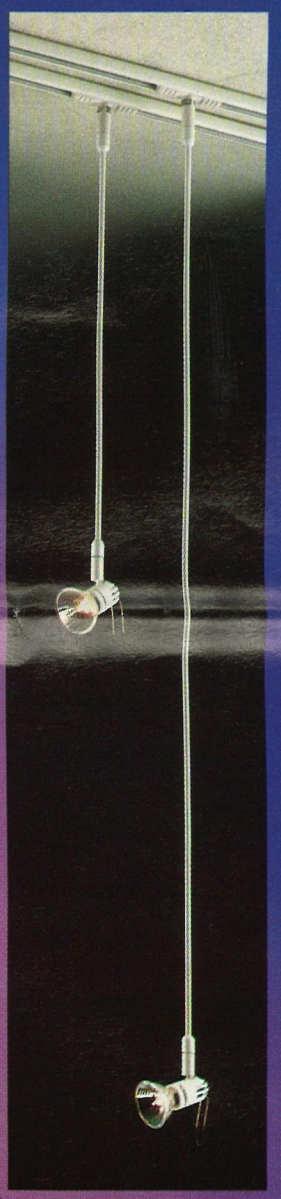

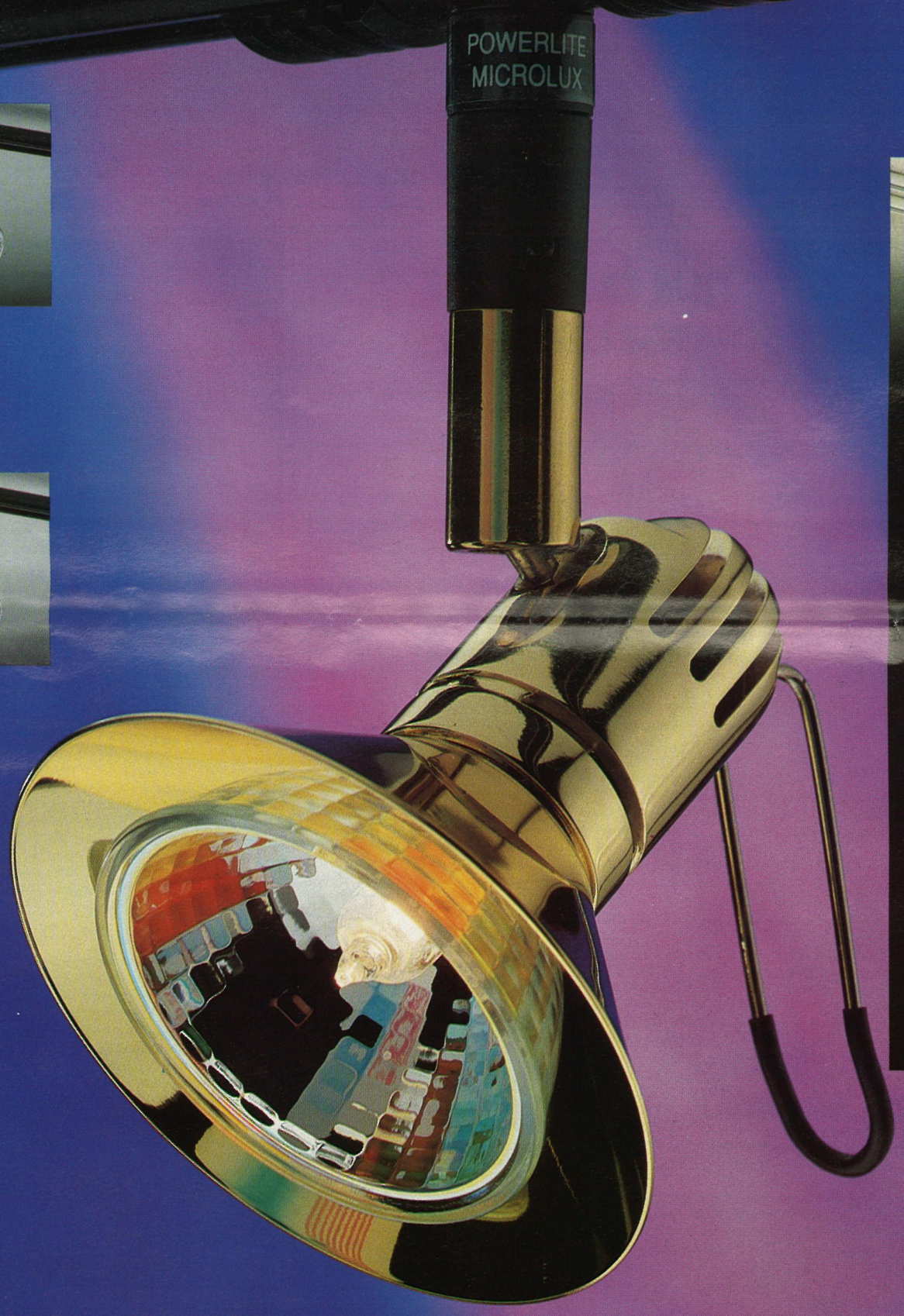

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Keeping a high profile

Exterior lighting installations are becoming increasingly popular for prestige office developments. *LEN* takes a look at some recent schemes.

In a prestige commercial development floodlighting can ensure a building stands out from its environment 24 hours a day.

One of Liverpool's important waterfront buildings – the Royal Insurance Company's UK head office – has recently been dramatically lit with floodlights from Siemens Lighting. West Cheshire Electrical used a total of 151 luminaires, including Siemens Solarflood, Euroflood and Multipurpose floodlights.

NAV (SON) lamps were used to complement the colour of the building, while a smaller number of MBF (HQL) lamps provided visual interest on the balconies.

Wattages were matched with luminaires to provide precise beam control for each part of the building – with light levels descreasing towards the top. By contrast the towers, a key feature, are lit evenly from bottom to top.

Further refinement was achieved by linking the network of luminaires to the building management computer. Receiving signals from external light sensors, the computer controls the entire lighting installation on all 12 levels of the building.

On city centre sites security can be a major consideration. The external areas and car park of the Hammersmith Centre, in London,

Floodlighting installation at Royal Insurance building, Liverpool.

Sympathetic treatment for a neoclassical building – Plantation House.

needed 10 lux to provide sufficient illumination for the operation of CTV cameras.

Thirty post-top luminaires in spherical smoked glass were used, each with one 70W SON lamp and mounted on 10m columns at six to seven metre intervals.

The fascia of the building was floodlit from a HNF003 projector with a 400W SON/T lamp.

Energy saving is a key issue of the nineties and one with which electricity companies are becoming increasingly identified. The Severnside Area office of South Western Electricity has a new green floodlighting scheme – green in colour, and "green" in efficiency.

The green colour comes from 12 special Osram mercury halide lamps, rated at 400W each, fitted in floodlights with a precise fan-shaped light distribution. The floodlights were manufactured by Franz Sill.

The corners of the sharp rectangular building are picked out with narrow beams of white light from Thorn 150W Arcstream floodlights. Two of these are also used to highlight the adjacent microwave transmission tower, producing an appearance of delicate tracery reaching towards the sky.

The total electrical load is 6.9kW, replacing the earlier installation with a total load of 21kW.

Plantation House is a prime office building in Fenchurch Street, in the City of London. Built in 1937, it has an imposing classical facade, which dominates the surrounding architecture.

The building has just received a major internal refurbishment and external facelift, and was opened by the Lord Mayor of London in June. Equation Lighting Design was appointed to ensure that the facade retained its attraction at night.

Medallions

The stonework has been cleaned and the metalwork of windows and canopies has been newly finished. The medallions of the original trading companies associated with Plantation House have also been refurbished.

The lighting installation accents the height of the building when it is first seen from either direction along Fenchurch Street.

The lighting treatment is based on a series of layers, using the classical arrangement of the architecture. The overall scene starts at the building's base, growing through the vertical arrangement of columns, then via the entablature to the stonework features and flagpoles at the head of the facade.


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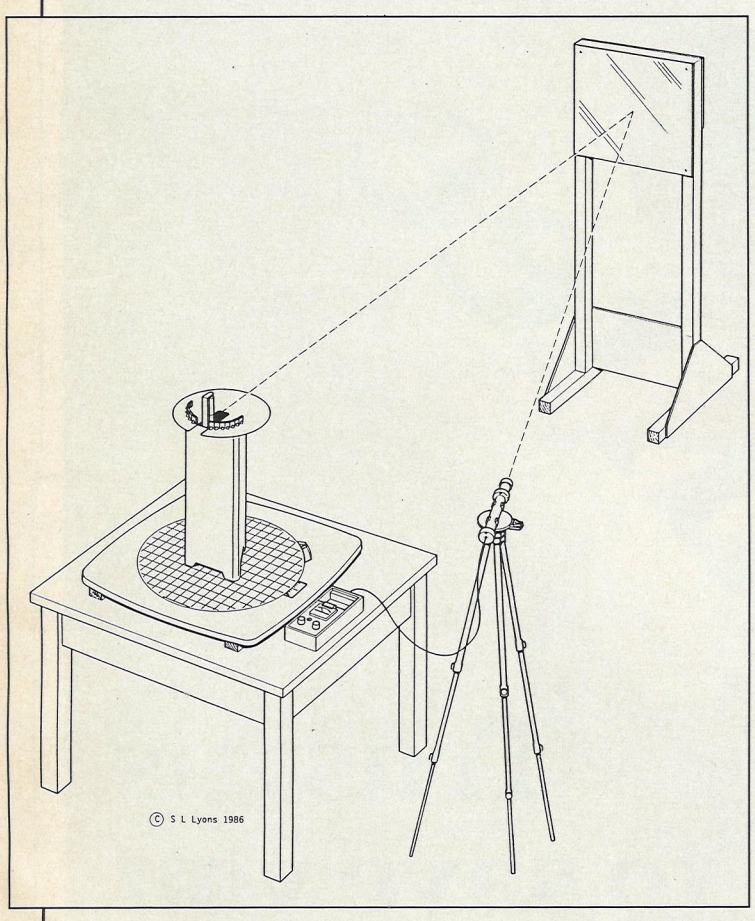
Accuracy of goniophotometry

Eric Chapman, Belvoir Lighting Consultancy, comments on Peter Everard's work on distribution photometry.



The Lyons goniophotometer set up to photometer an analogue or segmental mirror array. A reflector contour may be used without even needing to make a prototype of the proposed design.

Increasingly, lighting specifiers are demanding full photometric data to be provided by suppliers, though I suspect that many who call for it may not be able to interpret the data meaningfully.

The accuracy of luminaire and light source intensity contours provided by suppliers is usually taken on trust, but there might be some surprises if the same or another sample of the product they specify were tested again. If one sends the same sample luminaire to several certified photometric laboratories, each will doubtless test it carefully, yet the results will not be identical.

In my experience, much published photometric data should be regarded merely as an indication of the expected performance, and not as an accurate or truly representative curve – and this applies even to photometry performed by reputable photometrists. Without doubt the tested sample will have been set up most carefully, with all its surfaces cleaned, and with the optical parts in alignment; but, what the photometrist cannot know is whether the test sample is truly representative of the products coming from the production line. He may not know, for example, what manufacturing tolerances of angles and dimensions will be; nor how the product may perform with a lamp of the same type but from a different batch – for lamp dimensions are subject to tolerances, too.

Optical performance

In his paper* Mr Everard discussed the optical performance of 12-V tungsten-halogen dichroic lamps. I have had occasion to investigate the optical performance of such lamps from several manufacturers, and of differing quoted beamspreads. I found filaments not located centrally to the reflector, and reflectors not located centrally and axially to the lamp pins.

Published figures of beam spread angles were largely apocryphal, as was the data for symmetrical distribution of the lamps I tested. Unless the manufacturing tolerances of some of these lamps have been radically improved in the last few months, there is little point in Mr Everard calling for improved accuracy of testing to remove this source of error!

No purely academic

This is not mere academic quibbling, as the installation designer puts his firm's reputation on the line by accepting the supplied photometric data which could lead him into litigation if the product or installation failed to meet the client's requirements.

One cause of inaccuracy is the common practice of averaging the test results from the two 'halves' of a luminaire. The actual performance of each half can be wide of the required mark, but it is possible that the average curve will be within the specification.

Few lighting engineers routinely perform photometry, and most have not seen a goniophotometer since their student days. There is no substitute for 'hands-on' experience. Computers are good servants and can expedite the calculation process, but they do not serve well if supplied with inaccurate input data. Great sophistication of equipment is not required; the vital input data can be readily obtained by a suitable photometric measuring device and a reliable calibrated turntable.

The Lyons Goniophotometer (see figure) provides these basic necessities, and – in view of your reporter's remarks – goes beyond the capability of many highly sophisticated instruments since it is graduated in half-degree steps enabling quarter-degree precision. This simple instrument, costing under £2000, can be set up quickly and will produce results in a fraction of the time required by its big brother. The cell output can be inputted to a computer, speeding and simplifying the operation. As a development tool it has value in providing an independent test facility which any consultant or engineer can use with minimal training. Further, the Lyons goniophotometer can be dismantled in minutes and stowed away in a cupboard, releasing valuable space for other activities.

In carrying out photometric testing, it is easy to assume that there are smooth gradations of intensity between successive test angles; but the photometrist should consider the appropriateness of his measurement intervals, and should investigate any sharp changes of value, or marked asymmetry.

Need for accuracy

Mr Everard is to be congratulated for directing our attention to the need for photometric accuracy, and pointing out the dangers of selecting angular steps in photometry which are too large for their purpose. However, there are quite a few other fundamental factors which can improve the accuracy of photometry and its proper interpretation.

* See LEN, April 1991.

Compact lamps and energy saving

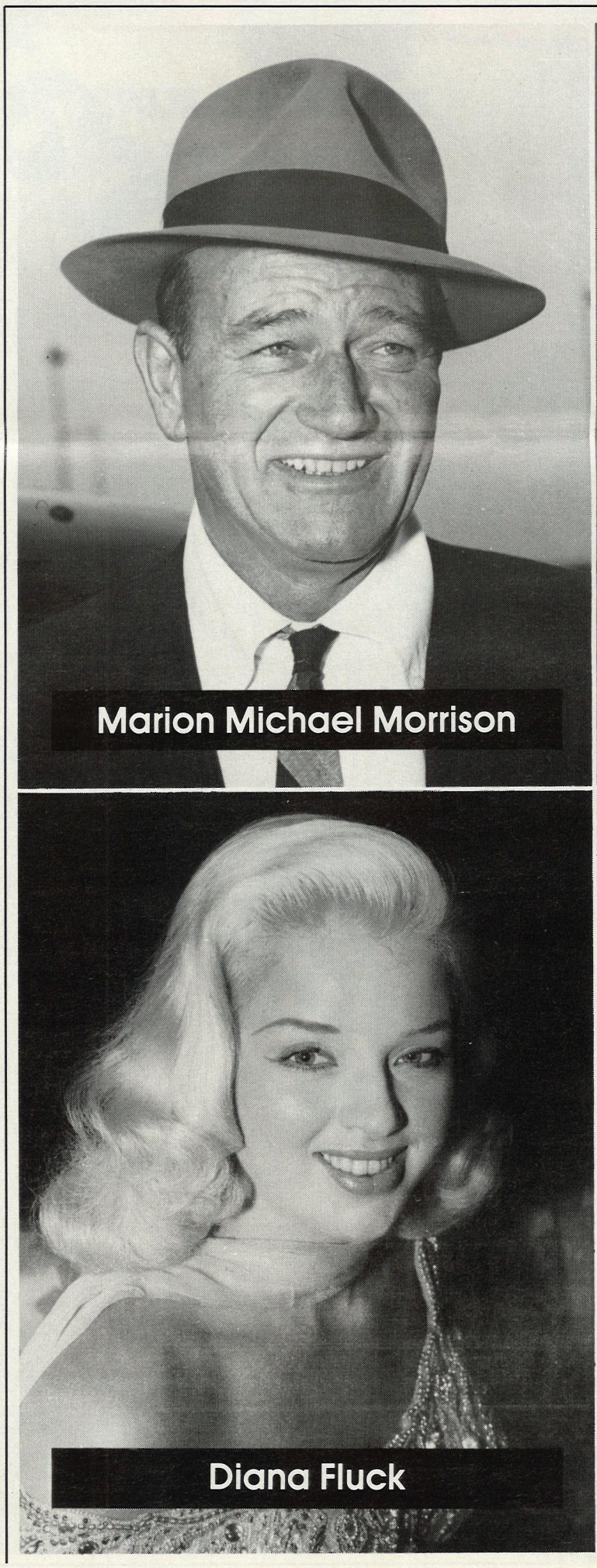
S. Nicholson, of East Midlands Electricity, argues that regional electricity companies are promoting energy efficiency.

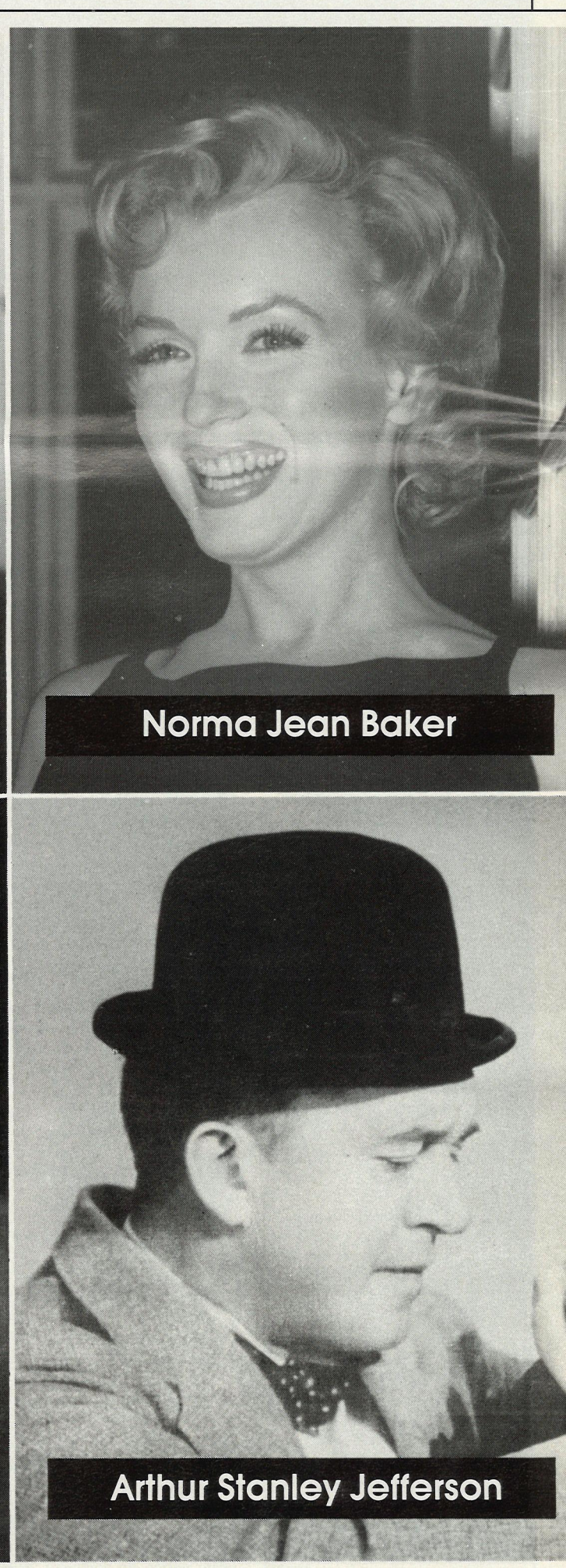
Mr Robin Aldworth of the Lighting Industry Federation mistakenly suggests in his article in your July 1991 issue that the issue of power factor in compact fluorescent lamps is a red herring raised by the supply companies, apparently in contravention of their requirement to promote energy efficiency.

East Midlands Electricity was among the first regional electricity companies to actively promote the new CFLs launched by the manufacturers last year (aimed predominantly at the domestic market). Our marketing has attracted a significant response from customers interested in using the new lamps. We retail a range of bulbs in our shops and promote their uptake by a prominent display board and free associated literature.

Joint venture

In addition, our company has initiated a least cost planning project at Great Gonerby in Lincolnshire. This is a joint venture with Neighbourhood Energy Action and the South Kesteven District Council. It ensures good





levels of thermal insulation, the use of CFLs, provides energy efficiency advice to residents in a community of 150 houses and the effectiveness of (electrical) demand side management will be monitored.

Commitment

In these and other activities, East Midlands Electricity has demonstrated a firm commitment to promoting energy efficiency in a progressive way.

Our concern with CFLs is that they clearly sometimes fall short of their manufacturer's claims:

- ☐ Investigations (eg Electrical Review April 1991), show that light output is generally less than the equivalent GLS wattage quoted. This is certainly supported by the perceptions of many of our customers.
- ☐ Many of the CFLs produce harmonics which exceed the recommendations of the IEC and cause system pollution which can adversely affect the appliance use of adjacent customers.
- ☐ Most CFLs do have a low power factor. This simply means that more power needs to be generated (in volt amps) to supply the energy requirements of the lamp (in watts). It is clearly in the interests of any supply company to ensure high power factors in order that their distribution system isused as efficiently as posssble. At least one lamp wtih a high power factor is available and more should be encouraged from other manufacturers.

Ill founded

Misleading syggestions that regional electricity companies are discouraging the use of CFLs and not promoting energy efficiency are ill-founded and misplaced. It is in the interests of our mutual customers that supply companies and leading lamp manufacturers continue the constructive dialogue they have enjoyed for many years. This will ensure that CFLs can be fully developed to cost-effectively make a positive contribution to worthwhile energy efficiency.

Long life fluorescent tubes - fact or fiction?

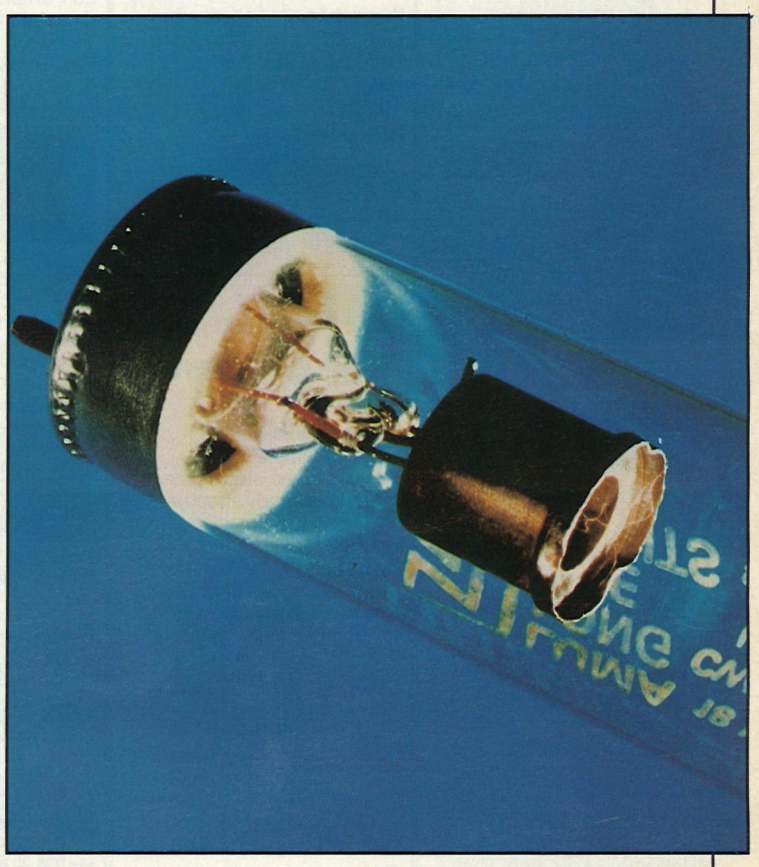
Arthur Rowley looks at approaches to prolonging lamp life in fluorescents, and the advantage of long-life tubes.

In recent years a number of fluorescent tubes were marketed as longlife tubes but did not deliver the claimed performance.

The reason behind this may have been a difference in the measuring method employed. It is generally known that if a fluorescent tube is not switched on and off, its life is extended greatly as loss of emitter is the major cause of lamp failure and emitter loss is greatest when the lamps are switched on.

This difference in life testing results in fluorescent tubes of North American manufacture having claimed lives of over 20 000 hours and European tubes only 7500 hours. If the North American tubes are measured in the European way their useful lives are similar to the European tubes.

However, a Swedish manufacturer (Luma) has developed a new type of lamp with a claimed useful life of over 27 000 hours for the bi-pin tubes. Based on the use of switchstart (SS) or electronic start (ES) control gear, a 3 hour switching cycle (170 minutes on, 10 minutes off) and measured to when % lamp survival x % initial lamp output = 70% of initial as the useful life (ie the useful life for an installation).



The Luma lamp, showing cathode assembly redesigned to minimise emitter loss.

These lamps have been used in Scandinavia for some years now and the claimed life has been fully justified in operation.

A single-pin tube (for use in Ex'e' luminaires) has been developed with a useful life of over 20 000 hours and has been used successfully in ABB/CEAG's electronic high frequency (HF) control gear eLLk luminaires. Therefore, unlike previous long life tubes, the Luma tube has met its claimed life in practice.

How is this long life achieved? The loss of emitter is the main cause of lamp failure and so three routes are possible to longer life:

- ☐ increasing the amount of useful emitter in/on the cathode;
- ☐ reducing the rate of emitter loss;
- ☐ a combination of the two above measures.

Lamp manufacturers have continuously improved fluorescent tubes over the decades and additional improvements to the cathode are unlikely to greatly improve tube life although some gains may be feasible. In the event, emitter loss by redesigning the cathode assembly was the route adopted by Luma

The cathode has been surrounded by a non-electrical connected anode screen of iron. The opening on the discharge side is covered by a mica screen with a hole in it to allow the electrical discharge to remain unaltered. By forcing the discharge to pass through this hole, the electron density increased near the electrode, reducing the electrode drop and reducing the temperature and so reducing emitter vaporisation.

While redesigning the cathode assembly, the amount of emitter on/in the cathode was optimised and this combination of increased emitter and patented cathode assembly results in the very long useful lives achieved.

For the mono-pin tube type, Luma have used triphosphors to combine high output and quality with their 36W tube emitting 3350 lumens Ra 85 compared with 2800 lumens Ra 53/66 for the 40W mono-pin tubes (100 hour values). The standard tube is a cool white (CCT = 4000K); however, warm white and middle white (3000K and 3500K) tubes are available to order.

For the bi-pin tubes, longlife versions are available with Ra indices of 85 and 70 with similar light outputs, for the RA 85 tubes, to GE-Thorn Polylux/ Philips colour 80 tubes and the Ra 70 tubes are designed to replace standard tubes such as GE-Thorn Pluslux/Philips White 35 supplying better quality light.

Minimising maintenance

The main reason for using long life fluorescent tubes is reduction in maintenance costs. For the bi-pin tubes, lamp replacement can be reduced from once a year to once every three years without sacrificing the quantity or quality of the lighting. Waste (notably mercury) released into the environment is minimised and the cost of stocking spare tubes can be reduced.

Based on a factory using 500 twin 1500mm luminaires, the maintenance savings will be £3333/year, assuming lamp replacement labour costs are £10/luminaire. Tube costs are ignored, as the cost of 3 normal tubes is more than the cost of 1 long life tube and electrical costs are the same.

The cost savings achievable in offshore installations using mono-pin tubes are even greater, due to high labour costs.

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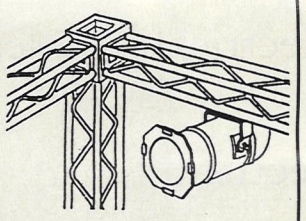

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52-62 Brasenose Road
Bootle, Merseyside L20 8HG
Tel: 051-922 0052
Telex: 629135
Fax: 051-922 0099

CLASSIFIED ADVERTISEMENTS

081-975 9759 — 081-975 9759

Lighting Sales Engineers

KALMAR

Kalmar have a long record of supplying high quality lighitng to discerning clients on a varied range of projects in the UK and abroad.

We are introducing a major new product into our existing range and are looking for two sales enginers to cover London and the Home Counties.

Successful applicants would have a minimum of ten years' experience in the industry, will be in contact with architects, designers and consultants, used to working on their own initiative and be keen to be part of a compact, enthusiastic team.

For the right person the reward is there.

If you think you have the skills required write, with full details of qualifications and experience to:

The M.D.,
Kalmar Lighting,
19 Dacre Street, London SW1H 0DJ

SALES AGENTS

required for LONDON/SOUTH EAST, MIDLANDS and SCOTLAND

As part of our current expansion plans we require experienced agents to promote our comprehensive range of emergency lighting and fire detection products to specifiers, contractors and wholesalers within the above areas.

Please contact: Simon Perrott or Elizabeth Laverton
ARMADA LIGHTING AND FIRE LTD
Huxley Close, Newnham Industrial Estate,
Plympton, Plymouth PL7 4JN
Telephone: 0752 342942

C. L. E.

Can you 'sell' mainstream fluorescent luminaires in our current competitive market, to Consultants, Contractors, Q.S. and Architects?

The Company's genuine desire to maximise your success is supported by:

CAD CAM designed luminaires
Computerised lighting design
In-house louvre design and manufacture
Top quality value engineered products

Good salary & commission.
Normal major company package of car, expenses and pension.

Please contact in confidence:
John Munnings, Creed Light Engineering Ltd,
Hillside Gardens, Braintree, Essex CM7 7HB
Tel: 0376 48777 Fax: 0376 44108

BUSINESS FOR SALE

For sale as a going conern. All machines, patterns, tools, stock and WIP, ~~n~~eccessary to manufacture a complete range of Reproduction Victorian Street Lighting. Ideal add on to an existing business. Only £25,000.

Contact Box No. 1506, Maclean Hunter House,
Chalk Lane, Cockfosters Road, Barnet, Herts EN4 0BU

EXPERIENCED SALES AGENTS REQUIRED

For established manufacturers and importers of lighting and security products nationwide. Selling nationwide to Wholesalers.

Please reply to Box No. 1507
Lighting Equipment News, Maclean Hunter House,
Cockfosters Road, Barnet, Herts EN4 0BU

CLEARANCE OF CERAMIC TABLE LAMPS

- All colours, shapes & sizes
- Large range
- Low factory prices

Contact Mr Chris:
Tel: 081-444 5630 Fax: 081-444 3458

Manchester based manufacturer of commercial lighting products, requires commission agents with established contacts within the electrical wholesaling markets.

Agents required for most areas of the UK.

Reply in the first instance to:
PO Box 42, Southeast District Office, Manchester M12 6FB

MORE CLASSIFIED NEXT PAGE...

SALES ENGINEER LIGHTING CONTROLS

NORTHERN/MANCHESTER BASED

Home Automation have an enviable reputation within the electrical wholesaling industry for innovation, quality and design.

We now seek an enthusiastic and imaginative achiever to introduce our expanding range of lighting control products to contractors, specifiers and consultants, as well as an existing wholesaler base. You will already be working within the lighting industry and need a new challenge.

Please send your CV with covering letter to Alex Cother, UK Sales & Marketing Manager at the address given below.

Home Automation

Home Automation Limited
Bumpers Way Chippenham Wiltshire SN14 6LF **DELTA**

OPPORTUNITY FOR SALES AGENTS

We are seeking agents country wide to promote our "Spectrum" range of luminaires. Established contacts with specifiers including architects must be proven

Full colour brochures available to assist with selling and marketing range.

Please write to: The Managing Director
British Electric Lamps Ltd
58 Spencer Road, Wimbledon SW19 4EN

SALES OFFICE & MARKETING ASSISTANT

Commercial Lighting Company based in Wickford, Essex requires an experienced person with thorough knowledge of light sources and commercial lighting fittings and able to run a sales office/marketing functions proficiently.

Salary negotiable

Apply to:
The Managing Director on Wickford (0268) 762299

SALES AGENTS REQUIRED

Newly established lamp distribution company requires area sales agents to call on wholesalers, OEM's and large end users.

For further details, please contact:

Box No. 1508, Lighting Equipment News,
Maclean Hunter House, Chalk Lane, Cockfosters Road,
Barnet, Herts EN4 0BU.

JUST LIGHTING LTD.

requires

SALES AGENTS

Applications are invited from active sales agents in all areas to sell our range of BRITISH MADE lighting to Electrical Wholesalers. Applicants should have a proven track record in this field with established contacts. Range of products includes: *Low voltage track and spotlights, low voltage downlights, Transformers (large range of tupes and sizes), Mains track and spotlights, Mains downlights.*
Please send full details to The Managing Director, Just Lighting Ltd,
Units 8 & 10 Kirby Road, Nelson, Lancs BB9 6RS

Engineer with Capital and Sole UK Distributing Rights to Import full range of Quality Ceiling Lighting from Important German Manufacturer seeks Individual or Company with experience of Lighting Market/ Industry with Aim of joining forces to promote Range.

Mr. L. Honey
22 Heathview
London N2 0QA
Tel: 081-883 8696

I.T. LITETRONICS LTD

Be a Litetronics Agent and sell our 16,000 hour GLS, 10,000 hour reflectors and 8,000 hour Candle Lamps, direct to End Users.

Write to Litetronics Lamp Ltd 1 Stoke Park Mews, Coventry CN2 4NV or Fax: 0203 441501 with details of your area and contacts. 20% commission.

SALE AGENT

Sales Agent operating in the Irish Republic, with established contacts with specifiers and wholesale trade, seeks contacts from manufacturers requiring representation in this market

Please reply to Box N o. 1510

Lighting Equipment News, Maclean Hunter House, Chalk Lane, Cockfosters Road, Barnet, Herts EN4 0BU

TO ADVERTISE HERE CALL ALASTAIR MOYES ON 081-975 9759

AUSTRALIA needs YOU

Commission sales personnel needed to sell an attractive innovative range of quick-fit efficient DOWNLIGHTS to lighting retailers, D.I.Y. outlets and electrical wholesale distributors. Sales agents already servicing these outlets would be of great interest.

YORKSHIRE — SCOTLAND — SOUTH WALES — SURREY

Immediately available territories, other areas shortly. Stocking and distribition will be via our London warehouse. Excellent delivery service guaranteed.

Contact:
Ben Mills by Fax: 010 61 2 708 4008 with details.

ALL-ROUND SALES

Small specialist lighting distributor operating in niche market requires salesperson to develop sales across a wide spectrum, including architects, specifiers, wholesalers, and specialist outlets.

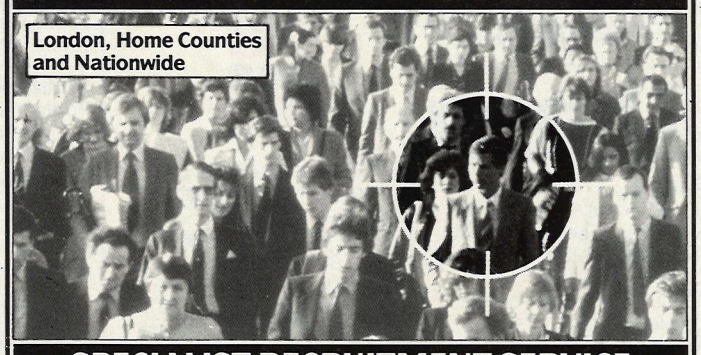
You will ideally:

- have a proven sales record, with ability to work on own initiative, identifying and exploiting market opportunities
- display degree of technical knowledge, with an interest in creative lighting design
- want to work in a small company

We are offering an attractive package to include OTE £25K, plus car and bonus. This is a real opportunity to join a young, expanding company! **interested??**
Apply in strict confidence *NOW* with full CV to:

O.L.S Chris Thornton, 352 Old York Road, London SW18 1SS
Tel: 081-877 0144

Top Sales Professionals



SPECIALIST RECRUITMENT SERVICE FOR THE LIGHTING INDUSTRY

FOR CANDIDATES: Excellent Career/Promotion opportunities with leading Manufacturers and Distributors in the Lighting Industry.
Sales Professionals £16/22K + CAR.
Management Positions £22/30K + CAR.

FOR CLIENTS: Immediate access to high Calibre Candidates, plus tailor-made Advertised Searching and Headhunting Service.

For further information call Dominic Grudzien

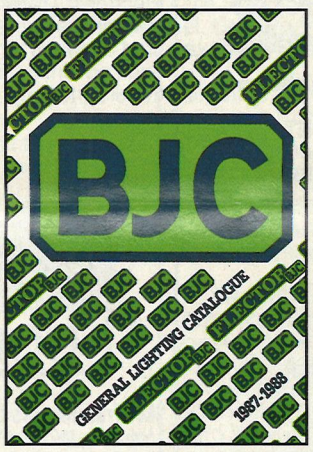
James Knight

SALES & EXECUTIVE SEARCH
Knight House, 29-31 East Barnet Road, Barnet, Herts EN4 8RN (Fax: 081-449 6262)

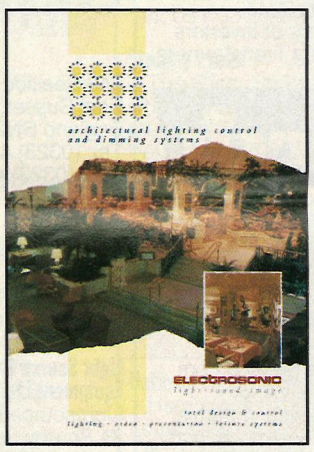
BUILDING THE WINNING TEAM

Tel: 081-449 4111

CATALOGUE DIRECTORY



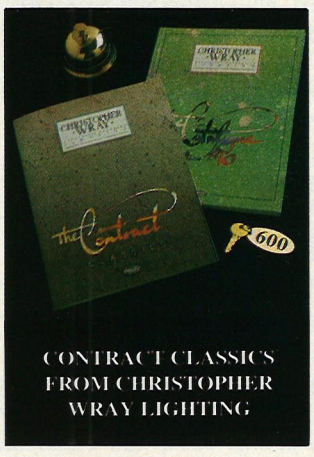
Acorn Lighting are pleased to annouce that the BJC product range has been added to their portfolio of products. BJC offer a range that includes street & amenity lighting, industrial lighting, floodlighting & lighting for security. The whole product range is manufactured to the highest quality standards:
circle 90



Whatever the application, from hotel to museum, shopping complex to a church, Electrosonic's range of architectural lighting control and dimming systems can meet your requirements. Electrosonic's expertise is world renowned, with over 25 years' experience. From a single channel dimmer up to a custom-built computer controlled network, Electrosonic is there:
circle 91

Catalogue Update
Introduced by JSB Electrical is a range of prestige luminaires which includes the new Carina with crystal glass and a brass body. It is available as an emergency luminaire in maintained, non-maintained and slave options with a matching mains version. All are available with a choice of surface or semi-recessed mounting:
circle 92

Channel Safety Systems Ltd announce the launch of 'Couturier', a new concept in emergency lighting for the ninties. An inovative range of emergency luminaires designed to present an opportunity to break away from the stolid conventions of the past and apply refreshing creativity to this sector of the market:
circle 93



The Contract Classics from Christopher Wray Lighting is a 64-page full colour supplement to the company's Catalogue Number 10 especially designed for the contract market. With full technical information and advise on energy saving systems, The Contract Classics highlights the enhanced service Christopher Wray Lighting offers from each of thirteen outlets:
circle 94

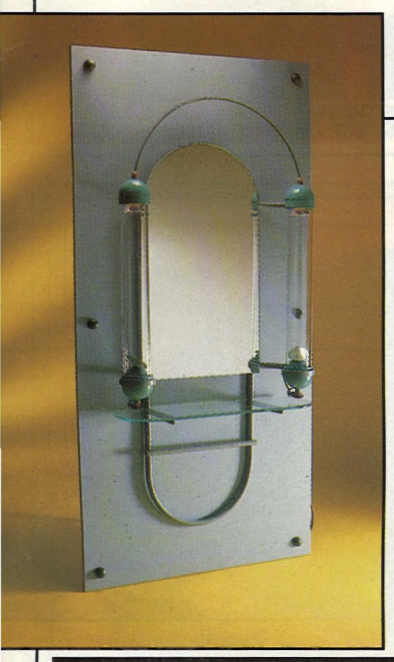
The Wieland LYNX system is a new concept in modular wiring, designed especially for use with luminaires in office buildings. Based on highly successful ST18 connector range, LYNX offers the benefits of system adaptability, combined with substantial savings in installation time and servicing costs:
circle 95

The launch of Kotzolt Lighting (UK) Limited in the UK coincides with the release of its comprehensive price list. Aimed at all specifiers and users, the 92-page full-colour brochure, has been designed to provide a useful and detailed buyers's guide to Kotzolt's extensive range of Tube Systems, Modular, Display andSports lighting luminares:
circle 96

LIGHTING CATALOGUE

CATALOGUE DIRECTORY

Every year companies spend huge amounts of time developing catalogues and one of the biggest problems they face is publicising and distributing them to specifiers. If you have a catalogue, printed or in production which is targeted at lighting specifiers then this section can help you. Contact: Alastair Moyes 081-975 9759: circle 97



New idea for mirror lighting

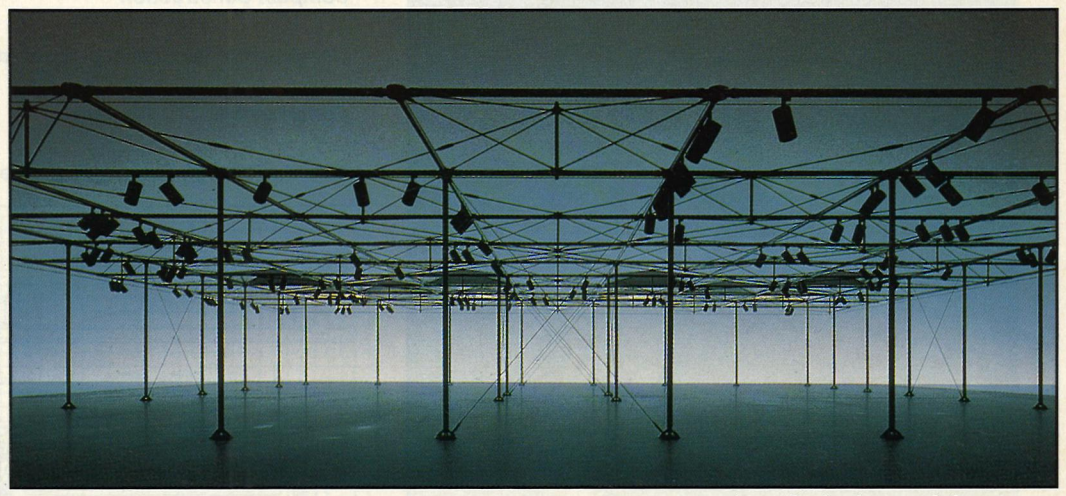
An innovative approach to the problem of mirror lighting has been designed by Dudley Roberts.

His arch-shaped mirror, with integral shelf, has a low voltage spotlight mounted on each side of the mirror. Below the spotlights, just above the shelf, are two small, circular, adjustable mirrors in spherical housings to match the spotlights.

The spotlights throw light downwards onto the small mirrors, which are adjusted by turning a coloured band around the housing, to direct light where it is required on the face, for example under the chin or nose.

A sealed, vertical glass tube at each side of the mirror connects the spotlights and small mirrors and prevents the lamps from being touched.

Mr Roberts' design has won the £1000 Emess award offered to new designers.



Award winning modular lighting system – Axis.

Modular lighting wins award

Axis, a modular lighting system, designed by Roy Fleetwood Ltd, has won the architecture/structures category in the Alexal 91 Aluminium Design Competition. This competition aims to recognise design excellence using extruded aluminium.

Alexal 91 is sponsored by the Design Council's Engineering magazine, in conjunction with the Shapemakers (the Aluminium Extruders Association).

Commissioned by Erco, Axis was designed to provide large span track lighting using a modular system made from extruded aluminium with an integrated power supply. It can be supported on columns or suspended from the ceiling.

Funding for education and research

The Chartered Institution of Building Services Engineers cautiously welcomed the government White Paper *Higher education – a new framework,* which sets out proposals to extend higher education opportunities and remove the distinction between universities and polytechnics.

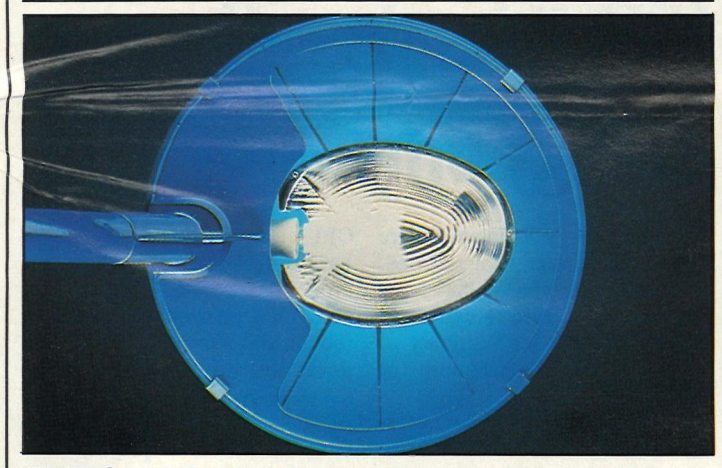
However, CIBSE has warned against diluting the value of degrees or diverting educational resources away from the technician sector. It particularly stressed the need for construction industry representation on the proposed new funding body and asked the government to introduce positive incentives to encourage industry funding of education.

The institution has also called for greater government leadership in the funding of applied research, which is needed to allow the UK to compete effectively in Europe.

All change at Cannon Street

The major refurbishment of BR's Cannon Street Station includes platform lighting to the value of £150 000 manufactured and supplied by Abacus Municipal.

The new platform lighting at Cannon Street is mainly under cover and a range of special spherical luminaires was designed. These are suspended in pairs above the station platforms, equipped with either downlighter or uplighter reflectors. A proportion of the 812 luminaires incorporates emergency lighting.



EXPO '92 lit up

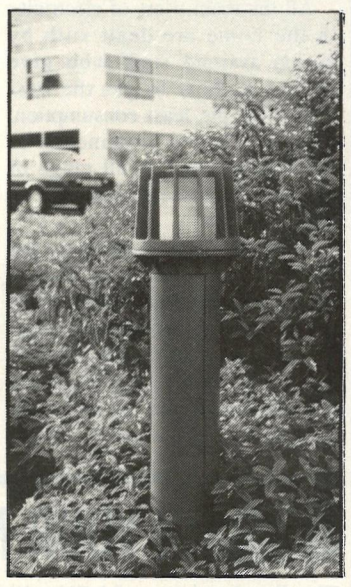
The new acrylic-imide co-polymer, Kamax, has been selected by Philips to create lighting fixtures for next year's World's Fair in Seville, organised by EXPO '92.

A total of some 2000 lights, each 12m high, will be equipped with bowls made of Kamax that will diffuse light of a bluish hue.

The material was selected because of its heat resistance – an essential property, given the Spanish climate – and for its resistance to ultraviolet rays, which helps prevent deterioration. The fitting is designed by Miranda and King (Italy).

The material is one of a new range of polymers developed by Rohm and Haas. These transparent materials offer a high heat resistance together with excellent optical properties including UV resistance.

Lighting business

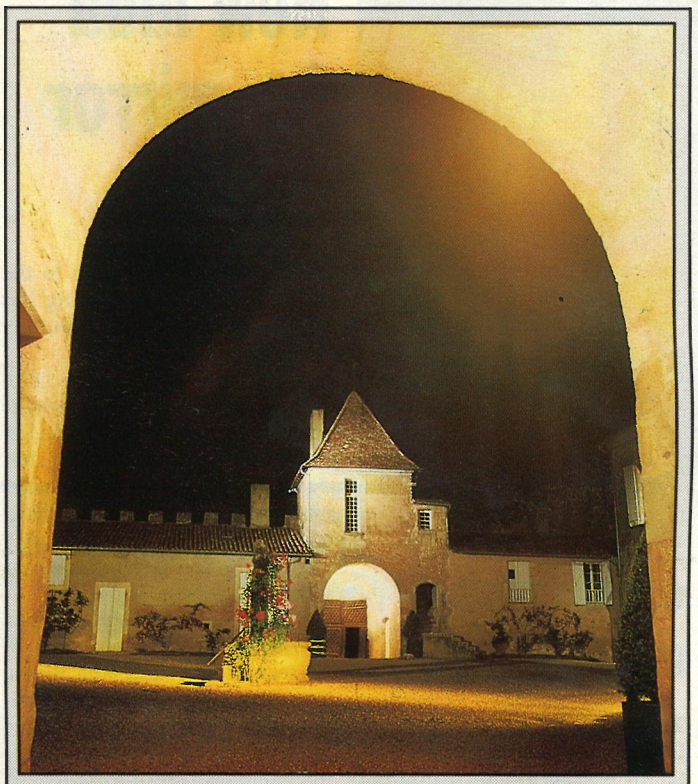


Crownlight low-level amenity luminaires, manufactured by Crompton Lighting have been installed in the car parks and landscaped areas of Westlea Campus business park, Swindon.

Two styles of Crownlight have been used, each fitted with energy-saving 50W mercury discharge lamps. Lowland Crownlights are installed beside the covered pathways leading to each of the three office buildings on the site. These luminaires are mounted at ground level on preformed plinths, to give unobtrusive pedestrian lighting.

Car parking areas are illuminated by Post Crownlights. The extruded tubular aluminium posts housing the heavy-duty fused cut-outs and lighting control gear, also support the head and lens assemblies. These are similar in design to the Lowland fitting. The overall above-ground height of the complete luminaires is approximately 850mm, avoiding unnecessary glare to car drivers while providing good illuminance.

LIGHTING EQUIPMENT NEWS



Tungsten halogen floodlights from Thorn produce a strong dramatic effect at Chateau D'Yquem in south west France, home of the world's most exclusive sauternes. The courtyard is used as a reception area and each year the May Musical, one of the traditional grand fetes of the Bordeaux region, is held there. Within the courtyard a combination of 300W and 500W spotlights gives low background light while highlighting building elements such as the arches. Tungsten halogen was chosen for four key reasons: to enhance the pale yellow colour of the stone; the need to minimise the size of floodlights; a desire for instant light; and the need to vary light intensity.

SWEB leads with energy efficiency

The first Energy Efficient Centre under the banner of a regional electricity company has been opened by David Heathcoat-Amory, MP, Under Secretary of State at the Department of Energy.

South Western Electricity's new centre, situated in Nailsea, near Bristol, is designed to provide domestic electricity users with expert advice on energy efficiency and energy saving appliances. It also houses an exhibition featuring energy saving in the home.

Main emphasis is on domestic applications, but the message also relates to the commercial sector, and the centre includes details of last year's winners of the company's PEP and BETA energy efficiency awards.

All the main users of electricity in the home are dealt with by highly trained staff who give advice on how to get the best results for the least consumption. Lighting figures prominently in the displays, and a full range of compact fluorescent lamps are on sale.

Pride of place is taken by the SWEB lamp which is an adaptor type compact fluorescent fitted with a 13 watt replaceable lamp. The total consumption is 14 watts and as it has a power factor of 0.9 this represents the real consumption, unlike most of the CFLs currently available. The light output is equivalent to that of a 60W GLS lamp. The adaptor also incorporates filtration to reduce the harmonic distortion normally produced by these lamps to acceptable levels. Typical standard luminaires fitted with CFLs are also on display to illustrate their attractiveness and wide variety of use.

The Energy Efficiency Centre previously served as the local SWEB shop and the opportunity was taken during the conversion to fit new lighting equipment that is highly energy efficient. The load consumed by the original installation, comprising recessed mercury lamps, fluorescent tubes and crown silvered display lighting, amounted to 12kW. The new installation, using mainly GE Thorn 2D lamps, consumes 3.8kW and produces a much more striking effect. The 38W 2D lamps used for the ambient lighting are operated at high frequency.

A prominent feature is a row of green 16W 2D lamps, set veritically in a ceiling bulkhead, which is designed to emphasise the 'green' theme of the Centre. Other 2D luminaires used are recessed downlighters and a wooden louvred type.

Wall displays are lit using compact adjustable recessed floodlights by Franz Sill fitted with 70W Osram metal halide lamps.

IN YOUR NEXT ISSUE

The October issue of LEN will look at the role of the wholesaler in the lighting industry both in the UK and in continental Europe. One of the questions we will try to answer is whether the single European market will give rise to a new breed of pan-European distributor.

On the lighting technology front, we hope to make a survey of new developments in HID gear.