



# Architectural Lighting Design.

OSRAM Lighting Services  
- realising your vision sustainably.

SEE THE WORLD IN A NEW LIGHT



## Architecture needs light.

Great architecture creates demands – in design, material, engineering and computing power. New technologies are an important key. Therefore, artificial light must also continue to develop.

New technological principles and production tools have produced, amongst other things, the LED. However it is not only the light source itself, but also the intelligently controlled application of the light in lighting systems, which leads to greater efficiency, but at the same time also complex solutions.

OSRAM Lighting Services specialises in the application and planning of the latest light solutions.

New light is capable of creating well-being and health, increasing productivity and sales or generating attention and identity.

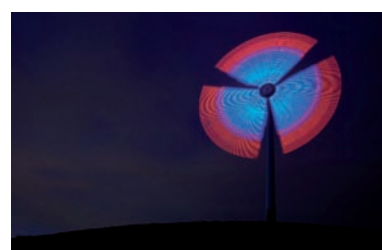
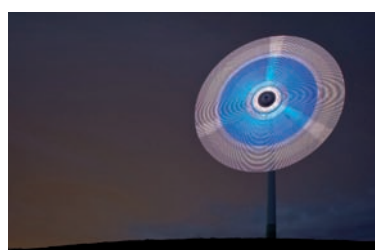
However, it always concerns the greatest challenges for modern society: sustainability and energy efficiency.



The city of Hamburg has another bright attraction now that OSRAM has illuminated the 100 year old town's landmark on top of the **Hotel Atlantic** in colourful LED light.



OSRAM has installed 150 Endura lamps in the 14 support pillars for the roof structure over the **Fröttmann station** at the Munich football stadium. The luminaries are completely hidden from the view of passengers.



At OSRAM's Headquarters seven light pillars s.c. *Seven Screens* were set up, each six meters high and equipped with state-of-the-art RGB LEDs on both sides. Altogether almost 80 square meters of display area with 770,000 LED serve as digital platforms for media artists.

Traxon an OSRAM subsidiary transforms a wind turbine into a unique LED piece of art. The *"Star of the South"* is lit up with 9,000 LED. The project is a cooperation between Siemens and multimedia artist Michael Pendry.

## Lighting Design.

For several decades we have been developing, planning and realising outstanding lighting solutions all over the world. Experience shows that optimum results are only possible if the tasks and architecture with lamps and lights are running together in harmony.

With the application of modern LED light sources, new lighting solutions are needed, as well as solutions concerning the complex technical implementation.

Important construction projects can therefore no longer be developed without professional lighting design.

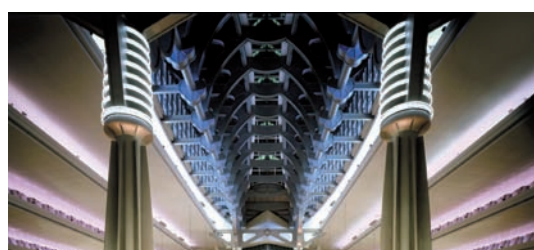
All individual factors should be optimally tuned to each other:

- Illuminance / Luminance
- Architectural design through lighting design
- Light colours
- Energy consumption
- Easy maintenance
- Cost optimisation
- Control systems
- Thermo simulation, optimised thermo management

Every single aspect influences the quality of the lighting.



Fotos SGL Carbon Group: Jan Bürgermeister/Hans-Jörg Tangemann



*OLS projected the architecturally significant building "Forum" of SGL Carbon Group SE. In addition to 70 % of the lights being powered by LED, the lighting design also considered emotive factors, e.g., subjective "light feeling".*

*With 508-metre height "Taipei 101" is the second-highest building in the world. For the lighting, the highest quality was specified - all lamps and devices for the public areas come from OSRAM.*

## Tailor-made.

A tailor-made lighting design is always based on the demands of the customer and usually contains the following planning activities:

- Calculation of the illuminances and luminances
- Photo-realistic 3D-simulation and visualisations of the future lighting
- Application of the most modern lamps and ECG systems
- Project engineering of controls dependent on presence and daylight
- Creation, manufacturing and check of conformity of the lighting solutions
- Integration of the lighting system into the building management system
- Development and programming of complicated light scenes dependent on the situation
- Linking with other requirements of utilisation (e.g. in conference rooms)
- Supply of easy to understand operating elements (touchscreen surfaces)

If requested, we can carry out, together with our partners, the complete implementation of the projected lighting solution.



*The new lighting system in the "Post sorting depot for Deutsche Post" in Straubing with an adaptable bus-light control provides an ideal light atmosphere with an energy saving of approx. 70 %.*

## Energy-efficient upgrade. Lighting analysis.

The specialists from OSRAM Lighting Services (OLS) are not only highly competent partners for the development and implementation of demanding lighting projects.

Another essential provided service is the analysis and optimisation of existing lighting installations concerning function, efficiency, durability and quality perception.

Today artificial light is responsible for about 19 % of the worldwide electric consumption. A substantial part of the CO<sub>2</sub> emissions can be avoided by optimised lighting. As a general rule through the modernisation of an old lighting system, energy consumption and operating expenses can be reduced by up to 30 %. Through the application of intelligent lighting management systems with movement sensors and dimmers dependent on daylight, savings of up to 70 % can be reached.

Simply ask us how much you can save and you will receive a questionnaire from us. According to the analysis of your lighting data you decide together with us whether an extensive audit is recommendable. In this case an OLS team will provide an expertise survey about the existing lighting installation in your location.

In a detailed final report we show you the saving possibilities and the investment necessary for each room listed separately. If you wish, OLS will deliver and install the complete new lighting system.

Just ask us – it'll be worth it!



As a part of the **Fraunhofer IAO Inhaus 2** installations, an experimental set-up was developed for future hotel solutions. With the application of innovative OSRAM LED light technology a futuristic vision was created illustrating how the wishes of a hotel guest could be fulfilled.

Cover: In the **world championship stadium in Durban** OSRAM and a South African light manufacturer realised the biggest LED project of the country. 70,000 visitors to the stadium are spanned by a 350-m-long and 104-m-high curve: "The Arch" is illuminated by 400 "LED BEAM" with OSRAM LED.

## Competence counts. Sustainability.

Size produces responsibility.

Sustainability also arises in lighting design not through one single big action or measure, but through the sum of many small things.



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