PHILIPS
Lamps&Gear MAGAZINE
TOTAL LIGHTING SOLUTIONS

INTEL WORLD LIGHT FAIR 2001
VOLUME 4 ISSUE 1

Seeing the world in black and white

A look at the role lighting plays in the visionary Sephora retail shops

DALI

Bringing maximum efficiency in a state-of-the-art office environment

ITALY

Innovative and exciting concepts from Italy

A look at I Guzzini and Via Bizzuno

Welcome to the Intel World Light Fair

WELCOME TO THIS SPECIAL ISSUE of the Philips Lamps & Gear Magazine, celebrating the Intel World Light Fair 2001. This issue of Lamps & Gear has its usual widespread appeal to our audience of lighting professionals. It certainly should have – it includes stories from all over the globe, including Central and Eastern Europe, Japan, France and Norway, along with some special Italian features in honour of the Intel Fair.

Again, we have a variety of informative articles for lighting professionals. An indication of the changing role of lighting at the top end of today's retail environment is given in the article on Sephora. Sephora is a chain of outlets owned by the luxury products group LVMH Moët Hennessy Louis Vuitton. At its newest store, lighting plays a key role in supplying the special ambience Sephora uses to create a productive, distinctive environment.

We also have articles on the emerging lighting markets in Central and Eastern Europe, along with the often unusual lighting scene in Japan. You can also read about the up-to-date developments in LEDs and the use of DALI controls to help provide an advanced working environment for Telenor.

There's much more, covering products, technology, solutions and markets. I'm sure you'll find plenty to interest you.

Hendrik van den Boogaard
Managing Director, OEM Lamps Europe

I HOPE THAT WE WILL BE ABLE TO WELCOME YOU to the Philips Lighting stand at the Intel World Light Fair 2001. The Intel show is probably the most important continental lighting exhibition, attracting 115,000 visitors last year alone. The venue alternates yearly between Italy and Germany – this year it is being held in Milan.

To celebrate the Intel Fair, this issue of Lamps & Gear Magazine has contributions from two dynamic companies, each representing different aspects of the Italian lighting scene.

I Guzzini is a leader in the field of architectural and decorative lighting, providing indoor and outdoor solutions, involved with major companies on a worldwide scale. I Guzzini has enjoyed outstanding business growth in the last 10 years, becoming one of the European leaders in its sector.

We have an interview with Mario Nanni, founder and director of Via Bizzuno, a dynamic project- and design-oriented organisation. Via Bizzuno has demonstrated an outstanding capability for exploiting the design opportunities of innovative products to provide original interpretations of lighting schemes. They have a shining example of the value of "thinking out of the box" and rapid response, qualities which are characteristic of many Italian firms.

I hope you find these stories as inspirational as the show, and I look forward to meeting you at the Philips Lighting stand (PAD. 15/1 E 36 B51) 23rd – 27th May, Milan, Italy.

Diego Mantovani
Sales Marketing Manager, OEM, Italy

Contents

Let's hear from you

We welcome any comments you want to make about this magazine, as well as suggestions for articles. Contact us at:

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ALUline PRO-111

The new low-pressure solution for accent lighting

This stylish large-diameter low-voltage reflector lamp gives superb optical performance and now features a low-pressure burner that permits all ratings (50, 75, 100W) to operate safely in open gridlight luminaires.

The ceilings of modern stores are clean and uncluttered. Tiles are being replaced by plaster; ceilings now present a clean and empty face. It follows, therefore, that the number of ceiling-mounted luminaires needs to be kept as small as possible, without compromising the quality of the display and accent lighting in the store. This makes ALUline PRO-111 an exciting commercial innovation. Even more important for the user is that it has arrived on the scene at the time that it is needed, to meet the new demands of the latest trends in retail interior design.

A popular solution is the multi-lamp gridlight, in which a number of projector lamps are flexibly mounted in a single luminaire which is either recessed into the ceiling or suspended from it as a visually simple structure. Usually, such luminaires are designed so that individual beam throws can be adjusted in seconds, without the use of tools, to provide accent lighting where needed or to generate general lighting in the store.

The benefits of ALUline PRO-111 are its low first cost, its good appearance in gridlights, its superb optical performance and the fact that it needs no special control gear other than a normal low-voltage transformer. Its open appearance also looks particularly good in gridlight luminaires. ▶

ALUline PRO-111 specifications

Type		Average lamp life h	Maximum luminous intensity cd	Beam angle deg	Colour temperature K	Base	Reflector diameter
SPOT	ALUline PRO 111 G53 12V 8D						
	50W	3000	23000	8	3000	G53	111
	75W	3000	30000	8	3000	G53	111
	100W	3000	48000	8	3000	G53	111
FLOOD	ALUline PRO 111 G53 12V 24D						
	50W	3000	4000	24	3000	G53	111
	75W	3000	5300	24	3000	G53	111
	100W	3000	8500	24	3000	G53	111

ALUline PRO-111
is available in
3 wattages – 50, 75 and
100W, in 8, 24, and 45 degrees,
all equipped with low-pressure burners for
use in open luminaires. Mastercolour CDM-R lamps
in the PAR 30 format are available with beam angles of
10 degrees and 30 degrees in the 35W rating, and 10 degrees and 40 degrees
in the 70W rating. In all cases, the colour rendering index exceeds Ra8=80.

Technically, ALUline PRO-111 is a very advanced lamp. It combines a unique low-pressure halogen capsule, which is safe in open luminaires in all ratings, with superb optical performance from a high-purity faceted aluminium reflector. A metal cap shields the filament from direct view, not only reducing glare but also eliminating direct light and therefore enhancing the quality of the smooth, sharply-defined beam. The UV-block quartz burner reduces fading of goods on display. There is a choice of beam angles (8, 24, and 45 degrees), and ratings (50, 75 and 100W).

If more light is needed, the Mastercolour CDM-R ceramic-technology reflector lamp can be used in combination with ALUline PRO-111. At a crisp white 3000K, CDM-R colour temperature is the same as ALUline. In the PAR 30 format, CDM-R has a diameter of 97mm, so that the two lamps are effectively a physical match. The benefits of CDM-R are its long life – up to three times that of the ALUline lamp – its high luminous efficacy (for example the 35W Mastercolour lamp with a 10 degree beam has the same beam intensity in candelas as the 100W 8 degree ALUline lamp) and the low heat content in the beam, which not only keeps customers cool but can reduce the load in air conditioning systems to save even more energy.

ALUline PRO-111 therefore provides the lighting designer and end user with a choice. They can create a balance of use between CDM-R light, with its long-term cost-saving benefits, and flexible halogen lighting to create the best lighting solution in terms of quality and economy. L&G

Arti-shock Eindhoven

Replacement for electromagnetic ballasts in 'TL'D segment

Meeting today's increasing demands for energy savings in every segment of the market, the new e-Kyoto electronic ballast brings the benefits of electronic control gear to the standard trade luminaires for the 'TL'D lamp segment. Given the very attractive payback times (mostly within one year) for e-Kyoto, replacement of electromagnetic ballasts in the market will be much faster.

e-Kyoto

A simple answer to the e-Kyoto Treaty

brings energy saving electronic ballasts to standard trade luminaires

e-Kyoto is one of the ways in which Philips Lighting is responding to the 1997 World Climate Conference, held in Kyoto, Japan, which was dedicated to controlling climate change caused by emissions of CO_2 and other greenhouse gases. Much of these emissions are caused by the burning of fossil fuels, and since lighting accounts for around 20% of world electricity consumption, it is clear that there is plenty of scope for energy saving in this area.

One of the areas demanding attention is fluorescent ballasts, because the electromagnetic types are responsible for a large proportion of urban electricity use. These are mainly to be found in lighting systems in buildings like offices, shops, schools, factories and supermarkets.

Reduction of 25% in power consumption

It is well known that electronic ballasts save significant amounts of energy with fluorescent lighting, typically reducing power consumption by around 25%. But up to now, their relatively higher investment cost compared with conventional electromagnetic ballasts has prevented them from being applied widely in the 'standard trade' market segments.

To illustrate this point, the table below shows the savings made when using e-Kyoto electronic instead of electromagnetic ballasts in average cash value (in Euros) per year per 10 installed luminaires. ▶

Savings (in Euros) per 10 luminaires per year*

Lamp configuration	Application areas		
	Shops	Offices	Industry/supermarkets
1 x 36W	32	23	40
2 x 36W	67	48	84
1 x 58W	54	39	68
2 x 58W	106	76	132

*Based on average energy price in Europe

Now, the new e-Kyoto ballasts – named after the venue for the 1997 conference – address this need with an electronic solution at a very attractive price level and pay-back time. For the first time, this makes it possible for electronic ballasts to be incorporated economically in standard 'TL'D luminaires. Designed specifically for many lighting applications of a planned 10- to 15-year lifetime and where the lighting burns during the working day with low switching frequencies, e-Kyoto ballasts deliver substantial energy savings that result in pay-back times of less than a year in most situations. This makes them ideal for all new installations using 'TL'D luminaires, as well as for refurbishment projects where they provide an excellent opportunity to combine energy savings with improved lighting performance.

Meeting new legislative requirements

The low additional investment cost of e-Kyoto ballasts also makes them an ideal way for luminaire manufacturers to meet new legislative requirements which are progressively banning the most inefficient categories of electromagnetic ballasts. While up to now the use of electromagnetic ballasts has been virtually universal in standard trade luminaires – because of the strong price pressure in this segment – manufacturers will soon strengthen their focus on energy saving. This shift is already starting. An EC Directive on the use of electromagnetic control gear states that Class D (high-loss) electromagnetic ballasts will be banned from April 2002, and Class C (normal-loss) from 2005. At the same time, this joint declaration states that, by 2005, 55% of all ballasts sold must be electronic.

But the use of e-Kyoto electronic ballasts can also lead to other savings for manufacturers. With compact dimensions and a weight reduction of some 60% compared with electromagnetic ballasts, these electronic controls create savings in transport and distribution costs. And at the same time, the reduced ballast weight and better temperature behaviour means that the luminaire itself can be of a lighter and lower-cost construction.

All the other electronic benefits

Of course, making energy savings at an economic cost is by far the most important reason to use e-Kyoto. But these electronic ballasts also give all the other benefits. For example, electronic fluorescent lighting is flicker-free and eliminates 50 Hz lamp flickering, making it much easier on the eyes. Lamp starting is instantaneous, and electronic circuitry also prevents any possibility of stroboscopic effects which can be dangerous in areas where rotating machinery is used. There is also no audible hum, and heat generation is much lower, both of which contribute to an improved working environment. L&G

Benefits of e-Kyoto at a glance

As a replacement for electromagnetic ballasts:

- **Energy savings of 25%**
- **Pay-back time within one year**
- **Visual comfort**
  - **flicker-free**
  - **no visible striations**
- **Improved working environment**
  - **no audible hum**
  - **low heat generation**
  - **elimination of stroboscopic effect**

Seeing the world

Luxury products retailer Sephora uses innovative retail and lighting design to create stores with a unique atmosphere for a memorable shopping experience

Sephora, a division of the world's leading luxury products group LVMH Moët Hennessy Louis Vuitton, is a visionary retail outlet for fragrances, cosmetics and skin care products. Formed in 1993, Sephora is currently the premier chain in this sector in France and the second largest in Europe. Sephora has stores throughout Europe and the Asia-Pacific region.

FOLLOWING A FORMAT INITIATED by their first fragrance store which opened on the Champs-Élysées in 1996, Sephora stores aim to offer a pleasurable and effective shopping experience with all products on show in special service displays for browsing and self service. An exuberant ambience is created in these stores with striking black and white decor and bold spots flaunting the goods on show (see photos opposite).

In December 2000 a new chapter in the Sephora story began with the opening of the first store dedicated to skin care and "harmony" products. The aforementioned 'black' stores deal with one's looks, the new store in the Cour St Emilion in Bercy Village, southeast Paris, the first 'white' store, deals with one's inner self, or sense of well being ('Le blanc est la couleur des premiers pas de l'âme' – Soum).

Three rooms, or planets, emphasise different sensations: 'Discovery', 'Initiation' and 'Accomplishment'. Attractions include areas for aromatherapy, areas to relax with books or CDs and areas to connect to various internet sites covering topics such as Zen philosophy.

These novel shopping experiences dictated a novel appearance for this store, ►

in black+white

Sephora "black"
Champs-Élysées,
Paris, France

a challenge for the overall creative director, Mr Chafik, and his design team: Fabrice Thiérache, and Guillaume Galloy, in collaboration with designer Jean-Marie Massaud.

Everything in the design of this 'white' store aims to create a feeling of calmness and inner peace. To walk into it is to leave the slings and arrows of the outrageous world outside behind. A feeling of rest and inner harmony breathes from an interior with no straight lines, only gentle curves; no harsh or jangling popular music in the background but hushed incantations from the classical pantheon; and with no spots of light, only diffuse and blending white and purple hues emanating from the very walls and ceiling themselves.

The artificial lighting is not flamboyant, on the contrary it appears as enhanced natural lighting. Guillaume Galloy: 'Our intention was to ▶

'The great range of Philips Lighting products has given my team immense creative freedom with this store. The reception by the design fraternity and general shoppers alike has been enthusiastic and further 'white' stores are being planned. We look forward to many more years of creative partnership with Philips Lighting.'

–Fabrice Thiérache

Sephora “white”,
Bercy Village,
Paris, France

create a world within a world – you know you are not outside, but also you do not appear to be inside.'

Contouring the curved walls are hidden lines of purple and white cold cathode lamps. The billowing luminous ceilings are internally illuminated with projectors containing Mastercolour and White SON lamps. The Honey Comb shelving is also contoured with cold cathode lighting, this time of the NDF T1 type. They add to an elegant and shadowless wall of light in front of which the displayed products appear to float.

There are no luminaires on show. The walls, ceiling and shelving are themselves diffuse sources of light all around the shoppers. The experience evoked is one of complete and intoxicating relaxation.

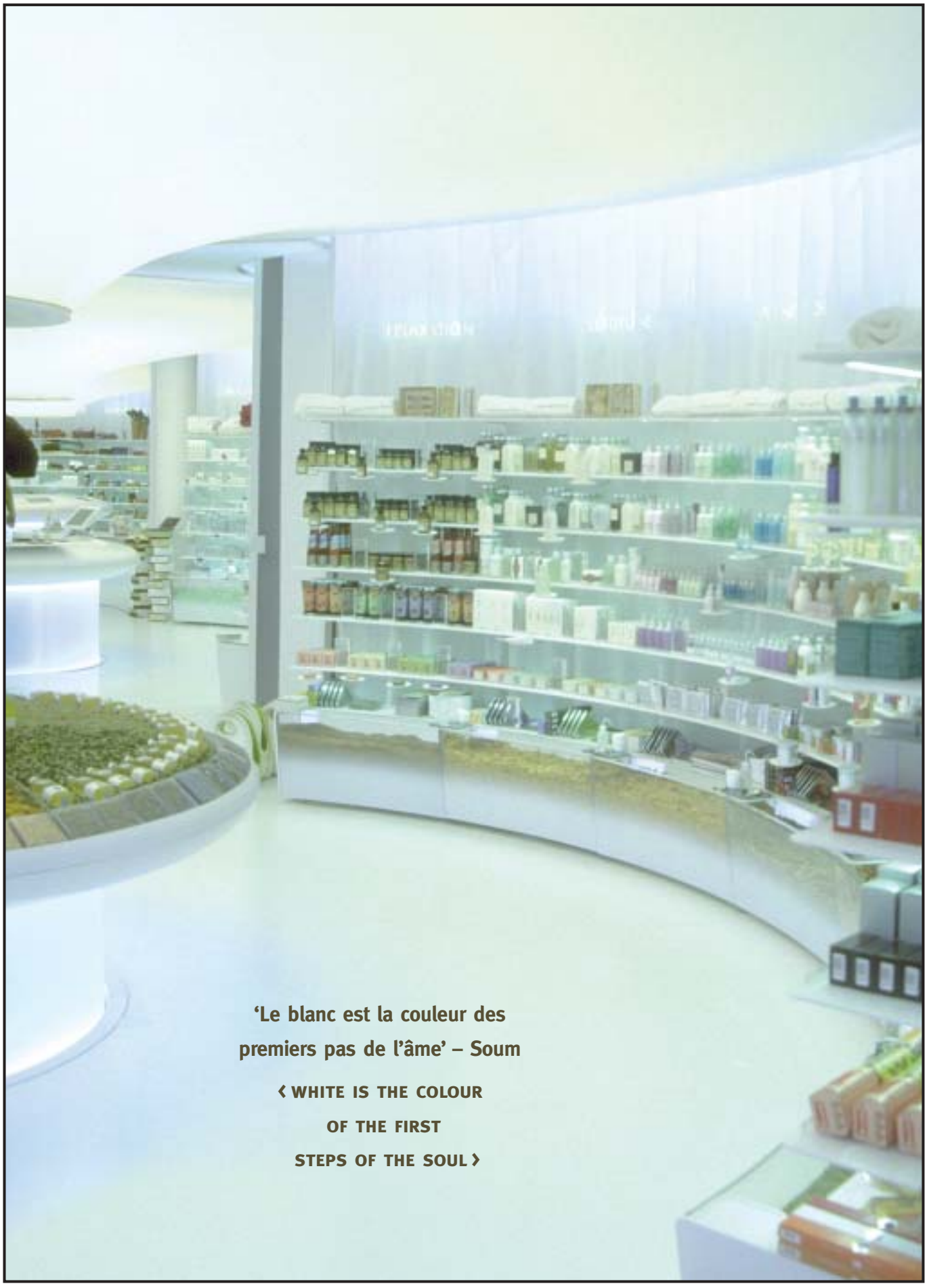
Achieving this success was a challenge jointly borne by the Sephora creation team and a special lighting solutions team from the Philips OEM department headed by Patrice Hennebert. It involves both standard and customised products developed over a period of one year in both the lighting application laboratory in Eindhoven and a "dummy" Sephora store in Paris. L&G

Support for special lighting solutions

The OEM Division of Philips Lighting has a resource to support specifiers and OEMs in dealing with special lighting solutions such as the curved fluorescent lighting for this Sephora shelving. Containing representatives from the different Philips supply centres (fluorescent, discharge, ballasts etc), and the application support laboratory this resource supports specifiers and OEMs to realise non standard design ideas. It liaises with companies from related industries such as Ineos and 3M. Example solutions are shown below. Application for this support should be directed to the local Philips OEM contact as shown on the back of this magazine. L&G

Example solutions (below) for illuminated shelving using:

1. **NDF T1 lamps (courtesy of Sephora)**
2. **'TL'5 HO lamps with HF ballasts (courtesy of Advanced Lighting Concepts)**
3. **Aperture 'TL'D lamps with HF ballasts (courtesy of DNA)**



‘Le blanc est la couleur des premiers pas de l’âme’ – Soum

‹ WHITE IS THE COLOUR OF THE FIRST STEPS OF THE SOUL ›

LED innovations for sign lighting

THE LAST TWELVE MONTHS HAVE SEEN the signage industry's first steps towards using LEDs in Point of Sale, channel letter and contour applications. As the efficacy of LEDs increases (for example the efficacy of white LEDs from LumiLeds have doubled in this timeframe to over 15 lm/W) the number of application areas in which they can be used increases. Secondly Luxeon™ High Flux LED modules with outputs over ten times that of traditional 5mm LEDs extend their usage beyond dynamic matrix signs and signalling type applications.

Philips Lighting with LumiLeds have integrated Luxeon LEDs of different power ratings into systems with varying aids to heat transfer, electrical connection and optical coupling for these sign lighting applications.

SIGN BY DNA SHOWN WITH PERMISSION OF GREEN BROTHER LTD AND JACUZZI UK

Point of Sale

As shoppers with less and less free time are faced with an ever increasing overload of product choices, so more and more purchase decisions are made in-store. Influencing these decisions, the design of Point of Sale displays has become a refined art, with rapid changes now an essential ingredient. In this context LEDs provide many opportunities for eye-catching POS design, for example with slimmer profiles, different shapes and dynamic elements like dimming, colour change and flashing.

A range of LED arrays with Luxeon High Flux LEDs, in white, blue, green, cyan, red or amber, and with or without collimating optics are available for this market, with a range of drivers for different combinations.

Chipstrip contour lighting installed on a Pizza Hut restaurant in the United Kingdom –courtesy GeeTee Signs

Contour Lighting

A series of interconnecting linear arrays of LEDs mounted on an elongated printed circuit board which is encased inside a translucent plastic housing can provide bands of light along roofs or edges of buildings. Again this means of producing decorative contours compares favourably with neon in terms of maintenance, energy costs and safety.

Chipstrip is such a system developed by LumiLeds and available in customised lengths of different cross sections and in red, amber, orange, green or blue for individual projects. L&G

Channel Letters

Strings of LEDs are being used as an alternative to neon for backlighting channel letters. Such systems compare favourably with neon in terms of a lower voltage reducing fire risks; its ruggedness greatly reduces risks of breakage during transportation, installation or usage; energy savings of up to 80% and a longer life.

The LumiLeds Led Rail system is a package of LEDs, a reel of flexible bending clip to mount the LEDs in (having fixed it to the sign backplate with double sided heat resistive tape), and a power supply and DC/DC driver with a feedback circuit meaning optimum operation is afforded to any number of LEDs up to 140 (for red).

CHANGING THE RULES

New lighting for commercial areas

The old rules on lighting often don't apply any more in a retail context. In this article Piergiovanni Ceregioli, architect and general manager of 'Centro Studi e Ricerca' of I Guzzini looks at ways in which the role of today's retail lighting design has changed and extended.

FROM THE HUMBLEST LITTLE SHOP on the corner to the swankiest boutique on Millionaire's Row, shops are an obvious and essential part of our lives. What I will be looking at in this article is the way in which shops interact both with the customer and with their external environment, and how the lighting designer can help them fulfil these functions successfully, using my company's experiences in Italy as an example.

As with other fields, the best outcomes for lighting in commercial areas are achieved as a result of close cooperation between client, architect and lighting engineering designer.

A store is part of a system, and does not exist as an autonomous entity. In some cases, the presence of stores helps provide areas of historic city centres with a specific character: think of Montenapoleone in Milan, Via Condotti in Rome, or Via Toledo in Naples. In contrast to this are shopping malls, which have no historic architecture, but which consist simply of a series of essentially similar stores in an environment with little character.

The basic difference between historic centres and shopping centres is, in fact, this lack of historical and sociological characterisation of the shopping centre – even where the latter attempts to take on the characteristics of a historic centre.

The lighting engineering design must therefore take into account this total context when producing an appropriate lighting solution.

In an urban centre, the external environment conditions the image of the store, in a relationship which can be homogeneous or contrasting.

When the external space is lacking in character, as might be the case in a peripheral, or suburban, area, the store itself can contribute towards providing the surrounding environment with character.

Commercial lighting therefore helps to add value to the location. ►

Habitat & Identità

"Software window" (top left) A lighting solution for a store selling computer products. Firstly, the technical nature of the product on sale is emphasised by means of basic fixtures using high-tech materials such as glass and aluminium. Secondly, the presence of the armchair and suffused light emphasise the pleasure of being there, and encourage customers to try out the machines.

"Reflections" (top right) This is a solution for a clothing shop, making use of translucent materials which divide up the various areas of the store, into display area, changing room and store. The light is above all accent lighting, which is implemented by means of suitably located spotlights (zoom lighting positioned above the clothes).

"Flower store" (above) This is a new design for flower shops, which are usually very well lit with general lighting. In this context, however, emphasis is given to the contrast between light and shade, which emphasises the essential nature of the furnishings, and the functionality of the ambience, which is divided into a display area and a work area around the central table.

Loro Piana store

The store is characterised by sober, minimalist furnishing: wood and glass are incorporated into a linear architectural structure, with regular colouring in neutral shades.

The Light Shed fixtures for lighting of this store, which aim to convey the concept of luxury without ostentation, have been specially created for this purpose. The fixtures consist of recessed units which combine low-voltage lamps (QT12 Gy6.35) with prismatic protective glass, providing regular distribution of the beam of light.

The effect obtained is that of soft light, with high chromatic performance. Furthermore, the fixtures are unobtrusive, and by means of the symmetrical and asymmetrical optics, it is possible to obtain general lighting of the environment, and special lighting for the walls where the shelves are located.

- **The best outcomes for lighting in commercial areas are achieved as a result of close cooperation between client, architect and lighting engineering designer.**
- **The lighting design must take into account the context when producing an appropriate lighting solution.**
- **Retail lighting must not just highlight product features, but help create the desired ambience in the store.**

As far as the interior is concerned, the standard references are vague and now outdated, since they relate simply to the goods, and not to their context, the mood to be created, or the concepts associated with the brand names sold in that particular store.

There is a clear difference between the display of a woollen jumper in a Benetton store and in a Loro Piana store. This changes the entire context, the purchasers targeted, and the atmosphere of the store, which lighting helps to create.

Pelzahaus Rieger

This is a large shop which displays high value luxury goods in a very opulent architectural context of marble and inlaid glass. The lighting consists, firstly, of lamps on the ground, which provide formal continuity with the architectural context, and secondly, of recessed fixtures with a very low visual impact.

Disney Store

Disney Stores are characterised by extensive use of colour, and movement imparted to the walls by the furnishings, the openness of the display windows, and the special display units.

The lighting is provided by Shuttle spotlights, which can use various sources of light.

The lighting function – beyond product displays

Light is obviously a fundamental factor as regards the general marketing philosophy behind a product, or a chain of stores. Although in the past light was used to emphasise particular aspects of the goods (colours, value of the materials, fabrics, jewels, etc), nowadays it is also, and more importantly, a matter of style: the light contributes towards defining and communicating the lifestyle which that store represents.

The special skill of Italian companies consists of combining the technology of the lighting engineering solutions with the shape of the fixtures, which by this means can be co-ordinated with the general style of the environment.

I Guzzini has been active in this area, both in research – via various branches of Habitat and Identità – and in practical activity, by cooperating with architects and lighting designers in order to produce lighting design fixtures for stores. L&G

CHANGING THE RULES

The changing role of lighting design in Italy

An interview with Mario Nanni

In an interview with Lamps & Gear Magazine, Mario Nanni, founder and director of the innovative Italian lighting company Via Bizzuno, talks about his company's philosophy and design strategy.

MARIO NANNI IS A FOUNDER AND DIRECTOR of the world-renowned lighting company Via Bizzuno. In a long and distinguished career he has been responsible for initiating many of the important trends in Italian lighting design and won a number of awards. Today Italian lighting design, as with design in other areas, has a worldwide reputation for excellence, experimentation and innovation. We spoke to him about the lighting scene in Italy and his views on lighting design.

L&G: Can you describe to us briefly the history and development of the lighting market in Italy, and explain how it is now changing?

MN: At the end of the '50s in Italy there was a surge of development in furniture design. At the same time, lamps, or lighting units, as I prefer to call them, also assumed an increasingly important role in architecture.

In Europe since the start of the 20th century, significant experiments were carried out, initially on the form of the lamps, by Paul Hennigsen or Wagenfeld. They raised the status of lamps to high-performance optical fixtures, in order to emphasise and make the most of the sources of light. In Italy, by contrast, formal research was undertaken, which frequently went beyond the exclusively technical requirements in the field: there was a desire for new forms, which could express the many changes in society.

However, it is essential to note that the lighting units which have continued to be perfectly up to date, and are fundamental to Italian design, are those which take into account a technical value required to solve the problems, whilst maintaining great simplicity and severity of form.

It is crucial for the designer's approach to new lighting solutions and initiatives to be driven by the desire for innovation and experimentation. Nor should it be forgotten that good design is partly the result of what I would call inspiration, and partly of intelligence, and therefore also technological innovation.

L&G: Can you talk to us about Via Bizzuno?

MN: Via Bizzuno was created firstly as a research laboratory, and only later became a producer of lighting units. In the last few years, many innovations have been made in the field of lighting design, and we can certainly claim to have made a significant contribution in this area. ▶

Betty Boop

Nanà

Via Bizzuno believe in giving consideration to the 'biological' architecture, which is closely associated with lighting systems. We design artificial lighting so that the lighting units and the type of light they give out are always functional in relation to human activities – for instance, using "warm" light with excellent visual comfort and the correct intensity, and lamps with colours which are psychologically pleasing.

The Nanà and Betty Boop lamp system in the Via Bizzuno Alva-line collection are examples of how this thinking can be applied. They are very colourful, have unusual shapes, and are based on the parameters of chromotherapy, so that they can also be used in environments that require a particular type of lighting.

The Mexcal lamps are one of the most significant applications of the concept of "light in movement", which is inherent in our own design philosophy. Using a system of articulations and rods, Mexcal lamps take light wherever it is needed, discreetly and with great lighting performance.

So, behind each lighting unit, there is always a motivation, a strong concept that guides the idea and the creation of the finished object.

We have worked with major designers, including Claudio Silvestrin, Claudio La Viola, Aldo Parisotto, Massimo Formenton, Luigi Cicognani, Marco Merendi, Grazia Ghetti, Corrado Venturini, Marco Costanzi, Rita Bedeschi, A.G. Fronzoni, and Marcello Chiarenza.

In the last few years, we have benefited from the sensitivity and creativity of two people in particular: A.G. Fronzoni, the "master of visual communication", and Marcello Chiarenza, the architect, set designer and theatre expert.

A.G. Fronzoni has designed for Via Bizzuno, but above all has contributed towards definition of the company image. It was important to have an image that was not just beautiful or formally correct. We needed something which genuinely represented us, and could express our reality and design philosophy.

Via Bizzuno's way of thinking is therefore represented by a blank page, through which there pass two lines, one vertical and one inclined, which are different, but at the same time in harmony with Via Bizzuno's two collections – 'For m', and Alva-line.

Alva-line is our dynamic, ironic, joyful collection, which is represented perfectly by an inclined line. Alva-line products are colourful and entertaining, blending materials and light. The colour of the Alva-line collection is blue.

'For m', by contrast, is a vertical concept: it is balanced, rational and rigorous. The lighting unit of the 'For m' collection becomes a true construction component, using a design which is almost self-effacing, withdrawing discreetly into the wall.

The colour of the 'For m' collection is grey like the most commonly used building materials, such as cement, aluminium and steel.

In this way, the link between the lighting unit and the architecture becomes increasingly strong and extensive.

Betty Boop

L&G: Can you tell us how you see light in design terms?

MN: My way of interpreting light takes into account four basic factors:

1) The density of the light
2) The absence and presence of light
3) Light as a construction material
4) Light in movement.

The density of both natural and artificial light is measured in terms of volumes and spaces.

"Absence" and "presence" of light are concepts which are associated with the characteristic of a lighting unit, which must express its true function discreetly, without being intrusive.

This method of producing light is connected with development of lighting units which are becoming increasingly flexible: the link with the architectural elements is becoming ever greater.

The lighting unit withdraws, upright, and self-effacing, into the walls: there is no need to know where it comes from, or how it works.

The light must adapt perfectly to the space, so as to make it seem that this light and this space have always co-existed.

This concept is closely associated with another of our beliefs, that is, that light must be considered as a construction material.

"Our" light is given off discreetly from walls, ceilings and floors, becoming one with the architecture, with which it must be integrated perfectly in order to construct a space.

Light is therefore considered, not just as a "lighting material", but also as a "construction material".

The idea of light in movement is associated with its flexibility; in other words it has the potential to express different sensations according to the messages to be conveyed. L&G

Mexcal TR, Mexcal S, and Mexcal TA

Trends in Urban Lighting in Japan

Kaoru Mende, lighting designer and president of Lighting Planners Association Inc.

Japan, for so long a world leader in the development and application of new technologies, also has a very distinctive 'lighting culture'. Here Kaoru Mende examines trends in Japanese lighting as we start the new millennium.

HAVING NOW EXPERIENCED at the turn of a millennium the collapse of rapid economic growth, we in Japan are entering into a new age. Our accepted values are being exposed to profound challenges. People are now asking themselves, "What is a happy life?" The trends in the urban lighting of Japan at the turn of a millennium can provide part of the answer to the question. In the rest of this article, I will try to give you an overview of current trends and outline some of the changes expected to occur in the 21st century.

Five Trends underlying the Lighting in Modern Japan

Five distinctive characteristics can be recognised in the lighting of modern Japan, dating from the end of the Second World War. They are:

1. To use abundant light everywhere.
2. To illuminate evenly.
3. To use white colour or cool colour light (high colour temperature).
4. To tolerate glaring light.
5. Not to introduce any sense of changing time.

Let's look at each of these factors in more detail.

1. To use abundant light everywhere

Flooding people with large amounts of light has long been seen as a sign of prosperity and this belief has rendered each nightscape as bright as daytime. However, many Japanese have at last started to take an interest in lighting quality, rather than quantity. It is not easy, though, to recover from a well-established surfeit of lighting. The question is, can we manage to live without the large amount of lights to which we have been accustomed for so long?

2. To illuminate evenly

Japanese people have been eagerly engaged in distributing light evenly to every corner of their environment. A circular fluorescent lamp is usually hung down from the ceiling at the center of a room, shedding light evenly on every corner of the room so that shade or contrast are banished. Similarly, street lighting standards are set so as not to leave any conceivable shades. Darkness has been regarded as an embodiment of evil! But in reality, we Japanese have an aesthetic sense, rooted deep in our traditions, toward contrasts made by shades which are embodiments of beauty. ►

Exterior at twilight / Sendai mediatheque (Architect – Toyo Ito; Lighting Consultant – Lighting Planners Associates Inc.)

3. To use white colour or cool colour light (high colour temperature)

Tokyo, when viewed from high above, is a city filled with lights of pure whiteness. The phenomenon is caused by white fluorescent lamps which make up 70% and more of the household lighting and by the mercury lamps and high pressure sodium street lighting which also contribute to the effect. Surely, the Japanese must really like white light! But what's behind their penchant for white? I am personally disappointed with a city of white lights where night is turned into day. I'm sure I'm not the only person who longs for the nightscape of a city after dusk which is bathed in a light of leisure and warm colour.

4. To tolerate glaring light

It's often said that Japanese are tolerant of strong and glaring lights. Certainly we are constantly exposed to glare coming directly from bare light sources, both indoors and out, to the extent that it has reached the level of a public nuisance. There is no physiological reason for this – it's simply that Japanese lack experience of good, gentle lighting that doesn't pierce your eyes. There is still a tendency to regard glare as equivalent to brightness, which is certainly a misconception. Otherwise, we wouldn't find so many people lured to drugstores being lit by only bare fluorescent lamps.

5. To ignore any sense of changing time

We are getting fewer opportunities to enjoy the sense of changing time. Part of the reason is that we have become accustomed to lighting environments which always stay the same. In other words, we are not yet accustomed to the practice of freely controlling the lights depending on time-place-occasion (TPO). Anyone may lose the sense of time when he or she is left in the lighting environment where no variation in the lighting condition is made available. The situation has reached such a stage where education is urgently needed to make people fully appreciate that the ambient control technology does in fact bring back to their lives the comfortable sense of time.

Entrance hall at Sendai mediatheque

Typical convenience store shopfront

Mimicking European and American trends in light-ups

We Japanese have a penchant for mimicking things European or American. One example of this is in the use of "light-ups" which originated in Europe and America and have found wide acceptance in Japan. The light-up means, in its narrow sense, the floodlighting of buildings from beneath. Japanese nightscapes are filled with many lighting schemes mimicking those successfully employed in European cities, where bridges, towers, castles and other historical buildings are lit to make beautiful silhouettes against the night sky. Such lighting technology has aroused interest among government organisations as an important lighting method for producing attractive nightscapes.

Light-ups, however, have nearly reached the saturation point. People are now shifting their attention to ways of designing the lighting environment so that scattered points of light sources are best organised to form lines and planes. Some people cast doubts on the use of light-ups from beneath in the case of wooden buildings, which are legacies of Japanese tradition. In fact, we are now encountering demands for a lighting method designed to produce Japanese, rather than European, scenery.

Convenience stores: welcome to Nightless City

The nonsense of high lux and glare, which is commonly found in area lighting in convenience stores, has now spread to drug stores – and indeed looks like becoming a trend. The levels I am talking about in an average convenience store are set at 1000 to 1200 lux, with the store ceilings lined with bare double-ended fluorescent lamps of white (or daylight) colour in an almost end-to-end fashion. However, the levels in drug stores astonishingly go up to as much as 2000 to 3000 lux (in fact, in the forefront of the stores it goes up to 4000 to 5000 lux). The inside of every store is kept in a condition of daytime, where no shade whatsoever is visible. Many female customers of 10 to 20 years of age, who are collectively known as Co-Gals, are drawn to these places. What attraction can anyone find in the madness of such an environment? The reality, however, is that the brightly lit stores are clearly shining with profitability.

Vending machines: contributing to the chaotic nightscapes of Japanese style

Just imagine vending machines, which are brightly lit for 24 hours a day. The vending machines do not stand alone, but in lines and groups, forming an alley in convenience stores. The vast number of such vending machines is the symbol of safety in Japanese cities and a uniquely Japanese commercial ►

style. More specifically, they embody a commercial environment where a man-machine interface has replaced fully-staffed stores. Each vending machine has about 4 double-ended fluorescent lamps of 30W installed and constantly lit day and night, every day. The number of the vending machines being installed in every conceivable place in cities is such that they overwhelm the streetlights installed along main streets. The site of the vending machines is not always fixed at a particular location. Instead, they are moved around to any location where they can sell more products. The vending machines cast pure white light on the side of the faces of passers by, thereby adding variations to their facial expressions.

The vending machine is generally considered a source of light pollution, but the extent to which it has influenced the night scenery of modern Japan has made it something that cannot be ignored. As a lighting designer, I sometimes ponder on whether the vending machines can be incorporated into the public lighting scheme, and thereby contribute something of value.

New trends in light sources, from mobile phones to immobile walls

The Japanese are very receptive to top-notch lighting technologies. From the lighting concept of mobile phones to large walls of exciting commercial buildings, the technology or expression of something new is always eagerly sought after. The developments of blue or white LEDs were pioneered in Japan. They are widely used to add a touch of entertainment to the spaces of the city or household, through the use of LEDs or EL sheets, developed for various electronic parts, or the technology underlining projectors which use liquid crystal panels. The façades of commercial buildings incorporate new light sources, which contribute to the production of delicate effects different to those produced by conventional exterior flood lighting. The interesting point is that the small light sources sitting inside people's pockets are also finding applications in ambient lighting of city-scale. In other words, you never know whether the development of new lighting technologies might play a role of providing a bridge between each individual and the city. Who knows, someday we might find ourselves in an age where mobile phones contribute to the creation of nightscapes. L&G

The five underlying lighting trends in Japan:

1. To have a lot of light everywhere, since light is seen as a symbol of prosperity.
2. The use of evenly spread light (darkness is considered an embodiment of evil) even though this conflicts with traditional Japanese liking for contrasts and shades.
3. The extensive use of white or cool colour light, in domestic and urban lighting, which turns night into day in Japanese cities.
4. The tolerance of unpleasantly glaring light – perhaps Japanese people have forgotten the joys of subtle lighting.
5. The lack of a sense of changing time in lighting environments – people need to fully appreciate that ambient control technology brings back a comfortable sense of time.

Mimicking European and American trends in light-ups

Floodlighting of public buildings works well in Europe and America – but a different approach is often needed in Japan.

Convenience stores and drug stores – welcome to Nightless City

Drug stores are following – and exceeding – the high lighting levels used in convenience stores, with levels of up to 5,000 lux.

Vending machines – adding to the chaotic nightscape

Urban Japan is being overrun with brightly-lit vending machines which add to the already highly illuminated street environment. Perhaps they could be used as part of public lighting, the author suggests.

New trends in light sources

Japanese are eagerly receptive to new light sources, whether for new mobile phones or to illuminate large office walls.

Bright wall by vending machines

Thermo-switch ballasts meet new safety standards

Meeting the applicable safety standards is an essential requirement for luminaire manufacturers. Philips Lighting aims to keep ahead of changes in standards – often through its participation in the relevant standardisation committees – to make sure it can offer the right products and advice to luminaire manufacturers when they are needed.

One area in which recent changes will have an impact on luminaire design is the new requirements for safety of luminaires for CDM, metal halide and SON lamps as specified in EN 60598. This standard relates to avoiding possible undesirable situations at the end of lamp life. In particular, some types of lamps may be subject to arcing at end of life, taking place in the discharge tube but also in the outer bulb of the lamp. This causes a rectifying effect, with a resulting high DC current which will overload the ballast and, in a superimposed or series system, the ignitor. The result is overheating of the ballast windings, which will drastically reduce ballast and ignitor life. Although Philips lamps have built-in end-of-life protection which makes these effects very unlikely, luminaires need to guarantee safe operation with all lamp types and brands.

Central Station Amsterdam

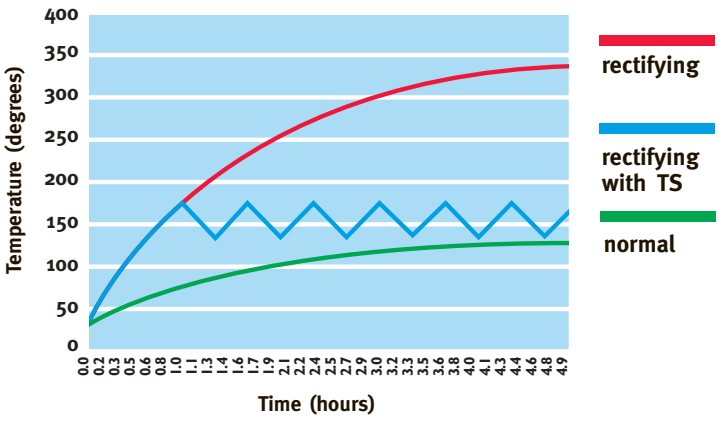
New electromagnetic ballasts with thermo-switch

To prevent possible overheating, Philips has extended its HID-Basic and HID-Heavy Duty ranges of electromagnetic ballasts with versions that incorporate a thermo-switch. This will detect possible overheating caused by an end-of-life lamp and cut off the supply current to prevent unsafe conditions from arising. The thermo-switch is self-resetting when the ballast cools. The new ballasts are suitable for use with both semi-parallel (impulser) and superimposed (series) ignitors. For maximum protection and optimum ignition behaviour, Philips recommends the use of the semi-parallel ballast ignitor system.

To comply with EN 60598, luminaires equipped with High Pressure Sodium and Metal Halide lamps are required to incorporate protection against ballast or ignitor overloading. This requirement already applies to CDM and metal halide, and has now been extended to include luminaires for high-pressure sodium lamps with effect from 1st September 2001 (planned date). Of course, the existing Philips electronic ballast types already incorporate more advanced protection against overloading, and meet the new EN 60598 requirements in full.

Temperature behaviour related in time

under normal running conditions, rectifying conditions without thermo-switch and rectifying conditions with a thermo-switch protected ballast.



In addition to thermally protected ballasts a timed ignitor is highly recommended to limit the ignition attempts with a defect lamp. This will also reduce the annoying cycling of the lamp (on-off switching) and the ignition of defective lamps which could have a higher risk of arcing. Under normal conditions ignitor-life matches that of electromagnetic ballasts, i.e. 10 years continuous operation. With a failed lamp however, the ignitor may be pulsing continuously and will rapidly use up its lifetime. In this situation the electronic timer circuit acts to prevent this effect as soon as the failure of the lamp is detected, ensuring maximum circuit protection and prolonging component life.

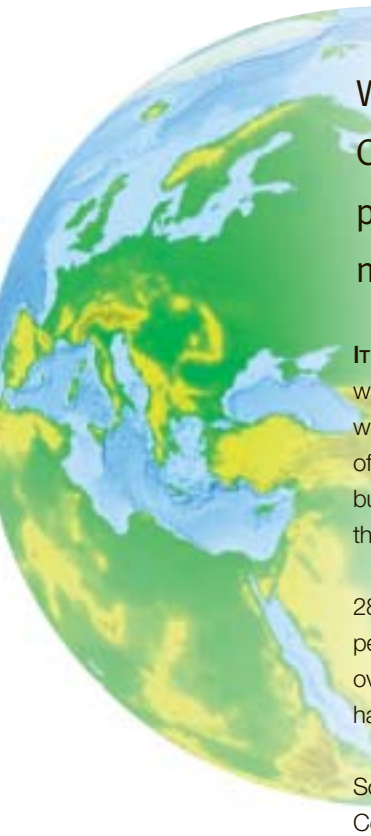
In order to assist in the clarification of which lamp types are specified as requiring protection of the luminaire e.g. usage of a thermally protected ballast, Philips have compiled the chart below. L&G

Lamp types requiring luminaire protection

Lamp family	Type/wattage	Protection required
Metal Halide	35–150W CDM (T, TD, R, TP, TC*) 70–250W MHN/W-TD 250–400W HPI PLUS (T, BU[S][P]) 1kW–2kW HPI/MHN	yes yes no no
High Pressure Mercury	50–700W HPL (standard and comfort)	no
White SON	35–100W SDW (T)	no
High Pressure Sodium	50–1kW SON (T, E, I, Comfort)	yes
Low Pressure Sodium	18–180W SOX (*Plus and E)	no

*70W CDM-TC is only suitable for full electronic operation

After the fall:
the lighting market in Central and Eastern Europe



With over 28 countries and 400 million people, Central and Eastern Europe offers great possibilities for lighting manufacturers – but they need to be aware of local needs and conditions.

IT'S ALREADY MORE THAN 10 YEARS since the Berlin wall fell – and with it fell the walls of protectionism, which had cocooned the markets and manufacturers of Central and Eastern Europe for decades. Slowly, but with increasing speed, these markets opened themselves to Western products and ideas.

Today, Central and Eastern Europe consists of 28 countries, with a population of around 400 million people. The area has experienced many changes over the past 10 years, and the local lighting markets have seen their fair share of those changes.

Jiří Černý from the Czech company Artechnic-Schreder gives us his view of the development of the Central and Eastern European lighting market:

"In the first years after our markets opened up, the local economies were constantly shrinking and everyone was focusing on price, price, price. This led to an influx of low price, low quality products, especially from the Far East. The bad experience with these products – lamps with a short lifetime, poor quality ballasts – combined with a slowly increasing buying power has led to a gradual shift towards quality products from suppliers like Philips. Nevertheless price is still today a dominant factor in any buying decision and higher prices must be justified in terms of return on investment and value for money.

The Central and Eastern European lighting markets are quite conservative. In the old days, lighting installations were made with either incandescent, T12 fluorescent or high pressure mercury lamps. At that time lighting installations were purely functional. It was only 4 or 5 years ago that a city like Prague started with initiatives for city beautification.

New light sources like Mastercolour and QL are now available but still relatively unknown, and need to be promoted more aggressively by the large lighting companies.

A clear trend of today is energy saving – using more efficient lamps, luminaires with reflectors and electronic ballasts. Given the huge numbers of installed inefficient luminaires the potential for refurbishment is enormous.

An excellent example of the energy savings achieved by refurbishment is the project for upgrading the outdoor lighting of the city of Prague. A total of 20,000 old luminaires equipped with high pressure mercury (250W or 400W) have already been replaced with luminaires for 100W or 150 SON-T plus. This has led to a reduction in energy consumption between 20 and 40% per luminaire. The refurbishment project will continue for some more years. We hope that in the meantime Philips will keep on introducing ever more efficient lamp-ballast combinations, allowing us to achieve even greater energy savings.

National Theatre-Prague

In spite of increased competition from West European luminaire makers, especially strong in the project business, I still see a good future for our local luminaire makers. The quality of their products is improving and, especially here in the Czech Republic, there is a high level of craftsmanship. However, if they are to be more successful, it is important that they focus on innovative products, like the 'TL'5 system, and perhaps on niche markets – such as that for nostalgic luminaires."

Project 'National Theatre Prague'

A good example of the possibilities offered by combining Western and Eastern products, skills and local knowledge is the renovation of the outdoor lighting of the National Theatre in Prague. Artechnic-Schreder was responsible for this prestigious project, including the lighting design. Another Czech company, Eltodo did the installation. The lamps and gear used were supplied by Philips.

The National Theatre is a building with many interesting features. The basic idea behind the lighting concept was to create a lot of contrast – not only in light levels but also in colour temperatures. Details were lit with Mastercolour lamps in both the 4200K and 3000K versions. QL induction lamps were used to light the columns. The general illumination of the lower part of the National Theatre was carried out with SON-T 400W and HPI-T 400W lamps. Lighting the upper levels was realised with SON lamps on poles located some distance away. Although the number of light points was increased, an energy-saving of 30% was achieved. Now, after a full year's preparation with some 230 light sources, the client has reported complete satisfaction with no lamp outages. L&C

- **Central and Eastern Europe is a huge market, consisting of 28 countries with a population of around 400 million people.**
- **In the first years after the fall of communism, the market for luminaires was entirely price driven. Bad experiences with low quality products have changed the focus to quality and return on investment.**
- **The Central and Eastern European lighting markets are still quite conservative. New light sources are available but need to be more heavily promoted.**
- **Energy saving refurbishment offers enormous scope. In Prague, a total of 20,000 old luminaires equipped with high pressure mercury (250W or 400W) have already been replaced with luminaires for 100W or 150 SON-T plus, reducing energy-consumption by between 20 and 40% per luminaire.**
- **Cooperation between local and western companies offers great possibilities – a good example is the National Theatre, Prague.**

DALI brings state-
to Telenor's

Integrated control concept for an innovative working environment

Aerial view of the Telenor project

Norway's leading telecom, IT and media company Telenor has chosen DALI lighting controls supplied by Philips for its ambitious new headquarters location on the site of Oslo's former airport at Fornebu. Here, DALI will ultimately help more than 6,000 employees, relocated from 40 sites in and around Oslo, to work with maximum efficiency in a state-of-the-art office environment when the project is completed in 2002.

When Telenor started work in October 1998 on its new headquarters on the Fornebu site – the home of Oslo's main airport since 1939 – it aimed to create Scandinavia's foremost innovative and creative working environment. Today those plans are well advanced, with the first wave of employees scheduled to move to their new location in spring 2001. The site covers almost 140,000 square metres, and with a construction workforce of more than 1,500 it is currently Norway's largest construction project.

As the leading telecom company in Norway, a country that hosts one of the world's most advanced telecommunications markets, Telenor has a reputation for innovation and excellence. Naturally enough the company wanted to reflect this attitude in its new headquarters, where aspects like modern design, care for the environment and outstanding functionality were the key requirements. And because of its important role in determining the quality of the working environment, lighting received careful consideration during the design phase.

Need for controllability

In particular, controllability was an important requirement right from the start. The plan was for almost all the luminaires to be centrally controlled, either by a centralised on/off function or with stepless dimming. This would be applied to each luminaire individually or in groups. To achieve this, the requirement was for a control technology that possessed the necessary inherent flexibility, while at the same time using an industry-standard,

-of-the-art control new Fornebu site

Artist's impression of the extensive Telenor project

non-proprietary concept to ensure an open, future-proof system with full product and equipment interchangeability.

Finally, the system chosen had to be competitive in both purchase price and installation costs, while also allowing economic changes and reconfiguration as and when these are needed.

DALI met all these requirements in full, with the additional advantage that the Philips-sourced system components are made by the same company that supplies the ballasts. The resulting integrated system approach was regarded as a clear benefit for both reliability and cost reasons. ►

Telenor wanted to reflect its reputation for innovation and excellence in its new headquarters, where aspects like modern design, care for the environment and outstanding functionality were the key requirements.

Tore Krabberød of Lyktan AS (left) and Jan Drabløs, Project Leader EL/IT for Telenor Fornebu

Diffused lighting of boulevards

Highly flexible control is essential for Telenor because of the wish to vary the lighting functions of the majority of the luminaires. While providing task lighting during the day, at night they have to serve as night lights, both inwards towards the atrium of the complex – a large glass-covered area between the six main buildings – and outwards as façade lighting towards the surrounding Telenor square. A total of 500m of boulevard is intended to be illuminated by diffused light from the hanging ceilings in the office areas. The rest of the façades will probably use fibre-optic effect lighting to highlight the steel construction details.

The ceilings are illuminated by fixed zone lighting consisting of suspended 'Fovea' luminaires from Lyktan AS, part of the Swedish luminaire manufacturer Ateljé Lyktan. These provide 50% uplight, with screening of the downward-directed light from the glass façade. Lyktan is supplying a total of 4,800 specially adapted 'Fovea' luminaires, representing the largest single order in the company's history.

Central LON-bus system

Overall lighting control is by a central LON-bus system, either directly through an on/off function, or through a gateway to the DALI controls which allow stepless dimming of

Ateljé Lyktan – lighting that combines design and performance

The philosophy of the Swedish luminaire manufacturer Ateljé Lyktan is to provide luminaires that excel in both design and lighting performance, and fulfil aesthetic, ergonomic and environmental demands. The aim is that its luminaires not only provide functional lighting, but also bring added value to their surroundings through a deliberate choice of materials and colours.

The 'Fovea' luminaires, on which the majority of the lighting installation at Telenor's Fornebu headquarters is based, are one of Lyktan's classic models, with a timeless and elegant design that perfectly complements Telenor's innovative office concept.

Since 1974 Ateljé Lyktan has been part of the Swedish Fagerhult group, which has enabled it to combine the technical characteristics and energy efficiency of new lighting technologies with its own design idioms.

Today Lyktan employs some 85 people in its factory and headquarters in Åhus, in southeast Sweden. It is steadily growing in Norway through its subsidiary company Lyktan AS, which like Telenor can also count Oslo's new Gardemoen airport among its prestige customers.

Striking architecture at Fornebu

individual luminaires or groups. During the day the light scenario is controlled by the central LON-bus system, transferring to preprogrammed dimming settings when the offices are not in use. Local control is by means of switches and switch panels, while the inputs from various sensors connected to the LON-bus are also relayed through gateways to the DALI systems. L&G

DALI – the new industry standard for local room controls

DALI – Digital Addressable Lighting Interface – brings the benefits of a new industry standard to lighting control systems. It has been developed specifically for optimum lighting control, both in Local Room Control applications and when interfacing with Building Management Systems.

DALI enables sophisticated lighting control while greatly increasing flexibility and reducing installation costs. The key to the DALI system is the combination of ballast switching and dimming via the control wire with ballast addressing. This enables different luminaires on the same control circuit to be controlled independently, and installations to be reconfigured without the need for costly wiring changes.

If the lighting layout or the sensors are changed, the installation can be reconfigured without changing the luminaire wiring. This flexibility allows the installer to specify DALI control systems at a later stage in the project, and even after installation to upgrade the control system with minimal rewiring.

Let's hear from you

We'll be glad to receive any comments you want to make about this magazine, as well as suggestions for articles or any other matters related to editorial content. For this purpose, you can contact us at:

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