

LIGHTING EQUIPMENT NEWS

AUGUST 1993

THE ONLY PUBLICATION DEVOTED TO ALL ASPECTS OF LIGHTING

In brief...

● Professor Dr Johannes Semler has joined the board of directors of the international lighting company, Sylvania Lighting International.

● Thorn Lighting has won two major lighting contracts, worth £1.4 million, at a power station and a hospital in Iran.

● George Ashley-Cound, previously director of design with Light Angles, has set up new company, ABQ, offering lighting design services for touring light shows; 081 866 6202.

● Whitecroft plc announced pre-tax losses of £41.8 million, compared with a restated loss before tax in the previous year of £3.6m.

● Surelux Lighting Ltd has bought the lighting manufacturer DFL Lighting Ltd, saving the jobs of all the company's 41 staff.

● Mr John Reeve has been appointed managing director of DNA Capacitors (UK) Ltd.

● Mr Bob Davis has become the director in charge of research and development and technical sales at Collingwood VLM, accessory and component supplier to the lighting industry.

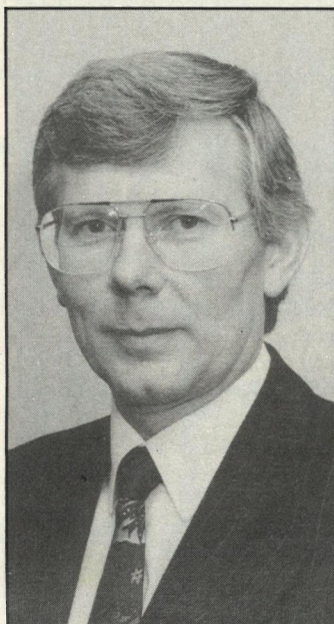
LIF president honoured with OBE

Lighting Industry Federation president Peter FitzGerald has been awarded the OBE for his services to the lighting industry and to economic development in Cornwall.

Mr FitzGerald, honoured in the Queen's Birthday Honours List, has been involved in lighting manufacture since 1963 and has been managing director of FitzGerald Lighting since 1975.

The family company was set up in 1972 with 10 employees. It is now the largest private independent manufacturer of fluorescent lighting in the UK and is one of the largest manufacturers in Cornwall. It currently employs 520 people with a turnover of £22 million and exports some 20% of its output.

Mr FitzGerald has also been involved with economic activities



in Cornwall with the DTI, Training and Enterprise Council movement and more recently as chairman of the Cornwall Economic Forum - a body set up to link county and district councils with the private sector.

Spotlight on winning design

Concord Lighting's Control Spots range of accent and projection lighting is one of six winners in the Consumer and Contract Goods category of the Design Council's British Design Awards.

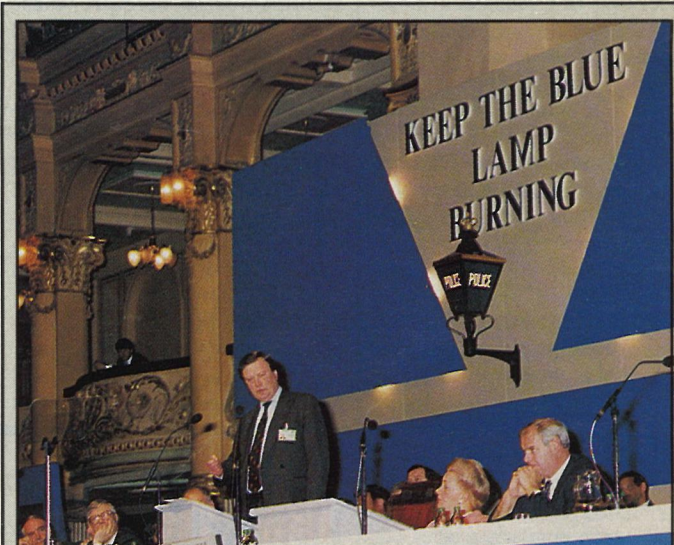
The winning products have to satisfy stringent judging criteria which include design innovation, benefits in manufacturing, effective use of materials and resources, outstanding appearance, ergonomics, ease of use and maintenance, performance, reliability and value for money.

The Concord range encompasses fittings from small low voltage spotlights to large projectors, ranging in price from £35 to £475. The die cast aluminium lights have extra safety features included, such as, for example, the tungsten halogen and metal halide luminaires are glass enclosed to protect users from lamp explosion and ultra violet radiation.

The low voltage spotlight provides four lens angles (from very narrow to very wide), three lamps (50, 70 or 100 watt) and three dimming options, giving 36 options compared with six from the nearest competitor.

The projectors are a basic unit which can be built up by the addition of different lenses and heads to give solutions to different lighting problems. For example, the framing head is used to produce a three or four sided 'frame' for an object, while the iris head gives a variable circle of light.

All of the winners of the Consumer Products and Contract Goods category will be on display in the British Design Awards Gallery at the Design Council, Haymarket, London, until 14 November 1993.



The police force's corporate image was in full view at the recent Police Federation's annual conference in Blackpool where a blue lantern supplied by D W Windsor Ltd highlighted the phrase 'Keep the blue lamp burning'.

Recently the Metropolitan Police commissioned heritage lantern manufacturer D W Windsor to design a traditional blue lamp to be installed at 91 police stations in London. This follows a return to the traditional image after research showed that the public associated the lanterns with the police and found it to be a reassuring symbol. The lantern has a strong British heritage, immortalised in the 1940's film *The Blue Lamp* and *Dixon of Dock Green*.

MP calls for improved lighting finance

Joan Walley, MP, has warned the Department of Transport of the continuing financial difficulties faced by local authorities in replacing obsolete and dangerous lighting units.

The Labour MP for Stoke on Trent North and member of the British Parliamentary Lighting Group said that such columns were inefficient in energy consumption and light output, and were also structurally unsafe.

Ms Walley called for the impending changes in the Transport Policies and Programme system to incorporate a more adequate cash injection with guidance on how local authorities should apply for additional funding.

In her petition Ms Walley highlighted the fact that 40% of lighting units in the UK are more than

30 years old and a survey carried out two years ago had concluded that 15-20% of all lighting units needed replacing urgently over the next five years.

She also said that the Government-backed urban renewal programme rightly addressed crime prevention, security and environmental enhancement, yet the benefits of improved lighting to the community from scheduled lamp replacement had still to achieve financial recognition from Government.

She concluded by calling for a mechanism to introduce extra funding to assuage community concerns over the issues of security, crime prevention, personal safety, and environmental enhancement and reduce road casualties by one third before the year 2000.



Esprit with GE

GE Lighting's Twist and Lock (TAL) 50 lamps have been installed in a newly opened Esprit store in the Bentalls Centre in Kingston. Twist and Lock describes the movement required to mount the lamp in the luminaire, whereby the lamp base is guided into position and the pillars naturally find the keyhole entries. This is said to obviate the risk of partial electrical contact, as contact can only be made once a mechanical lock is achieved.

The lamps are mounted in ARC low glare downlighters, manufactured by Light FX and specified by project designers Hosker Moore and Kent.

Reader Service No 150

Bernlite wins Mazda business

GE Lighting has signed an agreement with lighting distributor Bernlite Ltd, for distribution of its Mazda branded lamps and light

fittings to the retail trade in south London and the southern Home Counties. Bernlite becomes the 10th UK Mazda distributor.

For Bernlite, the new agree-

ment opens up a new opportunity for supplying lamps to the retail trade - until now the company has supplied to wholesalers. Bernlite has set up a new division to handle the new retail business.

Reader Service No 151

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Reader Service No. 1

NEWS

Longlife bulbs

Following the report in the May issue of Which? magazine on the life of the Litetronics Super Service lamp (see LEN June 1993, page 1), the UK distributor of the lamp, the Greenstock Lamp Company, has issued a statement in response.

Which? reported that the lamps achieved less than 5000 hours life under test, not the 16,000 hours claimed for the lamp. According to Greenstock, however; "Litetronics International has now confirmed that the lamps tested were from a faulty production batch manufactured by the contracted European factory, dating back to October 1989, and which were assembled with 5000 hour filaments". The company goes on to explain that it had been thought all of the lamps had been recalled soon after production and invites any customers with lamps branded M10 on the glass bulb to return them to the Greenstock Lamp Company for replacement.

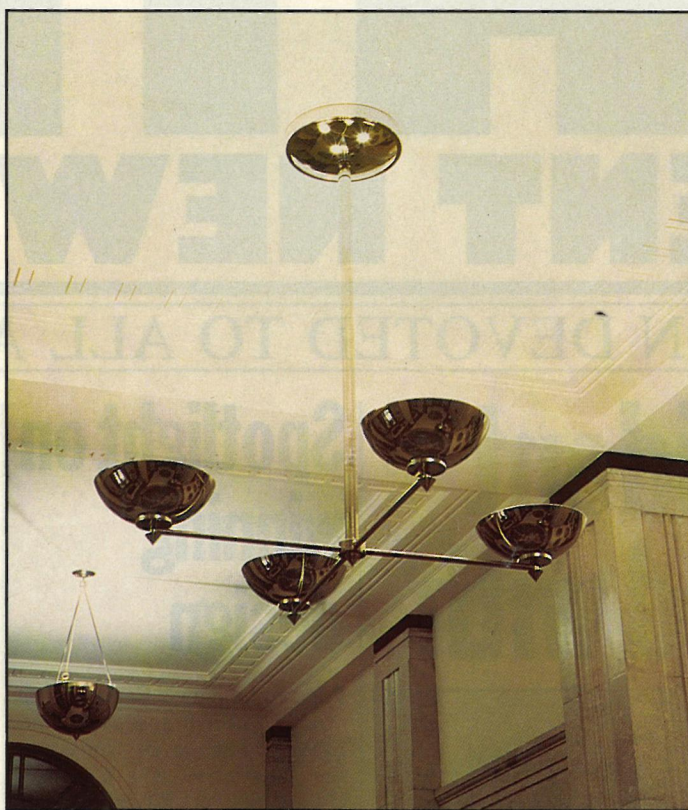
"The Litetronics Super Service Lamp has been manufactured for 22 years by Litetronics International which regularly carries out life tests, as any reputable manufacturer, and independent test reports confirm that the average life of the Super Service Lamp is 16,000 hours. Independent life testing is also carried out regularly in the UK at approved test houses to ensure life claims are being met," continues the statement.

The 16,000 hour Super Service lamp is guaranteed for one year in commercial use and ten years in domestic use.

Bettering battens at the bank

At the Bank of England's building at 44 Cheapside, London, the grandeur of the entrance halls was somewhat marred by the use of batten fluorescent luminaires on the ceilings. During the recent refurbishment, therefore, these were replaced by suspended uplighters, specially manufactured by Carvill Lighting.

Two designs of luminaire were used, quad pendants housing four 70W HQI lamps with control gear located in the ceiling rose and single 450mm OD hemispherical luminaires housing a 150W HQI lamp, with control gear mounted within the dish. Both types of luminaires were manufactured in solid brass, polished to a mirror finish and nickel plated. **Reader Service No 199**



Impressive Lightex line-up

Energy conservation and urban sky glow are just two topics among many under discussion at the three day conference running alongside the Lightex '93 exhibition in Bournemouth in September.

Dr Duco Schreuder from the Netherlands Institute for Road Safety Research will present a paper on Tuesday the 14th on assessment of urban sky glow. Also on that day will be presenta-

tions on the performance of discharge lamps, geographical information systems for lighting management, and lighting calculations.

On Wednesday the 15th Dr Twinn MP will introduce a paper from the British Parliamentary Lighting Group called 'Police officers and lighting engineers - partners in crime', offering the opportunity to hear about current thinking on lighting in Westminster.

Wednesday will also see the introduction of a code of practice on the use of lasers and other fes-

sive lighting from the Institution of Lighting Engineers.

Subjects covered on Thursday 16th will be lighting of pedestrian crossings, an appraisal of electricity supply arrangements for road lighting, and a talk on risk assessment and electricity at work by two speakers from the Health and Safety Executive.

During the course of the Lightex conference, awards will be presented to the winners of the

New standards

The British Standards Institute has published several new standards, including BS 7654:1993 on street lighting fuses.

BS 7654 specifies requirements for single phase street lighting fuses of 25A for the protection of power supplies to highway lighting and street furniture. It costs £41.60.

Also published is a new standard on electromagnetic compatibility, BS EN 61000, giving general guidance on harmonics and interharmonics measurements and instrumentation, for power supply systems and equipment connected thereto. Copies cost £54.20.

Also published are BS 7656 covering low voltage pole-mounting fuses and BS EN 55015 covering limits and methods of measurement of radio disturbance characteristics of electrical lighting. Copies of all the standards are available from BSI, Linford Wood, Milton Keynes, MK14 6LE.

Philips floodlighting competition and also to the outstanding student of the year from among those who have attended the Institution of Lighting Engineers' lighting technology residential courses.

Details of both the conference and the exhibition are available from the Institution of Lighting Engineers, 9 Lawford Road, Rugby CV21 2DZ. Tel: 0788 576492.

LETTERS

A SAD issue

Dear Sir

Following your correspondence about SAD (Seasonal Affective Disorder) in the June 1993 issue, I thought I should clarify several points.

In fact, the standard figure for SAD sufferers in the UK is 500,000, with a total of up to 10 million people who could benefit from bright light in winter. I have observed some scepticism about the reality of the condition from people in the industry. Let me tell them through your pages that SAD is an officially recognised and classified condition, with the most damaging effects on its sufferers. The NHS has six specialist clinics for SAD and in the USA insurers routinely pay for the treatment.

As regards so-called full spectrum light, in fact the senior medics now suggest that it should be avoided (because of the the risk from the UV content, small though it is). The essential is bright light - at least 2500 lux.

If any LEN readers want to know more I would be glad to help. My company, Outside In (Tel:0954 211955) is the UK's leading supplier of bright light devices and we keep a substantial library of information which I would be happy to share with interested persons.

Stephen B Hayes
Managing Director
Outside In

Crompton Lighting awarded British Driver Damon Hill with the Crompton Lighting Driver of the Day award at this year's British Grand Prix held at Silverstone. Hopes were high for Damon Hill as he went into the lead almost immediately and led the race until the 42nd lap when his engine failed, giving victory to fellow team member Alain Prost.

Not only did Hill keep spectators on the edge of their seats for the majority of the race he also broke Nigel Mansell's lap record with an electrifying one minute 22.51 second lap.



DIARY

SEPTEMBER

12-15

The Plasa Light and Sound Show at Earls Court, London. Organised by Philbeach Events. Exhibition for lighting, sound and special effects technology for live entertainment, TV and film sectors. It now also caters for theme parks and interior design etc. Details from 071 370 8215.

14-16

Lightex '93 - The Latest in Lighting Technology. Biennial exhibition organised by the Institution of Lighting Engineers. Over 180 stands catering for consultants, contractors, wholesalers, security firms, architects, specifiers etc. Details from 0788 576492.

20-24

Lighting Technology (part one). Residential course in Birmingham organised by the Institution of Lighting Engineers. Details from Judy Park 0788 576492.

OCTOBER

6

Introduction to BS 5750. Half-day seminar in London organised by the IEEIE. Details from 071-836 3357.

7-10

Elenex - Turkey '93. Turkey's premier show for the electrical and electronic engineering industry. Details from Philip McKean, Overseas Exhibition Services Ltd, 071-486 1951.

18

Should Britain have an energy policy? Public lecture organised by the IEEIE with Colin Robertson, professor of economics at the University of Surrey. Details from 071-836 3357.

18-22

Lighting Technology (part two). Residential course in Wakefield organised by the Institution of Lighting Engineers. Details from Judy Park 0788 576492.

26

Total Quality Management. Seminar in London organised by the IEEIE. Details from 071-836 3357.

26-28

Electrical Products '93. London-based biennial show for the electrotechnical industry, including a sub-show, Light Fair. Details from Andrew Castle, IMI Exhibitions Ltd, 0732 359990.

NOVEMBER

1-3

Clima 2000. CIBSE-organised event with 50 papers being presented covering various building services topics. Details from CIBSE 081-675 5211.

9

Laser Safety in Entertainment and Display. Birmingham seminar by Sira Communications. Details from Isobel Smith 081-467 2636 ext 215.

RAM

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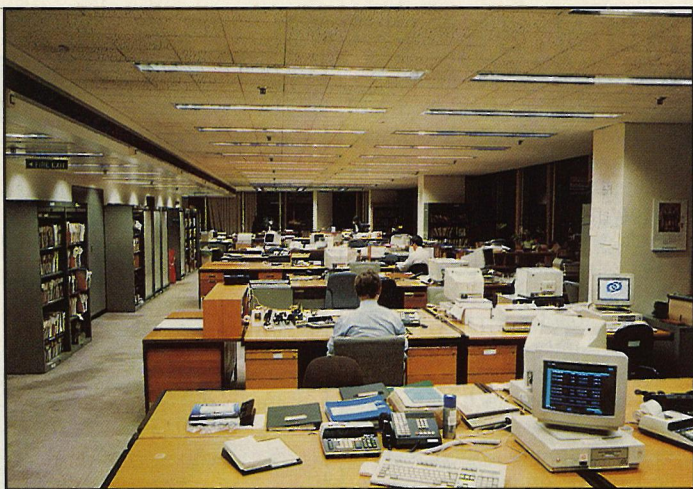
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CASE STUDIES

Banking on improved lighting

The multi-use office areas of National Westminster Bank's Kings Cross House were originally lit with single runs of recessed modular fluorescent fittings using ageing semi-resonant start wirewound control gear, old T12 tubes and prismatic controllers. Although the original installation gave adequate lighting levels, the bank needed a lighting scheme that was capable of effecting a major saving in running costs and fully meet the needs of the new EC workplace directive. Furthermore, a key restriction was that the refurbishment work could only be completed out of hours, with workstations remaining usable at all office times.

Nat West, together with Thorn



Lighting and Parkersell devised a structured refurbishment programme whereby the existing fittings were systematically upgraded to high frequency operation with T8 GE Polylux 4000 tubes and low brightness Category 2 louvres. This has resulted in an improved visual environ-

ment for VDT work, a slightly increased illuminance level and a 68% saving in electrical load, down from 553kW to 177kW.

This latter benefit was achieved by the supply of 3732 specially pre-wired high frequency gear trays. Installation of the new gear trays throughout the building

complex was straightforward, as no major changes were necessary to the existing light fitting bodies.

Alterations were basically confined to the removal of the prismatic panels, lamps and original gear trays, moving the mains cable entry point and drilling and fixing the new gear trays. Electrical connection was by means of a simple plug and socket arrangement to a new mains fused terminal block.

Finally the replacement lamp was inserted and the low brightness louvre secured. Apart from improving the light output ratio of the luminaire to give 500 lux in two years time, the accurate louvre permits effective control of light distribution.

In addition, over 300 of the refurbished luminaires were fitted with integrated emergency lighting designed to meet BS5226.

Reader Service No 152



Sent to Coventry

Coventry's biggest new home furnishing superstore opened its doors with a complete ceiling and lighting package supplied by the SAS Group. The CRS Home-world store has Trucell open cell ceilings in the main sales area with Program Lighting modular fluorescent luminaires fully integrating into the system and, to add display flair, Vivaldi low voltage spotlights have been installed to provide the highlighting solution.

To complement this, Temple Cox Nicholls Architects and M A

Design, along with SAS, designed a barrel vault ceiling through the main central walkway. To create a feature of the lighting, the designers worked closely with Program to achieve a dramatic effect using a combination of metal halide downlights with feature glass and specifically designed spotlights which co-ordinate with the main sales area.

"Having used SAS's integrated ceilings and lighting system previously, we had no hesitation in calling upon their services, products and expertise yet again," commented store manager Ken Hill.

Reader Service No 153



Pride and joy

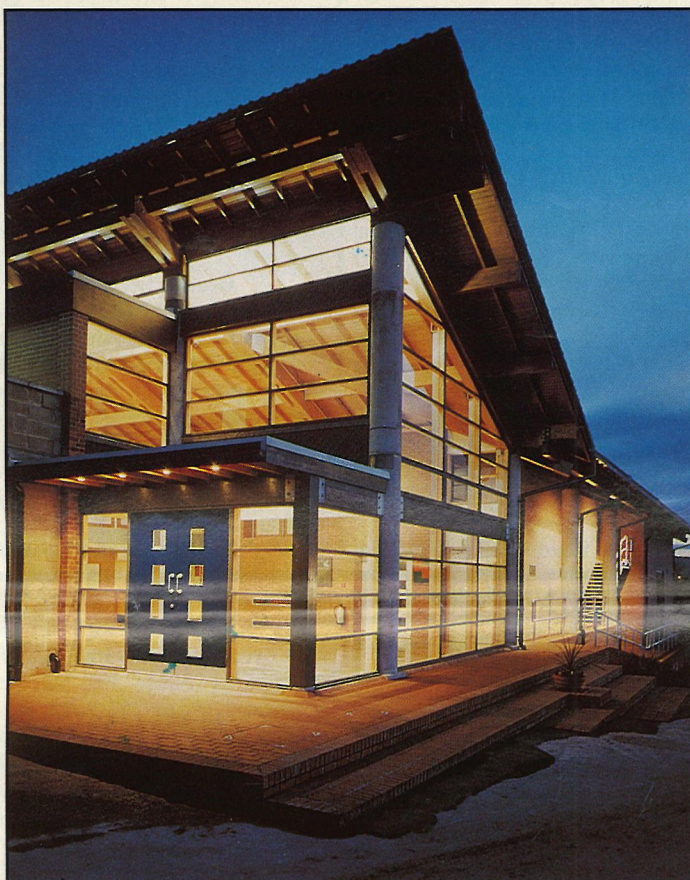
The Pride & Joy chain of mother and toddler retail outlets, part of the Sears Group, seeks to achieve a warm and friendly ambience within its stores. Part of this is achieved with the lighting, of course, and Ideas Design Consultants, working to a brief from the Sears Group, specified the Micro-lights Pharos fittings to provide ambient lighting. These fittings use compact fluorescent lamps with a 2700K colour temperature

to give a soft warm light.

Accent lighting is provided by low voltage Trunky 1 adjustable fittings, while the perimeter areas use Heterolux compact fluorescent asymmetric wall washers. These are said to give bright, even illumination when spaced at 1200mm.

According to Microlights, this arrangement has provided substantial energy savings compared to other lighting schemes and the cool running lamps reduce the air conditioning load.

Reader Service No 154



A leap forward

A new 660 seat theatre at Dean Close School is said to represent a great leap forward in the provision of english, music and drama at the school. Its lighting was always seen as a key issue and involved Concord Lighting in its design.

The main elevations are washed with light both externally and internally where the glass walls meet the brick faces. The foyer roof, formed with mono-pitch glulam rafters, are lit by MIL uplighters, while the bridge and balcony soffits are lit by

Torch 75 low voltage fittings. Around the perimeter, Tiller and Mura wallwashers are used.

In the auditorium, Tiller fittings with barn doors on Tubetrack are fixed at balcony and catwalk levels and each circuit can be dimmed from the main control desk. Low level light to the aisles and external steps comes from recessed Bega fittings.

"We like to use Concord Lighting because we can usually find in their range a suitable fitting reflecting a reliable level of design and execution," said project architect Philip Singleton.

Reader Service No 155

Knock, knock

The small village of Knock in the west of Ireland is famous for its international airport and for the reason that the airport was built. Just over 100 years ago a dozen or so Knock residents said they had seen an apparition of the Virgin Mary, standing with St John and St Joseph, at the west end of Knock church, praying to an altar on which stood a lamb, surrounded by angels. Some years ago, this scene was captured in an alabaster tableau in a specially designed building on the spot of the original apparition.

Equation Lighting Design Ltd was asked to provide a lighting scheme for the tableau, capable

of addressing the wide range of activities which take place within the building. The finished installation provides a number of pre-set lighting scenes, varying from lighting for the Mass and lighting for contemplation and prayer. It also includes a discreet overnight setting, enabling passers-by to see the tableau even when the shrine is closed for the night.

Light sources are predominantly tungsten halogen and there is a combination of theatrical and commercial projectors. As the electrical supply is subject to failure in the west of Ireland, there is also an emergency lighting installation which maintains a full lighting scene for the tableau.

Reader Service No 156

COMMENT

Tarting up the home

There is one particular lighting industry notable who, whenever I see him, takes great pleasure in bending my ear about various pet topics of his. One of these hobby horses is the dearth of imaginative lighting schemes in the home. This is a subject with which I have to agree, while admitting that until I came into contact with this industry I was totally unaware of many of the options available for tarting up the home.

I suspect that this is the root of the problem – the average punter does not even get to see the incredible range of designs available. Admittedly, they are on open display in many of the public and commercial buildings that many of us visit – but it is only people who are already tuned in to interior design that notice the light fittings in buildings. Most of us don't even think about lighting until it's time to go for shopping for lights. Furthermore, the choice available in the main retail outlets is very limited and much of it is so ornate as to induce instant vomiting at first sight of it.

It may well be, then, that the greater awareness is for these retailers to offer a wider range of designs. But one can understand that they may be wary of stocking up on unknowns when they know they can still shift the old favourites.

It occurs to me that the European Lightshow, with its mix of commercial and decorative lighting, may help any move towards a better mix. This year's show, with its LIF involvement, saw the presence of more commercial lighting companies. LEN also knows of a number of companies that were waiting to see how the 1993 show went before deciding whether to exhibit at the 1994 show. All the indications are that next year's show will see an increase in the number of commercial lighting companies exhibiting.

Assuming the more decorative companies continue to attract their customers to the show, and there's no reason why they shouldn't, one must suppose that these customers will also take a gander at some of the commercial lighting stands. This, in turn, could lead them to broaden the stocks available for their own customers.

This may all seem like a flight of fancy but we know that one commercial lighting company sold two of its low bay fittings, for use in a domestic setting, at the Hannover Fair.

Paul Haddlesey

PAUL HADDLESEY, EDITOR

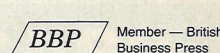
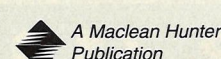
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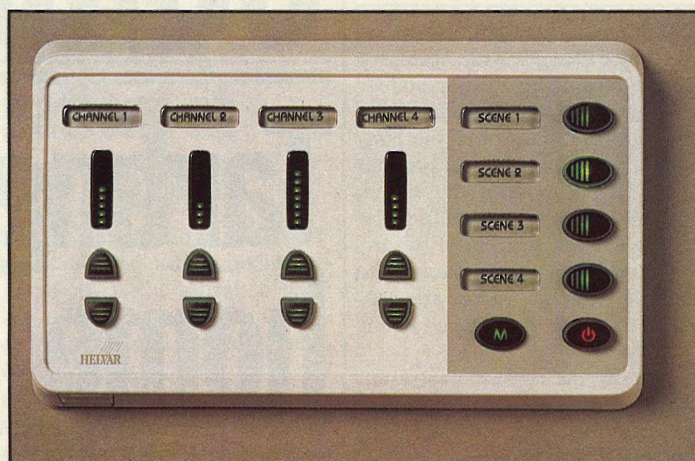
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NEW PRODUCTS

Setting the mood

'Helvar Vision' - a control system for 'mood' lighting - enables the individual control of four lighting channels, combinations of which can be stored as 'scenes' and recalled by pushing a button.

The four channels are programmed and controlled from a master panel which indicates the light levels by LED bar graphs. The scenes can be recalled from either the master panel or from up to four dimmer units connected to the master panel and situated at convenient locations.



'Mimo' is a single channel, intelligent lighting system designed specifically with energy saving in mind, making it suitable for most commercial lighting requirements where the emphasis

is on energy efficiency, both in terms of cost and environmental issues. Suitable for both new build and refurbishment projects, typical applications include offices, schools, factories, airports and shopping centres.

The system consists of a wall mounted central unit with a rotating potentiometer which can be remotely controlled by strategically placed light sensors. By continuously monitoring the maximum and minimum levels of light set on the control unit, the sensors will react to natural light changes and adjust the power to the light fittings to maintain a constant light level.

Mimo can also incorporate an advanced presence sensor enabling the lighting system to 'know' if someone is in the room and act accordingly by switching the lights on or off. When used in conjunction with Helvar's high frequency electronic ballasts, the Mimo intelligent lighting system can offer increased light quality with up to 60% energy savings, claims the company.

Reader Service No 200

In brief...

● Telemecanique has introduced the XC range of electromechanical limit switches which conform to standard IEC 947-5-1. Common to the entire range is a snap-action positive break contact block with a double contact bridge designed specifically for use in low-voltage applications.

Reader Service No 201

● The Safebreak from Amba Lamps is a shatter-proof fluorescent tube range which eliminates any risk of glass particles being showered around a room should the lamp be dropped or broken, claims the company. Standard fluorescent tubes are coated with a plastic approved by the FDA in the United States, forming a tough outer skin which, it is claimed, will not break or fracture should the lamp be dropped.

Reader Service No 202

● ILP Electronics has introduced a new slim-line standard toroidal transformer. It is only 62mm in diameter and is designed to fit virtually all downlight and eye-ball low voltage light fittings. There are three models within the SL range with ratings of 20, 35 and 50VA and designed for applications where individual fittings require individual transformers.

Reader Service No 203

● Environmental Lighting has launched a new version of the Collesque Electronic Spotlight. It incorporates a compact lightweight integral 50VA electronic transformer, allowing for the use of a 50W dichroic reflector lamp without the need for a remote transformer.

Reader Service No 204

AC mains stabiliser

The AC mains stabiliser (ACS1) has been introduced by Optron to extend the life of expensive low-voltage lamps and conventional tungsten filament bulbs. The company claims that even a small increase in supply voltage to a filament lamp reduces its life dra-

matically.

The ACS1 is factory set to limit overloading to within 2% of the required voltage. This may be between 220 and 250 volts AC. Lamps may 'blow' when switched on due to thermal shock, so to help overcome this the ACS1 automatically provides a 'soft start' feature which gently raises the supply voltage in just under one second.

Reader Service No 205

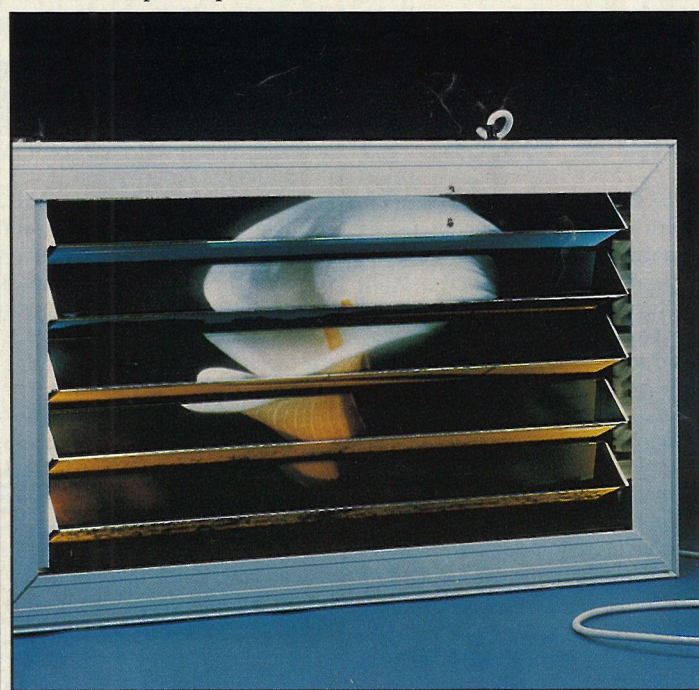
Back-lit rotating displays

A range of bright internally-lit rotating displays from Powergraphics Displays provide an intrusive display vehicle for point-of-sale areas, exhibitions or receptions. High level uniform illumination is achieved using light pipes of 3M optical lighting film. Minute prisms profiled onto

one side of the film promote total integral reflection, enabling the light pipes to distribute light across the display panel evenly.

The displays can be tailor-made from as small as A4 to very large displays. Each display incorporates three moving images, offering retailers the opportunity to 'sell on' the advertising area space to three separate manufacturers.

Reader Service No 206



High performance spotlights

Expostar is a new spotlight from Lumiance which offers many of the design and performance features of exclusive high performance accent lighting at an economical price.

It is available in two versions: The cool 75E uses a 75W 12V dichroic cool beam lamp, and the halogen 75E, a 75W 12V halogen lamp.

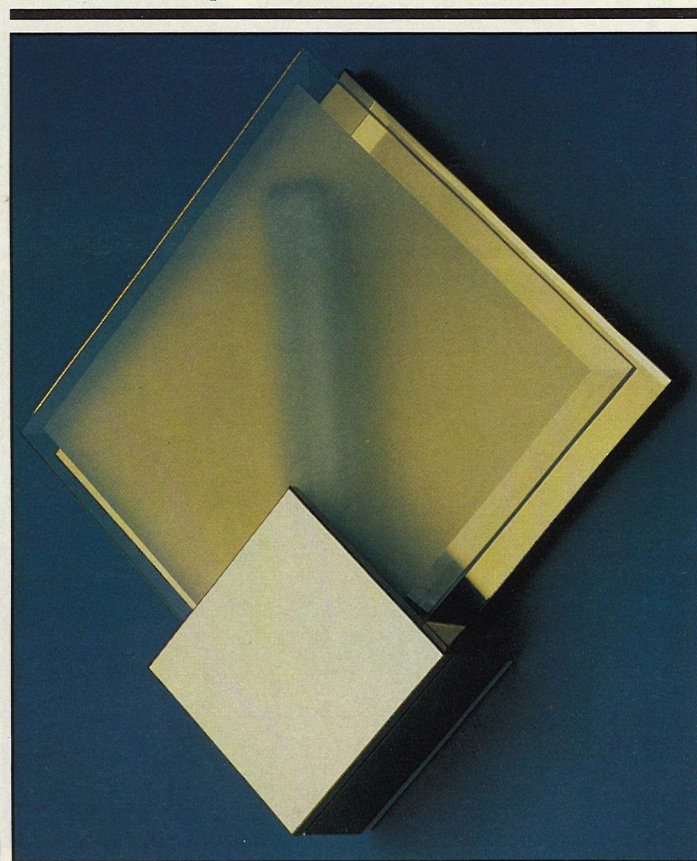
Expostar incorporates a replaceable electronic transformer for increased efficiency and longer lamp life, and can be fitted with one of four optical acces-

sories to suit the required application.

The Halogen 75E - which can be specified with either a fixed spot (90) or semi-spot (360) reflector - has a protective glass front added for extra safety, and is fitted with a Lumiance 2 circuit swivel and lock adapter for safe and robust fastening.

It can be used in 3 circuit tracks in conjunction with the Trackpoint adapter, or surface mounted with Monopoint.

Reader Service No 207



Staff Lighting

The Plano Emergency from Staff Lighting comprises a three-hour emergency power supply with a decorative luminaire. It features a glass rhomboid front and a metal back plate with an aluminium luminaire in order to accommodate the emergency pack.

Front plates may be clear or frosted glass and back plates can

be plated with brass or chrome or painted white. In each case the emergency housing unit is white. This integral emergency pack houses an inverter and battery pack which will allow the luminaire to be operated for three hours without mains power.

Confirmation that the emergency battery is fully powered up is provided by an LED indicator. The fitting utilises an 18W TC-L compact fluorescent lamp for energy efficiency and long life.

Reader Service No 208

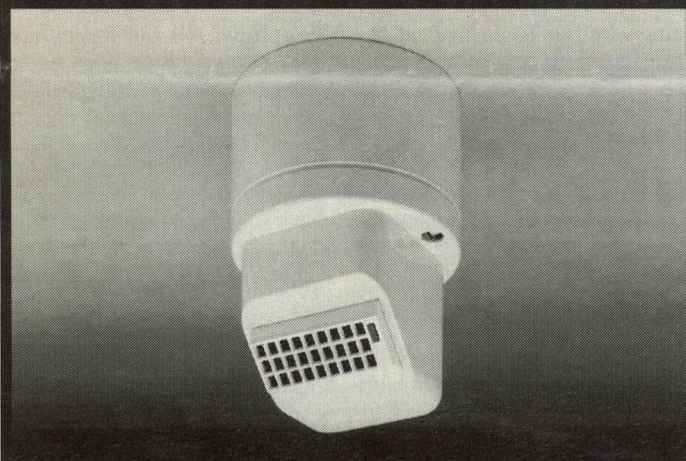
IN THE

SPOTLIGHT

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Reader Service No. 3

Page 4

Lighting Equipment News, August 1993

Aktiva additions

Aktiva Systems has added a number of new products to its lighting ranges. 'Cirrus' is a range of architectural luminaires comprising wall mounted and free standing up-lighters. All are available in a variety of finishes with opal glass, polished aluminium or EPC shades. The light source can be tungsten halogen or compact fluorescent.

The slim profile of the 'Nimbus' range makes it suitable for corridor or fitting room use. The 18W compact fluorescent lamp is covered by a curved acrylic diffuser, and various backplate accessories are available.

'Orbit' is a range of low voltage spotlights comprising surface, track and pendant mounted adjustable diecast aluminium spotlights. They are available in black, white, silver and gold EPC finish, with or without integral transformer.

'Wave' is a range of extruded aluminium architectural luminaires. It consists of a wall mounted metal halide or compact fluorescent up-lighter, and an adjustable low voltage spotlight available with either capsule bulbs, dichroic lamps or GE TAL



100 lamp. All variations are available in silver, black or white EPC finish. Reader Service No 209

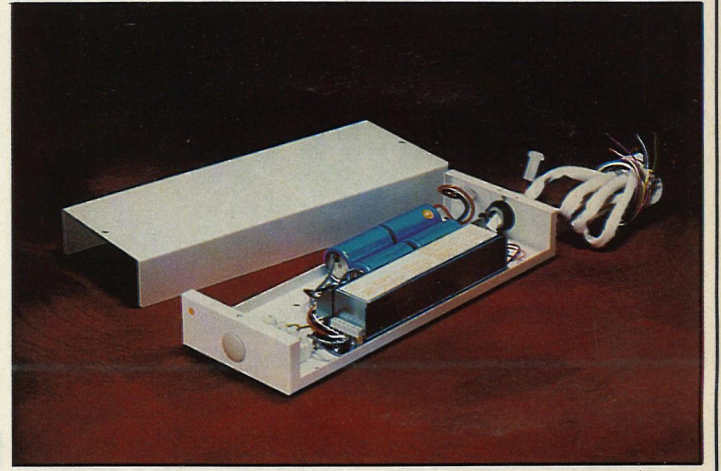
Remote conversion kits

Chloride Bardic's new range of enhanced remote conversion kits facilitate the conversion of a wide range of fluorescent luminaires to emergency operation, thereby avoiding the need to fit separate emergency lighting fittings.

The kits are supplied fully assembled, and the control module and battery pack are mounted in a remote enclosure and are ready wired; no drilling or assembly of ballast and batteries is required.

The conversion kits are supplied complete with a 1m fitted cable, and installation is by connecting the cable to the battery and then to the luminaire.

The kit's LED display, indicat-



ing that the mains supply is present and that the battery is connected and charging, is located on the end of the cable and can be sited inside the luminaire.

An integral heat sink reduces heat build-up, improving tempera-

ture performance and giving longer battery life, claims the company. A heat sensitive temperature indicator on the battery charges colour when the unit's rated temperature of 55°C is exceeded. Reader Service No 211

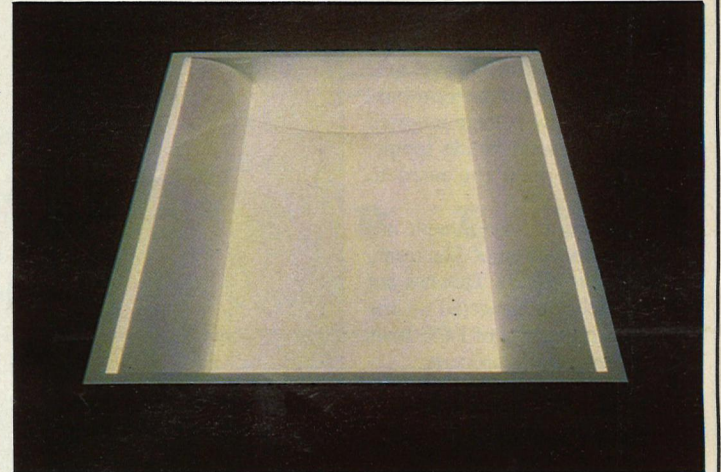
Base light

Base Lighting is an up-lighting system with a wide-angled beam producing a clean light distribution which highlights surrounding spaces and details.

It is suitable for all areas of everyday use where diffuse lighting is necessary, and offers a degree of uniform, vertical lighting which avoids glare and gives visual comfort.

Base Lighting is produced in sheet steel and is composed of different-sized recessed fittings. All details are in a white finish in order to ensure optimal luminance distribution in the reflecting surfaces.

These surfaces are made in sheet plating with a surface treatment to produce soft lighting, and its electronic control gear offers better efficiency and better light output without creating stray lighting and noise, claims



iGuzzini.

The light source aluminium screen covers are hinged to the body of the fitting, and can be removed to allow maintenance. The fittings are fixed to ensure stability even in the case of vibration and accidental knocks, claims the company.

Base Lighting is similar to, and interchangeable with, traditional

recessed ceiling fixtures, and may be fitted using an exposed 24mm grid. It is produced in four sizes which are suitable for most common standard false-ceiling panels. The terminal blocks are fast-coupling to simplify installation, and each fixture is supplied with a square steel bracket for installation with levelling from 27m to 48mm. Reader Service No 212

Lighting for large areas

Stellaria, a new solution for the lighting of large areas, is an electrical grid system in two sizes, which creates a screen between the ceiling and the surface to illuminate.

The system is composed of basic modules of four frames, which act as 12V electrical conductors and supports for spotlights. Specially designed decorative and professional spotlights can be installed at each contact point on the frames.

By connecting the basic modules of 187 x 88cm or 181 x 145cm, it is possible to obtain surfaces of any size which create favourable effects above the area to be illuminated. Stellaria can be suspended from the ceiling or connected to the wall with suitable accessories.

Due to special wall connectors, the system can also be suspended in large areas where ceiling suspension is not possible, thus creating a 'suspended bridge' effect.

Stellaria is also available in kit form to cover approximately two square meters, complete with spotlights and accessories, in order to bring accent lighting to a specific area.

Reader Service No 210

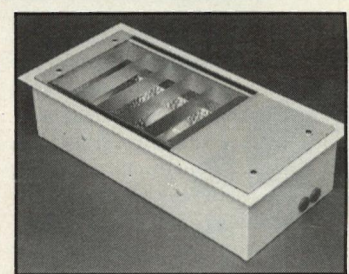


Luminaire for canopy installation

New from Parkersell Retail Petroleum Services is the Canolux 40 low bay luminaire for recessed canopy installation on forecourt sites. It is also suitable for industrial, commercial and retail lowbay lighting.

Based on the company's Euro Canolux range, it can be recessed into 400mm flat plank underlining systems and single-skin structural pan designs as well as standard profile undersheeting. A special masking frame or bezel allows the luminaire to be used with most underlining systems, claims Parkersell.

Its all-aluminium construction provides a durable enclosure with



a potential protection rating up to IP54. The clear or diffused toughened glass cover provides protection against sprayed water and easy access to the separate lamp and gear tray compartment.

All components can be removed from the luminaire body to allow easy fixing. The C40 can be supplied with a symmetrical or asymmetrical semi-specular reflector as standard, while an optional louvre restricts glare when clear lamps are used.

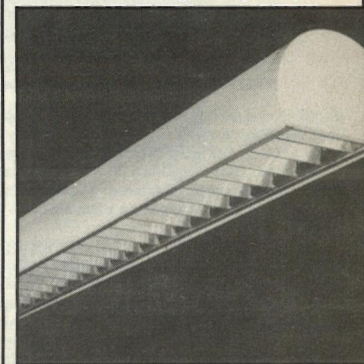
Reader Service No 213

Semi-circular pendant fittings

A new interior pendant fitting from Glamox is aimed at designers wanting to make the luminaires part of the lighting feature.

The DeLight CPU has a semi-circular profile and comes in four versions taking either one or two 36 or 58W fluorescent lamps.

Options of aluminium louvres and of rod, wire or chain suspension - and versions with a decorative uplight facility - provide designers with a choice of up to 30 derivatives. Most fittings are available with high frequency bal-

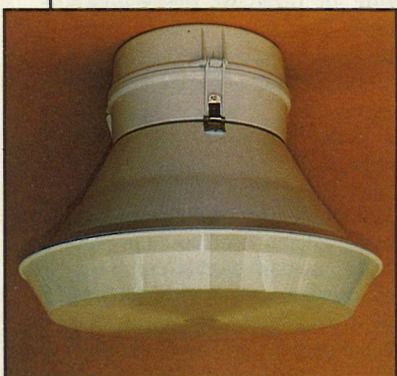


last, traditional dimming or high frequency ballast with dimming options.

For high electrical efficiency, power factor correction capacitors are fitted as standard. Type CPU pendant fittings are constructed using stove enameled steel and manufactured using advanced manufacturing facilities and laser welding techniques. This gives the DeLight range a light-proof body and smooth finish.

Reader Service No 215

Correction

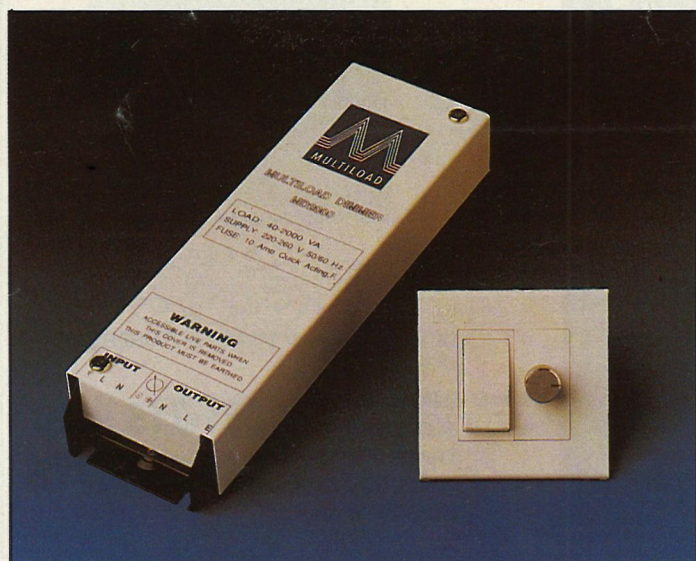


The Controlux from Hubbel is a ceiling mounted unit, not wall mounted as suggested by the picture in last month's issue.

Universal dimming system

Multiload Technology has introduced a new universal dimming system, the MD range. It has been designed to bridge what the company sees as a gap in the market between basic domestic dimmers and more technically complex and expensive systems currently used for prestige commercial and architectural lighting.

The range incorporates modern circuitry into a simple, and universal dimming system, and works with every dimmable light source; eg, low voltage, incandescent, fluorescent and cold cath-



ode. The dimmer can also control a mixture of these light sources and without de-rating, claims the company.

Each dimmer unit is supplied with a double-pole switch module and a control knob module which are clipped as standard into a two-way MK Accent grid-switch wall-box. Connections to the control knob module are at mains potential and require simple, two-core wiring.

The dimmer knob and switch modules can be easily removed and clipped into a multiway control-plate from the MK Accent Gridswitch system to form up to eight individual dimmable circuits.

Reader Service No 214

The energy benefits of electronic controls

***Alf Mellor examines the advantages gained from using electronic control gear.**

The advent of a number of new light sources over the past ten years has largely resulted from the impact of rising energy costs. Lamp technologists, such as Osram, have during this period developed T8 fluorescent tubes; compact fluorescents; low voltage tungsten halogen and metal halide lamps; all of which meet the need to conserve energy.

A concurrent development has been the introduction of Electronic Control Gear (ECG). This has not been entirely unconnected as one of the main benefits of ECG is its own energy saving property.

Coupled with energy efficient lamps, the combined savings are impressive. Osram has calculated that savings of over 40% can be achieved with, for example an Osram Lumilux T8 fluorescent tube with ECG when compared with a T12 tube with conventional control gear.

In addition, there are other cost saving benefits from using ECG. Its high-frequency operation can increase lamp life by between 30% and 50%, making a significant reduction in lamp replacement and maintenance expense as well as eliminating many aggravating call-outs.

The design of ECG also has cost-saving implications. The circuitry layout ensures that heat loss is minimal – below 10% – leading to lower temperatures within each unit, thereby extending the life of the ballast and its components. The heat generated

or soft start with a pre-heat time of one second, ECG does not suffer from ignition flicker. Stroboscopic effects are eliminated while the electronic circuitry ensures silent running through the elimination of choke hum; and by sensing when a lamp is failing, the ECG automatically shuts down defective lamps, thereby avoiding the irritating flashing associated with defective lamps.

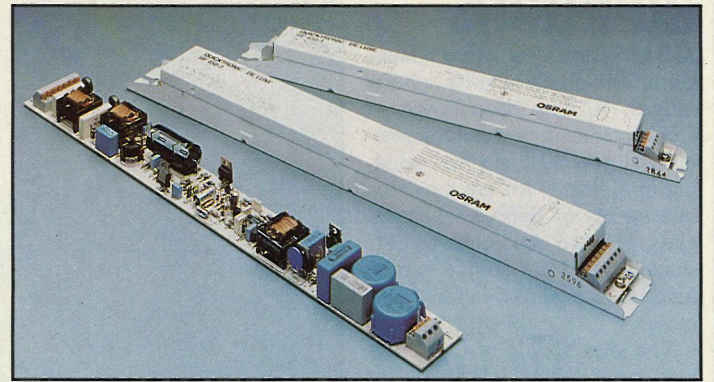
Concern has been expressed about the frequency modulation at which ECG operates. It is generally believed that people are not affected by frequencies above 70Hz. However, research has shown that there are a group of people, albeit small, who sense flickering up to 1300Hz. Traditional control gear operates at 100Hz, therefore by no means totally ideal. ECG however operating around 30,000Hz causes no problem at all.

other errors, automatically switching to stand-by to prevent temperature rise.

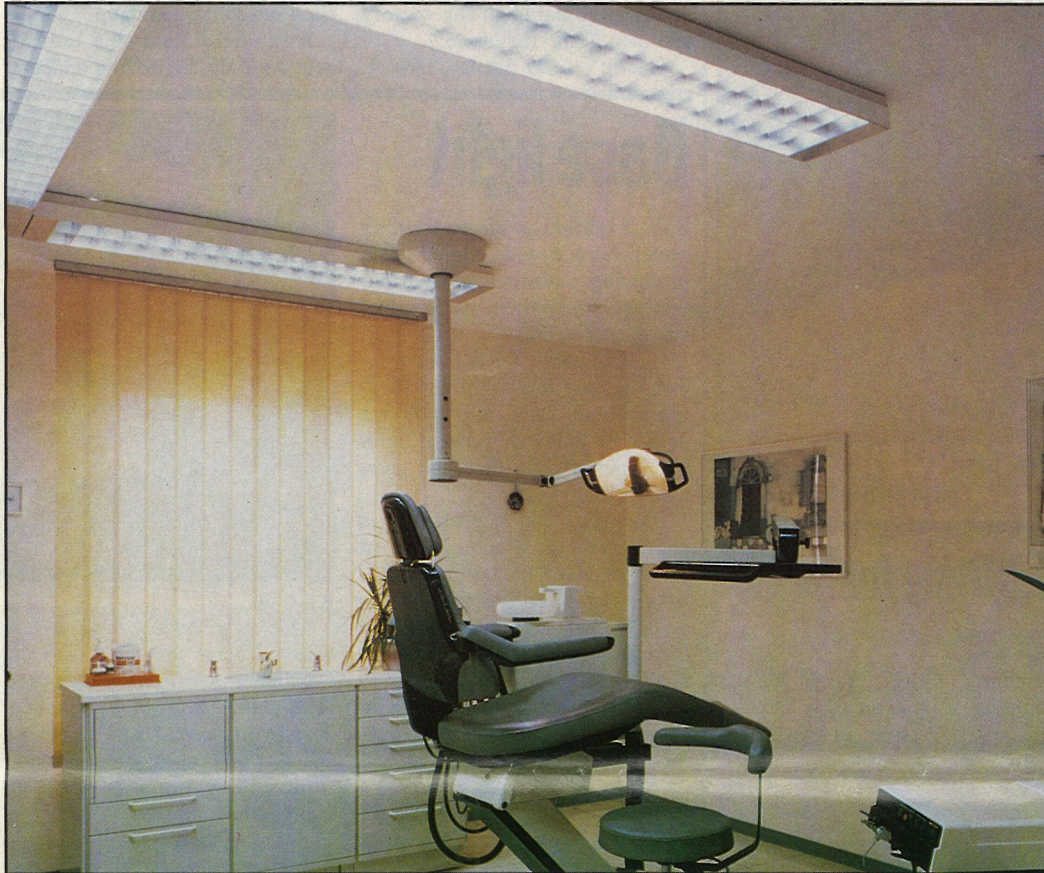
Safe ignition occurs over a wide temperature range, from 0°C to +50°C indoors and -20°C to +50°C in exterior applications. ECG's excellent pre-heating qualities make it ideal for operation with compact fluorescents and in

lar, can now be used on a greater scale. Previously they were susceptible to the high temperatures of conventional control gear.

Given its many advantages, it is perhaps not surprising that ECG has quickly made inroads into the control gear market. Already the worldwide market is worth in the region of £200m



Osram's Quicktronic de luxe-dimmable from 100% to 1%



An Osram Lumilux T8 fluorescent tube with control gear gives savings of up to 40%

is up to a third less, a factor which has a material effect on air-conditioning requirements and costs. Taken in total, these savings ensure that investment in ECG can be recouped within a period as short as two years.

Cost savings are a very important reason for justifying the

installation of ECG, but they are by no means the only one.

Experience has shown that ECG eliminates many of the annoying and distracting effects of conventional gear, an important consideration in office installations for example.

By offering either instant start

ECG is designed to provide reliable and safe operation. Its in-built intelligence enables it to react to different operating conditions with filter protection guarding against constant overvoltage and excess voltage surges.

As well as detecting lamp failure, it can sense installation and

applications with high switching frequency.

For luminaire manufacturers, ECG provides greater flexibility in the design and production of their products without any adverse effect on performance. ECG's lightweight compact size and heat-reduction properties are all major factors in this.

For these reasons, luminaires can be smaller and less obtrusive and can be more readily customised to meet the demands of particular installations. Costs are also saved as less wiring is required and starters and power factor correction capacitors are not needed as these are integral within the ECG.

The much lower heat levels generated allow a wide range of materials to be used in luminaire manufacture. Plastics, in particu-

involving no less than 8.2 million units. Osram's conservative estimate is that the market will grow by 25% to 30%, possibly more by 1995.

Osram, being a lamp manufacturer, understands the need to accurately match lamp requirements for pre-heating, starting voltage, lamp current, operating voltage and lamp wattage and how they differ in each lamp technology.

For this reason, Osram has the largest ranges of ECG for the main group of light sources, Quicktronic for fluorescent and compact fluorescent Halotronic for tungsten halogen and Powertronic for metal halide.

**Alf Mellor is market manager OEM/Specification at Osram*

Reader Service No. 220

A lesson in savings

A combination of good housekeeping practices and dedicated lighting controls from Chalmor Ltd, has led the Abraham Darby School in Telford to exceed the Audit Commission's recommended energy performance tables.

Headmaster for the school, Mr K A Pattinson, first introduced the good housekeeping techniques in 1984 to increase school funding and as a practical example to pupils of energy conservation.

Staff and pupils were encouraged to switch off lights when rooms were vacated or when there was sufficient natural daylight. During the next four years their co-operation helped the school to save over £10,000 in electricity costs and reduce CO₂ emissions by 154 tonnes.

Encouraged by these savings the headmaster discussed further energy saving schemes with Peter Crean, the energy conservation officer for Shropshire County Council, which ultimately led to the installation of a Chalmor lighting control system using ELT electronic lighting timers.

Two-thirds of the classrooms' light switches have been replaced with ELT controllers. When activated by a special key, the lights are switched on for a pre-set period of 40 minutes, the equivalent of a normal class period. The remaining third of the classrooms' lights have been left at manual control and, for safety reasons, do not time out.

Lighting is still at the control of the classroom occupants, but full lighting can only be initiated by a teacher using the key switch at the start of a class period. However, for increased energy savings, all the lights can be switched off at any time without using the key.

The Chalmor lighting control

system consists of 28 ELT controllers and 25 slave relays controlling 450 fluorescent tubes - 65% of the school's lighting. The total cost of the system was £4,400, an investment that ultimately realised electricity savings of £2,200 in its first year.

Over a five year period (April 1985 to March 1990) both the Chalmor control system and the good housekeeping practices achieved savings of £15,650 in electricity, and consequently, 237 tonnes of CO₂ and 4.7 tonnes of SO₂.

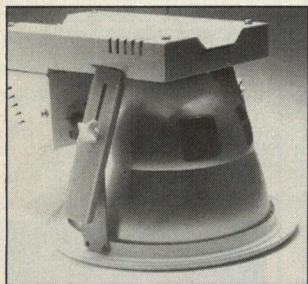
Funded by the County Council's energy conservation budget, the scheme has not only saved an average of 32% on electricity costs - which has directly led to increased funding for the school, but has proved a practical example in energy conservation for pupils at the school.

Conservation

"I am a firm believer in teaching by example" said Mr Pattinson, headmaster, "and the Chalmor controllers are a tangible example of energy conservation through precise control." Energy conservation also plays an important role in three of the school's cross-curriculum courses; environmental studies, social studies, and personal and social education.

Following the success of the energy saving schemes implemented at the Abraham Darby School, similar schemes are now being offered to other county secondary schools within the Shropshire catchment area. If adopted, the County's energy conservation department is projecting electricity savings of £150,000 per annum, equivalent to a reduction of 2,600 tonnes of CO₂ and 52 tonnes of SO₂ per annum.

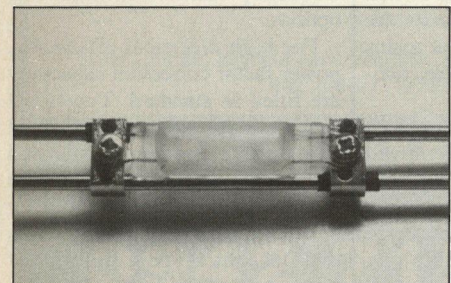
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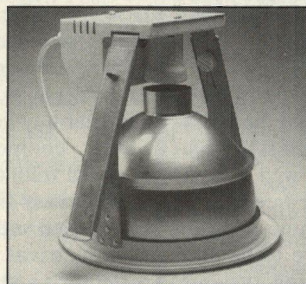
2 x 18W compact fluorescent downlight

(Right) Some of the new large range of high quality die-cast floodlights manufactured in Germany by Schmidt Strahl. Uses include interior & exterior sports and architectural. The range utilise 70-3.5kW discharge and 100-10kW halogen lamps. (Featured in last months LEN article on sports lighting). (Available exclusively in the UK from inotec)

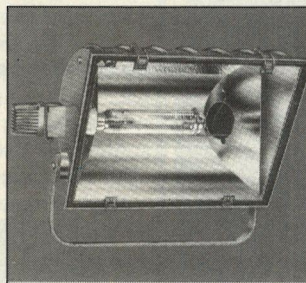
(Below) Circuit track uses the 30,000HR 12V Xenon lamp, its compact design enables it to be used for many concealed lighting applications which include underseif, display and cornice lighting. Having the flexibility for you to choose between using 1 to 25 lamps per metre. Accessories include a tubular glass cover for use in wet environments and exterior use.



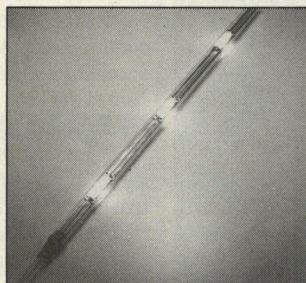
Circuit track (30,000 HR Xenon lamp)



White Son downlight



Twin 400W-2000W floodlight

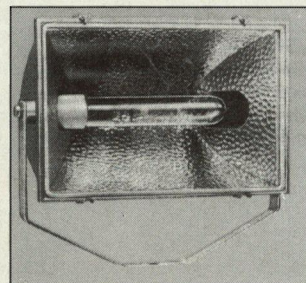


Circuit track with glass tube accessory

NEW from inotec

Both the 2 x 18W compact fluorescent and White SON downlights shown on the top left are now being manufactured and sold exclusively by inotec.

The above mentioned downlights are no longer on licence from inotec to Libra Trading Ltd who trade as Edison Halo Lighting. Inotec hold the sole rights to manufacture and sell the above mentioned range of designs, which also include the following products which are not shown: Single & Twin 13, 18 or 26W compact fluorescent lamp version with or without a suspended decorative front glass disc. 70 & 150W single or double ended metal halide lamp version. 50, 70 or 100W white SON lamp version



150-1000W floodlight

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The original concept behind Zed, from Hawker Fusegear, and its family of components was to provide complex features and energy control facilities through simple devices. The intention was that these should be suitable for cost-effective installation by a component electrician without the need for programming skills, manuals or complicated wiring diagrams. In the main, the features offered by Building Management Systems and Bus products far outstrip normal requirements. Indeed it has often been said that the new generation of Bus systems are 'a solution looking for a problem'. Zed, on the other hand, was conceived and developed on the understanding that the large majority of installations require only a handful of these features. Therefore, the expense of a central processing unit (CPU) and intelligent light fittings, switches and other devices could rarely be justified, except in the most exceptional of cases.

With the concept firmly established a range of devices was subsequently developed which could operate as stand alone units, each having mains terminals for the supply and load connections and separate SELV extra low voltage terminals for the connection of switches and interconnection of devices for more complex features.

To ensure industry integration the switches fitted existing standard grid systems and had just two terminals, even when providing remote load state indication and multi-way switching. One basic switch design provides these features and can operate a single load or several hundred loads as required.

At the heart of the main device, the Zed Modular Controller, is a micro-controller which monitors the SELV control terminals and operates the mains output device in response. Each controller therefore has its own intelligence and can be placed in the circuit wherever a junction box would be situated in a conventional system. Variants exist to provide time delay features, brightness control, occupancy detection etc.

All SELV terminals can be interconnected as required. Local terminals operate this unit only, while ON and OFF zone terminals are designed to be connected in parallel with further Zed con-

Zed and the art of control

The Zed lighting control system is said to offer a number of advantages over more complex systems

trollers to provide simultaneous operation. To turn a particular load off but not on in response to the zone switches for example, the OFF terminal on the appropriate controller is connected. Connection to the SELV terminals is not limited to switches, but can include PIR detectors, photocells, time switches and, in fact, any piece of equipment having a voltage output or volt free contacts.

As a result of this interconnectability a hierarchy of zones can be created through the use of additional modules to provide control for a whole building (or even a number of buildings) from a single switch. Unlike a conventional contactor used to turn off all lighting, a system comprising Zed components can achieve the same result without disabling the local control. The size of installation is unlimited, from a single controller upwards as each Zed unit operates independently. Furthermore, additional circuits can be added and the interconnection carried out 'live' if necessary.

Interference immunity

The SELV cable (bell wire, telecom cable etc) for all switch runs gives significant cost savings in cable and more significantly in installation as no earthing or conduit is necessary. It is also possible to utilise existing wiring when upgrading a conventional installation to Zed control. The 'messages' passed between units are of extremely low frequency giving excellent immunity to interference and cable runs between units can be anything up to 1000m and more.

The load switching, which is core to the whole idea, is based on Hawker Fusegear's own miniature pulse operated contactor originating from the electric-

ity supply metering industry. Compact dimensions, latched operation and excellent mains switching capabilities, coupled with mains to control circuit isolation makes it a suitable device for reliable load switching. The patented latched mechanism results in no requirement for a maintaining current to hold the main contacts in the open or closed positions, thus providing minimum energy requirements for normal operation, consistent

with the energy saving features of Zed.

The beauty of any system that incorporates Zed devices is its compatibility with other control products on the market such as time clocks. A recent example of this is an installation developed and designed by lighting consultant Peter Liebmann of London-based David Resnick Associates. The contract formed part of a total refurbishment package and, given a clean sheet, Peter was



The Zed Modular Controller 'intelligently' controls mains output

able to come up with a lighting scheme that was controlled via an 8-channel time clock. This allowed for six zones to be wired which could be activated at preset times according to the day, hour and minutes fed into the time clock. On one of the two remaining channels Peter plans to install Zed Master Zone modules which give global operation i.e. the ability to override all 6 channels. The whole arrangement provides a

flexible approach for the end user, allowing optimum use of energy while cutting out needless waste from lights being left on.

Though Zed might lack the apparent sophistication of Bus-based systems in reality it is only the lack of a sophisticated approach that prevents the designer or lighting engineer from achieving complex but workable systems.

Reader Service No 222

S T R A N D S C A P E S

No. 3



At the gallery

Tunnel vision

Interior lighting of the newly opened Limehouse Link – a road tunnel of over one mile in length beneath London's docklands – is controlled by a computer employing light measuring sensors from Hagner International (UK) Ltd, and developed in collaboration with the British Ministry of Transport.

Similar sensors have already been installed by the company at numerous major motorway tunnels throughout Britain and overseas countries.

They operate by remote control and continuously measure luminance (brightness) within a 20° angle as seen by the average human eye. Mounted at each of the Limehouse Link's three tunnel approach road sections, the sensors are targeted to the entrance portals and interior threshold sections. This approximates the view seen by vehicle drivers approaching the tunnel entrance from a distance of 50m.

The 4-20 mA output measurement signals (proportional to a range of 0 – 6500 candelas per square metre) are fed to a con-

troller programmed to automatically adjust the intensity of luminaires at each interior entrance section to match changes of exterior ambient daylight levels. The hazardous 'black hole' effect, and temporary impaired vision often experienced by vehicle drivers entering road tunnels, is thus eliminated.

Illuminance sensors, for continuous measurement of interior 'incident' light levels on wall and road surfaces throughout the threshold and transitional zones of the tunnel, are similarly monitored with photometers developed by Hagner International. These measurement signals are fed to the central lighting control system.

The data is recorded and displayed on a VDU screen as a means of checking that outputs from the luminaires are maintained to their required efficiency and in accordance with required changes of switching intensities.

The complete control system was installed by Supervisory & Industrial Process Control Ltd, and specified by the main contractor Balfour Kilpatrick Ltd.

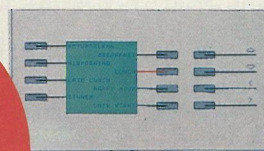
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**AWARD
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Strand's sophisticated Premiere system brings new dimensions to the fine art of lighting control.

Together with an exciting range of luminaires, dimmers and control stations, Premiere is giving designers new inspiration for projects ranging from art galleries to hotels.

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The latest offering from Simmtronic, SPECS, is an electronic control system for lighting which offers the following principle features:

- a high integrity communications link via mainsborne signalling or hardwired bus according to customer preference.
- full system feedback allowing the gathering of all light levels and sensor conditions from a centralised point.
- custom built high frequency lamp gear with integrated receivers offering variable light level and on/off control.
- compatibility with other gear types on the market including 0-10V and PWM systems.
- flexible control using wall switches, photocells, presence detectors, time switches, radio and infrared – all based on a simple 2 wire bus system known as E-Bus.

Four-eyed controls?

A recently developed lighting control system uses a series of simply interconnected building blocks

The system also has two levels of configuration and operation. Firstly, using 16 addresses set manually by rotary switches and secondly, using 16384 addresses offering grouping and advanced system features with centralised control and feedback.

From the outset, SPECS has been designed to meet a range of market requirements – from refurbishing a small building such as a public house or restaurant up to a large office block. At its heart is the transmitter which sends mes-

sages to high frequency fluorescent ballasts, electronic transformers or other load drivers in order to control light output.

The messages may be sent via two wires (O-Bus) or using mainsborne communication. The mainsborne communication option is particularly suited to existing buildings as no extra wiring is required. This is especially the case with listed properties where no changes to the fabric of the building can be made. In addition to this advantage, the installation time is minimised – especially relevant to contractors looking to convert a restaurant for example, in the minimum of time.

In its simplest form SPECS supports 16 channels per transmitter which can be set by rotary control switches located at both the lamp drivers and the control devices such as switch plates. In layman's terms this means that up to 16 separate circuits can be controlled using the minimum of hardware.

Light output is digitally controlled in 128 steps from 0 to 127. Level 0 is off, on/off control being integrated into the SPECS lamp driver circuit. Consequently, light levels can be set very accurately and repeatability is excellent. The lamps can be started at any of the dimming levels and a soft start feature prolongs lamp life.

In keeping with the system's aim of simple installation and use, end user control is by means of a 4 button switch plate. This can be preset during commissioning and subsequently reset if needed – should the building's decor be changed, for example. Degrees of dimming, fade rate and response rate can all be controlled and four fully variable preset lighting levels can be set. The switch plate is also provided with a four pole terminal block for the SPECS' expansion system, or E-Bus. This will be dealt with in more detail a little later.

The adjustment method is straightforward and suitable for non-specialist operators. Four levels are factory supplied, nominally high, medium, low and off. However, by holding the 'high' and 'medium' buttons down a special mode is entered that enables the user to adjust each level by pressing the other two keys. The level being set is indicated by LEDs on the pushbuttons. Once set, the levels are stored in the system's memory.

If two switch plates are set to the same channel, perhaps at either end of a large room, either switch plate can be used. Furthermore, any adjustment made on one is replicated on the other, reducing set up time.

Having discussed some of the fundamental components of SPECS, we should now look at real application. As previously mentioned, SPECS offers two basic systems, aimed at smaller and larger buildings respectively. A simple system layout is shown in figure 4. A typical use here could be a public house, restaurant or property where the maximum of 16 channels of the simple system is more than adequate.

In this example the switch plate set to channel 2 controls the luminaires on channel 2, the switch plate set to channel 5 controls

installation time and system hardware are clear and changing the configuration of switches and lamps can be done without touching the decor.

Expanding the system

It was noted above that the switch plates are provided with a four pole terminal block for the E-Bus expansion system. Indeed, the system's ability to be fully integrated with any number of ancillary devices with considerable ease is another key feature. A typical application for E-Bus is the integration of presence detectors, as shown in figure 5.

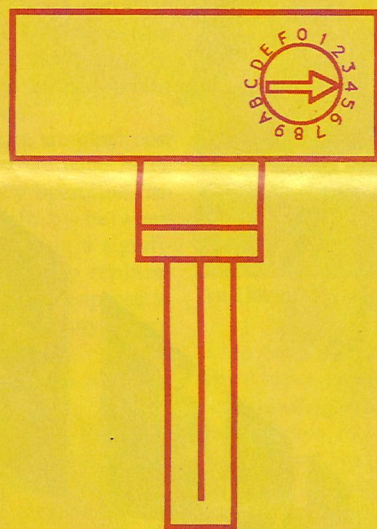
In this example, two luminaires

have been set on channel 2 and are being controlled by the switch plate. Just by connecting a presence detector to the E-Bus and selecting channel 2 the detector becomes fully integrated into the system and can 'talk' to the other components. As a consequence, the presence detector will now automatically bring any luminaire on channel 2 on as a room is entered, and maintain until vacated. As the switch plate is on the same channel, light levels can be set as before. In particular, if lighting is manually turned off, to give a slide show presentation for example, then the presence detector is automatically overridden

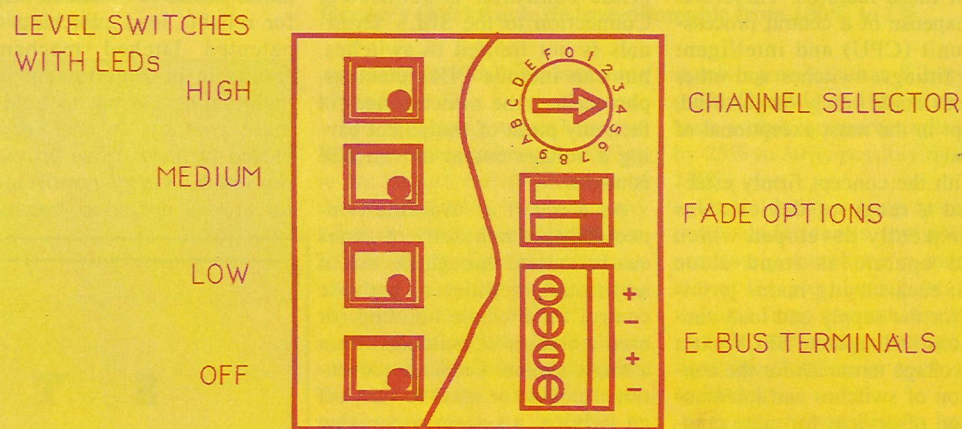
SPECS TRANSMITTER



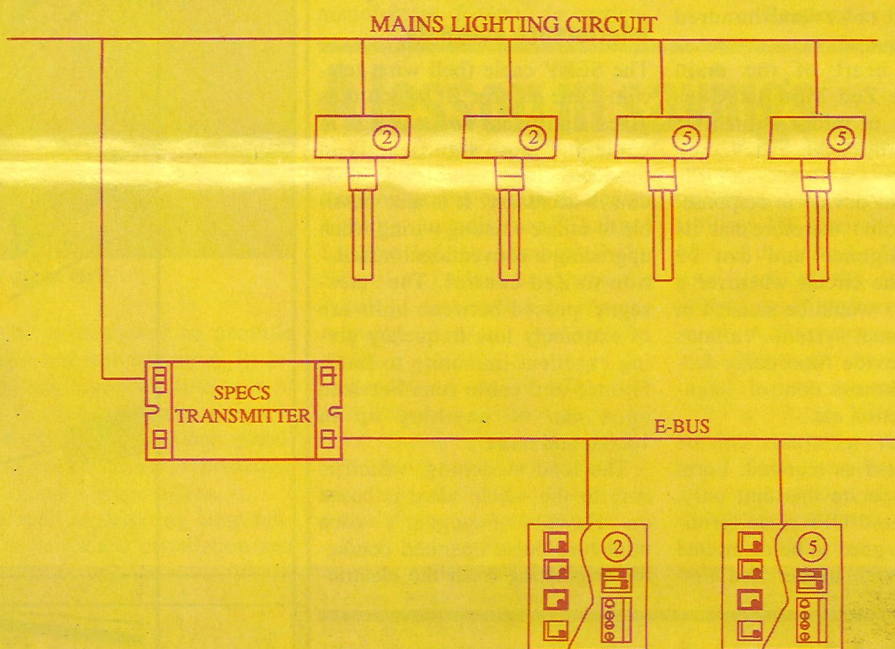
INTEGRATED SPECS LUMINAIRE WITH CHANNEL SELECTOR



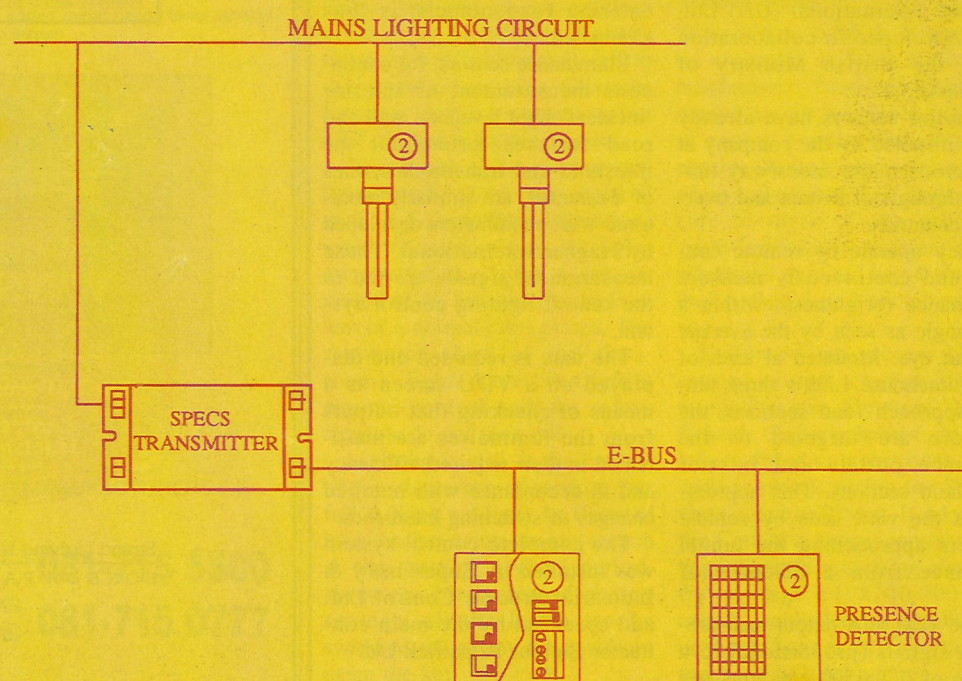
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until the lights are switched on manually or the room is vacated. There will, of course, be some applications where presence sensors will enable the elimination of light switches completely — no more lights left on all night!

A variety of other devices can be integrated into the system using E-Bus. Lux controllers or photocells to bring on the lighting system automatically when darkness falls is a typical example. Infrared controllers, rather like the hand held units of a TV set, are also a straightforward addition.

A further feature of SPECS is that hard wired dimmers, 0-10V interfaces etc can be talked to using either mainsborne communication or 0-Bus. Consequently, there is no need to rip out an existing system should this already be in place.

It was previously indicated that a higher channel range is also available for large buildings. More advanced systems are supported by SPECS simply by connecting transmitters together using a 2 wire high speed communications bus known as C-Bus. In addition, C-Bus can also be used to connect the lighting sys-

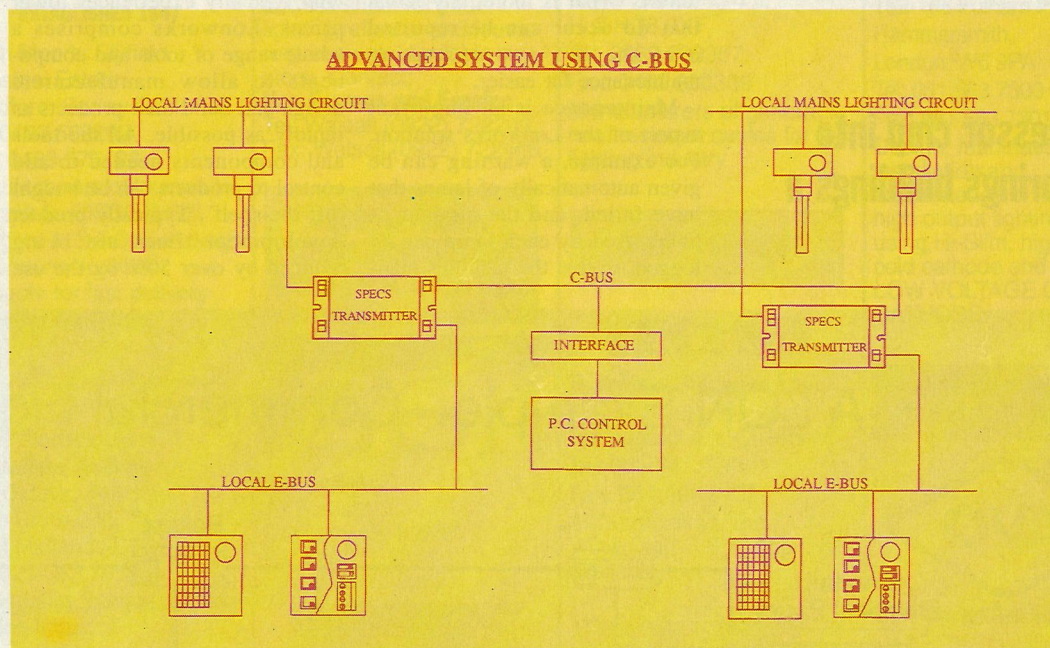
tem to a PC to give fully automated control. Using this facility, 16384 channels — for all practical purposes an infinite number — can be set up. A typical multi transmitter application, perhaps in a large office block, is shown in figure 6.

SimmTronic's policy is one of continuous development and

already a number of ballasts for fluorescent lamps are available. It is the intention to make all lamps, from smaller compacts to the large wattage linears, able to run on the system in single, twin and multiple configurations. Other lamp types, such as metal halide and low voltage tungsten halogen, are also under consideration.

The SPECS system is an example of how modern technology can make a lighting system truly flexible and yet simple to install and operate, should you own a pub or a palace. No longer only the domain of the skilled lighting designer, "dimming for all" is now truly a reality.

Reader Service No 224



Liteminder switches off lights in unoccupied areas

Light work of low voltage problems

Simple and reliable installation of low-voltage display lighting systems can be achieved by using the Lamp Conservator, claims Multiload Technology Ltd.

The Lamp Conservator was originally introduced several years ago. At its launch, claims were made for its performance: doubles the life of lamps; saves on labour and maintenance costs; eliminates nuisance tripping of fuses and mcb's; and that it was simple to install and has a very short pay-back period.

The biggest installation to date has been at Thresher's Wine Rack retail outlets. Thresher's had chosen low-voltage tungsten halogen because of the crisp white light given off, and the promise of considerably increased lamp-life. However, like so many SELV systems before and since, the initial installations suffered several problems. The biggest of these was lamp-life which, far from being increased, was worry-

ingly short because of the effect of surge currents.

At this stage, Thresher's brought in outside help: David Matyus-Flynn, principal of the Lighting Enterprises Consultancy; David Collins of H.D. Collins, lighting manufacturer from Waltham Cross; and Steve Fleming, of Fleming Electrical, contractors from Nuneaton.

As lighting consultant and specifier, David Matyus-Flynn was responsible for choosing the Lamp Conservator. "I had been aware of the Lamp Conservator since its development and had been using it regularly for low-voltage installations, so I knew that it worked and that the market needed this product."

"Nowadays, I always specify the Lamp Conservator or Marlin's Black Box for low-voltage installations. Each offers three key benefits: the Softstart is so accurate and responsive that it makes the lamp think its never being switched off or on, thus totally eliminating surge currents; the Voltage Tweak provides much greater current control, for instance allowing the lamps to be

under-run at 4% which doubles the lamp-life; and finally, the products are simple to install — what I call 'Fit and Forget'."

David Collins added: "Following David's recommendation, we took the Lamp Conservator circuit board and built it into a tailor-made control for the Thresher's job. It was the first time I'd used it and I'd never heard of Multiload, so I was a little nervous in spite of the very impressive technical spec."

"I need not have worried. All the problems that we had experienced with the initial system, which was made up of a basic control and a variety of circuit-breakers, were swept aside. What's more, Multiload provided an excellent back-up service, even helping us with problems that had nothing to do with the Lamp Conservator."

Steve Fleming continued: "As the contractor, the customer tends to blame us if anything goes wrong. I was a bit sceptical about the Lamp Conservator at first, because you can't actually see what's different about it. But having used it, our call-back has been

absolutely minimal. This means you have a much easier relationship with the customer and you save a lot of time which you can put to more profitable use elsewhere."

"It's extremely straightforward to use — all the cabling goes to one position — which is a God-send in itself. If more people understood the long-term gains, instead of just looking at the front-end costs, my life would be a lot easier."

Finally, Martin Chatfield, property manager at Threshers, commented: "We were very disappointed with the initial installations, largely due to the poor lamp life we were getting. Once we installed the Lamp Conservator, all the initial problems were resolved. We eliminated surge currents, removed the domino effect and got our extended lamp life. All subsequent installations proved to be a simple task. We now have over 100 Wine Racks running low-voltage display lighting to great effect."

Reader Service No. 225

Control in the classroom

A monitored trial of an automatic occupancy-operated lighting control by Lincolnshire County Council has provided savings of 50%. The Council saw a potential for Liteminder as a lighting control in classrooms, so a study was set up to evaluate the controller.

Liteminder uses passive infrared detection and a photocell control to ensure that lights are only on when the detection area is occupied and there is insufficient ambient light. At all other times lights remain off.

"Lighting accounts for as much as 70% of electricity cost in many of the county's schools, so the claimed savings of 40% by Setsquare, the manufacturers of Liteminder, looked attractive to us," said the County Council's Energy Manager Jaime Beckett. "Using our monitoring system we measured kWh in sample areas, firstly with, then without Liteminder installed. Taking two comparable four day periods, the load was reduced from 44kWh to

22kWh — saving 50%," he continued. "This should lead to savings of over £40 per year from each Liteminder installed. This provides a very satisfactory payback period of marginally over two years on the installed products. We were so pleased with the results that we have now started a rolling programme for the installation of Liteminder in a further 30 schools."

The first complete trial school was Skegness Earl of Scarborough High. At this school the existing light switch has been kept in circuit so that lights can be switched off when overhead projectors are in use. When the light switch is on, the Liteminder takes full control. Additionally, a keyswitch override was installed, allowing the keyholder master control of the whole system if required.

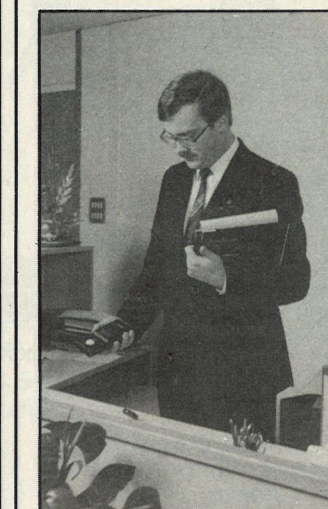
"I am very satisfied with the system," said headmaster Mr Whittaker. "Lights no longer burn when classrooms are unoccupied. Staff and children have hardly noticed the difference and we all look forward to reduced electricity bills."

Reader Service No 226



A typical low-voltage display at one of Thresher's Wine Racks

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Reader Service No. 7

Talking the same language

Incorporating a recently developed microprocessor chip into various types of building services equipment brings buildings a step closer to full integration of controls

By making use of newer technologies, the traditional arrangement of point-to-point power cabling connecting every switch to every light can be replaced with a bus system, with a single shared 'network' of lights, switches, infrared detectors, light sensors and other elements. When a switch is activated, a message is sent to every point on the network but it is only acted upon by those lights configured to respond. By working in this manner, control networks simplify the initial installation of a lighting control system, enabling a reduction in the amount of wiring used. In addition, systems based on control networks offer savings in the cost of modifying and expanding systems. Changes can often be made without any modification to the system cabling.

As well as providing the benefits of a control network, Lonworks technology provides four additional benefits, which are among the reasons why a large number of lighting and building control companies are working with the technology. These include ECS Energy Conservation Systems, Helvar, Philips Lighting, Leax, Trend Control Systems, Siebe Environmental Controls, Honeywell, Toshiba Lighting and MK Electric

1. An Open Standard

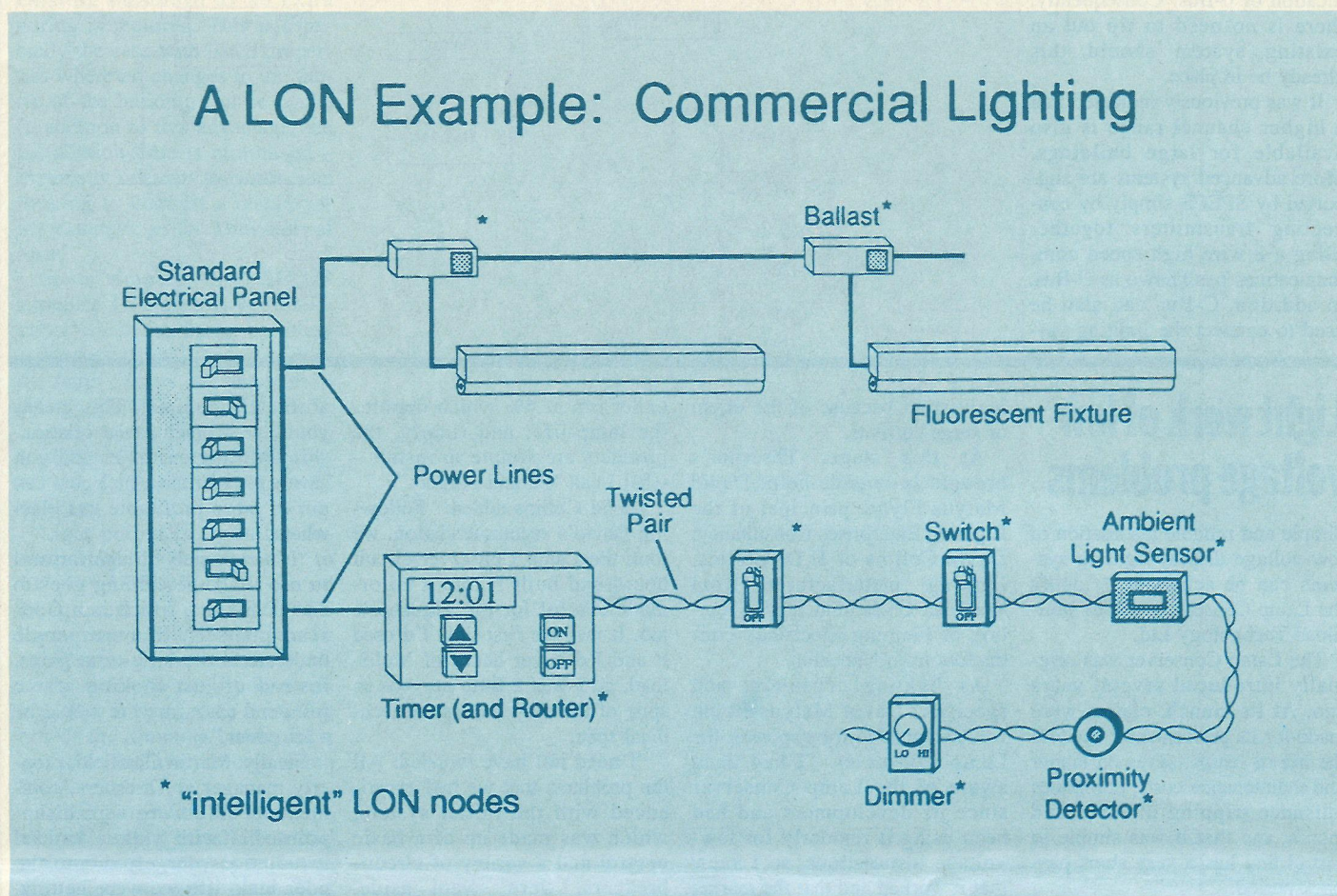
The benefits of control systems over traditional systems are functionality, enhanced flexibility and reduced costs. It is not surprising, therefore, that many building control companies have based their current products upon some

type of networking technology. However, each manufacturer has tended to develop its own proprietary network technology, rendering its products incompatible with those of other manufacturers. This makes it difficult for products to be used together and often locks the customer to a sole supplier or a sole product range. Lonworks changes all that and is open and available to all manufacturers. At its heart is a microchip, called the Neuron Chip, which contains a communications 'language' to enable products containing the chip to 'talk' to one another over a network. Since all the products containing the Neuron Chip use the same language - even when from different manufacturers - it is simple for different products to be connected to and work with other products over a bus.

And, because Lonworks is suitable for a wide range of products, lighting products will be able to communicate not only with other lighting products but also with heating, security systems, window blind controls etc, to produce truly integrated building services.

2. Ease of installation

Lonworks has been designed so that manufacturers can choose from many different media for communications, from twisted-pair cabling, through radio frequency to the use of the existing mains wiring for mains borne signalling. This gives the end-user the greatest levels of convenience and flexibility when installing or refurbishing building services. It also helps reduce wiring and installation costs.



Using the powerline for communications it is possible, for example, for new products to communicate as soon as they are plugged into an electrical socket or connected to a power line. By incorporating media independence the technology allows building automation to take place in areas in which it was previously uneconomic because of the need for dedicated cabling. This is particularly the case with integrated services; for example, a security system could, upon detecting an intruder, turn on the outside building lights, flash the lights in each room as the intruder moves through it, and open a driveway gate to let in the police - all via commands sent through the building's power wiring.

3. Ease of use

Lonworks is designed so that in the event of a building layout being changed (for example, a floor previously used by one tenant may be subdivided and let out to two), any building services such as lighting, HVAC or security, would not need to be rewired but could be reconfigured quickly and easily using network management tools.

This phenomenon of changing office layouts is something that is happening more frequently in modern companies. If Lonworks-based products were installed throughout a building there would be tremendous savings on re-wiring over the lifetime of the installation, and a much faster lead time on the layout changes. This can be of great advantage when parts of a building are rented out, as changes can be implemented much faster, thus generating more revenues on the rental.

The standard has other benefits to offer the building manager. Although a central overseeing function may be used as desired, no central controller is required in a building containing a Lonworks network. The 'intelligence' of the system is distributed at each point of control which has the benefit of no central point of failure. What is more, any faults that do occur can be reported over the bus system making maintenance far easier.

Maintenance is an important aspect of the Lonworks solution. For example, a warning can be given automatically of lamps that have failed, and the number of hours used by each lamp can be logged, so that the facilities man-

works-based products facilitate easy charging of tenants according to how much electricity they use.

4. Ease of development

Any advancement which makes products easier to design and build benefits not only the manufacturer but also the end-user who typically experiences lower prices. Lonworks comprises a whole range of tools and components to allow manufacturers design and build their products as rapidly as possible. All the tools and components needed to add control to products can be bought 'off-the-shelf'. Typically product development times are being reduced by over 50% by the use

how important that sort of requirement is to a company. In 1986 it was the firm that provided the Lloyds building with just such a reconfigurable system to allow for changes in use of the building over time - but at the expense of extremely complex wiring. According to ECS, the same effect can now be achieved infinitely more simply and at a fraction of the price using Lonworks technology.

End-user driven

Although Echelon only markets and sells the components of Lonworks technology to manufacturers, much interest has been expressed by end-users who are the ultimate beneficiaries.

ager can have advance warning of when to change lamps.

In addition, when all the building's services use the same system there will be only one PC in the facilities manager's office to provide a common user interface to all building systems. There will also be only one set of software to access all the systems. As a result training of maintenance personnel will be simpler and less costly.

Another aspect is service charging. In a big building, occupied by different tenants, Lon-

of Lonworks technology.

Theory into practice

ECS Energy Conservation System's new lighting management system - Lightmaster - aimed at large installations, is based upon Lonworks. Lightmaster is inherently easy to install, maintain and reconfigure. Each switch and each set of luminaires is individually addressable and any switch or sensor in the network can be configured to control any set of luminaires without touching the wiring system. ECS knows just

Already a number of major end-users in the US and Europe are specifying the use of Lonworks compatible products for all of their buildings. For example, Wisconsin Bell, one of the 'Baby Bell' companies in the United States, and a leading instigator of new building technology, has recently requested a 'shopping-list' of Lonworks-compatible equipment which it will require from suppliers in the near future for its Lonworks-based building control systems.

Reader Service No 227

Savings in Scotland

The Royal Mail in Scotland is cutting its electricity costs by up to £1,200 per year at selected Road Transport Workshops, underground loading bays and car parks at letter delivery offices.

With nine energy managers, each one controlling a specific geographic territory, the Royal Mail has been in the vanguard of developments aimed at saving energy and conservation since the early 80's.

The Scottish division, which includes Northern Ireland, experiences a number of unique problems including the wide geographical spread of the area - which includes the Scottish Islands - and extremes of weather. Because of these factors the Royal Mail's divisional energy manager, Brian Taylor, has concentrated his efforts on a number of pioneering techniques including centralised control of hot water supplies and the instal-

lation of Econolight units to save on lighting costs.

"We installed our first Econolight system as a trial in 1991 at one of our road transport workshops and carefully monitored the load before and after installation," said Mr Taylor. "Our workshops are lit with high daylight SON lighting and a few fluorescents. The unit was also used on the supply lines to power ramps, tools and compressors. In fact, only the rolling road - which is not in continual use and needs a 500 amp supply - was bypassed. Over the trial we recorded a saving of 24%."

Since the success of this trial Econolight units have shown a 23% saving on electricity consumption at a letter delivery office in Aberdeen and similar results are expected at a similar installation in Falkirk. Recently two further installations have been made in Northern Ireland at a letter delivery office underground loading bay and at a road transport workshop in Belfast.

Mr Taylor, whose division extends to 278 different buildings staffed by 13,000 people, anti-

pated similar levels of savings and said: "Really we've had no real teething problems and the units appear maintenance free."

The Econolight system was pioneered some eight years ago and in principle it is a simple device which is normally installed in the switchroom between the incoming mains supply and the lighting distribution board. It is guaranteed for a period of five years with a minimum life expectancy of 35 years.

High speed sensing calculates the percentage difference in voltage required every half cycle to effectively reduce voltage requirements and energy costs with no apparent reduction in lighting levels or equipment performance. State of the art electronic control is used to ensure smooth voltage stepping and zero interference so computers and high technology equipment function normally.

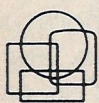
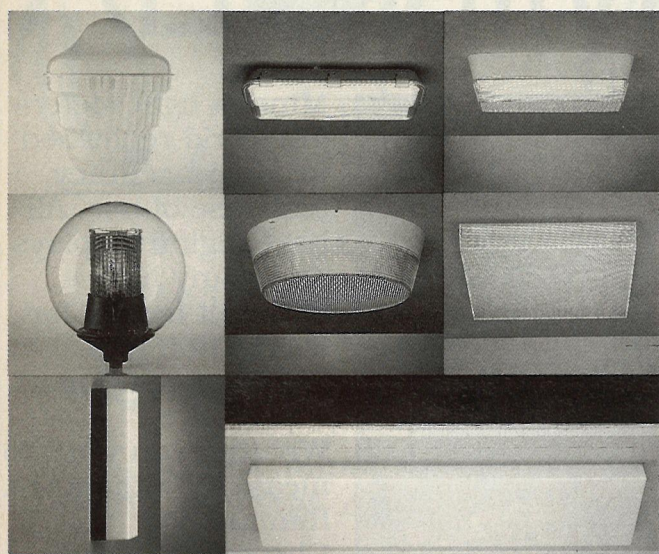
In the case of either low input voltage or unit malfunction the equipment goes into automatic by-pass and thus preserves the integrity of supply at all times.

Reader Service No. 228



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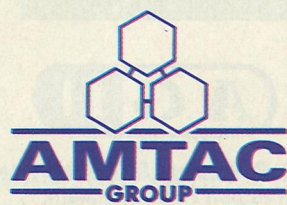
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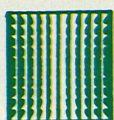


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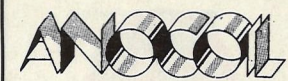
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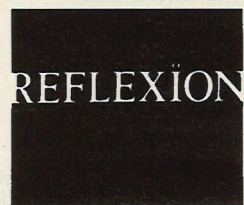


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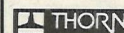


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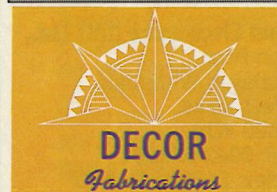


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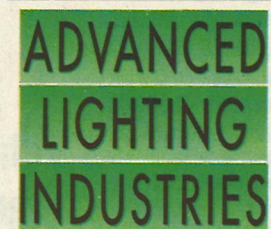
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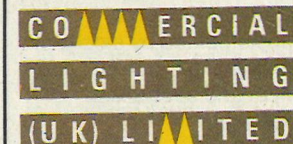


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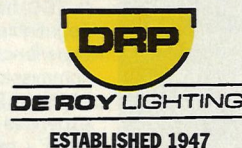
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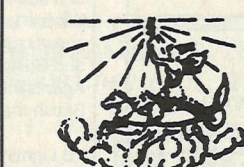
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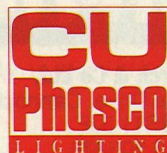


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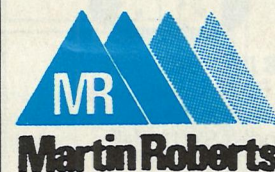
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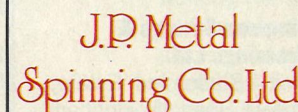
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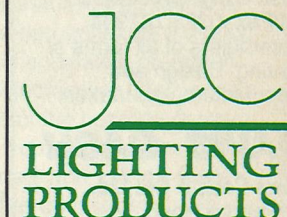
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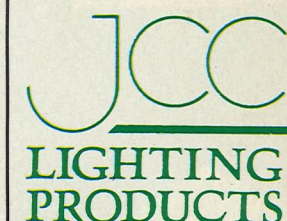
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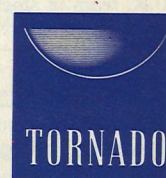
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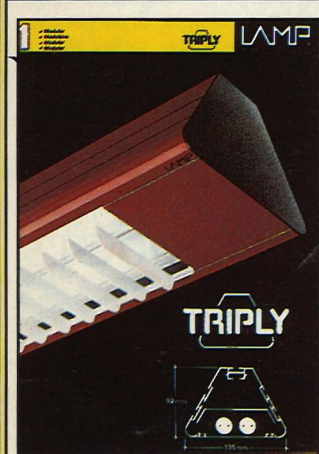


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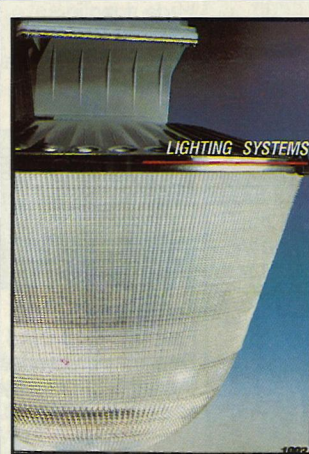
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Agents interested in representing the Company and developing the sales of its
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A rapid product development program is both enhancing existing ranges and developing new products at the leading edge of lighting technology. The portfolio increasingly reflects the Company's aim in producing:

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WHITECROFT
Lighting Division



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Please apply in writing, enclosing a copy of your CV and current salary details to:

Personnel Officer, Gradus Limited, Georgian Mill, Park Green,
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To be successful in this position you must be able to demonstrate sound management and engineering skills and be comfortable in giving presentations to customers and representing the Company at professional meetings. Furthermore you will need to be presentable, have an electrical background, sound commercial acumen and a clear understanding of how to get the best out of people.

Interviews will be held on 1st and 2nd September 1993 for short listed candidates.

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Interviews will be held on 3rd and 6th September 1993 for short listed candidates.

If you can meet the challenges of these demanding roles please send your C.V., stating which position you are interested in to, Mr S Singh, Personnel Manager, THORN Lighting Limited, Elstree Way, Borehamwood, Herts, WD6 1HZ, telephone 081-967-6201. Fax 081-967-6341.

THORN

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Good communication skills and the need to enjoy challenging situations together with a systematic and perfectionist approach to problems are integral to the function.

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Reader Service No. 9

Prescribed lighting

Wall-mounted uplighters from Connect Lighting are being used to illuminate a new crescent-shaped doctors' surgery at Henley-on-Thames. The architects, Sutton Griffin and Morgan, wanted to avoid a conventional system of fluorescent ceiling luminaires for the waiting room, play area, reception and records office. They therefore contacted D J Enterprises (Lighting) Ltd to provide a lighting scheme which was economical to run, easy to install and would enhance the unusual design of the building.

"After careful consideration we decided to use Connect uplighters for the scheme," said D J Enterprises director Dave Wheeler. "They satisfied all the architects' requirements, giving the necessary lux levels and also requiring minimum maintenance."



The public areas of group medical practice are now lit by a combination of Connect's metal

halide products, including 250W triangle uplighters with downlighter effect, 150W quarter-sphere uplighters and 250W floodlights.

Reader Service No 270

Lamp steels top prize

A stainless steel mesh sculptural table lamp was the winning entry, out of a field of 150, in the 1993 Student Design Awards sponsored by Avesta Sheffield.

Camberwell School of Arts mature student, Lolly Palmer,

won the £1,000 first prize for her Sculptural Table Lamp, which creates a table top 'moiré' effect by shining a soft light through two layers of stainless steel mesh.

Aimed at the corporate market, the lamp (measuring 0.9m x 1.2m) can be fitted together in a number of ways to allow interior designers and architects to experiment with a variety of shapes and patterns of light and shadow.

A clean design

Moorlite Electrical has recently been involved in designing specific solutions for two clean room lighting projects.

In one project, the client wanted to avoid contamination of a sterile laboratory when lamps had to be changed by electrical maintenance personnel. The solution was to make use of a recessed luminaire with a hinged, gasketed diffuser frame for access to the lamps. An isolating switch is activated by opening the diffuser frame, so there is no electrical hazard to maintenance staff. This precaution is backed by neon indicators to warn when the mains is still active.

In another project the client

required a luminaire in a controlled environment which could be operated without a wall switch and which incorporated an environmental change indicator. To meet this requirement, a sealed, gasketed luminaire which incorporated a presence detector was used. The detector switches the luminaire on and off and a xenon indicator warns staff of environmental changes so they can check instruments for humidity and temperature.

Moorlite has been involved in many similar design solutions for pharmaceutical and medical processing companies and claims that its computer driven design and manufacturing enable it produce such special luminaires at competitive prices.

Reader Service No 271

In brief...

● A new company, Inlico (Industrial Lighting Components Ltd), has been set up to distribute lighting components to lighting manufacturers.

Reader Service No. 272

● Oscar Faber plc has a new operational structure under which its UK businesses will be arranged under three companies – Oscar Faber Consulting Engineers Ltd, Oscar Faber TPA Ltd and Oscar Faber Water Ltd.

● A newly launched building services consultancy, the Davies Aspin Partnership, will operate from Bristol offices.

Reader Service No. 273

● Lighting design and manufacturing company Designed Architectural Lighting (DAL) has won a number of overseas contracts including trading floors in Hong Kong and Singapore, the British High Commission building in Nairobi, Kenya and a shopping centre in Belgium.

● Glow Ball Lighting Ltd has taken on further premises in Chingford, London (Tel: 081-531 4446). The new office will include a showroom and a trade counter.

● LB Lighting Ltd has gained the quality assurance certification BS5750 Part 1 for both designing and providing luminaires.

● Southern Electric Contracting Ltd has won a four-year £4 million street lighting contract from Wiltshire County Council, which involves maintenance work on street lighting and illumination signs in a service area including both Salisbury and Swindon.

● Light Sound Image Systems Ltd has been appointed as the exclusive distributor of Australian company Dynalite's range of architectural and entertainment dimmers and controls.

Reader Service No.274

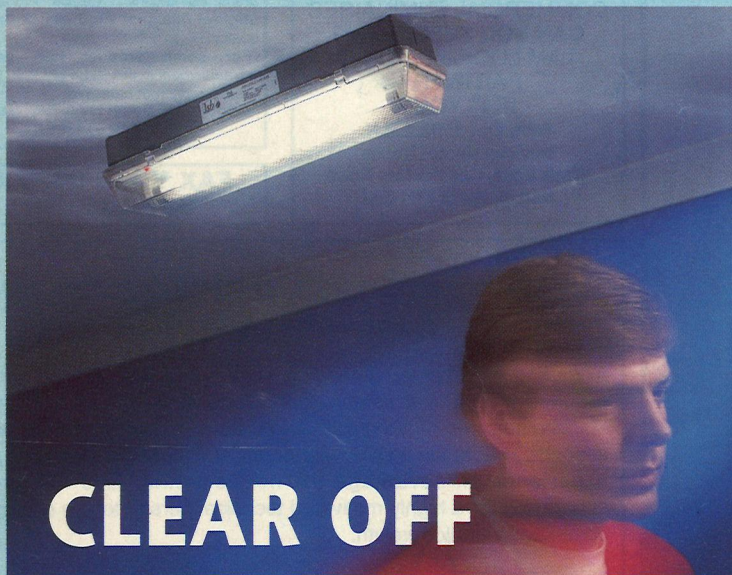
● WF Electrical Distributors has moved its London City branch from Commercial St to a new warehouse in Bethnal Green (Tel: 071-613 3321).



CLIP IN



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THE ALL NEW ZETALITE has been designed to provide the trade with a high quality, high specification emergency luminaire at a very economical price.

Zetalite is a completely self contained unit manufactured in tough vandal resistant materials and sealed to IP 65. It features a linear reeded clear polycarbonate diffuser that combines high efficiency with aesthetic appeal.

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In addition, Zetalite has a semi recessable design and each unit has provision for 20mm cable entries at both ends and at the centre to accommodate easy installation in any location.

Clip the cost of your next project and ask your supplier for Zetalite by name or contact us direct on the number below for further information.



JSB Electrical plc, Manor Lane, Holmes Chapel, Cheshire CW4 8AB.

Telephone: 0477 537773 Facsimile: 0477 535722.

IN YOUR NEXT ISSUE

The main feature in the September issue of *LEN* will be looking at lighting for the retail industry –

what there is and how it can be used to shift the goods out of the door.