

# LIGHTING EQUIPMENT NEWS

NOVEMBER 1992

## In brief...

● Arlen Electronics has supplied over 18 000 Pulsestarter electronic starters and Wattwatcher ballasts for a major office development in London's Little Britain.

● **Electricité de France** can help UK companies wishing to export to France to find the best potential partners. Information from Nicole Bombo on 0454 281606.

● **Phosco** can now accept lighting scheme enquiry drawings on disk, using Autocad DXF format. Computer scheme drawings can be returned on disk.

● **Tamlite** has built three new bays onto its Redditch factory for the production of amenity, display and emergency lighting.

● **Lyktan** lighting, made in Sweden, will be on show from mid-November in the Facit furniture showroom at 31a Bruton Place, London W1X 7AB.

● **David Morgan Associates** has won another accolade for its Shelf Light system, this time a design award from the Association of Business Designers in New York.

● **Ambla Lamps** has a new £100 000 furnace in which its specialised industrial lamps are to be baked for four hours to eliminate contamination.

## Student award goes European

For the first time the Lighting Association is inviting students at European design colleges to enter for its 1992/1993 Student Lighting Designer Awards. The awards, which in the past have been restricted to students at UK colleges, currently offer £2500 in prize money.

This year the judges are particularly interested in receiving entries from students who show an understanding of the decorative lighting market.

The outline design brief encourages entries which not only highlight the student's design skills but also show evidence of market research and an understanding of the importance of price points, packaging and creative use of new technology.

Industry support for the awards has grown over the six years of their existence and includes supplying free hardware and control gear to selected finalists to make prototypes. In 1991/92 Philips Lighting sponsored a visit by two award winners to the company's headquarters in Eindhoven.

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## European winner

Winner of the 1992 European Lighting Award is the Oberpollinger Store in Munich's historic city centre. This sports and toy shop, located in one of the

city's main shopping streets in a pedestrianised area, is a branch of the Karstadt department store chain. Behind a traditional facade which is beautifully flood-

lit, the interior design and lighting installation are uncompromisingly modern.

In this very competitive commercial environment it is neces-

sary to attract passers-by from a distance, draw their attention to the displays in the shop windows and lure them inside putting them in the right mood to select from a rich choice of temptingly presented goods.

The lighting solution begins outside with the illumination of the facades and the arches of the arcades for which a contrasting combination of metal halide and high pressure sodium uplights are used. The shop windows also use high-pressure sodium lamps for general lighting while halogen spots provide accent lighting. Adding a fun note, rows of blue halogen lights buried in the pavement guide the way to the entrance.

This is the third contest organised by the European Lighting Council which aims to award owners and designers of outstanding lighting installations. The theme of this year's contest was lighting for selling, and lighting schemes completed between 1 January 1990 and 30 April 1992 were eligible to participate. A total of 33 entries was received from 12 countries.

The Marien Pharmacy in Eichstatt, also in Germany was a close runner-up to the Oberpollinger store. Three contestants, with equal marks were each awarded a third prize: these were the Mazda car showroom in Espoo, Finland; the Casino supermarket in Annecy, France; and the Laura Bakens fashion shop in Helmond, the Netherlands.

Finally, the banking hall of the Royal Bank of Scotland in Edinburgh, Scotland was awarded a special prize for achieving an interesting solution to a challenging lighting problem.

Full details of the prize-winning schemes will appear in the December issue of LEN.



## EC clears Sylvania sale

The EC Commission has now approved the planned acquisition of GTE Sylvania's international lighting business by a buy-out led by Citicorp Venture Capital (CVC). The Commission concluded that no other lighting manufacturer will have any control over Sylvania Lighting International.

Don McCullough, president of GTE Sylvania in Europe, said, "This decision is a major step forward as it clears the way for the establishment of the new Sylvania Lighting International Company. With this decision, we are free to devote our full management attention and resources to meeting customers' needs."

The commission had investigated, among other issues, certain financing and technology agreements and determined that these were granted on an arms-length and temporary basis.

Sylvania is a major European lighting company, marketing lamps and fixtures under the brand names Claude, Concord, Le Dauphin, Linolite, Lumiance and Sylvania.

Its European sales are expected to be about \$500 million. It has 4000 employees at nine manufacturing locations in Belgium, France, Germany, The Netherlands and the United Kingdom, with sales coverage in every Western European country.

### Japanese buy-out

Meanwhile, Philips Lighting has announced that it plans to buy GTE Sylvania's 70% stake in the Japanese lighting company Kondo Sylvania. Agreement in principle on this acquisition has been reached with GTE Sylvania and with the minority shareholders in Kondo Sylvania. The deal should be finalised shortly.

Kondo Sylvania has annual sales of about 40 million US dollars and employs over 3000 people. It specialises in the development, manufacture and sale of halogen photo/projection lamps and also offers a range of other halogen and general lighting products.

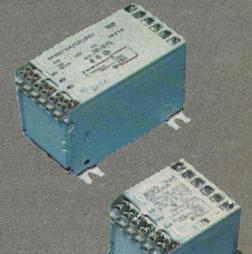
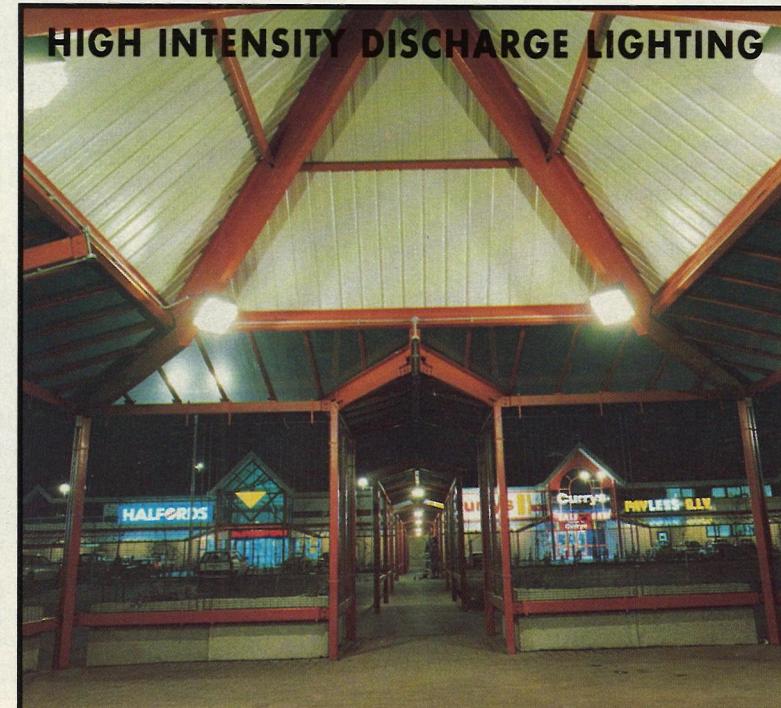
This acquisition offers Philips new access to the Japanese market.

## Road lighting highlighted

The new chairman of CIBSE Lighting Division, Ron Simons, spoke about developments in road lighting, airfield lighting, glare in interiors, computers, and photometry in

his recent inaugural address.

He referred to worldwide studies on road accidents and lighting just published by the *Commission Internationale de l'Eclairage* and to work in North America that showed advantages to be gained from non-uniform lighting of road surfaces.



Choice of voltage tappings (up to 4).

To cover European Standards.

Compact size.

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Volume production.

Selection of base-plate fixings.

Thermal cut-out for Metal Halide lamps.

**HELVAR**

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## Green light for a cleaner future

Give-away compact fluorescent lamps made lighting the talking point in a recent series of Energy Efficiency Office regional roadshows aimed at business and commerce. The free samples were provided by Osram, Philips and GE Lighting.

Lighting was chosen by the EEO to take a high profile throughout the campaign as one of those measures that could save British business some £5 million and help the environment, and the Lighting Industry Federation participated throughout.

The principal message of the Roadshows – which to date have visited Cambridge, Swindon, Dunblane, Cardiff, Runcorn, Nottingham and Newcastle – is that what's good for the environment is good for business.

'Energy efficiency – the environmental solution' put the commercial and environmental cases for improved energy efficiency. On behalf of the lighting industry John Aston, of Energy Conservation Systems, gave a presentation which outlined the latest developments in energy efficient lighting. The accompanying exhibition demonstrated the latest practical methods, systems and technologies.

The Roadshow provides a unique opportunity for company directors and senior management to hear at first hand how energy efficient lighting can not only help the environment but can also help them to cut costs.

## Minister briefed on efficient lighting

Lord Strathclyde, Parliamentary Under Secretary of State at the Department of the Environment, was recently briefed on developments in energy efficient lighting at the Philips Lighting Application Centre in Croydon.

The DOE took over the energy efficiency responsibility of the former Department of Energy after the April general election.

# DIARY

## NOVEMBER

17

Uses and development of fibre optics for lighting. Evening meeting in London arranged by CIBSE Lighting Division. Details from CIBSE, 081-675 5211.

Innovative lighting systems.

Evening meeting at Liverpool University arranged by CIBSE Merseyside and North Wales region. Details from R W Bell, 8a Fulwood Park, Liverpool.

18

Software for lighting. Evening meeting in Croydon of CIBSE London and SE region. Details from Colin Ashford, 0923 664288.

25

Electricity at work regulations. One-day course in Nottingham arranged by IEEIE. Details from 071-836 3357.

Lighting basics 2: lamps and luminaires. One-day seminar in Manchester held by Mid Career College. Details from 0223 880016.

26

Exterior lighting design practice. One-day seminar in Manchester held by Mid Career College. Details from 0223 880016.

## DECEMBER

1

Lighting for hazardous areas and Emergency lighting. Evening meeting in Newcastle upon Tyne held by CIBSE North East region. Details from Alan Embleton, 091-232 8520.

2

Electricity at work regulations. One-day course in London arranged by IEEIE. Details from 071-836 3357.

Lighting basics 3: lighting design calculations. One-day seminar in London arranged by Mid Career College. Details from 0223 880016.

3

The age of enlightenment. The Waldrum lecture, an evening event in London. Tickets from Karl Pike, CIBSE, 081-675 5211. Exterior lighting design practice. One-day seminar in London held by Mid Career College. Details from 0223 880016.

8

Lighting basics 2: lamps and luminaires. One-day seminar in Newcastle upon Tyne held by Mid Career College. Details from 0223 880016.

9

Lighting basics 3: lighting design calculations. One-day seminar in Manchester arranged by Mid Career College. Details from 0223 880016.

10

Interior lighting design practice. One-day seminar in Manchester held by Mid Career College. Details from 0223 880016.

15

Lighting for places of worship. Evening meeting and social event of CIBSE Lighting Division, in London. Details from 081-675 5211.

# CIBSE

The Chartered Institution of Building Services Engineers

## Lighting up industry

Industrial lighting accounts for 25 per cent of the luminaire sales in the UK and 16 per cent of the energy used for lighting. In the current, (1984), CIBSE *Code for Interior Lighting* there are 20 pages of the schedule of recommended lux levels devoted to industry and only one to offices.

It is somewhat surprising, therefore, that when designers were asked if they would like information on different lighting applications, only 24 per cent said industrial lighting was 'very important' to them and yet 66 per cent said that office lighting was 'very important'. It seems strange that an article, on lighting the office environment, should receive more attention from lighting designers than lighting the place in which it is actually made, ie the factory, even though the consequences of poor lighting in the factory may be more far-reaching.

This is perhaps one of the reasons why industrial lighting schemes have failed on occasions to reach the standards required to win one of the LIF National Lighting Awards.

Industry is finding the going tough, with lower demand and increased competition. Therefore, it needs any help it can get to improve production and reduce costs.

Good lighting will aid production. There may be a few firms that take pride in the size of their scrap heaps, though it is, nevertheless, true that they represent a great deal of wasted labour and materials. Some of the scrap is no doubt there on account of defects in materials which could not be prevented by good lighting – but if those defects can be detected in the early stages of manufacture, they will be rejected straight away, instead of undergoing the process of elimination, thus saving time and money.

The more skilled and better paid workers are, the more reason to give them good lighting.

While it is easy to make out a case for good lighting on the grounds of production, it is also important to consider the effect that lighting has on the employees themselves. Blake's 'dark satanic mills' should by now be a thing of the past!

In 1989, CIBSE produced the first guide to lighting the industrial environment which is full of practical ideas on how to provide solutions to many of the problems involved. It urged a more analytical approach to lighting for industry, based on knowledge of the working practices and a full understanding of lighting principles and equipment. While visual acuity is related to illuminance, simply throwing more lumens into an area is not the main criterion of good lighting. In addition as we should note in these days of awareness of energy conservation, it is against the interests of the environment.

Maintenance of equipment has always been a problem in industry as those responsible have so many other demands on their time which are directly related to production.

Maintenance of lighting equipment is also far too often neglected. As a result, it is not uncommon to find installations running at one third of their potential illuminance. Just imagine anyone paying for three times as much as they are actually receiving!

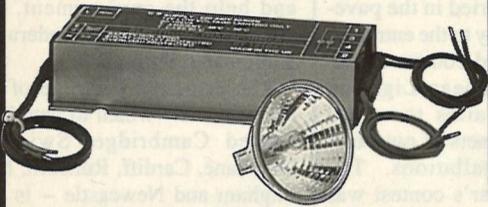
In conclusion, we must hope that CIBSE's move to maintained illuminance will set targets which can be measured and make users more aware of the value of effective and regular maintenance.

Alan Wilson,  
Chairman, CIBSE Industrial Lighting Task Group.

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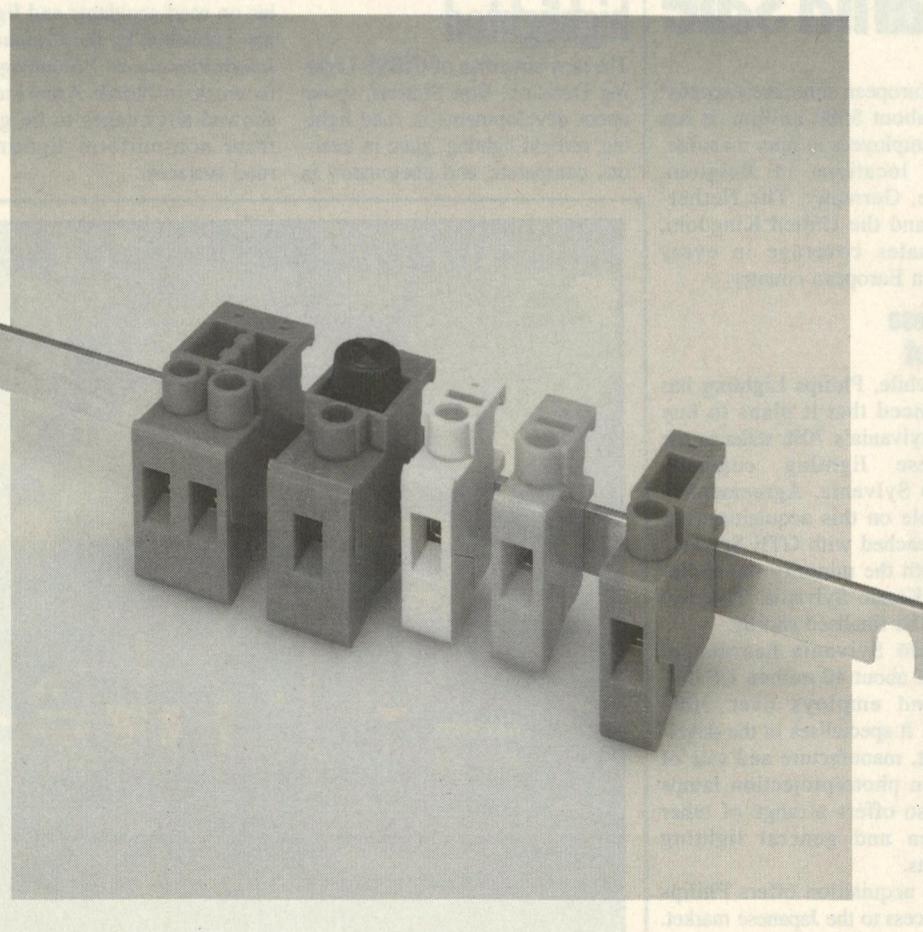
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Page 2

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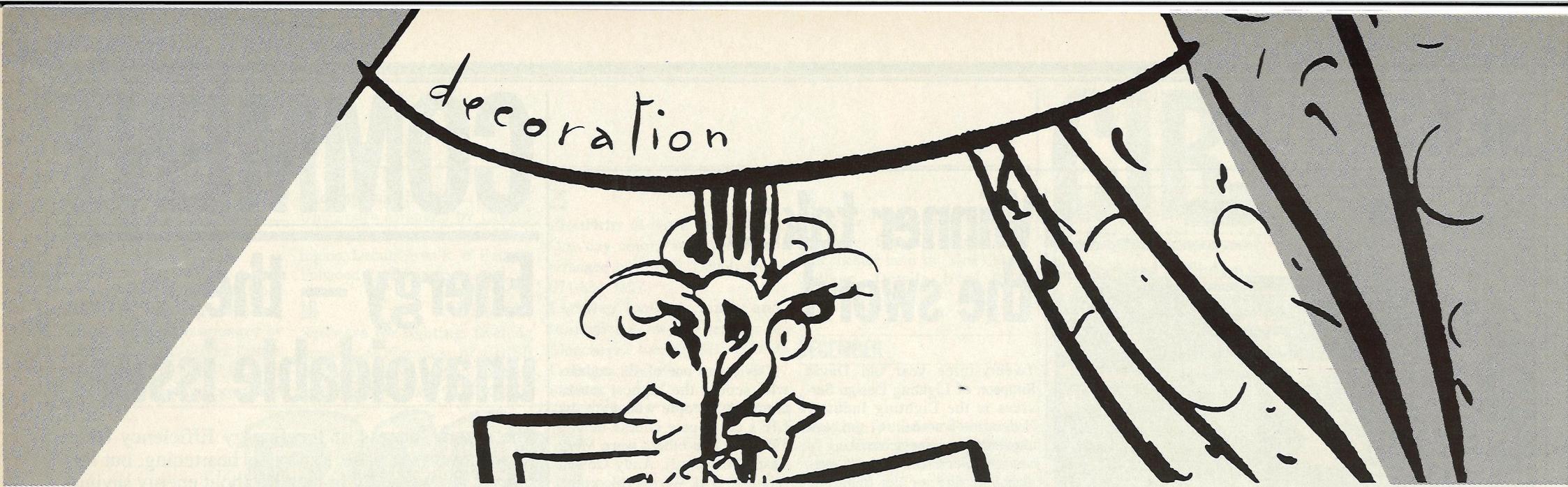
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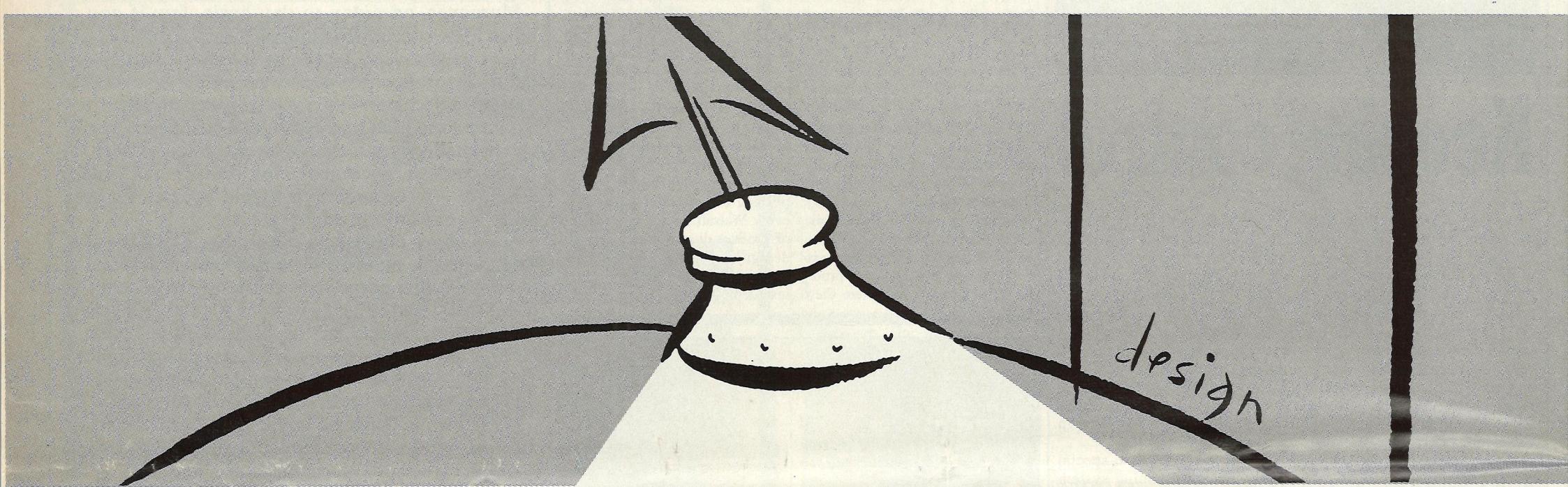
Lighting Equipment News, November 1992





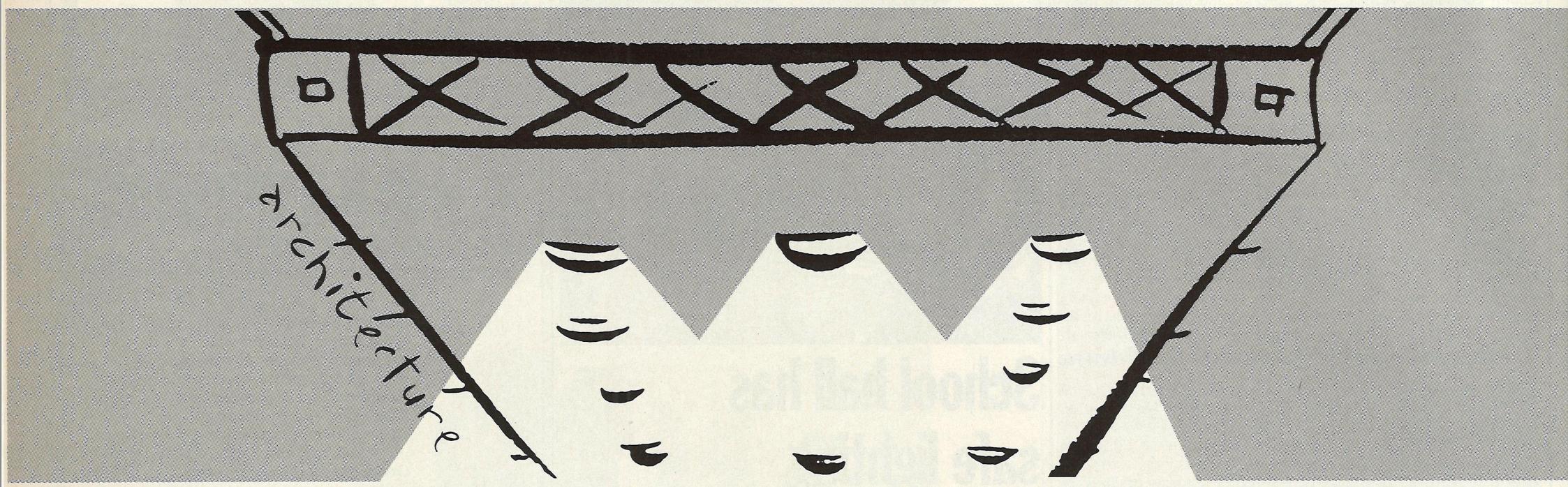
decoration

## 400 INTERNATIONAL EXHIBITORS



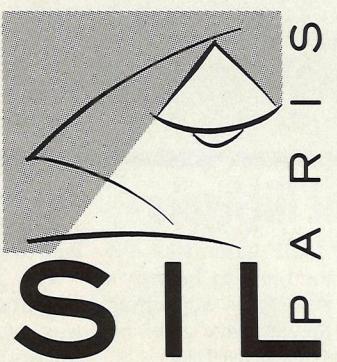
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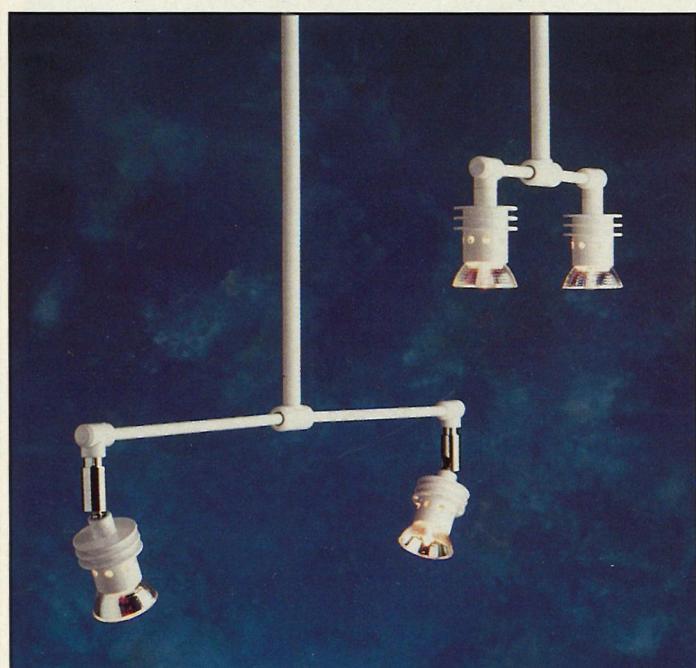


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# NEW PRODUCTS



## A duo for restaurants

Duo from the Highlight collection of spotlights by Fairfield Displays is a bi-pendant which can either be fixed from the ceiling, or wall mounted. These twin spotlights are available on horizontal rods of two lengths, 100mm and 425mm, and can be supplied on vertical drops of either 200mm or 500mm.

A variety of low voltage lamps

## Compact outdoor spotlight

Lightscape Projects' miniature M11, low voltage exterior spotlight offers a discreet method of obtaining a wide range of accent lighting effects. It measures 50mm in diameter and is 85mm long.

Applications include lighting signs, entrances and steps, individual garden ornaments and planters, architectural detail on buildings, and landscape features such as trees and shrubbery.

The spotlight is made of solid brass anodised in black. It is an ingress protection rated IP55.

Either a 20W or 35W MR11 dichroic lamp is used, giving beam angles of 8° to 30°. Remote and integral transformer versions are available, together with



optional extras including coloured glass filters, spread lenses and an anti-glare louvre.

It is easy to install and has a range of fixing accessories: ground spike, fixing plates for wall and ceiling, and tree strap.

Reader Service No 152

## Full testing and monitoring of emergency lights

Autotest is both a self-testing and condition monitoring system



designed for use with Menier's Convertalite range of emergency lighting conversion kits, which are suitable for most standard fluorescent luminaires.

The system is controlled from a central control panel displaying up to eight zones, each monitoring up to 20 luminaires.

The control panel has a programmable timer pre-programmed with the BS5266 test regime and future European requirement. It can be operated in either automatic or manual mode.

The unit's illuminated display will pinpoint luminaire faults in any of the zones. The control panel can be connected to a printer to give hard copy of test results and general status of the system.

In addition, individual luminaires have an LED display confirming locally what the control panel is registering centrally.

Reader Service No 153

## More gobos for stage designers

In association with international lighting designers, Rosco has developed 24 gobo designs for use with theatre lanterns.

An even greater choice of designs is now available to create

patterns of light that give texture to stage sets. Other designs fall into the categories of foliage, windows, graphics, city (skyline) and celebrations.

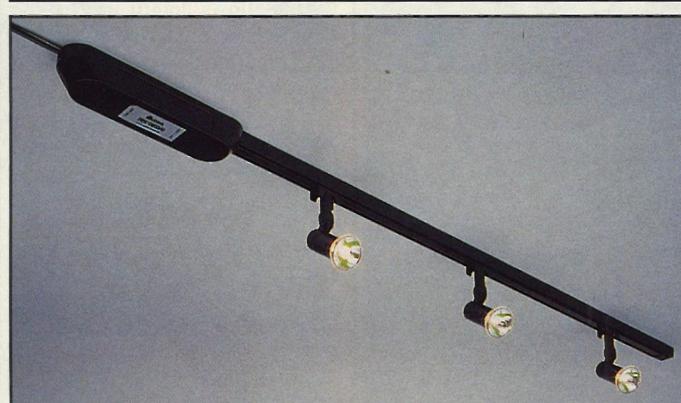
Reader Service No 154

## Luminaires for VDT areas

There are seven standard luminaires in Kotzolt's DID fluorescent range for VDT offices, each providing a different ratio of direct to indirect light. All fittings can be used individually and a number can be used as part of Kotzolt's continuous tubular lighting systems.

Other options include individual switching, dimming and special RAL paint finishes.

Reader Service No 155



## Track pack with integral transformer

Illuma has launched Marktrack Pack, a low voltage track lighting system. The miniature 12V track has an integral 150VA electronic transformer in a slim housing at one end.

The transformer is stated to allow the track to accept loadings between 50W and 150W without

affecting the life or efficacy of the lamps.

Marktrack Packs include 1.2m of track, three spotlights and twist-and-lock fixing plates.

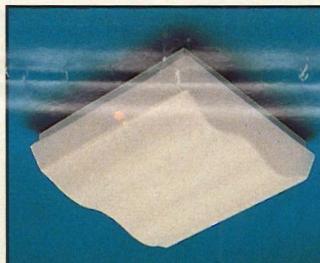
A variety of attachments, such as barndoors, is available for the spotlights.

Reader Service No 156

## Emergency luminaires

Existalite has added a range of square, surface mounted luminaires to its Hylite combined mains and emergency lighting fittings. As with other Hylite luminaires, the new Art fittings are energy efficient, being offered with a choice of 28W or 38W 2D lamps, or 2 x 18W PLL lamps.

The 375mm square luminaires have either 'wave' design or stepped diffusers and accept sur-



face or rear entry wiring.

They are available in maintained or non-maintained emergency versions with matching mains only models.

Reader Service No 157

## Ballast dims lamps to 1% of light output

An electronic ballast from Tridonic allows precise dimming of fluorescent lamps down to 1% of light output. Control is achieved through signals produced by a digital interface which can be controlled by multi-switches, infra-red, or a building manage-

ment system.

By monitoring and controlling lamp power rather than lamp voltage alone, these ballasts are stated to give constant light output throughout lamp life, and because they are digitally controlled the light level from each lamp remains the same. Defective lamps are automatically switched off.

Both single and twin lamp versions of the PC-A ballast are available.

Reader Service No 158

## Floodlight saves energy

Hilclare has launched Signlite, an energy saving floodlight for domestic and commercial use.

It is designed to use either two, three or four PL type compact fluorescent lamps rated at either 9W or 11W. The dimpled reflector is aluminium sheet.

Ingress protection rated IP64, Signlite has a polycarbonate housing and lamp cover to make it resistant to vandals.

An elbow joint has been developed that is stated to be capable of holding the floodlight in its fixed position even in 150km per hour winds.

Applications include car parks,



sign lighting, security purposes and on mobile towers used with generators.

Reader Service No 159

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

# LIF LINE

## Illuminating problems

The police are now joining the struggle to persuade authorities to improve lighting in high priority areas. The situation is deplorable and does nothing to assist crime prevention in high risk areas. Better street lighting is a deterrent to burglars and vandals and a help to the police.

Although considerable effort is being made by some authorities, the rate of progress, they say, depends on the amount of cash being allocated to schemes. The police are working with quite a few lighting engineers, particularly in London, to pinpoint areas where better lighting would cut the risk of assaults and criminal damage and ease the fear of crime. Numerous surveys have been carried out and are backed up by police statistics.

The message throughout is prioritising and risk assessment. The benefits of better street lighting are beyond doubt. There is no shortage of help and advice in assessing areas, and designing the most appropriate schemes with the best of modern technology. The most important step for local authorities is to put lighting replacement and maintenance higher up their list of priorities.

Street lighting is not a priority for many local authorities. At least that is what some experts believe. With more urgent calls on councils' limited resources, lighting is often placed well down their scale of importance.

The fear is that many local authorities will leave the overhauling of their lighting systems until it is too late. Then the cost of replacement – even if carried out in several phases – will be prohibitive.

For example, a report has revealed that to replace Wiltshire's 13 000 ageing concrete street lights would cost £2 600 000. Some are up to 50 years old, when the life expectancy is 30 years. The highways director David Gardner is asking the county highways authority to let him spend £260 000 next year as a start to a phased programme of replacement.

The average cost of repairing damage is about £50, but £100 where a galvanised steel sleeve has to be fitted. A replacement costs £400. Sleeves were used 10 years ago when a number of columns were found to be splitting; and some of these sleeves are now showing signs of deterioration as well. For public safety it is essential that the worst deterioration be remedied and a programme introduced to deal systematically with the rest.

In Oldham it is a similar story. Millions of pounds must be spent on bringing Oldham's street lighting up to scratch. At least 40 per cent of the borough's lamps posts were put up before 1960, and 9 000 are now obsolete. Lamp posts have a life expectancy of about 30 years, so more than £6 million is needed for a 10 year replacement programme across the town. The council, which spent £180 000 on new street lighting in 1991-92, has several planned improvement schemes which must be carried out immediately.

It wants to spend £550 000 on new lighting for 1993-4 but the schemes depend on funding from the government. The dim outlook on street lighting is highlighted in the document, 'Oldham Council's Transport Policies and Programme 1993-4'. The council wants more than £19 million in total but has already been warned that the bid will not be met in full.

Many authorities are having difficulty in dealing with the backlog of lighting columns that need maintenance and repairs, let alone providing replacements. In Sheffield, it was reported last month that every street lamp could be out of order within four years because of council cash cuts. The warning has come from the authority's own works department, which admits that some of the city's 60 000 lamps are left unattended for months. A reduction in the repairs budget means routine checks are only made every eight to ten weeks, and only 10 per cent of electrical faults are repaired.

According to the works department it is feasible that within four years there will be no street lights working in Sheffield if the council's current spending levels continue. The present budget is a long way short to keep up with what needs to be done.

Many highways committees – or environmental services as they now seem to call themselves – are reaching similar conclusions in this autumn budget round and deciding that improvements will be minimal this year. In addition, there seems to be a very bleak prognosis as to when improvements in street lighting will be carried out.

Yet, increasingly, worried residents are petitioning councils to demand better lighting in their areas. The public are demanding to know why street lighting does not have a higher priority.

# NEW PRODUCTS

## Bollard lights paths or facades

A vandal-resistant bollard from LDMS has a strong, wire-reinforced concrete shaft with a graffiti resistant finish. All fixings are concealed.

It accepts 75W mercury, or

70W-100W high pressure sodium or metal halide lamps.

The heavy cast aluminium head has a domed top to deflect impact. Louvres at an angle of 65° allow wide spacing. An alternative version gives full light cut-off on three sides and throws vertical light in the other direction to illuminate building facades.

A variety of head and shaft



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For the enlightened manufacturer.



Reader Service No. 8

Page 6

## Longer cable for HID lamps

A special cable for metal halide and other high intensity discharge lamps is available from Pulseline. It enables the distance between lamp and control gear to be increased.

Pulseline 45 is for installations using lamps in the 70W-250W range. For 70W lamps the distance can be as much as 25m, while for 150W ratings it can be increased to 20m and for 250W lamps up to 15m.

This allows control gear to be situated in a switch room or grouped around one ceiling tile to allow ease of access.

Pulseline cable is rated at 5000V; insulation wall thickness is 1.8mm. This gives an additional safety margin where lamp ignitors are used. Ignitors typically pulse at 4500V to 4900V and if a lamp fails, the ignitor continues to pulse. This could result in insulation breakdown, and lead to risk of shock or fire.

Reader Service No 161



## Wall light gives choice of light distribution

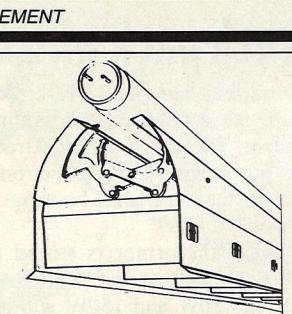
Eco is an exterior wall light for surface mounting or semi-recessing. It gives a light distribution of 75% in one direction and 25% in the opposite direction. As it can be mounted either way up, this offers a choice of predominantly upward or downward light.

Made in Italy, it is available in the UK through Mattalex.

Either PLC type compact fluorescent lamps (18W or 26W), or 60W tubular incandescent lamps are used. The prismatic diffuser is made of ultra-violet stabilised polycarbonate.

Ingress protection rating is IP55. Control gear is integral to the luminaire.

Reader Service No 162



KGL RESOLUX have a RANGE of REFLECTOR PRODUCTS which fit RETROSPECTIVELY to existing fluorescent installations, EFFICIENCY can be improved by as much as 50%, saving energy, or glare control can be significantly improved. Investment pay back times are short. Be sure to see the RESOLUX range before purchasing any reflectors.

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Reader Service No. 7

## Transformer fits onto track

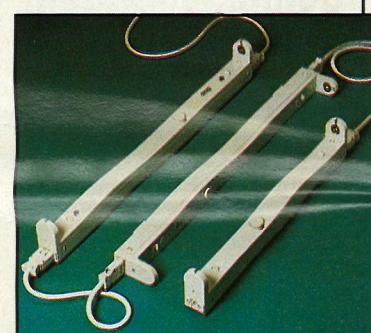
Powerlite has introduced a lightweight 200VA compact transformer that fits directly onto its Microlux low voltage lighting track, solving the problem of finding a suitable remote location for the transformer.

The design had to be of minimal weight, small enough to fit onto the track in the same way as the luminaires, and allow the

An ultra slim, single-lamp fluorescent fitting designed for plug-together continuous lighting has been introduced by Thorn. It enables up to 40m of lighting to be run from a single point.

Arrowslim Connect is an addition to the Arrowslim range, but integral sockets in the end caps allow either end-to-end connection, or interconnection by flexible leads. Opal acrylic, U-shaped diffusers are available if required.

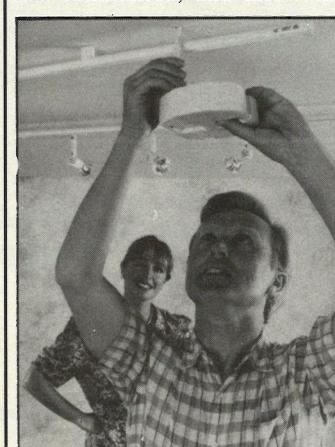
At 37mm wide, and in five lengths from 450mm to 1200mm, Arrowslim Connect is suitable for



retail applications such as display cabinets, pelmets and gondolas. It can also be used in other commercial and domestic interiors.

There is a choice of three positions for the end caps to allow flexibility in mounting.

Reader Service No 163



power supply to be taken from the nearest source.

The transformer may be fitted anywhere along the track giving maximum flexibility in siting the lighting equipment.

Safety features include a 'fast blow' fuse on the primary side, while the secondary circuits are protected electronically from short circuit and overload.

A high intensity LED provides visual indication of an overload or fault.

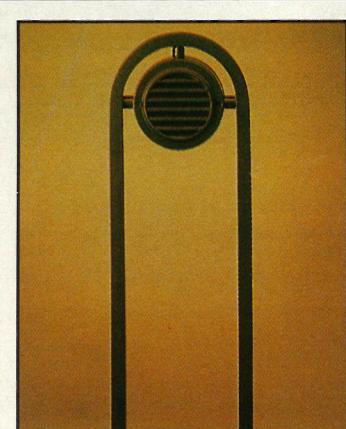
Reader Service No 165

## LV landscape lighting range

Lucent Lighting has introduced Nightlife landscape lighting from the USA.

This outdoor range comprises low voltage spotlights for installation on spikes or for wall mounting, and ground recessed adjustable uplights. There are also low voltage steplights, bollards and decorative lanterns.

The bollard, called Nautilus, is available with either a cast louvre or hemispherical polycarbonate diffuser and can be supplied in



double-sided versions. A 12V 18W SBC tungsten lamp is used.

Reader Service No 164

## Polymer coating strengthens tubes

Fotolec is marketing Safebreak fluorescent lamps which are coated with purpose designed polymers to make the tubes stronger.

Lamps treated in this way will often survive an accidental knock, but should they break, the glass fragments and tube contents are encapsulated in a plastic "snake"; there is no contamination and the lamp can be disposed of safely.

Applications the company has in mind are industrial locations where risk of contamination must be kept to a minimum, such as food processing.

An additional advantage of these lamps is that the coating reduces ultra-violet radiation.

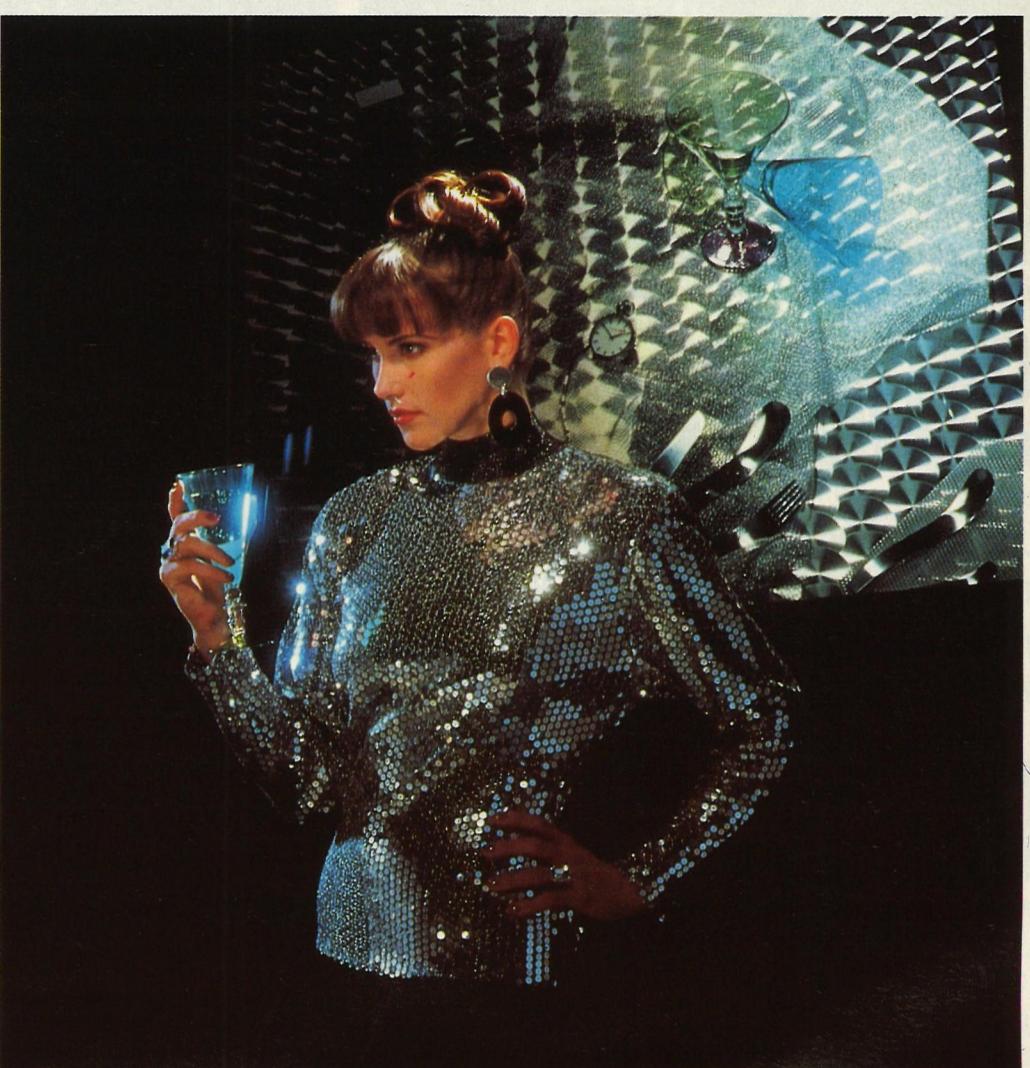
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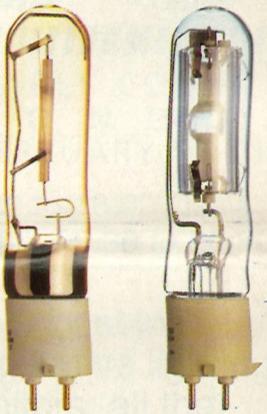
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**PHILIPS**

Reader Service No. 17

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Company name \_\_\_\_\_

Nature of business \_\_\_\_\_

Address \_\_\_\_\_

Postcode \_\_\_\_\_

Telephone \_\_\_\_\_

Approximate number of employees \_\_\_\_\_

Approximate annual turnover of business (please tick)

£0-10,000    £10,001-50,000    £50,001-100,000

£100,001-150,000    £150,001-200,000    £200,001-250,000

£250,001-500,000    £500,001 plus

Post to: J. Pool

Marketing Communications Department

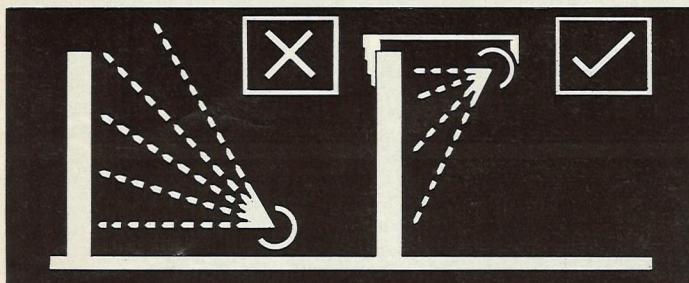
Philips Lighting Limited

FREEPOST

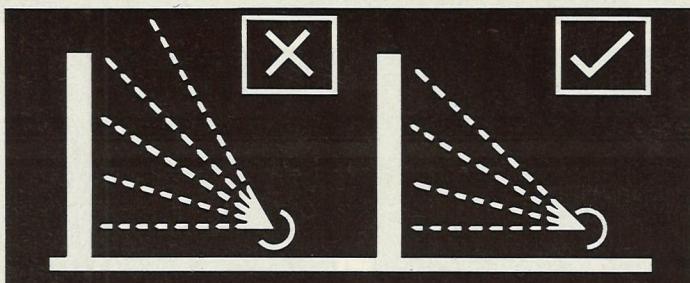
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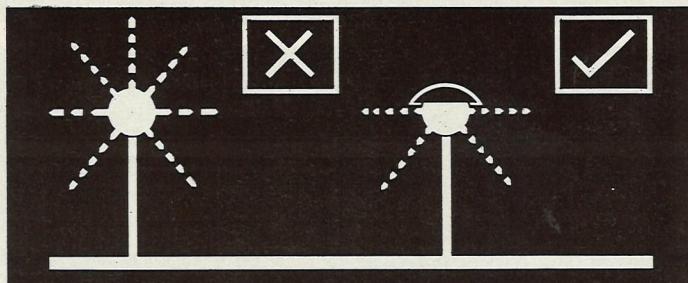
## EXTERIOR LIGHTING



Direct light downwards and not upwards if possible.



Use shields or baffles where light is directed upwards.



Minimise the spread of light above the horizontal.

# Stop that waste

**Light pollution is a waste of light, a waste of energy and a waste of money. Lighting consultant Nigel Pollard, who is also chairman of the ILE Study Group on Obtrusive Light, explains how it is possible to reduce light pollution.**

Many of us in the lighting profession have felt for some time, that light pollution is generally the product of poor lighting design and that, if installations were properly designed, not only would obtrusive light be reduced but also the overall energy used. In short, we would achieve two

benefits for the price of one! Aware of the growing public concern over light pollution, coupled with the equally important need for good, safe lighting, the

Technical Committee of the Institution of Lighting Engineers (ILE) set up a Study Group in 1991 to examine the issues of 'obtrusive light'.

Under my chairmanship its first task was to produce Guidance Notes for the use of both lighting engineers and the general public. Advance copies were distributed at the July 1992 UNESCO conference in Paris, and copies are now available free of charge from the ILE\*.

'All living things adjust their behaviour according to natural light. Man's artificial light, which is now powerful enough to turn night into day, can create stress and confusion. If not properly controlled,

obtrusive light could present serious physiological and ecological problems not just for the present but for future generations.

'Sky glow is a form of light pollution and is caused by the scattering of artificial light by dust particles and water droplets in the sky.

'At present a significant proportion of artificial light ends up in the sky, where it does nothing to increase nighttime utility or security. This wastes not just electricity and thereby large sums of money but, more importantly, the earth's finite energy resources. In many cases this results in unnecessary emissions of greenhouse gases which should also be kept to a minimum.'

'Light pollution, whether it keeps you awake through a bedroom window or impedes your view of the stars and the night sky, is a form of pollution and without too much trouble can substantially be reduced without detriment to the lighting task.'

Thus reads the introduction to the Guidance Notes, which then go on to list some twelve ways to reduce the problems of unnecessary, obtrusive light.

### Study panel

The question of how we evaluate 'light' and which of its many technical parameters we use in measuring 'light pollution' was the first task of the ILE Study Panel. Close contacts with the various international CIE committees looking at the same problems, of which I am the UK member, greatly assisted in this task.

A motorist is mainly interested in the horizontal road surface, but his attention should also be drawn to a number of vertical surfaces such as traffic signs and, of course, pedestrians and other possible hazards not directly in view on the roadway.

Other road users, particularly pedestrians, are even more interested in vertical surfaces such as

buildings, shop windows and, naturally, other people.

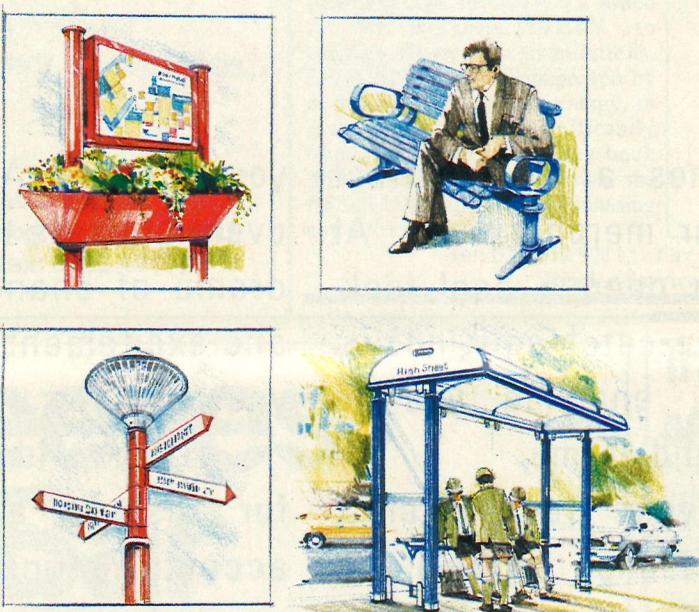
Intensity, luminance and illuminance are all technical parameters that can be measured. The problem as far as obtrusive light is concerned, arises mainly from a direct source of light rather than a reflection and, therefore, the guidance notes specifically emphasise directional intensity.

For maximum efficiency in lighting most areas, the peak intensity from a luminaire needs, in theory, to be between 60° and 80° to the downward vertical. At 80° it is becoming very glaring, or we would say 'obtrusive'. The old British Standard on road lighting lanterns (BS 1788) had the main beam at 75°, known as a 'semi cut-off' distribution, which many people thought glaring. The alternative 'cut-off' distribution had its peak intensity at 65°, which all seemed happy with.

However, in light pollution terms, it's what happens above the peak angle that matters. It is tempting to say simply that no light is required above 90° and that's that! But, thinking of the total nightscape of cities such as London, Paris, Venice or Bath, where effects are achieved by beautiful old lanterns shedding their subtle light in all directions, some degree of upward light is necessary.

For rural traffic routes and particularly motorways, things are different, and it could be suggested that a total cut-off above 90° would be quite acceptable, and in fact the Department of Transport is moving in that direction. However, for areas on a more human scale it is suggested that less strict limits, to allow for those more traditional decorative luminaires, would be more appropriate. That is, there should be an emphasis on the quality of light rather than solely on its quantity.

Many lighting standards do not help in this respect as much photometric data is produced in a form that quotes intensity limits



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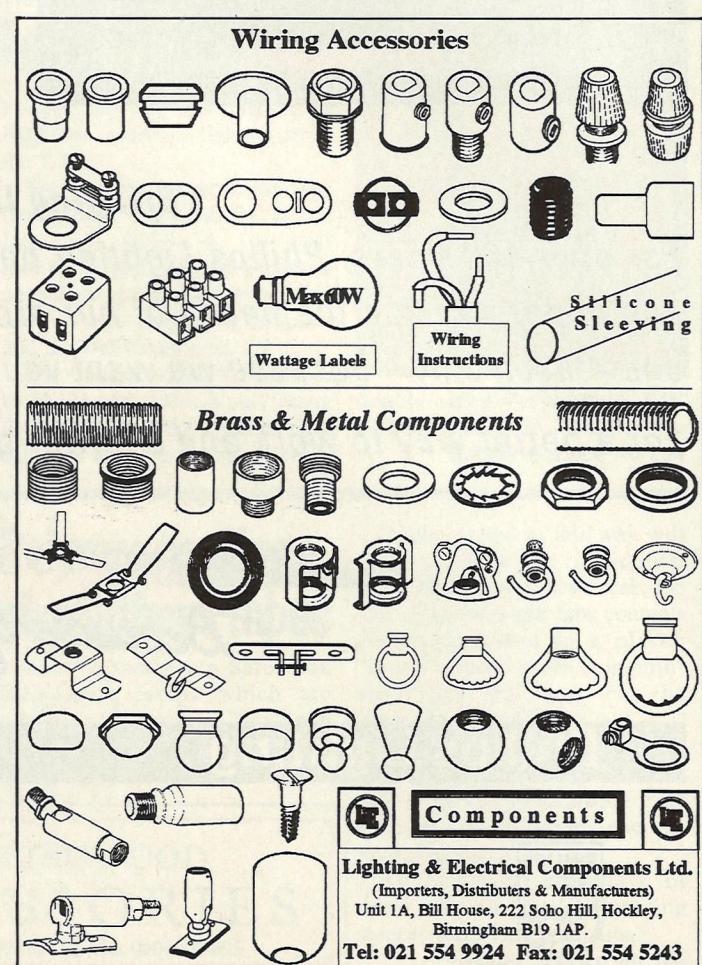
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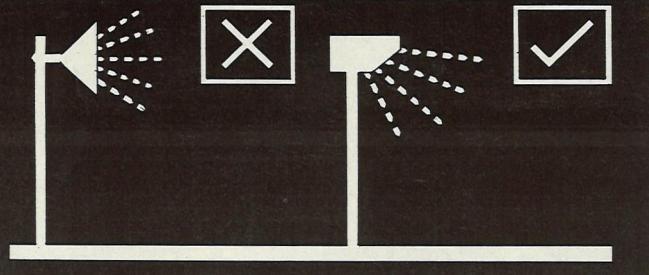


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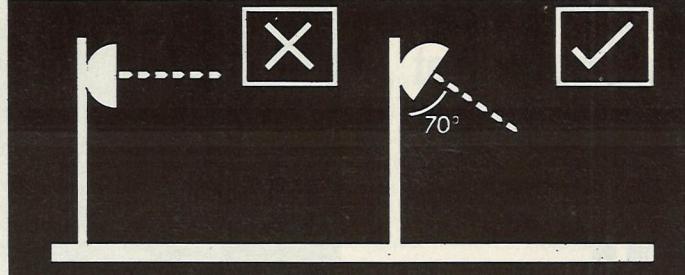


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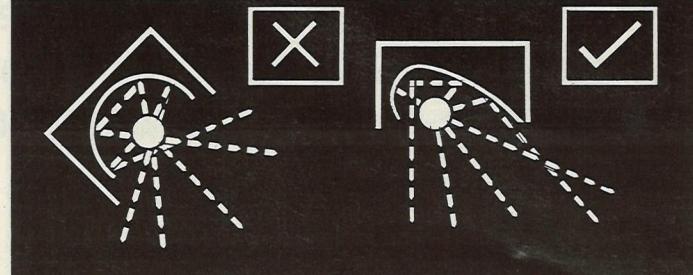




Luminaire design should limit upwards light.



Keep beam angle below 70-75°.



For sports lighting use floodlights with horizontal front glass.

in candelas per Klms. An example is the BS 5489 : Part 3 (residential roads). Here, limits are given at 90° of 80 cads/Klm. Utilizing the low wattage lamps normally found in residential street lighting, for example, the 70W high pressure sodium lamp at 5500 lumens, is fair enough.

But, as society for various understandable reasons asks for more and more light and the industry responds with higher wattages and even more efficient lamps which can be installed in the same luminaires, then such a limit becomes absurd. It is now quite common to use the 150W high pressure sodium lamp which in its 'Plus' form produces 17 000 lumens. Note that the ILE guidance notes set intensity limits in actual candelas.

In spite of these problems, road lighting luminaires have a great advantage since once the luminaire is installed the light distribution is fixed. Conversely, that of the majority of area floodlights is not.

Unfortunately, far too many floodlights advertised and installed for 'area' lighting are simply not designed to minimise light pollution. A road lighting luminaire is a form of area floodlight and, as we have noted, has fixed peak beam angles of around 65°/75° with a sharp run back above the beam to limit light above 80°.

However, many of the normal floodlights sold for area lighting utilise symmetrical optical systems with no more control above the peak than below it. Moreover, the peak angle is frequently perpendicular to the front glass so that when the installer directs the floodlight for maximum range at 65°-75° the luminaire will most likely produce major light intensities at, or well above, 90°.

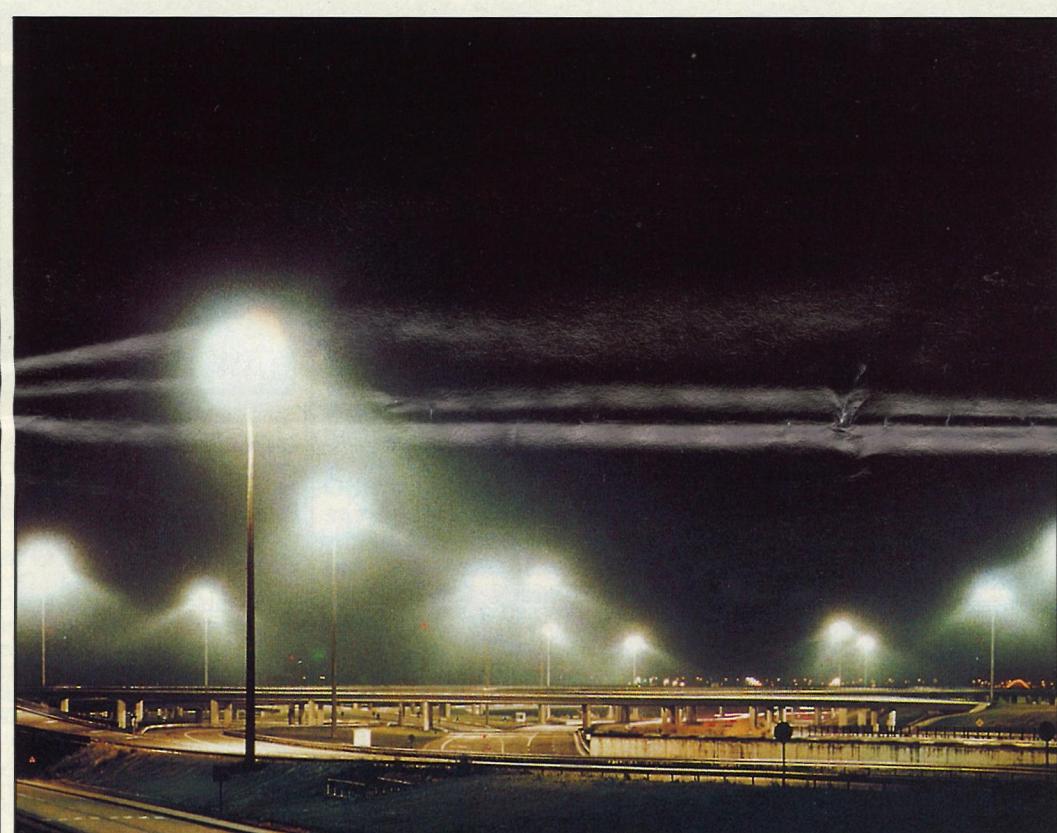
This is not necessary, and the ILE Guidance Notes suggest a preferred style of area floodlight. Such floodlights have optics that mirror those of road lighting luminaires and some even have variable optics to alter the beams below 90°.

The Guidance Notes are split into two parts technical and non-technical. The non-technical suggestions give simple instructions such as, for instance:

- Switch off lights when not required for safety or security.
- Use passive infrared detectors for domestic (or small scale) security lighting wherever possible.
- Direct light downwards, not upwards, wherever possible to illuminate a target, and if there is no alternative, then the use shields and baffles intelligently.
- Use specifically designed lighting equipment that, once installed, minimises the spread of light above the horizontal.
- Light to existing published standards – that is, do not 'over light'.
- The more technical notes cover actual limits of light technical parameters and suggest, for example:
- To keep glare to a minimum, ensure that the main beam angle of all luminaires directed towards any potential observer is kept below 70°/75°.
- Vertical illuminance levels outside the area being lit should be controlled. For guidance, levels should be kept to 10 lux at ground level and 5 lux at first floor level.
- For floodlighting buildings, levels should be limited to: 3-10 cads/m<sup>2</sup> (low district brightness); 30-60 cads/m<sup>2</sup> (medium district brightness); and 50-100 cads/m<sup>2</sup> (high district brightness).
- For sports and area lighting use floodlights with asymmetric optics that, while producing their main beam at around 60°-70°, permit the front glass to be kept horizontal.
- For road lighting, light above the horizontal should be minimised. Only luminaires that have continually reducing limited intensity values above the horizontal of 300 cads at 95° and 150 cads at 120° should be utilised. Ideally, the intensity at 120° and above should be below 30 cads.

Simple, easily understood sketches accompany several of the

Motorways are a major cause of light pollution on the edges of cities and towns.



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Reader Service No. 21  
Page 9

**Lighting, effectively used, can be a major element in attracting customers to a hotel. Angus Corrie, of Philips Lighting, looks at this valuable adjunct to hotel marketing which lets the facilities speak for themselves.**

# Making light of it

**A**ppearances may well be deceptive, but what better pointer can the passing motorist or weary traveller have to the standard of facilities and the quality of the hospitality provided within a hotel without crossing the threshold than a pleasant facade, entrance grounds picked out in light, and a well lit and invitingly safe car park. Surely, there can be no better way to attract guests and other potential customers.

How many times have you driven past a well-lit and attractive old pub or country-house hotel at night, in too much of a hurry to stop, and made a mental note to try the place at some future date? That's the advertising power that a good exterior lighting scheme can provide.

## Brave face

The facades of hotels in older architectural styles such Regency or Victorian, and buildings in regional styles around the country have a wealth of form and detail which can be revealed by a decorative floodlighting scheme. Modern hotels, too, can have architectural features which are dramatised by appropriate floodlighting. Even buildings which are not particularly distinguished in themselves can be made to stand out at night by designing floodlighting to produce a patterned effect of luminance or colour.

The entrance to a hotel building is a key point; it must be easy for incoming guests to identify it. Often hotel signs, which are visible by day are not so obvious at night – even if they are illuminated.

Lighting can be used in a number of ways to indicate visually the position of the main entrance. For instance, wall or post mounted decorative outdoor luminaires may be positioned on either side of the entrance or approachway, or the entrance fascia may be floodlit in a different colour to that of the building immediately adjacent to it, thus creating a contrast and drawing the eye to the actual entrance to the premises.

Take care to ensure that the steps leading to the entrance are well lit and that the type of lighting provided gives adequate contrast between treads and risers without creating undue glare.

Hotels outside city centres which are set in their own grounds can use localised floodlighting of trees and shrubs to produce attractive night-time

scenes. This makes the grounds a feature of the place by night as well as by day. Floodlights housing metal halide or mercury fluorescent lamps are ideal for enhancing green foliage and an interesting colour variation can be provided by introducing some high pressure sodium floodlights.

Small outdoor luminaires incorporating PAR 38 reflector lamps, both clear and coloured, can be used to create attractive patterns of light and colour on flower beds, small trees and bushes.

Roadways and footpaths through hotel grounds should be well lit. This is necessary both for the safety of drivers and pedestrians, and for security reasons to act as a crime deterrent. Here, a post-top luminaire which combines energy efficiency with an attractive appearance can provide functional lighting by night and add a pleasant pattern of light to the grounds. A careful choice of lighting fitting means it will also add visual interest during the daytime.

As most hotel car parks are an integral part of the grounds, decorative post-top lanterns, discussed above, can also be used in these areas. For private car parks, the normal recommended average horizontal illuminance at ground level is 10 lux, but it is worth considering increasing this figure to 20 lux for security purposes.

Hotel managers seem to have difficulty in maintaining lighting equipment, especially outdoors. On the other hand, a lighting installation with lamp outages does not convey the image of an efficiently-run hotel. It is, therefore, preferable to use lamp types which have a long life and group change at the economic service life.

For this reason, high pressure sodium, mercury fluorescent or tubular and compact fluorescent lamps are commonly used. In certain locations the QL lamp, with a system life of 60 000 hours, is the ideal solution. This lifespan represents, in effect, 15 years' service at 4000 hours per year – approximately the requirement for dawn to dusk service in these latitudes. At 60 000 hours the percentage failure is less than 20% and lumen depreciation is about 30%.

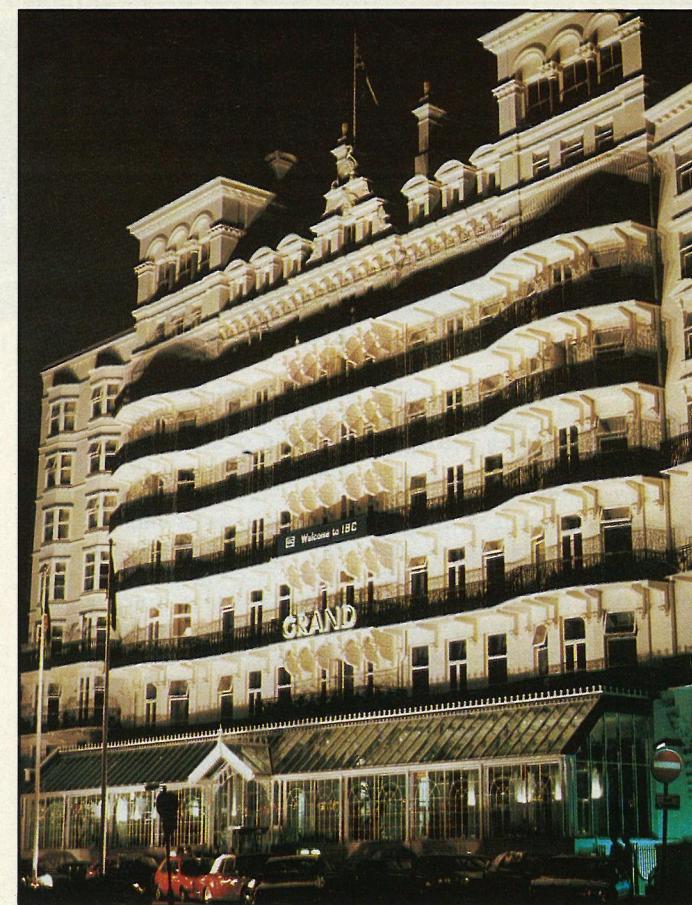
## Inside job

Interior lighting must complement the interior design of the building and be appropriate to the architectural style and the colours and furnishings used.

Hotel guests are also conscious

of, and react to, how other people look, and in particular whether their skin tones appear natural and healthy. So, the lamp types used should not only give good colour rendering of the fabrics and finishes used in the interiors, they should also reveal skin tones in a natural, or perhaps slightly flattering way.

Normal incandescent and tungsten halogen lamps have the required 'warm' colour appearance (CCTs of between 2700K and 3200K) and excellent colour rendering properties (Ra of 100) and, so, fulfil the requirements. However, the economic advantages



The Grand Hotel, Brighton – the drama of a floodlit facade.

of using the more efficient fluorescents and certain types of discharge lamps – which are available in a wide range of CCTs and Ra values – for some applications, means that lighting specifiers and hotel maintenance staff need to ensure that the correct lamp types are used.

Compact and linear fluorescent tubes are available in Colour 82 (CCT of 2700K) with very good colour rendering properties (Ra or 80 to 85) and ideally suited to hotel lighting. White SON (with a CCT of 2500K and Ra of 80) and certain types of metal halide lamps are suitable for some applications, particularly downlighting.

However, fluorescent and discharge lamps cannot compete with the small, low-voltage tungsten halogen reflector lamps when it comes to effect lighting. Much has recently been done to improve both the efficiency and life of such lamps. Philips' new Masterline range of 12V, 20V, 35V and 50V dichroic reflector lamps has a higher beam efficiency which is up to 70% greater than the stan-

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Every OSRAM DULUX® lamp uses 80% less electricity than its equivalent incandescent. That means less carbon dioxide emission from electricity generation and a drastic reduction in energy costs. Based on a price of 7.5p per kWh, the cost of electricity consumed during the 8000h life of a 20W OSRAM DULUX® EL is only £12 compared to £60 for the equivalent 100W conventional incandescent.



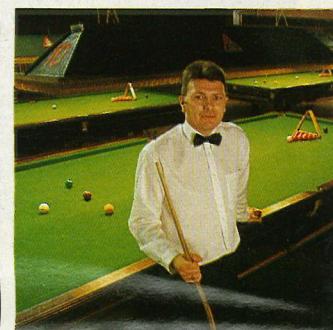
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More light, smaller size, less energy – these are the benefits of the innovative OSRAM DULUX® F 36W compact fluorescent lamp. Its small size and 2800 lumen output makes it ideal for 300mm square recessed or surface modules. Wall lights, sign lights and uplighters can all benefit from the OSRAM DULUX® F.

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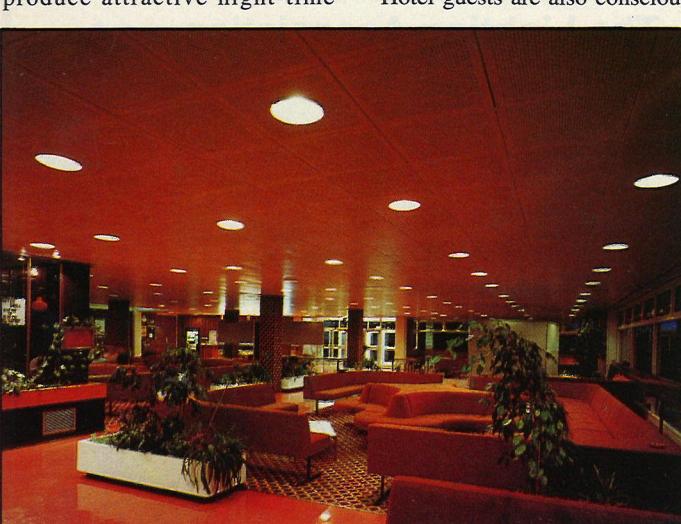
## Snookered? try CIRCOLUX® EL

Potting the black is seen in a new light at Wembley's Starlight Snooker Club thanks to OSRAM CIRCOLUX® EL lamps.

The tables have an even spread of light and at the same time the club enjoys significant cost savings. Each table is lit by three 32W OSRAM CIRCOLUX® EL lamps replacing three 150W conventional incandescent lamps. As there are 19 tables, that's a total energy saving of 6726 watts! Before, at least one incandescent lamp was replaced daily. Since CIRCOLUX® was installed five months ago, not one has failed.

Reader Service No. 12

# A RAY OF LIGHT ON ENERGY COSTS:



A warm colour appearance, to flatter skin tones, is best for lounges.





Lighting indicates the entrance to the Holiday Inn, Glasgow.

night time when 100 to 150 lux is more appropriate. But horizontal illuminance is not the sole criterion for judging a lighting installation because people's normal line of sight is horizontal, so the illumination of vertical surfaces is extremely important.

For instance, although narrow light distribution downlights positioned too far from the walls may produce the required horizontal illuminance on the floor (which usually has a low reflectance and will appear relatively dark) they will not achieve a satisfactory wall luminance.

The colour temperature of daylight (around 3000K) is considerably higher than that recommended for hotel interiors, so it is worth considering using a metal halide MHN-T lamp which has a CCT of 4000K to provide the higher illuminance needed during the daytime and switching to luminaires with the 'warmer' (2500K) White SON lamps for the lower nighttime illuminance.

The reception area of most hotels provides for a variety of

standard types combined with a longer life of 3000 hours, and other lamp manufacturers have been spending considerable sums on development of this lamp type.

#### Entrance foyer and reception

Whether it forms part of, or is

separate from, the main reception area, the entrance foyer must be regarded as a transition area from outdoor to indoor lighting conditions. It is also the most immediate public face of the hotel – the point where guests gain their first visual impression of the hotel

interior and make an initial assessment of the quality of the surroundings.

Because of this transitional role, lighting levels should be variable. During daylight hours a much higher illuminance (of say, 400 to 500 lux) is required than at



Table lamps add interest to this hotel foyer.

functions including circulation and lounge or waiting areas as well as the reception, cashiers' and porters' desks, so a variety of luminaires may be called for. It is appropriate to provide a low average general illuminance of, say, 50-100 lux in the lounge area.

Equally important, is the need to add visual interest by using a range of table, standard or wall-mounted fittings to create areas with a higher local illuminance. This also enables those who so wish to sit and read.

Circulation routes are sometimes indicated by the use of a different type or colour of floor surface. They can also be indicated by a suitable pattern of luminaires mounted on, or recessed into, the ceiling immediately above the route. As these fittings are likely to be switched on for most, if not all, of the time it is sensible to consider using downlights with discharge lamps such as White SON in this location.

The detailed clerical tasks carried out at the reception, cashiers' and porters' desks will require lighting levels in the region of 300 lux. It is also a good idea to provide a good wall luminance level immediately behind each of these desks to make them easy to find. If the jobs to be carried out include working with VDTs then it will also be necessary to comply with the recommendation of CIBSE Guide LG3 'Areas with visual display terminals'.

#### Restaurants

The atmosphere in a restaurant needs to change throughout the course of the day. Generally speaking, requirements vary from a brisk, visual environment for breakfast and a speedy lunch – simulating daylight if not actually providing it – to a more leisurely atmosphere at dinner time.

Although in some instances natural daylight may provide the higher illuminances required for breakfast and the midday meal, it can also produce excessive contrast between windows and the intervening dark wall spaces. This can be overcome by washing the wall with light from fittings. One solution is to use concealed linear fluorescent lighting behind pelmets to light both walls and drapes. Operating the fluorescent lamps on high frequency regulation control gear provides a simple means of varying the wall and curtain lighting to suit any mood. For more sophisticated changes and a greater degree of control, programmed controls giving a simple scene setting system may be appropriate.

**Conference rooms**  
Conference and function rooms are multipurpose and can, moreover, be called upon to provide for a very wide range of functions – including private dinner parties, lectures, training sessions and exhibitions – at short notice. Flexibility is, therefore, the key consideration when designing a lighting installation for such spaces. It also follows that it is difficult to pro-

vide optimum conditions for any one activity.

So, flexibility in terms of lighting controls and simple methods of adding, removing or relocating luminaires is essential if the necessary range of illuminances and visual environments is to be attained.

A suitable arrangement of inconspicuous low-voltage tungsten halogen or compact fluorescent downlights, preferably recessed, can be switched to produce a number of lighting effects, but this will usually need augmenting with track-mounted or plug-in luminaires which can easily be installed or relocated and directed according to need.

High-frequency fluorescent lighting with regulation is usually the most suitable method of achieving the higher and adjustable illuminances required for some activities. However, care should be taken to ensure that the fluorescent luminaires cannot be seen when switched off or they will spoil the appearance of the room when it is used for more leisurely functions. One way of achieving this is to use them for uplighting from behind a cornice or from wall-mounted luminaires using more compact fluorescent lamps such as the PLL.

Portable lighting in the form of free-standing uplighters with tungsten halogen or metal halide lamps provides another flexible solution to this problem of having to meet different lighting needs – providing they are suitably positioned or anchored to prevent them from being knocked over or obstructing circulation or escape routes. Suitably positioned electrical sockets must also be available.

#### Behind the scenes

Lighting needs in kitchens, offices and ancillary spaces must be adequately met if hotel staff are to work well and efficiently. It is an advantage if lamps have the same, or very similar, colour characteristics as those used in the public rooms, so that staff do not experience continuous and significant changes in the colours of objects as they go about their work. A particular problem can be created where the lighting of kitchen and food preparation areas has very different colour characteristics from that used in the restaurants in which the food is to be served.

It goes without saying that luminaires for kitchens and food preparation and storage areas should be corrosion resistant and that for hygiene reasons they can be washed or hosed down safely. It is equally important to ensure that no part of the lamps or luminaires can fall into the food.

#### Conclusion

In conclusion, good lighting is an inexpensive means of improving the attractiveness of a hotel. Nevertheless, it is important to minimise energy consumption, and hence running costs, by using the most efficient lamps and luminaires capable of producing the desired lighting result.

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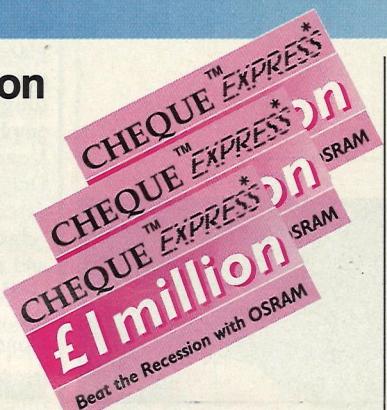
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## Get to know more about Lighting

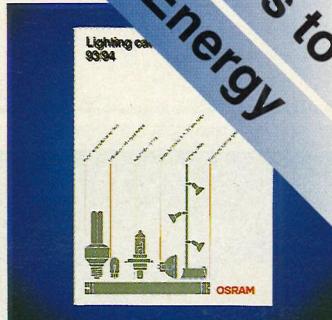
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TECHNOLOGY BROUGHT TO LIGHT

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**Fast food or classic French cuisine, whatever the fare, lighting can play an important part in the experience of dining out. Janet Turner, of Concord Lighting, shows how.**

# Food for thought

Eating out should always be an enjoyable experience whether it is only murdering a burger at the kind of fast food joint so beloved of the young or a languorous gourmet – and very adult – evening. In the catering business, 'enjoyment' is not just a philosophical utopia: rather, the customer's pleasure and satisfaction are factors at the cutting edge between commercial success and failure. Happy customers come again. And they come, not merely to eat, but to relax in a special ambience – a temporary illusion of a different country, a richer lifestyle or a kinder age.

Apart from the chef and all his works, it is the design of the interior space and the decorative concept which creates the special personality of any cafe or restaurant. Lighting is of paramount importance and becomes a vital ingredient in setting mood and atmosphere.

## Impact

First, the exterior lighting of the frontage and sign should have an immediate impact, highlighting the architectural features and contributing to the semiotics which tells the prospective customer what sort of restaurant lies beyond the entrance.

Inside, the clever use of light can make an enormous contribution to the design concept, which goes well beyond satisfying the basic need to allow you to see what you are eating. At this point, it is worth noting that another basic need – enough light to read the menu – is, oddly enough, often forgotten. Restauranteurs, please note – if your carefully composed bill of fare is to receive the requisite attention, don't force your diners to ask for a torch. Do give them enough light beside or at their dining tables.

Another 'don't' is glare. The current vogue for the unshielded



High intensity TH beams offset daylight in the 'Minema'.

capsule lamp could not be less appropriate or more uncomfortable. The elegant extended meal requires that you see your com-

panions – and your exquisite comestibles – bathed in a becoming light, and no more. However, mood lighting can also be used to repel; aggressively high levels of illuminance can assist the fast turn-around eating places to fulfill their role in discouraging the customer from lingering over a beefburger or bacon butty.

Interiors washed with high levels of natural daylight require a counterpoint in high intensity low voltage lamps. The 'Minema' is such a restaurant. Behind its 14 m glazed street facade, the designers selected the narrow beams of tungsten halogen Myriad to emphasise the cool reflective surfaces of this minimalist interior. Only 3.5 m deep, the restaurant, described by the design press as a 'glistening gem', glows both day and night. Recessed parabolics fit neatly into the ceiling, reinforcing the clean, crisp lines of the 'American diner' look.

## Vaults

In direct contrast, a windowless space without any vista is a particular challenge. Here, imaginative lighting design can surmount spatial disadvantage to provide an effect so appropriate and so decorative that diners are diverted from remembering that there is no natural daylight. In the vaults of the Royal Society of Arts, the designers were working in an exciting space defined by the beautifully distressed bricks of the eighteenth century Adam building, but had to produce a restaurant and conference centre, just

under 600 sq m in area, with no windows to the outside world. The lighting scheme had to bring out the architectural attractions while providing illuminance that would compensate for the total absence of natural daylight.

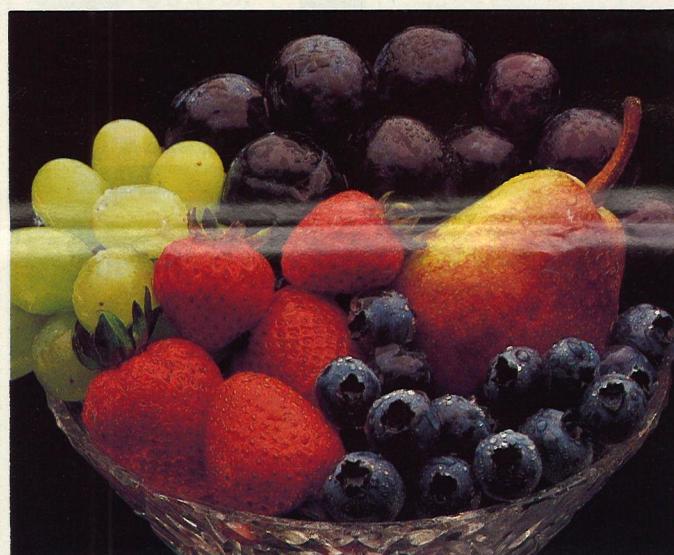
In the final scheme, the handsome brick surfaces throughout the Royal Society of Arts basement vaults are enhanced by a delicate wash of light from 50W low voltage Torch spotlights and miniature 100W uplighters hung from 'floating tracks'. Narrow beam uplighters recessed into the raised timber floor accentuate the cathedral-like arches of the vaults and, for special occasions, table candelabra create an even more mysterious and dramatic atmosphere.

The British Museum self-service restaurant typifies another spatial problem with its various heights of floor and ceiling levels. The designers cleverly deploy 10° and 40° beam spread downlighters for ambient light, supplemented by more luminaires recessed into perimeter canopies. With additional uplighting fixed to the columns in the higher spaces, the overall effect is lively and appropriate both to the style of food and the noisy background chattering of patrons.

There is no attempt here to isolate any item or a specific feature. Bar, servery and food displays sparkle in all their glorious natural colour lit by dichroic lamps that serve the dual purpose of enriching colour while providing a cool light source to protect the

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## HOTELS AND RESTAURANTS

lighting plan by easily operated switching and dimming alternatives that provide instant mood change. Luminaires that bounce light off the wall surfaces will be particularly effective and achieve maximum impact when used in conjunction with dimmers.

### Creating an effect

For special effects, existing skylights can be illuminated from the exterior to boost or simulate the 'daylight' effect. Painted stencilling on the glazed skylight surface adds a decorative touch; a 'dappled' projection over all interior surfaces creates a 'sunlight through trees' effect. This embellishment was installed many years ago at the Four Seasons Restaurant in New York City.

Without altering the architectural elements, a huge range of special effects can now be created at the touch of a switch – and a different pattern or colour can 'jazz up' a plain, calm space merely by fixing the gobo accessories to control projector spotlights. The gobos can be ordered to any design, including logo and corporate identity

images as well as exotic or geometric shapes.

For the late-night venues – open almost until dawn – the 'club' atmosphere is almost de rigueur. Lighting must be functional as well as decorative: customers don't want to trip over their partners' feet, or the dice, or someone else's drink. Here, as well as in the 'theme' pubs with their art nouveau, Edwardian or Deco styling, even the most baroque atmosphere almost always requires an element of functional or task lighting. So it becomes the task of the designer to balance the decorative with the practical, to moderate the glaring light from a 'period' chandelier or wall bracket by substituting a lower wattage lamp. Other functional luminaires, often concealed behind a decorative feature, will then provide back-up directional shafts or washes of light.

Glaring through neon, or so discreet it is hardly noticed, light and lighting plays an ever more important role in the magic and illusion of the entertainment of eating out.

**Making the most of a windowless space – the basement vaults of the Royal Society of Arts.**

perishable food. Shelves carrying glass displays are backlit by concealed compact fluorescent lighting, while downlighting is focussed on counter tops. In other schemes, rather than a bland wash of light, it might be preferable to highlight servery or bar areas with narrow 10° beams from recessed spot fittings producing the least possible glare.

The popular 'diner look' with the suspended opal spheres and chrome surfaces that are signatures of the Deco period, can now be achieved by using energy conserving sources in uplighters fixed to walls or ceilings – metal halide for cool air colours (blue/green/grey) and White SON for warm earth colours (red/orange/yellow).

### Suggesting sunlight

Following the real sun through the seasons as well as through the day, from lunch time to dinner, may be a design consideration. With the resources now available, designers can suggest the strong summer sun as well as its paler winter reflection by deploying a simulated 'daylight' effect. When separate switch controls are installed, refreshing options of mood can be easily achieved.

A bustling atmosphere, like that of the busy French brasserie, can be suggested by directing spotlights onto a walkway. This creates a corridor of light through

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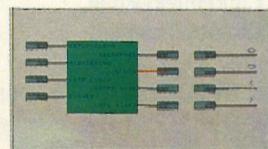
**A lively style for the restaurant in the British Museum.**

## STRAND SCAPES

— No. 3 —



*At the gallery*



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# Making a hurried exit

**Emergency lighting used to be conspicuous by its strictly utilitarian design and much of it was – frankly – ugly. Bob Wilson of Bradley, Lomas Electrolok argues that this is no longer the case.**

**T**op of the list of priorities in the design of any large hotel or restaurant is the safety of the guests and staff. The greatest potential hazard is fire, and it is essential that the provision of an adequate fire alarm system to give early warning and emergency lighting to enable safe evacuation of the building, are considered at the design stage.

The requirements for emergency lighting systems in the UK are currently covered by the British Standard Code of Practice BS 5266, but this is shortly due to be superseded by new mandatory European standards and

directives which are expected to come into force in December 1992.

These will include a specific recommendation on hotel fire safety which is at present under review, and is expected to be translated into a directive with its scope extended to cover premises where there is a sleeping risk to travellers and tourists.

BS 5266 requires the installation of a 3-hour emergency lighting system in hotels and one of 2 hours' duration in restaurants and cafes. It specifies a minimum level of illumination of 0.2 lux in corridors and stairways, and an average level of 1 lux in

open areas.

The European standard is expected to require a minimum light level of 1 lux in all areas, but it is possible that a 0.2 lux level may still be acceptable under certain conditions.

Many of the existing requirements of the British standard will be written into the new standard. These include:

- the provision for emergency lighting to operate in the event of local sub-circuit failure;
- the need for each compartment of an escape route to have at least two emergency



Safe and stylish – emergency lighting in the foyer of the Ashford Hotel, Kent.

luminaires, and for specific locations such as plant rooms, lifts, toilets and escalators to be protected;

- the adequate illumination of fire alarm call points and fire fighting equipment by suitable emergency luminaires.

The standard will also cover the location of exit signs and the need for them to be seen clearly from all parts of the building. There will also be a need for external emergency lighting to be provided immediately adjacent to the final escapes.

One of the major problems for designers is that until recently emergency luminaires were often basic in design, to say the least, and so were essentially fitted in addition to normal mains lighting.

To solve this aesthetic problem, many companies have developed conversion kits which fit into a wide range of luminaires and enable them to provide emergency lighting for the required period in the event of mains failure without the need to use conventional emergency luminaires. This enables the designer to provide a coordinated mains/emergency lighting scheme. Such gear trays are available for a wide range of lamp types including standard and 2D compact

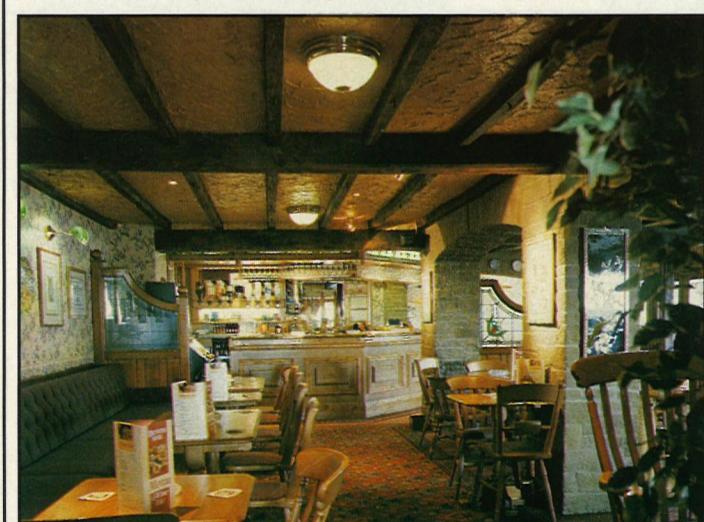
quality. Here, they specified the Lusso range of luminaires from Bradley Lomas Electrolok, one of the many ranges of luxury fittings now on the market.

The luminaires are manufactured from solid brass which is in keeping with the rest of the decor, and amber glass diffusers complement the plush, timber-beamed interior, creating a soft ambient light. The emergency exit signage echoes the tone of the main lighting installation, incorporating brass edge-lit signs.

Another recent example showing the use of both these approaches is the Ashford International Hotel in Kent, which has an installation by Bradley Lomas Electrolok, using self-contained, maintained emergency luminaires of three hours' duration.

The bedrooms are equipped with white Spaceglow units and emergency exits in the public areas are indicated by brass finish edge light exit signs which complement the interior design. Outdoors, Stormglow luminaires provide the necessary emergency lighting to each final escape route.

Built in downlights using dichroic lamps have been fitted with converters to enable them to be used as emergency luminaires, and so has the fluorescent lighting in the conference rooms.



Emergency lighting creates an ambience at the Wood End Inn.

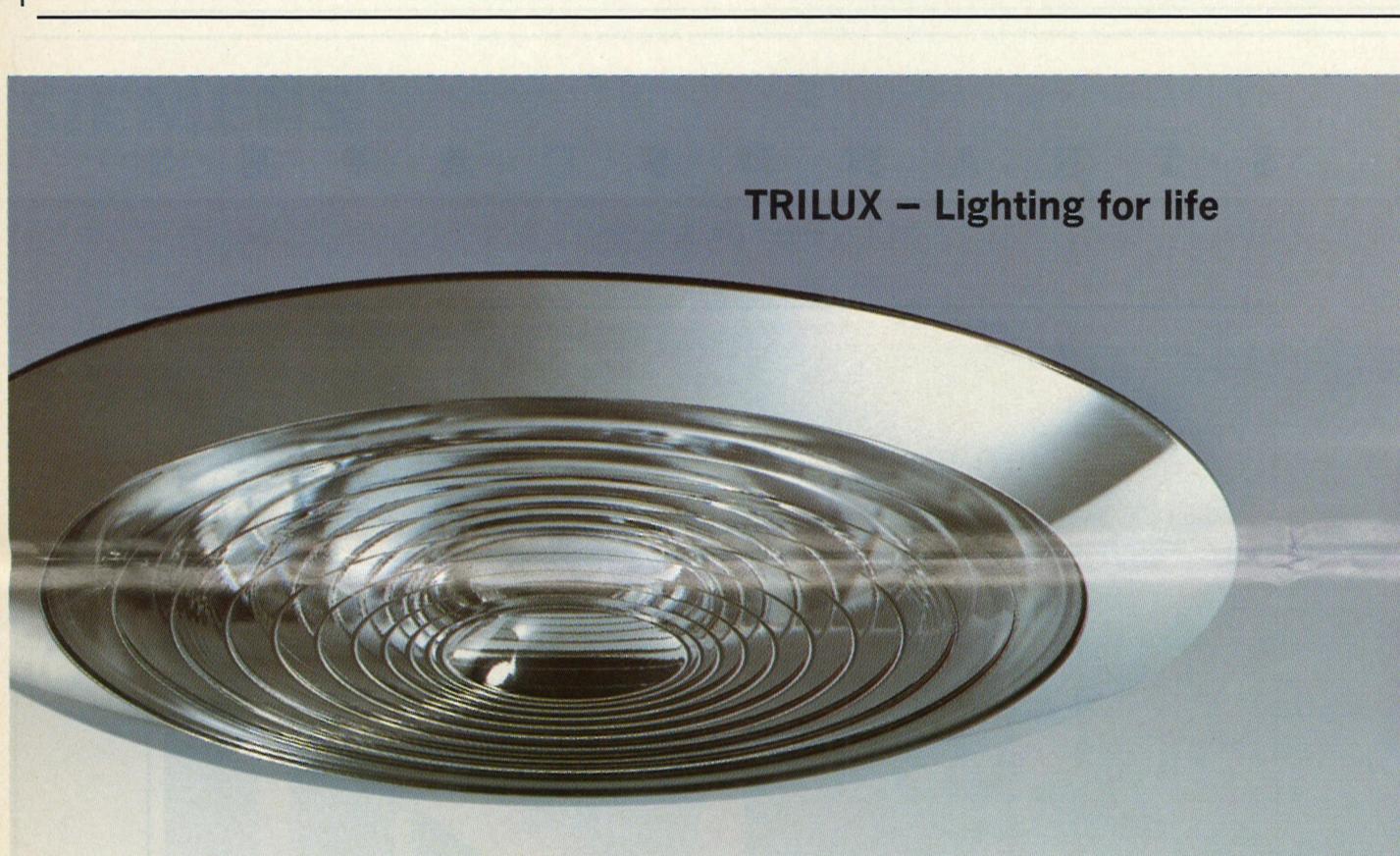
fluorescents.

In addition, decorative emergency luminaires to a high specification are increasingly being brought onto the market by the emergency lighting manufacturers, mindful of the demand for this type of product.

Typical of this requirement is the Wood End Inn, Sheffield, one of a number of Brewers Fayre Pubs owned by Whitbread. The designers of this chain of pubs were keen to create a pleasant atmosphere with the emphasis on

Manufacturers and lighting designers are now leading the way in pinpointing exactly what is required in hotels and restaurants, so there is no longer any need to put up with obtrusive and ugly emergency luminaires.

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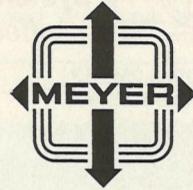
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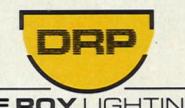
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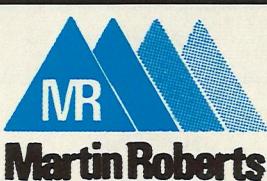
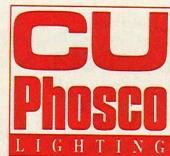
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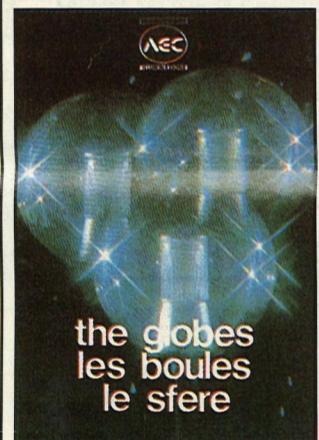
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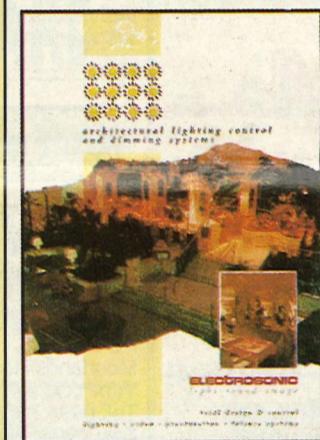
Wieland have extended their range of ST17/ST18 compact connectors, the 1992 catalogue shows many new products: 3 Pole, IE320 approved, 250V; 5 Pole, compact, crimp, 250V; 2 Pole, low voltage system, 50V; 'Tronic' LV electronic transformer. This range offers a versatile and cost effective modular wiring system which is easy to install, reposition and service: circle 90



BCP Lighting, the official representatives of AEC from Italy now have available their well proven and comprehensive range of Amenity Spheres. The Galleries have integral MBF or SON gear (up to 150W) various optical controllers and are for globe size from 400mm to 600mm in diameter: circle 91



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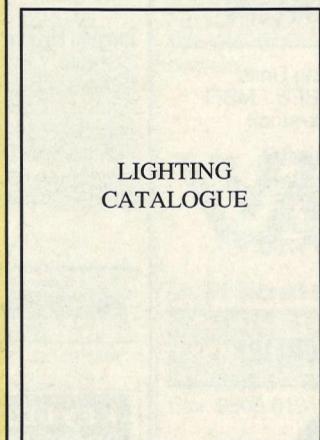
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Projection Lighting now have available their comprehensive catalogue. It details a full range of U.K. manufactured products, and their capability to design and produce special luminaires. The range consists of discharge, low energy and L.V. downlights, wall mounted and free standing uplights: circle 95



FORMLICHT is an established German based manufacturer, specialising in high quality Downlights. After the extreme success of using decorative glass discs for the compact fluorescent and HID range, this design was consequently continued in the recently launched new catalogue for Low Voltage Downlights. The well designed appearance of the range is suitable for prestige lighting schemes: circle 96



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Luxmate has decentralised intelligence and a diagnostic reporting capability as currently being installed in 2 turnkey projects within the U.K. Ref: 08/001

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We are seeking to appoint a sales person to promote our unique ZX composite lighting/wiring/trunking system to contractors/users in the South East. The successful applicant will have a background in the electrical wholesaler/contractor interface and have a proven track record in selling. Ref: 01/002

## SALES-ARCHITECTURAL & DISPLAY LIGHTING

We require a sales person with experience of calling on interior designers and architects in the South East. An affinity to good design and style would be beneficial but a proven selling background is essential.

Ref: 03/002

Please apply in writing with a C.V. and a 200 word essay on why you would like to work for Zumtobel to:

Mr. G. Daniels, Zumtobel Lighting Systems Ltd. Unit 5, The Argent Centre, Pump Lane, Hayes, Middx UB3 3BL

**ZUMTOBEL**

## Sales Representative required

for Yorkshire and Humberside area.

Experience preferred.

Send full CV to Mr A. Stuchberry,  
**Fitzgerald Lighting Ltd,**  
Abbotsfield Road, St Helens,  
Merseyside WA9 4HU

## SALES AGENTS

Manufacturer and distributor of commercial and architectural luminaires requires agents in all areas. Must have good quality contacts within the electrical specification market including architects, consultants, engineers and electrical contractors.

Please apply in writing together with CV to:  
Box No. 1537, Lighting Equipment News  
Maclean Hunter House, Chalk Lane,  
Cockfosters Road, Barnet, Herts EN4 0BU

## Lighting Sales Engineer:

iGuzzini Illuminazione is one of the leading manufacturers of Architectural lighting in Europe and now requires professional lighting Sales Engineers for the UK Operation to cover West & South West London Postal Districts, and the South West, Midlands, & North of England.

Your main role will be to develop and secure lighting specifications, calling on such clients as Architects, Consultants, Engineers, Contractors etc. You will have had at least two years experience within the specification market, and are able to prove a successful track record. You must be of a flexible nature, enthusiastic, self-motivated and able to cope with the heavy demands that the position requires.

In return we are able to offer a competitive salary with a bonus scheme and company car.

Please apply in writing to Mr Ian Stanton enclosing a current Curriculum Vitae.

iGUZZINI UK Ltd, Unit 3, Mitcham Industrial Estate, 85 Streatham Road, Mitcham, Surrey CR4 2AP.

**iGuzzini**

## RON DURY AD

Ronald Dury of Manlight Lighting was given a severe test by Ron Tsang of Cudd Bentley Associates recently. Fifty (50) special shallow plc 18 watt recessed downlighters were required for a branch opening of a large fast food chain of restaurants opening in two weeks.

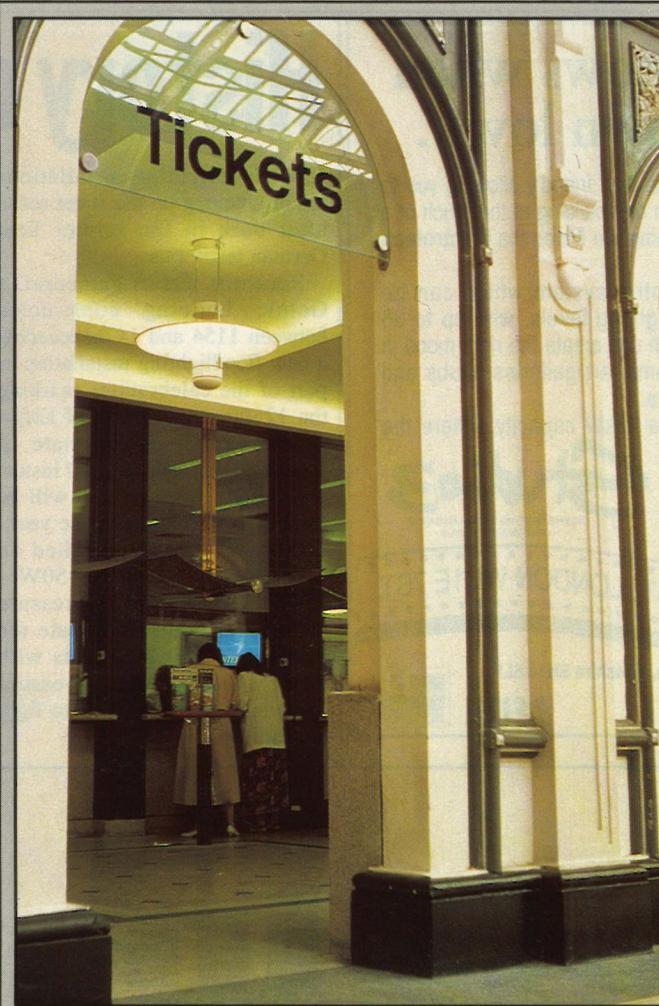
The downlighters were computer designed, toolled, spun, assembled, tested, packed and delivered personally within eight (8) working days!

SEND IN NOW FOR THE NEW LOW PRICE DOWNLIGHTER RANGE BROCHURE OUT NEXT MONTH.

Reader Service No. 30

Lighting Equipment News, November 1992

# NEWS



The newly completed ticket hall at London's Paddington Station uses Futura luminaires from MW United to provide ambient lighting. A 250W metal halide lamp throws light upwards onto a large, dish shaped reflector and it is then redirected downwards. Emergency lighting above the reflector uses a 16W 2D compact fluorescent lamp.

## KEYLIGHTING PRODUCTS LTD.

Keylighting Products Ltd are a rapidly expanding lighting manufacturer supplying the commercial, wholesale and specialist O.E.M. markets.

We require a sales representative to serve Bedfordshire, Buckinghamshire, Hertfordshire and surrounding area.

We offer an excellent remuneration package available to the right applicant.

Applications in writing with C.V. to:  
Managing Director, Keylighting Products Ltd,  
Royd Mill, Cowling, BD22 0BE

THERMA-SOL Ltd unreservedly apologises to Thorn Lighting Ltd for the unauthorised use of their copyright photograph in a brochure for the SOLITE mirror light reflectors and for any implication that the installation shown in the photograph has been amended by the substitution of SOLITE reflectors, which is not the case. At the request of Thorn Lighting Ltd a donation is being made to the C.I.B.S.E. benevolent fund in a token recompence.

## NEMEX '92

Birmingham Metropole Hotel  
24th & 25th November 1992  
National Energy Management  
Exhibition & Conference



MIRROR LIGHT REFLECTORS

CUSTOMIZED LIGHT REFLECTORS &  
LOUVRES TO COMPLY WITH HEALTH &  
SAFETY REQUIREMENTS AND ENERGY  
CONSERVATION

SEE US AT NEMEX '92

**THERMA-SOL LTD.**  
SPECIALISTS IN LIGHTING EQUIPMENT

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# Celebrating 200 years of gas lighting

British Gas is aiming to give credit where it is due – to William Murdoch, the Scottish inventor of gas lighting. New research, it says, calls for a reassessment of his role.

Two hundred years ago gas first lit up Britain and soon afterwards the rest of the industrialising world. Gas lighting quickened the pace of the industrial revolution, extending both working hours and educational opportunities, and made city streets safe after dark.

Murdoch's inventive genius was not limited to gas lighting, to

this colourful character has a list of inventions to his credit.

A full length biography of William Murdoch, *The Third Man*, by John Griffiths, was published in October by André Deutsch with the support of British Gas.

In addition, a brochure on William Murdoch and summarising the history of the gas industry has been published by British Gas Scotland. Copies are available free of charge from British Gas, 152 Grosvenor Road, London SW1V 3JL.

## Film and theatre firm expands

Light & Sound Design has opened a new factory at Gravelly Park, Birmingham, as part of a multi-million pound investment

to expand into manufacture of lighting equipment for film, television, theatre and concert applications. Over 100 new jobs have been created.

This is in addition to the company's hire department at its Coventry Road, Birmingham, headquarters.

## Hear what the future holds

A one-day conference in London on *The future for building services* has been arranged by the Mid Career College. It will take place on 8 December and

will explore opportunities and strategies.

Jim Ure, Associates in Building Services, will chair the conference. He says, "Building services systems are dynamic, unlike the other components of buildings.... They need regular attention if they are to provide the best results."

## Move to recycle electronic products

The newly launched Industry Council for Electronic Equipment Recycling aims to reduce levels of redundant electronic equipment going to landfill. This initiative will bring together equipment designers, raw material suppliers, manufacturers, retailers and other

relevant organisations.

Through the creation of ICER, industry and commerce is acknowledging the contribution electronic equipment makes to the waste problem and the environmental benefits of unlocking the resources trapped in the equipment.

More information is available from ICER, 6 Bath Place, Rivington Street, London EC2A 3JE.



## Flying high

New apron floodlighting at Newcastle International Airport provides an 80% improvement in lighting levels together with a 29% saving in energy costs.

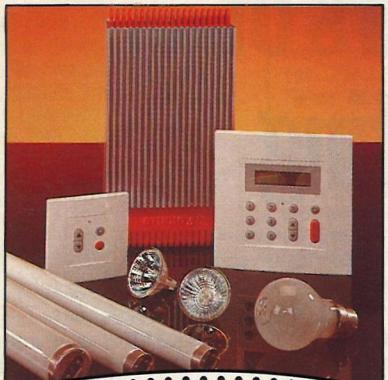
The new installation, designed by Thorn Lighting, comprises 25 floodlights, each of which contains two 400W high pressure sodium lamps – GE Lucalox XL – which combine high light output with a long life. Each lamp can be individually switched, giving greater control over the amount of light provided on the apron. Thus, when a plane is docked and unloading or loading baggage and passengers both lamps are switched on. For general illumination and security

purposes, only one lamp is used, so significant energy savings can be made.

Precision reflectors have considerably improved the uniformity of light distribution on the apron, thus increasing safety, and the improved performance has enabled the total number of fittings to be reduced. The installed lighting load has also dropped from 24.8kW to 18.9kW.

The new installation will also produce substantial savings in maintenance, as the control gear for all the fittings is now sited remotely in an easily accessible area inside the pier. The original scheme had integral control gear so engineers had to carry out maintenance work at the installation height of 17m.

## 'Studio 3' A system which knows when its time to turn the lights down low...



NOW ON DISPLAY AT THE BUILDING CENTRE, 26 STORE ST, LONDON WC1E 7BT.

**Home Automation**

Home Automation Limited, Bumpers Way, Chippenham, Wiltshire SN14 6LF

Tel: 0249 443422 Fax: 0249 443315

DELTA



Reader Service No. 27

**IMAGINE** a system which is user friendly allowing you to control various lighting scenes in one building at the touch of a button. A system which is so innovative it won the **Electrotech Award** for technical excellence.

**IMAGINE** a lighting control system which can be programmed to give preset lighting levels, with up to 36 different scenes. A system which can create the right mood in the workplace, hotels, museums, art galleries, clubs and window displays, in fact anywhere.

**IMAGINE** a system with a 45kW capacity, where the control circuitry is just **two 12v wires**.

Studio 3 is all you've ever imagined.

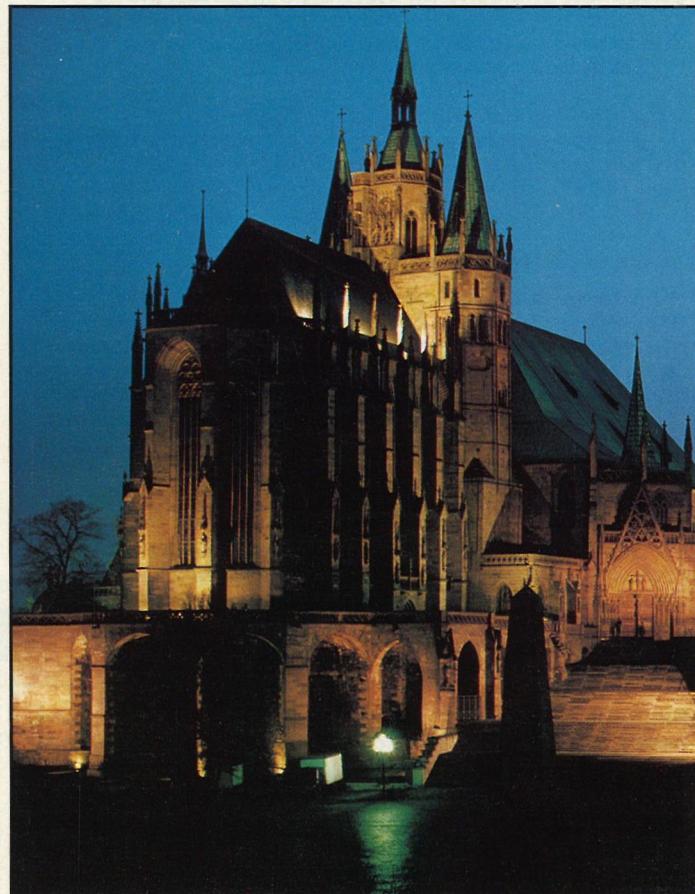
**Studio 3**  
SCENE SETTING PROGRAMMABLE  
LIGHTING CONTROLS

## History comes to light

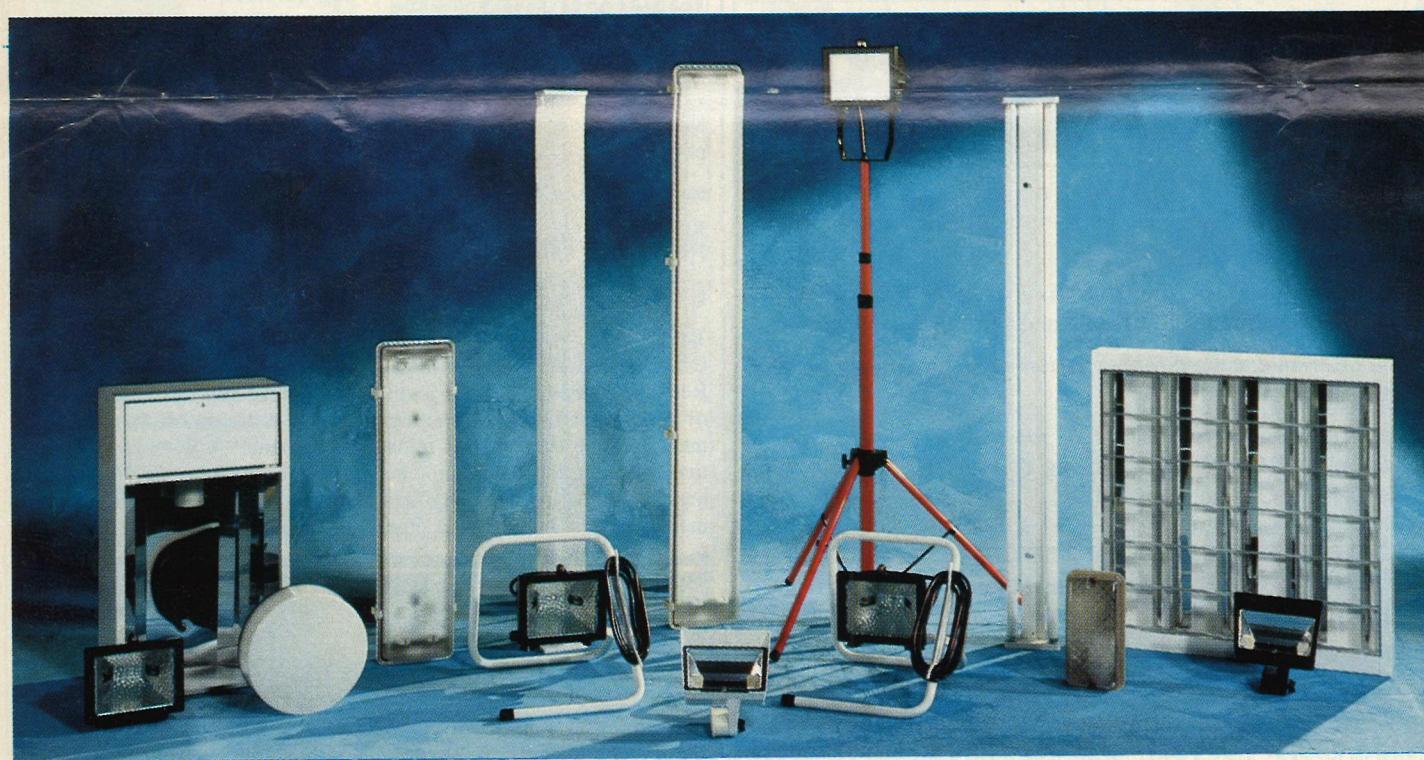
New floodlighting installations are brightening up the street scene after dark in the former East German territories.

Recently, Erfurt cathedral, a Gothic building constructed between 1154 and 1476, received a new floodlighting installation as part of the celebrations marking the 1250th anniversary of Erfurt as the capital of the state of Thuringia. In fact, over 40 historical buildings in the city will be floodlit in the course of the year.

Philips Lighting installed 48 SNF floodlights with 150W - 400W SON-T high pressure sodium lamps to illuminate the masonry; HNF floodlights with 1kW tubular high pressure sodium lamps were used to light the roof and spire.



## See JSB in a new light



### A new range of standard lighting that's anything but.

Improving standards is just what you might expect from a company used to dealing with emergencies.

As such JSB have now added a complete range of standard mains lighting products to our already extensive catalogue of emergency lighting.

Everything from floodlights and luminaires to lay in modules and diffusers will now carry the JSB name, with it will come the outstanding levels of quality and service for which we are renowned in the industry.

As with emergency lighting, our design service will be available to assist contractors and specifiers in choosing luminaires for all applications or projects.

And a firmly established distribution network will ensure availability off the shelf, so you'll never need to let your standards slip.

Further detailed information on the new standard lighting range is available through your wholesaler/stockist or by contacting us direct.



JSB Electrical plc, Manor Lane, Holmes Chapel, Cheshire, CW4 8AB. Telephone: 0477 37773 Fax: 0477 35722

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The new installation consumes only one third of the power of the previous floodlighting scheme, which was used only approximately 30 hours per year.

Leipzig also newly commemorates a grim moment from its past in light. In October 1813, Austria, Russia, Sweden, Britain and Prussia defeated Napoleon's army near Leipzig, thereby freeing Germany from foreign rule. This was one of the key events which gave Germany a feeling of nationhood from which developed the idea of

a single German state.

A memorial to commemorate the so-called Battle of the Nations, the Voelkerschlachtdenkmal, was erected in 1913. The 91m high monument is built on a mound of earth some 30m in height and its bell-shaped dome houses a 60m high hall which contains four giant seated figures.

A new floodlighting installation comprising four floodlights and two spotlights now ensures that the monument is as impressive by night as by day.

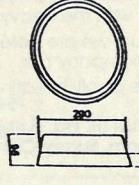
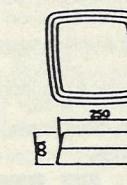
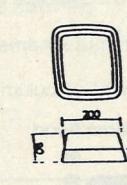
### IN YOUR NEXT ISSUE

Modular linear lighting systems are widely used for a variety of applications. As the choice is extensive, the December issue of *LEN* will take a look at the systems on the market.

Winning installations in the European Lighting Awards competition will also be described. On this occasion, the theme of the contest was lighting for selling.

## ACRILUX

THE ENCLOSURE SPECIALIST TO THE INDUSTRY



ACRILUX fully enclosed units are moulded in vandal resistant UV stabilised polycarbonate. Flame retardancy = UK 94-V2 or UK 94-VO. These units are suitable for use with incandescent or fluorescent light sources.

**VERALUX Ltd.**

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Stockists and Distributors of ACRILUX Components for VERALUX. Globes - Refractors - Diffusers - Enclosures - Galleries - etc. to the OEM's of the lighting industry.

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Reader Service No. 29

Lighting Equipment News, November 1992