

SKILL LIGHTING

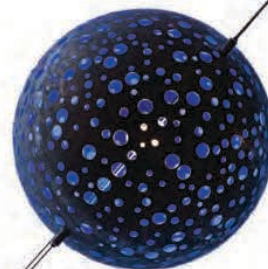
In this new monthly feature, we begin with lighting, a divisive topic. There's a vast cultural rift between advocates of natural and artificial lighting; austere, low-energy design inhabits a different universe from hedonistic tungsten-heads, reports *Felix Mara*

'We're recapturing the night,' says architecturally trained lighting designer Mark Major, a principal at Speirs + Major, harking back to the obsessions of early Modernist architects such as Mendelsohn and Taut. 'Artificial light was an integral part of their thinking,' he explains. 'After the war this was lost and there was a preoccupation with numbers as lighting came to be seen as a bolt-on, but in the past 20 years its expressive potential has been rediscovered.' This renewed interest in artificial lighting is linked to the growth of what Major calls 'the night-time economy', which has an estimated turnover of £63 billion in Britain. 'Light', he says, 'is a 24/7 commodity.' Like it or not, people are as likely to use spaces by night as by day, and many work in deep-plan buildings. Our circadian rhythms are in limbo.

Major's appetite for artificial light evokes the Belle Époque and *ukiyo*, or the floating world, in Edo period Japan. Both have magical qualities but are also rooted in technological change. You can experience this medium's lyrical potential in Speirs + Major's work at London's Queen Elizabeth Olympic Park, a collaboration with executive lighting designer Michael Grubb Studio, landscape consultant James Corner Field Operations and architect Make. Perforated metal spheres at the crossing points of catenary vaults scatter shifting hues of light onto pedestrian avenues and circular stainless-steel columns

Expo Milan 2015
iGuzzini's diminutive
Trick luminaire combines
lightblade, radial and
wash effects

Speirs + Major,
Queen Elizabeth Olympic
Park, London
One of the perforated
metal spheres scattering
light onto walkways at the
former Olympic Park, with
executive lighting designer
Michael Grubb Studio





**Nendo,
Camper store**
The Camper retail outlet in Stockholm has footwear suspended in mid-air. The distinctive use of diffuse light by Nendo creates a subtle play of shadows

alternate with the ranked trees lining the promenade. Lighting here is no bolt-on. The same might be said of Speirs + Major's integrated natural and artificial lighting design at Fuksas Architects' Shenzhen Bao'an International Airport Terminal. Here, thousands of hexagonal skylights perforate the wavy double-skin roof and project daylight into the terminal. By night, the roof acts like a paper lantern, as light reverberates between its inner and outer skin and through the skylights as the apron below the terminal is transformed into a pale cyan lagoon.

Major contrasts designers' interest in darkness with an inexorable tendency to over-light cities, sometimes mindless and often driven by standards, fear of crime and the increasing use of CCTV. One might also venture that lighting manufacturers do little to discourage this. 'With so much light spill from computer monitors in office interiors, is 750 lux really necessary?' asks Major. Too much light, with insufficient contrast, can actually impair vision. Indeed, a new BRE Trust-funded report, 'Lighting and Health', explains the importance of variation of light from day to night for our wellbeing.

'We need to rethink how we light cities at night', agrees Altus Associates' senior partner David Nixon. 'We waste vast quantities of energy providing a lot of useless street and building lighting at night that causes light pollution and blocks view of the night sky?'

Nixon considers street-light design central to the problem. Flagstaff, Arizona, he notes, has strict limits on street and building lighting as well as adverts because it has observatories, 'Cities like this work perfectly well and are much more pleasant places at night.'

Developments in the quality as well as the quantity of light produced by LEDs, OLEDs and lasers are offering designers unforeseen levels of control in night- and daytime environments. Italian lighting manufacturer iGuzzini has developed products such as Underscore flexible 6mm LED strips, used to unobtrusively inject strategically located diffuse light and give the impression of weightlessness in Piurarch's Caritas Pavilion at Expo Milan 2015. iGuzzini's Laser Blade uses miniature optic sources which project circular patterns of uniform high-CRI light with no halos, spots or double rings and its diminutive Trick luminaire combines lightblade, radial and wash effects.

Bright diffuse light has enormous artistic potential in the skillful hands of designers such as Nendo. The Japanese design practice has a distinctive way of using diffuse light, for example in designs for retail outlets such as Camper in Stockholm. This spatial quality of light, to use Nendo's terminology, is combined with direct illumination in the practice's NJP table lamp, designed for Louis Poulsen.

Recent product developments are complemented by exemplary architectural

**Nendo, NJP table lamp,
for Louis Poulsen**
Following in the long-standing tradition of anglepoise lamps comes adjustable direct illumination from the NJP iteration





**Foster + Partners,
UAE Pavilion, Expo Milan**
The cladding material for the exterior of the drum of the UAE Pavilion and its light sources were chosen in tandem. David Atkinson Lighting Design added theatrical filters to the linear LED fixtures, specifying Tecu Gold material and a high output LED strip fitted with an amber filter

applications, for example at Munich's Lenbachhaus, where Foster + Partners, with lighting designer Ingenieurbüro Bamberger, reworked the existing art museum and added a replacement wing opened in May 2013. This is the first extensive museum application of LEDs and this technology was used to provide versatile and precise lighting for paintings that, without risk of radiation damage, can be viewed in conditions resembling the *en plein air* environments where they were created. Lighting manufacturer OSRAM's LEDs were used to provide a range of light colours adapted to the needs of each painting, used in conjunction with daylight in certain areas and easily controlled.

David Atkinson, the lighting designer of another, very different, Foster + Partners' project, sees a 'sympathetic synergy between structure and light' as a growing trend. This is the foundation for David Atkinson Lighting Design's work on the UAE Pavilion at Expo Milan 2015. It reflects the coordinated approach that was fundamental to Foster + Partners' ecological masterplan for Masdar in the UAE, which, like this Expo pavilion, reinterprets the architecture of desert cities. For example, the cladding material for the exterior of the pavilion's drum and its light sources were chosen in tandem. After rigorous testing, the designers specified Tecu Gold material and a high output LED strip fitted with an amber filter. The strip at the top

of the drum uniformly lights the Tecu without creating glare and the light is reflected off the drum onto the surrounding GRC walls, creating ambient depth. 'We like prototyping and testing lighting products as this is an extremely important part of the lighting design process,' says Atkinson. 'A good example of this was with the external lighting of the pavilion drum where we added theatrical filters to the linear LED fixtures.'

The UAE Pavilion is teeming with inventive lighting ideas, but its designers also describe it as minimalist because its many types of light sources are used to their maximum potential. Cristián Undurraga's Chile Pavilion at Expo Milan 2015, a collaboration with lighting designer, Maite Zubiccoa, has also been described as minimalist. Just 20kW/h is required to light the whole building and although there are projected displays, only the timber facade and ground-floor ceiling are illuminated, using no nonsense iGuzzini iPro spotlights. This is another good example of lighting which is thoroughly integrated with the structure rather than bolted on, and therefore also resilient to value engineering.

'Are there certain types of lighting product and design approaches that have become outmoded and should be put to one side?' I ask Atkinson. 'I feel the "Retro" lighting look of factory lights has probably now run its course,' he replies, 'but that is not to say that I do not love the look of old lighting fixtures.'

**Cristián Undurraga,
Chile Pavilion, Expo Milan**
Cristián Undurraga worked in collaboration with lighting designer Maite Zubiccoa on the Chile Pavilion for Milan which used just 20kW/h iGuzzini iPro spotlights for the entire building. The lighting is completely integrated in the timber structure

