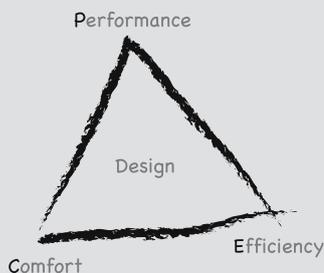




A lesson in light

Thorn's recently completed £32m (€35m) factory and Academy of Light at Spennymoor in North East England marks the largest investment in the manufacture of lighting equipment and training in the UK for almost 70 years.



In this edition:

Spennymoor opening	2/3
Lean, green and clean	4
LED products	5
Education and healthcare	6/7
Road and Tunnel lighting	8/9
Urban lighting	10
Sports lighting	11
Insight e-newsletter/ LumExpress	12

THORN
www.thornlighting.com



UK Member of Parliament for Bishop Auckland, Helen Goodman, who opened the complex, said the new facility was "fantastic news", adding: "I am particularly pleased that the new site will include the Academy of Light training facility, which will help to maintain and develop skills."

The Thorn Academy of Light Competence Sharing Centre, which fronts the new building, is designed to provide sales staff and customers from Europe and International Sales with application-specific training.

The structure has a floor space of 3,000m² on two levels where up to 100 people can experience light at work, view exhibitions and attend workshops and CPD seminars.

But the heart of the Academy is the 37-metre-long demonstration zone tailored to specific applications, product introductions and new technologies. It is approached through an exhibition area, which currently demonstrates sustainability in architecture and engineering.

Photos: Joss Guest

Continues on pages 2-3





Academy highlights ...



Shop 'til you drop - Visitors to the Academy will see how well designed lighting makes merchandising more appealing

Contractual matters - LumExpress is Thorn's offer for electrical contractors and wholesalers



Industrial illuminations - Safety and performance in factories and warehouses are boosted by effective and efficient light fittings

Show the true colours - At the colour comparator unit, visitors can test the effects of different light sources on fabrics, food and other everyday products



Sporting life - Good lighting extends play

A breath of fresh air - Outside, there is a 500m² 'light garden' where exterior fittings can be studied - and remotely controlled - through the end wall glazing



Modern manufacturing

Spennymoor is about more than training, and the 40,000m² building also hosts a relocated manufacturing facility and laboratory

In October last year the company was working from a sprawling site nearby, compromising its ability to respond to customers' demands. The new purpose-built factory is a model of efficiency, flexibility and closeness to the customer.

Changes on this scale don't come easy, but with careful planning and execution, the transfer was completed in only 45 days - with no impact on customer service.

The move to the new plant was a perfect opportunity to invest in new technology and introduce a synchronised flow system, which has

led to dramatic savings. For instance, the distance travelled by materials has been cut by 42 per cent.

Training, coupled with a culture of continuous improvement, are also lynchpins in the transformation of Spennymoor into a Lean Six Sigma organisation.

Eliminating wasteful reworking, unnecessary movements, downtime, inefficient work processes and overproduction enables Thorn's output to be fast, flexible and cost effective - allowing the plant to produce quality luminaires that are reliable, available and affordable.

Sheet metal is cut by the world's fastest laser cutter and robots undertake wiring and packaging duties.

Above and beyond

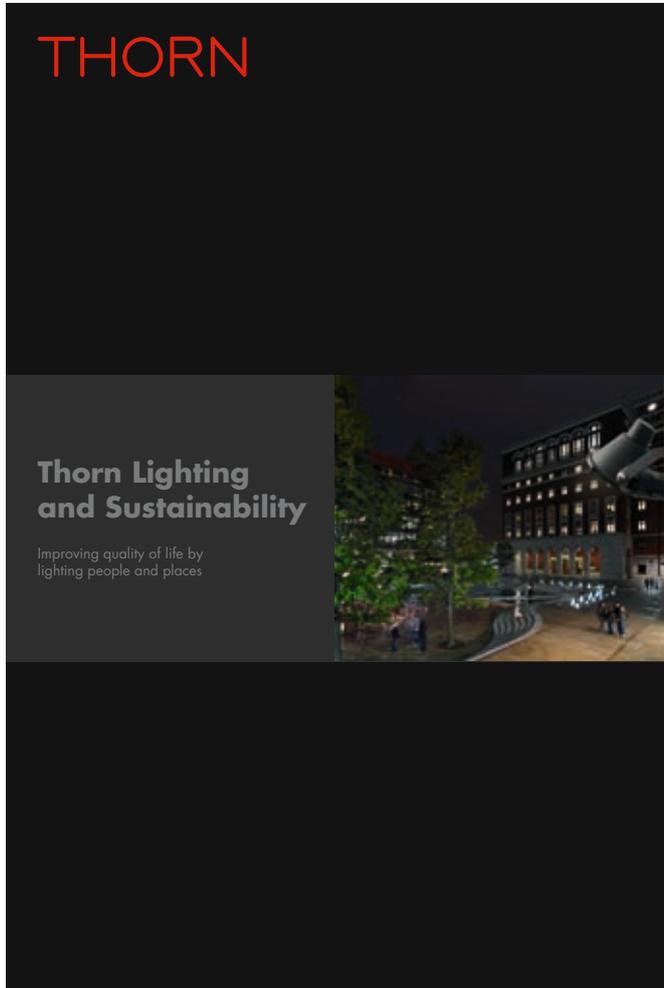
Thorn has also renewed its laboratory, which is particularly well known for its ability to develop high performing energy saving products. It now features full automation of thermal test measurements, a fully anechoic EMC test chamber, expanded materials and life test facilities, plus superb temperature control to all laboratory areas.

Photos: Joss Guest



Lean, green and clean

Visiting the new Spennymoor facility is not only fascinating in itself, but also essential for anyone who wants to understand the company's sustainability strategy

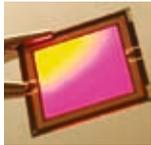


Thorn Lighting and Sustainability
Green Issues and Lighting

Thorn has recently focussed its attention on renewable raw materials as alternatives to fossil fuels. It has designed stand alone exterior products operated by alternative fuel sources, such as solar power and wind generation.

Renewable Energy Generation and Lighting






Monolith
A solar-powered LED concept luminaire, the Monolith is straight out of 2011: A Space Odyssey. It has two photovoltaic panels. Banked top and bottom by a modified LED Band luminaire (a strip of 10 x 1W LEDs). The rows of 40 LEDs (4 x 10) are mounted at 3.2m and 0.7m above the ground for overall lighting and pavement illumination respectively. The unit operates independently of the mains supply via storage batteries within the base.

Smart Avenue
The renewable energy theme continues with Smart Avenue, which uses solar PV panels with light sensors and presence detectors to deliver illumination from 4 x 1.2W LEDs. Wind generation allows similar recharging of the 50 hour capacity batteries during the night.

OLEDs
What of the future? Thorn is developing, in collaboration with Sunston UK and Durham University, the next generation of lighting technology. Organic Light Emitting Diodes (OLEDs) are wider thin panels of material that light up when electrically charged and are already found in mobile phones and MP3 displays. The team is developing the capability of printing a layer of conductive material - one two-thousandths the thickness of a human hair - on to a thin glass sheet that could transform walls and ceilings into lights. The sheets use minimal amounts of energy by comparison with traditional lighting and low volt power - 4 to 5 volt DC current. This will allow Thorn World headquarters to be lit using only battery or solar power. They also emit a far wider spectrum of light - more akin to natural daylight than current lighting methods - but longer and are more environmentally friendly (due to the lack of mercury) than current light sources.

Heating and lighting, packaging and painting - even simply moving products around the factory - all have an impact on the environment. And all have been re-evaluated for the new Spennymoor plant. For instance a new paint plant controls polluting fumes and treats waste water before it is discharged into the drain, just one factor in the factory becoming ISO 14001 compliant in May 2009.

Sustainability Guide

These criteria, as well as all the relevant EU energy and waste directives, plus examples of the brand's sustainable performance in conjunction with projects and products, are featured in Thorn's new 'Guide to Sustainability'.

The publication starts with two informative interviews, one with Andreas Ludwig, CEO of the Zumtobel Group, and one with Grant Daniels, MD of Thorn UK & Ireland. The second part of the guide lists product performance data combined with worksheets that help calculate lighting energy consumption in buildings (LENI). The guide is obtainable online as a pdf. Visit www.thornlighting.com/sustainability



New LED products

Base LED

Thorn has unveiled an LED downlight built from the co-operation between its parent, the Zumtobel Group, and leading LED producer Cree. Base LED uses Cree's colour-mixing technology and XLamp® LEDs to excel in three critical areas: performance, energy-efficiency and colour quality.

At 12W and with an output of 650 lumens, it matches the output of a CFL downlight, yet uses half the energy and lasts over four times longer (designed to last 50,000 hours). Available in 2700K and 3500K options, it has an excellent CRI (Ra) of 94 and is dimmable to 20 per cent.

Base LED comes in two versions, recessed or surface and for a more decorative look there is a choice of inner ring: white, silver or copper. The fitting is rated IP44 (splash-proof), so is suitable for mounting in humid areas, such as bathrooms.

Voyager LED points the way

Thorn's new Voyager LED range enables designers to specify emergency lighting that is aesthetically pleasing, consumes less power and requires smaller power supplies. Three options - Route, Area and Spot - are available in white or silver, recessed or surface mounted. All use single 2.7W LEDs and sophisticated optics so the fittings can be spaced more widely than traditional fluorescent systems.

All are self-contained and include three-hour NiMH batteries and charger. The nickel metal hydride battery is more environmentally friendly, offers greater capacity per volume and, having no 'memory effect', has superior recharge characteristics than nickel cadmium types.



Chosen for their acoustic qualities and aesthetic design, Thorn luminaires light the 1200-seat Symphony Hall of the recently extended Concert Hall in Aarhus, Denmark.

Close co-operation with architect CF Moller and installer Lindpro allowed the lighting to be integrated with the whole architectural concept. Inspired by the famous Golden Hall in Vienna's Musikverein the auditorium functions as a giant instrument, with sound being adjusted by moving walls, carpets and acoustic panels and canopies.

To allow the stepped walls and balconies to stand out as independent elements inconspicuous T16 (T5) fittings were used. The extreme height of the hall, about 25 metres, resulted in the use of a starry sky of tiny LED spots. Their long life has clear maintenance advantages.



Downlights chosen for flagship hospital



A marvellous example of hospital lighting at its best - and using some of the most energy efficient technology - was recently completed by Thorn and agent, E. Calleja & Sons Ltd in Malta. The new state-run Mater Dei General Hospital, which replaces the aging St Luke's hospital, has been lit throughout with mainly dimmable fluorescent luminaires in a contract four years in the making. With 250,000m² and 906 beds, the complex is among the largest operational hospitals in Europe.

The scheme called for Thorn expertise inside and out. The interior includes downlights and 'waterproof' luminaires while the grounds of the hospital now give a healthy glow at night thanks to Avenue lanterns.

Electrical contractors were ABB Malta.



Planor gets MicroPrism treatment

The suspended Planor upgrade uses upcoming technology, the MicroPrism optic, to guarantee lighting quality.

The sleek indirect/direct pendant combines T16 (T5) lamp technology and a micro prismatic lighting technique that regulates the light through pyramidal prisms and a newly developed surface. This allows for high light output (30% more than Planor Suspended), while reducing glare and uncomfortable reflections in conformity with EN 12464 (UGR<13) and concealing the lamps from direct view.

Elegant and technically sophisticated it solves one of those eternal problems - how to give even, yet 'user friendly' lighting over an entire desk surface.

Intelligent 'MiniSensa' and digital dimming versions deliver light only when it is needed for optimal energy usage.

Optus IV adds variety and flexibility

The expanded Optus IV family of T16 (T5) fluorescents delivers balanced lighting to offices and schools with a touch of style. While retaining its predecessor's reputation for performance, it gains greater flexibility, better looks and more control choices.

The range covers surface mounted, suspended and whiteboard luminaires, including an IP23 surface version for use in laboratories. Two light distribution ratios are available for the suspended bodies (60:40 or 40:60 direct/indirect).

Three body colours are offered - grey, white and brushed aluminium - in a sleek aluminium housing, which can be customised into various configurations using junction boxes and infill panels.

Digital dimmable and 'SensaDigital' control options add further flexibility.



On the move



Light station



Making an entrance



The Norrortsleden highway was built to provide a fast and easily accessible route for commuters along the northern suburbs of Stockholm. New and safe highways require high performance lighting that saves energy. The Swedish Road Administration therefore decided on some 600 Civic road lanterns.

The benefits are obvious: new electronic models with light regulation functions mean that local authorities are able to adjust the amount of energy spent. By using the Telea control system it is possible to 'tailor' the lighting system, regardless of the existing environment. The wide range of light sources and photocells guarantees the highest possible flexibility and leads to additional savings in energy.

Thorn India demonstrated yet another facet of its expertise in diverse areas of lighting application, when it designed and supplied the lighting for the Toll station at the entrance of the Old Mahabalipuram Road. This major highway is the gateway to the bustling IT corridor in Chennai and experiences dense traffic 24/7.

Thorn's solution uses custom Gotthard luminaires that employ a highly efficient asymmetric optical system, delivering good horizontal and vertical illumination. This ensures safety and adequate visual acuity making it easy for drivers to clearly see the toll station from a distance, while employees are able to clearly view the approaching vehicles and occupants. Further, the lighting enables quicker transactions and clearance for vehicles through the toll station.

Thanks to Thorn, motorists will not have to wait for the end of the Eagle Nest Tunnel in Hong Kong before they can see the light. Since its opening last year, the tunnel has been optimally illuminated by over 13,000 luminaires.

Running for 2.1km, from Butterfly Valley in Kowloon to Sha Tin in the New Territories, the twin tunnels will help to ease congestion on the busy Route 8 corridor.

With the adaptation of the eye in mind the scheme is in four distinct zones – entrance, transition, main tunnel and exit. The design is based on Gotthard luminaires using a combination of 1x49W fluorescent and 1x150 and 2x250W discharge lamps - surface mounted in lines above the three traffic lanes.

Illumination has also been supplied for the administration building, from where operators can monitor and control the lighting in both the tunnels.

Constructors were Leighton Contractors (Asia) and Kumagai Gumi.



Telea takes control

Significant product enhancements have been made to the Telea outdoor lighting control offer.

Utilising either power line or radio frequency data transmission, the system allows for individual control and monitoring of exterior installations without the need for a dedicated cable. The two data transmission technologies can be combined in the same project, making 'complex' applications straightforward to achieve.

Through improved remote and central monitoring, it enables maintenance schedules to be optimised, leading to fewer site visits and lower travel overheads. Lanterns can be controlled either individually or as a group to radically reduce energy costs, and programs can be extended from traditional street lighting to business parks.

Telea technology can be integrated into existing facilities with no great outlay and, of course, can be pre-installed in the new generation of Thorn lanterns.

No need to get heated with this lantern

Although the road lantern is one of the most popular luminaires in general use, it has a well-known peculiarity - it doesn't like temperature change.

Rain, for example, can cool down a lantern dramatically, causing a vacuum of 200 mbar (3 psi) or more inside the enclosure. If the seal between the body and bowl does not effectively equalise the pressure, air, moisture and other contaminants are drawn through into the luminaire, thus impairing performance.

Now Thorn has overcome this problem by upgrading its Jet lantern to IP66, complete with GORE™ controlled breathing vent. Containing a micro porous ePTFE membrane the vent constantly allows the lantern to breathe with changing environmental conditions, thus ensuring a dust tight and jet proof seal.

Green light for Lyngør



Good lighting control, echoes of heritage and economical operation were what the people of Lyngør wanted for their picturesque coastal town in southern Norway - a past winner of the 'Best-kept village in Europe' award.

The scheme involved street lighting for the popular summer tourist attraction, which is spread on four islands, and comprises traffic-free streets lined by idyllic white-painted houses with rose gardens, leading down to the delightful harbour.

Traditionally the town has used lanterns with 125W mercury lamps. However, they were removed a year previously because components contained toxic PCBs.

The optical efficiency of the pendant style Freesia lanterns with 35W lamps ensures improved visibility and reduced obtrusive light while requiring only a third of the energy load consumed by the old fittings.

Yemen's 'national wonder'

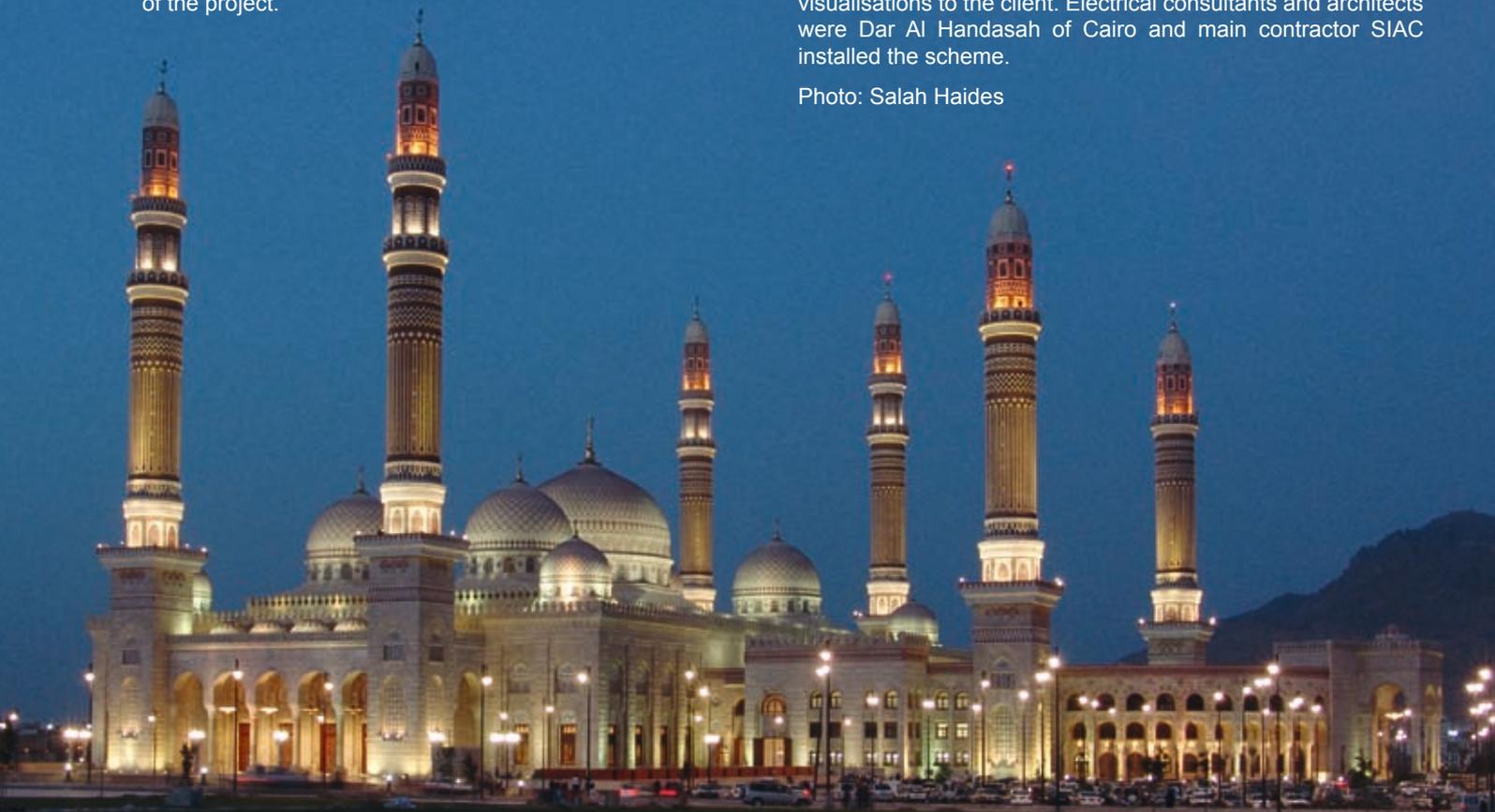
'A national wonder...' So says a leading Middle East website of the Al Saleh mosque in the Yemeni capital Sana'a.

Built at the President's expense to accommodate 44,000 worshippers, the \$60m (€47m) Mosque combines Yemeni architecture with classic Islamic elements, such as minarets, domes and arches, and floodlighting is essential to the success of the project.

A mixture of Contrast and OQ1000 floodlights from local Thorn distributor Al Zaghir cast light on the exterior, but without over-emphatic highlights and shadows. The scheme is striking and the six 100-metre minarets are visible from a considerable distance at night.

Thorn used 3D design software to supply rotational visualisations to the client. Electrical consultants and architects were Dar Al Handasah of Cairo and main contractor SIAC installed the scheme.

Photo: Salah Haides



Good neighbours

By working closely together, the Queensland Government, contractors Stowe Electrical and Thorn were able to deliver the Skilled Park Stadium on Australia's Gold Coast in time for the start of the National Rugby League season. Nearly 200 Mundial floodlights with 2kW HQI-TS lamps in various beam distributions are used to achieve four illumination levels - ranging from training to TV broadcasting.

The projectors were wired in pairs and mounted along the roof structure. This negated the need for corner towers and kept obtrusive light in the surrounding area to a minimum, ensuring the stadium is a 'good neighbour'.

Skilled Park can also boast a number of additional sustainability principles: a 23,000m² fabric roof - the largest in the southern hemisphere; recycled water for pitch irrigation and a park and ride transport scheme.



Stadium gets TV friendly

Commenting on his home stadium, the Vest Sports Centre in Holstebro, Denmark, Men's European Championship star Lars Rasmussen says: "We now have more light than before. The hall seems larger and during the matches things are far more lively."

Two hundred 4 x 80W T16 (T5) Titus Sport luminaires satisfy the ever more stringent requirements for digital TV broadcasts and slow-motion recordings. With 2,200 lux the TV companies

don't need to set up additional lighting. But it's not just the illumination level that makes the scheme unique. With the help of DALI lighting controls each individual fitting can be programmed for different scenarios and different levels. For instance, the hall can be used as a handball pitch, a boxing arena or a dance floor for competition, training or entertainment purposes. The possibilities are almost endless.

Photo: Mads Skamris

News at (almost) the speed of light ...

Need help to grow your business during a recession? To keep you better informed, Thorn prepares and sends an e-mail version of this newsletter covering news relevant to those working in the built environment and public realm.

Sent every quarter, Insight online highlights new products, projects and promotions as well as giving expert advice and links on sustainable technologies and solutions. It's a free source for events and keeps lighting practitioners updated with all the happenings and educational opportunities at the Thorn Academy of Light.

Registration is simple and quick. You can subscribe to the newsletter by visiting our website www.thornlighting.com/newsletter and adding your email address.



Recession beating ...

New for 2009, Nella post-top lanterns and Cetus downlights are great ways for contractors to enjoy affordable LumExpress branded products - whilst reducing installation and running costs

Low down on Nella

The Nella lantern provides precision lighting for pathways, plazas, and parks all in one box. It's easy to install, has low running costs, and offers years of reliable performance.

Few lanterns can combine such a high degree of effective illumination and styling. The optic - designed for 70 to 100W HIT and HST lamps - reduces upward spill light to a minimum. The conical, silver grey, aluminium body with a matching clear diffuser gives great scope to the landscape architect and designer.

Sealed to IP65, the optic will stay clean, therefore maintaining its looks and performance.

The design incorporates a one-piece twist-lock diffuser for easy re-lamping and maintenance.



High light on Cetus

Cetus has spring mounting clips, screwless connection blocks and integrated strain relief for direct tool-free fixing that cuts installation time by almost half.

It combines a horizontal lamp optic (LOR >55% with low glare UGR 19/22) with a linear gear housing for a recessed depth of only 110mm. Single and twin lamp versions, rated 18W or 26W, are 230mm in diameter. Attachments include a tri-vane louvre and IP44 cover.

Cetus is available in high frequency and emergency options.