

# LIGHTING

## EQUIPMENT NEWS

DECEMBER 1993

THE ONLY PUBLICATION DEVOTED TO ALL ASPECTS OF LIGHTING



### From derelict to delightful

Cuckoo Wharf, a new canal-side business park development in Birmingham, has been transformed from a derelict site. Recently opened by Prince Edward, the development is expected to create about 100 jobs. Period lighting and bollards were supplied by Candela Traditional Lighting Ltd.

"We gave equal consideration to both the roadside and canal-side

elevations of the development," said Gerry Pountney of developers Town and Country. "This required a considerable amount of restoration of the canal itself, its towpath and the surrounding landscape. We also required an efficient, high specification lighting in classic form, which Candela was able to supply from its Victorian range," he continued.

Reader Service No 150

### Seminars examine the latest in lighting

Running alongside the European Lightshow '94 will be a series of seminars on the latest in energy efficient design, emergency lighting and health and safety.

On Monday, January 31 there will be a special seminar dedicated to the new CIBSE Guide covering lighting controls and management and the new CIBSE Code for Interior Lighting.

It will examine such subjects as the adoption of maintained illuminance, installed power density targets and other significant changes which interior designers, specifiers and end users need to know about in the light of recent and anticipated EC Directives.

On Tuesday February 1 a seminar presented by independent lighting designers will cover matters such as sick building syndrome, and 'green issues' and the designer's responsibilities. Also on Tuesday will be a seminar on emergency lighting chaired by the Industry Committee for Emergency Lighting.

The Health and Safety Executive will chair a seminar on Wednesday February 2 on the Display Screen Equipment Regulations. This will include an overview of the Regulations, employers' obligations, modern lighting technology for offices, productivity and efficiency and ergonomics.

Information about the seminars can be obtained from Siobhan Dowsey, LIF, 081-675 5432.

## Break from traditional Xmas lighting



Regent Street's Christmas lightshow this year brings to life Disney's latest animation, Alladin. This year, in a break from traditional lighting methods, the displays use the latest fibre optic technology and floodlighting from Thom Lighting.

Instead of using hundreds of tiny bulbs to simulate the firework display over the Euro Disney castle, the effect has been achieved by 400 fibres transmitting light from one 150W metal

halide lightsource.

The display, by Vantage Design and sponsored by the Walt Disney Company and the Regent Street Association, consists of 10 x 18m wide, 7m high double sided garlands suspended across Regent Street. All are additionally highlighted with 500W tungsten halogen floodlights which uplight the characters from their mounting positions at the base of each tableau display.

### Student rewarded

Adrian Tame of SLI Lighting has been judged the Outstanding Student of the Year by a panel of judges consisting of Senate Electrical Wholesalers' managing director Jim Bamforth, LIF edu-

cation chairman Hugh Ogus and LIF president Peter FitzGerald.

Mr Tame was one of four students who had scored highest among the 60 students who have taken LIF's Certificate Course during 1992/93.

His reward, donated by Senate Electrical Wholesalers Ltd, was a

### In brief ...

● Rada Lighting has appointed Independent Lighting Specialists Ltd as its distributor for the north west of England. It is based at Wynne St, Salford, tel:061-736 1237.

● The Lapp Group of companies has launched Lapp Lites, an electrical distribution service for contractors. The company has produced a brochure detailing products available - everything from switches to spotlights - from the company's London headquarters. Further information from Lamp Lites: 081-961 1881.

● Ventilux (UK) Ltd, a wholly owned subsidiary of the largest manufacturer of emergency lighting equipment in Ireland, has opened a sales and distribution office in Manchester at Unit 14, Quirks Trading Estate, Waverley Road, Sale, tel: 061-905 3426.

● GE Lighting will be running its Low Energy Money-Back WWF Promotion throughout January and February. Mazda will give £1 to the World Wildlife Fund for every packet top returned from customers buying the new Mazda Low Energy 6L lightbulb. Each participating consumer will receive a £1 coupon redeemable against further Mazda low energy bulbs.

● Franz Sill GmbH, German manufacturer of exterior discharge luminaires, has opened a branch in the UK to distribute Sill luminaires - previously distributed in the UK by an agent. Sill Lighting UK is based at Thame, Oxfordshire, tel: 0844 260006.

## Transcending the rectangular

When refurbishing a rectangular first floor office space, Artillery Interior Architects were looking for a new concept. The brief from the client was to design the office to create an interior which transcended the rectilinear shape. Accommodation includes a lobby, a relaxation area, cellular offices around a central open plan office and specialist working areas.

The resultant lighting scheme included a unifying diagonal 'beam' structure supplementing the main office lighting. This comprises low glare luminaires and uplighting, supplied by Moorlite, located to suit the office work in the various sections of



the interior.

At one end of the interior, the relaxation area is softly lit by concealed uplighters, with recessed fluorescents on the diagonal marking the beginning of the beam - constructed of perforated metal - which continues through the offices.

The beam follows the sloping glass wall of the lobby and con-

tinues across the open plan offices to the specialist working area at the far end. Downlighting concealed in the beam is specially designed 600mm louvre wedge category LG2 luminaires with bi-axial compact fluorescents. An ambient balance is achieved with the uplighters also sited in the beam.

Reader Service No 151

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CHRISTMAS

from Helvar and their distributors.

GREENINGS

GEC Distributors (Ireland) Ltd. 775413

Jerrard Bros. PLC 081-688 8222

Mico Lighting Ltd. 0532 567113

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# DIARY

## JANUARY

18

**Street lighting and crime.** CIBSE Lighting Division presentation in London given by Professor David Herbert. Details from CIBSE Member Services Dept 081-675 5211.

20

**Lighting Specialist Course.** LIF seminar in London on the use of computers in lighting design. Details from David Pritchard 06285 22669. **Lighting Control and Management Development in Commercial and Industrial Applications.** ILE regional meeting in Newcastle with paper given by B McKiernan of Lutron. Details from ILE 0788 576492.

23-26

**Lighting '94 & Furniture Accessories.** NEC, Birmingham exhibition in its second year.

Details from William Mann 081-742 2828. **Intelec.** The international electrical show for contractors, installers and specifiers taking place at the NEC, Birmingham. Details from Intelec Exhibitions Ltd. 081-547 1566.

## FEBRUARY

15

**Practical energy saving:** case studies. CIBSE Lighting Division meeting in London. Details from CIBSE Member Services Dept 081-675 5211.

23

**Stage lighting through the ages.** A CIBSE Heritage Group Presentation. Details from CIBSE Member Services Dept 081-675 5211.

24

**Lighting Induction Course.** One day LIF seminar in London for people new to lighting. Details

from David Pritchard 06285 22669.

## MARCH

24

**Lighting Specialist Course.** One day LIF seminar in London on the latest developments in lamps and control circuits. Details from David Pritchard 06285 22669.

27-30

**National lighting conference,** organised by CIBSE Lighting Division. Details from CIBSE Member Services Dept 081-675 5211.

## APRIL

24-27

**Interior Design International.** This year at Olympia, London, including product sections that focus on lighting, architecture and contemporary design. Details from Gavin Tadman 071-486 1951.

24-28

**Intershop.** The international shopfitting and display exhibition takes place at Olympia, London. Details from 071-486 1951.

## MAY

11

**Office lighting - the way ahead.** Seminar organised by CIBSE Lighting Division, 081-675 5211.

18

**Sky glow conscious lighting design.** Seminar organised by CIBSE Lighting Division presentation, given by Nigel Pollard, followed by the AGM and Lighting Division Lunch in London. Details from CIBSE Member Services Dept. 081-675 5211.

19

**Lighting Specialist Course.** Seminar at LIF, Balham on emergency lighting. Details from David Pritchard 06285 22669.

# CASE STUDIES

## Less clutter in Oxford Street

Westminster Council has been widening the pavement in parts of Oxford Street, with a view to giving pedestrians more space to circulate freely. It was important, therefore, that there should be as little clutter as possible, which meant making the maximum use of lighting poles.

Consultants, The Project Centre, chose the Urbi 3 lighting system from The Woodhouse Company. Urbi 3 is described as a versatile system that provides roadway lighting, while simultaneously accommodating pedestrian lighting, traffic lights, regulatory signs, promotional banners and even Christmas decorations. Thus, the problem of having an array of poles serving these functions is avoided.

At Oxford Street, it was decided that signals should be positioned away from the street lighting columns, so smaller



poles from the Urbi 3 system were provided to maintain the integrity of the overall design concept.

Reader Service No 152



## Dockyard savings

Since an energy management policy was introduced at Devonport Royal Dockyard in 1988, a 40% reduction in annual energy costs has been achieved, from £15m to £9m.

One of the more recent investments made by energy manager Andy Voden was three Econolight units used to control the lighting circuits in the frigate refit complex. Working with a photosensor, the Econolight system

shuts off each of the 30kW sodium lighting systems when ambient light reaches a predetermined level. This has been combined with the introduction of task lighting to reduce extraneous lighting.

Econolight uses high speed sensing to calculate the percentage difference in voltage required every half cycle to reduce voltage requirements and energy costs with no apparent reduction in lighting levels or equipment performance.

Reader Service No 153



## Relieving stress

The new Granary Restaurant at Gatwick Airport is one of the largest airport restaurants run by Forté's Welcome Break Division. Part of the Gatwick Village at the south terminal, it includes franchise outlets for Kentucky Fried Chicken and Sbarro.

Connect Lighting has supplied nearly 500 products to the restaurant, including over 260 adaptor plates, some in a non-standard satin finish, for the open cell restaurant ceiling. Also, included

in the order was low voltage display lighting, a variety of compact fluorescent, white SON or low voltage downlighters and directional downlighters.

Our prime consideration was to combine the corporate Forté design scheme with a variety of energy-efficient lighting to create a warm, relaxing and inviting atmosphere," commented designer Neil Clayton. "This is especially important for a restaurant at an airport where customers can often be anxious or under extra stress."

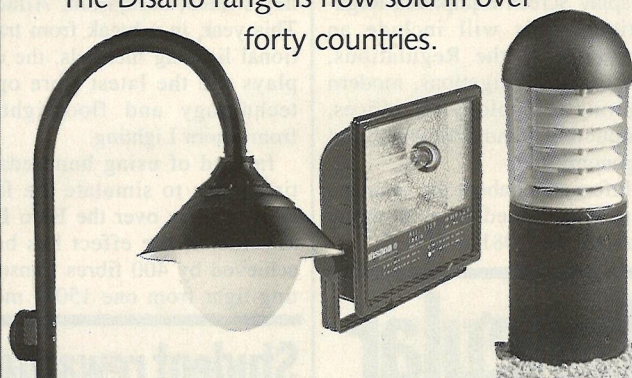
Reader Service No 154

# disano

Disano is recognised worldwide as a reliable, innovative and cost-effective solution for making light work – efficiently!

Whatever your lighting requirement, from fluorescent, display and track lighting to urban, amenity and flood lighting, you'll find that the comprehensive range of Disano lighting products caters for your every need.

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Tel: (0302) 873500. Fax: (0302) 872700



# NEWS

## Ultra-violet radiation in the workplace

Many tungsten halogen light sources in the workplace are being used unfiltered against ultra-violet radiation, according to a report published by the Health and Safety Executive (HSE).

The aim of the research, carried out for the HSE by the National Radiological Protection Board, was to collect information on the uses, numbers and types of tungsten halogen light sources in occupational environments.

This snapshot survey showed that the majority of tungsten halogen light sources are used as spotlights, with very few (less than 1% of the total reported) being used as desktop lamps. Where any such lamps, particularly desktop, are unfiltered this can, in certain circumstances, give rise to ultra-violet exposure guidelines being exceeded.

The report includes information, such as advice on the use of filters, to show how tungsten halogen light sources may be used without exceeding ultra-violet guidelines.

Copies of the report, *Survey into the Use of Tungsten Halogen Light Sources in Occupational Environments*, price £20, is available from HSE Books, tel: 0787-881165.

## Compact savings

GE Lighting has calculated that, by installing its Biax low energy compact fluorescent lamps, users can save up to 90% on lighting maintenance costs.

In NHS Hospitals, for instance, recent findings have shown that it costs approximately £2 to change a light bulb. GE maintains that heavy lighting users such as hospitals could not only save on lighting maintenance costs by using CFLs instead of GLS lamps, but also as much as 80% on lighting energy costs.

GLS lamps, says the company, are "grossly inefficient" as less than 10% of the energy they consume is used for light and 90% is wasted in the form of heat.

Reader Service No. 105

## Fibre optics at the bank

Edison Halo has been appointed as a bespoke supplier of fibre optic lighting to National Westminster Bank. NatWest is involved in a branch refurbishment programme, which it calls FAME (Furniture and Merchandising Experiment). This is reviewing the whole interior design of each branch and involves giving customers greater freedom of movement and providing a relaxed and welcoming atmosphere.

Aspects of the design were complicated by the architecture of many of the branches, about a third of which are old buildings with widely varying ceiling heights. Some of these may have exposed beams or other detailing and many are subject to Listed Building restrictions.

These features tend to make it difficult to install suspended track lighting. With high ceilings the natural air circulation may also cause shimmer effects at counter level.

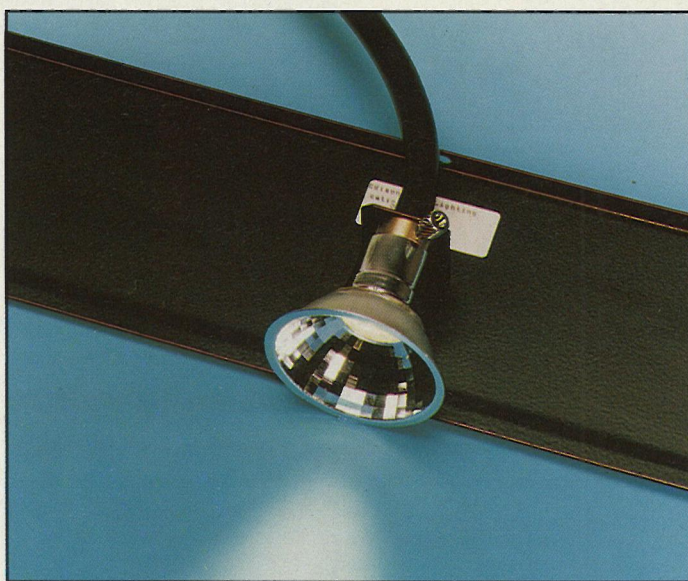
### In brief...

- The Institution of Electrical Engineers has opened a branch in Beijing – the first European engineering institution to establish a branch in China.

- The Electrical Contractors' Association (ECA) has taken an equity share in Electrotech Exhibitions Ltd. ECA president James Pinnington said that the exhibition aided the ECA's objective of creating a better, more effective representative identity for the electrical installation industry.

- Roy Haley has been elected chairman of the council of the 28,000 strong Institution of Electronics and Electrical Incorporated Engineers. John Golding has been appointed deputy chairman.

- BHS Lighting has joined Philips Lighting and Osram as major sponsors of the Lighting Association's Student Lighting Designer Awards, which attracts hundreds of entries every year.



This combination of circumstances led to the consideration of fibre optics by NatWest's Property Management Technical Services department. As a result, senior engineer Peter Strangeway made contact with Edison Halo.

The solution devised was to remove the lighting source from the ceiling mounted track and downlighters and house it in a metal transom over each till module, a structure which could be largely pre-assembled. Each 1200mm counter module is illuminated by four optical heads – two at 1.2m over the customer and, behind the glass counter screen, two at 1.5m over the cashiers.

This arrangement gives an even, steady and glare-free light source. It also allows the counter modules to be positioned wherever is most appropriate without the need to take structural details into account.

The new system is also cheaper

to run. Each set of fibre optic tails is fired by a single 150W metal halide 4000K lmp. This is said to offer savings of 35% compared to the multiple lamps on a low voltage system. Further savings are achieved as installation is quicker, while the light source is easily accessible for maintenance.

"There's no doubt that fibre optic lighting has provided us with the flexibility, quality, speed of installation and cost savings necessary to facilitate the implementation of FAME," said Peter Strangeway. "In particular we were fortunate to be talking to a supplier who was in a position to adopt a developmental approach to our lighting needs," he continued.

"Fibre optics isn't a replacement for other forms of lighting but it is a valuable new addition to the lighting designer's portfolio of options," commented Edison Halo's technical director Peter Hanley. **Reader Service No. 106**

## LETTERS

### Unfair trading in low energy lamps

Dear sir

I am writing to you about low energy lamps, with respect to the unfair trading conditions that are being created.

As a small independent retailer selling all types of lamps and tubes, electrical accessories and lighting at what we hope to be competitive prices, I must point out that as just one trader I feel aggrieved that large DIY houses like B&Q, Texas, etc, are now selling low energy electronic lamps at £9.99 for all wattages.

This price represents an average discount off trade prices of 33%. Even buying at our best rate we cannot come anywhere near selling this lamp at a price of £9.99 and make any profit.

I appreciate that these stores can purchase bulk quantities, but then so can multi-national wholesalers – however they cannot offer these lamps to us to sell at £9.99.

We have had several enquiries for the lamp at £9.99 but not at our present price of £14.99. What is happening at present is that the buying public is using us for obtaining information about the lamp and then buying from the sheds. Therefore I now refuse to give any information on these lamps – I wonder if they can get the same information from the big stores?

I am aware that the government, through the energy trust, and the EEC are campaigning for energy awareness, and that a grant has been issued to the superstores to promote this lamp – but manufacturers of such products should be aware that us retailers/wholesalers are up against unfair competition, through no fault of our own.

I would have thought it would have made more sense had the grant been issued to manufacturers so that it would have then been passed on to all those who promote the lamps in question.

At the present time us smaller traders have no chance in matching these prices. If all retailers and wholesalers were to boycott these products then perhaps manufacturers would help us. If manufacturers persist in helping the large shed groups, they will be effectively cutting the life blood of us retailers.

At present I have 50 low energy lamps in stock, and will in due course be removing them from show, and I will not assist the public by giving information on these lamps.

Perhaps in my small way I might get the message through to manufacturers that us smaller shops are the real ones that assist the public in giving relevant information and not the sheds.

**Jack Muslin**  
**The Lighting & Gifts Centre Ltd**  
**East Barnet**  
**Herts.**

# COMMENT

## Gloombusters

It's very noticeable that many hotels are having to offer lower rates to gain sufficient custom. While the basic rates may remain ludicrously high, most are now prepared to negotiate and some good deals are certainly possible.

This being the case, these hotels must be having to look very closely at their running costs – in particular their energy costs. Lighting forms a major portion of these costs and there are signs that some hotels have looked at this very closely. Most hotels have permanently lit corridors and the use of fluorescent light sources is common in these areas. In many cases, compact fluorescents allow the use of attractive wall-mounted light fittings, while also minimising the running costs.

In the rooms, however, this attention to running costs does not seem to be so common. I am frequently irritated at the impossibility of making a hotel room bright during the hours of darkness. The norm seems to be lots of small light sources scattered around the room, without any bright, central source. As a result, I will tend to have all the lights on at the same time to even get anywhere near a bright environment. This could mean the light by the door (usually a recessed downlighter), both the bedside lights and one or two table lamps. Even so, the room remains dim overall with just a few pools of light to break up the gloom.

It may well be that I am some sort of wierdo and most people are quite happy with gloomy rooms. But I've heard similar comments from others, so there are certainly a few fellow gloombusters burning up the kilowatts in hotel rooms.

Surely, therefore, it would make sense to have the option of a bright light in the room for those of us that want it, in addition to a variety of other light sources. In this way, each guest could set the lighting to suit his or her own preferences and, I suspect, save the hotel money. I know it's possible because I encountered what I consider to be the perfect lighting configuration in a hotel room in Paris just recently. This room had all the usual types of light fittings, with a couple of extras that I had not come across before.

On either side of the bed were small lights behind plastic difusers, obviously designed to provide a faint light which could be left on all night. These were equipped with compact fluorescent lamps to do this economically.

The most interesting light source from my point of view, however, was a free-standing uplighter with a 300W halogen lamp. When on full, this light obviated the need for any other light source in the room. But the clever part was the dimmer built into the column of the light, giving the sort of versatility that should suit any guest. It certainly suited this one!

All this pondering on hotel lighting makes me wonder if any research has been carried out on the subject. For example, has the use of different fittings in rooms been monitored to see which ones get the most use? Or have different light sources been analysed to see which give the best economies? Or is it all just based on a traditional positioning of light fittings that presumably dates back to the use of candles or oil lamps? We would be delighted to hear from anybody who has been involved in the design of lighting for hotel rooms and could offer answers to these questions.

*Paul Haddlesey*

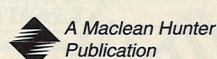
PAUL HADDLESEY, EDITOR

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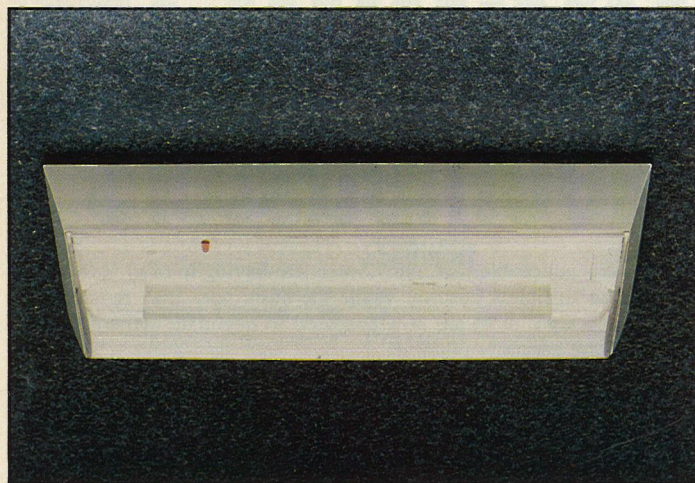
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fibre optic system



# NEW PRODUCTS



## Emergency lighting solution

Econolume, the new high light output 6W non-maintained emergency bulkhead from Thorn, is manufactured of white injection moulded plastic with a clear dif-

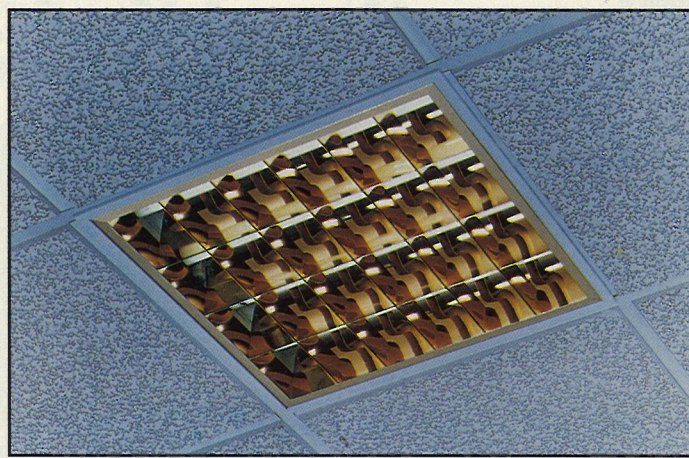
fuser and a grey skirt surround.

The bulkhead can be surface or semi-recessed mounted using a cream bezel trim attachment. It is claimed to stay illuminated for three hours on mains failure and to meet escape route lighting requirements. An 8W version is also available.

Reader Service No 165

## For T-bar suspended ceilings

Edison Halo offers the Sonalo range of fluorescent downlights for standard T-bar suspended ceilings. There are four models in the range rated between 2x36W and 4x36W – three fluorescents and one compact fluorescent – each engineered from spot-welded steel for rigidity with front faces mitred and seam-welded for extra strength and minimal light spillage. A polyester powder-coat finish is claimed to ensure durability.



The company has opted for simple die-cast twist-and-lock ceiling fixings and easy-fix butterfly springs for the louvres.

The range meets Categories 1 and 2 of the latest EC VDT Regulations.

Reader Service No 166

## Exit sign luminaire

JSB has combined an emergency luminaire with an exit sign in response to the forthcoming European norm. The norm requires an illuminance of 1 lux on the floor of an escape route, with an exit sign at each final exit.

The JSB Waylight is claimed to provide 1 lux below the exit sign for an area 2m wide and 2m along the escape route, as well as acting as an exit sign. It is available as a self-contained emergency exit luminaire rated at 230 to 240V for three-hour duration. Available in maintained or non-maintained versions, the design is described as robust with a metal



body and polycarbonate light controller. The new European exit pictogram format is included

with a viewing distance of 25 metres.

Reader Service No 167

# THIS SHOW MEANS BUSINESS

This will be the UK's lighting exhibition of the year.

It's the one place where the very best and latest in decorative and commercial lighting can be seen in a superb setting and all under one roof.

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Because it is the event where both exhibitors and visitors really *do mean business.*

## THE EUROPEAN LIGHT SHOW 94

EARLS COURT 2 LONDON JAN 30 - FEB 2

For more information contact:

The Lighting Association,  
Stafford Park 7,  
Telford, Shropshire TF3 3BD.  
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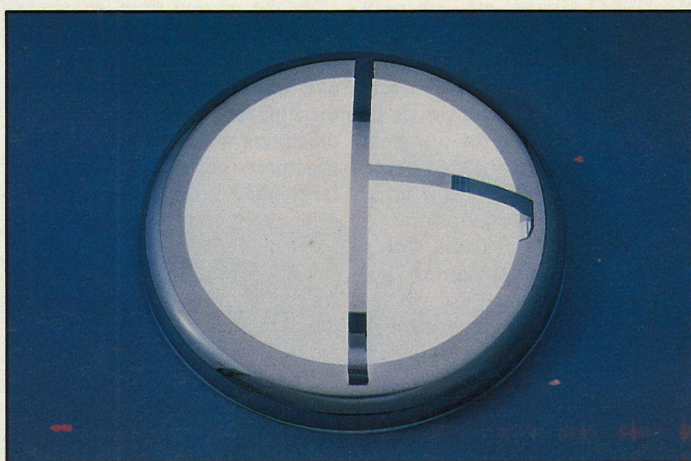
## Miniature spotlights

A range of miniature spotlights with three reflector shapes has been introduced by Illuma. Available in white, black or brass finishes, Eurostars have a die-cast

body and have been designed for 20, 35 or 50W GX5.3 50mm diameter dichroic reflector lamps.

Ideal applications are claimed to be highlighting merchandise and displays in shops and stores, and creating accent and effect lighting in hotels, restaurants, museums and art galleries.

Reader Service No 168



## Low energy CFLs

Beta Lighting has introduced a range of decorative luminaires for modern or traditional interiors.

Fiero is available with six levels of low energy compact fluorescent light output, including

Thorn's 2D lamps up to the 38W 2D and 2x24W PLL lamps. All models are available with emergency lighting options.

Standard finishes are white and polished gold. Other finishes are available to special order.

Reader Service No 169

## Lights on the move

Ingersoll-Rand has introduced a new version of its L6K mobile lighting system. New features include CEE form sockets providing auxiliary power outlets located at the rear of the light tower between the bumper and wheel fender on the lower enclosure panels.

The new light tower is said to offer lower sound levels than those required by EC Directive 84/536. The mast on the light tower extends to a maximum of 11m including the lamps and can be used at any height up to this limit.

The light tower has four 1500W tungsten halogen lamps mounted in reflector enclosures constructed to IP55. The four lamp holders are located in lamp frames to provide vertical adjustment of illumination angle. Lamps and frames can be detached when moving or towing the tower.

Reader Service No 170

## Shorter CFL

Osram has launched a shorter addition to its range of Dulux energy saving, compact fluorescent lamps – the triple-turn tube Dulux T.

The lamp measures two thirds the length of the existing Dulux D but is claimed to produce the same luminous flux and a more even distribution of light which is similar to incandescent lamps.

Reader Service No 177

## The bright outdoors

Celebration, from CSM Lighting, is described as the brightest range of outdoor lighting. The white and multi-coloured lighting sets, Lantern, Bright Lights, Lamplite

and Pealight are designed for use on patios, gardens and outdoor Christmas trees.

The company has also produced a brochure which depicts the various combinations of lamp and lighting designs, as well as the heavy duty festoon lighting chains, adaptors and harnesses.

Reader Service No 178

## In brief...

● New to Generalux' range of energy saving luminaires is the Square Light, manufactured by ITT Reiss, to IP54 standards. The diffuser fixes onto an injection moulded body without screws or clips, preserving clear lines. The heavy duty acrylic diffuser has been designed to operate with 1 or 2W lamps.

Reader Service No 171

● Micromark has introduced a range of dusk-to-dawn nightlights featuring famous cartoon characters, 'Tom & Jerry', 'Postman Pat', and 'My Little Pony'. There are six nightlights in the range; three are aimed at the home safety market and three cartoon character nightlights at the children's market. All of the lights switch on automatically at dusk and off at dawn.

Reader Service No 172

● A range of decorative glasses has been launched by Spectrum Luminaires for use with the company's exterior lanterns. They are designed to complement both modern and traditional trends in door and window glazing. The four versions, English Rose, Art Deco Flower, Diamond Cluster and Leaded Lattice are produced using inks fired on to clear Flemish glass which, according to Spectrum Luminaires, ensures they will not crack or peel.

Reader Service No 173

● The Enersave ballast for fluorescent lighting, from Ideas Engineering, is claimed to have an MTBF in excess of 30,000 hours and is designed to comply with International Standards for Radio Frequency Interference suppression to IEC 55015. The ballast is also described as having exceptionally low harmonic waveforms, and complies with IEC 555-02.

Reader Service No 174

● The Unity PX16 from Telegan is an integrated programmed lighting controller and dimmer unit. It offers control of up to 16 dimmer channels with four 10 Amp dimmers in a compact wall-mounted unit. All settings are adjustable using a remote handset, and operations are selected through either the handset or a wall switch plate.

Reader Service No 175

● The Line 94 'designer' collection of ceramic table lamp bases, manufactured by Mahoona Lighting, comprises an assortment of Classical Greco/Roman styles in a variety of colours and finishes.

Reader Service No 176



# NEW PRODUCTS

## Post-top lanterns

DW Windsor's York post-top lanterns are now available with the Diamond optic reflector system, which is claimed to provide real performance in a post-top mounted luminaire. Three new lid styles have also been added to the range.

According to the company, the combination of a York lantern with the Diamond optic reflector means that post-top mounted lighting schemes can now meet the requirements of part 3 of BS5489 for subsidiary roads and pedestrian areas more effectively.

The reflector system is a compact Diamond optic which is mounted into the lid of the York which also incorporates a separate reflector mounted into the base. DW Windsor claims that the combination allows light to be directed more precisely to where



it is required. This, according to the company, can mean that fewer luminaires are required for a

scheme, representing a saving in both installation and running costs; and the added light control

can save energy, reduce glare and minimise light pollution.

**Reader Service No 179**

## High-bay fitting with air filtering

According to Glamox, lower maintenance costs are incurred on its new high-bay fitting with air filtering. The filtering is claimed to prevent dust build-up inside the impact resistant pre-stressed glass which could otherwise reduce the efficiency of the luminaire.

Sealed to IP64, the GDH luminaire comes in 485mm or 566mm

diameter reflector to suit the lamp size being used. Lamp power rating types range from 150 to 700W. An open front version is also available to IP24.

The design caters for vertical or horizontal installation direct to the ceiling, on a mounting rail, or wire suspension on brackets.

All materials used are claimed to be corrosion resistant and the fittings carry the approval mark of most European standards, including BS 4533.

**Reader Service No 180**

## Conversion packs for retrofit

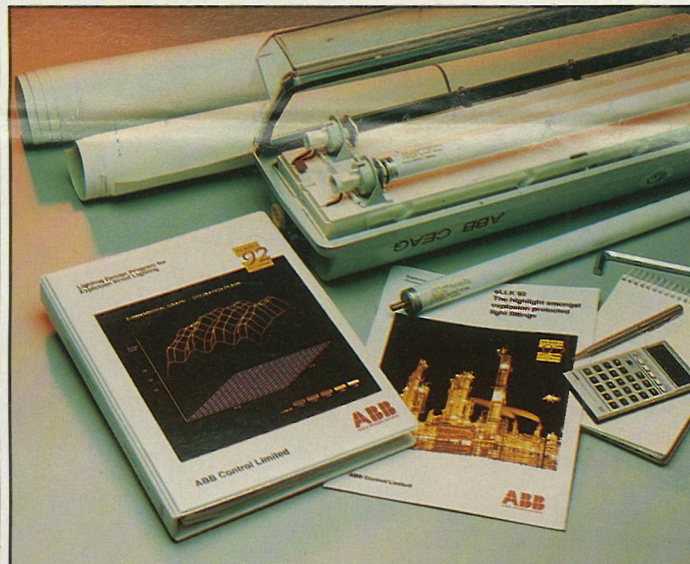
Precision Lighting is utilising parabolic louvres from Interlux in its Adaptpack range of conversion packs for fluorescent batten lighting.

The packs are claimed to enable the louvres - which meet

the specification for CIBSE Lighting Guide 3 Categories 1 and 2 - to be installed below existing fluorescent batten fittings.

Adaptapacks are supplied with universal brackets which are claimed to enable the packs to be fitted to practically any single or twin fluorescent batten.

**Reader Service No 181**



## Explosion protected

ABB Control has launched emergency lighting versions of the 20 and 40W CEAG '92 series. Both incorporate a high frequency electronic ballast system which is claimed to reduce power consumption, ensure immediate start-up, eliminate flicker and extend operational life.

Each luminaire is fitted with a

6V, 7Ah gas tight, Nickel Cadmium battery. This is described as being able to power one fluorescent tube for three hours at 25% of the normal rated light intensity, or for 90 minutes at 50% of normal rated values.

The luminaire has a remote inhibit facility which is claimed to allow switching of the emergency lighting system from within temporary safe refuges onboard offshore platforms.

**Reader Service No 183**

## New floods

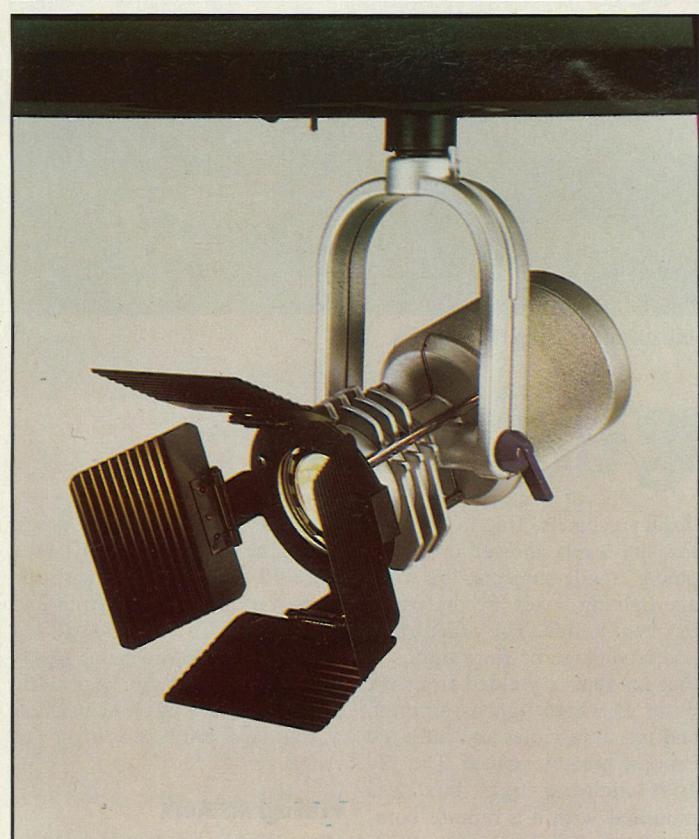
Glamox Electric is introducing a range of outdoor floodlights for practical and decorative applications. The GKO series is designed for wall or column mounting and is supplied with a galvanised black-enamelled steel mounting bracket, a black polyester connection point and a rubber sealing gland.

The range includes the GKO 70 for high pressure 70W sodium lamps, and the GKO 500 and 1000 for double ended 500W or 1000W tungsten halogen lamps. The latter models can be supplied

with optional anti-glare flaps.

The company has also introduced the GDO range of outdoor luminaires, described as an attractive and practical alternative in amenity lighting. The luminaires have a half-sphere-shaped diecast aluminium body of 320mm diameter and is finished in a choice of black or white polyurethane paint. The fittings are angled at 45°, optionally pointing up or down. Single luminaires are available for wall or corner mounting or 60mm diameter pole mounting versions are available in single or double options.

**Reader Service No 184**



## Krypton factor

D&F Lighting has introduced the Fosnova 'Krypton' low Voltage halogen track luminaire. It is described as suitable for all display lighting applications, and is available with a range of accessories, colour filters, barn door baffle and diaphragms which can

be used to adjust distribution from the 50W dichroic lamps.

Krypton has fins which are claimed to enhance appearance and improve heat dissipation. It also has a toroidal transformer in fully ventilated enclosures and a fully adjustable stirrup bracket for surface or track mounting.

**Reader Service No 182**

# ILE

At the recent annual conference of the Institution of Lighting Engineers, attended by about 300 delegates, two new publications were introduced: *High Intensity Discharge Lighting in Interior Industrial Premises* and the fourth edition of the Institution's *Code of Practice for Electrical Safety in Public Lighting Operations*.

Choosing lighting equipment for large indoor spaces with high mounting heights can be confusing, as all too often there is a choice between differing lamp types and luminaire types, ie high or low bay luminaires.

This guide has been prepared by an ILE study panel to enable those responsible for choosing, planning and specifying lighting installations where high intensity discharge luminaires will be used (primarily industrial spaces) to select the appropriate lighting equipment and layout to meet the various lighting needs within the area.

The *Code of Practice for Electrical Safety in Public Lighting Operations* was first published in 1981. It is accepted by local authorities throughout Britain as the recognised reference source for all engineers in the public lighting industry, that is those involved with highway lighting and illuminated signs.

This updated edition, produced by a panel of highly qualified engineers from both the private and public sectors, covers some 20 aspects of the subject. As well as being used as a standard reference by qualified lighting engineers, it is useful to managers with overall responsibility for public lighting departments but without formal lighting training.

Statutory regulations and other codes of practice relating to public lighting are listed in the front of the booklet. Details are given of different types of electrical injury and of electrical safety procedures to follow. Requirements for safety clothing and equipment are set out and descriptions of safe working methods are given.

The need for training to comply with the Electricity at Work Regulations 1989 is emphasised. In the same section there are guidance notes for the training of operatives to undertake installation work at various levels, as prescribed by the Electricity Association, and a model Competent Person's Authorisation Certificate.

Types of cable recommended for use in public lighting and methods of installation are described fully. An important part of this section deals with avoidance of danger from underground electricity cables, along with circuit diagrams for lighting equipment.

Various types of earthing systems found in highway lighting and illuminated signs are covered, as are methods of complying with regulations. In the following section, on circuit protection, the need for co-ordination of earthing and over-current protection is described and information given on fuse ratings for specific types and sizes of lamp. There is advice on isolation to meet up-to-date legislation. General requirements are given for safety and weather-proofing of columns, posts, pillars and underground service boxes. Guidance is included on siting of this equipment.

There is also a pre-installation check list for lanterns and control gear, along with specific points to be observed during installation. Details of the interface between the lighting installation and the electricity company's supply are given, together with safety requirements for this interface.

An important section deals with emergency situations, detailing work procedures to be adopted in the event of accidents or acts of vandalism. A section on providing temporary electrical supplies from lighting equipment covers eventualities such as connection of temporary traffic signals.

Because there are occasions when it is expedient to fix lighting equipment to building structures, requirements for this type of work are included. At some stage during the installation of road lighting and illuminated signs operatives need to use portable equipment such as electric drills and cutting wheels. There is, therefore, a section on procedures to ensure operator safety.

Inspection, commissioning and testing is a difficult area of public lighting that is clarified in in this Code. Tests to be carried out at the time of commissioning and at regular intervals in the future are described. Model documents are also included for recording test and inspection details. Other items covered are the necessary notices, labelling and identification, as well as records required to comply with the Electricity at Work Regulations.

Finally, a good lighting installation only remains so if effective maintenance is undertaken and the Code concludes with advice on action necessary to ensure reliable and efficient working.

All in all, this document is essential reading for everyone involved at whatever level with the installation and maintenance of public lighting. Copies of both publications can be obtained from the ILE headquarters, 9 Lawford Road, Rugby, CV21 2DZ.

**John Brewis,  
Council Member, Institution of Lighting Engineers.**



# Making light work of art

**\*Kevan R Shaw provides a blow-by-blow account of the lighting design requirements relating to museums and galleries**

**L**ighting for museums and art galleries has a unique set of priorities, those of conservation and effective display. In many ways these two requirements conflict as there is a necessity to restrain lighting levels to promote the former whilst the latter requires sufficient light of a high quality to provide optimum viewing conditions.

## Balancing act

The process of lighting design becomes something of a balancing act to provide an effective compromise between these conflicting requirements. To attain this balance we need to look to the entire armoury of the lighting designer, specifying only the best equipment available, and we should consider all aspects of light within the display area. A complete understanding of the reasons for, and requirements of, conservation level lighting is essential and I would strongly advise everyone to read *The Museum Environment* before embarking on any project. This book explains the factors governing the degradation of materials in light and will allow the designer to discuss proposed lighting levels from a position of knowledge.

The first light source to consider is daylight. Although in terms of its excellent colour rendering it is ideal, the naturally large variation in level and the high ultraviolet (UV) content make it difficult and expensive to control. This, however, is not an argument for starting from a windowless 'black box'.

The recently completed St. Mungo Museum of Religious Life and Art in Glasgow is a good

example. This museum is housed in an existing building with large windows in the main gallery space which have been used to display stained glass exhibits. In conjunction with the architects Page & Park and Linda Cannon, Glasgow Museums' stained glass conservator, we specified a neutral density tinted glass for the double glazed windows and the glass surround to the stained glass panels. This allowed a reduction of some 80% in light levels within the gallery space without losing the psychologically important view to the outside. An additional filter reduces the ultraviolet content to acceptable levels. From this point it is possible to provide controlled accent lighting for display purposes whilst retaining the daylight feel of the space.

## Tungsten halogens

Given the wide choice of light sources available to the designer, careful consideration is required to select the most appropriate for the exhibition environment. The constraints on lighting levels, UV emissions, and requirement for highly accurate colour rendition generally point to tungsten halogen or high colour rendering index (Ra85 and above) fluorescent sources. For most display applications the cost and ease of control means that tungsten halogen is preferable. However, although easily dimmed, the resulting colour shift can easily lose the accuracy of colour rendition and engender that familiar air of yellow gloominess associated with many conservation level displays.

In order to maintain optimum colour rendition, lamps should be selected by beam angle and

wattage to provide the coverage and lux level required with the minimum of dimming. The large range of dichroic reflector lamps available can both help and hinder the achievement of good results. Unfortunately, the variations between manufacturers requires careful specification of lamps and I would state categorically that only lamps with cover glasses should be used in the museum environment. This is firstly to protect exhibits and the public from the euphemistically named, 'non passive failure' of the capsule. Secondly, because reputable manufacturers' front glasses are borosilicate which reduces the high UV emission of the capsule to acceptable levels without the need for further fil-

ter, this can represent a considerable cost saving over proprietary UV filters.

**Flexible systems**

The importance of the lamp specification must be made very clear to the exhibition operators as lamps purchased on a best price basis will almost certainly not conform to the originally specified lamps performance.

However it is always important to design a flexible system, even permanent displays change

as new objects are acquired, and galleries are often redisplayed because of a change of theme. The advent of reliable self dimming electronic transformers in luminaires and as stand alone items has been a great advance in this respect. Not only do they allow a wide range of lamp wattages in each luminaire type, they also allow for fine tuning of levels and minimal (around 5%) dimming to greatly extend lamp life.

Soft starting also extends lamp life, in St. Mungos Museum we have used Voltmaster units from Multiload Technologies as these also include the ability to stabilise voltage to minimise the visible effects of voltage drop and cascade failure on long runs of low voltage lamps.

**Black box approach**

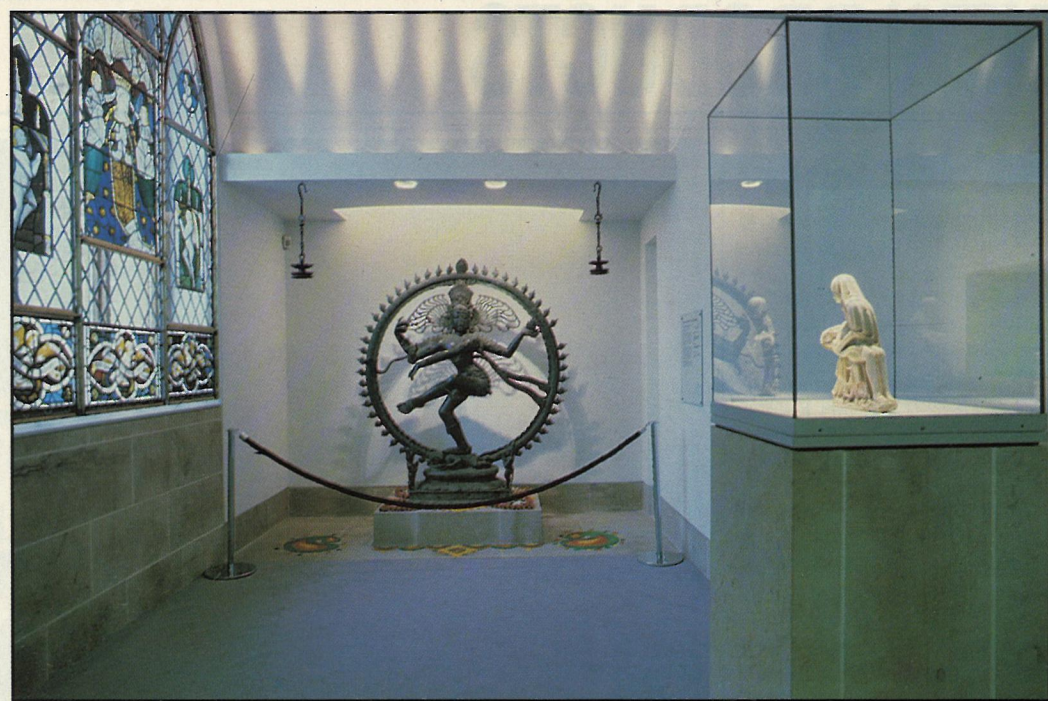
General lighting out with display areas can play an important part in the overall ambience of a museum and its importance should not be underestimated.

Soft starting also extends lamp life, in St. Mungos Museum we have used Voltmaster units from Multiload Technologies as these also include the ability to stabilise voltage to minimise the visible effects of voltage drop and cascade failure on long runs of low voltage lamps.

## Illuminating greatness

The task involved illuminating paintings, scripts, and sculptures. The objective of the exhibition was to blend all of Michelangelo's work in order to demonstrate the greatness of his ideological, scientific and artistic genius.

The Vatican museums are characterised by long and slightly sloping corridors with wide side apertures. Due to the delicate nature of the painting and scripts, a maximum direct illumination level of 50 lux was set. This naturally posed other problems with regards to circulation illumination and accent lighting in order to accentuate the artefacts and make



Two custom designed and effect lights simulate the flicker of oil lamps at St Mungo's Museum.

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Soft starting also extends lamp



Track mounted spotlights and display cabinets using fibre optics.

# Highlighting the genius

the exhibition interesting.

iGuzzini created a 'theatre stall darkness atmosphere' for circulation areas by using the reflected light given from the accent lighting luminaires. Shuttle track mounted low voltage luminaires were used to achieve accent lighting to highlight the non-degradable artefacts such as sculptures, and models. Track was the ideal solution for bringing the lighting system down from the high ceilings but without damaging any architectural features. The shuttles incorporated framing projectors, barn doors, and varying lamp beam angles, to ensure optimum highlighting but with vastly reduced glare and controlled reflectance.

For the very fragile articles such as the scripts, fibre optics were chosen for illuminating the

display cabinets. Due to the very low lux levels allowed in illuminating fragile subjects, low voltage lighting boxes are preferable to metal halide. The other obvious advantage of fibre optics is that no heat is yielded from the point of where light is emitted, and the ultra-violet and infra-red rays are greatly reduced. The 12v 50W dichroic light box was mounted within a remote compartment of the cabinet, which enabled lamp changes to be carried out without opening the cabinets. The tails were then laced into the cabinet framework and positioned inconspicuously around the scripts to achieve the best possible uniform lighting results. 150db rated fibre was used to achieve the best possible efficiency, and varying harness specifications were manufactured

to suit the different display cases. From the system, mainly used were 12 tail harnesses with the fibres varying in length from 2 to 3 metres.

From this project the company has standardised the fibre optic system and now has it included as a standard product within the range.

## Prestigious work

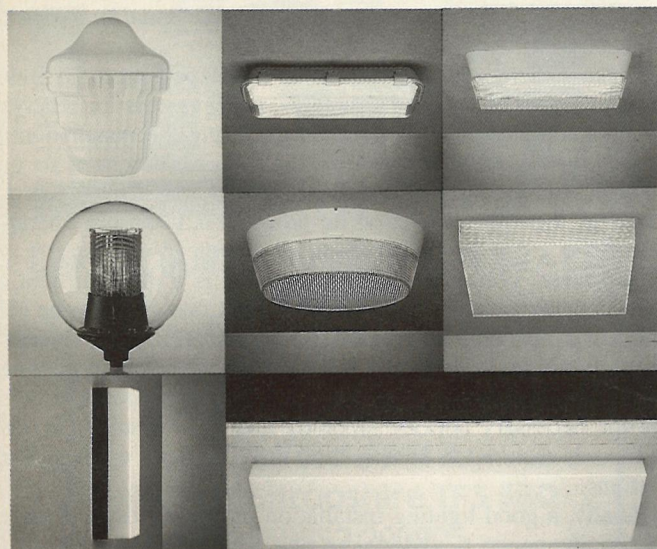
iGuzzini has worked on a large number of other very important and prestigious museums/galleries throughout the world and has published a catalogue which depicts some of these projects with written details backed up by illustrative photographs. This can be obtained free of charge by contacting iGuzzini or by using the reader enquiry service.

Reader Service No 190



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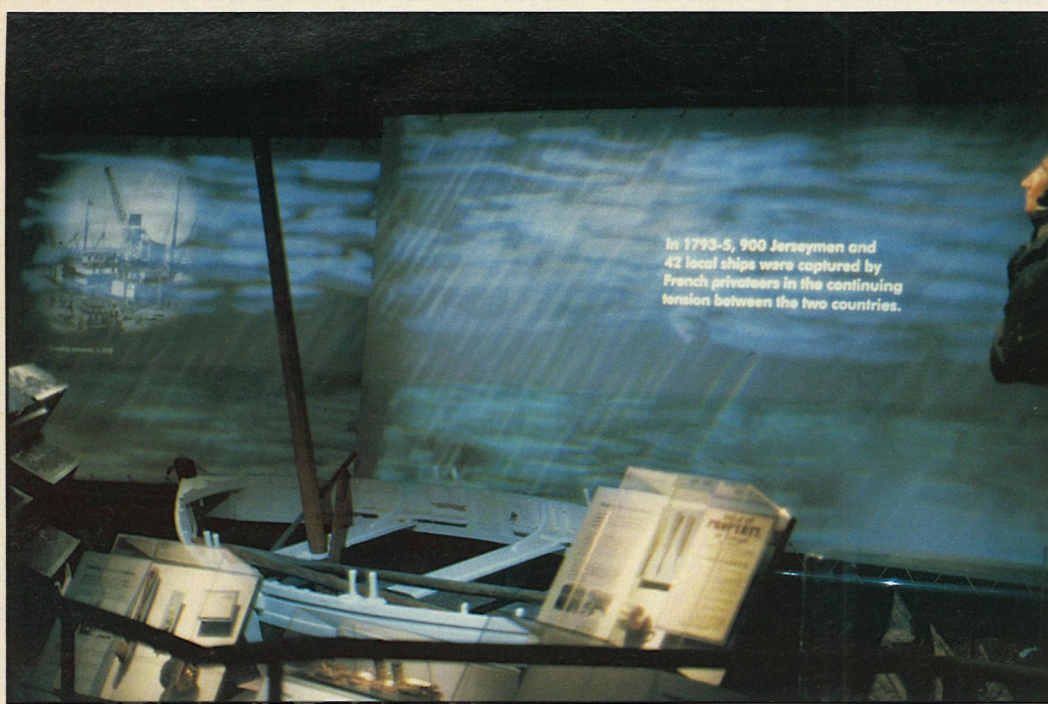
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## Light in Space

Photo: Wall luminaire "Mellow Light"  
652 W-AS, Pendant luminaire  
"Suspended light" 602 HR-ID

Reader Service No. 6





Dynamic theatrical lighting provides an interpretive tool for museum displays – 'The Sea' Jersey Museums

The 'black box' approach, where lighting is restricted to the objects alone, can provide extremely dramatic rendering of some types of objects as in the 'Work of Angels' exhibition at The National Museums of Scotland. In this case relatively high levels of light were used as the objects were in general not extremely light sensitive.

### Sense of gloom

The result obtained, objects standing out starkly from a dark background, was successful but where lower lighting levels are required this lack of background light can engender a sense of gloom and make the space appear underlit. A little general lighting can help but care must be exercised to prevent it from impinging on displays where the lighting is tightly controlled. Retail style sparkling dichroic backscatter is not appropriate where you need complete control over the direction and colour of sources, therefore only luminaires which shield the back of dichroic lamps should be used. The brightness of backscatter will always make conservation level lighting look relatively dark and dull.

Due to the preponderance of glazed surfaces within gallery spaces, glare is also an important factor to consider when designing lighting. Often the best way to introduce general lighting is by means of continuous runs of concealed fittings designed to bounce

light off ceilings and walls. Alternatively, concealed wall washing of vertical surfaces at quite low levels provides the suggestion of a lit environment with a minimum of light and potential glare sources.

Providing large diffuse sources of light can be useful in displaying highly sensitive artwork especially where close inspection is required. It also provides a solution where sloping glass cases are used as they frequently cause problems by reflecting the light sources directly back at the viewer. Diffuse lighting, however, is only a good idea for two dimensional exhibits, three dimensional objects lose their depth and texture without any form revealing directional light.

Elements of display lighting in museums now often include requirements for a more dramatic style of presentation which sometimes require theatrical lighting techniques and equipment to provide particular points of emphasis, or dynamic moving effects to enhance the presentation of displays. With these techniques lighting can perform an interpretive or context providing role in displays.

### Special effects

In Jersey Museum there is an exhibition area focussing on the sea as an important element for the island. The curator wished to show the constantly changing look of the sea and the changing weather patterns in the sky and

these effects were all created with lighting. In conjunction with exhibition designer Colin Milnes we created two projection screens in the form of canvas sails which were lit using ripple boxes from Howard Eaton Lighting and DHA animation units on CCT Minnette lanterns. The lighting was controlled by a theatre lighting board programmed to execute a looped series of cues.

### Rolling credits

In addition there was a requirement to display a body of text and a collection of Victorian photographs, these were displayed on the screens by means of specially constructed 'rolling credits' projectors. The constantly changing composition proved very successful in retaining the visitors interest with the result that many read through all the text which, had it been presented as conventional graphics, would not have been the case.

Another example of lighting techniques providing a context is the 'Fish Gallery' at the National Museum of Scotland. Here the exhibits are fine examples of fish taxidermy arranged to show different fish types, habitats, food chains etc. The cases were constructed using coloured stained glass in the top box to portray a water surface. The exhibits were lit from above the glass with a combination of low voltage and fluorescent sources to create differing underwater feels according to the habitat being portrayed. The texture of the glass created ripple patterns throughout the case.

In the centre of the gallery sharks and other large fish are displayed, here the intention was to involve the visitors in the display so animated water ripple effects were extended into the viewing area as well as the cases. Again this effect was created by animation units on Minnette lanterns.

### Reliability

Whilst on this subject, when specifying this type of equipment it is important to ensure that it is, or can be made suitable for the extended periods of use common in the museum environment. The daily hours of operation are long, also the life of displays can be up to, fifteen or twenty years in some museums therefore long term reliability and maintenance support are essential factors to be borne in mind when specifying all display and effects lighting as well as track and control systems.

Case lighting is also a key component in most museums. All the foregoing points are condensed into a very small space, so it is important to discuss case lighting with the exhibition designers early on in a project.

There can be no general rule as to what is the correct solution as this will depend on the nature of the objects to be displayed and their positions within the case. What can be said is that the box full of fluorescent tubes at the top of the case is rarely satisfactory.

Low voltage dichroic lamps can be used to great effect from within a top box providing they are freely positionable, undimmed direct light from even a 20W dichroic will exceed most conservation levels. The trick is to use careful focussing to spill light onto delicate objects rather than light them directly. This allows you to minimise dimming and so retain a good colour temperature. When it comes to larger or undercut three-dimensional objects, top box lighting on its own is very limited and in these situations it is often necessary to introduce light within the case from other angles.

Putting any light source in the same airtight space as the exhibit is unacceptable due to the inevitable heat rise within the case. This is where fibre optics are at their most useful as it is possible to position the fibre ends inside the case without risking heat build up or unacceptable UV and lighting levels.

The most economic use of fibre is to use short, high quality harnesses with a low voltage tungsten halogen light source, these will provide acceptable light levels and blend in with other tungsten halogen sources. Fibre can also be effectively used within a top box alongside low voltage where there are particularly light

In the Collective Gallery in Edinburgh we used a steel ceiling, fittings with magnetic bases and a grid of sockets, this provides the ultimate in positioning flexibility. The Erco Optec fittings we used have interchangeable spot and flood reflectors and also have self dimming transformers which are a great asset to flexibility. Specifying control systems for larger installations requires careful consideration of the daily operational requirements as well as the ease of programming and setting up for different exhibitions.

### High quality kit

Finally, whatever system you design, it is essential to ensure that it can and will be maintained as you have designed it. This means specifying high quality equipment that can withstand the amount of use it will receive and carefully recording the relevant positioning and lamp data to enable accurate maintenance. But perhaps most importantly, being willing to provide on-going help and support to the users of the system as training in the use of lighting equipment rarely comes from any other source and even the best system can turn into a disaster after a little well meaning tinkering.

Reference 1. Gary Thompson, 1978, The Museum Environment, London, Butterworth-Heinemann. \*Kevan R. Shaw Lighting Design was established in 1989 and specialises in museum and exhibition lighting.

Reader Service No 191



Fibre optic case lighting at St Mungo's Museum

sensitive objects such as paper or textiles. This approach was used extensively in The St. Mungo Museum.

A different approach is usually required for the provision of lighting systems for temporary exhibition areas. These can range from small art galleries with a rapid turn over of contemporary art to major exhibition spaces within national institutions, however the key criterion is always flexibility. This is flexibility in light levels, in positions for additional power or additional lighting for touring exhibitions.

Conventionally this can be provided by extensive track systems, where track is used it is important to select a system that can mechanically and electrically stand up to the frequent movement of fittings. It is also wise to select a system that accepts more than one manufacturer's track adaptor as this will provide the widest possible range of luminaires to choose from. However track is not the only solution.

## Artful control

The Electrosonic Imagine system is being used to control lighting in 15 new galleries, an education centre and a temporary exhibition area within the National Portrait Gallery.

The system gives the user the ability to set different lighting scenes and to programme new settings on site. At the Gallery special security settings have been incorporated into the Imagine system to ensure that the scenes cannot be altered by unauthorised personnel.

Helvar FD Ballasts were used for all the track mounted fluorescent fittings. Six racks of dimmers were installed, controlling a total of 108 channels - 72 circuits in the permanent galleries, 12 in the education centre and 24 in the temporary exhibition area - with output units for the controllable ballasts, which were installed for the cornice lighting.

The lighting tracks are multi-circuit and the Imagine dimmer modules can be addressed to control any type of load plugged in, whether dimmed or switched.

Electrosonic worked closely with electrical consultant Merz Orchard, and the system was installed by contractors Lorne Stewart. The galleries for the display of the mid and late 20th century permanent collection were officially opened by Her Majesty the Queen on November 17, 1993. Reader Service No. 192

## High speed lights

At the heart of Williams Grand Prix Engineering's head office at Didcott there is a vast open museum and conference centre. This is used exclusively by sponsors and accommodates 30 of the company's cars.

As well as requiring high lighting levels, the museum needs consistency in the colour of the lighting. General lighting is provided by Thorn Lopak luminaires housing 400W metal halide lamps, mounted at a height of about six metres. For highlighting individual cars a mix of Thorn Opera 150W metal halide and Lightstream low voltage spotlights were installed.

Reader Service No 193

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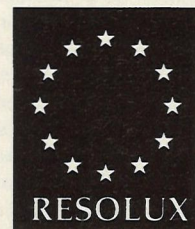
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# Caneletto in a good light

**Birmingham's new Gas Hall gallery has been sensitively lit to show the works of Caneletto in the best possible light.**

The old Gas Rates Hall of the Council House Extension, built in 1911, in Birmingham, has been converted into a state-of-the-art exhibition space fully equipped to host international standard exhibitions of old master paintings and other precious and delicate objects.

Stanton Williams, architects, also had the entrance hall rebuilt so that it is now directly linked by a new staircase and lift to the main galleries of the museum and art gallery above.

The challenge for the architects was to keep the original space as calm as possible, while providing for the varying requirements of environmental servicing and security.

Their response was to work with a small range of materials - maple, pietra sierra stone, cast iron, stainless steel, etched and plain glass - to make an interior which "paid respect to the original architecture" but at the same time allowed the new elements to be seen as contemporary, complementary insertions within the original building.

The architects also acted as consultants to the museum on the installation of the inaugural exhibition 'Caneletto and England' which opened to the public in October.

The architects, working closely with Birmingham City's conservation department and Concord Lighting, have created a flexible lighting scheme which will remain a permanent component of the gallery.

Concord's lighting plan had to include permanent ambient amenity and emergency lighting, atmospheric lighting to enhance architectural features and spaces as well as highly flexible exhibition lighting - not only for the Caneletto exhibition but for future exhibitions of all kinds.

## Architectural lighting

The visitor receives an immediate sense of occasion on mounting the stairs to the dramatic entrance



Concord's Control spots give the required level of illumination to Caneletto's work.

- a glass revolving door within a tall glass cylinder. Beyond the grey sandstone floor of the entrance, the gallery is painted throughout in very pale shades of grey and fitted with a maple timber floor.

The entrance is illuminated by specially designed asymmetric fluorescent uplighters in concealed positions around the perimeter walls and vaulted ceiling. The stairs are lit by Bega low energy wall lights within glowing opal globes. More ambient lighting is supplied by discreet Chorus directional downlighters.

The glass columnar entrance is made even more striking when cross-lit by two Bega uplighters buried in the slate floor on either side. These are very strong as they need to support the weight of heavy trolleys, and the like, being pushed over them.

There is an almost awesome

grandeur about the cathedral-like spaces of the gallery with its columned interior and its 9m high central 'nave' under a curved glass roof. To extend the ecclesiastical atmosphere, on either side, there are a series of smaller spaces like side chapels.

One of the new elements is the maple floor which incorporates air-diffuser grilles, demountable screen-fixing points and service outlets. Mounted on the exterior of the roof, high power metal halide Bega floods create an effect similar to daylight through the glass barrel vault.

Within, the ornate detailing of cornices on the columns and the coffered ceilings is accentuated by Mura wall washers, while ambient light is supplied by Chorus downlighters and Concord power floods. For the Caneletto exhibition an enormous white wall has been erected bisecting the central space and most natural daylight has been masked by screens or blinds.

## Exhibition lighting

The architects have designed lightweight structures below the barrel vault to suspend fabric display screens and lighting; in the side aisles there are purpose-built ceiling units incorporating exhibition lighting and surveillance systems. Demountable fluorescent fixtures supplied by Philips Lighting are part of the lighting arrays in the side aisles, but are not lit during the Caneletto exhibition.

Concord's Control Spot, which was designed to cope with just this kind of application, was used to achieve the level of flexibility required. Its reflectors are interchangeable, allowing the beam angle to be changed, from the 18° required in the 9m high 'nave' to the 29° in the 5.4m high side

aisles. For future exhibitions the gallery holds a stock of reflectors from 6° to 41°.

The low voltage Control Spot selected for the gallery incorporates a three-step dimmer switch to control light output to 60, 80 or 100%, making it simple to ensure that prints and watercolours are illuminated with less than 50 lux and oils with below 200 lux.

## Lamp focussing

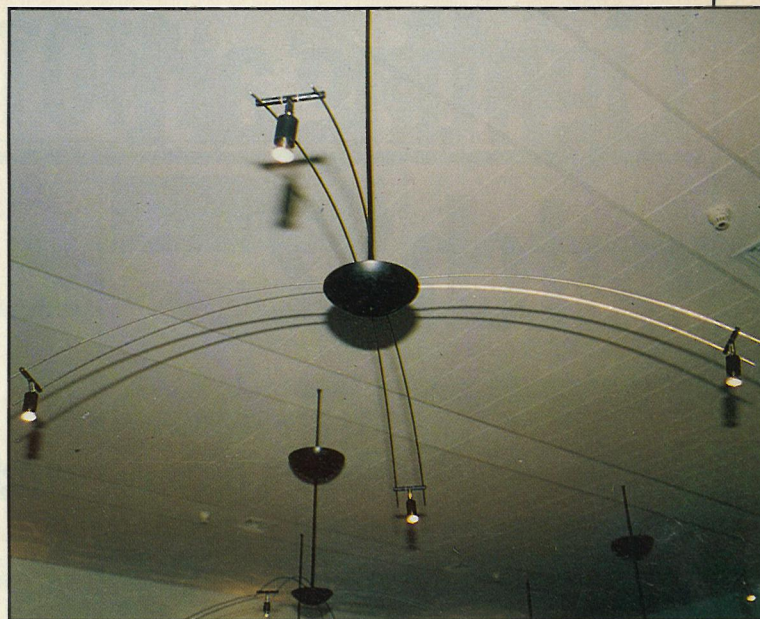
It also has a facility for lamp focussing and for maximum protection of precious objects, the spots are fitted throughout with glare cowls and UV filters. Light intensity is focussed on the centre of each picture, softening smoothly to the edge.

In the central space the spots are mounted on Tube Track 2. In the side aisles, the purpose-built lighting arrays are fitted with two runs of white Lytespan 2 flanged tracks fitted with two Chorus downlighters for ambient light, one non-maintained LED 3 emergency fitting and several LV Control Spots.

Each track carries two circuits, one used as an on/off switch and the other as a dimmer switch. The tracks have been positioned to cross-light opposite walls, allowing infinitely flexible light direction and optimum beam angles. Signage and information screens are lit by Torch 75, another highly adjustable spotlight from the Concord range.

Her majesty the Queen officially opened the gallery on October 29 1993. After the exhibition, when the Caneletto paintings are replaced by sculpture or, perhaps, motorcycles, very little outlay in cost or labour will be required to adjust the lighting to the new features.

Reader Service No. 194



## The water experience

Fairfield Displays and Lighting has manufactured a purpose-built lighting system for the marine invertebrates gallery at the Natural History Museum.

The museum was looking for a creative environmental lighting scheme to illuminate the delicate and fine invertebrate exhibits in the gallery. The gallery's design team worked with lighting designers de Pass Design Associates and Fairfield to find a solution and came up with pendant 'tentacle lights'. This is supplemented by special water patterned wall uplighters.

The rationale behind the tentacle concept was to complement the exhibits and set the scene within an aquatic environment. Research was carried out to ensure the reflections and glare from the overhead lighting did not interfere with the view of the

exhibits within the glass showcases. Illumination inside the showcases has been used to help overcome this problem.

Each pendant fitting has four arms, and the rods forming these arms are bent into gentle curves to create the delicate effect. Nine of these fittings are used in all, each one spanning two metres.

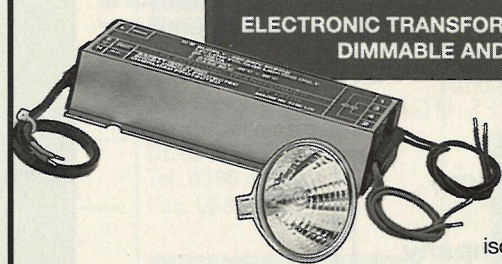
The symmetry of the light fitting, with its single support, was crucial to its balance. The spun aluminium dish forming the body of the fitting contains a 12V toroidal transformer, while multiple fused linkages are fitted to the end of each arm.

The wall lights are used to set the scene further and create an atmospheric backdrop to the gallery. These are used to throw delicate water patterns onto the ceiling to simulate the aquatic experience. As nothing appropriate could be found on the market, Fairfield experimented with Pilkington's patterned glass to achieve the desired effect.

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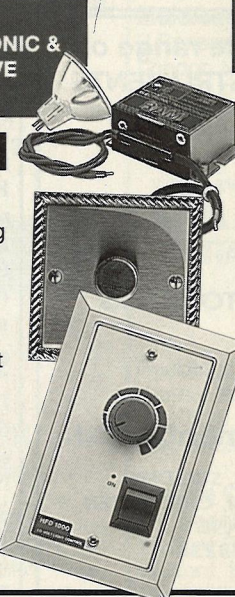
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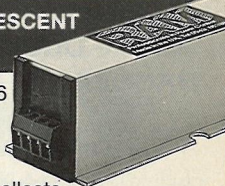
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Reader Service No. 9

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# Lighting art - catch 22

Museums and galleries are entrusted with a nation's heritage and the displays and exhibitions require good lighting. Light, however, destroys the very items it hopes to bring to the public's attention, says **\*Dominic Meyrick**.

Displays of fine art, print and textiles have pigments and structures which degrade over time and this decay is accelerated by light. Conservators specialise in limiting decay by controlling the environment - they rely on up-to-date information to make decisions on lighting levels but they are not lighting designers. If new information is not widely available, or that information is divided, old 'bench marks' are kept in place and lighting design becomes a practice of limiting the lighting level and not lighting the object creatively.

Across the pond things are different; a delegate from America recently attended a seminar on 'Lighting for Conservation and Display', held in Marlin's London showroom. She is a lighting designer and is a permanent member of staff at a prestigious American museum. Back home, not even the largest British museums have budgets to employ full-time lighting designers, so what hope have smaller museums of getting good advice?

## Gloomy interiors

One of the main problem areas is the confusion between conservation levels recommended for lighting displays and the general lighting of the space.

Even in certain major London museums, the general interior lighting would encourage muggers. It is particularly bad for the elderly visitor - not only are the general areas gloomy but the accompanying information is in semi-darkness. This happens when the objects, and not the

general space, are seen to be the most important area on which to spend limited funds.

But museums are not only about exhibits. They allow us to walk, to view, to converse, to see and recognise each other and to study colour and form. The light pattern, the luminance pattern, must be considered to be as important as any illumination level. This necessitates considering the museum space in its entirety - from surface finishes to daylight factors, from maintenance schedules to energy efficient sources and luminaires.

Two excellent examples of this interaction between displays, structure and space are the Sainsbury Wing at the National Gallery and the Natural History Museum. One is an example of a new build where light pattern, daylight and artificial light all work together to give an impressive feeling of space and comfort while displaying paintings within stringent illumination levels. The Natural History Museum has fewer conservation constraints and its recent refurbishment has allowed the opportunity to highlight the architecture of the building allowing exhibits and the space to work together as opposed to being separate entities.

The current economic climate forces us to think about objects and the display space, lighting design and conservation issues collectively. It leads us to re-evaluate the tools which we use for lighting and to think about the characteristics of modern lamps and luminaires. A case in point is the general disregard for the fluorescent lamp source in the

museum environment. At worst they are seen to be flickering, non-dimmable, high glare luminaires with poor colour rendering, fit only for corridors and office areas. With the introduction of compact fluorescent lamps, low brightness louvres and high frequency, dimmable, control gear most objections to this source should be laid to rest. In fact, the new compact lamps have brought about an interesting debate. Incandescent sources with their maximum Ra 100 have been



A warm colour temperature emphasises reds.

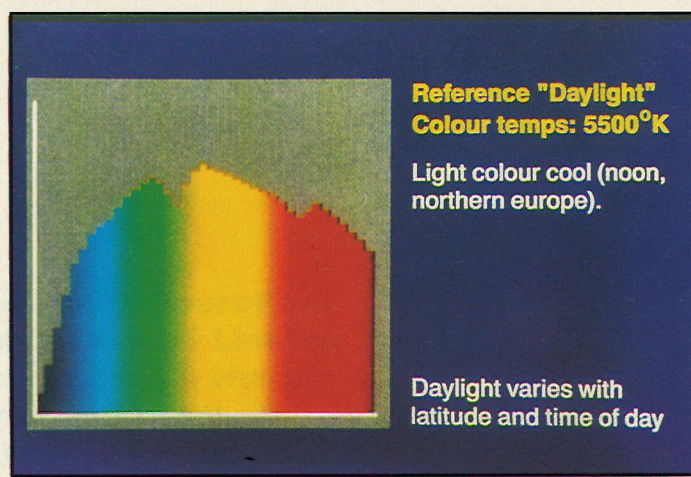


Lamps with similar spectral distributions to daylight emphasise reds and blues equally.

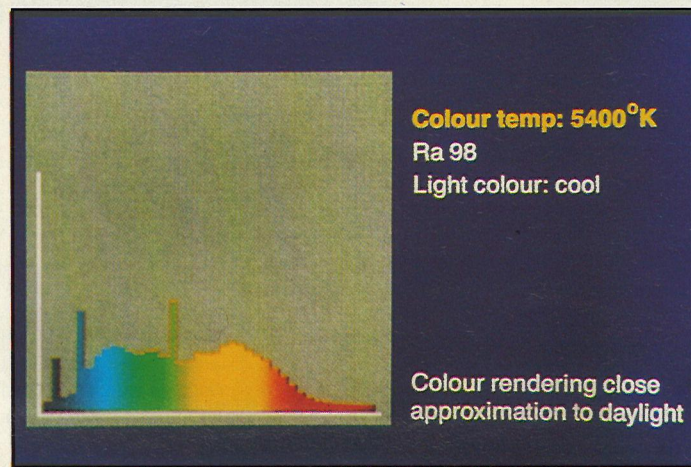
hailed as the only acceptable source with which to illuminate a painting. The trend of 'lighting a painting with the nearest light source to daylight' has often meant that only light sources with Ra 100 have been considered, regardless of their colour temperature. Lamps like the standard triphosphor fluorescent sources (Ra 83) were regarded as not good enough.

## Standard daylight

In Britain we regard artificial daylight as approximating Northern European daylight at 12 Noon. The colour temperature of 'this' daylight is high at 5500K. With standard blue filters an incandescent source can only reach around 4000K and most



Above: daylight cannot be exactly reproduced by artificial source. Below: the compact fluorescent comes close to matching daylight.



cooler daylight colour for the Impressionists. This is already difficult to achieve and when suggested to a fine art student recently she said, "By that argument my painting should be lit with poor colour rendering, flickering fluorescent and damaged diffusers!" In the future, with artists painting in an array of light sources, they should be increasingly aware of how artificial lighting will affect their work. This calls for a better understanding of artificial lighting by all those involved in the creation and display of art.

Conservators and conservation plays an increasingly important role in the display of the nation's heritage but sadly, museums and galleries do not number lighting designers among their permanent staff.

For the future we need to convey the improvements in luminaire design and performance and make this information readily available to both conservators and display designers. Only then can we strive for good lighting design, not only for the exhibits but for the viewing public.

*\*Dominic Meyrick works within Marlin's business development team with special responsibilities for museum and gallery lighting.*

Reader Service No. 196

## Filtering out the rays

In order to avoid the problems of bleaching and decay associated with ultra-violet (UV) light, many museums and galleries keep illumination of their exhibits very low. Possibly as low as 50 lux. This, in turn, means that the ambient lighting may have to be extremely low, or even absent, for the exhibits to stand out at all.

One way around this problem is to filter out the UV but this will tend to make the fitting larger and heavier, as well as less

pleasant to look at. With this in mind, Osram has introduced UV-Stop to its Halostar LVTH range. UV-Stop uses a special ultra-violet absorbing quartz, said to virtually eliminate the offending radiation.

According to Osram, the new lamp eliminates UVB and UVC, halves the UVA output and has a bleaching effect less than one third that of a conventional LVTH lamp. This means that museums can use lighting levels three or four times those previously recommended, so that ambient lighting can also be improved.

Reader Service No. 197

## Anchored beneath their halos

The work of the controversial French designer Phillip Starck was displayed in the main gallery of The Design Museum from mid-June to the end of August. Equation Lighting Design was asked by the museum to provide a dynamic lighting set to complement the exhibition.

The work is actually situated in a stretched lycra 'marquee' and this fabric is washed in coloured light from the ceiling of the gallery, through a slowly changing cycle, using subtle mixes of tones.

Each of the objects stands on a plinth which presses into the lycra, causing a series of indentations in the smooth surface of the white material. At these points, focused circles of light create 'halos' above each object.

The overall effect, when experienced together with the sound track, produces an ethereal environment where the only static references are the objects themselves, anchored beneath their white halos.

The scheme was based on theatrical equipment, using four-compartment, multi-circuit cyclights, fitted with 300W linear halogen lamps to create the coloured wash effects and 75W low voltage profile projectors fitted with custom-made gobos.

Reader Service No. 198

## Lighting for the blind

It may seem contradictory to worry about the lighting in a museum for the blind, but this is exactly what happened at the Museum for the Blind in Madrid.

The reason that lighting is important is that the term 'blind' includes varying degrees of visual handicap - from partial sight to total blindness. This places a number of different demands on the lighting.

With some kinds of eye disease, for example, visual acuity is heightened by an increase in illumination, while other sufferers may become increasingly sensitive to glare. Some severely sight-handicapped people are able to discern relatively strong colours and contrasts between

light and dark.

At the Madrid museum, the exhibit rooms are illuminated with Erco Oseris low voltage spotlights, installed on tracks fitted flush with the ceilings. Some of the spotlights have yellow, blue, green or red glass colour filters and are used to pick out the exhibits that can be perceived by the severely sight-handicapped. For other items artificial lighting is used to simulate the effects of natural daylight.

General lighting is supplied by two Varipoll light structures running parallel to each other in hallways and passageways. These are fitted with either tracks for mounting spotlights or with fluorescent lamps to supply general lighting. There are also different light accents on the walls to help visitors perceive the boundaries of various rooms and spaces.

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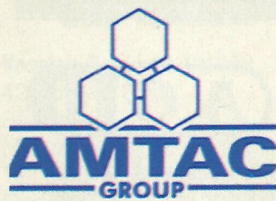


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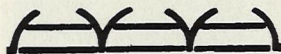


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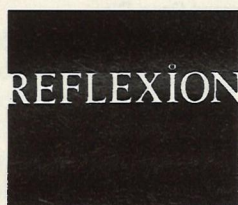
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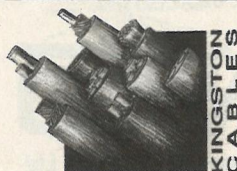


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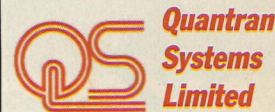


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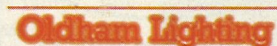


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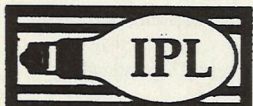


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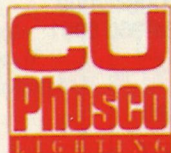


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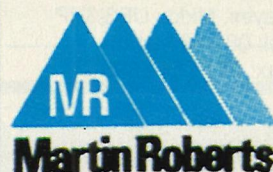
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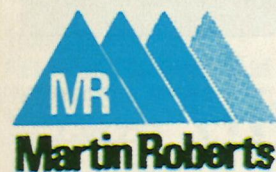
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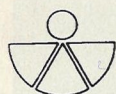
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**1. Lighting Sales Executives**  
London & S.E. area. £18,275-£21,350 + Comm  
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The fast growing designer and manufacturer of commercial, industrial and  
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**EXPERIENCED LIGHTING SALES ENGINEERS**  
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Applicants should have a thorough technical knowledge and ambition to  
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An ideal opportunity for an experienced lighting engineer who wishes to  
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Excellent starting salary, generous commission scheme and conditions of  
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Please send your application to:

Nick Tavare, Managing Director, Luxonic Lighting Plc, Unit 15, Monitron  
Trading Estate, West Ham Lane, Basingstoke, Hants RG22 6NQ.  
Tel: 0256-63090

**COPY DATE FOR JAN ISSUE: DEC 15th**

## Sales Director

Established, London based, decorative lighting company seeks experienced and effective addition to  
the team in order to promote the products of the business and achieve significant sales in the  
contract, designer/specifier sector, as well as key retail accounts.

The successful candidate will have a proven track record in this field and be able to negotiate  
positively at all levels and be computer literate. The candidate will live close to London, be prepared  
to work extremely hard and demonstrate a high level of flair and commitment.

An interesting and remunerative package, as well as the usual benefits, await the ideal applicant.

In the first instance, please submit CV in strictest confidence to Mr C Pexton,  
Coulthards MacKenzie, 17 Park Street, Camberly, Surrey GU15 3PQ

## HIGH CLASS AGENT REQUIRED TO REPRESENT HIGH CLASS MANUFACTURER

Quality Lighting Design Limited are seeking agents for London and Home  
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Apply to: **Guy Shaw, Quality Lighting Ltd, 164 Bridge Street West,  
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## CABLEFORM LIMITED

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Cableform Ltd are manufacturers of Photo Electric Cells for Street  
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Area Sales Engineer to cover the South, calling on Local Authority  
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The position requires total dedication and a professional who is self-  
motivated and keen to succeed. Experience in the Lighting and Local  
Authority field is desirable.

Interested candidates should forward their current CV's and salary  
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Alan Ball - Sales Manager  
Cableform Ltd, Lighting Division, Gratrix Works, Gratrix Lane,  
SOWERBY BRIDGE, West Yorks HX6 2PH  
NO AGENCIES PLEASE



Has positions for sales agents to cover the  
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We are manufacturers of hand made  
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applicants will have a considerable knowledge of  
the lighting and furnishing trade within their area.  
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market sector is a necessity.

Please write or telephone to:  
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Hastingwood Road, Hastingwood,  
Nr. Harlow Essex CM17 9JH.  
Tel: 0279 413466



**LIGHTING SALES - LONDON**

We are expanding our sales team which specialises in interior and exterior architectural and display lighting. Preferred applicants will have had not less than 5 years experience in the "specification" lighting market supported by a sound knowledge of lamp types. Your salary will be commensurate with your experience and will include a performance related bonus.

Please apply in writing in confidence enclosing your C.V. to:

Box No. 1574,  
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Barnet, Herts EN4 0BU

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London &amp; South East

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TRILUX Lighting limited is the UK subsidiary of the TRILUX-Lenze Group, leading European manufacturers of commercial and industrial fluorescent luminaires; hospital bedhead and ICU trunking systems and external lighting.

As part of our UK expansion programme we are seeking experienced lighting sales engineers to develop our sales activities throughout London and the South East.

Applicants must be experienced in selling to electrical wholesalers, contractors, local authorities, consultants and architects and designers.

If you are an experienced lighting sales engineer with a detailed knowledge of the UK lighting market and have the desire and ability to be successful in an extremely competitive market with a quality product, please write enclosing a full CV to Anna McShane quoting reference no. 94/5115 at:

TRILUX Lighting Limited

Trilux House

1 Churchfield Road

Walton on Thames

Surrey, KT12 2TJ

**TRILUX**

High power sales chief required for new lighting company with innovative commercial product range. There will be high returns for success in this new post.

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**SALES AGENTS**

Manufacturer of quality handmade lampshades and ceramic bases wish to appoint experienced lighting agents for most areas to extend our sales in the UK. We are looking for both retail and wholesale outlets.

We offer a very good rate of commission for successful agents - which is paid promptly. Ring initially 0249 822628 or Fax 0249 822632 asking for the Manageress.

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Shawe Lighting, part of the Welpac Group, is a manufacturer of functional domestic and display lighting, based in Tottenham.

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If you have, as well as new ideas and design ability, strength in design engineering, and a willingness to contribute in all the stages of new product development, we would welcome your application.

We will offer a competitive salary, and more importantly, the opportunity to join a small and friendly team at an exciting period of expansion.

Please send your C.V., stating your current salary, to:

John Fearon, Shawe Lighting Ltd, Tariff Road, Tottenham, London N17 0EJ

**TRIDONIC**  
Lighting Components**Northern Area Sales Representative**  
Extremely competitive salary plus car

Tridonic is one of the leading suppliers of lighting control gear in the world. With headquarters in Dornbirn, Austria, manufacturing takes place on 3 continents to supply over 30 countries.

Tridonic Ltd, the UK subsidiary is based in Basingstoke and is the leading supplier to the UK lighting industry.

The position is open because of the retirement of one of the company's key personnel. The customer base is established and the role is to expand existing business, which will include the introduction of new products plus increasing our market share. Sales are exclusively to lighting O.E.M's.

The candidate should live in a suitable location such that he or she can service the area which ranges from the Northern Midlands to the Scottish border. While previous lighting experience is desirable, it is not essential as full training will be given, experience of selling to lighting manufacturers would be an advantage. The ideal candidate will be under 30 and be technically competent capable of selling directly to engineers. Salary level will not prove an obstacle for the right individual.

Please write enclosing a full C.V. to:- Mike Tatem,  
Tridonic Ltd., P.O. Box 123, Basingstoke, Hampshire RG24 8YF

**CATALOGUE DIRECTORY**

NEXUS LIGHTING are now introducing to the United Kingdom their latest ranges of the most exclusive Italian decorative glassware. The comprehensive collection includes co-ordinating down-lighters, wall lights, pendants, desktop and free-standing lights in two distinctive futuristic and graceful elegance styles creating a unique ambience to any modern interior, shown above 'SATURNIA' pendant lighting fitting: circle 91



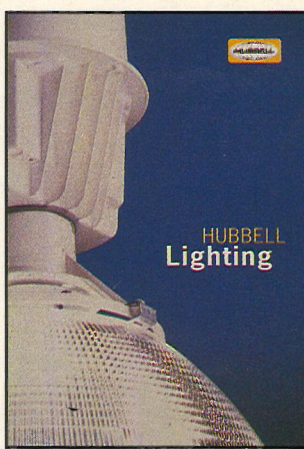
The new comprehensive Tools of Light Colour Catalogue by Kreon N.V. of Belgium, solely distributed in the UK by Kreon UK Ltd is now available. New product families, FM Series and Diapson have been added to the existing ranges of Upside Down, Inside Out and Upstream which are clearly illustrated with technical information: circle 92



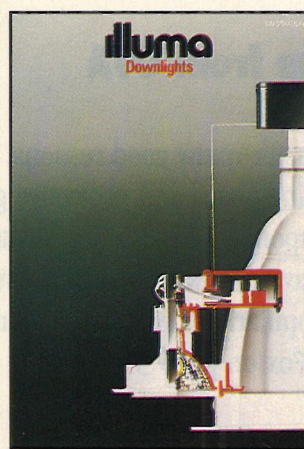
Introducing our new figurine table lamps, fitted with a 3 amp fused plug, height 12" at only £14 each, minimum order 10. For further detail please call Mr. C. Laing 0908 231786 or circle Number 93



Lamp Changing Equipment from No Climb Products Ltd  
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★ Durable and robust: Proven over 25 years: circle 94



Hubbell Limited has released its new 64 page catalogue. It features Amenity and Security lighting, Floodlighting and Industrial lighting and includes many new products. One of them is a patented ignitor which is used in several floodlights and high bay luminaires, giving Instant Start and Hot Restrike to a 600W high pressure sodium lamp and therefore providing increased safety and efficiency. Comprehensive photometric data is included: circle 95



ILLUMA LIGHTING have just released their new Downlight catalogue which features a wide range of recessed luminaires including those designed to accommodate the many energy saving light sources now available. Compact fluorescent Downlights with integral control gear are available for vertical and horizontal PL and PLC lamps up to 26W - the unique Lightseal range of clear, opal and reflector lens units are ideal for bathrooms and showers with an IP44 and IP65 rating. circle 96



Minolta is a world leader for the supply of light meters to measure the Luminance, Illuminance, Colour, Temperature and Chromaticity of a whole variety of lamps and luminaires. All our meters have digital readout, are extremely portable and most will link to a data processor or logger: circle 97



M&P Lighting introduce their new fluorescent lighting catalogue, featuring the new Louvre Sealed IP54 louvred luminaire, fully developed to meet the new CIBSE LG3 requirements, whilst maintaining protection to IP54. The catalogue also features recessed surface and continuous fluorescent lighting solutions: circle 98



### Finding the cure for Grimsby

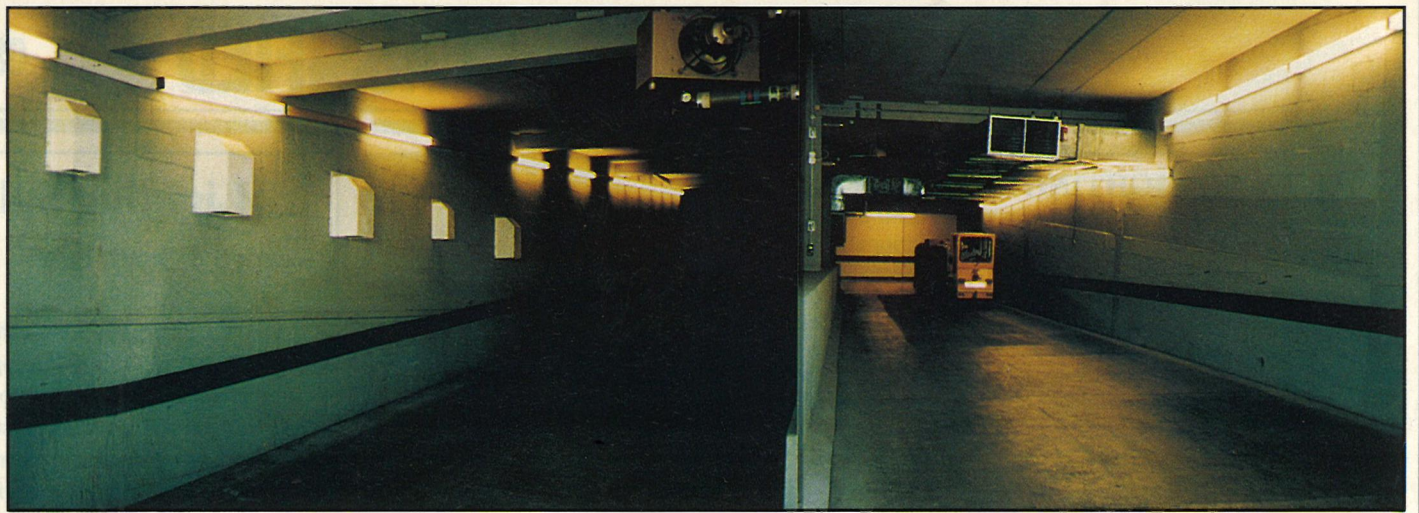
A hospital site provides a great deal of variation in lighting requirements, and all of these are subject to the pressures of energy cost and environmental concerns. This is a problem that has been addressed at Grimsby District General Hospital.

With a view to reducing lighting costs, electrical maintenance manager Milton Hubbs decided to run tests with Seaboard Energy Systems' Edison 21 fluorescent controller. The situation chosen for the testing was a series of between-floor access ramps for electric trolley vehicles. These move linen and supplies through

the hospital throughout the day and night, but with variable frequency and only for brief periods.

As people or vehicles move between floors the fluorescent fittings are turned on and off by passive infra-red occupancy detectors. This situation had been a problem area for some time, permanent illumination being costly and re-lamping being time consuming and difficult because of the sloping surfaces. The hospital team was interested in achieving lower costs and lower maintenance.

Experiments with the PIR detectors had shown that time delay was crucial. On a two



minute delay there was a high rate of tube failure as the lamps were constantly turned on and off. A 12 minute delay gave an average run time of about 55% while seven minutes provided a compromise of 45% run time and good tube life, with an average of 21 on/off cycles per day.

The Edison 21 works by harmonising the circuits of the lamp and providing smooth starting pulses to reduce wear on the tube. At Grimsby, 10 Edison 21s were

installed and in the nine months of the test no tube failures were reported. At the same time, checks of light output are said to have shown around 10% greater output from the Edison-equipped fittings than from similar fittings re-lamped at the same time.

While this trial was going on, the operating theatres were also being considered. These areas need special North lamps for the anaesthetist to monitor the patient's skin colour. Each theatre

has 30 lamps, so re-lamping can typically take half a day, during which time the theatre is out of service. Again, Edison 21s have been installed, with a view to increasing lamp life. It is now expected that the re-lamping

schedules will change from a 12 month cycle to at least 15 months and possibly 18 months. (Picture shows access ramps re-lamped at the same time, one with Edison 21s (r.h.) and the other without).

Reader Service No 220

### Thorn wins factory award

Thorn Lighting has won the household products category of the Management Today Best Factory Awards. It was one of nine companies which received awards from a total of 260 from throughout the UK.

Entrants competed on a wide range of factors including lead times, changeover performance, inventory control, labour productivity and delivery reliability.

Thorn Lighting's Spennymoor site impressed judges with its array of manufacturing technology,

such as a £2 million lighting technology laboratory. The workforce is divided into 'cells' or teams and the management has sent over 960 of the company's 1100 employees of weekend team building exercises to improve their team skills.

Changeover time also attracted the judges' attention. On a coil winding machine it has been reduced from four hours to a matter of minutes and on injection moulding equipment from 11 hours in 1988 to under four hours today.

The awards were presented at the Sayoy Hotel in London last month in front of 350 senior industrialists.

### Spine lighting

The new Conoco Centre in Warwick has a three storey central mall which acts principally as a spine to link the office blocks. It also serves to provide communication between the various levels and sections - and to provide an area for staff to meet informally.

To light this area the architects, Heery International, specified Futura fittings from Kalmar MW, supplied by MW United Ltd.

These fittings use a 250W metal halide lamp, which is powerful enough to provide ambient light when mounted four metres above the floor.

The fitting also incorporates an additional 16W 2D downlight to light the back of the reflector. This ensures that the top surface appears bright when viewed from above. There is also a 35W tungsten halogen lamp in the bottom cup, connected to the central battery emergency system.

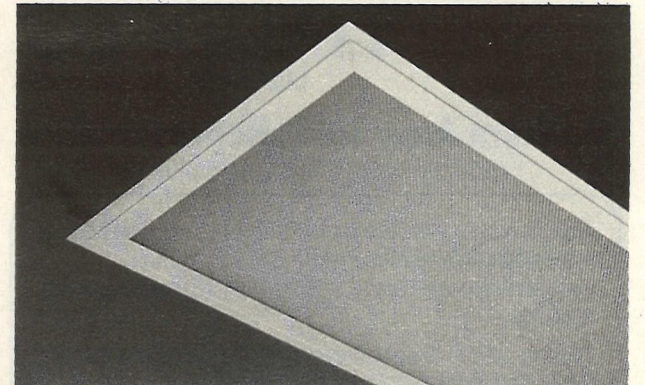
Reader Service No 221

### IN YOUR NEXT ISSUE

After a well earned Xmas break, you can get back to business with the January issue of LEN and plan

your visit to the European Lightshow by using our comprehensive stand-by-stand preview.

### INDUSTROLITE Clean Room Luminaires



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### The most competitively priced emergency luminaire in the UK



### The Master range from OVA

The Master range of emergency luminaires is popular for many good reasons. Its wide range of configurations and accessories, such as flush mounting plates and protective grilles, makes it extremely versatile. The quality of materials and components used in its construction gives it tremendous reliability. Quickfix fitting means it's a favourite with installers everywhere.

But surely the main reason for the Master's popularity is its price. To find out just how competitively priced the Master range is, call Simon Fox on 0685 371222.

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