

# LIGHTING

## EQUIPMENT NEWS

20 OCT 1989

OCTOBER 1989

### In brief ...

- **1989 BASEEFA** List published by the Health and Safety Executive. The price was incorrectly stated in *LEN* September. It should have read £35.
- **Courtney Pope Lighting Ltd** has moved its head office to 995 High Road, Finchley, London N12 8QX (telephone 01-446 8070) as from 2 October.
- **Emess plc** has announced pre-tax profits of £8.2 million for the half year to 30 June 1989. This represents an increase of 82%.
- **Thorn EMI plc**, in its preliminary results for the year ending 31 March 1989, announced a pre-tax profit of £289.1 million, an increase of 28%. Lighting's international turnover rose to 61% of the total.
- **GFC Lighting Ltd** has been appointed London area distributor for Electrosonic's System 12 lighting control and range of unit dimmers. GFC's showroom is at Westminster Business Square, Durham Street, London SE11 5JA.
- **Online Lighting Ltd** is sole distributor in the UK for Biffi Illuminazione's modern Italian lighting. Among some 40 designs are floor, ceiling and wall lights. Details from Online at Houghton Centre, Salt-house Road, Brackmills, Northampton NN4 0UL.
- **Tridonic Ltd** has been appointed distributor for the Panasonic range of Di-Cool dichroic reflectors for mains and low voltage capsule lamps. Further details from Tridonic at Unit D1, Grafton Way, West Ham Industrial Estate, Basingstoke RG22 6HY.
- **Crompton Lighting** has set up a new national sales office in Northampton. All routine UK sales enquiries and order processing for lamps and lighting are being handled by a team of telephone sales co-ordinators led by customer services manager Brian Tennant. The new number is 0604 28882.
- **Lightwork Fittings Ltd** has moved to larger premises at 48 Monkton Road Industrial Estate, Wakefield WF2 7AL.
- **Smiths Industries Environmental Controls Co Ltd** has obtained registration to BS5750 Part 2 for quality assurance.
- **Five installations of Oska, Pulsar Light's** touch sensitive stage lighting control system, have recently been sold overseas, including one to the USA and one to Turkey.

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## Uplighting interiors from down under



the entrance foyer is topped by a rotunda which conceals miniature spotlights mounted in banks of four.

These house Thorn Lightstream low voltage tungsten halogen lamps, giving a crisp white light with excellent colour rendering which shows off the specially commissioned murals to advantage.

Finally, the Downer Room, used as a venue for a wide range of activities including social functions and trade receptions is uplit with a string of fluorescent fittings concealed in the high-level trough which skirts the perimeter walls. Standard lamps cast highlights on marble palasters and wall mounted hardwood carvings, both imported from Australia.

Refurbishment of this space has been so well received that bookings are now claimed to be up by 300%.

New lighting has made a feature of Edwardian interiors at Australia House, the Australian High Commission's London offices in The Strand.

Uplighting reveals details in the ornate ceiling the original installation failed to cast into relief.

And functionally the scheme works much better — problems of glare, experienced with the old lighting installation have now been designed out and the new lamps give greatly improved efficiency.

The reception hall, designed to an illuminance of 200 lux, and the main reading room, with an illuminance of 300 lux, employ floodlights with louvres as uplighters positioned on a ledge 7 metres above floor level. The fittings are provided with de luxe sodium lamps.

The circular stairwell leading off



## Reaching new heights

The 88 metre high Queen's Tower in Kensington, London has been floodlit by Thorn.

The scheme consists of twelve 1 kW metal halide floodlights, with a variety of front glass attachments which provide different light distributions and peak intensities to suit the structure. The result is a scheme which enhances the Portland stone of which the tower is built and models its decorative features — the vertical ribs, flying buttresses on the belfry and the domed, copper roof.

Positioning of the floodlights at roof level on surrounding buildings was crucial, both to prevent glare to the occupants of opposite buildings and to reduce the risk of vandalism.



## Habitat expands lighting range

Habitat is making a major bid for the decorative lighting market with the launch of a comprehensive range of quality consumer fittings.

One of the motivating factors was undoubtedly to retain the loyalty of Habitat's original customers of the 1960s who now have higher disposable incomes and wish to trade up.

But 18 months ago the company's market research also showed a gap between the low-cost, low-design luminaires widely available through retail outlets and the exclusive designer ranges which sold as much on name as on quality. So, in October 1988, the creative resources of the Conran Design Group were brought to bear on the problem.

The result is a range of products broadly employing six different groups of materials: steel, in stark modern designs; traditional forged metal, often combined with glass; dark wood in the English style; ceramic table and wall lighting in traditional shapes; and classical



designs in brass.

Prices for this range of some eighty original designs start at a typical £25-£50 for a lamp base and go up as high as £140 for a floor-standing lamp capable of competing with designer names retailing in the £200 and upwards band.

The intention of the range, according to Habitat Chairman, Sir Terence Conran, is "to match the wider diversity of taste around on the High Street and produce an extremely well-balanced and diverse range of lighting, but given the Habitat style".

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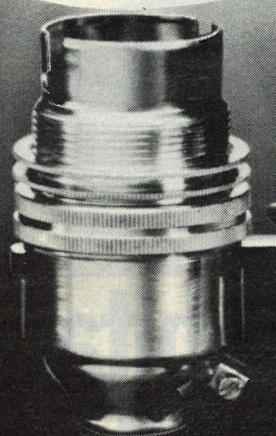
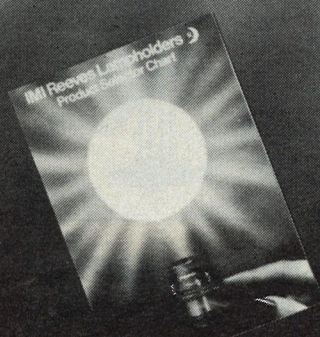
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## DIARY

### OCTOBER

3

**High frequency lighting.** Evening meeting at the Post House Hotel, Brentwood, arranged by the London and South East Region of the Chartered Institution of Building Services Engineers. Details from A Wincott 01-387 9671.

4

**Lighting for sport and recreation.** Evening meeting at British Gas plc, Gould Street, Manchester, arranged by North West Region of CIBSE. Details from L Daniels 061-228 2331.

**Cable management — the flexible approach.** Evening meeting at The Old Royal, Birmingham, held by the West Midlands Region of CIBSE. Details from A J Singleton, 9 Foley Road, Pedmore, Stourbridge DY9 0RT.

9

**Buxton Opera House lighting** (followed by performance and supper). Visit arranged by North West Region of CIBSE. Details from L Daniels 061-228 2331.

10

**Electrical equipment in hazardous areas for the single market.** One-day seminar in London held by BEAMA. Details from David Williams 01-437 0678.

17

**Launch of CIBSE VDT lighting guide,** at SWEB, Bristol. Details of meeting from Karen Phillips, CIBSE 01-675 5211.

18

**Emergency lighting.** Evening meeting held by Yorkshire Region of CIBSE at Holmfield House, Wakefield. Details from A Simpson 0532 759381.

19

**The spice of light.** Inaugural address by chairman of CIBSE Lighting Division, David Loe. Venue: Institution of Structural Engineers, 11 Upper Belgrave Street, London SW1X 8BH. For details contact CIBSE 01-675 5211.

**Emergency lighting design and installation.** Evening event at Sunderland Civic Centre. Arranged jointly by the Institution of Electrical and Electronics Incorporated Engineers and the Institution of Lighting Engineers. Details from IEEIE 01-836 3357.

20

**Debate on property development, architecture and design.** An evening event in London in conjunction with Designers' Saturday. Tickets and details from Barbara Arent 01-892 2278.

21

**Designer's Saturday.** Open day at London showrooms for designers. Information from Barbara Arent 01-892 2278.

23

**Electrical installations: inspection and testing for the 1990s.** One-day symposium in London for consulting engineers, specifiers and electrical contractors. Event co-sponsored by IEEIE, ECA,

IEE and NICEIC. Details from the conference secretary, IEEIE 01-836 3357.

24

**Lamps of today and lamps of the future.** Evening meeting at the RSAC Club, Glasgow. For details contact R S Webb, hon secretary, Scottish Region of CIBSE, 031-449 5111.

31

**Quality assurance — where are we now?** Half-day symposium at the RIBA, London, arranged by the Building Services Research and Information Association. Details from the publicity officer, BSRIA, 0344 426511.

### NOVEMBER

1

**Requirements of museum display lighting.** Evening meeting at British Gas plc, Manchester, held by CIBSE North West Region. Details from L Daniels 061-228 2331.

**Lighting modern shopping centres.** Evening meeting arranged by CIBSE West Midlands Region at The Old Royal, Birmingham. Details from A J Singleton, 9 Foley Road, Pedmore, Stourbridge DY9 0RT.

15

**Flicker,** discussed by A J Wilkins of the Medical Research Council applied psychology unit. Evening meeting in London arranged by CIBSE Lighting Division. Details from CIBSE 01-675 5211.

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## Lighting up leisure

The Winter Gardens is a new leisure complex in central Milton Keynes housing restaurants, bars, a nightclub and a health and leisure club. It is intended to provide a focal point for people from Milton Keynes and its surroundings.

Lighting for the leisure centre, its health club and a restaurant was designed and supplied by Lighting Design Services, who chose Lighting Workshop fittings in many of these areas.

The vast gymnasium includes areas of aerobics, exercise bikes, rowing machines — even an 80 metre running track. The predominantly blue and white interior is lit with 56, 150W metal halide versions of LW's Megaflux downlighter, while main lighting for the work-out area is provided by the Toplite down-lighters in polished brass with a square bezel.

Within the same complex Houston's Restaurant goes for the 'American' look to complement its 'Tex-Mex' menu. Dark wood and bare walls are enlivened by details



such as a station clock, an antique petrol pump and — a space suit! The interior design called for unobtrusive lighting so as not to detract from the interest supplied by these curiosities, and a network

of pinhole fittings was used to provide main ambient lighting.

The bar area is made more dramatic by a stained glass backdrop, the bar itself being lit by Mirolamp downlighter fittings.



## Finding the light way out in a hurry

When a helicopter ditches into the sea, passengers and crew can be disorientated should the helicopter capsize and submerge. This makes escape and evacuation very difficult, especially in darkness. So now helicopters are now being fitted with emergency exit lighting which comes on automatically on ditching. The lights are fitted to all emergency window exits and their operating handles.

The emergency lighting system

called Exis, has been developed by Bristow Helicopters, one of the largest international offshore helicopter operators in the world. Each strip of green light is encased in clear resin and powered by a small battery pack. This is activated when a pair of gold plated contacts in the outside of the pack are immersed in water during an emergency or when the pilot activates the system.

Essential requirements of the

system were to provide a long life to meet CAA regulations and lightness to comply with weight restrictions for helicopters. So the company approached Duracell to provide alkaline batteries which have the added advantage that they perform well in the cold conditions found in North Sea operation. The batteries are supplied welded together to avoid the possibility of problems with loose connections.

## All change for Europe

Forthcoming changes in the New Approach Directive for electrical equipment in flammable atmospheres are expected to be a considerable improvement over the previous version introduced in the late seventies.

Peter Jakeman, chairman of BEAMA's committee for electrical equipment in flammable atmospheres, says, "I cannot think of any British company involved in Ex matters, whether it be the design, manufacture, specification, installation or utilisation of such equipment, that will remain untouched by the new proposals. The ramifications of the new rules are very significant".

BEAMA has arranged a one-day seminar on 10 October to discuss this subject. Called *Electrical equipment in hazardous areas for the single market*, it will be held at the Park Lane Hotel, London. Delegate fees are: BEAMA members £138, non-members £172.50 (including papers and lunch).

Application forms are available from David Williams, BEAMA Technology Division, 8 Leicester Street, London WC2H 7BN (telephone 01-437 0678).

## Basic rock and studio lighting

Three books have recently been published on rock and roll, film and television lighting by Focal Press (part of Butterworth).

*Concert lighting*, by James L. Moody, is in A4 hardback format. Price is £29.50.

This USA lighting designer introduces the reader to rock and roll concert lighting. His advice ranges from establishing a rapport with artists, through use of lighting equipment on a wide variety of stages, to safety of stagehands when touring.

Mr Moody believes that techniques developed for rock and roll concerts over the last 20 years can be adapted and used in the legitimate theatre and for dance, television and film work.

Some of the final chapters present examples of how the techniques have been applied to theatre, corporate presentations and video projects.

*Concert sound and lighting systems*, by John Vasey, is another book on rock and roll lighting. This hardback edition is priced at £22.50.

Mr Vasey, an Australian, wrote this book to provide a basic foundation for sound and lighting equipment personnel. The three parts deal with power and rigging for concert touring; sound, and lighting. Equipment operation is explained in detail.

*The technique of lighting for television and motion pictures* by Gerald Millerson is a reprint of the second edition; price £22.95 (paperback).

This comprehensive text book, written from the author's BBC experience, starts with light, vision and basic lighting principles and works through to specialised applications.

# COMMENT

## The Swedes have a day for it

In the June issue I noted with rather a shock that the Department of Energy now saw its educational role in energy saving as confined to commerce and industry. Only in this way, ran their story, could they be cost effective. My reaction at the time — and ever since, for that matter — was to feel instinctively that this attitude was mistaken; that education should begin in the home and people would naturally go on to apply the principles in their workplace.

Recently I have had it drawn to my attention that energy authorities in other Western European countries approach things rather more intelligently than does our own Department of Energy and, for what it's worth I pass the details on to you — and to the electricity boards and their successors.

On the last Saturday in September the Swedes put their clocks back an hour and look forward to almost six months of long, dark winter nights. What better opportunity to draw people's attention, both at home and at work, to the benefits of lighting and the advantages of optimising one's expenditure on it?

So, Saturday 24 September this year saw Light Day and the launch of Stockholm's Lighting Fortnight, during which a combination of advertising, window displays and a special offer in energy saving lamps was used to persuade the Swede in the street to think about buying one. The discount finally given was about £5.00 one lamp per family (about 30% of the normal retail price) and the householder had a free choice of compact fluorescent lamps, the cost being paid for by the local energy authority, Stockholm Energi.

The Dutch scheme, was, on the face of it, rather more complicated. The consumer could request up to two lamps per family from the energy authority — again, at a discount of some 30% — and received a voucher enabling him to collect the lamps from a participating dealer. But the cost of the lamps could be charged to the electricity account and paid over a period of up to six months as the household economised on electricity. Here, however, the choice was restricted to one brand of 7W and 11W electronic lamps.

Now that the Energy Secretary has seen fit to revise the timetable for electricity privatisation so that area boards will not be floated before autumn 1990 there is time for a government change of heart and the launch of a national initiative on energy saving where it really counts — in the home.

## LIGHTING EQUIPMENT NEWS

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ABC

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# LETTERS

## National Lighting Awards

The LIF is a trade cartel whose principal aim must be to promote its members' commercial interests by any reasonable means.

Good lighting design includes the process of analysing the architecture of a building, the functions that are to take place within it and unifying these in a pleasing and wholly appropriate manner by specifying a suitable technical installation composed of equipment deriving from any appropriate manufacturer.

The National Lighting Awards, by definition of title, are coveted and unique distinctions, of varying degree, which are bestowed upon those who have successfully proven their skill in the field of

lighting design.

The promotion of good lighting design by members of LIF is a welcome element in heightening public recognition of this important skill. However, the addition of the contentious 'note' on the entry form removes the degree of apparent altruism which is required to establish the NLA as 'the' national design awards scheme as distinct from a parochial commercial promotion.

It is notable that neither the IESNA International Illumination Design Awards nor the International Association of Lighting Designers Awards programmes stipulate (or imply) any strictures or limitations with regard to the

provenance of equipment used within the designs submitted.

As a major firm of lighting design consultants we are discouraged by the current status of the NLA scheme and would feel that any award which our work may attract would be of greater merit and credibility if it were bestowed by those who hold good lighting as the sole criterion for a distinction.

**Andrew Tammes,**  
Partner,  
Lighting Design Partnership,  
Edinburgh.

### Broadgate: Home based suppliers are there

On a recent BBC Panorama programme featuring Broadgate, much was said of the supply of

materials coming from overseas companies.

While there was a concession that British manufacturers fared well on the smaller contracts it did not reflect the success of the British luminaire manufacturers on the project.

Our company has been responsible for the development and manufacture of all the custom and architectural luminaires including the exterior feature lighting.

The majority of the office fit-out contracts have been won by UK fluorescent luminaire manufacturers.

The Broadgate project represents one of the most prestigious developments in the UK and in our particular specialised industry the success of the home based manufacturers was not reflected in the these of the programme.

**John Sawyer,**  
Designed Architectural  
Lighting Co. Ltd.,  
London EC1.



The Chartered Institution of Building Services Engineers

## Lighting education

The state of lighting education in this country has for a long while been cause for concern throughout the industry, the Institution and the educational establishments. However, at last there seems to be a glimmer of hope for the future as three innovations have now been introduced which, it is hoped, will encourage students at all levels to accept the educational challenge to further their careers and improve the quality of the profession.

The first of these innovations is the introduction of two CIBSE lighting awards for academic achievement. These, the Lighting Certificate and the Lighting Diploma, may be awarded to affiliates of the Institution who have passed the lighting components of the BTEC or an equivalent course.

The Certificate may be awarded to members who have passed either two level III BTEC lighting units or equivalent subjects on another course. The Diploma may be awarded where a pass in either three level 'H' BTEC lighting units or an equivalent course has been obtained.

Important factors of the awards are:

- ☐ it is not necessary to study subjects other than lighting;
- ☐ no formal qualifications are required for a person to be elected to the grade of affiliate, as the requirements for this grade of membership are simply that the applicant must be interested in lighting, or building services in general, and not under 23 years old.

The second recent change is the accreditation by CIBSE of the South Bank Polytechnic Certificate in Environmental Engineering. This course is a general environmental engineering course with specialisations in lighting, electrical building services, and heating, air conditioning and ventilation and each option leads to associate membership of CIBSE. It is possible to study individual subjects and to obtain credits for examinations passed during each year. The first four terms of the lighting subjects are considered to be equivalent to two BTEC Level III units and the remainder of the three-year course is equivalent to three BTEC level 'H' units. Thus the course may lead to the award of both the Lighting Certificate and the Lighting Diploma.

It is also possible, in certain circumstances, to credit a person for passes obtained in other courses by admitting that person onto the course at a point other than the beginning of the first year. For instance, a person who has passed one BTEC Level III unit may be allowed to enter the second year of the course. Anyone who has passed the LIF Advanced Certificate may also be considered for direct entry to the second year for the study of lighting subjects.

The third step forward is the introduction of an MSc course in Lighting at the Bartlett School of Architecture and Planning, University College London. This course covers all aspects of light and lighting and provides an excellent opportunity for a person who is qualified in another discipline to undertake an in-depth study of lighting, leading to the award of a master's degree. This course has already been in operation for two years and is well supported by students with engineering, architectural and design backgrounds, who are employed by lighting manufacturers and consultants.

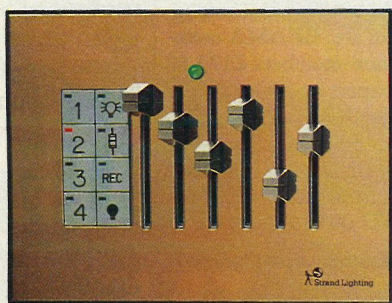
### Lighting Division participation in education survey

The Council of the Lighting Division is aware of members' problems in finding suitable courses locally, and has conducted surveys of the courses offered by colleges in all regions of the country. The results were made public at the last National Lighting Conference. These indicated quite a strong interest by colleges in providing lighting courses, but very few courses were actually offered because of the lack of students.

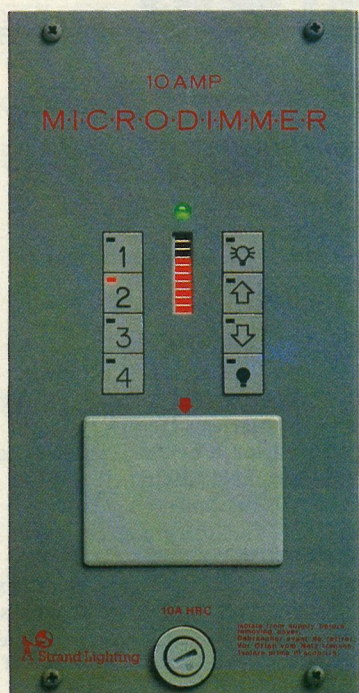
A college cannot provide a course unless it feels that it is economically viable and, therefore, a minimum number of students is required before any course can commence. So, it is necessary for members of the lighting profession to want a reasonable standard of lighting education, and it is up to the senior staff of companies to encourage newcomers to follow a recognised course of study, in order that a healthy educational programme can be established throughout the country.

**John Frost**

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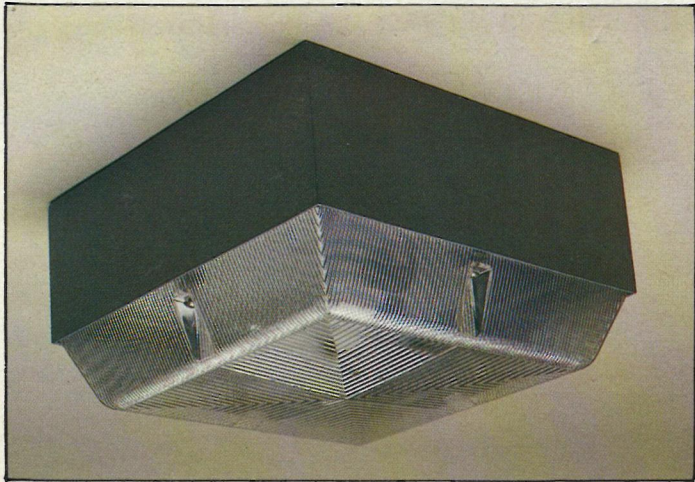
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LEN/10/89



# NEW PRODUCTS



## Light has square lens

Deluxe Brunel is a weather and vandal resistant luminaire, for under-canopy mounting, recently introduced by Designplan Lighting Ltd.

An ultra-violet stabilised, polycarbonate lens produces a square light distribution pattern which results in an increase in luminaire spacing to mounting height ratio

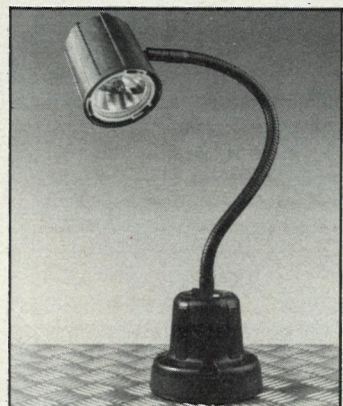
and improved uniformity of illuminance. This in turn saves on capital, running and maintenance costs.

High pressure sodium lamps (50W or 70W), low pressure sodium lamps (18W), and 2D compact fluorescent lamps (28W or 38W) can be used with the luminaire. **Reader Service No. 151**

## Task lighting for industry

Profi-Light, a powerful industrial task light, is available in the UK from Burwood Lighting Co Ltd. It is designed for use with 12V, 24V, 110V or 240V electrical supplies and uses either 20W, 50W or 75W tungsten halogen lamps with specially designed reflectors.

This fitting is well suited for "long distance" lighting where previously luminaires with a lower light output had to be used close to the work and could get in the way



of the operator and the operation. Profi-Light can be supplied with either a narrow or wide beam lamp and on a variety of strongly constructed arms.

The whole unit is sealed to ingress protection standard IP54. **Reader Service No. 156**

## Lighting for building sites

Briticent International Ltd has extended its range of electrical equipment for construction sites and other rugged applications where portable power and lighting are required.

Festoon lighting is offered in 100m and 50m lengths with lamps set at either 2m, 3m or 5m spacings with special lengths and spacings to order.

Two new floodlights are a 1500mm portable fluorescent light with 14m of cable, mounted on a galvanised tripod with an adjustable centre shaft, and a light industrial tungsten halogen fitting on a collapsible tripod.

**Reader Service No. 157**

## Light bars for sparkle

Light Bars from Edison Halo Lighting accept four low voltage tungsten halogen capsule lamps, each rated from 5W to 20W, to provide decorative lighting for retail and commercial applications.

They are designed to operate off a remotely positioned transformer.

The extruded aluminium bars are finished white and are avail-



able in three versions: with either convex, concave or cone shaped profiles around the lamps.

**Reader Service No. 158**



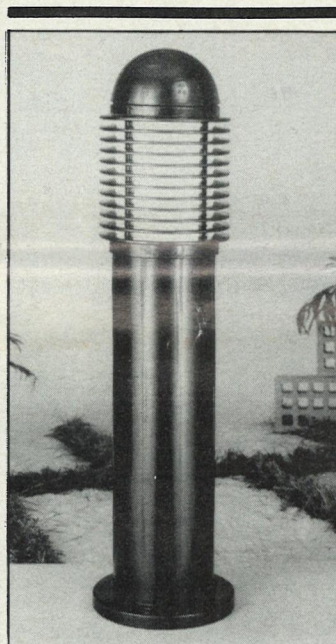
## Outdoor lighting from Italy

Cast aluminium outdoor lighting made by Ismos, Italy, is now available in the UK through Online Lighting. Designs range from small wall lanterns for patios through to street lighting.

Illustrated are two fittings from the spherical Villa range. There is a choice of either black or white matt painted finishes. The glass shades use either GLS lamps up to 100W or SL compact fluorescent lamps.

Matching lighting columns, gate post fittings and a bollard are available.

**Reader Service No. 159**



## Modern amenity lighting range

A range of commercial and industrial lighting is being introduced into the UK as a joint venture by Fael Luce UK Ltd and BO Luce of Italy.

The first models are bollard and bulkhead lights designed for use on walkways, steps and in car parks. They are intended for use in office developments and controlled industrial environments.

Made from diecast aluminium, the lights can be either wall mounted or built into an extruded aluminium bollard to light paths and steps.

Heat resistant pressed glass lenses are used and there is a choice of 75W incandescent, single or twin 9W compact fluorescent, or up to 70W high pressure sodium lamps.

Stated to be weatherproof and as vandal resistant as possible, the range has either a black or white polyester finish.

**Reader Service No. 160**

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

# LIF LINE

## Electronic data interchange

In these times of intense competition, with customers making even greater demands upon us, it is important that we grasp every opportunity offered by modern technology to serve our customers in a better manner and retain a high level of efficiency.

As our competitors seem ever stronger and, with the advent of 1992, could grow stronger still, it is of vital importance that we constantly improve. An opportunity to do so lies with electronic data interchange, EDI for short.

EDI involves invoices, orders, acknowledgements and other documents being transferred directly between the computers of trading companies. Major users of EDI services are the motor and shipping industries where millions of pounds are saved each year.

It is clear that Electronic Data Interchange is set to change fundamentally the way we do business with both supplier and customers. Faster communications, reduced paper, errors and cost, more accurate information and improved customer services are just some of the benefits to be gained from the adoption of EDI.

Many large corporations already insist on doing business electronically; the retail sector is rapidly moving this way (the EPOS check-outs are one sign) and nearer to home EWF, Newey & Eyre/STC have all taken firm positions and indicated their intentions.

It is an area, however, where not only is it essential to avoid a fragmented approach, but one where incorrect or expedient decision today could prove expensive or damaging in the long term.

For this reason LIF has set up an industry working party to ensure that the right decisions are made in the shortest possible time. LIF members and UK Lighting Ltd will thereby have the major advantage in the domestic and world markets in the years to come.

### Getting it right

The right decisions include agreeing article numbers as the basis for product related communications, standard formats for invoices etc, and the data exchange network to be used.

In this country we have a system compatible with article numbering in existence on an international scale — in over 40 countries around the globe.

Each and every product can be allocated a unique identifying number. And each and every variation of any product can carry a number which differentiates it from, say, another size or colour of the same product. A 60W light bulb for example has a different number from a 100W bulb.

A 13 digit number uniquely identifies the product or product variant to which it is applied. This number does not contain any information about the product — the individual digits have no meaning on their own.

The number can be shown on the product in the form of a bar code symbol. Read by hand-held devices or fixed laser scanners, the bar code allows computers to recognise the number and, therefore, the product.

Article numbering is also used to identify the units traded between manufacturers and wholesalers. The UK traded unit code is also based on a 13 digit number and again can be shown in the form of a machine-readable symbol.

This system means that it is possible to scan goods on packing lines, in despatch, in storage, on delivery, and in cash and carry outlets, as well as in the shop, and thus it is possible to obtain a complete and accurate picture of stock movement through all the stages of the trading chain. This facility would obviously be most effective if manufacturers and their customers used the same data exchange network.

Since EDI benefits add up to a vital competitive edge for its members, this, along with article numbering and standard formats, constitutes the agenda being discussed by the LIF.

## Modern light.

### ELECTRONIC 35w ADAPTOR

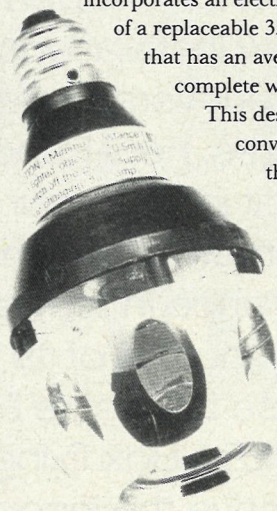
This remarkable new display illumination unit is more than just a lamp. Made in high temperature plastics it incorporates an electronic transformer which allows the use of a replaceable 35watt 12 volt tungsten Halogen lamp that has an average life of 3000 hours. Unit comes complete with an M66 lamp.

This design provides 1500 hours more than the conventional PAR38/RO80 lamp because the heat can pass back through the body of the unit which gives a heat

reduction of 20 per cent over the standard PAR38/RO80.

The cooler beam improves working conditions for your staff, enhances the shelf-life of perishable goods and cuts air-conditioning costs.

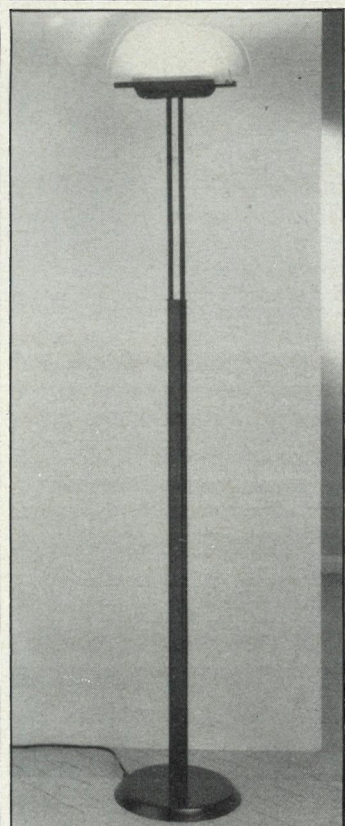
It all adds up to being a big saving especially when required for prolonged use in reception, display areas, exhibitions, hotels etc.



3000 HRS LIFE CYCLE · REPLACES EXISTING PAR 38/RO 80

EXCELLENT COLOUR RENDERING · COOLER BEAM · 60% ENERGY SAVING

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## Floor and wall mounted uplights

Acapulco is the latest in a range of uplights by Knight Design. It features a glass shade which provides general lighting to complement the uplighting effect.

There are two floor standing uplights and three wall lights in the range. All are designed for use with linear tungsten halogen lamps up to 300W.

The floor standing models have dimmer switches.

**Reader Service No. 155**

## Parisian wall light

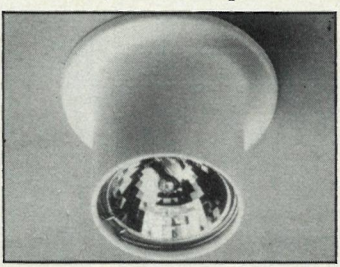
Stick is a wall light from Opus Lighting Ltd. Made from a brass extrusion finished in either black, white or gold colour it is 30mm wide and projects 530mm from the wall. The lamp used is a 200W linear tungsten halogen type.

This luminaire is part of a collection made by Autographe of Paris. **Reader Service No. 152**

## Low voltage downlights

A range of low voltage luminaires from Ring Electronics Ltd is suitable for use as display and feature lighting.

Recessed and semi-recessed downlights are included. Cone shaped downlights are also available as wallwashers with either round or square base in a choice of five finishes: polished brass, white, matt black, chromium plated and



black chrome. There are some versions with emergency lighting facilities.

Another option is that certain models accept compact fluorescent lamps.

**Reader Service No. 153**



# A MAJOR BREAKTHROUGH...

What makes Punch from Thorn Lighting such a major breakthrough in fluorescent luminaires?

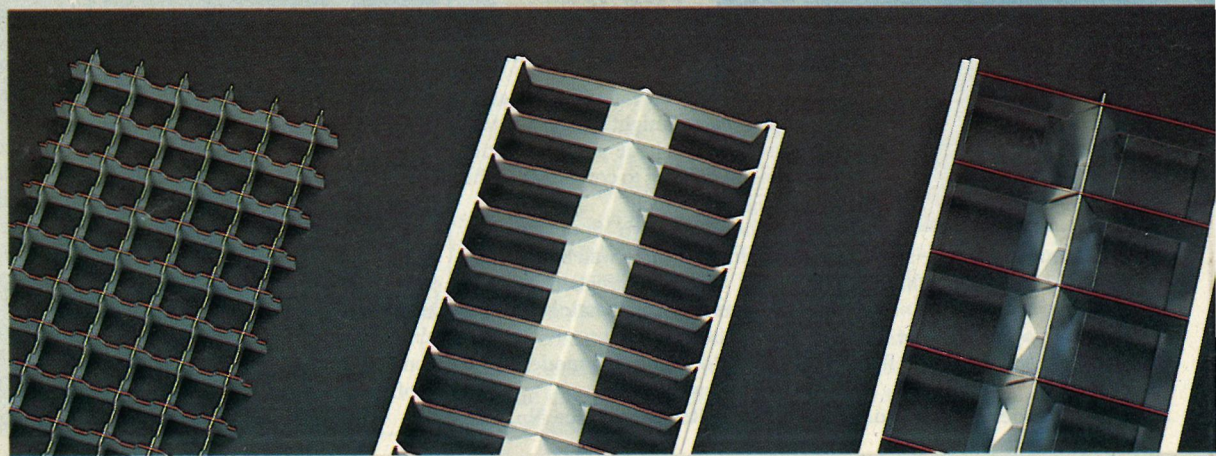
It's cost-effective *and* beautifully designed!

Sleek low-profile looks and a choice of sheet steel, aluminium or notched louvres make Punch the perfect luminaire for new installations.

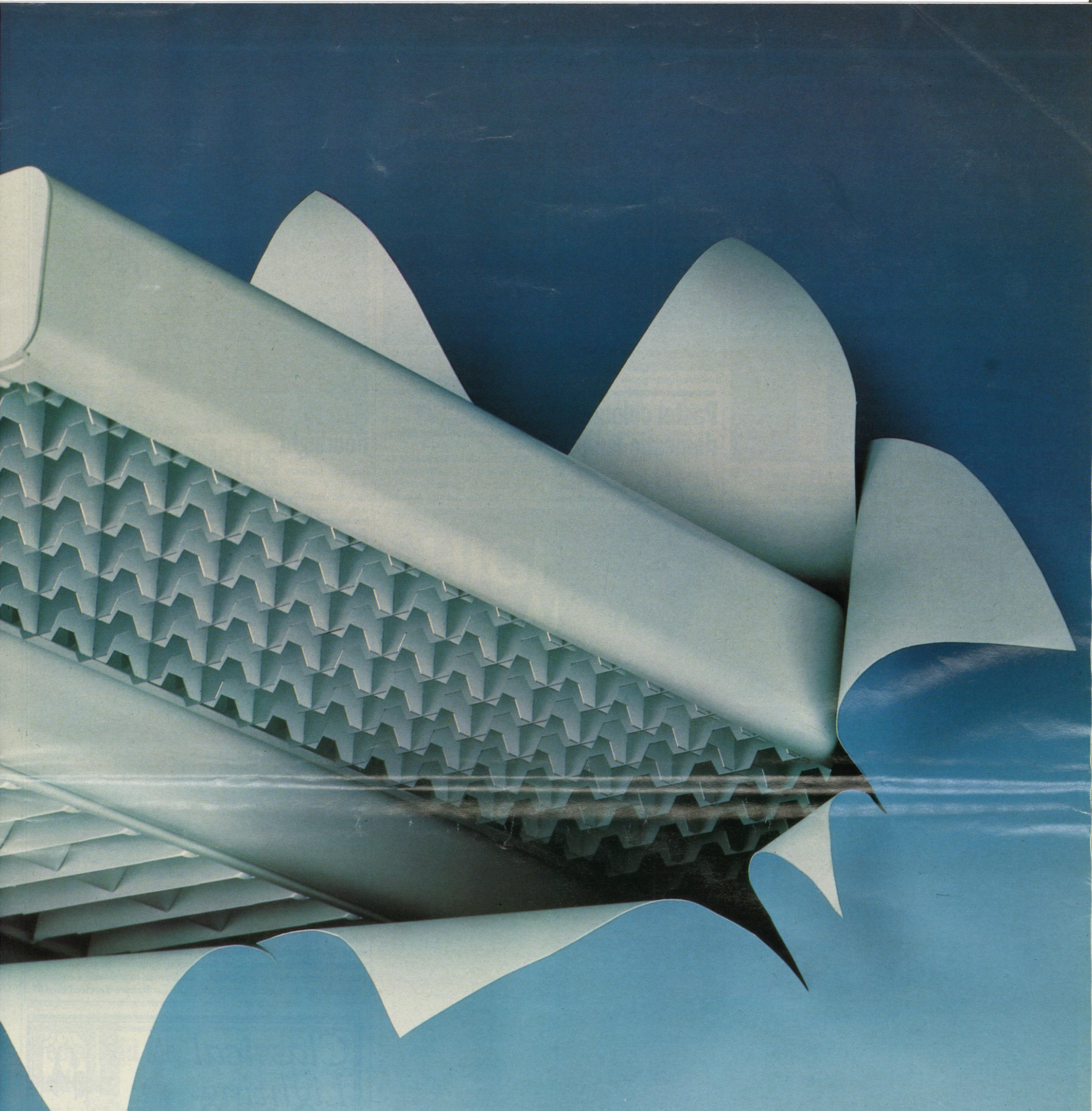
In four different versions and a total of 21 types and sizes, new Punch offers a wider range to fit in with your own specific requirements, and the highest level of performance in terms of glare control and light output of its type.

And, because the entire Punch range has standard BESA Box fixings, you don't even need to move the incoming wiring during replacement or refurbishment programmes.

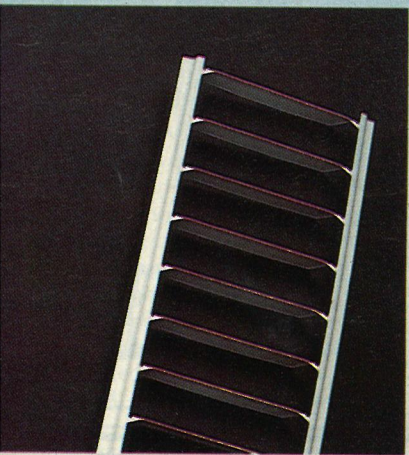
(It's also the only range of its type in the UK to offer a 6' unit.)







# ...PUNCH! FROM THORN



Punch is available *now*. If you're really serious about cost-effective lighting that looks good when it's on *and* off, find out about the Punch range now.

For further information or a copy of the Punch brochure, telephone the Thorn Brochure Hotline on 0800 289869.

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 **THORN**

Reader Service No. 6  
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Enfield Middlesex EN1 1TJ



# NEW PRODUCTS

## Lighting in the round

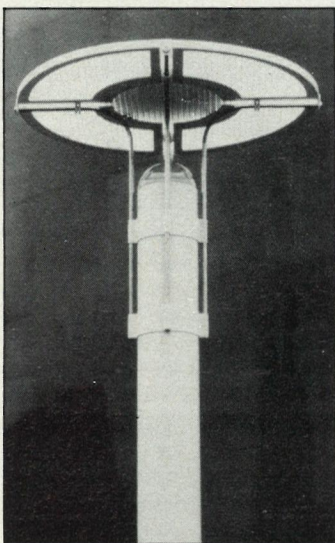
Sitting like a giant Frisbee on top of a 3m column, the central feature of the new Roundlight precinct luminaire from Staff Lighting Ltd is the aluminium reflector which provides indirect illumination.

Staff says it aims to bring fun, atmosphere and safety to street design through technically advanced lighting.

The light source for Roundlight is integrated within the column and protected by a half sphere of vandal resistant glass. Sodium or mercury lamps rated at 150W or 250W are used.

Light is directed upwards onto the 1m diameter reflector, which is fitted with clear faceted acrylic on the underside. The reflector head is fixed in position with four aluminium rods.

Roundlight is available in a comprehensive range of colours at



no extra cost. The column has an access door for maintenance.

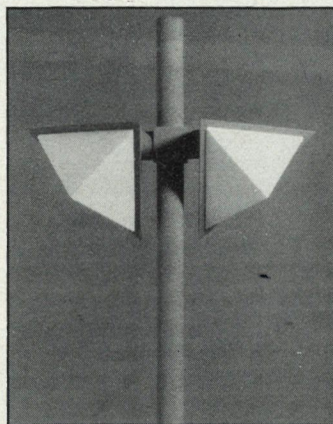
**Reader Service No. 161**

## Lighting for theme parks

LDMS has introduced a range of amenity lighting for use when design and quality is a prime consideration. Units are manufactured from cast aluminium, stainless steel, polycarbonate, acrylic and glass.

Matching column mounted, wall and under-canopy lights are available. They accept a choice of lamps.

This range is suitable for use in theme and leisure parks where novelty lighting can complement



the atmosphere created by the designers.

**Reader Service No. 162**

## Pastel coloured domestic lamps

Osram-GEC Ltd has launched Warmlight, a 60W GLS lamp available in pastel pink, peach and

lemon, designed to colour co-ordinate with decor in the home. It produces a soft, relaxing lighting effect.

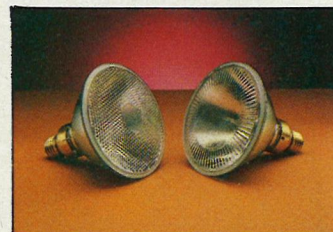
Attractive blister packaging has been designed for Warmlight, colour linked to the lamp.

**Reader Service No. 163**

## New halogen lamp replaces PAR38s

GTE Sylvania has launched a new display lamp named Halogen PAR 38 De Luxe. It consists of a mains voltage tungsten halogen capsule housed in a conventional PAR38 envelope.

This lamp is designed to provide upgraded tungsten halogen lighting in retail and other display situations where the investment required for a complete low voltage system cannot be justified.



Energy savings are also made because the 100W Halogen De Luxe lamp replaces a standard PAR38 120W lamp and the 75W Halogen De Luxe is stated to give the same light output as a 100W conventional PAR38 lamp.

Narrow and wide beam versions are being produced.

**Reader Service No. 164**

## Security floodlight

Braitrim Lighting Ltd has introduced a 300/500W tungsten halogen cast aluminium floodlight with ingress protection rating

IP54.

It is for security lighting for smaller commercial and residential premises and is said to be competitively priced.

The floodlight can also be used for applications such as floodlighting of small buildings.

**Reader Service No. 165**

## Cellular ceiling luminaires

Lighting fittings in two sizes for open-cell ceiling systems are available from Light Years.

The low voltage luminaires drop easily into 86mm or 100mm square cells. The back of every fitting is enclosed with perforated steel and a wiring box with terminals is provided.

Access slots in the cast aluminium housing allow the recessed



luminaires to be re-lamped easily.

Recessed fittings are adjustable up to 30° from the vertical. They are available in white but can be sprayed in different colours to order.

**Reader Service No. 166**

## Brass electrical accessories

The Kenilworth range of flush fitting electrical accessories by Redditch Plastic Products is made in solid brass with a "rope edge" design in sharp, deep relief. The polished accessories are protected by a hardened coating.

A clear pvc protective edging strip is fitted to prevent contamination of the accessories from recently plastered walls. This strip can be regarded as a feature of the plate or removed after installation. Available in one-gang and

2-gang plate sizes, the Kenilworth range includes 5A lighting switches, 13A socket outlets, 13A switched connection unit and dimmer switches rated at 400W, 250W and two-gang 250W.

Socket outlets and connection units feature the RPP colour coded terminals in red, green and black for "no mistake" wiring and top access to the fully shrouded and retained terminal screws.

The 5A lighting switches incorporate a mechanical break feature, which overcomes problems encountered in faulty circuits where certain fluorescent loads endeavour to maintain a circuit.

**Reader Service No. 167**



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**Reader Service No. 7**  
Page 8

## Classical Lighting

by NORAL

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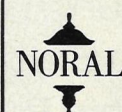
Architect-designed in cast aluminium, these stylish lanterns are totally weather resistant and available in black, white or 'aged copper' finishes.

With matching wall, gate-post and lamp post models, there are over 100 styles and fittings to choose from.



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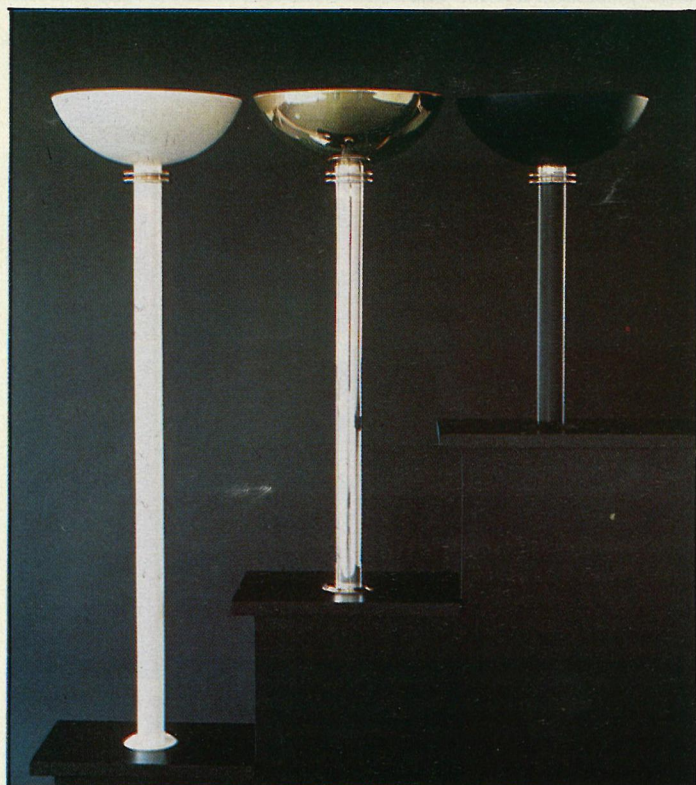
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**Reader Service No. 8**

Lighting Equipment News, October 1989



# NEW PRODUCTS



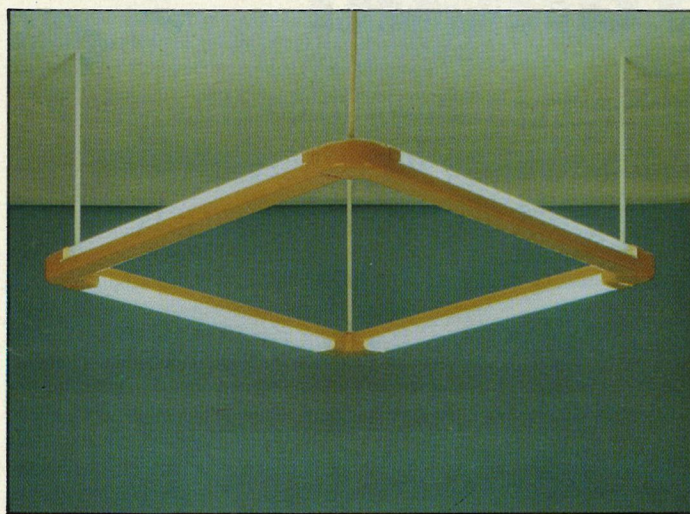
## Compact linear lighting system

Radius Lighting has a modular linear lighting system called Proteus 90. It is rectangular in cross section and is available in a wide range of colours.

Designed and made in Britain, Proteus 90 consists of a universal module containing either single or twin 26mm diameter fluorescent tubes, in a variety of lengths and wattages, together with variable or fixed corner junctions to provide wide scope for linear or grid configurations.

The variable corner joint allows any angle between 60° and 135° to be selected. The 135° and 120° settings respectively permit octagonal and hexagonal arrays.

The rectangular modules, in extruded aluminium, are compact in cross section yet produce well distributed light.



Fluorescent modules may be inverted for uplighting. Accent lighting is available on separate track modules, or on track beneath fluorescent uplight modules. There are also emergency lighting and dummy modules to complete the system.

The system is stated to be easy

to specify and install. Modules are all prewired and supplied as either starter, intermediate, or end modules, so ensuring rapid assembly on site.

Mounting is by wire or rod suspension, ceiling plates, or wall brackets.

Reader Service No. 172

## Stage luminaire gives better performance

Vari-Lite Europe Ltd has an improved version of its Vari-Lite stage luminaire.

Equipped with a 400W HTI arc lamp, the VL2-B is stated to be significantly brighter than the original VL2 and can thus provide enhanced colour saturation, as well as a more even spread of light across the whole beam.

A perceived lower colour temperature gives a warmer effect on flesh tones, while better internal optics mean sharper, undistorted gobo projection.

Reader Service No. 173

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

## Versatile uplights

Uplights called M3, with dish shaped reflectors, are available from Design Carvill Ltd. As well as offering a choice of lamps they are produced in a variety of heights for positioning on partitions, tables, stairways or the floor.

Linear tungsten halogen, 2D compact fluorescent, or metal halide lamps with remote gear can

be used. A safety glass is fitted as standard.

The illustration shows (left to right) a model finished in white pearl effect paint, one with a solid brass reflector on a chromium plated column, and a third model which has metalwork stove enamelled black.

Reader Service No. 168



## Fibre optics for architecture

Fiberstars, a multiple strand, lateral emitting fibre optic system from California, is being handled through a new division of Marlin Lighting.

Light is transmitted along the fibres by a lamp with a small filament or arc tube coupled with an

ellipsoidal reflector. A forced ventilation system and heat reflective mirrors prevent heat build-up.

The system is claimed to be able to transmit light up to 60m, though 30m is regarded as the optimum distance.

Applications include highlighting architectural detail, creating features, signage, fountains, pools, ice rinks and ice sculpture. It is stated to be easy to install.

Reader Service No. 169

## Wedge light for outdoors

Wedge is a wall mounted luminaire from Staff Lighting Ltd that uses a 12V/50W tungsten halogen lamp. A transformer is included in the weatherproof housing.

The lamp is off-set 5° from the wall to improve the light distribu-

tion and is protected by a reinforced glass cover.

A choice of three standard housings is offered: cast aluminium with a white finish, or cast bronze with a chromium plated or gilt finish. There is also a range of colours.

Applications include banks, building societies and prestige retail outlets.

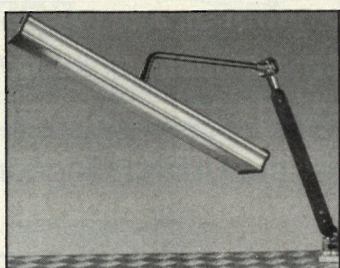
Reader Service No. 170

## Machine tool task light

Tube Light is a task light from Burwood Lighting Co Ltd for machine tools. It uses Dulux L compact fluorescent lamps in either 18W, 24W or 36W ratings; there is also a twin 36W version.

The lamps are enclosed in either acrylic or toughened glass tubes in lengths from 345mm to 993mm. The fittings are sealed to ingress protection standard IP65.

As well as being used on open machine tools, these lights can be mounted inside computer controlled, enclosed machine tools for



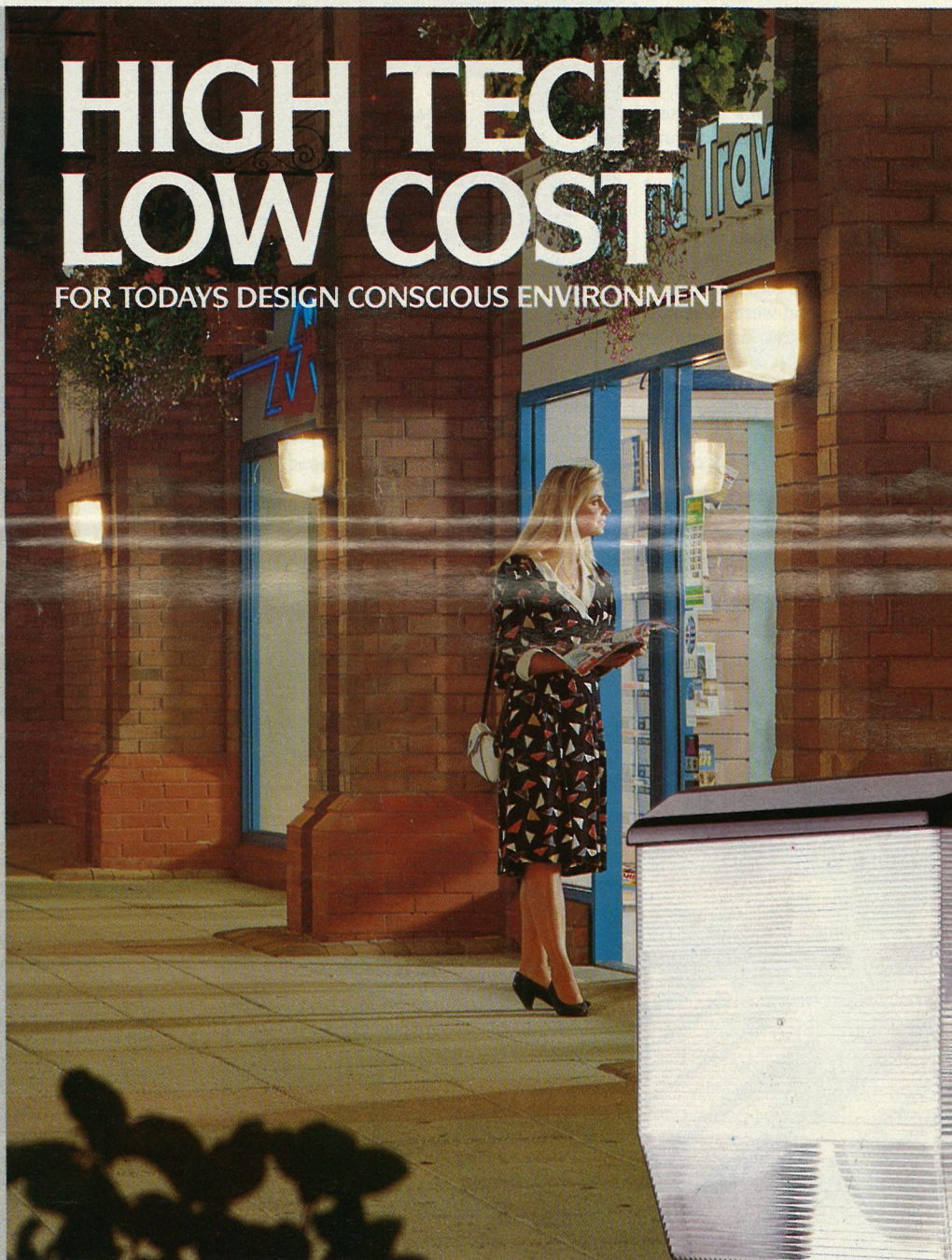
inspection purposes. Because they are sealed, they can be used even when coolants are being sprayed continuously. There is a choice of clamp fixing.

These heavy duty fittings, which give a very bright light, are made by Dittmer Industrie-Produkte, West Germany.

Reader Service No. 171

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# Streets ahead

**Not only has street lighting been shown to be effective in combatting crime, it can also make for a more exciting environment and act as a great attraction to tourists. *LEN* looks at the recent public lighting awards.**

The 1989 Public Lighting Competition provides evidence of a continuing rise in design standards and a growing awareness of the need for better lighting on the part of public authorities. The decorative floodlighting schemes, in particular, show an increasing awareness of the potential for tourism of a spectacular night time environment.

The competition was started more than twenty years ago to stimulate public lighting design and technology among public authorities and government departments in the UK and Eire.

The scheme, held every two years, covers the three most important fields in public lighting — road lighting, public building and works, and public amenity lighting. Each category is split into two sections, A and B, covering small and large projects respectively.

In addition to the winners of the standard categories a further prize, the Silver Jubilee Trophy was awarded for the Tower Bridge floodlighting scheme (see *LEN* November 1988 issue). This is a special award made for a lighting scheme of exceptional importance and was last made in 1977.

Entries are judged on eight basic

criteria, including originality, appearance both by day and by night, design, technical merit and cost-effectiveness.

Judges, representing the sponsoring organisations, were Peter Wright and Bob Paterson, president and vice-president of the ILE; architect Lorenzo Apicella, representing the RIBA; and Mike Simpson of Philips Lighting.

## Floodlighting

An installation at the thirteenth century Scottish castle of Eilean Donan won section A of the public building and works category. The castle, situated at the head of three sea lochs, was destroyed by English frigates in 1719 and rebuilt in 1912 in a late "medieval" style.

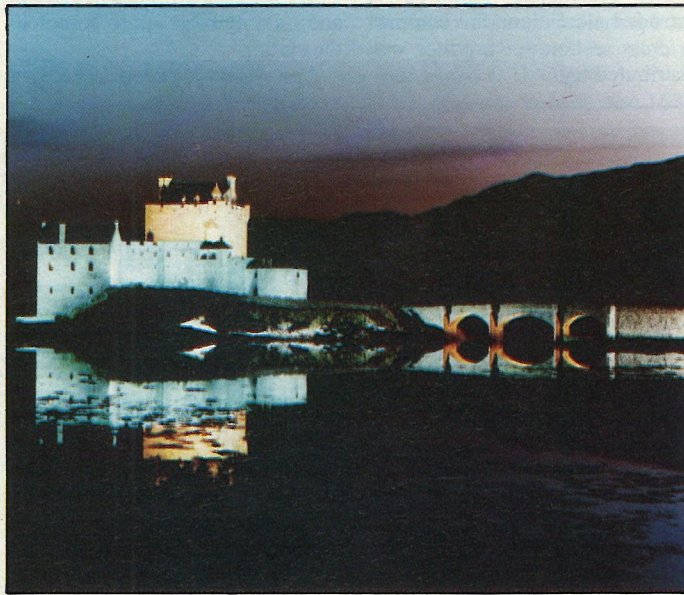
High pressure sodium and mercury halide were chosen to complement the colours of the stonework. The floodlights were aimed in such a way as to create an illusion of depth, reinforced by creating shadows from window and buttresses. Fittings had to be carefully hidden — and were built into walls, concealed on parapets or encased in specially made enclosures.

One group of fittings was installed under the arches of the bridge and causeway. Work on this

section of the installation could only be carried out at low tide, with the electricians wading up to their thighs in water.

Lighting is provided by a mixture of 250W, 400W, 1kW and 2kW HPI-T lamps incorporated into a large range of Philips fittings, the individual location of each light determining the fitting.

Another Scottish castle, the more famous Urquhart Castle,



Eilean Donan Castle shows the impact made by skillful floodlighting.

overlooking Loch Ness won section B of the same category. This thirteenth century castle is a major tourist attraction, the second most visited castle in Scotland after Edinburgh.

Design was complicated by a number of problems. Firstly, the limited electric supply available meant that only the famous west facing facade could be lit. In the event, twelve floodlights using eight 400W SON-T lamps and four 250W SON-T lamps were used.

In addition, the architect would not permit any man-made structures above ground level. So those fittings that could be located at ground level were built into the dry stone dyke which runs parallel to the castle walls and were subsequently bricked up to conceal cables and control equipment. Then, a large tree proved to be an obstacle to the floodlighting; but this was eventually overcome by placing a floodlight in its very branches.



Lighting on the promenade at Rhyl, a winner in the road lighting section.

In Section A of the road lighting category, the winner was a scheme for lighting the East and West Parades on the sea front at the seaside town of Rhyl. The lanterns specified had to be very tough to withstand the constant battering of winter gales. In lighting this area the designers used 208 Phosco lanterns, 132 fitted with 150W and 76 fitted with 250W SON lamps.

Winning project in Section B of this category was a road lighting installation for a bridge at Leatherhead, a Grade 2 listed structure. The scheme uses 10 D W Windsor Victorian style pedestal mounted spheres housing 70W SON lamps, and spaced at 16 metre intervals.

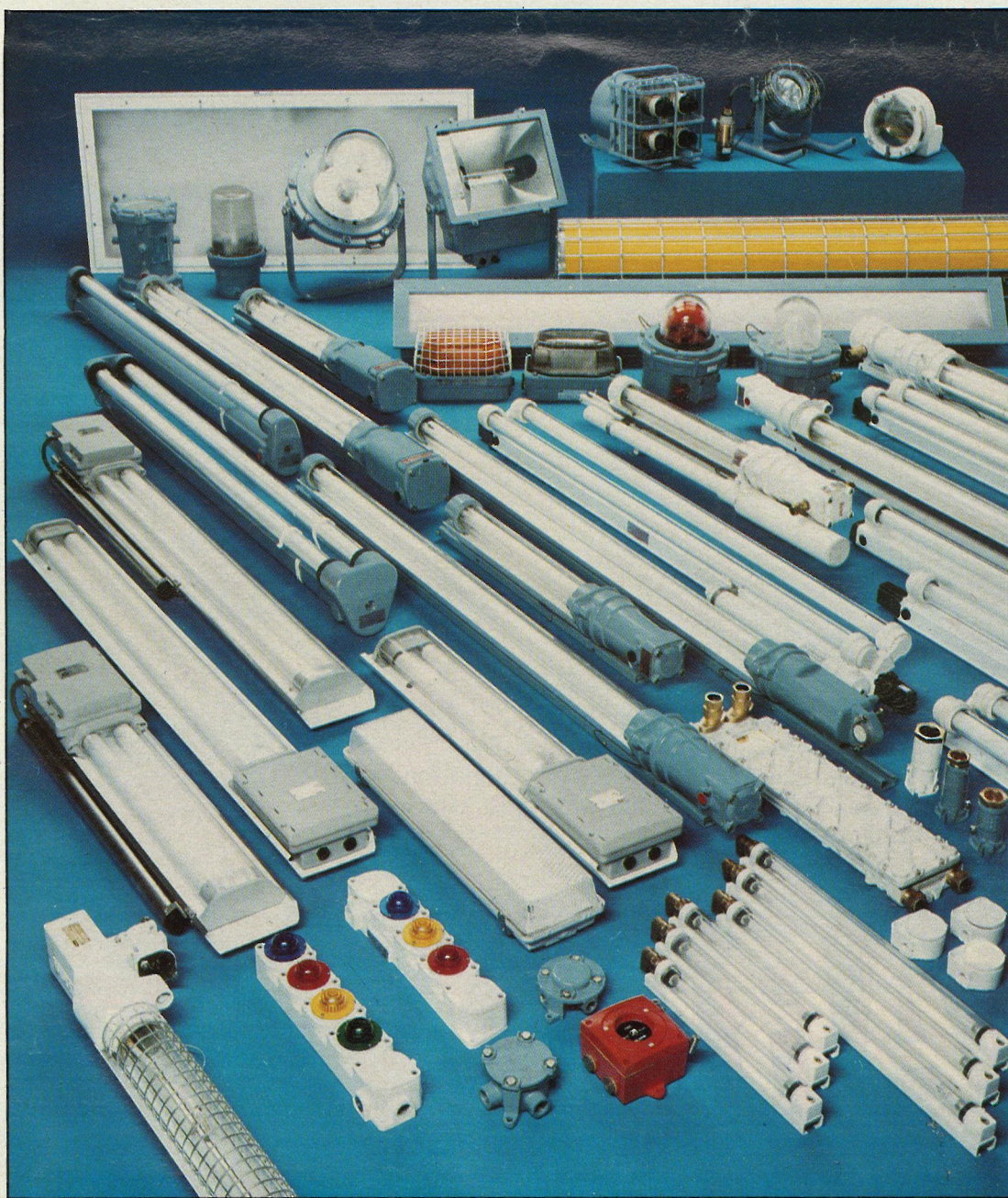
## Amenity lighting

An imaginative lighting scheme for the High Street of the historic town of Irvine in Ayrshire won the Section A award in the public amenity lighting category for

Strathclyde Regional Council. Because the town dated back to 1184, lighting had to fit sympathetically into a traditional streetscape. Twelve multiple headed units mounted on 6 metre columns each carry three GEC ZD4 542 luminaires taking 100W SON-T lamps. In addition to lighting, the columns each carry two illuminated shields, and these take three MCF lamps.

In section B a scheme to light a Victorian fountain was awarded the first prize. The fountain, situated in the High Street in Epping, Essex, was originally erected to commemorate fifty years of Queen Victoria's rule. It has recently been restored and relit.

Two lanterns specially designed by Sugg Lighting provide general lighting here, and floodlighting to the fountain. The fountain is floodlit with two Philips DVF 102 fittings with 300W PAR 56 lamps.



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LIGHTING



# Lighting news from the USA

**David Loe takes a look at lighting in North America — including Disneyland — during a visit to Florida for the annual IESNA lighting get-together.**

The Illuminating Engineering Society of North America (IESNA) held its annual conference this summer in Orlando, Florida, the land of Disney, the Epcot Centre and the Magic Kingdom. In true Disney style the conference opened with a breakfast, sponsored by Philips, with a brass band and all the Disney characters there to welcome delegates — a real fanfair of an opening.

The IES conference is the one opportunity each year when the American lighting community can meet and discuss lighting with people from all over North America and overseas too. Hence the conference has a very full programme and combines the business of managing the institution with that of a technical conference.

From the institution point of view it was interesting to see how the problems of lighting in America are similar to those in the UK and other parts of the world too.

One of the main concerns was over the shortage of lighting education and lighting research and hence there was considerable discussion about the newly established Lighting Research Centre at Rensselaer Polytechnic Institute under the direction of Dr Mark Rea; it is intended that the centre will provide facilities for postgraduate lighting education as well as opportunities for high level lighting research.

There was also much discussion about the possibility of having a lighting professional's certification programme; not to rubber stamp today's designer or existing lighting education programmes, but a programme to consider lighting qualifications and competence as well as lighting education, examination and accreditation.

A tall order, but the IES seems



Laser display at the Epcot Centre.

keen to develop in this way to ensure that the next generation of lighting specialists are respected and well qualified members of the design team.

Another piece of news is that the IESNA and the IALD (International Association of Lighting Designers) have withdrawn from the organisation of Lighting World, an exhibition/conference which has been running for a number of years, alternating between New York and Los Angeles.

Instead they have joined forces with AMC Trade Shows East to

run a new venture combining a lighting exposition and conference entitled Lightfair. The first Lightfair will take place at the New York Hilton from 10-12 April 1990 — UK manufacturers take note!

But back to the conference. There were many parallel sessions which made it difficult to decide which to attend and inevitably there was a conflict between those one ought to attend and those that looked most interesting.

The conference was formally opened by the IESNA president, Stephen Spier, and the first real presentation was by Fred Heller, president of the Genlyte Group, entitled *Lighting: how much longer an underachiever?* The thrust of his lecture was that lighting was not receiving the attention it deserved and that too much attention was paid to cost rather than quality.

He claimed that lighting had not grown as fast as other sections of the building design profession and because it was seen as a commodity it was often a casualty of cost cutting — a very familiar story.

Later the same day there was a paper *Crime and Lighting*. Here, J M L Cunnen of Philips Lighting, discussed this very topical subject

**Halogen-IR PAR lamp showing specially coated filament capsule.**

suggesting that it was not a question of "lighting or no lighting" but of "good lighting rather than bad lighting". He went on to stress the importance of light on vertical surfaces and the need for better light uniformity.

One of the aims of the conference is to inform delegates about new technology and the lamp-makers vie with one another to present new products.

GE Lighting had two new lamps. The first was a Halogen-IR PAR lamp, which looks very similar to a conventional PAR lamp but incorporates a capsule containing the filament, which operates as a halogen lamp. The capsule is coated with an infra-red film which reflects the unwanted heat back onto the filament and reduces the amount of energy needed to produce the light. The efficacy claimed is 26 lumen/watt.

The other notable development was a small MBI lamp, with a virtually instant re-strike time, for use in automobile headlamps. This lamp was shrouded in a certain amount of secrecy, but it looks like an exciting breakthrough — a metal halide lamp with instant re-strike and operating from a battery!

Another development from Philips was a reshaped reflector lamp. This incorporates a computer designed reflector which is more efficient because of its tighter control of the beam shape. It is claimed to give up to 25% more light at the beam centre compared to a conventional reflector lamp of the same wattage.

## Lighting, how much longer an underachiever?

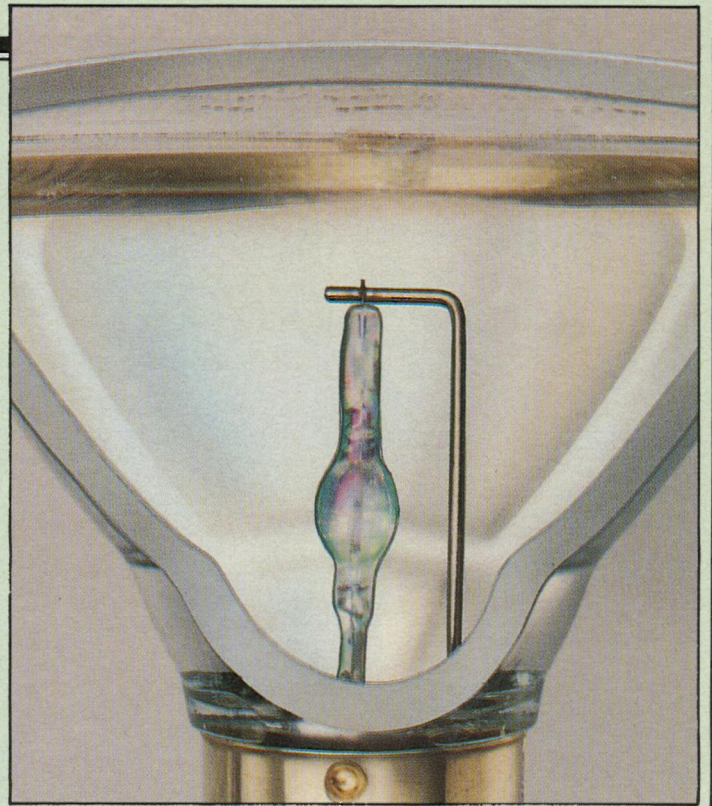
Daylighting was also covered by a number of speakers. One of the common themes was that since the 1950s, interest in daylighting design had declined and hence the benefits in terms of lighting quality and energy efficiency were not being realised.

No visit to Orlando is complete without a visit to the Epcot Centre. This is the Disney complex that aims to educate as well as entertain. GE Lighting is one of the sponsors and arranged for delegates to visit the centre.

The technological wonders of media presentation at Epcot are frankly amazing. Most people spend all day there and at 10pm every night they are treated to the most impressive lightshow to bid them goodnight — Disney calls it the "Kiss goodnight".

It is a combination of animated floodlighting, lighting effects, lasers and fireworks all to a musical accompaniment. The lightshow was described in a conference paper by John Haupt of Walt Disney Productions; the show took three months to design, eight months to install and the cost was \$10 000 000.

Not only is the spectacle impressive, but the care taken to conceal and blend the installation with the landscape, so that during daylight visitors are not offended by unsightly equipment, is impressive too. Every student of lighting

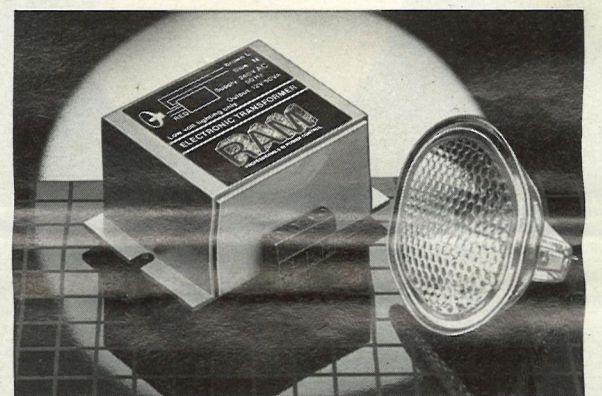


should experience the Disney Magic at least once.

For those interested, the next IESNA annual conference will be held in Baltimore from 29 July to 2 August 1990.

This report was contributed by David Loe, director of The International Philips Centre for Lighting Education and Research at the Bartlett School of Architecture and Planning, University College London.

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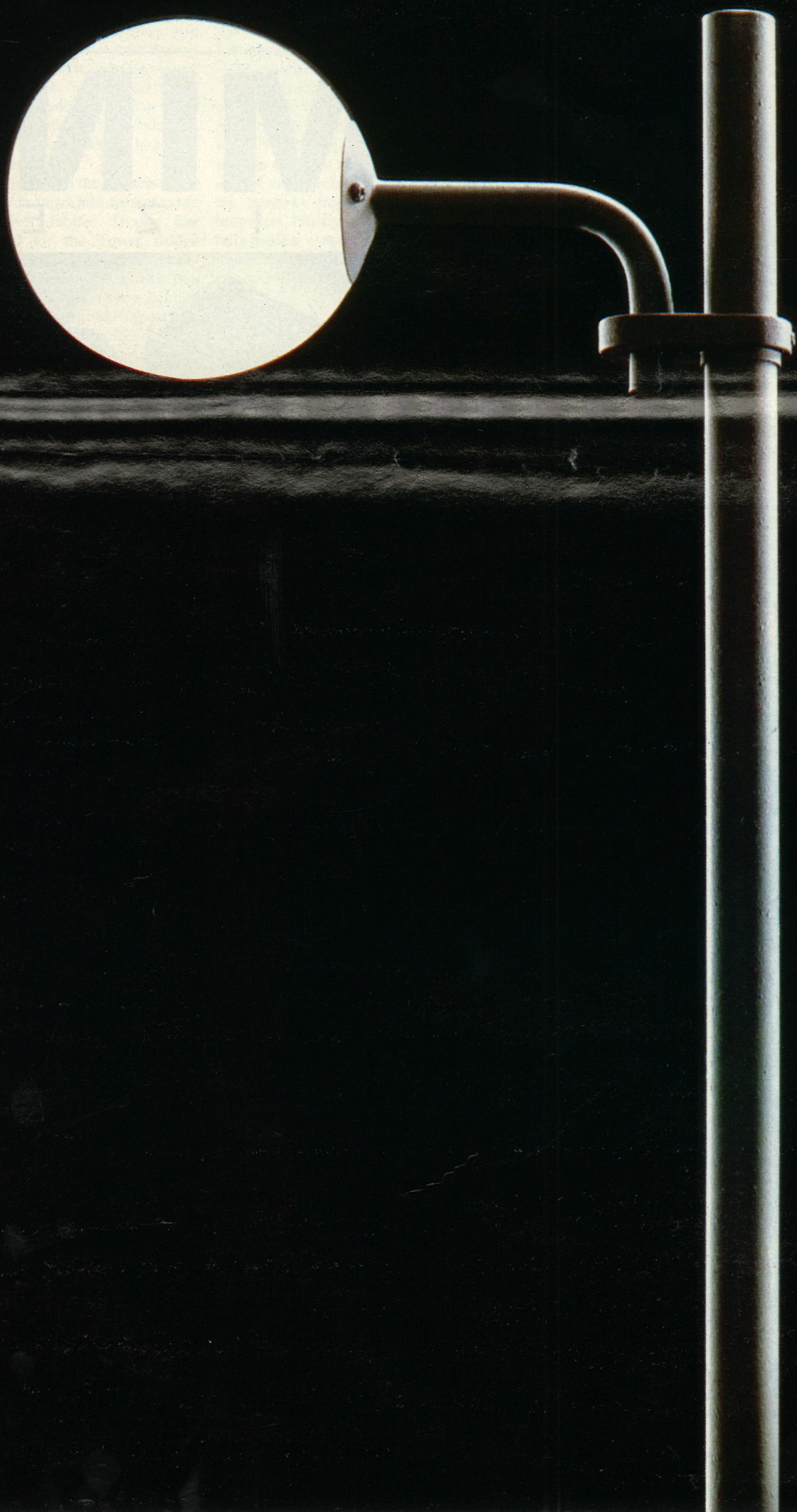
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Disney razzmatazz at the opening of the conference.



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The first demo took place exactly 20 years ago, in the old part of Pavia, northern Italy. It was during the XIV Triennale di Milano festival that public opinion was made aware of the need for a new public lighting system. That made the most of important inner-urban areas.

Today, to combat certain shady doings in some parts of the city, iGuzzini have created Public. An out-

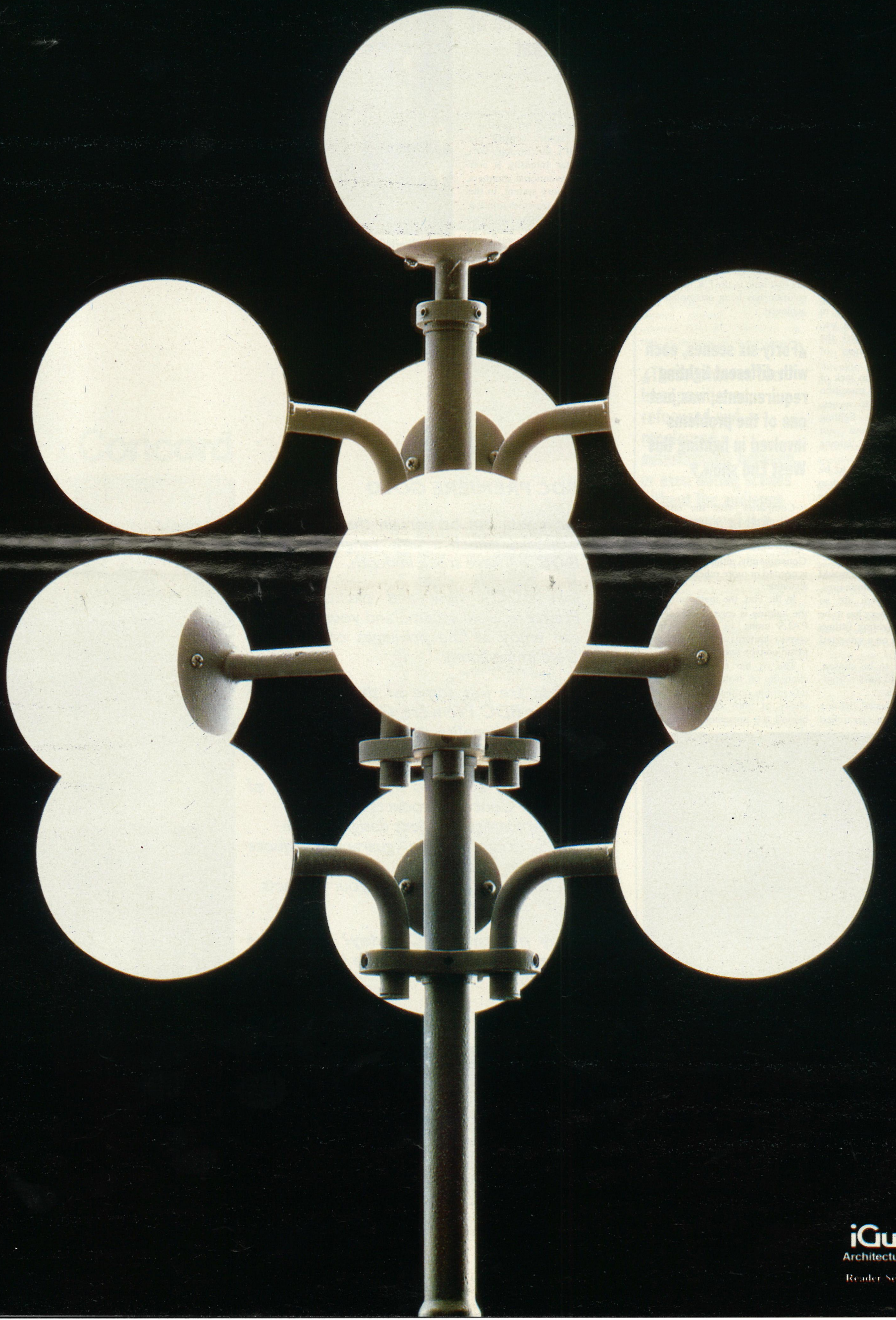
door illumination system for pedestrian and mixed-use zones: crossings, streets, parks and squares.

Public is a new way of managing urban design thanks to poles that allow the mounting of single, or bunches of lamps.

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quired. The materials, production technology and dimensions of Public make it all-weather resistant and vandal-proof.

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# Lighting helps the scene changes

The introduction of robotic lighting marks a major change in stage lighting techniques. An installation at the Prince of Wales theatre is described which uses a small rig that works hard instead of a larger saturated rig.

Andrew Lloyd Webber's latest musical, *Aspects of Love* at the Prince of Wales theatre in London's West End, explores a wide variety of relationships within a family. It has many scene changes and a demanding lighting design brief. Lighting designer, Andrew Bridge, was asked to create an atmosphere of filmic composition; achieve intimate isolation on an open stage; use colours from a water colour palette; help the fluidity of scene changes, and help to create a sense of time passing. In addition, a type of lighting was to be used that "engaged the dramatic 1950s sharpness of crosslight".

The main problem was lack of space. Although a fluid transition was required between 46 scenes, each with different lighting requirements, there was not enough space for a large lighting rig.

All the equipment had to be installed in a space smaller than most sitting rooms. From the safety curtain to the back wall is 7.6m and from the scenic wall to the back wall just under 1m. Tolerance between hung scenery is only 50mm.

Normally, 46 scenes would require about 1000 luminaires, however, because there are so many scenes, the scenery has to be stored where the lighting fittings would usually hang on a saturated grid.

Luminaires had to be chosen, therefore, that could fulfil a number of different roles.

Consultant for special lighting effects, Howard Eaton, researched

automated lighting systems and he and Andrew Bridge selected Strand Lighting's Precision Automated Lighting System (PALS). This allows luminaires to be re-positioned, re-focused and re-coloured automatically and silently between or even during scenes.

The luminaires had to be reliable and precise to a resolution of 1 in 1000 for eight performances each week. This is believed to be the first time in the UK that such a solution has been attempted and achieved.

**4Forty-six scenes, each with different lighting requirements, was just one of the problems involved in lighting this West End show.7**

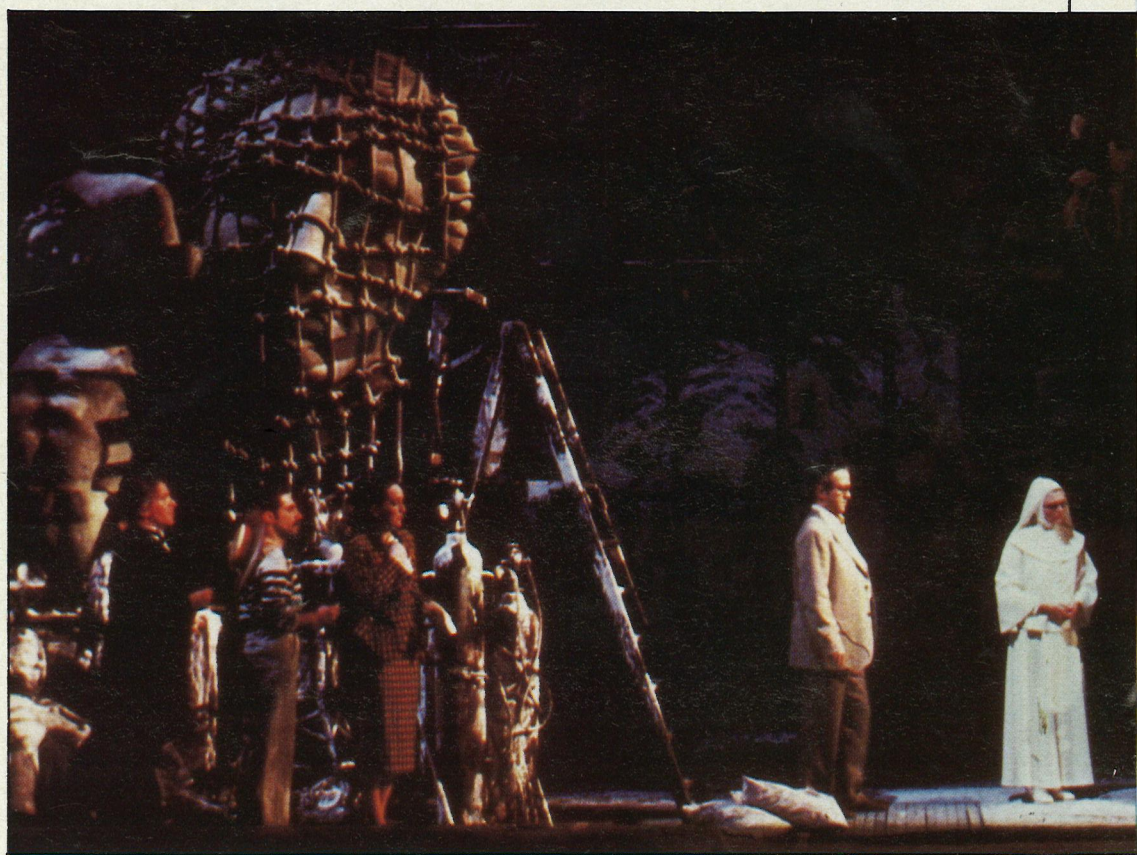
Compared with the conventional method of a large lighting grid and many luminaires, it requires much less setting-up time. Consequently, either less overtime is needed or more rehearsal time is available.

In the end, the main burden of the lighting is carried by only 26 PALS units: 13 Cantata prism convex lanterns and 13 Cadenza prism convex luminaires.

The rig has 65 PALS colour changers on front-of-house Cantata profile spotlights and a multiplicity of units on ladders just behind the proscenium arch, but

the PALS controlled luminaires cover the important acting area.

Separate motors control pan (through 340°), tilt (through 90°), focus and iris. Intensity is controlled by conventional dimmers, while the memory system, in this case a Galaxy 3, provides repeatability for performance of all functions including colour changes by scrollers.



Scene showing a visit to the sculpture studio.

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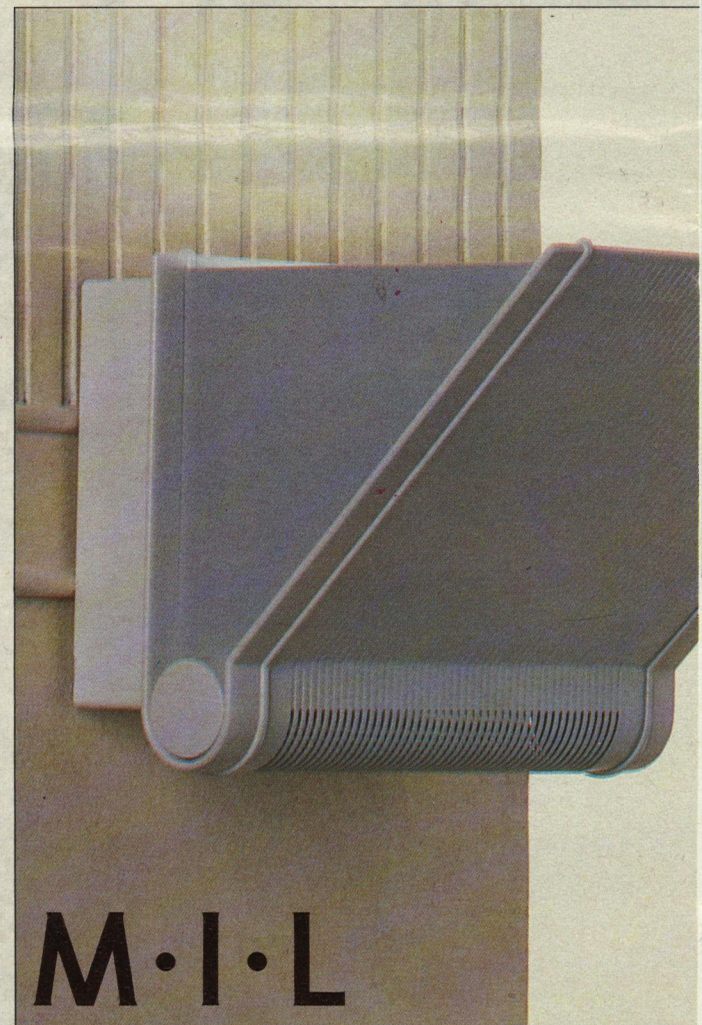
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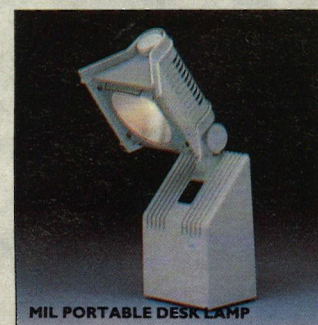
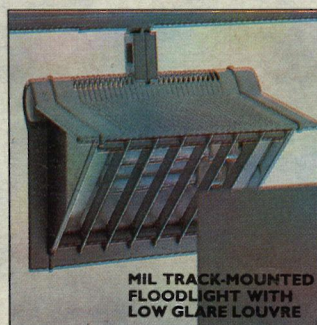
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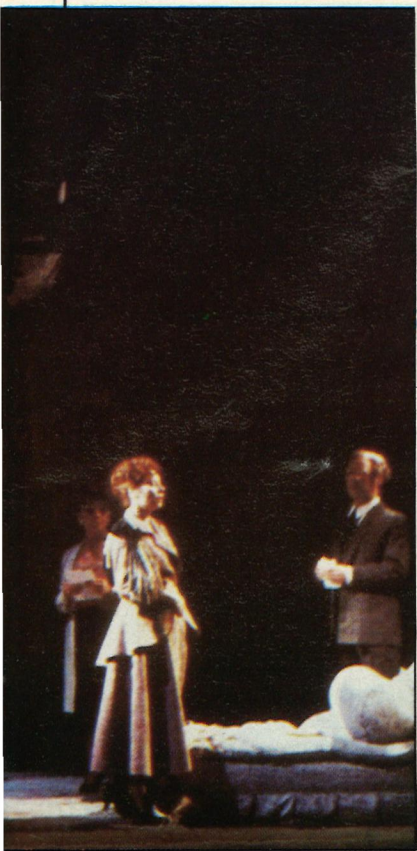
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The circus scene from *Aspects of Love*.

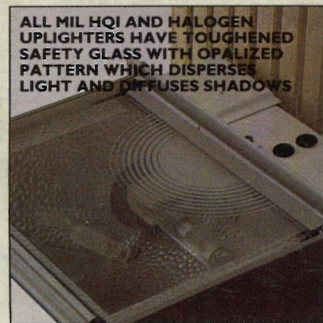
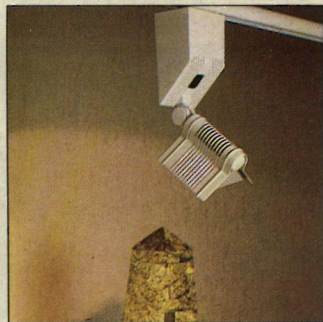
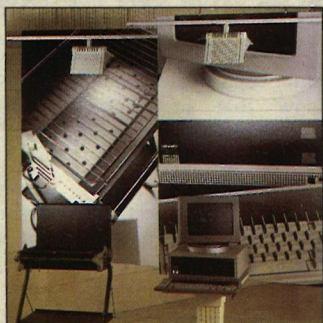
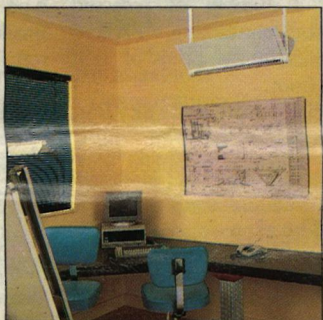
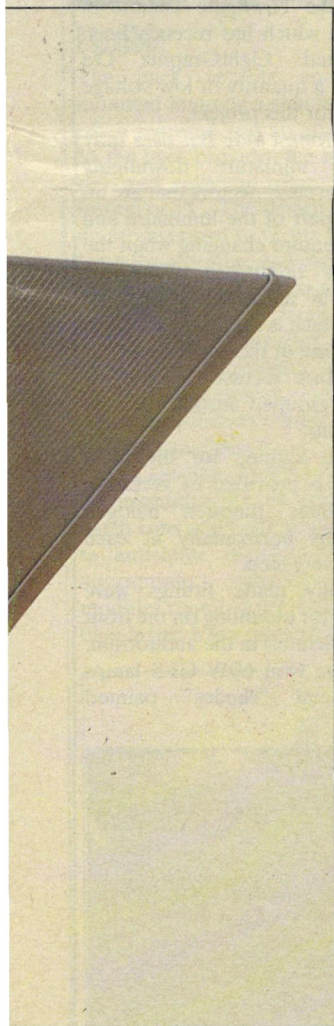






Many points of light on stage, created using only a small lighting rig, give a cosy, intimate atmosphere in the study scene.

## Concord



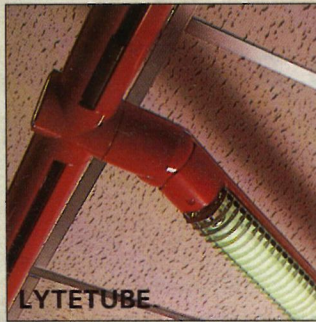
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Although it was not strictly necessary, Andrew Bridge wanted to separate selection of circuits and their lighting levels from the PALS lantern control. A specially adapted IBM PC therefore controls movement of the luminaires.

**These lanterns can be repositioned, refocused and recoloured automatically between or even during scenes without the audience being aware of it.**

Innovative features of the installation include the use of low voltage equipment in very tight spaces to achieve cyclorama lighting and remote, hand held lighting control to reduce the amount of cabling in very difficult locations.

The system allowed the re-use of an old type of theatrical lantern, the prism convex, now updated and able to give a beam width from a tight spot to a wide angle flood of light. Cebachrome film in scrollers is used with these luminaires, together with gobos.

General coverage of the stage with colour scrollers makes available a wide variety of colours. This enables a colour to be chosen that is exactly suited to a particular scene, rather than compromising with just a cool or warm light.

It also helps to achieve good "breakup coverage" to give a feeling of movement and time passing.

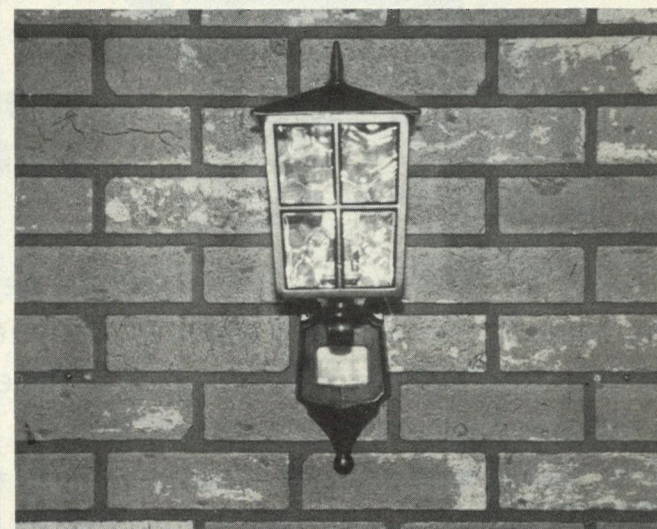
Positioning of the followspots, two on a stage right perch and two on the left catwalk, enables the artists to be visible without the obviousness of "musical" follow-spotting.

Strand had already completed a large PALS installation for German television, but *Aspects of Love* was the first theatre installation.

There had been no opportunity for a quiet trial in a theatre far away from the London critics. In addition, its use in such a heavily publicised Andrew Lloyd Webber show meant that PALS had to perform successfully or news would have spread very quickly and the system could have been damned.

With only 10 weeks to supply, install and programme the system, Strand's sales director, Russell Dunsire, put Alan Luxford, project manager, in charge with one simple instruction: "Just see that it works!" And it does.

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# Lighting for music, dance and drama

A brief look at the lighting in three very different theatres, two in The Netherlands and one in England.

**T**win, but contrasting buildings form the focus of the new cultural centre at The Hague in The Netherlands. One is the famous Netherlands Dance Theatre which is noted for its contemporary ballet productions, the other is the Dr Anton Philips Symphony Hall, home to the Residentie Orchestra which is also

known internationally.

In designing the lighting installation for the concert hall, the objective was to provide every musician with visual comfort on stage. Vertical illuminance on the music stands is 250 lux, which is achieved by surrounding the platform with a ring of some 50 spotlights using 500W tungsten halogen lamps.

Philips Lighting, who designed

the lighting for both buildings, describe the concert platform lighting as, "not very different from floodlighting a football stadium!"

Ceiling lighting in the auditorium is by specially designed luminaires mounted on a spaceframe. These fittings use 80W pressed glass lamps on dimmers and give the effect of a starry sky of more than 400 points



The Symphony Hall, left, and the Dance Theatre, right, in The Hague.



A view of the Symphony Hall as a performance is about to start.

of light.

An equal number of luminaires containing PL compact fluorescent lamps are installed on the spaceframe to give soft indirect light.

Perimeter lighting of the auditorium is provided by dimmer controlled fluorescent lamps concealed behind pelmets above the balconies.

The musicians are said to have dubbed the concert hall, "The best to play in".

Architecturally, the Symphony Hall resembles a giant pink cube surrounded by a black glass "mantle" which houses the foyer and offices. In the space between the cube and the mantle is a lobby the full height of the building.

By night, metal halide floodlights installed on the roof outside direct light through the transparent ceiling of the lobby onto the pink wall of the hall inside the lobby. This lights the lobby and at the same time emphasises the mass of the pink auditorium,

focusing attention on the place where performances are held.

The foyer, which is used by audiences visiting both theatres, has the atmosphere of a cavern or grotto and is mainly lit indirectly using tungsten halogen, wall mounted uplights, though there are also a number of recessed downlights containing PAR56 lamps which throw pools of light onto the floor.

A special feature is the Sky Bar, in the form of an oval, railed platform which is balanced high above the foyer.

## Dance Theatre

In the Dance Theatre, all the lighting focuses attention on the stage. Three gold coloured shields flank each side of the stage and reflect both sound and light. Two tungsten halogen floodlights directed onto each shield create a bright glow that immediately catches the visitor's eye and guides it towards the stage which has a gold coloured curtain.

To reinforce this effect, the interior decoration of the theatre is in dark cobalt blue to absorb any stray light.

The undulating steel ceiling, another feature of the theatre, is matt black and lit only indirectly,

giving a subtle effect of steel waves echoing the movements of the dancers on stage.

Stalls lighting in this auditorium is by 300W PAR56 luminaires.

## Basildon

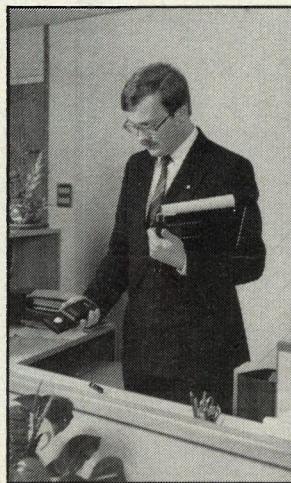
A theatre of a more traditional type is the Towngate Theatre in Basildon which has recently been refurbished. LightGraphix Ltd supplied a quantity of low voltage lighting for this project.

The Prompt Side Bar uses fully recessed miniature downlights with dichroic reflectors that are an integral part of the luminaire and do not require changing when the fitting is re-lamped. They are located in an area of dropped ceiling which is shaped to echo the curving line of the bar counter.

Miniature recessed downlights are also grouped around the tops of columns.

Special lighting for the main staircase is provided by recessing low voltage tungsten halogen downlights horizontally at each side of every step.

Specially made fittings were supplied for mounting on the front of the balconies in the auditorium. These use twin 60W GLS lamps with metal "shades" painted crimson.



The foyer and Sky Bar at the two Dutch theatres.

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MINOLTA



# Up-stage lighting

**Lighting Equipment News** takes a look at fittings which are new to the theatrical lighting range.

**L**ee Colortran are a company well known in film and television lighting. When they recently took the strategic decision to move into the field of theatre lighting it was only after a period of careful research.

Designer Joe Thornley was asked to design a theatre range which would respond to the particular needs of the theatre lighting industry, and which would, therefore, create a significant market share.

Feedback from sales staff showed the need to have the entire range in stock at all times so that orders could be satisfied in full immediately. But satisfying this requirement has horrific cost implications.

However, when products have to be made to order, a delay is inevitable, and short batch runs make little financial sense in manufacturing terms.

The solution adopted was to devise a range which comprised a series of modular parts that could be assembled rapidly to give complete luminaires.

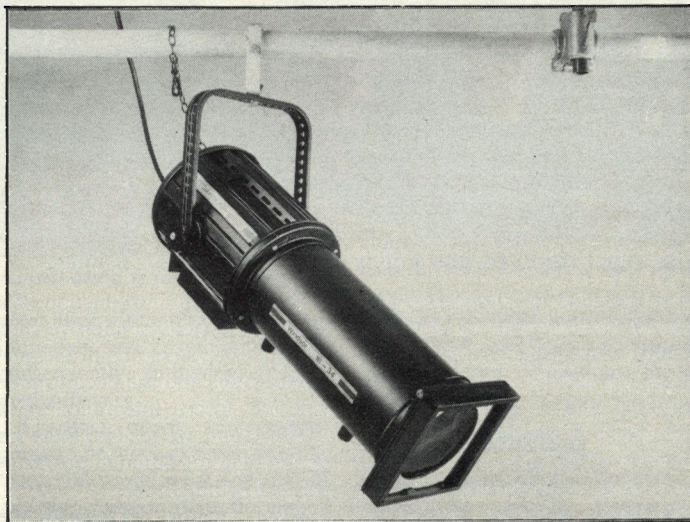
The Windsor range consists of a standard common housing, onto which can be assembled one of a number of different fronts — a fresnel, pebble convex, or a choice of four variable beam profile lens tubes.

## Flexible

The back accepts an axially mounted lamp or a standard back when required and an attachment to the base provides the lampholder and reflector when used as fresnel or PC. The design also has an arrangement to fit the required lamp for a profile, and can change the lampholder position to accept a 1000W or 1200W lamp.

The resulting product range is eight profile luminaires, a fresnel and a pebble convex — giving 10 different luminaires from a set of standard modules.

The separate modules can thus be manufactured in economical batch runs and held at the factory to anticipate requirements. The appropriate combination of modules required are then assembled in just a few minutes to create



Lee Colortran's modular Windsor range.

the luminaire — without the capital investment of finished equipment stock.

The customer has the benefit of rapid delivery and can purchase the appropriate modules to effect instant repairs or change the luminaire mode to any other in the range.

Because the range has been designed to accept lamps at 120, 220 and 240V, the products can be used anywhere in the world. Safety is an important factor too, and the luminaires have been built to the new IEC 598/2/17 European Standard, incorporating both the British and the German VDE and DIN standards.

Other features including a rotating gate for each luminaire, and a mains connector in the handle so that there are no plugs and sockets to break. Each luminaire electrically disconnects automatically when opened. Both fresnel and PC models have front and rear focusing.

From a newcomer to the theatrical lighting business we now turn to CCT, a well established company with a twenty-five year track record. CCT have pioneered the use of aluminium extrusions with their excellent thermal and mechanical characteristics. These form the basis of most of their luminaires.

A new discharge spotlight has been designed to use any hot re-strike single ended (G38) GSI +

MSR or HMI discharge lamp. Constructed of aluminium extrusions, it gives easy access to reflector and lamp. Gate control is by built in, high temperature iris and stripping shutters which have 15 degree rotation.

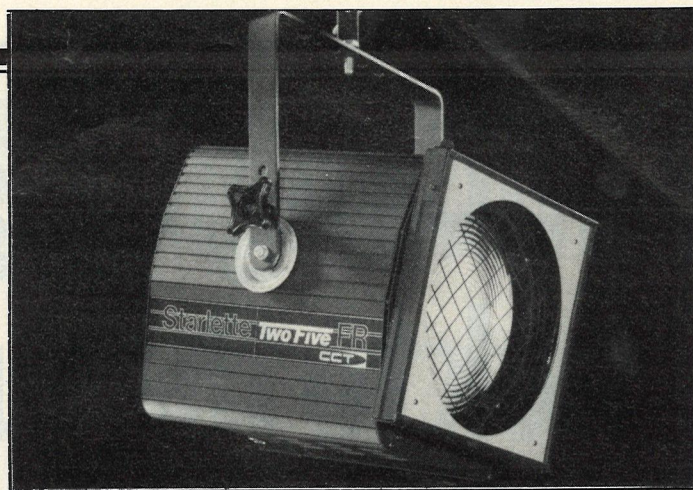
Apart from the ballast accessory all lamp operational controls are incorporated in the lamphouse. Safety interlocks ensure secure internal access. Power on/strike and off controls are built in, together with an elapsed time meter.

Although usable with any standard Silhouette lens tube, special versions of the 18-28 degrees and 9-23 degree zoom lens tube will incorporate those particular features which makes for good and comfortable hands on follow spot operation. These features together with excellent pan tilt and balance controls make the Silhouette discharge follow spot very user friendly.

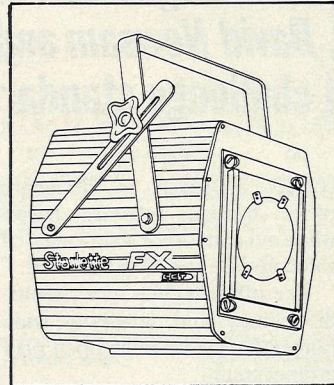
Two, finger operated 5 colour magazine accessories are available depending upon which lens tube is used.

The ballast accessory in addition to power on control has reduced power selection for tick over times.

Also in the professional range is



CCT's Starlette 2500 range and the new FX Effects projector.



the new Starlette FX Effects projector, designed to use the G22

based 2500W CP91 and 2000W CP92 lamps. The projector uses industry standard effects, slides and lenses.

The safety interlocked top door provides access to lamp, reflector all lenses and heat glass. All glass elements are separately mounted on easily removeable plates, which are keyed to ensure correct reassembly.

Lead screw adjustment of lamp position is provided for fine field control. Rigid mounting and locking is achieved with quadrant arms on both sides of the aluminium extrusion body.



## Brillante

It's brilliant. Basic from Prisma created by Italian designer, Roberto Fiorato

Sturdy but stylish, this is a fine Italian outdoor light in black die-cast aluminium. It can be wall mounted or free-standing on posts of varying heights in black extruded aluminium.

The posts carry up to three Basic fittings each of which will cast a sculpted beam of light across its surrounds.

The diffuser is glass. The gasket is polymer and all fluorescent versions come fully wired, complete with capacitor.

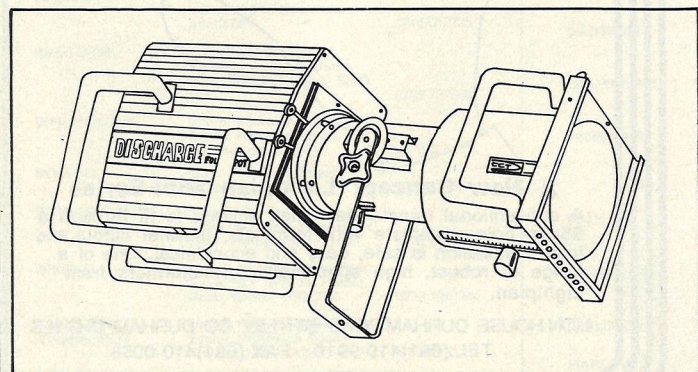
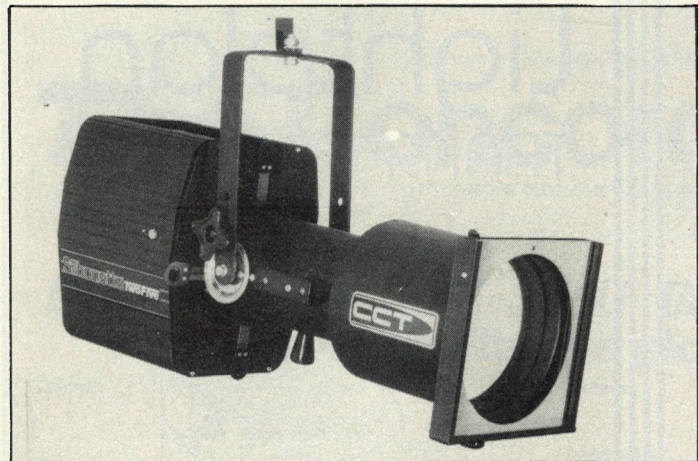
The Prisma range is distinguished by an extensive list of approvals and IP ratings. And every luminaire, interior or exterior, is fully supported by complete technical data.

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# Office lighting — back to the future

Do lighting codes go far enough? Starting with their own office, Tracey Cuddy, David Newsam and Colin Shockledge of Moorlite Electrical challenge standard lighting practice.

This feature discusses the possibility of a new approach to office lighting. We are about to challenge the standard lighting practice and, hopefully, throw light onto areas which have been, up until now, left in the dark.

The question whether or not we, as lighting engineers, are taking the

correct approach to designing office lighting schemes began when our own office was in need of some update and refurbishment.

The office is, like most, multidisciplinary and houses a wide range of activities in an open plan arrangement.

The luminaire arrangement was predetermined. The ceiling con-

sists of a series of coffers, each incorporating one luminaire. Each luminaire accommodated 2 x 1.8m 85W T12 lamps in a stacked arrangement, a 300mm wide single cell low brightness faceted crossblade louvre, and a traditional 3 wire T12 dimming gear tray.

The existing lighting scheme

was designed in compliance with the CIBSE Code of Practice, which states that, "where more than one activity takes place in an interior and a general lighting approach is necessary, then the highest of the design service illuminances recommended for the individual activities should be adopted".



The office space, showing ceiling coffers incorporating lighting.

But, with the introduction of a computer system to improve such activities as stock control, purchase orders and the need to provide for future integration of a CAD system, we realised there we had to plan for different permutations of lighting levels.

After lengthy discussions the route we decided to take to include for these was to introduce variable output ballasts (VOEB), together with our own occupancy related switching system. The lamps were changed to 1.5m 58W T8 in the same arrangement, the coffers were cleaned, and the old louvres replaced with new.

We decided to turn the refurbishment into an on-going survey with three objectives:

- To compare running costs of the existing installation, 2 x 1.8M 85W T12 dimming, with the new installation, 2 x 1.5M 58W T8 VOEB, when operated with and without the switching system.
- To investigate task illuminance, visual comfort and overall individual requirements.
- To identify required illuminance values and permissible contrast ratios.

As the lamps were in a stacked arrangement we decided we would benefit from design and wire as a staggered lamp configuration, ie one set of control gear operating two lamps, one from each adjoining coffer.

In areas where the illumination level was too high, this would allow us to reduce the level by having only one lamp lit per coffer, eliminating the 'missing tooth' effect, and the office area as a whole would appear as one lit space.

Throughout the survey, a period stretching from two weeks before the refurbishment to two weeks after, the kWh reading was being monitored at the same time each day. An 18% reduction in energy had already been achieved with the VOEB set at 100%.

We then decided to begin a switching program and divided the luminaires into various categories: supplementary, access, background and cleaners' category. The supplementary is the top lamp where the lighting can be enhanced if required with the facility of infra-red transmitters and receivers. Access, background and cleaners' are all on the bottom lamp and are controlled at pre-set times via the switchsave system, from a program we devised which best suited the requirements and patterns of the office.

The switching program with the VOEB set at 100% was monitored for a further three weeks achieving, in total, 57% saving in power consumption over the initial installation.

## Levels reset

We then decided to introduce another variable into the survey, altering the levels on the VOEB. Levels can be changed to three settings, 100%, 87% and 70% of light output, by manually adjusting the switch on the VOEB ballast.

Various lamp configurations were tried and tested to ascertain the threshold of illuminance for the various individuals and tasks throughout the office area. A compromise of 87% top lamp, 87% bottom lamp was tried and was found to be fairly acceptable, achieving total savings of 67%.

Unfortunately, problems began to occur with the lowest setting 70% as a consequence of variances in the supply voltage of the technically obsolete VOEB ballast. A superior ballast was necessary to enable us to continue the survey and determine the threshold of illuminances which were still questionable in certain areas where blanket illumination was a 'thing of the past'.

Blanket illumination has generally been the established way of lighting a given office environment, especially that of a multidisciplinary office. In practice this may result in up to 30% more illumination than deemed necessary to provide adequate light levels for the individual and the task in hand.

If we examine the localised individual requirements and concen-

## THE QUALITY of LIGHT

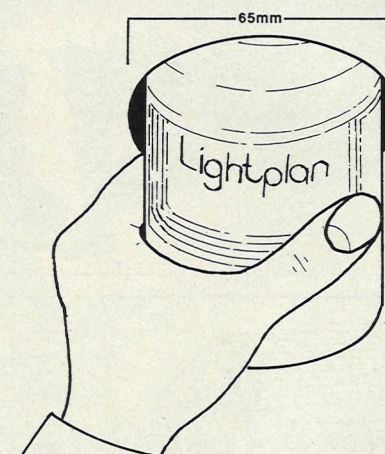
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The office space, showing daylight contribution from the windows.

trate more directly on personal needs to accomplish relevant tasks, the vast areas of lighting design and lighting theory become open to question.

For every person to maintain optimum legibility or clarification of function, a set minimum of light is required. The minimum or 'threshold', can, therefore, be determined by experimenting with a continually falling illumination level until the user is forced to switch on supplementary lighting.

Once this level has been found — and bearing in mind each individual work station is going to be different — then lamp configuration along with lamp switching can be set so that the light output is pitched slightly above the minimum threshold level to provide satisfactory lighting.

### External factors

Of course, external factors will always have an effect, for example, daylight contribution and task variation may result in differing levels of threshold, even that of attitude and the psychological effect of impulse switching 'instant light' can become a hindrance. For example, a person entering an office automatically switches on all lights, regardless of necessity. To overcome this, the installation will be equipped with a superior preset VOEB where both automatic and manual levels can be achieved in conjunction with stepped fading, thereby enabling an end user to switch for more light and ensuring that over a predetermined period, lighting levels gradually return to the threshold level.

As can be expected in an open

plan office with multiple functions, individual task requirements and, consequently, individual lighting demands vary.

Contrast ratios are perhaps going to be more extreme than the 'accepted norm' whatever that is, and the question of uniformity is going to raise its' head. But, is this in any way a drawback, or a disadvantage?

Office environments, lit generally to a mundane guideline, can give a 'big brother is watching you' effect, and create an austere place to work. Perhaps there is a need to introduce warmth, interest and variation to break away from the monotony and blandness of basic ideas which bear little relation to the technology at hand today. The architecture of light within a given space can be aided by contrast ratios and diversity, while maintaining ample task parameters.

Interest can be provided, for example, by highlighting repetitive scalloping noticeable on end walls with the use of varying light sources.

Luminaire design can also affect the environment, helping to avoid the 'missing tooth' effect, mentioned earlier. Uneven illumination can be disconcerting when viewed. The stacked lamp arrangement with one lamp positioned directly above the other, can eliminate the 'missing tooth' effect if one of the lamps is not needed to achieve the threshold. However, many criteria in today's specification may not be permissible with a stacked lamp configuration. Modern offices demand, the now conventional twin lamp side by side, twin cell

luminaire. Technology in the form of the VOEB ballast, together with the theories discussed, should be linked with up-to-date louvre/luminaire design.

We are now producing the latest design in VOEB. The new unit has many extra features, including the ability to be dimmed gradually from one level to another and a facility to be controlled automatically by either a central controller or even by localised manual switching. Dimming is achieved by varying the resistance between two control wires. A separate unit has been produced to accept automatic signals and control the fading of the ballast. The central controller and VOEBs are connected by means of low voltage control wires which signal the ballasts to switch on, off or fade light levels.

Fading occurs over a pre-set time, which has been established using a series of in-house field tests.

### Separate switching

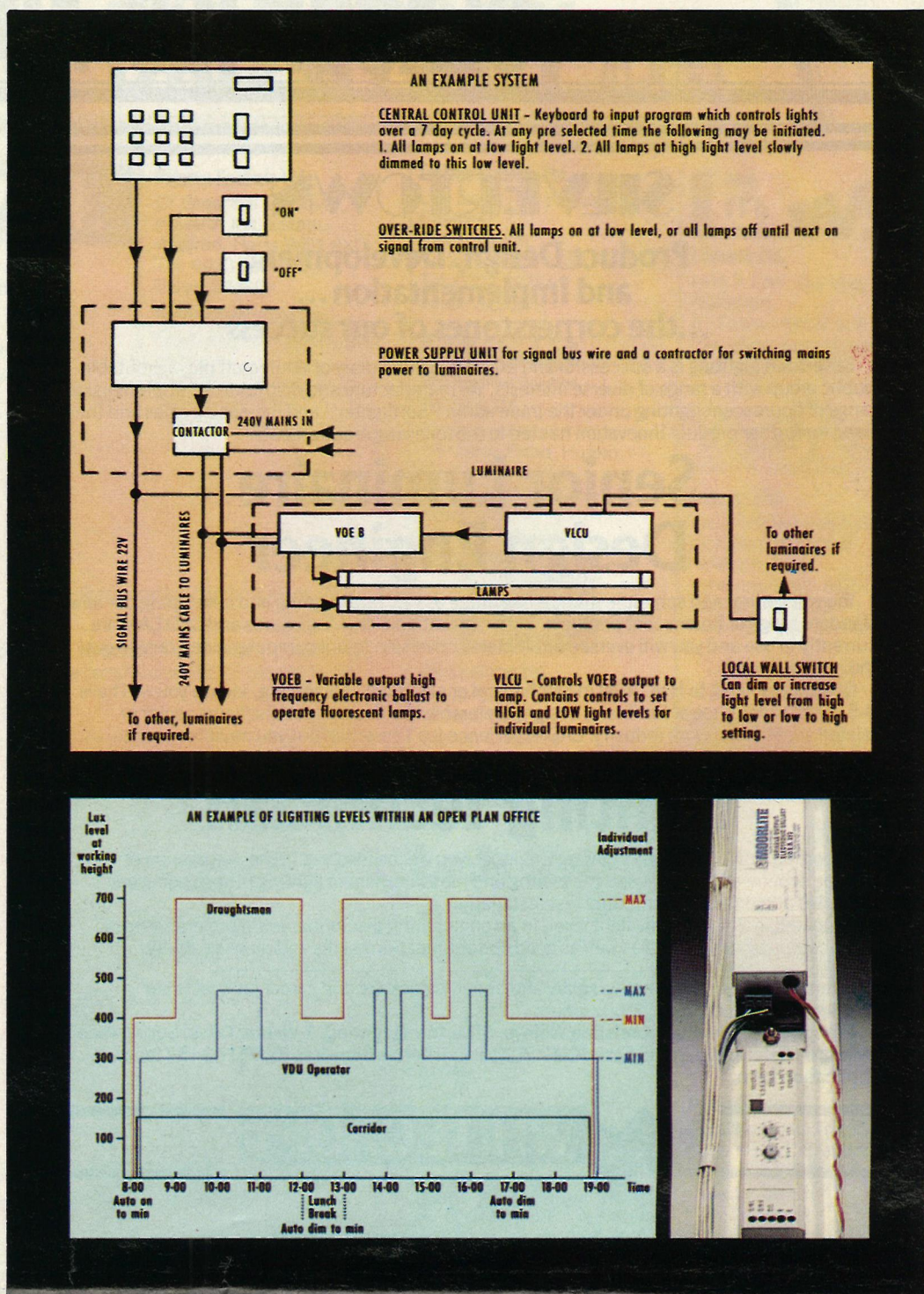
In a twin-lamp, louvred luminaire, each lamp can be separately dimmed or switched to higher levels in unison, thus maintaining uniformity of lumen output from each lamp while gaining the benefits of illuminating the space economically and with design flair. This basically overcomes the problem of the 'missing tooth' effect mentioned earlier.

The new VOEB ballast has a stabilised input and, therefore, is not affected by changes in supply voltage. The dimming range has a minimum light output of 25% and a maximum of 110% and can be set to any level between these two points.

Moreover, the ballast ensures a reduction in light output which results in a proportional reduction in energy consumption. It also utilises the latest high frequency argon-filled lamps achieving best result with smooth flicker-free dimming.

The new unit can also be controlled by means of local switches or even infra-red transmitters. Using these manual controls the operator can switch the luminaire on, off or increase its lumen output. The central controller sends timed signals to switch on, off and dim fittings via the low voltage bus wires.

Future ideas include the use of photocells in conjunction with the VOEB. These could detect task illuminance and signal the ballast



Moorlite's high frequency variable output electronic ballast lighting system.

to increase or decrease the light output.

Automatic and manual control could also be extended to give the user more control over the light output. Of course it may be questionable whether the user should have more control!

In the past, lighting design steered towards individual needs being given by local tungsten light sources. With the advent of fluorescent luminaires in most office installations, the principle of

blanket illumination was adopted and has since remained.

The preface to the CIBSE Code (1984) states: "Lighting is both an art and a science. It can be both decorative and functional although the balance between decoration and function will vary with application. The applications considered in this code are essentially functional. Even so, given the differences in visual work, building form and surface finish that occur, and the different light sources and

luminaires that are available, there is plenty of opportunity for variety in design".

As lighting designers we hold to question why this is not being put into practice?

Perhaps now with advancing technology in electronics and lighting we could return to some of the previous methods of catering for individual needs and go back to the future.

This paper was entered for the 1989 Millar Award sponsored by CIBSE.

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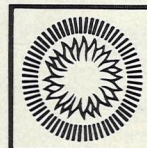
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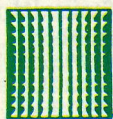
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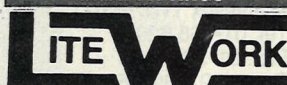
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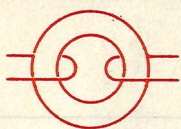
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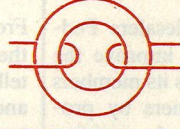
Light Source Electrical  
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## Tridonic

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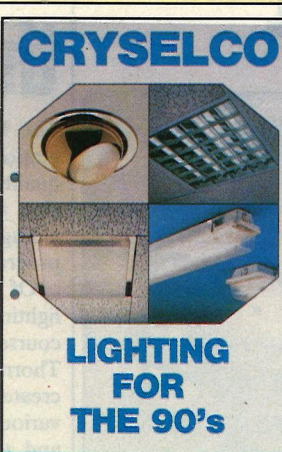
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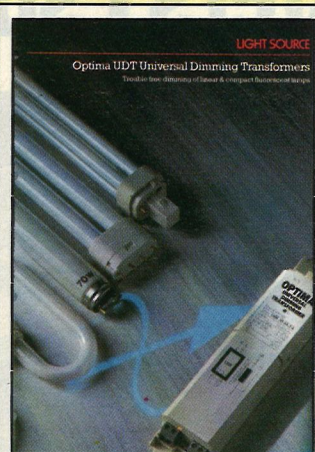
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# CATALOGUE DIRECTORY



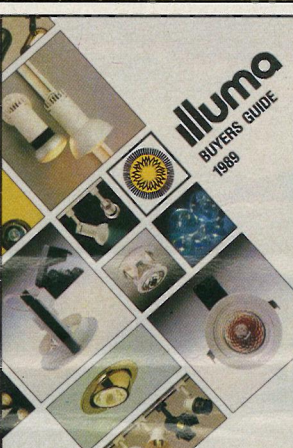
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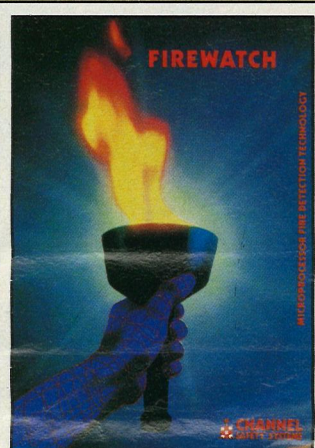
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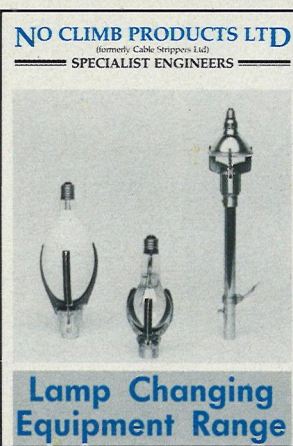
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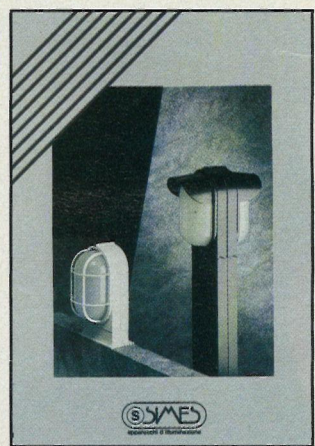
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### Lighting fosters Esprit

Lotus Cars' fastest ever production model, the Lotus Esprit Turbo SE, is currently being prepared in a purpose-built production unit at Hethal, Norfolk. High bay discharge, linear fluorescent and emergency lighting luminaires from Crompton Lighting, a Hawker Siddeley company, provide all essential lighting within the 10m high building.

Lighting levels vary throughout the area according to the stage of production. In the general waiting area, where the body parts are received for assembly, Crompton Pacemaker high bay discharge luminaires using 400W MBF/U mercury lamps, provide approximately 1000 lux. To meet strict quality control requirements the bodywork is carefully examined



for blemishes at every point of assembly and preparation.

In the body finishing and inspection areas the lighting reaches an extremely high level of 2800 lux. This is supplied from twin-lamp Crompack 4 battens fitted with Spectra 84 fluorescent

lamps controlled by high frequency gear. High efficiency semi-specular aluminium reflectors direct the light onto completed body-panels, allowing the hand finishers to identify any minor blemishes that may have been overlooked.

### Training is the key

The Electrical Wholesalers Federation is aiming to improve the quality of the services its members give to their customers by providing a structured training programme.

Of particular interest to the lighting industry is the Lightcraft course set up in partnership with Thorn Lighting. This is designed to create a basic understanding of the various light sources on the market and their application within the general lighting field.

In addition, recognising the importance to a wholesaler of his trade counter, the Federation in collaboration with MEM has set up a new course for trade counter staff. The first of these took place in Belfast in September.

### Home buyers scheme now in operation

From September, home buyers in the South East have been able to tell at a glance which new houses and flats are comprehensively protected against burglary and assault. The 'Secured by Design' scheme, launched in June 1989 has now come fully into operation.

The three month phasing-in period was provided by the police

so that housebuilders could respond to the scheme and apply for police approval for current projects, and already many developers in the South East have successfully made application for 'Secured by design' status or are currently doing so. Provision is made for security lighting under the scheme.



### Going round the mountains

The new A55 Penmaenbach Tunnel in North Wales has been lit by 637 special luminaires from Thorn Lighting.

The new 650m-long tunnel, which forms part of the upgraded North Wales Coast Road, is designed to carry westbound traffic through the Penmaenbach Headland, west of Conwy, Gwynedd.

Basic lighting is provided by twin 58W fluorescent lamps positioned over the centre line of the tunnel. Boost lighting is supplied with 250W and 150W tubular high pressure sodium (SON-T) lamps situated over each entry and exit

and into the tunnel up to the second transition zone. External ambient conditions are matched by the threshold lighting to ensure drivers' vision remains unimpaired on entry to the tunnel.

Maximum illuminance in the threshold zone is approximately 2700 lux to match the brightest level of daylight. This reduces in the first and second transition zones to a level of 200 lux in the interior zone. On dull days and at night threshold lighting levels are reduced accordingly.

The fluorescent luminaires are run on high frequency electronic ballasts.

### IN YOUR NEXT ISSUE

The lighting of hotels and restaurants will be featured in the November issue of *LEN* with descriptions of recent installations.

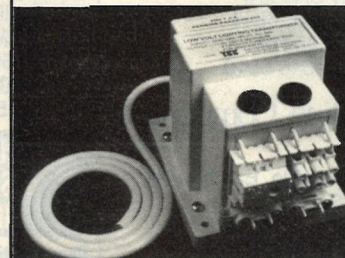
Low voltage lighting comes under the spotlight, with special

emphasis on safety aspects. There will also be a look at some of the luminaires currently available.

The European lighting market is another topic to come under *LEN* scrutiny.

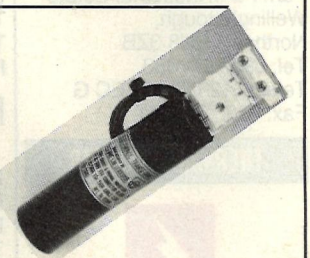
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