

# LIGHTING EQUIPMENT NEWS

- 9 AUG 1988

AUGUST 1988

## Transatlantic switch at Philips

Hein van der Schoot, 49, became the new Managing Director of Philips Lighting Ltd on 1 July, when he took over from Mike Goodwin, who has moved in the opposite direction across the Atlantic to take up the position of Executive Vice-President of Philips' North American lighting operation.

Mr van der Schoot joined Philips 28 years ago in the Netherlands and worked for 15 years in the components division before joining the Lighting Division in 1975. He spent seven years in Brussels where he helped to build up the small electric motor business, before returning to Holland to run the motor activity. In 1977, he became Product Manager for Photo and Projection Lamps and, in 1979 Market Manager for the Special Lamp Group. In 1986 took up his last position in Canada as Vice President and General Manager of the Lighting Division.

Commenting on his new appointment, Mr van der Schoot said: "I am particularly pleased to be joining Philips Lighting in the UK, where there appears to be a growing awareness of the benefits of better lighting both in the professional and consumer markets".

## In Brief...

- In the July issue a low voltage spotlight with a toroidal transformer was attributed to Prima instead of Reggiani Ltd. We should like to make it clear that, although Prima was until recently responsible for marketing Reggiani products in the UK, Reggiani have now opened their own manufacturing plant over here and they produce this fitting and market it.
- Whitcroft plc has announced a 33% increase in group profits for the year ended 31 March 1988. Lighting Division profits increased by 15%. Commercial and domestic markets for the Lighting Division are being widened and the pace of new product development is reported to be increasing.
- M and M Lighting Ltd has been set up by Michael Goldberg, formerly UK sales manager of Roscolab. The new company is distributing Swedish stage and film lighting.

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## European highlights

### ELC's public lighting winners announced

Winners of the first European Lighting Awards have been announced. The trophy for the overall winner goes to the town of Angers in France. In addition to prizes in individual categories, the adjudicators awarded two special prizes: one to Rome for the lighting of the Coliseum, and one to Blackpool for its famous illuminations.

On this first occasion that the contest has been held, the theme was public lighting installations.

In the category for lighting traffic roads and tunnels Angers took first prize, the Hatfield motorway tunnel in Britain gained second prize, and the Corso Regina Margherita in Turin, Italy, was third.

Category two, for shopping and pedestrian areas, was won by La Rochelle, France, with Britain placed second and third for the Treaty Centre, Hounslow, and the Hanley pedestrian zone.

Italy won category three, for decorative floodlighting, with its illumination of the Piazza del

Popolo in Ascoli Piceno, while the town centre of Cáceres, Spain, was placed second. The lighting of Verona's historic centre came third.

#### Angers: imaginative

The problem facing the town of Angers was to enhance the night-time appearance of the city centre and at the same time provide public lighting for a motorway and tunnel which passed through the area. This combined project therefore contained an element of decorative lighting.

An imaginative combination of low pressure sodium lighting was used for the visible motorway and tunnel with high pressure sodium for pedestrian and recreational facilities. Pressed glass lamps contained in special water-tight luminaires were used to light a fountain. Lighting manufacturers involved were Philips and Europhane.

The Coliseum in Rome was lit to an unusually high standard. In an



area of high traffic density, the decorative lighting enhanced the visual environment without creating glare.

The installation used equipment by Osram, Germany, with mainly tubular high pressure sodium lamps, which complimented both the texture and colour of the stone.

Blackpool illuminations were considered by the jury to be exceptional by virtue of the elaborate use of fantasy, diverse creativity and the sheer size and standard.

This festive lighting stretches for 11km, consisting of 18 major roads with different themes and a cliff top display incorporating some 60 animated tableaux. Over 10 000 tungsten lamps are used for Blackpool tower alone.

Although many of the themes pictured are traditional, the technology is the latest, using fibre optics and laser beams.

#### Tunnels and shops

The lighting of the Hatfield Tunnel used 5223 special luminaires made by Thorn.

Basic lighting is provided by twin 65W fluorescent tubes positioned over each nearside and offside lane of the A1 (M). Boost lighting is from 135W and 180W low pressure sodium lamps over each entry and exit point and into the tunnel up to the second transition zone.

To ensure that drivers' vision is unimpaired on entry to the tunnel, the threshold illuminance matches the external ambient lighting, which can reach 7000 lux, reducing through the first and second transition zones to 200 lux at the centre.

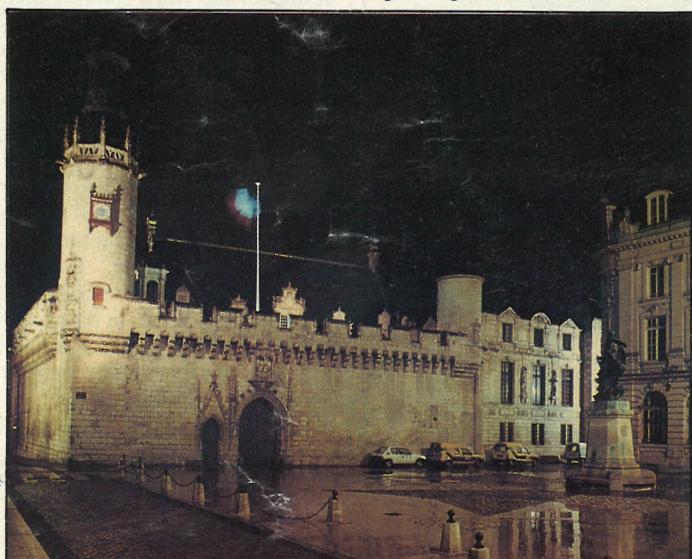
Britain was involved in all three of the shopping centres named.

Thorn Lighting, Lyons, worked in conjunction with the city engineer of La Rochelle to create the winning lighting scheme for the town. A warm and pleasant atmosphere is created while simultaneously enhancing the historical and architectural features.

Because the streets are very narrow, high pressure sodium deluxe floodlights were fixed to building facades. The light reflected off the buildings provides indirect lighting.



The lighting of the Coliseum won a special prize.



La Rochelle, France, won first prize in category 2.

for the streets and walkways. Asymmetric reflectors limit glare.

The Treaty Centre at Hounslow uses a variety of lighting for the atrium and malls, while in Hanley, a busy traffic area was pedestrianised. High lux levels were deliberately avoided in the new lighting scheme to give a restful character.

#### Ornamental spheres

Philips 150W and 250W floodlights using tubular high pressure sodium lamps are mounted on buildings while ornamental fittings are installed at low level on columns. The decorative spheres are also by Philips but had ornamental metalwork added; they use 70W high pressure sodium lamps.

The new lighting is said to have enhanced the night-time scene and made the public more aware of its surroundings, as well as contribut-

ing to safety and comfort.

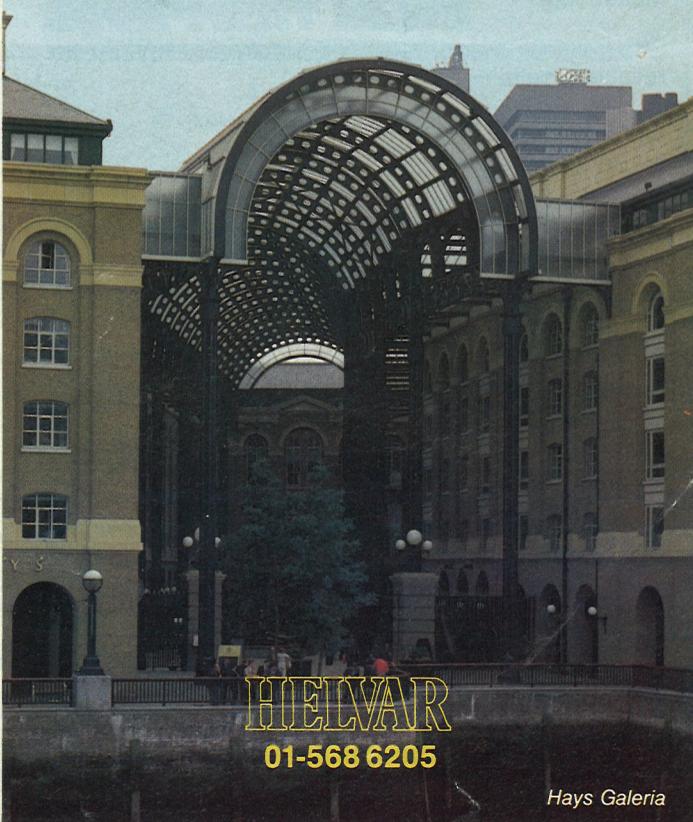
Ascoli Piceno's winning entry in the decorative floodlighting section was a small square surrounded on all sides by medieval buildings, the town hall, a palace and a church. Galleries line the square.

A combination of high pressure sodium and metal halide luminaires gives a modelling effect.

Entries from Cáceres in Spain and Verona in Italy similarly featured historic town centres enhanced by the use of high pressure sodium and metal halide lighting.

The competition, organised by the European Lighting Council, attracted 65 entries, described as being of outstanding quality.

## WHAT YOU CAN'T SEE IS JUST AS IMPORTANT



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Reader Service No. 1

Page 1

# NEWS

## Theatre and film experts to gather in Amsterdam

Amsterdam is to be the venue of Showlight '89, the international event concerned with lighting for the performing arts. It will be held on 15, 16 and 17 May at the Hilversum studios of NOS/NOB, the Dutch broadcasting organisation.

Subjects to be discussed include innovative stage lighting designs, special rigs for theatre lighting, controlling light (eg intensity and colour), remote control of luminaire movement, and special effects. The committee is currently considering synopses of papers.

The provisional programme includes visits to theatres in Amsterdam on 15 May.

A display area is being organised where manufacturers can exhibit their products and meet clients.

It is anticipated that delegates

will be professional stage lighting designers and others working in, or supplying products to the performing arts in Europe and North America. Television, cinema, theatre and pop music will be the main areas considered.

The working language will be English and Showlight '89 will provide an opportunity to exchange views, news and experience across related fields.

The event is being organised by the National Illumination Committee of Great Britain in association with NOS/NOB on behalf of the *Commission Internationale de l'Eclairage*.

For more information contact Ruth Harrison, Room A2000, BBC Woodlands, Wood Lane, London W12 0TT.

## People in Brief . . .

### CCT acquires W J Furse

CCT Theatre Lighting Ltd has acquired the Theatre Products Division of W J Furse & Co Ltd.

Don Hindle, managing director of CCT, says that CCT will now be able to benefit from the expertise of Furse in the broader field of stage equipment, including lighting controls and electronics. It is planned to develop the Furse manufacturing resources in Nottingham.

W J Furse has been known for its regional and educational theatre lighting since the 1930s.

### Peter Platten dies

Peter Platten, project co-ordinator at Erco Lighting, has died following a long illness.

He was with Concord Lighting for seven years and left there to run his own company before joining Erco in 1986.



## Sodium guides British skiers down the slope

The longest artificial ski slope in England and Wales is using high pressure sodium floodlighting by GTE Sylvania.

Ski Llandudno, home of the 1987 Wales and 1988 national championships, chose Sylvania fittings to enable skiing to continue until late into the evening throughout the year.

The fittings provide good beam control both across and down the 300m long slope, avoiding the problem of shadows for the skiers. A combination of 250W and 400W high pressure sodium FED fittings is used, mounted on 12-light columns. Five of the fittings have auxiliary lamps for instant restrike in the event of power failure.

The floodlight housing and electrical connection box are made of corrosion resistant diecast aluminium which is necessary because the slope overlooks the Bay of Llandudno and is thus subject to the effects of sea air. The fitting is ingress protected to IP54 standard and has a safety glass cover.

Chris Warmby, director of Ski Llandudno, said, "We are very pleased with the lighting scheme which satisfies the requirements of the skiers and is also very economical".

The ski slope, which is open all year round, has a Tyrolean style ski lodge with bar and restaurant overlooking the slope and the bay. The lodge is floodlit by Sylvania Alleykat 70W SON fittings which have a rugged construction.

### Stage and disco show goes to Olympia

Light and Sound Show '88 will take place at Olympia 2, in London, from 11-14 September. Over 120 companies will exhibit lighting and sound equipment for the entertainment industry.

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## MINOLTA METERS MAKE MEASURING LIGHT WORK!

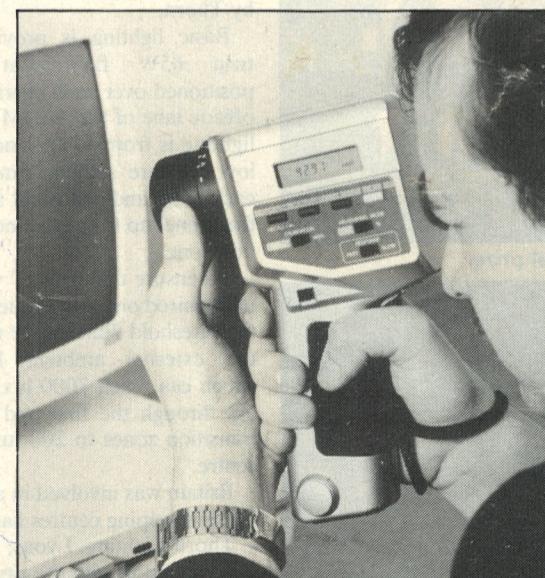
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MINOLTA

## Italian blames UK makers for poor design

Vico Magistretti, renowned for his work both as an industrial designer and an architect, gave this year's IDI/RIBA lecture in London.

He emphasised that when designing a product manufacturers and designers must find a solution together. It was a case of conveying a concept and he felt detailed drawings from the designer only restricted manufacturers and were unnecessary unless the project was one of styling or "image design".

An urge to do things a different way was the essence of Italian design, he said.

He described it as a cultural fault of UK manufacturers that they did not have "a passion for their work" — they did not find outside help.

Professor Magistretti believes that Britain has the very best schools of design. He said the Royal College of Art produced some fantastic work and it was a lack on the part of UK manufacturers that they did not buy it.

He blamed manufacturers for not having enough confidence in designers, or in the public to buy modern design.



## Holiday firm overcomes VDU lighting problems

VDU screens at Lunn Poly presented a lighting problem when planning the refurbishment of its branches. It was decided to continue using a fluorescent system but care had to be taken to prevent reflected glare in the screens and to create an eyecatching and welcoming atmosphere for holiday buyers.

Designers and shopfitters J H Johnson sought the help of City Electrical Factors and a solution was found using white, modular, Vulcano fluorescent fittings from Prima Lighting.

Combining the essential low

brightness characteristics with a smart modern appearance, the fittings have computer designed parabolic louvres. To avoid a uniform pattern on the ceiling, the fittings are placed at offset angles. Accent lighting draws attention to holiday brochures and posters. White, low voltage, tungsten halogen spotlight fittings are fully recessed into the ceiling and, with their 60° adjustment, provide flexible and powerful highlighting.

The finished installation creates an inviting interior and a practical working environment.

## University engineering lab lit by Moorlite

Energy efficiency and cost effectiveness, a high standard of aesthetics and visual comfort were major requirements of a new lighting scheme for the University of Cambridge Department of Engineering.

These objectives have been satisfied by an installation using Broadspread luminaires and a Switchsave lighting control system from Moorlite Electrical Ltd.

Replacing existing tungsten lamps and twin fluorescent battens, which had been in the seven-storey building since 1952, Broadspread fluorescent luminaires have been mounted throughout the offices, teaching facilities and general circulation areas.

As well as increased energy efficiency, this has resulted in a vast improvement in the lighting quality with the high downward light distribution, low brightness

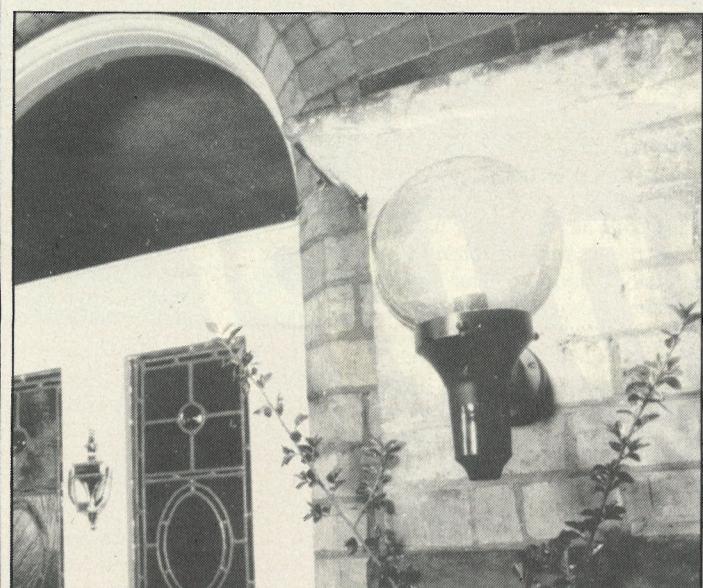
and evenly spread illuminance which characterise Broadspread luminaires. Two sizes were installed, 1500mm x 165mm with single 58W lamps and 1500mm x 298mm with twin 58W lamps.

Running costs have been reduced even further by the use of the Switchsave energy management system with photocell control, which has been shown in practice to decrease electrical usage by up to three hours a day.

Switchsave consists of three elements: a programmable controller, a factory fitted switching unit on each luminaire, and a signal wire.

As a result of the new lighting scheme, designed and installed by the University's Estate Management and Building Service, light output has been slightly increased using fewer luminaires. At the same time, the total electrical load has been reduced by nearly 50%.

# NEW PRODUCTS



## Lighting guards the home automatically

Night Eye is a decorative, automatic security light for domestic premises introduced by Smiths Industries Environmental Controls Company.

It is for wall mounting and has a smoked glass globe with a matt black bracket. A passive infra-red sensor concealed in the bracket has a detection range of 90° over 10m; it can be rotated to adjust the detection area to suit individual premises.

Once it has been activated, the light stays on until two minutes

after the area has been vacated. A photo-cell prevents it from switching on during daylight. A manual override switch is available so that Night Eye can be used as an ordinary exterior light.

The luminaire uses a 100W GLS lamp and it is also possible to connect an additional 400W of lighting to it, for example, in the garden or garage, to provide additional security facilities around the home. Retail price is around £55.

Reader Service No. 151

## Low voltage downlights

Osram-GEC Ltd has moved into the low voltage tungsten halogen market with a range of 12 downlights.

Called Dimension 12, they are in a variety of designs and sizes, with diameters ranging from 40mm to 150mm.

The fittings use either miniature tungsten halogen lamps with integral dichroic reflectors, or M32

## More bi-plane lamps for the theatre

Two more lamps for use in theatre lanterns have been introduced by Philips.

The T19 is a 1kW bi-plane lamp. It has a second generation bi-plane filament with greater spacing than usual between the spirals, to increase vibration resistance.

It is suitable for use in all lanterns designed to take T11/T19 1kW GX9.5 lamps.

The T29 lamp also has a second generation bi-plane filament. It is rated at 1.2kW and is suitable for



use only in lanterns designed for T29 1.2kW GX9.5 lamps.

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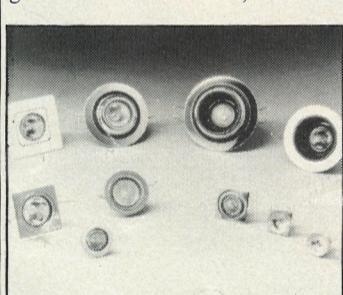
## Lighting system for showcases

A system of showcase and counter lighting is available from C P Contracts Ltd. Called Center Line, it is a low voltage tungsten halogen system using an electronic transformer.

There is a choice of spot or flood type lamps which are positioned where required by simply clipping them into a miniature track. The special track fits into the top inside edge of counters and showcases.

An optional air-cooling system with fan assembly can be used for ambient temperature control.

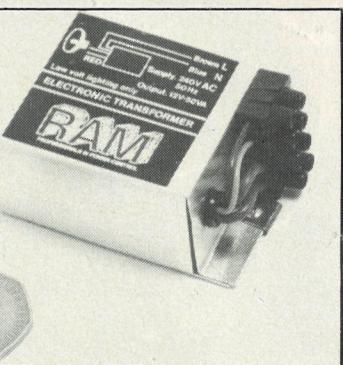
Reader Service No. 152



tungsten halogen lamps without the use of reflectors, rated at 20W, 35W or 50W.

Five transformers are available in appropriate ratings, one being an electronic type.

Reader Service No. 153



incorporates key size, weight and safety features.

Measurements are 50 x 45 x 30mm and the weight is only 100 grams.

The company states that the transformer runs 40% cooler than others of its type.

Reader Service No. 154

## Electronic transformer

RAM Electronics has launched a lightweight electronic transformer designed principally for the tungsten halogen lighting market. It

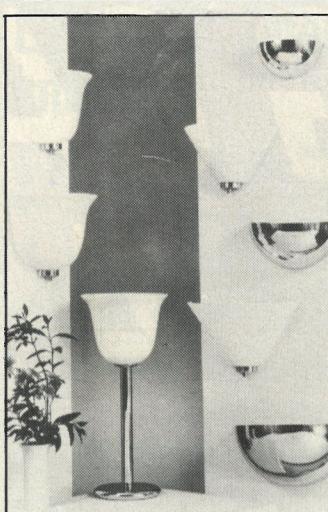
## Spotlamp replacement

A replacement for PAR38 lamps has been introduced by Economy Lighting Ltd.

Called the ELPAR-H, the device incorporates a toroidal transformer and a 35W low voltage tungsten halogen lamp with dichroic reflector. A snap-in polycarbonate diffuser with a circular hole in the middle reduces glare and allows the fitting of colour filters if required.

Reader Service No. 156

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

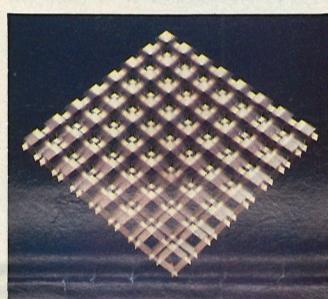


## Glass and metal uplights

Bell shapes, white glass and chromium plated finishes are design features of a range of decorative luminaires from Tally Ho Lighting.

This Art Deco range includes a table lamp and several wall lights with bell-shaped, cone and quarter sphere diffusers or reflectors. All give upward light.

Metalwork can alternatively be supplied in brass or white enamel finishes. Reader Service No. 157



## Open-celled ceilings

Interlux Ltd has added to its range of profiled aluminium open-celled ceilings. The new design, called Cubus, is available in a wide choice of colours, anodised aluminium and standard pre-coated white.

The cube shaped cells are in sizes from 25 to 120mm. A variety of fixing methods can be used.

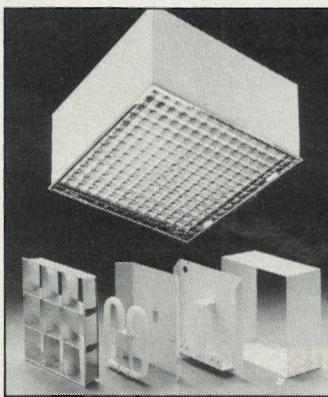
Reader Service No. 158



## Luminaires with emergency provision

To meet situations where emergency lighting facilities are required to be incorporated within standard luminaires, Mattalex has introduced a range of modular surface mounted and recessed luminaires designed around the 28W 2D lamp and twin PL18 lamps.

Thermal and mechanical provision is made for incorporation of a self-contained, three-hour emerg-



ency lighting module and battery pack.

A choice of louvres is available to complete the square-shaped fittings. Reader Service No. 159

# COMMENT

## Keeping the workers happy

Do employers give enough priority to the quality of lighting at work? Legislation only requires a standard of lighting which will avoid accidents and reduce the likelihood of eyestrain and similar discomfort. Matters of good practice which are not essential to health and safety — the maximising of task performance, for instance, or the enhancement of the visual environment within factories and offices — are not enforced.

In the current political climate such intervention as is currently permitted will actually tend to decrease rather than the reverse. So, if the industry would like to see higher standards it must make out a convincing case itself.

Of course, the best employers always have provided excellent working conditions and will no doubt continue to do so. By and large they also tend to be the larger companies. But the majority of the workforce will continue to be employed by smaller companies, and especially by employers who are tenants rather than owners of their place of work. In the latter case, in particular, employers are likely to suffer from the division of responsibility for working conditions. Many speculative office blocks, built in the construction boom of the 1960s fall into this category — and the outdated fluorescent lighting installations generally incorporated at that time have seen little or no improvement over the years.

A well-targeted approach to employers who are not their own building owners to convince them of the importance of good lighting to a happy, healthy workforce could well reap dividends in the longer term by making them more critical purchasers of office space.

The public sector is more immediately amenable to pressure. A recent news item it is pleasing to be able to report is that attention drawn by the, then, LIF President Mike Lipkold at the presentation of the 1987 EMILAS awards to the lack of foresight in PSA purchasing has led to LIF being invited to assist the PSA in the training of energy managers for the government estate.

Things are certainly happening in the field of lighting at work. On the industrial front, CIBSE is showing the way with its new Industrial Lighting Guide due to be published in November; while on a broader international scale the European Lighting Council's symposium on Modern Lighting at Work to be held in Brussels in mid-November will try to present a European consensus on practice in both industrial and office environments.

But all this seems oddly like preaching to the converted. So who is going to go out and show the employers the way?

## LIGHTING EQUIPMENT NEWS

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# WIRING CAN BE A WIND UP!

“ You know, big ones make some people nervous, but not me.

The bigger the better, that's what I say. Take this new office block, for instance. I mean, we are talking seriously big and complicated here. But when my lot were chosen to put in all the cables I wasn't worried.

‘Why aren't you worried?’ they asked.  
‘Cause I know Kev’ I replied.

My mate Kev at STC Distributors.

You see, the trick is that Kev told me that STC Distributors only supply best quality goods. What's more, they deal with all the top contractors. And let's face it, Kev is your actual mastermind when it comes to cable. Every cable he sells is BASEC approved, so you know it's the business. And get a load of this, STC Distributors have even got a range of BELDEN equivalent cable at selected branches.

Kev's got the lot, and everything is the best of British, too.

Take it from me, when it comes to big, complicated jobs, with my mate Kev and STC Distributors, you've never had it so good! ”

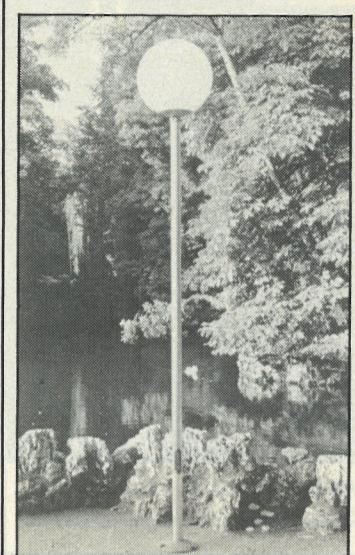
**TEAM UP**

**WITH KEV**

AND FOLLOW THE BIG  
CONTRACTORS TO STC DISTRIBUTORS.

# NEW PRODUCTS

## Amenity lighting



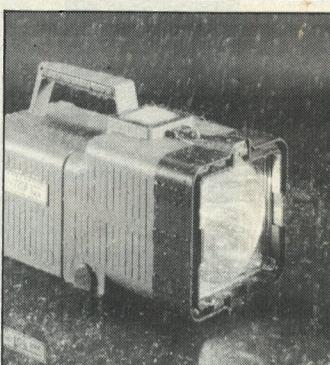
A range of amenity lighting combining aesthetic appeal with practicality is available from Abacus Municipal Ltd.

Ideal for use in car parks, gardens, residential areas and other general amenity applications, the luminaires are vandal resistant. Recommended mounting height is 3.5m.

There are six models designed for use with discharge lamps. Opal polythene spherical lanterns are used.

An electropolished, anodised and sealed, aluminium extruded ring can be added around the sphere. The AM240 series also has integral gear and diecast aluminium attachment sockets.

Reader Service No. 160



### Tough industrial handlamp

A rugged rechargeable handlamp for military, nautical and other harsh environments has been introduced to the UK market by Autonix UK Ltd.

Made in Italy, the Toplux 5/5 is already widely used in continental Europe. The weatherproof unit uses sealed lead acid batteries which provide a 5Ah supply to two lamps — the main tungsten halogen spotlight and a pilot light.

Should the need arise, either lamp can be made to flash. There are four coloured filters to enable the handlamp to be used as an emergency beacon.

A special feature is that when connected to the mains supply, a mains failure can automatically switch on the lamp if required.

Reader Service No. 164

### Lighting to deter intruders

Two security products have been introduced by Ring Electronics Ltd.

The first is Ring Guard, a passive infra-red detector capable of switching up to 2500W of lighting, the other is a tungsten halogen floodlight with integral PIR detector. The floodlight is fully enclosed and uses a 500W lamp.

The PIR intruder detectors have



manual override for use when continuous lighting is required, for example, for barbecues.

Detection range can be adjusted from 4-15m with a beam angle of 110°. The light remains on for between 16 seconds and 16 minutes according to adjustment, after a person or vehicle has left the area.

Reader Service No. 165

# LIF LINE

## LIF IN CONTROL

The saying goes that there are only two sure things in life — death and taxes. But like many such bons mots, this one serves only to illustrate a basic truth — in this case it's life's little inevitabilities — and can easily be expanded. To death and taxes we can assuredly add that the cost of electricity will rise. The prudent building services manager will naturally want to counter this rise in his costs by the simple expedient of control.

It was partly in recognition of this that three years ago the Federation set up a specialist committee to monitor and promote the use of energy control devices and systems for lighting installations. The situation then was complicated by two discrete elements.

- the entry into the lighting field of a number of electronics companies with little or no direct expertise in lighting hardware;
- the out-and-out "cowboy", whether as manufacturer or installer.

In an attempt to steer a professional path between these two hazards, LIF's specialist committee conducted a survey of all the types of lighting control then on the market and published its well-known Guidance Notes. These notes, which are still available from LIF but are currently under review for re-issue, covered every aspect of energy control in lighting, from simple on/off switching to the most sophisticated type of programmable system then available.

But in lighting, as in all technology-based businesses, nothing stands still. We now have high frequency fluorescent lighting, electronic ballasts, variable output ballasts, plus much greater flexibility in the control of lighting in the workplace. The range of controls now on offer is such that the user is seeking further guidance on their suitability and relevance to particular types of lighting scheme. LIF is, therefore, in the process of developing an Applications Guide for Lighting Controls and Energy Management Systems. The committee has recently acquired a new Chairman — John Aston — and John is committed to the preparation and promotion of product standards for lighting controls, both in the UK and the EEC. LIF is prepared to lead the way, but will seek relevant input and co-operation from electrical contractors and user-groups. Ad-hoc involvement with the committee's work will be possible, by invitation from LIF.

Any manufacturers of lighting controls who would wish to be influential in the direction of LIF's work in this area are also involved to get in touch with LIF at Swan House, (telephone 01-675 5432) to discuss the terms of their involvement, including possible membership of the Federation.

## Downlights: fixed or adjustable

A range of low voltage, recessed downlights with either octagonal, round or square bezels is available from LightGraphix Ltd. Included are adjustable models in eyeball or pivoting styles in sizes from 55 to 155mm diameter.

Most of the range accepts M32



Reader Service No. 161

tungsten halogen lamps and for this reason reflectors are built into the luminaires. Alternatively they can be supplied suitable for use with lamps that have integral reflectors.

Certain models have a decorative brass tube that projects below ceiling level to give a narrow, concentrated beam of light.

Bezels are finished in either white, black, chromium plate or brass.

Reader Service No. 161

### Lighting system on poles

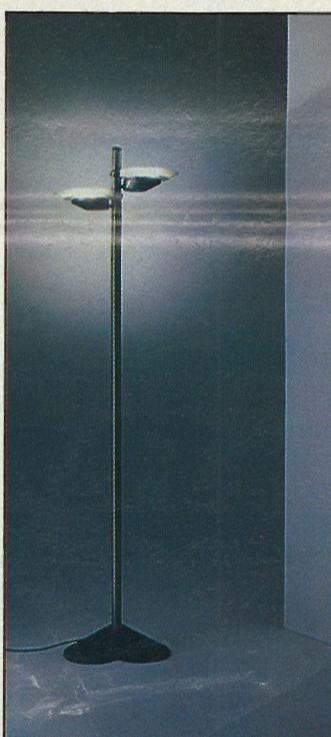
A system described as multi-functional lighting is available in Britain through Offital (UK) Ltd.

It is designed around a pole fitted between floor and ceiling. The pole carries tungsten halogen, mains voltage lighting fittings using lamps rated from 200W to 500W.

A combination of poles and coupling devices is used to support shelves, partitions, clothes hooks and other items.

The system is made by Piuluce, Italy, who suggest it can be used in offices or for shop display purposes.

Reader Service No. 166



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

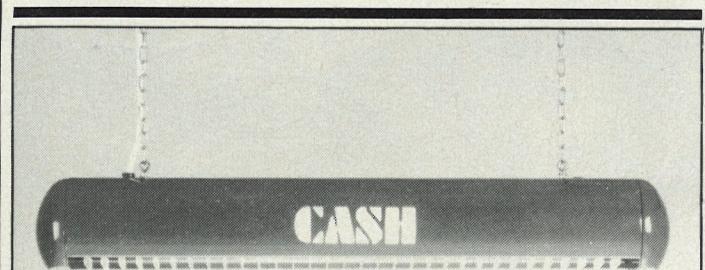
## Higher capacity Trolli system

The capacity of Trolli, a cable lighting system available from Prima Lighting Ltd, has been doubled from 12V 200W to 24V 400W and a series of new fittings has been launched for higher wattage operation, together with an appropriate transformer.

Three of the luminaires take up to 100W tungsten halogen lamps for powerful task and display lighting work.

Regalo and Altero (illustrated) are two adjustable fittings which revolve through 360° and tilt to 70° and 80° respectively.

Reader Service No. 162



The 40mm high cut-out letters form any word(s) required and are illuminated from within through coloured translucent inserts.

Elteva claims that Text lighting fittings are effective at any point-of-sale, information or display location.

Reader Service No. 163

## Illuminated text

Elteva Lighting has introduced a new range of luminaires named Text. These cylindrical fluorescent fittings are produced in 18, 30, 36 and 58W sizes in white, red, grey, yellow and other RAL colours.

### Downlights have choice of sizes and lamps

Equinox is a range of downlights in three sizes from Concord Lighting Ltd. All models have safety glasses over the apertures and ultra-violet filters are available if required.

The smallest size is 135mm in diameter. It uses either a 35W metal halide lamp or a 75W mains voltage, tubular tungsten halogen lamp. As well as the plain cone style, this model is produced in wallwasher, pinhole and spill ring designs.

The medium sized, 175mm diameter model accepts either a 70W metal halide or a 100W mains voltage tungsten halogen lamp.

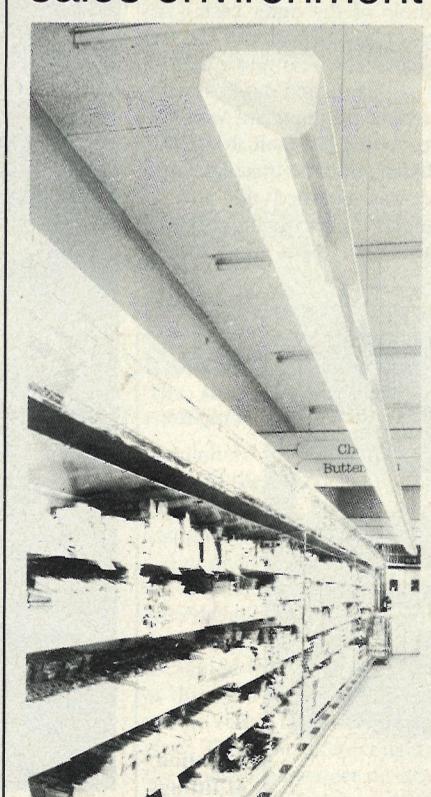
The largest, with a 202mm diameter, is designed for either a 150W metal halide or a 150W mains voltage tungsten halogen lamp.

In each case, the gear box for metal halide lamps is small enough to pass through the ceiling aperture cut for the luminaire.

A snap-on, aluminium, diecast lampholder housing has an easy access wiring chamber and can be relamped from either above or below the ceiling.

Reader Service No. 167

### For a perfectly lit sales environment



*Shelflites*

Developed to meet the unique lighting requirements of supermarket goods, Shelflites provide high levels of even illumination over the full spread of displayed product.

Available in an attractive range of continuous or modular fluorescent lighting fittings for use adjacent to supermarket display cabinets Shelflites can be colour coded to the needs of the client.

Shelflites, a new concept in lighting for supermarket goods — designed and developed by Lighting Equipment Service and Supply. For full details contact: Del Bennett, Lighting Equipment Service and Supply, 14/15 Grand Parade, Harringay, London N4 1LA Tel: 01-800 8049 Fax: 01-809 4619

**less**  
*Shelflites*

Reader Service No. 4

Page 5

# Checking the safety of luminaires

**LEN** visits a lighting factory to find out how a varied range of modern luminaires is being tested for electrical safety.

**A**s lighting products become more sophisticated, the equipment used to test them for safety needs to keep in step.

Concord's MIL range of modular luminaires, designed to meet all the lighting needs in a building, has had test equipment specially built for it by Clare Instruments Ltd. There are 56 different lighting fittings in the range with a total of more than 200 variations. To add to the complexities a wide variety of lamps is used, from metal halide through compact fluorescent and linear fluorescent to low voltage tungsten halogen.

In order to do a simple "light up" test to check that a luminaire works, the equipment therefore has to accommodate many different lamps.

In fact, Rod Walker, sales director of Clare, states that it will test for safety and function luminaires using any lamp on the market.

To comply with the electrical requirements of BS 4533, three basic electrical safety tests are necessary: an earth bonding check, a high voltage flash test and an insulation test.

The earth bonding test done by Concord uses a current of 25A, although the Standard requires only a 10A current; the flash test is carried out at 1.5kV with a simultaneous a.c. insulation resistance measurement.

Concord wanted the test devices to be totally enclosed so that it would be impossible for the operator to touch any live parts.

Because floor standing uplights are included in the range, the test equipment was designed in two parts. A safety test enclosure accepts most of the luminaires and contains the instrumentation, while a separate cabinet some 2000mm high is used to test the floor standing uplights.

In the case of wall mounted discharge fittings which use remote gear boxes, the gear boxes are tested separately. To ensure that they function, they must be tested with a lamp. The gear box is placed in the safety test enclosure where spring loaded pins automatically pick up the correct terminal block connections for testing. A second set of pins automatically detects the type of lamp and wattage appropriate for that gear box and selects the lamp from standards in the base of the test station.

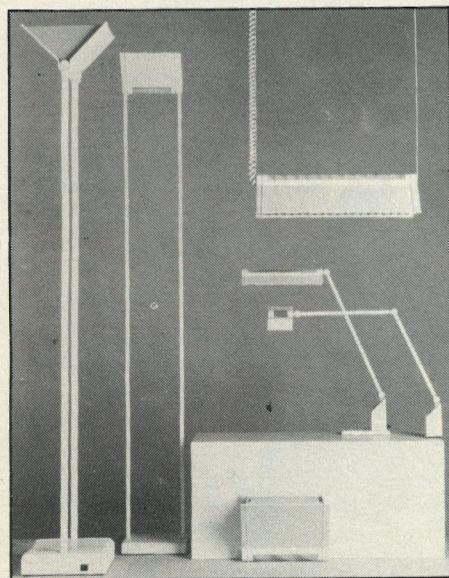
The action of closing the transparent safety cover starts the series of tests, which lasts for six seconds. The operator then watches for the green "pass" light. If the luminaire does not meet all the requirements, a series of red lights indicates the specific fault.

## Double insulated

Some luminaires in the MIL range are double insulated and these are tested on a separate test station using specially shaped, conductive foam blocks which are inserted into the test enclosure. The blocks, one for each luminaire design, fit snugly around the lighting fittings and are necessary because the whole of the outer casing of double insulated metal fittings must be checked to make sure no part of the housing is live when the fitting is in use. On these luminaires, the flash test is carried out at 4kV.

At another stage of production, products are labelled with the week of manufacture, so that if a fault should be found later, that production batch could be traced easily.

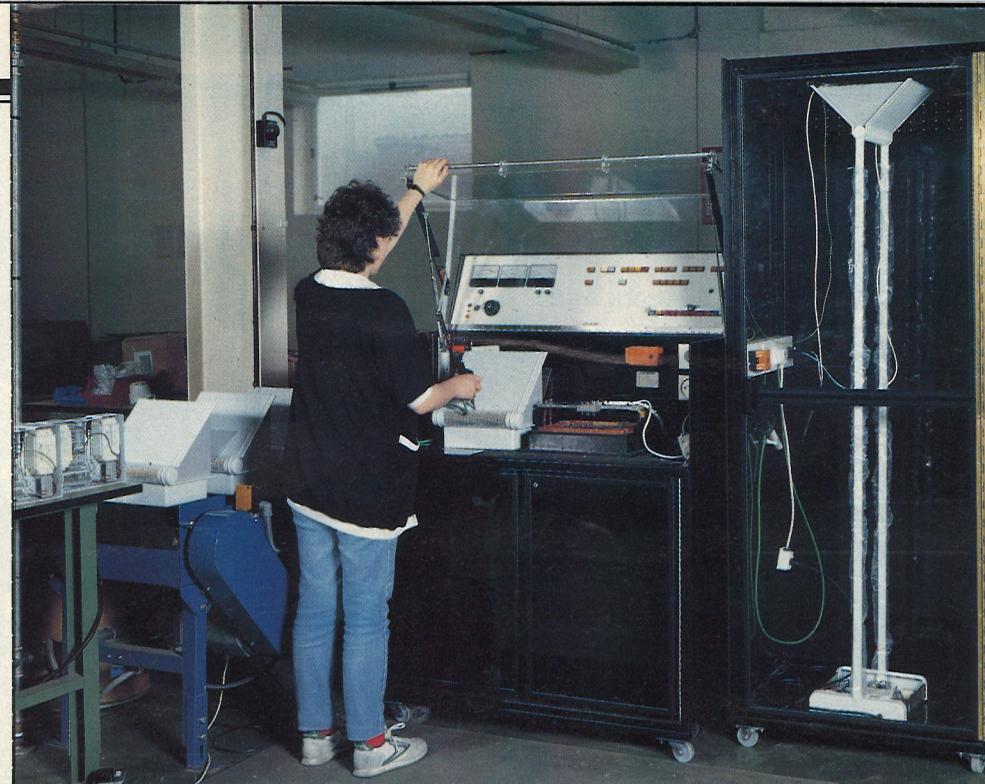
Earlier this year Concord was awarded the part 2 certificate of BS 5750 in respect of its quality control system. The new safety test equipment contributed towards gaining that award.



Selection of fittings from the MIL range.

The company has been using Clare's equipment for 15 years, but Noel White, Concord's technical manager, says, "This is the most flexible method we've found".

Clare Instruments Ltd is at Woods Way, Goring-by-Sea, Worthing, West Sussex BN12 4QY, telephone 0903 502551.



Testing a wall light on the test station in Concord's Newhaven factory.



LIGHTING

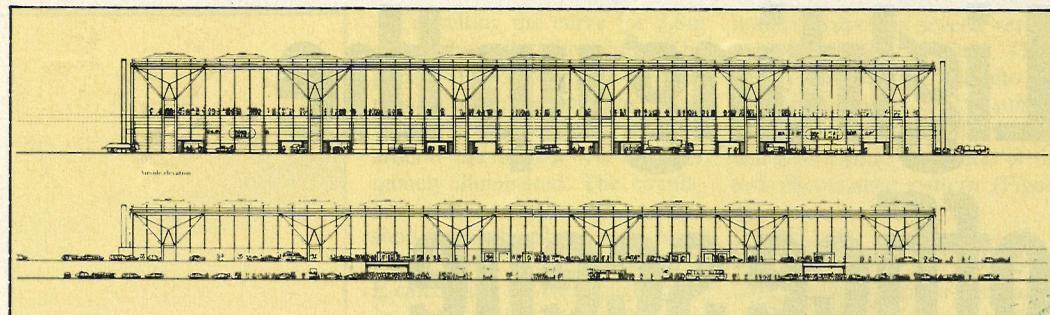
# Aiming high

London's new Stansted Airport terminal building, uses uplighting to feature a shell lattice roof.

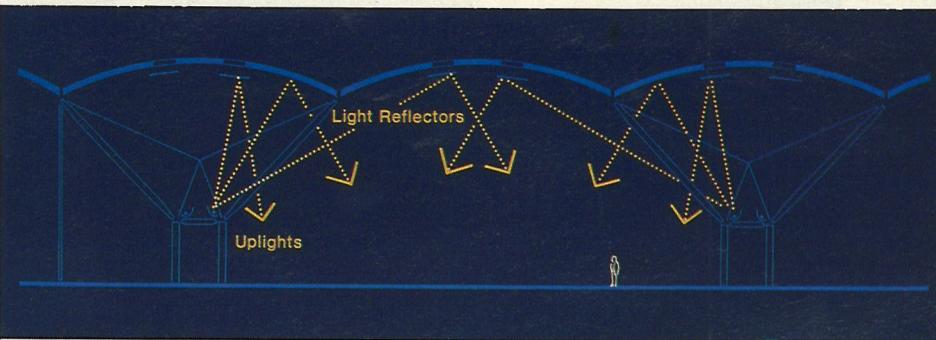
In 1981 Foster Associates were commissioned by the British Airports Authority to carry out feasibility studies into the expansion of passenger facilities at London's Stansted Airport. The practice was subsequently appointed to design a new terminal and its interior; the building was to be situated on the opposite side of the runway to the existing terminal.

The brief called for a design which would economically provide maximum passenger comfort and convenience and allow internal flexibility for future modifications with a minimum of disruption. The need for the building not to appear unduly intrusive in the predominantly rural landscape was also stressed.

The terminal building, currently under construction,



The main elevations of the building are glazed.



Indirect lighting illuminates the soffit of the shell lattice roof.

clearly reflects these priorities. All public facilities are provided on a single concourse floor with building services, baggage handling and a railway station located below this in an undercroft. Lifts, escalators and ramps will bring passengers directly up to the concourse from the railway station, coach station and car parks. Passengers proceed through the check-in area, security and immigration controls and departure lounges to tracked transit stations on the same level. From here automatic tracked vehicles transport them to satellite buildings from which they board their aircraft. The resulting plan form gives a compact building which reduces walking distance for passengers.

Structural columns at concourse level are set on a 36 metre square grid. This is dictated by functional requirements, and the need to provide maximum flexibility

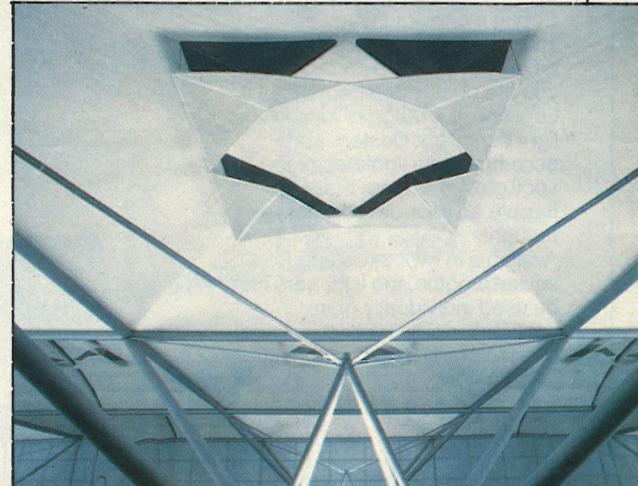


Service distribution shaft contained within a cluster of steel columns.

for layout in the concourse. The roof supports form tree-like structures comprising clusters of four interconnecting tubular steel columns. These are angled at 4 metres above floor level to give an 18 metre square grid.

To increase flexibility, all passenger services at concourse level requiring enclosure — such as banks, shops, kitchens, left luggage offices and lavatories — have been designed as free-standing enclosures, 3.5m high, which can easily be dismantled. Services for these are, by contrast, taken directly from the undercroft.

The roof itself is constructed of lattice shell domes, thus avoiding the need for trusses or beams. Each dome rises to a height of 3 metres above the concourse ceiling level of 15 metres. All distribution equipment for heating,



The shell lattice roof domes showing the integral rooflights.

ventilation, air conditioning and lighting serving the main space of the concourse is contained within the clusters of steel columns, leaving the roof free of plant and equipment.

Internally, lighting to the main concourse area during the daytime is to be primarily by natural light from the glazed cladding and roof lights in the lattice domes. After dark, the concourse will be lit indirectly by luminaires located at the top of the service shafts which are directed at the soffit of the lattice shell roof, so no harsh sources will be visible from outside and the building will appear to glow. The same indirect lighting will be used to illuminate the landside passenger set-down area on the forecourt and the track transit stations.

The terminal building is due for completion in 1990. Further details from Foster Associates, tel: 01-637 5431.

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**PHILIPS**

Reader Service No. 5

# Lighting up the office scene

Uplighters can provide the flexibility needed in today's office buildings. Lou Bedocs of Thorn Lighting shows how to set about planning an uplighting scheme.

Uplighting is one of the oldest artificial lighting systems used by man. In recent times high powered tungsten filament lamps have been used but because of their short life and poor efficacy they gave way to overhead fluorescent tubes housed in battens or troffers.

The present revival of uplighters for offices is due to several factors. The increasing use of VDUs leads to a requirement that screens are free from reflections of the lighting. As new developments in office equipment occur, office managers need more useable space and flexibility to accommodate the equipment. The new high intensity discharge (HID) lamps which give good colour, long life and high efficacy are best employed in uplighters.

Uplighting is an indirect lighting technique where the lamp in the luminaire shines all its light output onto the ceiling. This output generates pools of light on the ceiling which are reflected downwards onto the work plane. The light will be very diffuse with no heavy shadows and is ideal for places

where task visibility is hampered by veiling reflections. The very bright lamp is totally shielded from view by the uplighter reflector which should have its opening at least 1800mm above the floor. The contour of the shallow, upward facing reflectors has to be adjusted according to the height of the ceiling. If the ceiling is below 3.0m a

wide batwing distribution is needed but it needs to be somewhat narrower for ceilings above 3.0m (Figure 1). The object of these distributions is to avoid excessive ceiling brightness while still giving the impression of pools of light. These pools of light provide a variation of illuminance on the work plane — a high value near

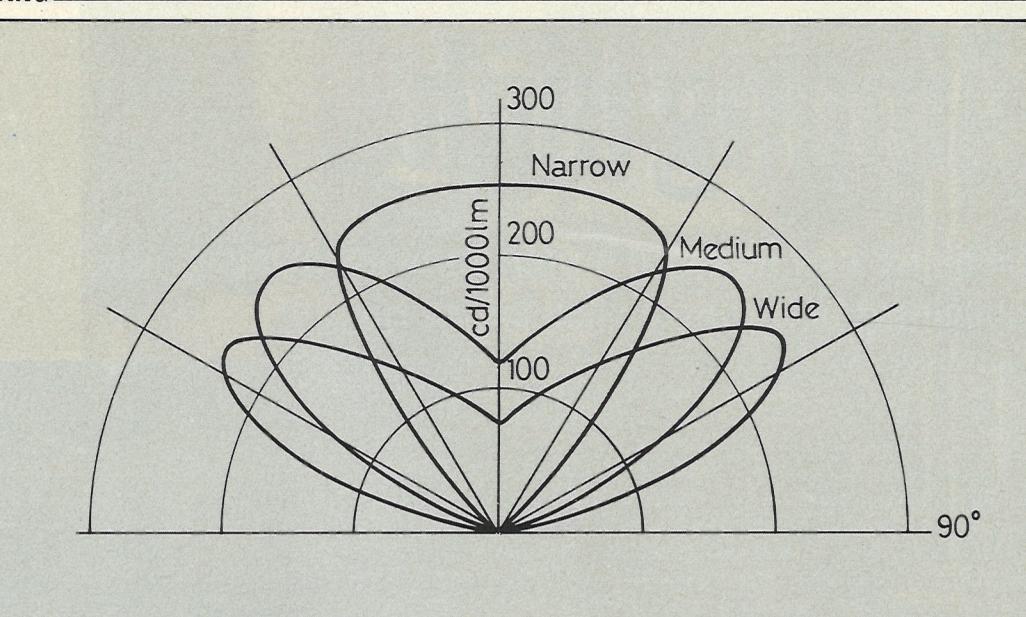


Figure 1 Uplight polar curves

the unit which decreases as one moves away. This means that a unit can be used to illuminate a single work place in a small office. In larger areas several work stations can be grouped around the unit to benefit from the high illuminance close to the unit but at the expense of reduced levels elsewhere. In these situations the uplights provide "localised lighting".

Uplights not only offer greater flexibility to the lighting engineer but give tremendous scope to the interior designer. The luminaires can be free standing, built into furniture, suspended from the ceiling or attached to the wall. They can be styled to taste. They can also offer useful facilities such as additional power points, shelves for plants or storage space (see picture). The uplighter optics (mainly reflector type) have to be very efficient. Typical light output ratios range from 80% to 90%. The sizes can be as small as 300mm square to as large as 1000mm diameter depending on the design and lamp used.

## Lamps

The two most useful and efficient HID lamp types in use are the metal halides (MBIF) and the high pressure sodium de-luxe (SON DL) lamps. At the moment the available ratings range from 150W to 1000W, but the preferred size for office lighting is the 250W MBIF or SON DL lamp. It is important to understand what these lamps do and the difference between them. Not all makes of metal halide lamps are compatible, but the electric circuit requirements of SON lamps have been well standardised. Although different makes have slightly different light outputs and colour characteristics they can be operated on a standard ballast and ignitor. When making a choice

between them, it is essential to look not only at the quality, but at efficiency of operation. Both metal halides and SON DL lamps are available coated or clear jacketed, and both require an ignitor to start them.

The 250W MBIF (Kolorarc) lamp, with an efficiency of 74 lm/W, provides a white cool appearance (3800K) with excellent colour rendering quality (Ra 80).

The 250W SON DL emits a much warmer appearance, with a yellow tinge (2300K), but still provides good colour rendering quality (Ra 70). The SON DL takes a little longer to run up from cold but it will restrike within one minute when hot. It is also more efficient with an efficacy of 93 lm/W. Compact fluorescent lamps also lend themselves to use, particularly where the aimed illuminance is low, such as continuously operated control rooms.

Although lamp selection must be made with lamp life in mind it is important to realise that simple life figures can be misleading. In general it is uneconomic to operate an HID lamp to the point of electrical failure, as by this time the light output will have substantially deteriorated.

Selection is best made with the aid of lamp lumen maintenance/survival curves. With such aids the economic lamp life can best be determined. (That is the number of hours of use before the light output declines so much, that it would be more economic to replace the lamp). Another common concern is with lamp flicker, particularly near to the end of lamp life. Low flicker level is essential with uplighting as a substantial part of the bright ceiling is in the periphery of sight where the eye is most sensitive to light fluctuations. Flicker with MBIF lamps can be minimised by burning the lamp

horizontally, while SON DL may be used in any burning position. In practice flicker problems are rare, but when they do occur the only sure cure is to change the lamp immediately.

## Scheme design

Planning schemes with uplights is no more difficult than with any other lighting product. The essential requirement is for a high reflectance ceiling with a matt finish. Ideally, the ceiling should be white, but pastel colours with a reflectance of more than 80% and a gloss factor of less than 15% are acceptable. Where ceilings are very high, attention should also be paid to the finish on the upper part of the walls. When choosing colours it is important to avoid those with a high chroma finish as the whole room may appear tinted with the colour. Obviously high gloss finishes should be avoided as they will reflect images of the bright uplighter lamp. Metal panel ceilings are particularly prone to this effect.

The recommended illuminance for office tasks ranges from 300 to 750 lux. To avoid discomfort glare, luminance limits are placed on the ceiling. According to the CIBSE Lighting Code the maximum should not exceed 1500 cd/m<sup>2</sup> with an average of 500 cd/m<sup>2</sup>.

The lumen method of scheme design is not suitable for planning uplighting. The recommended design process requires several steps, depending on the degree of accuracy required, or the photometric data available. The basic data should consist of the LOR, the upward luminous intensity distribution and the illuminance curve for the specific uplighter. These, combined with a set of uplighter tables, permit all the design calculations to be made. Uniform illuminance across the horizontal

Table Utilance for second and subsequent reflections

Room Reflectances												
C	W	F	.75	1.00	1.25	1.50	2.00	2.50	3.00	4.00	5.00	∞
.80	.50	.20	.150	.160	.165	.167	.168	.169	.168	.166	.164	.152
	.30		.077	.086	.094	.099	.107	.113	.118	.124	.128	.152
	.10		.025	.032	.039	.045	.056	.066	.074	.087	.096	.152
.70	.50	.20	.125	.133	.135	.136	.136	.134	.132	.130	.128	.114
	.30		.064	.072	.077	.080	.086	.090	.092	.096	.099	.114
	.10		.021	.027	.031	.036	.045	.052	.057	.067	.073	.114
.50	.50	.20	.081	.083	.084	.083	.080	.078	.076	.072	.069	.056
	.30		.042	.045	.048	.048	.050	.051	.052	.052	.053	.056
	.10		.013	.016	.019	.020	.024	.028	.031	.035	.037	.056

Note The effective reflectance of the ceiling cavity, RE (C) is given by the expression:

$$RE (C) = \frac{CI \times RA (C)}{CI + 2 [1 - RA (C)]}$$

Where:

CI = cavity index of ceiling cavity  
(twice plan area/wall area of space above uplighter);

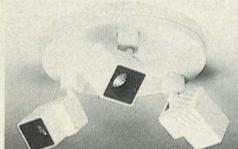
RA (C) = area-weighted average reflectance of bounding surfaces of ceiling cavity.

# better bar none

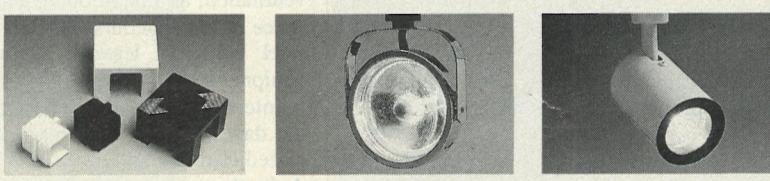


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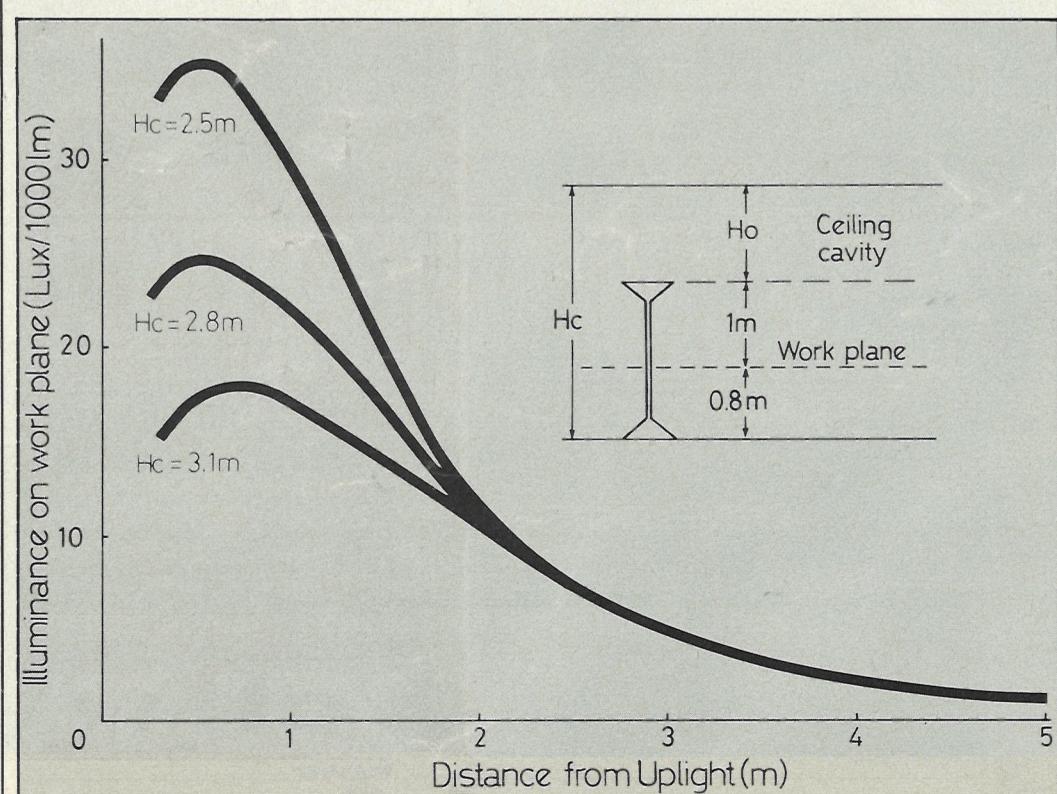


Figure 2 Illuminance curve for a 250W SON DL uplight based on ceiling reflectance of 75%



Uplights at the offices of the TSB Trust Company at Andover.

work plane is best provided by a regular array of uplights. However, uplighting is most economic when used as a localised lighting system.

A quick and simple way of assessing the number of uplights needed to light a large space with a ceiling height of between 2.5m and 3.5m to 500 lux is provided below. This shows the area effectively covered by an uplight.

For more precise planning the illuminance curve for a particular unit and ceiling height has to be consulted. The illuminance curve for the uplight is usually normalised to lux per 1000 lamp lumens and represents the illuminance on the work plane due to the first reflection from the ceiling. This is often called the direct component (Figure 2). The inter-reflected

components are calculated after the scheme is planned.

The design begins with the plans. These should show furniture and power point layouts. For a localised scheme, one uplighter will be located in the centre of a group of desks. For a regular array the only consideration is the power outlet.

Lighting calculations begin with a quick estimate of the number of uplights needed followed by the calculation of direct and indirect illuminance to confirm spacings. Finally the maximum luminance of the ceiling is checked. The indirect, or more correctly the second and subsequent reflection light can be calculated with the aid of the utilance table and using the expression:

$$E_i = \frac{U'F \times LOR \times F \times MF}{Area} \text{ lux}$$

$U'F$  is the utilance for the whole room having known ceiling cavity, wall and work plane reflectance; LOR is the light output ratio of the uplight;  $F$  is the lamp design

lumens;  $MF$  is the maintenance factor;  $Area$  is the notional space served by one uplight.

The process is perhaps best shown by means of an example. Assuming an office 15m x 30m with a ceiling height of 2.8m; a ceiling reflectance of 85%; wall reflectance of 60% and a work plane with a 20% reflectance. The office is to be illuminated with 250W SON DL free-standing uplights with an LOR of 80% as a localised system providing 500 lux on the adjacent desks. The lamp flux is 22 000 lm and the maintenance factor is 0.9. Using the cavity and room index calculation techniques the effective ceiling reflectance is found to be 0.8, with a room index of 10. By interpolation from the table, the utilance will be 0.162. The quick-method table shows that one uplight will be needed for every 25m<sup>2</sup>.

The indirect illuminance  $E_i$  will, therefore, be:  
 $E_i = \frac{0.162 \times 0.8 \times 22000}{25} = 102 \text{ lux}$   
 The direct illuminance needed

$$= E_{\text{total}} - E_i = 500 - 102 = 400 \text{ lux}$$

This is equivalent to  
 $400 \times 1000 = 20 \text{ lux}/1000 \text{ lm}$   
 $22000 \times 0.9$

on the illuminance curve. Correcting for the effective ceiling reflectance of 0.8, this value becomes  
 $0.75 \times 20 = 18.75 \text{ lux}/1000 \text{ lm}$   
 $0.80$

Consulting the curve for 2.8m ceiling shows that the value will be greater anywhere inside a 1.3m radius from the uplight. Therefore, any 1.2m long desks located around the uplight will be adequately illuminated. The circulation area between work stations should also be illuminated to at least 250 lux. Repeating the direct E calculation for two uplights:

$$\frac{0.75 \times (250 - 100) \times 1000}{0.80 \times 22000 \times 0.9 \times 2} = 3.6 \text{ lux}/1000 \text{ lm}$$

provides the value for the illuminance curve.

Find the fall off point which shows that the uplights should be spaced between 5 and 5.5m apart to satisfy both task and background illuminance requirements. The lighting scheme will, therefore, consist of  $15 \times 30 = 18$  uplights.

25

To check that the ceiling luminance limit is not exceeded, the expression  $L = \frac{IP_c \cos^3 \theta}{\pi H_o}$  is used.

Where:  $I$  is the intensity of the uplight in the direction of  $\theta$ ;  $P_c$  is the ceiling reflectance;  $H_o$  is the ceiling height above the uplight; In the above example using a medium batwing distribution when  $\theta = 0$ ,  $I = 18.75 \text{ cd}/1000 \text{ lm}$ ,  $P_c = 0.85$ ,  $H_o = 1 \text{ m}$ . Therefore,

$$L = \frac{130 \times 22000 \times 0.85}{\pi \times 1000} = 774 \text{ cd/m}^2$$

The final check on the scheme is the electrical loading. The total circuit power required by each uplight is 277W. Therefore, loading,  $18 \times 277 = 11 \text{ W/m}^2$ ,  $15 \times 30$  a real energy-effective scheme.

This design procedure may be used for any type of uplight for which the basic photometric data is available. Of course, wall mounted uplights will use asymmetric distribution to avoid excessive wall brightness. For these, illu-

minance curves in several vertical planes will be needed. These curves may be converted into isolux contours and scaled to suit the plans. The plotted isolux curves will give a good indication of the task illuminance pattern (Figure 3).

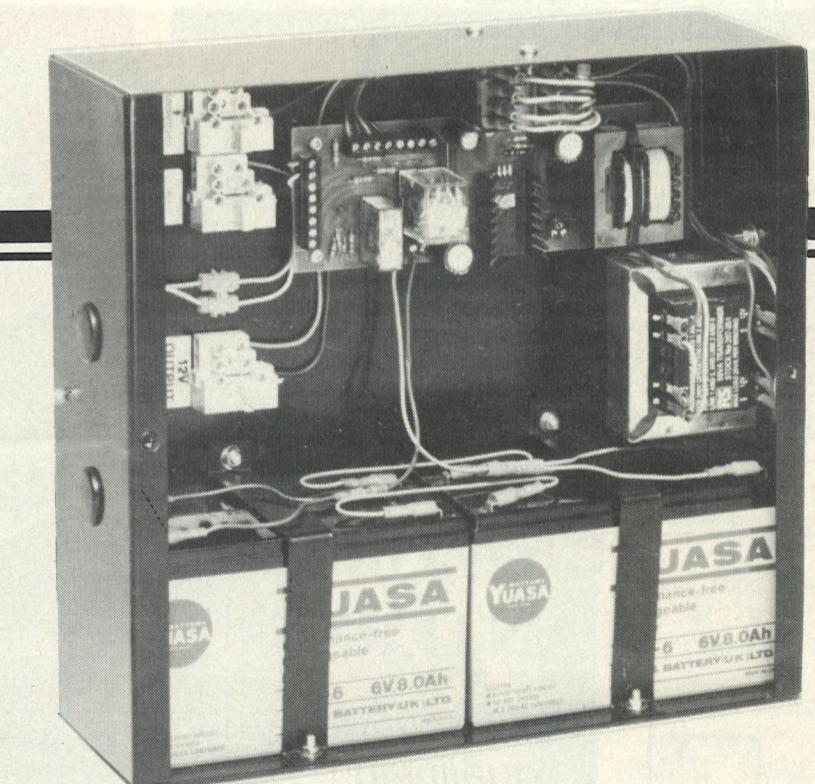
### Operation and switching

Uplights like any other luminaires, need regular maintenance. However, this process is carried out with a greater ease. For example, the open reflector uplight can be cleaned by vacuuming it perhaps once a year.

Uplights need power supply from floor level. For maximum flexibility and to minimise trailing leads, well laid out floor outlets are needed. This demand is not new. The electronic office with word processors, VDUs and calculators already require such outlets which can be shared by an uplight. The switching of uplights can be done on the unit with a simple rocker switch or centrally when a dedicated lighting circuit is used. They can also be hooked up to energy management systems by incorporating a zero volt trip relay switch or mains-borne signal pulse detector switch. For maximum energy economy they can be combined with daylight and occupant presence detection controls.

A correctly designed scheme using uplights will produce a pleasing effect with very weak shadowing and no veiling reflections, to interfere with VDU screens or keyboard. This trend, which is aesthetically satisfying as well as being energy efficient, is bound to continue with the introduction of more advanced HID lamps.

L. Bedocs C Eng, MIEE, FCIBSE is manager of the Lighting Development Department of Thorn Lighting at Enfield.



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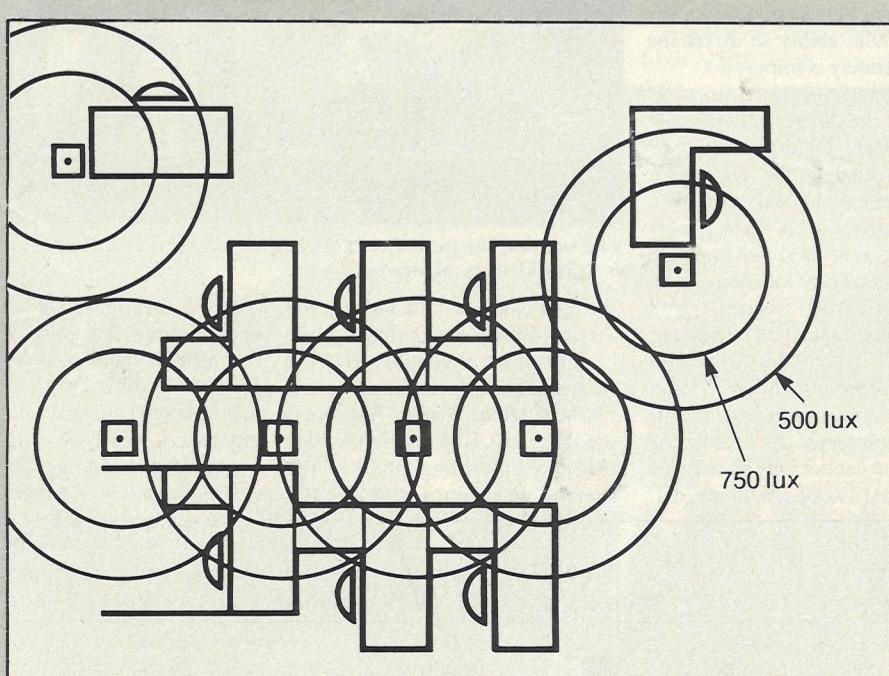


Figure 3 Use of isolux curves to indicate task illuminance patterns (square = uplight).

# Trends in uplighting

**LEN** looks at lamps suitable for uplighting and considers a number of recent schemes in commercial and renovation work.

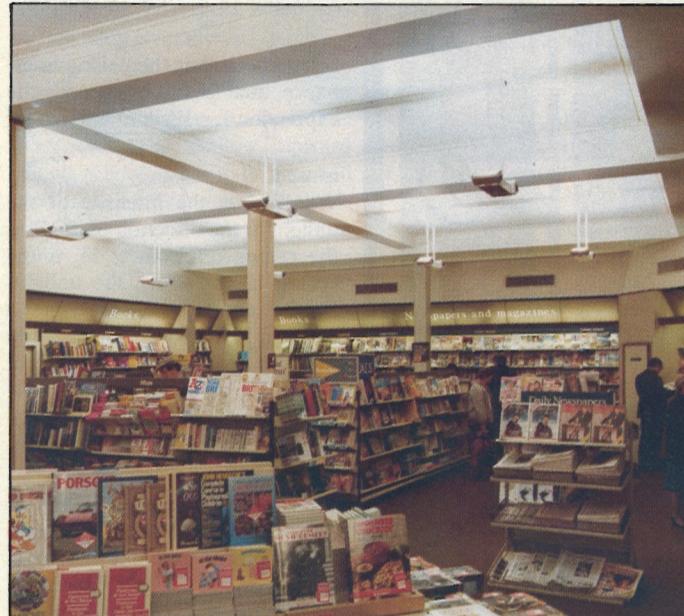
**U**plighting can be defined as a technique in which nearly all the light from light sources reaches the working surface after reflection from a ceiling.

Uplighters first came into vogue in the 1930s as a form of decorative lighting that also produced a low level of ambient light. Because of the low efficiency of the lamps available at that time, it soon lost popularity and it did not reappear in commercial buildings until the 1970s when the introduction of high intensity discharge lamps gave a boost to its use. Of the lamps available before the early 1970s, high powered tungsten filament lamps were too inefficient to give acceptable running costs and had too short a life, and fluorescent sources proved too bulky to enclose in a reflector.

## New lamps

Uplighting generally uses indirect light from high intensity discharge (HID) lamps which otherwise could not be used in interiors because of their high light output and brightness.

The two most useful HID lamps in use are the metal halides (MBLF) and deluxe high pressure sodium (SON DL), although tungsten halogen is ideal for small rooms. Metal halide is more energy efficient than tungsten halogen. To light a large area with tungsten halogen would require a large number of lamps and these would generate large quantities of heat. Metal halide uplighters are more expensive but longer lasting. Typically they cost twice the price but less lamps are needed: for instance, two 500W TH lamps would give the same light as one 250W metal halide. Metal halides



The W H Smith, Sheriton Bookshop in Bath.



Ipswich supermarket uses uplighters mounted on walls and beams.

are prone to the problem of flicker, and light colour is similar to a fluorescent.

High pressure sodium (SON DL) provides a warm golden glow, ideal for public spaces, such as shopping arcades, but arguably less suited to an office environment. SON DL lamps are more efficient than metal halide and do not suffer from flicker.

In the right environment uplighters can be used alone, but the trend is to use them as part of a mixed installation of display and effect lighting. In this context uplighting is used to generate a background of ambient lighting to which spotlights, wall washers, and other forms of accent light are added.

Data for the most important lamp types is given in the table.

## New approach

Many schemes incorporating lighting manifest a new approach to lighting design in which lighting itself is used as the design element, the luminaires themselves being made as inconspicuous as possible. In this context, uplighters can accent a beautiful ceiling, and the directional properties of upwards light can be used to model interesting features. Moreover, a degree of uplighting can remove the tunnel

effect generated by downlighters hanging from a high ceiling.

The following case studies indicate a couple of applications for which the technique of uplighting is appropriate: in shops and shopping centres, and to highlight features of historic buildings.

## Shops, supermarkets and shopping malls

Here, uplights can provide greater operating efficiency and improved visual interest that lifts the quality of the interior.

Shopping malls, in particular, do not belong to the individual tenants and are not directly part of the selling space. As a result, they are often underlit. Here, lamps used as uplights can be inserted into outdoor floodlights for use in a semi-outdoor atmosphere. The low maintenance requirements of discharge lamps are particularly appropriate in inaccessible areas.

The W H Smith, Sheriton Hughes book shop in Bath displays wares including glossy magazines and dust jackets, which are particularly prone to veiling reflections and may be held at any angle by customers, so totally diffuse light and good colour rendering are basic requirements. The luminaires are Philips Lita MPG 101 ceiling-mounted uplighters with integral gear and twin 150W adjustable metal halide lamps under easily cleaned glasses. They are positioned to model the recessed lath and plaster ceiling. In contrast to uplighter design of the 1970s, when the luminaire itself made the design statement, these luminaires are fairly unobtrusive.

Ipswich Cooperative Society's Solar Superstore at Leiston in Suffolk, a commended scheme in the 1988 EMILAS awards, uses 29 Thorn uplights with 250W MBi Kolorarc lamps. The wall-mounted single and twin asymmetrical units provide an average 650 lux horizontal illuminance.

Finally, Woolworth's store in Hitchin, Hertfordshire, uses a combination of uplights, spotlights and concealed fluorescent fittings to create a stylish retail environment. The major feature of this scheme is 25 specially designed uplights each of which house three 250W de luxe high pressure sodium (SON DL) lamps. These, together with 25, 250W SON DL wall mounted units, give an illuminance level of over 500 lux. In addition, low voltage Lightstream luminaires are mounted around the edge of the uplight fitting to highlight display areas.

## Historic buildings

Projecting light upwards is often the best way of revealing the detailing of historic structures. Once again, the use of outdoor fittings and the ability to direct the light accurately is important.

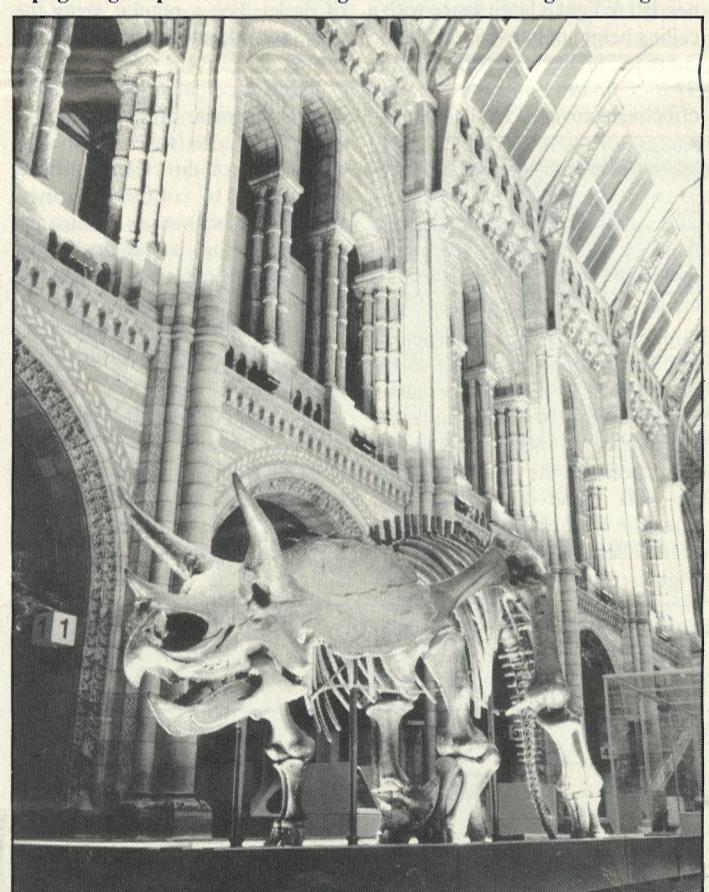
The ceiling is the most important feature of the dining hall at Brasenose College, Oxford, and luminaires directed at the ceiling are hidden behind the wall panelling. The installation is particularly interesting as it used two separate rows of fluorescent luminaires with Philips HFR (high frequency with light output regulation) circuitry. One row is fitted with Colour 83 triphosphor lamps; the other with Colour 84 lamps, and each has its own potentiometer. As a result, the light output cannot only be reduced to around 12% of maximum, but



Space age uplighting: Woolworth's store at Hitchin.



Uplighting emphasises the ceiling at Brasenose College's dining hall.



The old and the new: twentieth century lighting and a dinosaur at the Natural History Museum.

the light colour can be varied from a crisp 4000K for business meetings to a warmer, more relaxing 3000K for social occasions.

The Natural History Museum's dinosaur hall is lit by 400W high pressure sodium and 1000W tungsten halogen lamps placed alter-

nately in Thorn OWS floodlights in uplight mode. This mix of golden and white lamps emphasises the grandeur of the hall with its beautifully painted arched ceiling and provides a dramatic background for the replica of the 70 million year old triceratops dinosaur.



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Popular Lamp Types	Rating (W)	Circuit Wattage (W)	Light Output (1M)*	Colour Appearance	Correlated Colour Temperature	Colour Rendering Index (Ra)
SONDL-E	150	170	11,000	Warm	2200K	70
	250	277	19,000	Warm	2200K	70
SONDL-T	150	170	11,500	Warm	2200K	70
	250	277	20,500	Warm	2200K	70
MBIF	250	295	16,000	Cool	3700K	78

\*2000 hour lamp lumens

Source: Thorn Lighting

Lamp data for HID lamps used in uplighting.

# Lighting makes shopping a treat

Varied and interesting lighting at the Treaty Shopping Centre has just won a second prize in the new European Lighting Awards scheme. *Barbara Trigg reports.*

The Treaty Centre shopping complex at Hounslow, in Middlesex, consists basically of a large atrium and a number of short malls and entrances. There are balconies at two levels around the atrium and a glazed roof over a spaceframe structure.

On walking into the atrium, two features immediately catch the eye — three groups of very tall bamboo plants and a staircase.

Special lighting had to be provided to keep the bamboo healthy, because it needs 3500 lux. To achieve this, and at the same time avoid glare to shoppers, three 2kW metal halide floodlights by Philips are mounted at roof level and fitted with special cowls. This also gives a certain amount of general lighting.

Five multi-arm columns spaced around the atrium each carry five hexagonal plastic lanterns containing 50W high pressure sodium lamps. The columns, which were specially designed, were supplied by Exterior Lite Services Ltd and help to create an outdoor "street" environment.

They are finished burgundy to co-ordinate with bands of colour on the balconies.

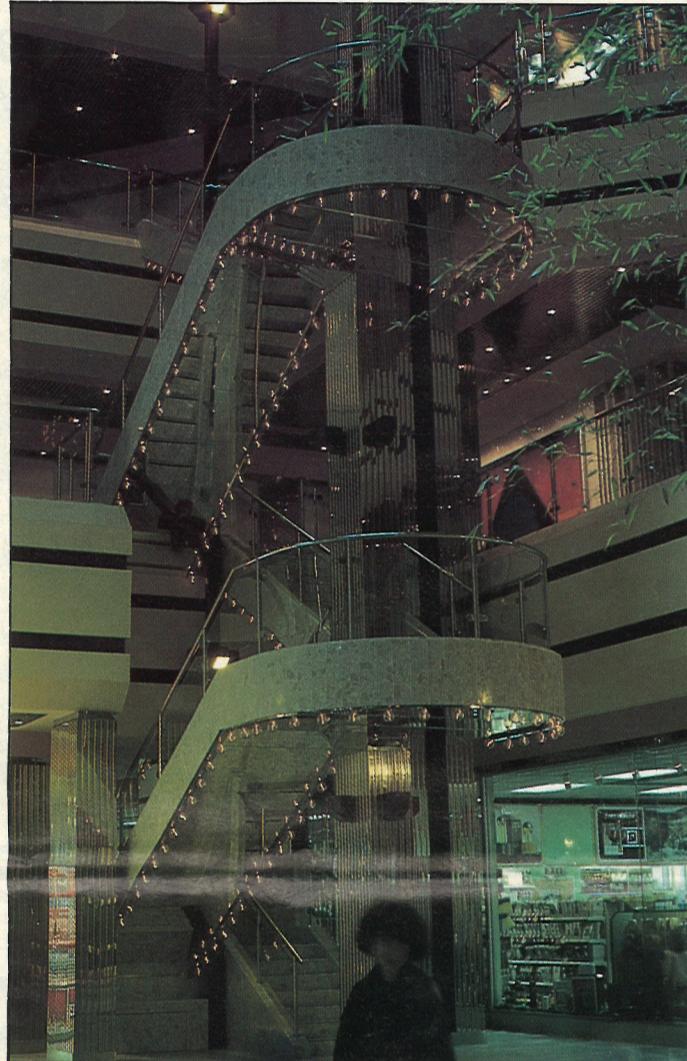
## Spaceframe

To avoid a black hole effect at night, the spaceframe below the glazing is uplift by white, area floodlights using 250W high pressure sodium lamps. These fittings, by Thorn Lighting Ltd, are mounted inconspicuously, one at each corner of the atrium.

Extra lighting is provided on the escalators by a series of fluorescent tubes concealed under the handrail.

Two types of lighting are used for the staircase: functional and decorative. Functional lighting is provided by 70W high pressure sodium fittings mounted on a column through the middle of the staircase. Some of these luminaires incorporate non-maintained emergency lighting facilities.

They are colour matched in bur-



Tivolites on a staircase add a decorative touch.

gundy and were made by DZ Licht, Germany, whose products are available in Britain through LDMS.

A decorative element is added to the atrium by low voltage Tivolites, by Lightgraphix Ltd, which outline the staircase. These can be sequentially switched to give the appearance of running either up or down the staircase.

A starlit effect is given to the balconies by using Magnagrid open cell ceilings by Formwood Ltd, with Program Lighting Ltd's miniature, low voltage, tungsten halogen downlights recessed into

the cells. The downlights use Thorn M58 lamps to give a wide angle beam.

## Malls

A glazed, barrel vaulted canopy emphasises one of the principal entrances from the main shopping street. This area is lit by decorative spherical wall lights by LB Lighting Ltd, which have cylindrical louvres around the 50W high pressure sodium lamps. They are mounted on the structural steel columns.

Malls and other entrance areas have low ceilings. Several of the

mall are lit by specially designed clusters of lights consisting of a column carrying four white globes and an uplight.

The central metal halide uplight has a reflector shaped to echo a coffer in the ceiling above; the surrounding spheres contain PL type compact fluorescent lamps. Column and uplight are colour matched in burgundy. LB Lighting made these luminaires, which are positioned down the centre of the malls.

In front of the shop windows on each side of the malls is a line of recessed, gold coloured cellular ceiling panels by Formwood. Above these, at intervals, are 600mm<sup>2</sup> fluorescent luminaires by Program Lighting containing twin U-shaped lamps. These fittings have a very sharp light cut-off and give some general lighting for circulation without competing with the shop window displays, which are deliberately allowed to dominate.

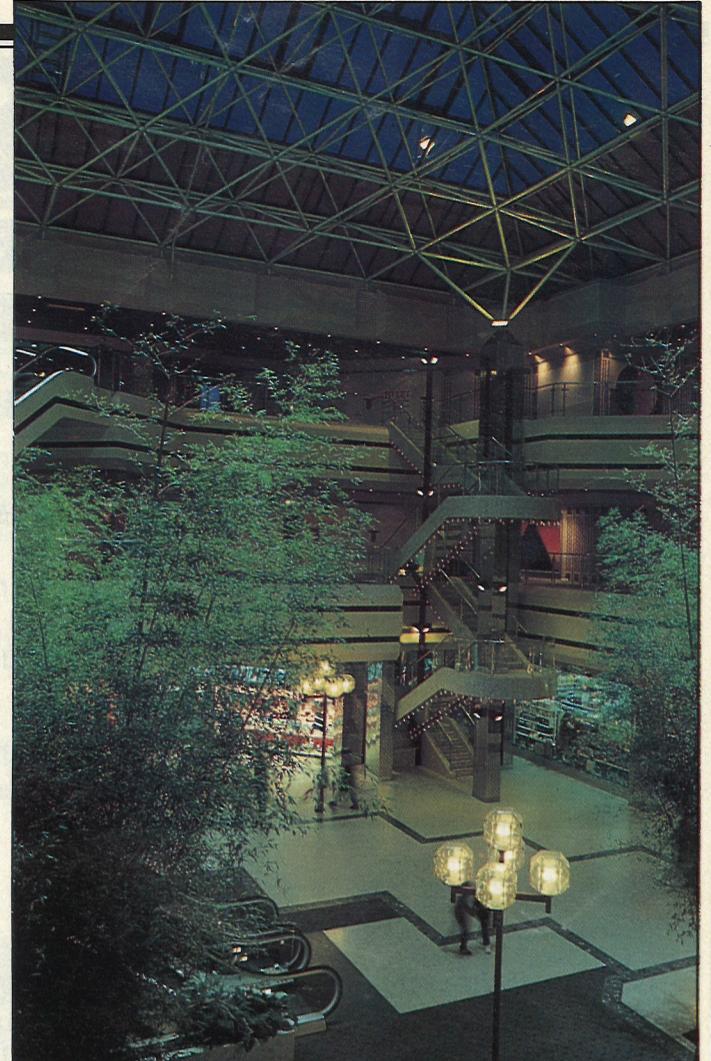
## Louvred panels

As the East Mall has mirror-faced structural columns down the centre, it was not possible to use clusters of lights on street columns. Instead, panels of open cell, gold coloured louvres are used with low voltage spotlights mounted above.

To emphasise the lift doors and give pools of light on the floor in front of them, three low voltage downlights with narrow beam M49 lamps are positioned above each door.

Where three of the malls intersect to form a small square, a planted area that includes tropical palms is highlighted by small, recessed 150W metal halide downlights made by Franz Sill, Germany, and supplied through LDMS.

At night a decorative element is added to the plant lighting by switching on low voltage spotlights



General view of the atrium at the Treaty Centre.

above triangular panels of low brightness parabolic louvres by Interlux Ltd.

Adjacent to this area the ceiling coffers are deeper and have cornices which are used to conceal fluorescent battens.

An entrance corridor to the shopping centre is lit by a suspended tubular lighting system that harmonises with the architectural structure of this area. The fluorescent lamps in the tubes are obscured from view by reeded dif-

users. Made by BPS Lighting Systems, Germany, it was supplied through LDMS and is finished in burgundy.

Architects for the Treaty Centre were the Fitzroy Robinson Partnership for clients the Taylor Woodrow Property Co Ltd. Electrical contractors were the Taylor Woodrow M and E Division.

Lighting consultants for the project were Derek Phillips Associates, 24 High Street, Bovingdon, Herts HP3 0HH.

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One of the malls; lighting levels are low to avoid competing with window displays.

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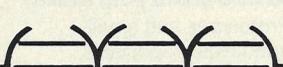
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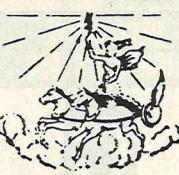
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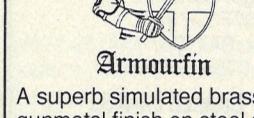
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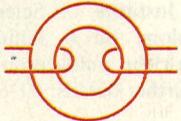


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Essex CM7 7YN  
Tel: 0376 24809  
Telex: 987312 TOWERS G

## TRANSFORMER MANUFACTURERS

A. A. Samsons Electronics Ltd.,  
Lighting Transformer  
Specialists  
23 Crawford Place,  
London W1  
Tel: 01-262 5125 or  
01-723 7851

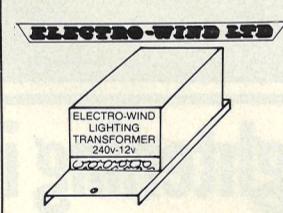
Burrows Electrical Ltd.,  
Railway Street,  
Chelmsford, Essex  
Tel: 0245 267428



Carroll & Meynell Ltd.,  
Portrack Grange Road,  
Stockton-on-Tees  
Cleveland TS18 2PH  
Tel: 0642 617406  
Telex: 58646  
Fax: 0642 614178  
Manufacturer of Low  
Voltage Transformers.

Colbere Eng Ltd.,  
Church Lane,  
Caldwell, Burton on Trent,  
DE12 6RT  
Tel: 0283 761267

Cumbernauld Transformers  
Ltd.,  
18-20 West Lenziemill  
Industrial Estate,  
Cumbernauld,  
Glasgow G67 2XT  
Tel: 023-67 25914  
Telex: 777350  
Full range of low-voltage  
transformers available.



Electro-Wind Ltd.,  
1A High Street  
Newchapel  
Stoke-on-Trent,  
Staffordshire ST7 4PU  
Tel: 0782 776422/776321

## parmeko

Parmeko Components Ltd.,  
Percy Road  
Aylestone  
Leicester  
LE2 8FT  
Tel: 0533 440044  
Telex: 341689  
Fax: 0533 440000



Tekcon Electrical Limited  
Porte Marsh Estate  
Caine, Wilts. SN11 9PU  
Tel: 0249 814548  
Telex: 445966 TEKCON G  
Lamp Transformers (SELV)  
50VA to 600VA rating.

# Tridonic

Tridonic Ltd.,  
Unit D1, Grafton Way,  
West Ham Industrial Estate,  
Basingstoke, Hampshire  
RG22 5HY  
Tel: 0256 843232  
Telex: 858137  
Fax: 0256 840113

## TUBES — ALUMINIUM

Thames Tube Ltd.,  
8F Bedford Avenue,  
Slough, Berks SL1 4RU  
Tel: 0753 821316  
Telex: 846533  
Manufacturers of small  
(30mm max) diameter  
drawn tubing suitable for  
decorative anodising.

## TUBES — BRASS LENGTHS AND BENDS

## S. Lilley & Son Ltd.

80 Alcester Street,  
Birmingham B12 0QE  
Tel: 021-622 2385  
Fax: 021 6666 148

## ULTRA VIOLET/SPECIALIST LAMPS & EQUIPMENT

American Lamps and Lighting Ltd.,  
367 Uxbridge Road,  
Acton, London W3 9RH  
Tel: 01-993 3181  
Telex: 894452



Coast Air,  
PO Box 797,  
Sudbury,  
Suffolk CO10 6FL  
Tel: 0787 76259  
Telex: 987126

## VICTORIAN REPRODUCTION GAS AND ELECTRIC LIGHT FITTINGS

Sugg Lighting Ltd.,  
65 Gatwick Road,  
Crawley, Sussex  
Tel: 0293 540111

## WOOD FLOOR STANDARD LAMPS

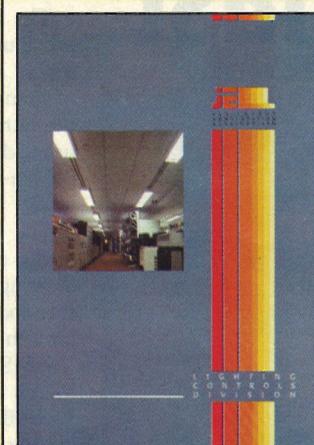
George Wood Ltd.,  
Laundry Street,  
Pendleton, Salford  
Lancs. M6 6WJ  
Tel: 061-736 6855

## ZONES 1 & 2 BASEEFA APPROVED LIGHTING FITTINGS

B.V. Industria,  
2 Duke Street,  
Liverpool L1 5AS  
Tel: 051-709 7041  
Telex: 629135  
Fax: 051 709 1981

Communication & Control  
Engineering Co. Ltd.,  
Park Road, Calverton,  
Nottingham NG14 6LL  
Tel: (0602) 652574  
Telex: 37362 comcon G

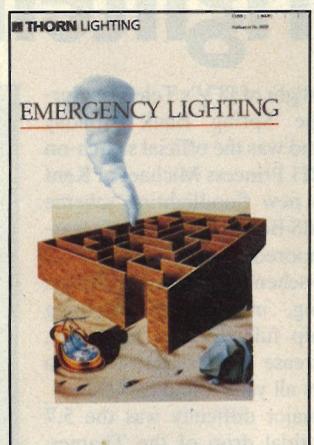
# CATALOGUE DIRECTORY



JEL Energy Conservation  
Services Ltd: JEL Lighting  
Controls division  
manufactures a range of  
lighting controls suitable for  
most commercial premises,  
factories, and warehouses.  
The brochure illustrates the  
range including Reset  
Switches, Programmable  
Zone Controllers and Mains  
Signalling Systems: circle 90



Boone Systems Ltd: lighting  
products. A range of  
fluorescent luminaires for the  
home, fitted kitchen,  
bedroom; units for offices,  
shops and other commercial  
interiors, Boone Systems Ltd:  
circle 91



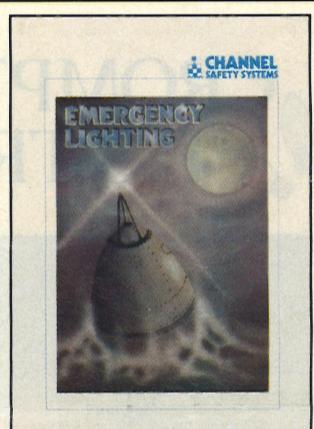
Thorn Lighting have  
published a new brochure for  
emergency lighting products.  
It contains a complete list of  
all commercial luminaires  
which can be converted for  
emergency lighting. It is  
intended to help specifiers,  
architects and consultants  
design a completely unified  
scheme: circle 92



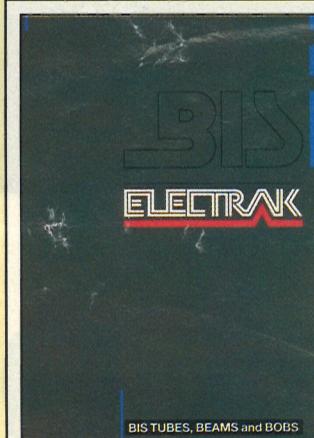
Concord Lighting Ltd:  
Concord manufacturers an  
extensive range of  
commercial lighting products.  
This new catalogue gives  
details of low voltage systems  
including technical  
information. A separate  
catalogue gives details of the  
new "Tiller" collection.  
Concord Lighting Ltd: circle  
93



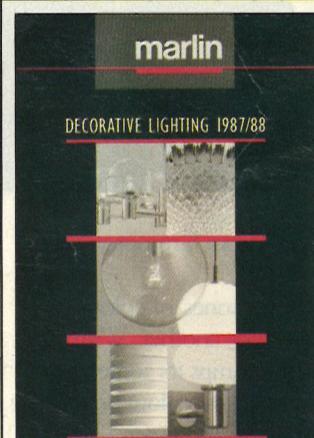
Rada Lighting Ltd: High-  
efficiency fluorescent  
luminaires and continuous  
lighting systems. Ultra-low  
glare louvres for maximum  
performance in VDU  
environments. Compact  
luminaires for low energy  
lamp sources. Vandal and  
weather resistant luminaires  
for external locations. Rada  
Lighting Limited: circle 94



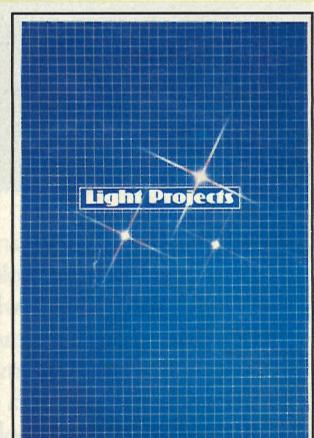
Channel Safety Systems Ltd:  
An attractive range of self-  
contained emergency lighting units  
including the award  
winning "LASER PACK"  
Low Voltage Conversion Kit  
and the now well established  
"EMERGENCY DOWNLIGHTER"  
developed to blend into the  
architectural design of  
commercial ceilings: circle 95



Electrak Ltd:  
The launch catalogue of the  
Electrak — BIS Lighting  
Tube, a specialist product  
unique to the UK and  
available only through  
Electrak International Ltd:  
circle 96



Marlin Lighting Ltd:  
A comprehensive range of  
decorative lighting for  
interior and exterior  
applications:  
circle 97



Light Projects Ltd:  
Specialises in the design and  
manufacture of a professional  
range of light fittings, offers  
an independent lighting  
design service, and provides  
lighting design supply and  
commission packages:  
circle 98

# WHERE TO BUY DIRECTORY

# Brightening up Belfast

A highlight of ITV's Telethon during the Spring Bank Holiday weekend was the official switch-on by HRH Princess Michael of Kent of the new floodlighting scheme for HMS Belfast, the museum warship moored on the Thames.

The scheme, designed by Philips Lighting, involved floodlighting the ship fully for the first time, to increase her attractiveness to tourists all year round.

A major difficulty was the 5.7 metre tidal drop of the Thames, which meant careful direction of the shoreside lighting of the ship's port side hull at all times. This was achieved by using special brackets and platforms made by the London Electricity Board to house narrow and wide beam 2kW mercury halide lamps.

The starboard river side of the



ship is lit from special booms, which can be removed to allow other ships to come alongside. These support floodlights housing 250W metal halide lamps to light the superstructure and 250W

HPLN lamps directed downwards to light the hull. The HPLN lamps establish the correct brightness patterns to accentuate the shape of the warship.

The funnels and part of the for-

ward superstructure have been lit with wide beam 400W mercury halide floodlights fixed to the deck.

The radar masts of the Belfast are illuminated by narrow beam 400W and 250W high pressure sodium lamps, fixed in the base of the latticework masts and shining upwards to provide a contrasting golden-white light on the metal-work.

The inside of the Admiral's bridge and Compass platform are lit using 18W SOX and low pressure sodium bulkheads, to achieve a warm golden appearance.

HMS Belfast was launched in March 1938 from the Harland and Wolff Belfast shipyard which gives her her name. The ship saw active service during both World War II and the Korean War in the early 1950s.

She was decommissioned from navy service in 1963, and in 1971 became a museum ship, moored at Hayes Wharf on the south bank of the Thames where she attracts some 250 000 visitors a year.



## Lighting up down under

Low-voltage miniature lighting fittings made by Light Projects Ltd were chosen by the Natural History Museum in London to illuminate displays in their Australian bicentennial exhibition, now on tour in Australia. The exhibition features conservation problems in Australia and uses lifelike figures of people and of animals together with graphics, including water colours of Captain Cook's first voyage of discovery.

The 150 fittings supplied include special graphic panel lights and remote M16 units fitted on a special clamp designed by Light Projects. UV filters and other filters are employed for special effects and to reduce lighting levels to 50 lux. The lighting system is designed to plug into transformers and was supplied to the museum in lightweight flight cases on wheels for easy transportation. Light Projects Ltd. Tel: 01-231 8282.



## Enlightening industry

CIBSE's Lighting Division are to publish their first guide on industrial lighting at the end of 1988. It is intended as an introduction to the subject and is aimed at lighting engineers, specifiers, users and students. Written in an easily readable style, the guide gives practical applications and proven solutions to lighting problems in many industrial situations both interior and

exterior. Security, inspection and emergency lighting and all stressed and a section is included on maintenance and design methods.

A seminar and exhibition is being held at the University of Manchester Institute of Science and Technology on 6 January 1989 to mark the publication of the guide. Further details: 01-675 5211.

## QA scheme launched

On 30 June 1988 the NICEIC launched a new company, the National Inspection Council Quality Assurance Ltd, to operate the NCIQ Quality Assessment Scheme, a quality assessment service for the electrical contracting and related areas of industry.

The scheme involves the assess-

ment of a company to ascertain compliance with BS 5750 and a quality system supplement, produced in consultation with customers, consumers, trade associations, specifiers and government which applies the requirements of BS 5750 to this sector of industry. Further details from 01-582 8411.

## ■ IN YOUR NEXT ISSUE ■

In August, *Lighting Equipment News* looks at the design of lighting for stadia and other sports buildings. The needs of colour television broadcasting have changed the requirements for lighting of outdoor sports grounds. On the other hand, the new lamp

technology has provided powerful tools for lighting designers. We look at the new products and the way in which they are being used. Tasklights are also increasing in sophistication, and *Lighting Equipment News* reviews developments in this field.

## CROMPTON SHOWS ITS TRUE COLOURS



Here's a new range of lamps from Crompton that others just can't hold a candle to.

We've all seen what 'hints' and 'tones' of colour look like – even if we can't tell one from another. With Crompton's Charmlight Candle lamps it's somewhat different. There's a subtle but definite colour wash, and we've included cool colours – blue and green – as well as pink, peach and yellow.

For Clubs, Restaurants, Hotels, Shops, in fact all leisure, display and domestic applications, that means more options, more colour, more Crompton.

**Crompton's new coloured Charmlight Candles – you can see their attraction.**

For full information on Crompton Charmlight Candles, or on the complete range of Crompton decorative and display lamps, contact us today.



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