

# LIGHTING SERVICES



LIGHTING  
SERVICES

2014 / EN

**ONS**  
FOLLOW THE RIGHT LIGHT

## LIGHTING SERVICES

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FOLLOW THE

RIGHT LIGHT

# FOLLOW THE RIGHT LIGHT

## LIGHTING INNOVATIONS

### Trends



Light and psychology

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Light and safety

Energy saving

### Design



Design

Product design

Physical model and mock-ups

Product promotion

## LIGHTING ENGINEERING

### Engineering



Mechanical engineering

Electronic engineering

Thermal engineering

Optical engineering

Laboratory

Measurements

Certification



# LIGHTING SERVICES

## Production

Supply  
Manufacture  
Assembly  
Logistic

## Project

Lighting specification  
Visualisation  
Lighting calculations  
LQS Project  
Emergency lighting design  
Energy savings  
Wiring design and LMS  
Project documentation

## Support

Lighting system installation and programming  
Technical support

# FOLLOW THE RIGHT LIGHT

More than fifteen years ago we started as a small producer of luminaires in the midst of a dynamically developing market. **We knew we did not want to be merely average** compared to the ever-more demanding competition. As our production rates, customer numbers and profits increased, our passion for lighting grew, and the manufacture of luminaires no longer satisfied our desire to master the phenomenon of light with all its potential. **We fixed our gaze on excellent and began approaching it at the speed of light.**

Over a period of just a few years we have transformed ourselves from a small producer within an international market to a strong player who currently plays a key role in the development of lighting technologies, building our knowledge and understanding of everything about light and its provision. **We have become the ones who define rather than follow. Based on this we built a Lighting Innovations Centre with its own Research and Development department**, where you can find 120 specialists, engineers and designers from around the world. Our knowledge of light and lighting is limited only by their inherent boundaries, boundaries we push and expand every day, setting the pace for designers, engineers and production.

**Our attention is unshakably focused on theoretical research into light and its relation to life.** By determining the industry-wide Lighting Quality Standard we brought order to the chaotic assessment of artificial light. In this way we have provided both customers and other

market players with an effective tool for the evaluation and comparison of lighting solutions. Based upon this drive we have produced a series of specialist RIGHT LIGHT, publication to guide architects, developer and lighting designers, providing comprehensive instruction of how to provide high quality light for all types of interior and exterior space.

**We are pioneers in the research, development and production of LED** and nanotechnology. We have at hand **exceptional levels of knowledge and experience**, which we apply fearlessly in the development, production and design of LMS and the area of energy efficiency. All of these combined inform the production of high quality luminaires and lighting control devices.

Our knowledge, technological background and effective production and logistics enables us to deliver comprehensive and tailored solutions to customers, and connect together and a complex puzzle that results in a uniquely high quality solution to each project. Research and development, state-of-the-art technologies, strong product design, lean production, highly skilled and professional services as well as excellent logistics are all important parts of a puzzle leading to a first-rate and well-designed lighting solution for any kind of space. Fifteen years of systematic effort have taught us to perceive light with all its intricacies and refinements. **If you long for excellence, follow us**, we will guide you through the lighting universe and show you the way to the RIGHT LIGHT.



Turn your eyes towards excellence and you will start approaching it at the speed of light.



# LIGHTING INNOVATIONS

## TRENDS

The effects of both natural and artificial light on humans has been the subject of much medical research. The conclusions of such research form the foundation for our own investigative projects. **Our goal is to push and break the boundaries of current knowledge and understanding, and to forge our breakthroughs into innovative technologies** that can elevate the common luminaire into a unique item, able to actively influence the visual and psychological wellbeing of people, to improve the safety, security and economy of lighting solutions, and moreover to enter the awareness of customers through **original design**.

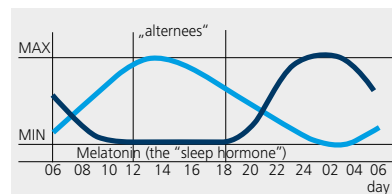
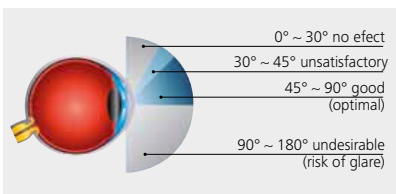
### LIGHT AND PSYCHOLOGY

It is no coincidence that we feel full of life on a sunny day, but as the clouds gather our mood darkens. **The amount of light, length of exposure and colour can have a major influence on human physiology.** The conclusions of various studies show that the human body responds most positively to daylight, leading the lighting industry to attempt to imitate the properties of sunlight as closely as possible with artificial light. **The fundamental fact that natural light is not monotonous in terms of colour, brightness, time of day, season and weather conditions, acts as the basis for innovation.** This effort to adjust the properties of artificial light to match those of natural light has led to the development of dynamic lighting and TunableWhite technology. The result

is the ability to simulate lighting conditions comparable to those that we are exposed to under the open sky. **Correctly chosen compensatory temperature of chromaticism, measured in Kelvins (K), defined by optic receptors as a colour, can actively influence the psychological state of person.** An appropriately selected CCT of 5000 K or more, perceived by the human eye as cool blue and green, acts to increase the performance of the body. A lower CCT of 2700 K to 3000 K, perceived by the human eye as warm and rich in yellow and red shades, acts to relax and calm the body. The correct selection of light colour can, therefore, support, arouse and correct the specific psychological reactions of people.



# Spend just one day in darkness and you will see light in a different way



## LIGHT AND HEALTH

**80 % of our perception of the world around us is facilitated by vision.** A sufficient amount of light is, therefore, not only a key factor for correct visual perception but is essential for our vitality. Scientific research has shown that people should be exposed to the positive effects of daylight for a minimum of 10 hours per day in order to achieve a biologically optimised state. Our lifestyles do not enable many of us to enjoy such luxury as **we spend two thirds of our productive life in enclosed workplaces with little access to daylight. As such, the quality of light provided in these spaces becomes even more important.** In the early 1970's, during which the building of large-area offices boomed, lighting designers concentrated on maximising worker performance. Due to their understanding of the effects of daylight on the body, they focused in particular on the brightness of provided artificial lighting. However, after **the discovery of a third photoreceptor in the human eye** that responds especially

to blue light with a wavelength of 430–500 nm, which effects the production of the sleep hormone melatonin, **a revolution was sparked within the lighting industry in the form of biologically effective light.** Its main benefit is its ability to positively influence certain functions in the human body. Simply put, current technologies allow us to optimise hormone levels, especially melatonin, cortisol and serotonin. Biologically effective light can contribute to increased performance and concentration, and reduces the risk of damage to vision. It can actively work against Seasonal Affective Disorder, Sick Building Syndrome and suppress pain in chronically ill patients. **However, a quality lighting solution must not become blinded by science,** but also provide ergonomically sound lighting, taking into account minimum illuminance levels, glare, lighting uniformity and CRI as defined by European standards for interior spaces. Workplaces with insufficient illumination, high glare and low lighting uniformity can reduce visual acuity, cause fatigue

and damage the eyes. Special attention must be paid to workplaces where employees perform visually demanding tasks and need to be sensitive to detail or where there is a high risk of injury.

# LIGHTING INNOVATIONS

## LIGHT AND SAFETY AND SECURITY

**The quality of artificial light provided is a key tool in ensuring safety and security.** It plays a decisive role in spaces where people perform visually demanding tasks that require precision and time, or where there is a high risk of injury. In this regard, the risk of encountering the stroboscopic effect caused by low-frequency light sources is extremely dangerous as it can cause hazardous rotating objects, such as machine parts, to appear as if not moving. The **quality resolution of safety and emergency lighting**, the task of which is to ensure adequate lighting in the event of the general lighting system failing, to enable safe evacuation of a building, limit panic and allow for the completion of risk activities, is also highly important. Nowadays

**special attention is also directed at public lighting as a way to increase safety and security.** A key aspect of such lighting is the fact that the human eye cannot see so well in lower light levels. **Our ability to recognise colours, shapes, obstacles, people, and therefore danger, degenerates in correlation to light levels.** It is no coincidence that the largest number of industrial injuries, traffic accidents and violent crimes occur after dark. Higher levels of illumination of a sufficient quality provided by an ergonomic lighting system can improve safety for drivers, pedestrians and other users of public spaces. **The modern LED technology used in our luminaires enables us to bring to our public spaces a key solution in the form of 'white light'.** Its spectral composition

is very similar to daylight enabling better contrast, modelling, colour and shape recognition, all of which helps us stay safe. White light illumination will improve the overall security of a space.



We know how to increase the safety of your space with the help of high quality lighting. □



#### ENERGY EFFICIENCY

We know that primary energy resources are running out and that energy prices are constantly increasing. This places even higher demands on the economy expected of lighting systems. Many older lighting systems fall very short in this respect. **Obsolete luminaires, ineffective light sources and lack of lighting management result in high energy consumption and low light quality.** We have been closely following the needs of energy efficiency for many years and have at our disposal extensive knowledge and understanding about how to reduce energy consumption. The selection of suitable luminaires, light sources and

LMS are the first steps towards an effective lighting system and energy savings. The search for more effective and efficient solutions points towards the use of renewable energy resources and lighting systems that themselves act as resources in combination with appropriate technology such as solar collectors.

*A controlled lighting system brings with it increased energy saving potential. Users can choose between various control tools, from simple manual switches to sophisticated automated solutions that provide increased user comfort and eliminate the losses associated with manual control.*



More information at [www.omslighting.sk](http://www.omslighting.sk)

# LIGHTING INNOVATIONS

## DESIGN

There is a starting point for everything. **Our ambition is to bring to the market something entirely new**, to create an original product that will become iconic based on its design and exceptionality, whilst at the same time bearing the unmistakable identity of our company.

The overall effort of our product designers leads us in the direction of our goal. Who is the product for? What design language should be used? What will differentiate it in the market? These are the questions we ask at the beginning of every creative process, the answers to which will define design concept and realisation.

Only after answering these questions can the next step be taken, where the idea becomes sketches, bolder and more confident, after which the hands of the designers convert them into a 3D model. This necessitates **a close link between the imagination of the designer and the pragmatic realism of the mechanical, optical and thermal engineers**, alongside the possibility of lighting management. At this point, the courageous vision turns into possibility.

**When we create new designs we never lose sight of the possibilities afforded by new technologies.**

LED, OLED and nanotechnologies are fed into the design process and offer new perspectives as we fashion the light of the future. Luminaires with unconventional shapes and those using new methods of distributing the light are trends we can offer thanks to that close collaboration between all elements of a final solution. Moreover, our luminaires meet normative requirements.

When all aspects of our work fall into harmony it allows us to create a flawless, functional product with authentic design, using the latest technologies, and ready to enter the market and customer awareness as **inimitable and exceptional**.

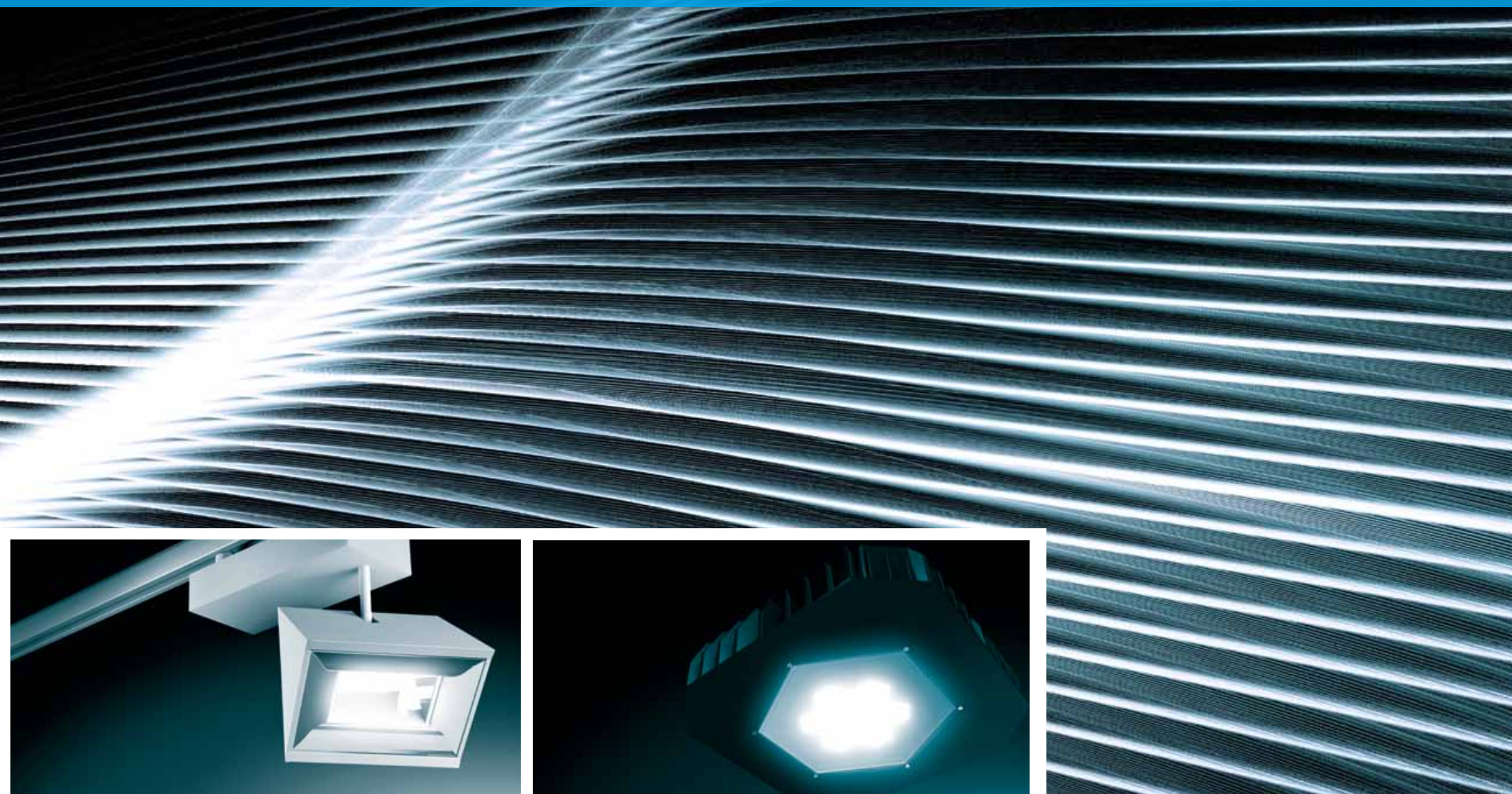


More information at [www.omslighting.sk](http://www.omslighting.sk)





Design is the first step in our line of business. It is the springboard for innovation. Our designers endeavour to connect two different worlds in one luminaire, the worlds of technology and of human need.



# LIGHTING ENGINEERING

## ENGINEERING

We always aim at achieving perfection in everything we do. **That is the reason why OMS products always have the best design and are made using the most precise and modern construction technologies and methods.** We consistently incorporate the results of our research and innovation into the development and production of all our products. We have become leaders in the LED market and have succeeded in applying them to many of our products, which lead the way in terms of energy efficiency and environmental responsibility. **We have now also entered the age of nanotechnology, and in our laboratories are developing and testing the first samples using this precise optical technology,** counted in tenths of nanometres. **We have entered the age of nanotechnologies. In our own laboratory, we are developing and testing the first samples of extremely fine and precise optics with perfectly detailed precision, counted in tenths of nanometers.** This technology enables us to control and direct the lumi-

nous output exactly, something not possible with currently used technologies. Nanotechnology allows us to direct the luminous output at various angles and to increase or decrease the density according to need. The integration of these ground-breaking technologies into our products ensures the highest level of design too.

**We have at our disposal exceptional research and production capabilities.** Our own photometric laboratories provide the ideal conditions for development of the most modern optical, mechanical, electronic and thermal solutions. Our principles of **lean production allow us to react to any client demand,** from small individual orders including the development and production of prototypes to fulfilling large orders for extensive projects. **Our market leading position also gives us the opportunity to work with the best suppliers and partners,** and our logistics department guarantee a **minimal delivery time of 3 to 6 days depending on the complexity of the order.** Our strength lies in our flexibility and ability to respond to the unique demands and ideas of every one of our customers.



CONCEPT  
AND DESIGN



NANOTECHNOLOGY



OPTIC  
DEPARTMENT



MECHANICAL  
DEPARTMENT



THERMAL  
DEPARTMENT



ELECTRONIC  
DEPARTMENT



LIGHTING  
SOLUTIONS



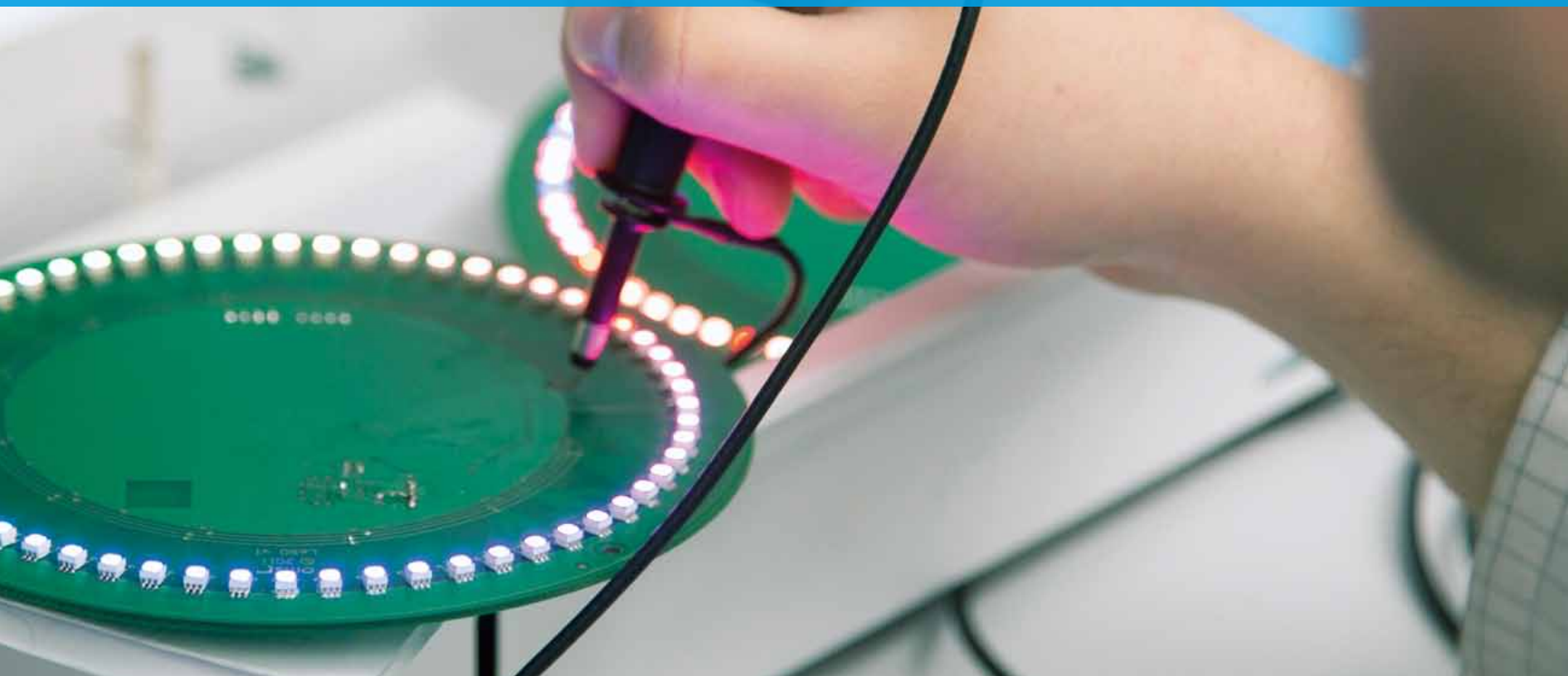
SUPPLY CHAIN  
MANAGEMENT



More information at [www.omslighting.sk](http://www.omslighting.sk)



We have entered the age of nanotechnology, are leaders in LED and are successfully developing OLED products.



# LIGHTING ENGINEERING

## PRODUCTION

**We regularly implement many new modifications to all types of luminaire.** This enables us to satisfy any customer with the customisation of any aspect of a luminaire's design, from construction to LIDC to surface finish.

**Our market leading position has enabled us to create a network of the best suppliers.** We collaborate with established and well-known producers and suppliers, which adds greatly to the quality of our products.

**Thanks to effective production procedures we follow the principles of lean production.** Using state-of-the-art mechanised production and two assembly lines with 3D operation enables us to keep lead times to a minimum, lower than the competition.

**Our effective logistics department uses modern vehicles to ensure reliable and timely delivery of orders all around the world.**



**ELITE** – an exceptional architectural brand of superior quality that represents the highest global level of lighting innovation, following the latest trends and constantly pushing the boundaries of lighting technologies.



**ADVANCED** – a commercially oriented brand of high quality and efficiency that allows for great flexibility and variation by means of product customisation according to individual customer needs.



**UNOLUX** – high quality luminaires for everyone. The whole array of luminaires with excellent lighting parameters for competitive prices. A standardized prototype enables minimal delivery time.



More information at [www.omslighting.sk](http://www.omslighting.sk)



There are never enough good products on the market, allowing it to easily be flooded by bad ones.



# LIGHTING SERVICES

**A satisfied customer is the greatest motivation to us,** to improve our knowledge and develop new products and technologies. However, we are also completely attentive to the customer, who is not only interested in what we create but in how important they are to us. We have been focused on the development of comprehensive services for fifteen years, thanks to which we are able to offer customers tailored lighting solutions and realisation.

**Within our Lighting Innovations Centre is located the Lighting Solutions department.** A wide range of specialists across lighting design, system management, energy audits, energy savings and visualisation work there. In close collaboration with other departments our specialists are able to provide complete project documentation for all types of lighting project and ensure its realisation. **The range and professionalism of our services truly sets us apart from the competition.** Thanks to our extensive knowledge and experience we are able to cover every stage of your lighting project, from the initial idea up to putting the new and more effective system into full operation.

**Our market leading position allows us to cooperate with the best installation services worldwide.** This further facilitates participation in multi-national pro-

jects. Our effective project management team can offer you a wide range of services in one place and one package. This will simplify your orientation of the opaque and sometimes chaotic network of suppliers lacking adequate references.

During the pre-project stage, our services include the provision of consultations and presentations for customers, through which they will gain a thorough overview of the proposed design and have the opportunity to compare different options. Then, based on initial investment and payback calculations, the customer can choose the most advantageous option. **We place the highest demands on our services and will support customers even after the successful completion of the project.**

**We are available for you 24 hours per day via our online service.** We are ready to answer any question and provide you with assistance in the resolving of issues that may arise. The guarantee of service quality lies in the huge human potential within OMS, not only as professionals and experts, but as highly motivated individuals who work together to ensure the best possible result. Their devotion and enthusiasm are luxuries in such a competitive environment, but essential elements thanks to which we are the best.



Competitively priced quality products and services that will put you a step ahead of the rest.



LIGHTING



SERVICES

# LIGHTING SERVICES

## PROJECT

Lighting specification

Visualisation

Lighting calculations

LQS project

## SUPPORT

Installation and programming of the lighting system

Technical support

Emergency lighting design

Energy savings

Wiring design and LMS

Project documentation

# PROJECT

## PROJECT

### Lighting specification

- Luminaire selection
- Defining the appropriate illumination
- Lighting design according to the RIGHT LIGHT methodology

### Visualisation

- Lighting design support
- Lighting design concept
- 2D visualisation
- 3D model
- 3D visualisation
- Video presentation
- Lighting demonstration

### Lighting calculations

- Calculation of daylight availability
- Calculation of artificial lighting

### LQS project

- LQS Composer
- LQS project optimisation

### Emergency lighting design

- Luminaire selection
- Emergency lighting calculation
- Emergency system selection
- Detailed inspection plan
- Complete fire protection project

### Energy savings

- Lighting energy audit
- Return of investment calculation
- Energy certification of buildings

### Wiring design and LMS

- Wiring design
- LMS design
- GUI design

### Project documentation



## Lighting specification

Visualisation

Lighting calculations

LQS project

- Luminaire selection
- Defining the appropriate illumination
- Lighting design according to the RIGHT LIGHT methodology

# Lighting specification

**There is no uniform lighting solution.** Every space needs to be approached individually. Therefore, during the pre-project phase **the information you pass on to our team of specialists is key.** In order for us to start the project comprehensively and responsibly, we need from you all the information necessary regarding the space for which the lighting solution will be designed, including how it will be used. The more thorough the specifications of the space and the ideas of the customers, the easier and more accurately we can design for the given space. It enables us to choose the appropriate type and style of luminaire that can fulfil the power, output, colour rendering, glare, light distribution and design needs. Once this is done, we will go on to define the illumination of the space in compliance with legislation, standards and the Right Light methodology.



# Lighting specification

## Luminaire selection

Defining the appropriate illumination

Lighting design according to the RIGHT LIGHT methodology

## Luminaire selection

**The luminaire selection service includes a comprehensive consultation that results in the final recommendation of a particular type of luminaire for the specified location.** The choice of luminaire is based on various technical requirements, including such basic criteria as whether the space is indoors or outdoors, and more complex criteria regarding the layout and use of the space. The more specific requirements further narrow the selection until we find the perfect fit for your lighting solution.

Every space requires different illumination and therefore different luminaires. **It is important to select luminaires that provide appropriate colour rendition and glare levels.** During the decision making process we will focus on other technical parameters and details, such as the optical system, light distribution, efficacy, level of protection (IP/IK) and the mounting type. We will help you choose the most appropriate design and light source for your needs.



Pricelist of services – [www.omslighting.sk](http://www.omslighting.sk)



OMS is represented by three brands: ELITE, ADVANCED and UNOLUX, each with its own unique philosophy, customer focus and level of technology. Across all three brands customers can find luminaires for use many areas of application.

### INPUT:

- Description of the illuminated space
- Illumination requirements (norms, RIGHT LIGHT)
- Ingress protection (IP)
- Light source type
- Optical system
- Luminaire dimensions
- Luminaire installation
- Luminaire type
- Luminaire description
- Luminaire wiring

### OUTPUT:

- Luminaire type
- Light source type
- Optical system
- Light distribution
- Lighting parameters
- Luminaire dimensions



Tell us about the space you need illuminating and we will find the perfect luminaires for you.



# Lighting specification

Luminaire selection

## Defining the appropriate illumination

Lighting design according to the RIGHT LIGHT methodology

### Defining the appropriate illumination

Light has a substantial effect on people, influencing their psyche, performance, concentration and regeneration. The appropriate illumination of a space enables the correct perception of visual information and the recognition of objects and faces. On the contrary, inadequate or inappropriate lighting can have a greatly negative effect on work performance and the state of psychological and physical health. Therefore, **when designing the lighting for any interior or exterior space we implement all valid European legislations and standards.**

The type of space and its use are the basic criteria upon which we determine technical and lighting parameters such as minimum illumination levels, lighting uniformity, glare and colour rendering. For us to be able to design a suitable lighting solution that fulfils all requirements **we require**

**comprehensive information about the space** including the final design documentation.

When determining the lighting we need to consider not only the type of space and workspace specifications, but also the types and colours of surfaces used. The colour of walls, ceilings and furniture, as well as their position with the space, have a direct influence on how users will perceive the lighting intensity. For that reason customers need to provide us, along with full design documentation, also **detailed drawings and photographs of the space.**

Lighting uniformity  
 $U_o = 0.7$

*When defining the lighting needed for a particular space we must adhere to valid technical norms and legislation. Key lighting parameters are illumination level, lighting uniformity, colour rendition and glare.*



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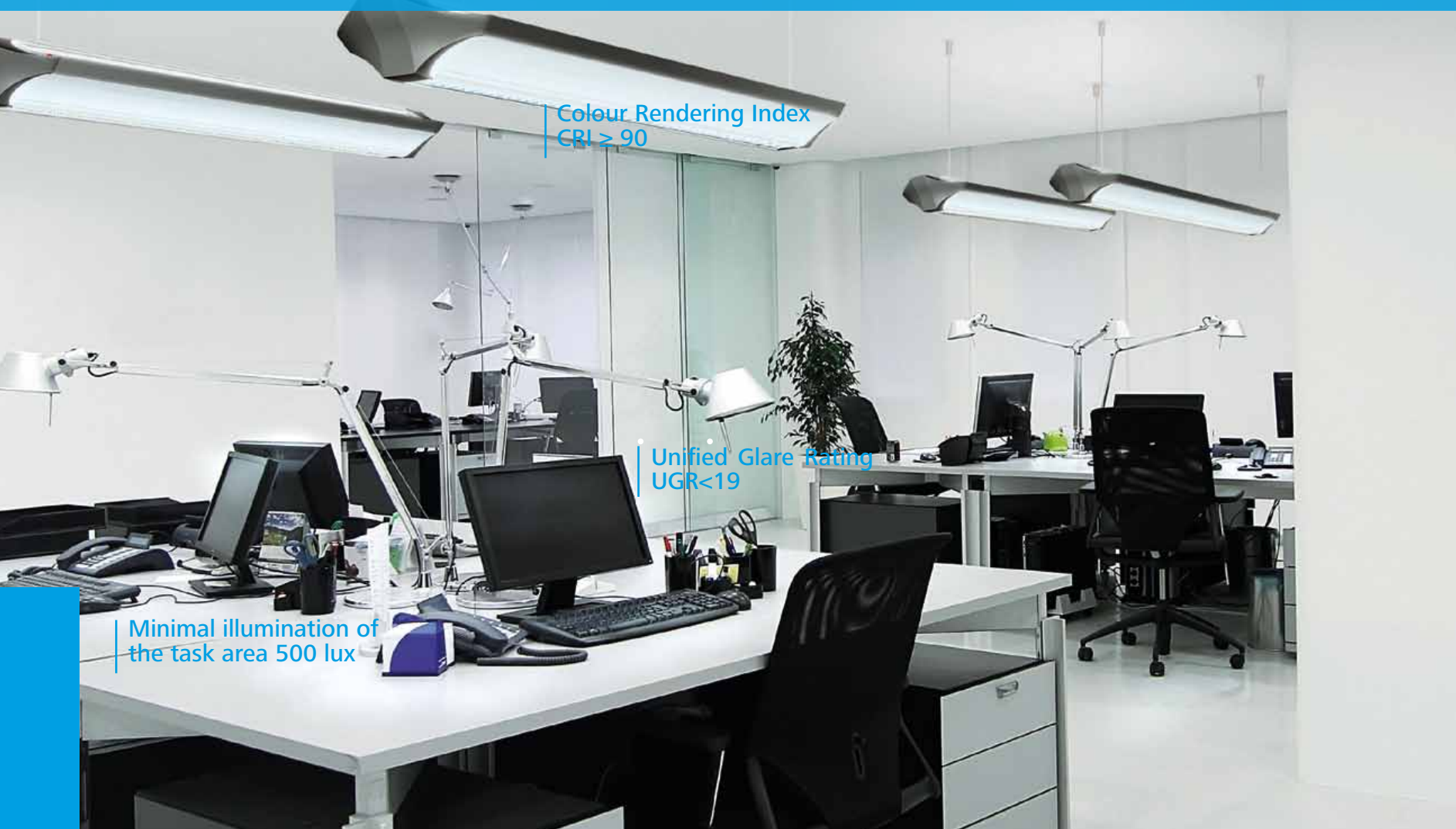
#### INPUT

- Drawing documentation, ground plan, profile (DWG, PDF)
- Use of the space
- Location of objects within the space (details, architecture, workplaces)

#### OUTPUT

- Illumination parameters for the particular space
- Lighting uniformity parameters
- Colour rendition parameters
- Colour temperature parameters
- Glare parameters
- Defining for the space to be illuminated
- Setting of the calculated space
- Any other lighting parameters

Our extensive knowledge of lighting standards combined with many years of professional experience guarantee the most appropriate and highest quality lighting solution.



# Lighting specification

Luminaire selection

Defining the appropriate illumination

Lighting design according to the RIGHT LIGHT methodology

## Lighting design according to the RIGHT LIGHT methodology

European standards define the basic rules to follow when calculating lighting for all types of space. Based on scientific research and our own extensive experience we know that **following those standards does not guarantee a quality lighting solution.** The standards provide an overview of basic ergonomic parameters for both designers and customers, for example, minimum illuminance levels, and CRI, glare and lighting uniformity values. However, **they do not consider the biological effects of light, or the emotive, aesthetic or ecological elements that underline the quality of a solution.** To this purpose OMS have developed an industry-wide standard for assessing all aspects of a lighting solution's quality. The Lighting Quality Standard (LQS) comprehensively quantifies and evaluates parameters across six key categories: Ergonomics, Emotion, Esprit, Ecology, Efficiency and Exceptionality.

The specialised **RIGHT LIGHT** manuals demonstrate how to implement the LQS principles into various practical situations. They include all relevant European standards whilst at the same time including principles based on the latest science, experi-

ence and practice, and knowledge of new lighting trends and technologies. **In many cases, advancements in lighting place increased demands on basic parameters, highlighting the necessity to revise them.**

- Take advantage of available daylight
- Recognise the importance of daylight simulation

- Use biologically effective lighting
- Get acquainted with the latest technologies and products in our portfolio
- Understand the difference in lighting quality when the Right Light principles are applied
- Better understand the technical aspects of your lighting project

### According to the European norm EN 12464-1



### Our recommendation according to the RIGHT LIGHT methodology



Pricelist of services – [www.omslighting.sk](http://www.omslighting.sk)

*The EN 12464-1 standard requires a minimal illumination level of 300 lx for task areas in classrooms (which due to the usage of the room means such a level for all horizontal areas), for the ceiling 50 lx and for walls 75 lx. However, these illumination levels are not adequate and according to the principles defined in RIGHT LIGHT we recommend increasing the level of minimal illumination to 500 lx for the ceilings, and 300 lx for the walls. These lighting conditions will simultaneously ensure sufficient cylindrical illumination to enable facial recognition, along with eliminating dark corners and shadows, which has a psychologically beneficial effect. We can achieve the recommended levels using suspended luminaires that provide both direct and indirect light output at a ratio of 50:50.*

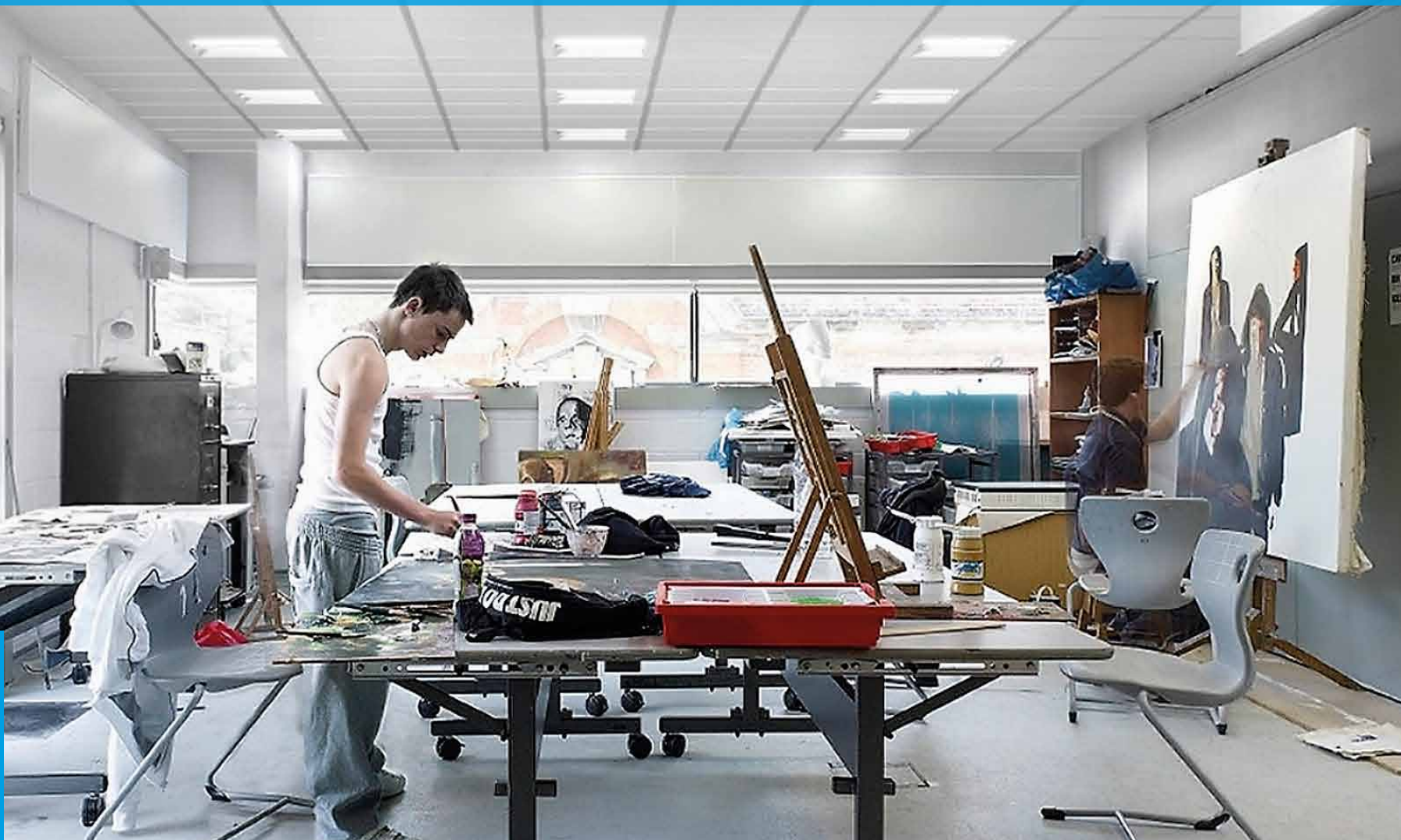
#### INPUT

- Drawing documentation, ground plan, profile (DWG, PDF)
- Use of the space
- Location of objects within the space (details, architecture, workplaces)

#### OUTPUT

- Illumination parameters for the particular space
- Lighting uniformity parameters
- Colour rendition parameters
- Colour temperature parameters
- Glare parameters
- Defining for the space to be illuminated
- Setting of the calculated space
- Any other lighting parameters

Where the normative standards end, there Right Light begins; where theory reaches its limits, there OMS Lighting Solutions emerge



- Lighting design support
- Lighting design concept
- 2D visualisation
- 3D model
- 3D visualisation
- Video presentation
- Lighting demonstration
- Light rental

# Visualisation

**Light is a cornerstone of architectural beauty. Spatial perception is possible only thanks to light, which models and defines all that we see.** In order that we are not deprived of this ability once the sun sets we need to devote our attention to artificial lighting. Lighting designers become scenographers in this context, they give shape to objects and mediate visual experience through the elements of light colour, intensity and direction. **In order that you fully understand the nature and characteristics of your spaces we provide a wide range of visualisation services.** You need no technical knowledge, we will simply show you everything you need to know.



# Visualisation

## Lighting design support

Lighting design concept

2D visualisation

3D model

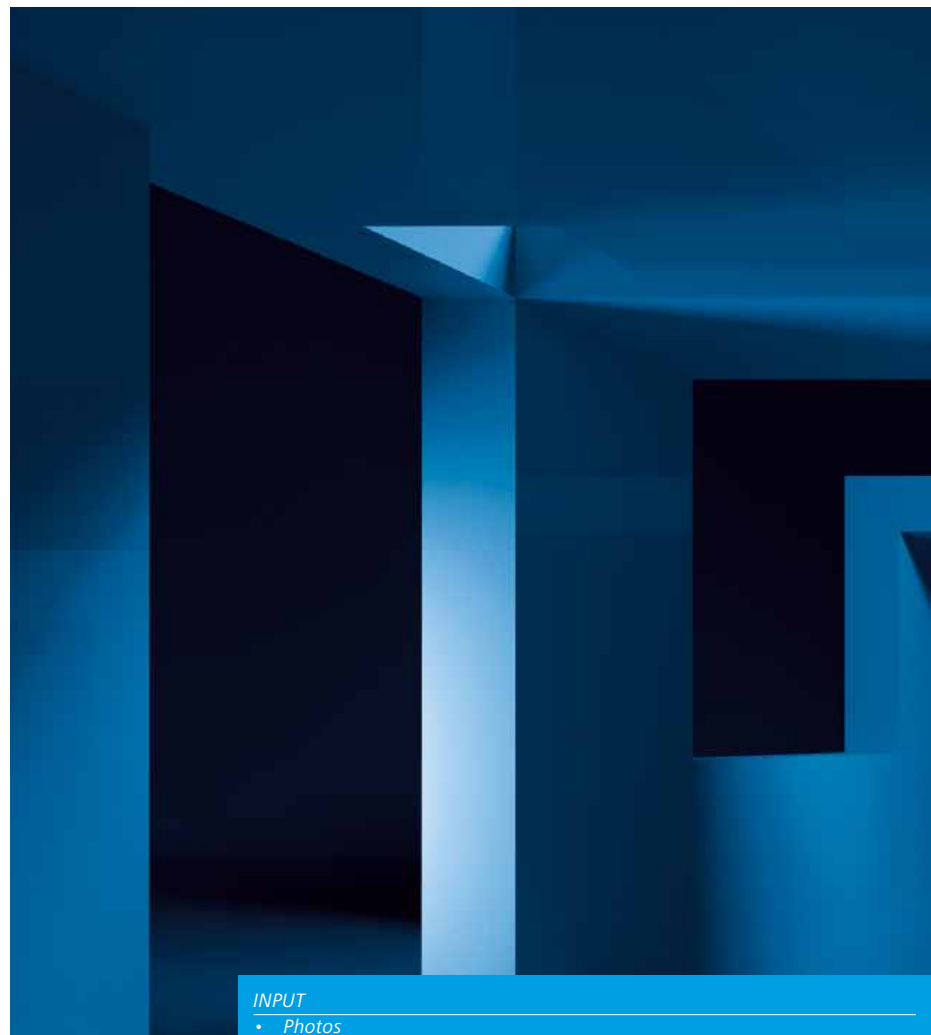
3D visualisation

Video presentation

Lighting demonstration

## Lighting design support

Light is an independent architectural element which can be used to model space. We can highlight its structure and draw attention to exceptional details. For light to be given its true place of importance within a space it is necessary to plan its presence from the very beginning. **We have been orchestrating light for more than 15 years, we know its character and creative potential.** We are able to tailor its design to every space, and use it to provide aesthetic appeal and atmosphere. We will support our customers through the entire process of finding the perfect balance between aesthetics, functionality and economy, to turn dream into reality.



Pricelist of services – [www.omslighting.sk](http://www.omslighting.sk)



*By uncovering the creative potential of a space we can take full advantage of the lighting possibilities.*

### INPUT

- Photos
- Project documentation (DWG, PDF)
- Location of objects within the space (details)
- Overall layout of the space
- Use of the space
- Illumination requirements (norms, RIGHT LIGHT)
- Light colour requirements (white, RGB)
- Static or dynamic light
- Luminaire installation possibilities
- Estimated budget

### OUTPUT

- Drawings, presentations
- Display of various possibilities (RGB, colour temperature)
- Light type
- Light distribution
- Approximate location of the luminaires
- Preliminary luminaire installation
- Preliminary budget



We know the hidden beauty of light, and if you allow us to work on your project from the beginning, we will breathe a unique atmosphere into your space.



*Appropriate directing of the light can highlight the architectural structure of the space.*



*Ambient lighting can be used to draw attention to interesting structural details.*



*The combination of ambient lighting and RGB colour mixing helps to create a unique and dramatic atmosphere in the space.*

# Visualisation

Lighting design support

**Lighting design concept**

2D visualisation

3D model

3D visualisation

Video presentation

Lighting demonstration

## Lighting design concept

There is no one formula for all lighting solutions. Light can bring a space to life, however if it is designed incorrectly it can highlight deficiencies or even be harmful to users and can increase costs considerably. To avoid this **we provide tailored lighting design concepts you can rely on, perfect for the given interior or exterior space.** When creating a lighting concept we take into account all aspects of the space and its use. Modern architecture is an ideal canvas for RGB colour mixing and dynamic lighting, which can be used to conjure unlimited visual experiences. Historical architecture is best illuminated with various colours of white light, which respect the history and soul of the building. Based on the chosen concept we will help you select suitable luminaires and light sources.



The lighting design in the bar is based on the customers idea to use contrasting cold and warm colours.

### INPUT

- Photos
- Project documentation (DWG, PDF)
- Location of objects within the space (details)
- Use of the space
- Illumination requirements (norms, RIGHT LIGHT)
- Light colour demands (white, RGB)
- Static or dynamic light
- Luminaire installation possibilities
- Estimated budget

### OUTPUT

- Drawing, presentation
- Display of various possibilities (RGB, colour temperature)
- Precise specification of lighting requirements (normative or others)
- Luminaire type
- Light type
- Light distribution
- Approximate location of the luminaires
- Preliminary luminaire installation
- Preliminary budget



Pricelist of services – [www.omslighting.sk](http://www.omslighting.sk)

Are you looking for the best way to illuminate your space, if so we will provide you with support you can rely on.



During the next phase we propose particular luminaires for the desired lighting of the space. The solution combines the use of ceiling recessed and suspended LED luminaires.



The visualisation shows the final effect of the chosen luminaires.

# Visualisation

Lighting design support

Lighting design concept

**2D visualisation**

3D model

3D visualisation

Video presentation

Lighting demonstration

## 2D visualisation

We ask that customers provide us with at least one photograph of the space to be illuminated. This allows us to design and model several proposals using specialist software. Depending on requirements we can provide various types of 2D visualisation. This **allows customers to be guided by their own aesthetic sense, to choose which proposal they prefer.** Based on that decision we will specify the design and technological parameters for the solution.



Pricelist of services – [www.omslighting.sk](http://www.omslighting.sk)



*When thinking about the facade lighting, the customer thought about using planar illumination that would change colours according to need and season.*

### INPUT

- Lighting design concept
- Photos
- Plan of the space (DWG, PDF)
- Location of objects within the space (details)
- Overall layout of the space
- Description of the space
- Light colour requirements (white, RGB)
- Static or dynamic light
- Luminaire installation possibilities
- Estimated budget

### OUTPUT

- Visualisations, presentations
- Display of various possibilities (RGB, colour temperature)
- Precise specification of lighting requirements (normative or others)
- Luminaire type
- Light type
- Light distribution
- Approximate location of the luminaires
- Preliminary luminaire installation
- Preliminary budget

To speak about light is similar to singing about architecture... you need to see it to believe it, the light must be demonstrated.



*After defining the concept, we created several 2D visualisations with various colours.*



*The colour can be changed according to special events and times of year.*



*The 2D visualisations used colours that would be psychologically effective.*

# Visualisation

Lighting design support

Lighting design concept

2D visualisation

**3D model**

3D visualisation

Video presentation

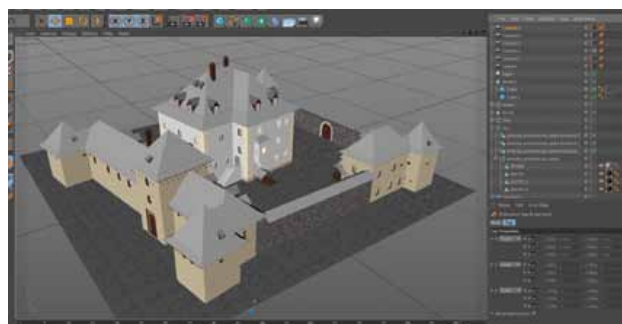
Lighting demonstration

## 3D model

**A realistic 3D model of a space takes full advantage of the imagination**, allowing customers to really feel what the space will look like once the solution is realised. It also serves as a basis for subsequent lighting calculations and technological definitions. We will provide you with a 3D model on request, based on your project documentation or DWG files.



Pricelist of services – [www.omslighting.sk](http://www.omslighting.sk)



*A realistic 3D model can be used as the basis for lighting calculations and is necessary for the creation of 3D visualisations.*

### INPUT

- Photos
- Project documentation (DWG, PDF)
- Description of the space
- Colour requirements
- Texture requirements

### OUTPUT

- 3D model (3Ds, obj, dae, skp, c4d, xml)
- 3D render

Using specialist software we can transform 2D visualisations into 3D, giving you a full impression of what your solution will look like.



*The advantage of using a 3D model is that offers detailed and realistic information about the space, whether the space be complete or under construction or reconstruction or maybe only an idea.*



*3D models allow for a detailed examination of the architecture from all angles.*



*A 3D model enables us to define the lighting and choose the right luminaires without the need to be physically present at the site.*

# Visualisation

Lighting design support

Lighting design concept

2D visualisation

3D model

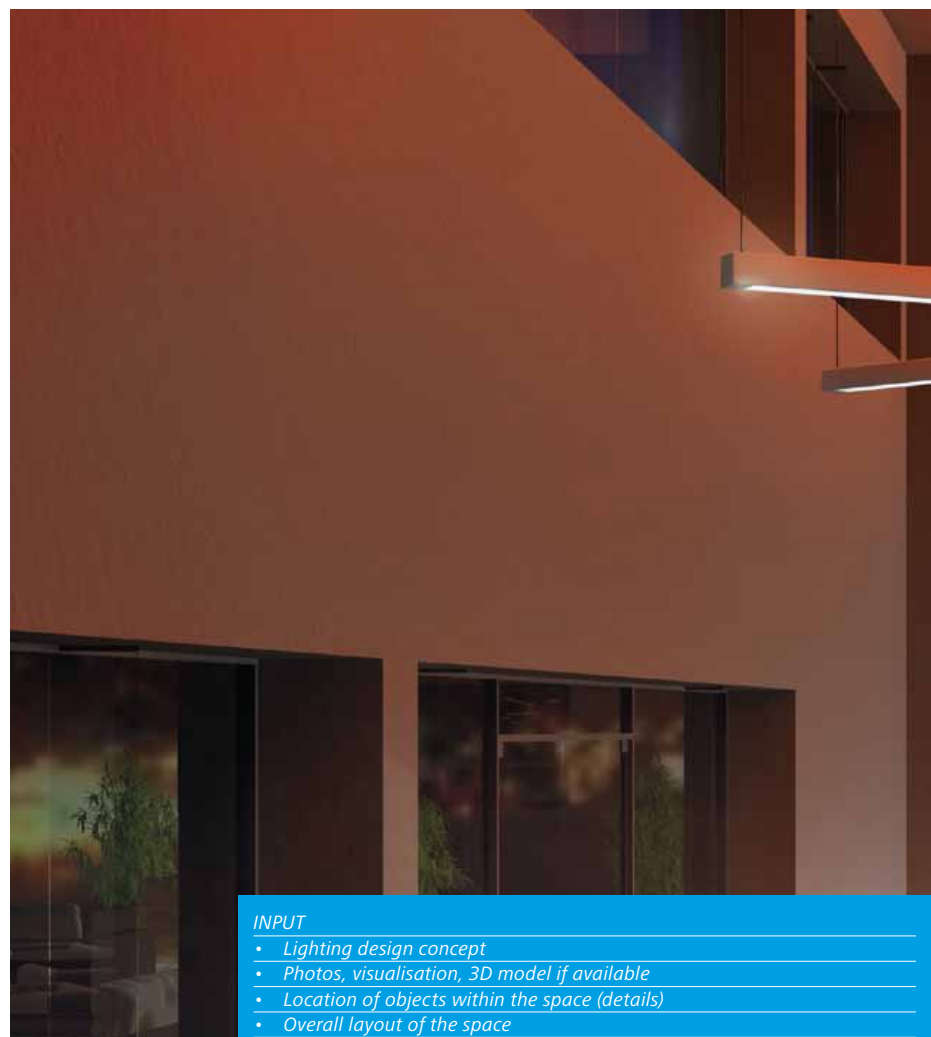
**3D visualisation**

Video presentation

Lighting demonstration

## 3D visualisation

A 3D visualisation enables you to see how a lighting design looks in realistic quality. Thanks to the use of sophisticated 3D software we are able to simulate a lighting solution in full detail. **Customers can see the real result of the use of specific luminaires, lighting distributions, as well as any reflections.** The 3D visualisation allows you to look at the illuminated space or object from any angle, close-up and from a distance, what effects can be achieved with light and shadow, and how to draw attention to noteworthy architectural details.



*The customer decided to update the lighting system at the same time as the planned reconstruction.*



Pricelist of services – [www.omslighting.sk](http://www.omslighting.sk)

### INPUT

- Lighting design concept
- Photos, visualisation, 3D model if available
- Location of objects within the space (details)
- Overall layout of the space
- Project documentation (DWG, PDF)
- Description of the space
- Illumination requirements (norms, RIGHT LIGHT)
- Light colour requirements (white, RGB)
- Static or dynamic light
- Luminaire installation possibilities
- Estimated budget

### OUTPUT

- 3D presentation
- Display of various possibilities (RGB, colour temperature)
- Precise specification of lighting requirements (normative or others)
- Luminaire and control system type
- Light distribution
- Approximate location of the luminaires
- Preliminary luminaire installation
- Preliminary budget



We live in a 3D world, so a 3D visualisation is the best way to fully understand the solution being provided.



After defining the interior colours, surface finished and materials we could specify suitable luminaires.



For the general illumination of the space we chose the suspended luminaire LAMBDA.



To increase the visual attraction of the space we included a 3D visualisation where recessed RELAX and SNAPPY LINE luminaires are used.

# Visualisation

Lighting design support

Lighting design concept

2D visualisation

3D model

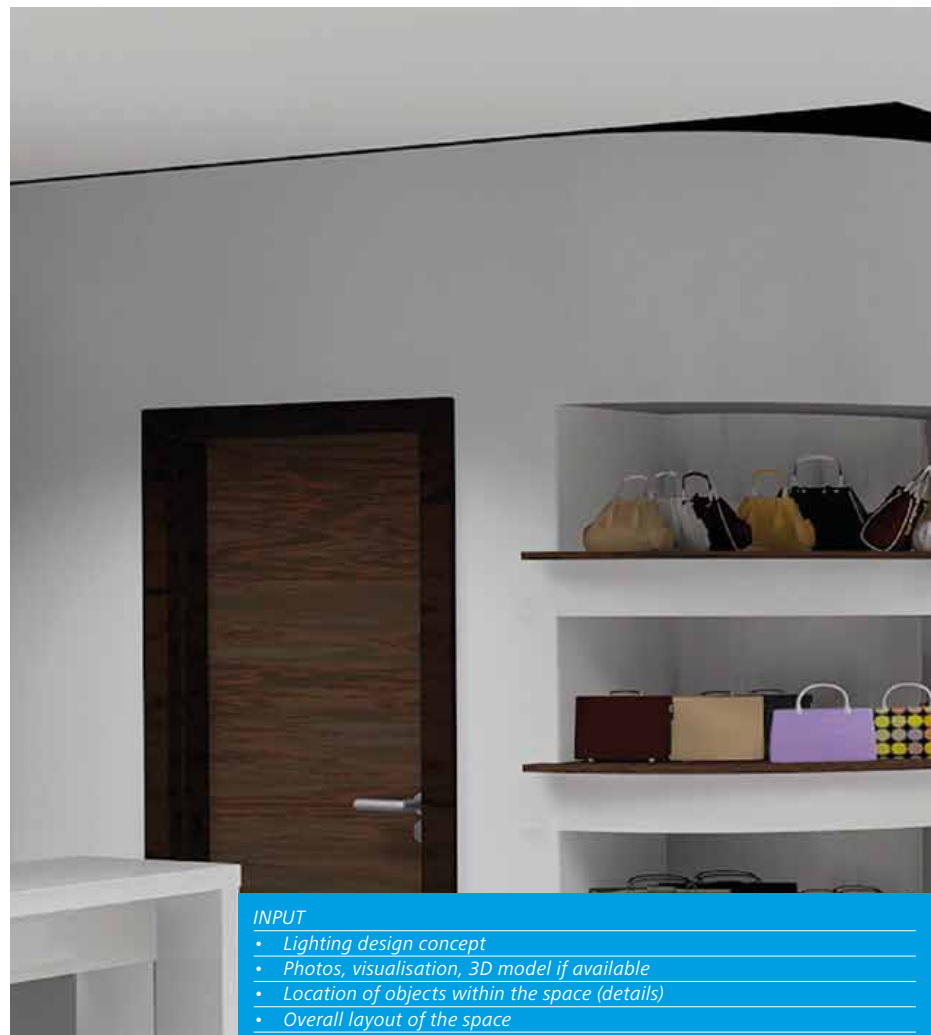
3D visualisation

**Video presentation**

Lighting demonstration

## Video presentation

Static visualisations can give a good idea of how a lighting solution will look, however in order to pass the boundaries of imagination we can also provide a dynamic video rendition. **We use the 2D and 3D visualisations to create a realistic image of how your lighting design will look across individual sequences.** The video presentation will show in detail how the light harmonises with the space and surroundings, how changes in colour look in applications where RGB colour mixing is used, it will provide you with a true picture of how light can change the space.



### INPUT

- Lighting design concept
- Photos, visualisation, 3D model if available
- Location of objects within the space (details)
- Overall layout of the space
- Project documentation (DWG, PDF)
- Description of the space
- Illumination requirements (norms, RIGHT LIGHT)
- Light colour requirements (white, RGB)
- Static or dynamic light
- Luminaire installation possibilities
- Estimated budget

### OUTPUT

- Video presentation, presentations
- Display of various possibilities (RGB, colour temperature)
- Precise specification of lighting requirements (normative or others)
- Luminaire and control type
- Light distribution type (the angle of emission)
- Light distribution
- Approximate location of the luminaires
- Preliminary luminaire installation
- Preliminary budget



Pricelist of services – [www.omslighting.sk](http://www.omslighting.sk)



Whilst working on a lighting solution for a sales area, the customer asked for a video presentation. Here the main lighting during opening hours has a minimum level of 500lx.

We will show you how the lighting design functions in a dynamic environment.



On the video the customer can see the effects of various requested lighting scenes that change according to the time of day.



Thanks to use of lighting scenes, which use pre-defined lighting parameters, the illumination can be decreased during cleaning and maintenance and the light colour temperature changed according to need.



The use of RGB colour mixing makes it possible to also change the colour of the light to create specific atmospheres.



# Visualisation

Lighting design support

Lighting design concept

2D visualisation

3D model

3D visualisation

Video presentation

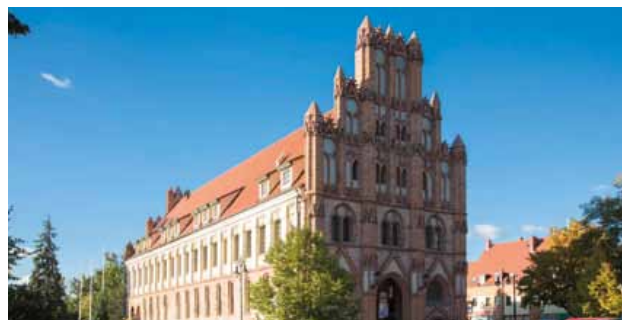
**Lighting demonstration**

## Lighting demonstration

The visualisations and video will simplify the process of selecting the appropriate lighting design. However, **to see the solution in practice we provide a demonstration service.** One part of the solution is installed and fine-tuned to the needs of the space. **This enables you to see the real affects of the lighting, what benefits it truly brings.** After a defined period of time you can formulate your opinions and ideas, based upon which we will finalise the concept and price offer.



Pricelist of services – [www.omslighting.sk](http://www.omslighting.sk)



*After definition of the lighting design and the presentation of a 3D visualisation, this customer asked for a preview of the actual lighting system.*

### INPUT

- The site to be illuminated or a suitably scaled 3D model
- Specification of the scope of the preview
- Access to the necessary services (electricity etc.)
- Full permission for the trial
- Number of possibilities to be presented

### OUTPUT

- Real experience of the illumination
- Preview of various lighting possibilities
- Illumination parameters for the particular space
- Luminaire installation method
- Technical support

We know how to turn simulated reality into actual reality.



*We were able to show him on-site the colour effects and general lighting design chosen for the historical facade.*



*This helped the customer to fully understand the impact of using RGB colour mixing for lighting the facade.*



*The original illumination of the facade did not draw deserved attention to the architecture. The new RGB colour mixing solution emphasises the cultural and spiritual soul of the building.*

# Visualisation

Lighting design support

Lighting design concept

2D visualisation

3D model

3D visualisation

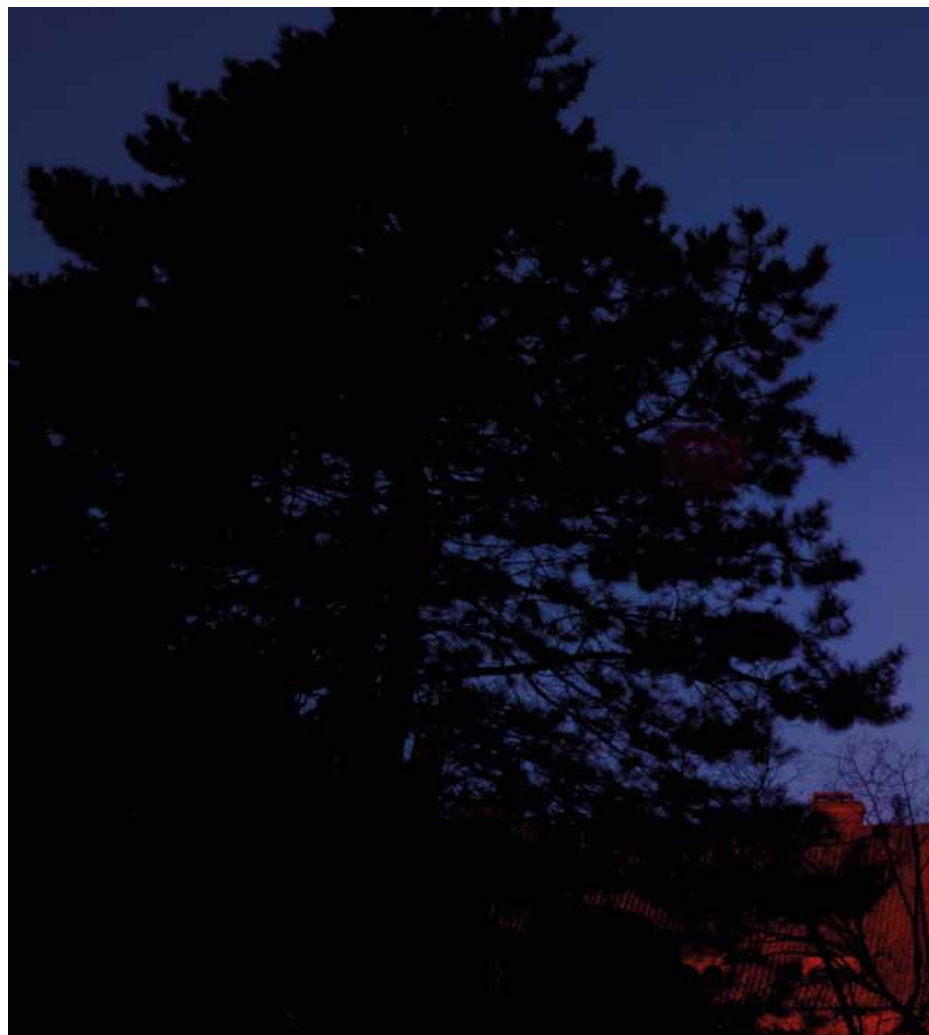
Video presentation

Lighting demonstration

**Light rental**

## Light for rent

Are you preparing for a special event and you don't consider the used space to be suitably illuminated? We offer lighting solutions for rent, to show your space in its best light. **It doesn't matter if it is needed for a party, celebration, exhibition, photo session or TV broadcast, we can provide you with the technology you need to create the right light.** In order that the architecture of the space is illuminated in the best way, we will work with you to plan the concept. If you wish we can prepare a visualisation of the chosen concept to help you fully understand the effect you will get. For such a service it is important to consider the time it will take and its potential for success, from the first concept to the installation of the luminaires, all must be planned far enough ahead.



Pricelist of services – [www.omslighting.sk](http://www.omslighting.sk)



A corporate customer rented historical rooms in a castle for an event. We provided OMS luminaires to illuminate the facade according to the ideas of the customer, using corporate colours.

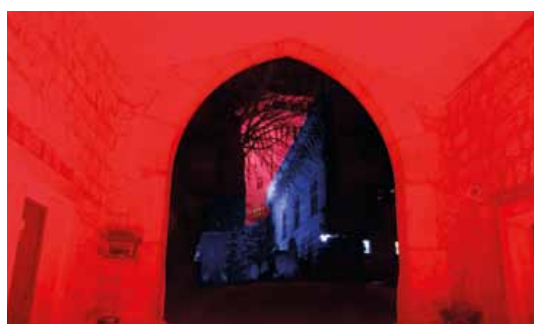
### INPUT

- Description of the space
- Photos
- Project documentation (DWG, PDF)
- Overall layout of the space
- Nature of the planned event
- Duration of the rental
- Luminaire installation and infrastructure possibilities

### OUTPUT

- Explanation of the lighting options
- Lighting design
- Location of the luminaires
- Control methods
- Budget

## Lighting for those special moments



- Calculation of daylight availability
- Calculation of artificial lighting

## Lighting calculations

**It is essential to carry out a set of precise lighting calculations to quantify the exact parameters,** necessary light output, distribution and the correct location of each luminaire in order to achieve the required illumination of the space. Our specialists are able to calculate the amounts and ratio of daylight to artificial light using sophisticated software, and to compare the quality of the existing and proposed solutions by assessing various quantifiable parameters. **The importance of these calculations is not in their helping the solution to fulfil normative requirements, but in that they help the customer to understand and assess the quality of a solution and its savings potential before choosing it.**





Emergency lighting design

Energy savings

Wiring design and LMS

Project documentation

Numbers represent certainty,  
they introduce order and  
structure into chaos... our  
calculations make your  
lighting project understandable  
and transparent.

# Lighting calculations

## Calculation of daylight availability

### Calculation of artificial lighting

## Calculation of daylight availability

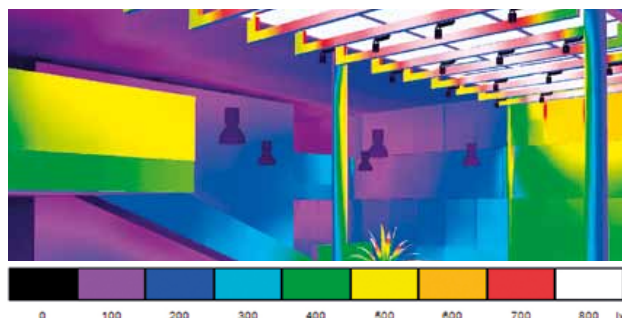
For tens of thousands of years the human body was exposed to the natural cycle of day and night. However, the industrial revolution and technical advancements that characterise the progress of our civilisation since the early 19th century means that now we spend more of our personal and working lives indoors with reduced access to natural light. According to scientific research this has not changed the fact that the best light for us is daylight. **It provides the best conditions for visual perception and has a positive effect on the circadian rhythm.** This fact is represented in European legislation and standards that state that a certain amount of daylight needs to be available in all types of

interior and exterior space. Based on this, **the calculation of the relationship of daylight to artificial light is one of the basic parameters that will have profound results on the quality of a lighting solution.**

To determine the amount of daylight entering a space we must make a lighting calculation during the day. **This helps us to understand and quantify exactly where daylight falls and at what intensity at any given time.** The resulting value is used as the basis for planning and calculating **the artificial light that will be used to supplement that daylight.**



Pricelist of services – [www.omslighting.sk](http://www.omslighting.sk)



To calculate the availability of daylight in an office building lobby we used the specialised software DIALux. The output simulated colours in the corresponding colour range and shows the effect on the illumination of all surfaces.

#### INPUT

- Description of the space
- Drawing documentation, ground plan, profile (DWG, PDF)
- Location of objects within the space (details, architecture, workplaces)
- Size and location of the windows
- Orientation of the building
- Geographical location of the building
- Information about surrounding buildings

#### OUTPUT

- Daylight availability parameters
- Distribution of daylight within the space
- The proportion of daylight

There is no light better than daylight, and we are able to precisely calculate how much of it you are receiving.



# Lighting calculations

Calculation of daylight availability

Calculation of artificial lighting

## Calculation of artificial lighting

The choice of luminaire and light source and the lighting parameters provided are only the first steps in determining the illumination of the space. **Amongst the additional parameters that we must consider, the calculation of artificial lighting is foremost.**

Within the framework of the calculation of artificial lighting we are able to determine the exact number and location of luminaires needed, and to choose the required efficiency and light distribution. If all these parameters are in harmony the lighting system will not only provide sufficient illumination, but will be of the highest quality in other respects.

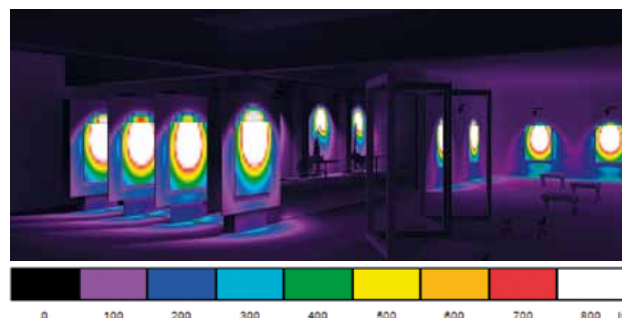
Other **important factors** that enter into the equation **are the colours and surface finishes of furniture, fixtures and walls.** Different materials have different reflectance. Light or glossy surfaces will appear brighter and brighten the space,

whereas dark and matt surfaces give the impression of lower illumination. This makes the reflective properties of all surfaces within the space key within the overall lighting design.

Lighting calculations are performed using specialist software. Precise quantification of the required number of luminaires and their parameters ensures that the highest quality artificial illumination is provided for customers in both interior and exterior spaces.



Pricelist of services – [www.omslighting.sk](http://www.omslighting.sk)



Output from DIALux was used to illustrate the illumination of surfaces in a gallery. The colours represent the amount of light falling on any given area.

### INPUT

- Description of the space
- Drawing documentation, ground plan, profile (DWG, PDF)
- Location of objects within the space (details, architecture, workplaces)
- Illumination requirements (norms, RIGHT LIGHT)
- Luminary selection
- Requested type of lighting installation
- Drawings of the ceiling
- Estimated budget

### OUTPUT

- The exact type of luminaires to be used
- Number of luminaires
- Input of the luminaires
- Location of the luminaires
- Directing of the luminaires
- Installation height of the luminaires
- Maintenance Factor of the luminaires
- Illumination parameters for the particular space
- Lighting scenes

Thanks to our calculations you can be sure that the quality and quantity of light will be in complete harmony.



*DIALus also shows the LIDC and how the light will accent areas.*



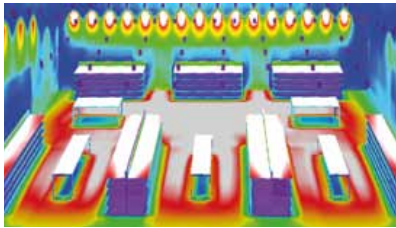
*A final DIALux output shows the expected effect of the lighting proposed.*

# Lighting calculations



## Shops, supermarkets and shopping malls

Shops, supermarkets and shopping malls often have little or no access to daylight, therefore a proper artificial lighting calculation is vital, as effective lighting of such spaces can have a profound effect on the buying behaviour of customers.



## Industry and outdoor workplaces

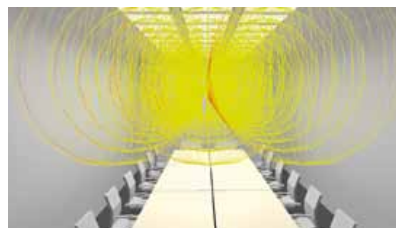
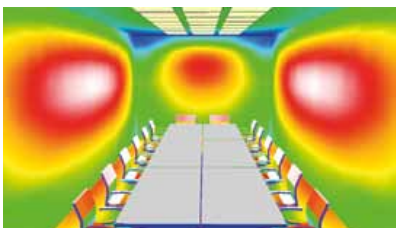
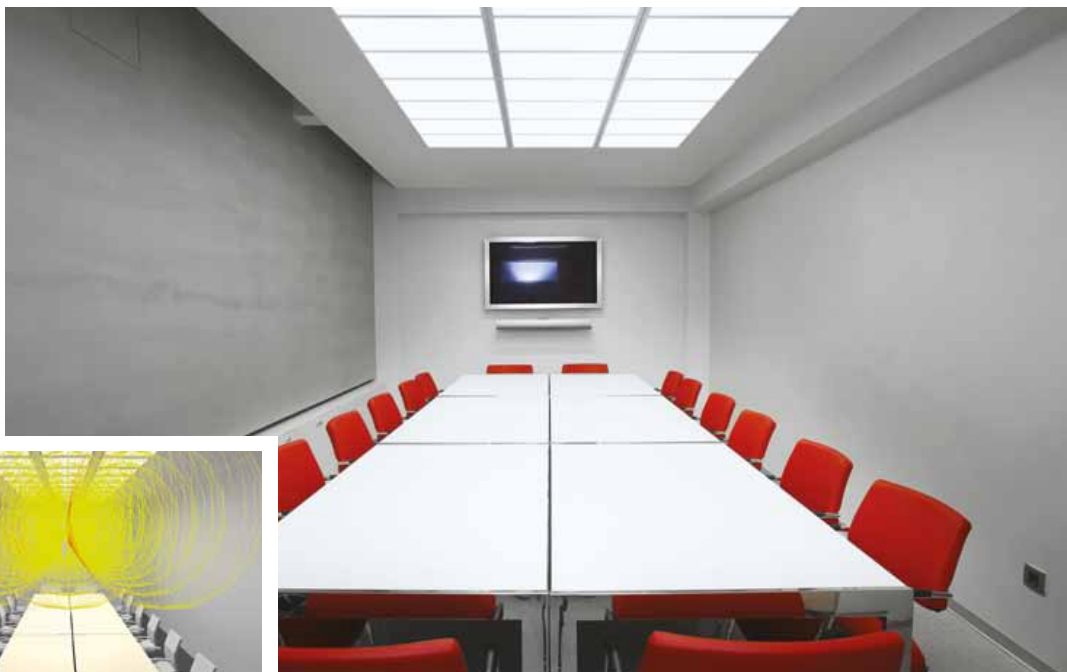
The appropriate lighting of manufacturing, warehouse and outdoor workplaces can greatly improve workforce performance including efficiency and accuracy. It also ensures safety and reduces the risk of injury.





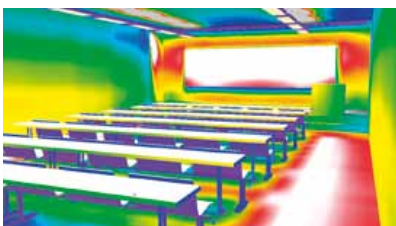
## Offices

Workers in administrative buildings perform visually demanding tasks for long periods of time, and in order to maintain visual comfort and acuity adequate and appropriate lighting is crucial. The calculation of artificial illumination is therefore essential.



## Education and science

The proper illumination of educational premises is primarily focused on the relationship of students to their learning. The kind of artificial lighting provided can have a highly positive influence on a student's ability to concentrate and learn, and helps them to feel comfortable.



# Lighting calculations



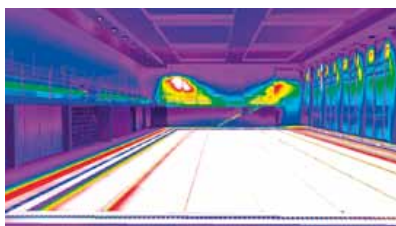
## Hotel and gastro

For customers, the lighting in hotels, restaurants and such spaces is about the atmosphere it creates. There are no normative requirements for customer spaces, however it is important to remember that they are also workplaces and sufficient and suitable lighting must be provided to ensure visual comfort and acuity for staff, according to standards.



## Sport and wellness

The calculation of artificial lighting for both interior and exterior sports and relaxation areas is essential in order to provide adequate illumination. The requirements very much depend on the use of the space, with sports grounds that are used for high level activities having strict demands.

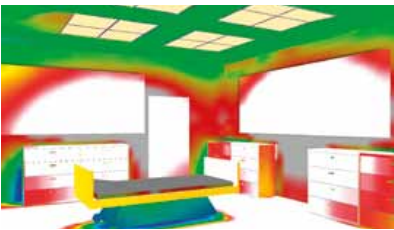






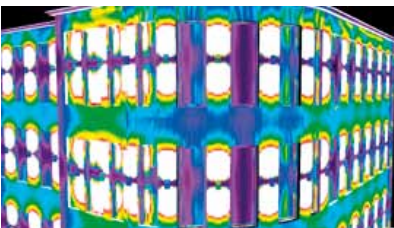
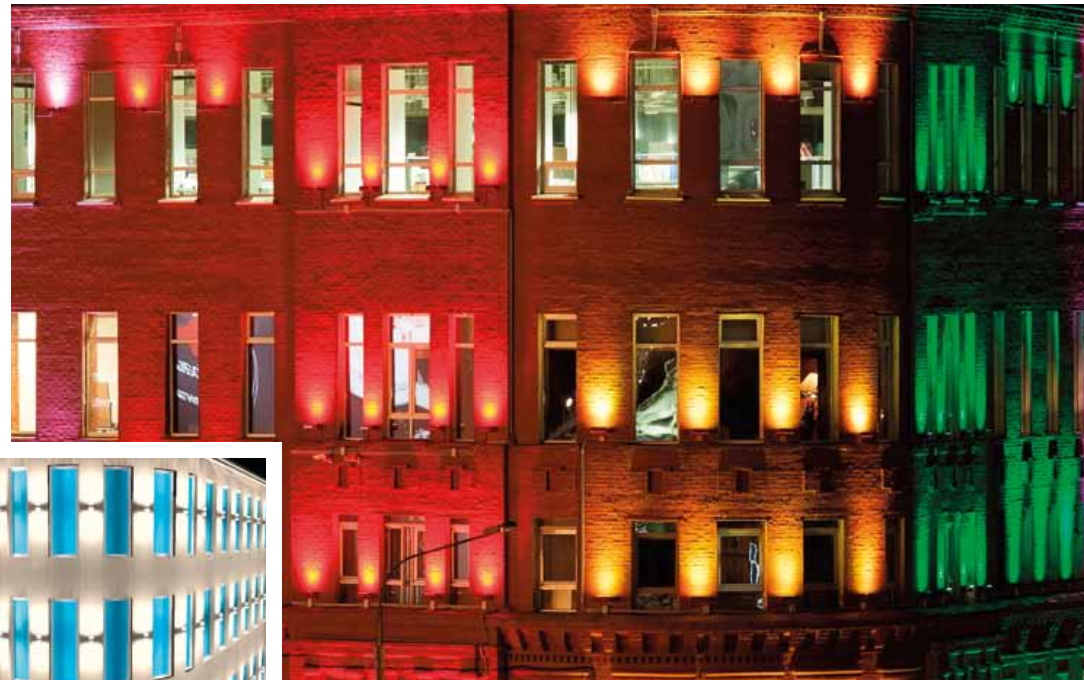
## Hospitals and healthcare facilities

It is of special importance to perfectly calculate the lighting in such spaces in order to ensure the comfort of staff and patients and enable to performance of complex tasks.



## Architecture and outdoor advertising

Light is referred to as the sixth element of architecture. It is not only to illuminate buildings, objects, statues and billboards, but to breathe life into them. However, behind the poetry of light there is the structure of lighting calculations.

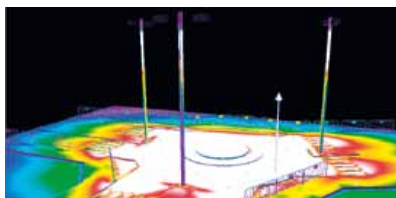


# Lighting calculations



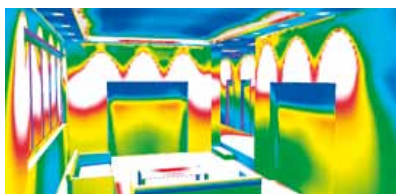
## Public lighting

As the sun fades in the evening the importance of supplementary artificial illumination increases. Only appropriately illuminated streets and public spaces can be safe after dark, and without the right lighting calculation this is not possible.



## Living areas

Candles can create an intimate and relaxing atmosphere, however, by today's standards their illumination is not enough. Artificial lighting and its quality are just as important in our homes as elsewhere. By using lighting calculations we can ensure that your home truly is your castle.





- LQS Composer
- LQS project optimisation

## LQS project

**OMS specialists have developed a unique industry-wide Lighting Quality Standard (LQS) which uses 20 measurable parameters to assess the quality of a lighting solution in a given space.** LQS is a universal tool which is able to compare the lighting quality of various solutions and is not bound by OMS products. Individual parameters are categorised into six elements: Ergonomics, Emotion, Ecology, Efficiency, Esprit and Exceptionality. Within the framework of the first four elements LQS evaluates 20 quantifiable, and therefore objectively assessable, parameters. The remaining two elements are to be subjectively assessed based on the design, user friendliness and individual approach to each customer. Each evaluable criteria can be assigned a value between 0 and 5, with 5 being the best score and 0 meaning the criteria is missing or assessed very poorly. The resultant LQS Index represents the average score across all criteria with a maximum theoretical value of 5.



# LQS project

## LQS Composer

### LQS project optimisation

## LQS Composer

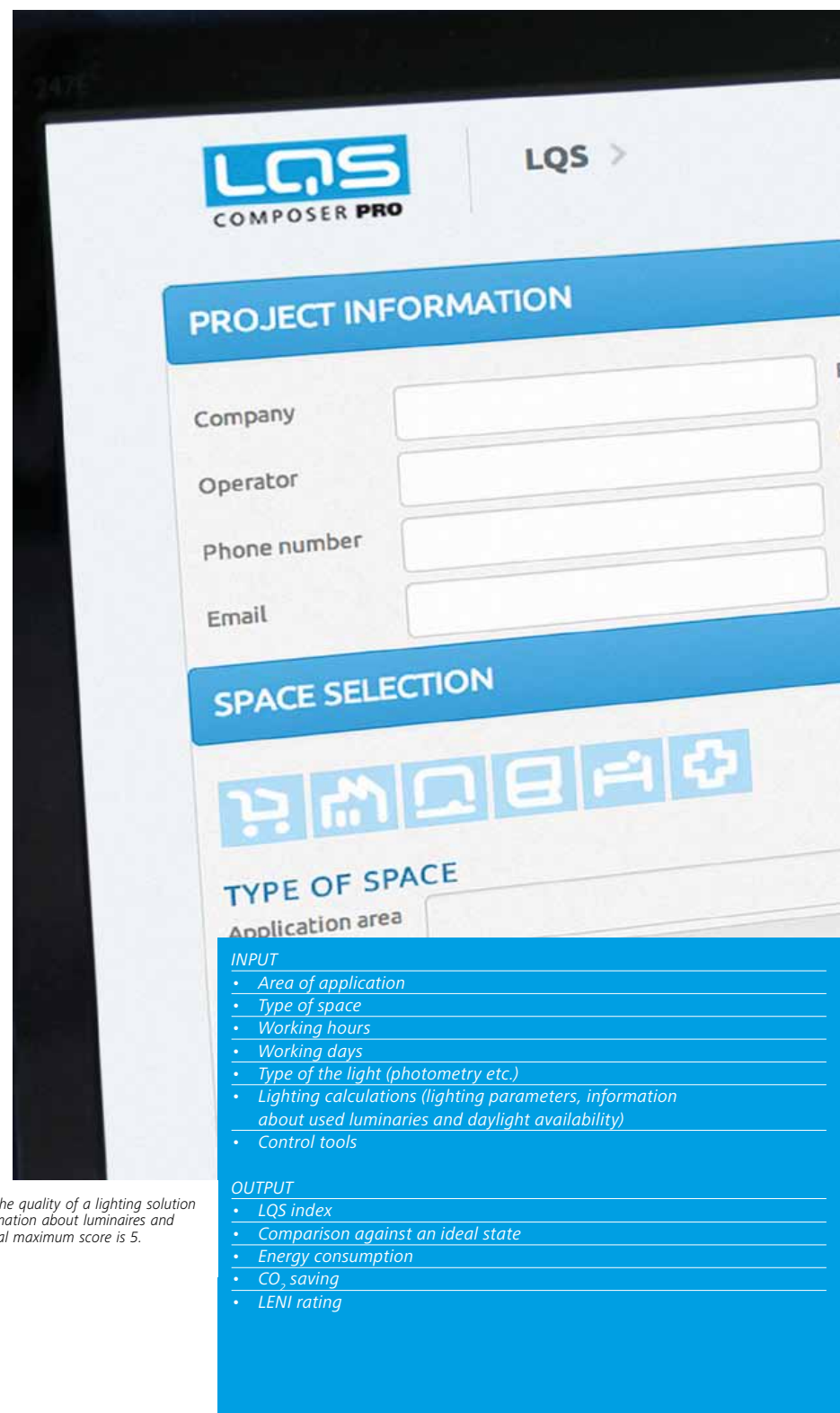
Did you know that lighting quality can be counted? **Our specialists have developed a dedicated software programme called LQS Composer Pro which enables the calculation of a lighting solution's quality.** LQS Composer Pro is also a universal tool which enables users to assess a lighting solution independently of the luminaire manufacturer and the type of light source used. **This allows users to simply and effectively assess various lighting solutions in order to make the right choice.**

LQS Composer Pro can be used to assess the quality of an existing lighting solution or a theoretical one. In the case of assessing an existing solution the values for key parameters are entered into the software as input data, and in the case of a theoretical solution the data is acquired through simulation software such as DIALux. **LQS Composer Pro then goes on to process all data to provide a resultant LQS Index, a single number that represents the assessed value of the solution.**

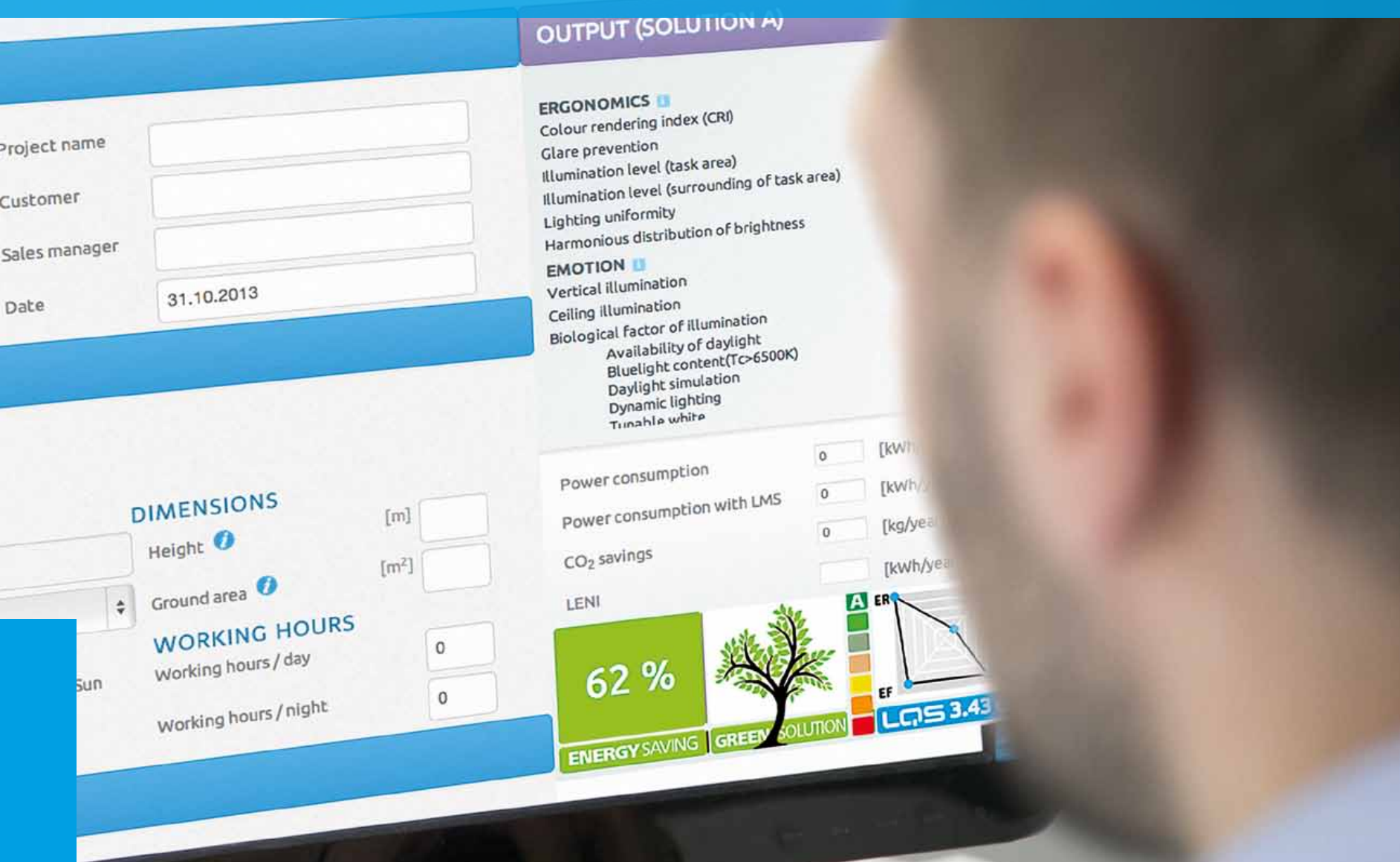


*The software LQS Composer PRO is used for evaluating the quality of a lighting solution according to the LQS. After inputting of all necessary information about luminaires and control tools, it provides a final LQS index. The theoretical maximum score is 5.*

Pricelist of services – [www.omslighting.sk](http://www.omslighting.sk)



One single number can tell you more about lighting quality than one hundred pages of documentation.



**OUTPUT (SOLUTION A)**

**ERGONOMICS**

- Colour rendering index (CRI)
- Glare prevention
- Illumination level (task area)
- Illumination level (surrounding of task area)
- Lighting uniformity
- Harmonious distribution of brightness

**EMOTION**

- Vertical illumination
- Ceiling illumination
- Biological factor of illumination
- Availability of daylight
- Blue light content (TC > 6500K)
- Daylight simulation
- Dynamic lighting
- Tunable white

Power consumption [kWh]

Power consumption with LMS [kWh]

CO<sub>2</sub> savings [kg/year]

LENL [kWh/year]

**62 %**

**ENERGY SAVING GREEN SOLUTION**

**LQS 3.43**

**DIMENSIONS**

Height [m]

Ground area [m<sup>2</sup>]

**WORKING HOURS**

Working hours / day

Working hours / night

Project name

Customer

Sales manager

Date 31.10.2013

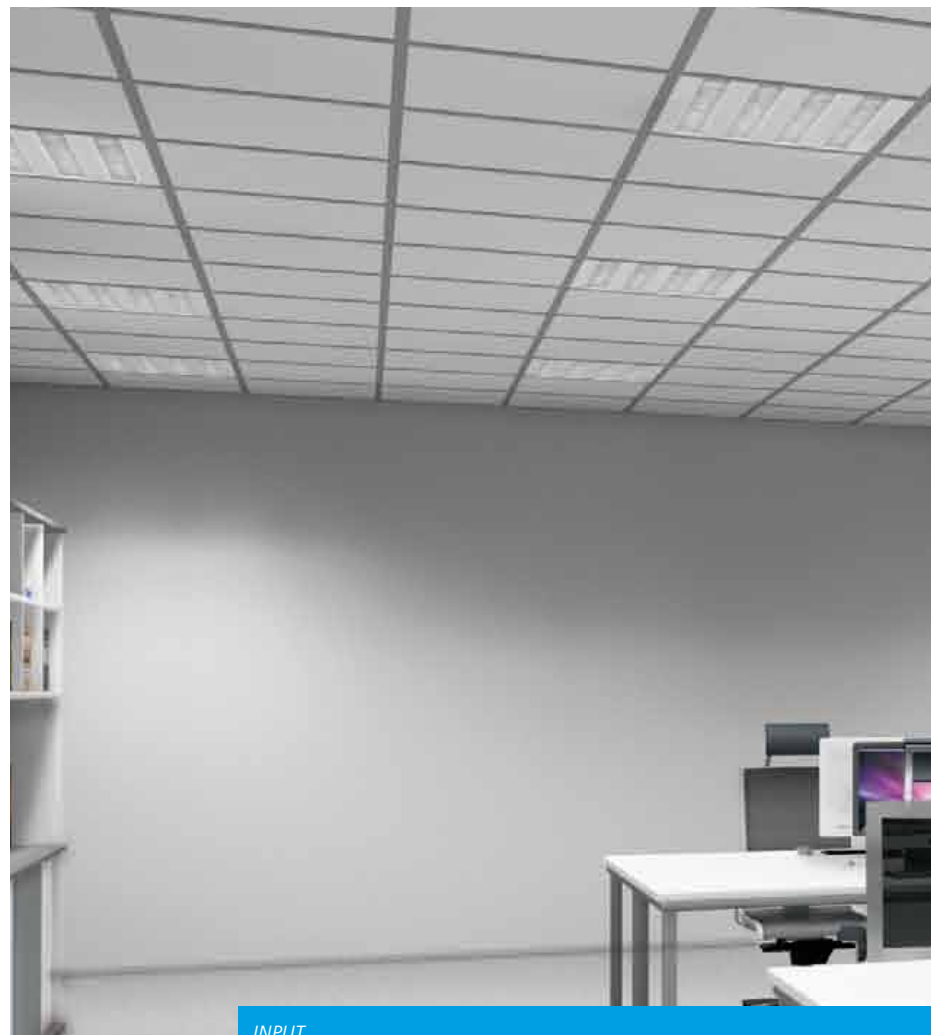
# LQS project

LQS Composer

## LQS project optimisation

### LQS project optimisation

The LQS Index tells you more about the quality of a lighting solution than what you might expect. **If the Index value is low you know that your lighting system has potential for improvement,** and within the framework of LQS project optimisation we are able to clearly identify exactly where that potential lays and help you take advantage of it. **Thanks to the simple and objective output of LQS Composer Pro the user can clearly see the advantages and disadvantages of any element of the lighting design,** and by choosing the best options for each you can be sure that your lighting solution will fulfil all of that hidden potential.



Pricelist of services – [www.omslighting.sk](http://www.omslighting.sk)



*LQS Composer PRO allows for the effective comparison of two proposed solutions. The resulting LQS index clearly shows that using the suspended luminaire RAY ensures better lighting quality.*

#### INPUT

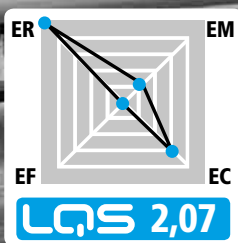
- Area of application
- Type of space
- Working hours
- Working days
- Type of the light (photometry etc.)
- Lighting calculations (lighting parameters, information about used luminaires and daylight availability)
- Control tools

#### OUTPUT

- LQS index
- Comparison against an ideal state
- Energy consumption
- CO<sub>2</sub> saving
- LENI rating



Does your current lighting solution have any qualitative reserves...  
if so we can help you use that hidden potential.



TUNEBLEWHITE

PRESENCE DETECTOR

DAYLIGHT SENSOR

Each individual LQS score expresses the quality of that aspect of the illumination. The higher LQS score (on the right) is due to use presence detection, a lighting intensity sensor and TunableWhite technology to provide daylight simulation.

Lighting specification

Visualisation

Lighting calculations

LQS project

# Emergency lighting design

In areas where there are many people, safety in the event of an emergency is key. **Emergency lighting helps to prevent panic in critical situations and creates the necessary condition for the finishing of risk tasks and safe evacuation of the area.** Ultimately, the use of safety lighting decreases the risk of injury or death.

## Emergency lighting design

Energy savings

Wiring design and LMS

Project documentation

- Luminaire selection
- Emergency lighting calculation
- Emergency system selection
- Detailed inspection plan
- Fire protection project

Critical and dangerous situations don't announce themselves in advance. We will provide you with what you need to handle such situations safely.

# Emergency lighting design

## Luminaire selection

Emergency lighting calculation

Emergency system selection

Detailed inspection plan

Complete fire protection project

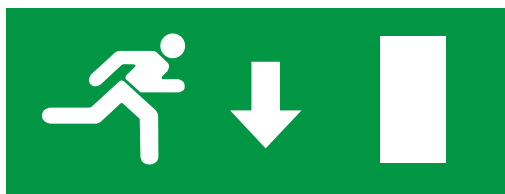
## Luminaire selection

**Standards stipulate the emergency lighting requirements of a space according to its dimensions and use, and the luminaires selected must be legally compliant.** Larger spaces with obstacles or where there are many people, such as production halls and high-traffic corridors, require anti-panic lighting additional to basic emergency lighting. Anti-panic lighting ensures that a minimum level of illumination is provided at all times regardless of events like power cuts and ensures that people have sufficient visual acuity to recognise and avoid obstacles, including people, under stressful conditions.

**The signage used to mark escape routes and exits are a crucial part of any emergency lighting system.** Their number and positioning are dependent on strict normative requirements in accordance with the evacuation plan of a given building. In critical situations when people are prone to panic, such signage makes escape orientation clearer and easier, helping everyone reach a safe exit point.



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*The correct positioning of signage draws attention to exit routes and exits and makes orientation in a dangerous area much easier.*

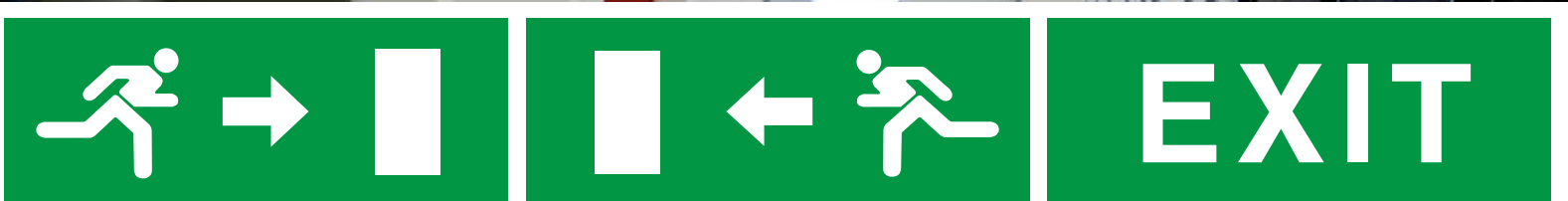
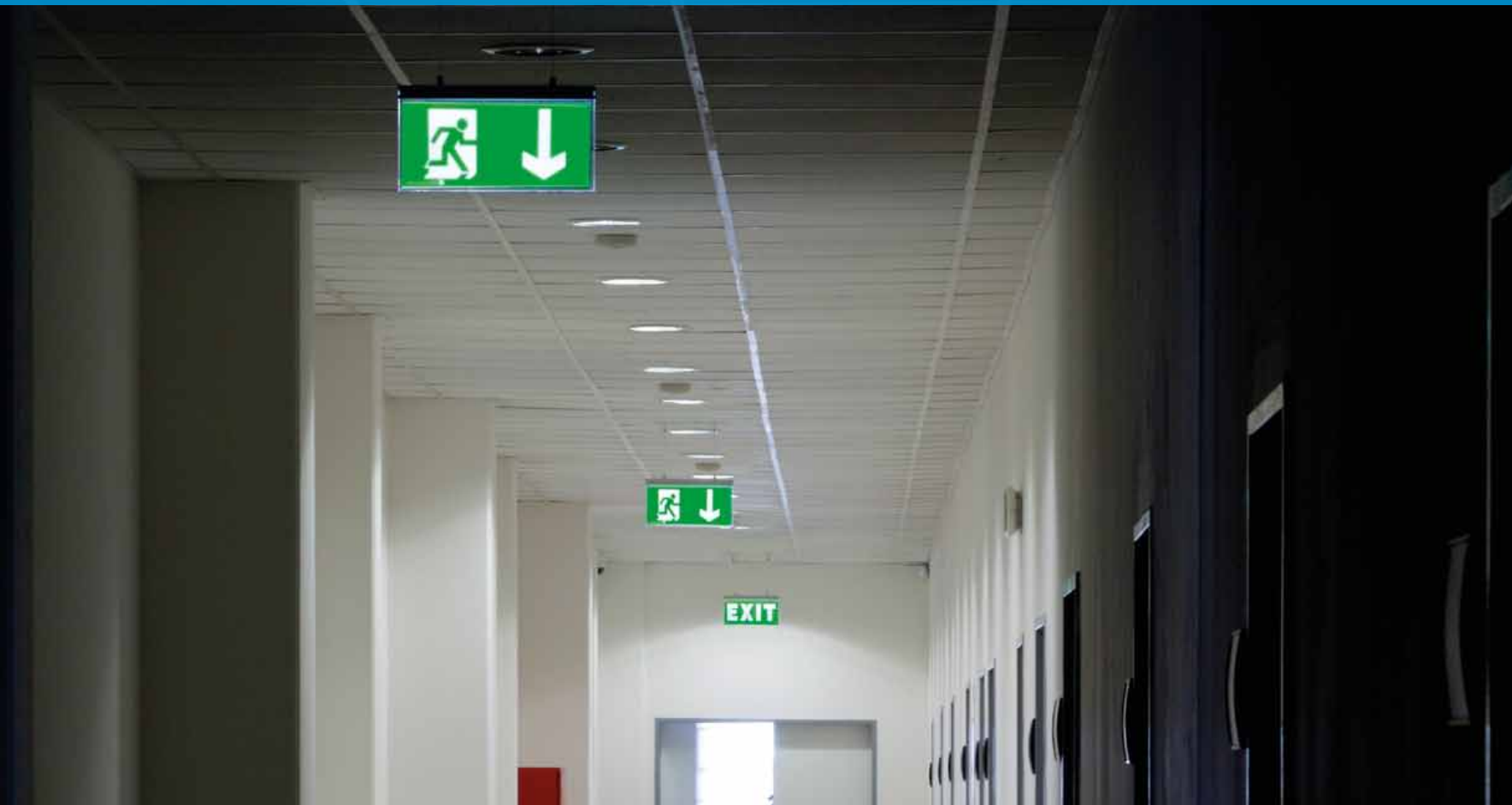
### INPUT

- Description of the space
- Form of emergency lighting
- Illumination requirements
- Luminaire protection (IP)
- Light source type
- Optical system
- Luminaire dimensions
- Luminaire installation
- Luminaire wiring
- Description of the tasks being performed in the space

### OUTPUT

- Luminaire type
- Light source type
- Optical system
- Technical parameters of the luminaire
- Luminaire dimensions
- Photometric measurements

Good emergency lighting will prevent confusion and panic by ensuring that escape routes are easy to find and follow.



# Emergency lighting design

Luminaire selection

**Emergency lighting calculation**

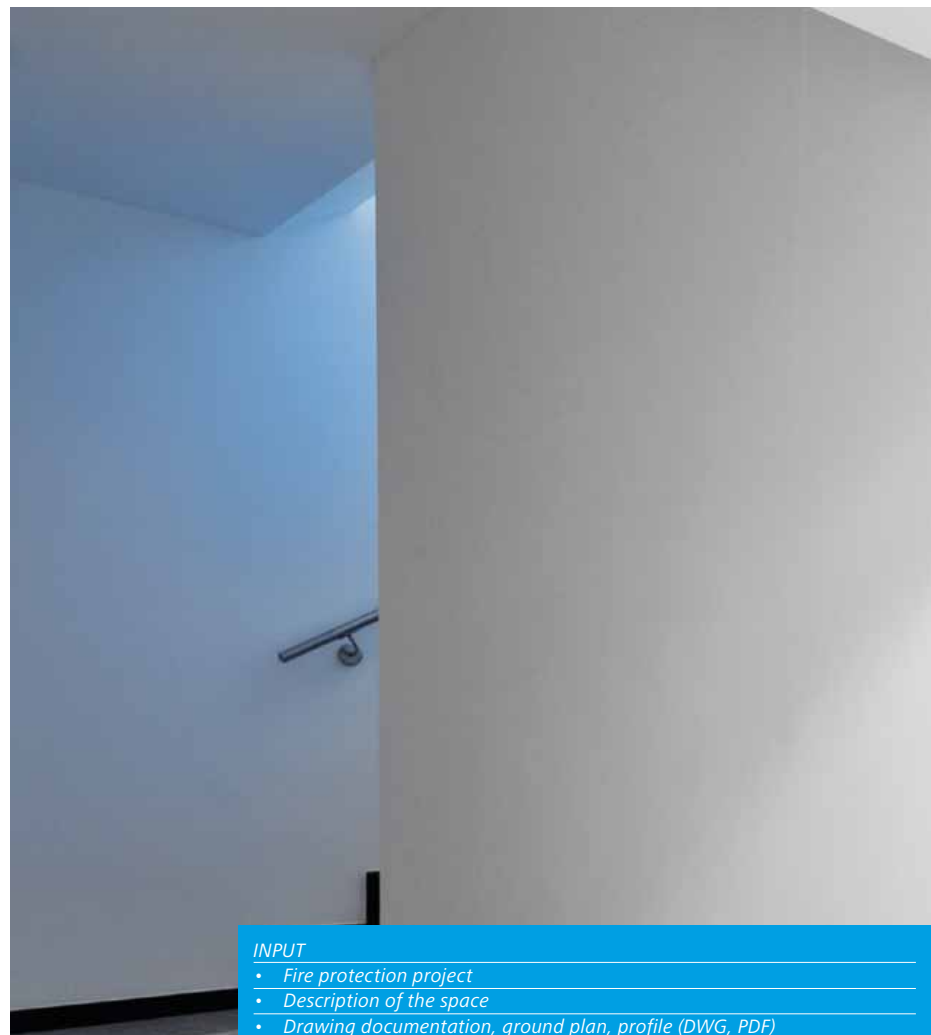
Emergency system selection

Detailed inspection plan

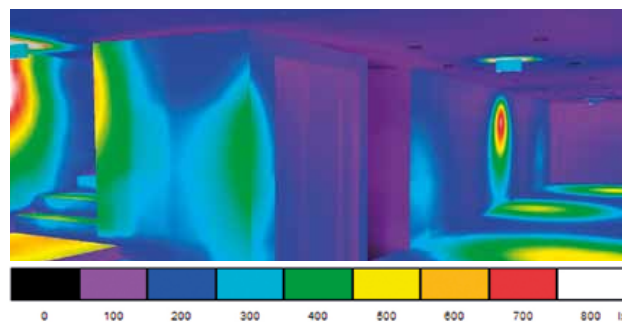
Fire protection project

## Emergency lighting calculation

The planning of safety lighting involves a series of accurate lighting calculations that determine the number and positioning of signage, emergency and anti-panic luminaires. Comprehensive emergency lighting also covers parameters regarding the location of safety equipment such as fire extinguishers and first aid kits. So-called risk areas where auxiliary lighting is required to ensure the completion of risk activities during a power cut have additional specific demands. Hospitals, metal and chemical processing facilities and sports grounds are examples of high-risk areas where a minimum replacement illumination must be provided. **Our team of highly trained specialists are able to design safety lighting for any kind of space.**



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The output from DIALux shows the illumination of all surfaces. The colours correspond to the amount of illumination in each given space.

### INPUT

- Fire protection project
- Description of the space
- Drawing documentation, ground plan, profile (DWG, PDF)
- Location of objects within the space (details)
- Workplaces positions
- Illumination requirements
- Luminaire selection
- Requested installation type
- Drawing documentation of the ceiling

### OUTPUT

- Luminaire type
- Number of the luminaries
- Luminaire wiring
- Location of the luminaries
- Directing of the luminaires
- Installation height of the luminaries
- Maintenance Factor of the luminaries
- Illumination parameters for the particular space
- Lighting scenes

We will ensure that your spaces are safely illuminated in any situation.



The DIALux output shows the LIDC of the used luminaires.



The final DIALux output shows the expected lighting conditions provided by the emergency lighting system in the case of a power failure.

# Emergency lighting design

Luminaire selection

Emergency lighting calculation

**Emergency system selection**

Detailed inspection plan

Fire protection project

## Emergency system selection

**When defining the emergency system it is important to consider the size of the space and number of luminaires used to provide auxiliary illumination.** In smaller applications, we recommend using an independent solution where each luminaire is equipped with a battery and inverter. During a power cut, the inverter supplies the luminaire from the battery ensuring the required safety level of illumination is maintained. **More extensive applications supply emergency luminaires from a central battery system or diesel generator,** a solution which is also economical due to reduced maintenance during inspections of emergency system functionality. We recommend the use of a central monitoring system, especially for larger systems that can consist of several thousand luminaires, which can monitor system functionality through a computer rather than its needing to be performed manually.



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Central monitoring system

### INPUT

- Description of the space
- Technical documentation
- Complete fire protection project
- Emergency lighting calculation
- Scope of the project
- Luminaire type

### OUTPUT

- Emergency system selection
- Luminaire selection
- Selection of the components for monitoring, managing and controlling the system
- Battery selection and functionality



A proper emergency system can ensure safety and economy, and we can show you how.



Larger lighting installations need to incorporate a central monitoring system from where the lighting functionality can be remotely tested.



Smaller installations that have no central monitoring system need to be regularly tested manually.



# Emergency lighting design

Luminaire selection

Emergency lighting calculation

Emergency system selection

**Detailed inspection plan**

Fire protection project

## Detailed inspection plan

The owner or user of a space is required by law to carry out inspection of emergency lighting on a regular basis, sometimes every day, sometimes only annually. **Within the framework of the detailed inspection plans we provide, we ensure the full training of staff concerning the rules of inspection, the operation of the emergency system and the performance of necessary maintenance.**



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*Adherence to the provided maintenance and testing plan is binding in accordance with legislation*

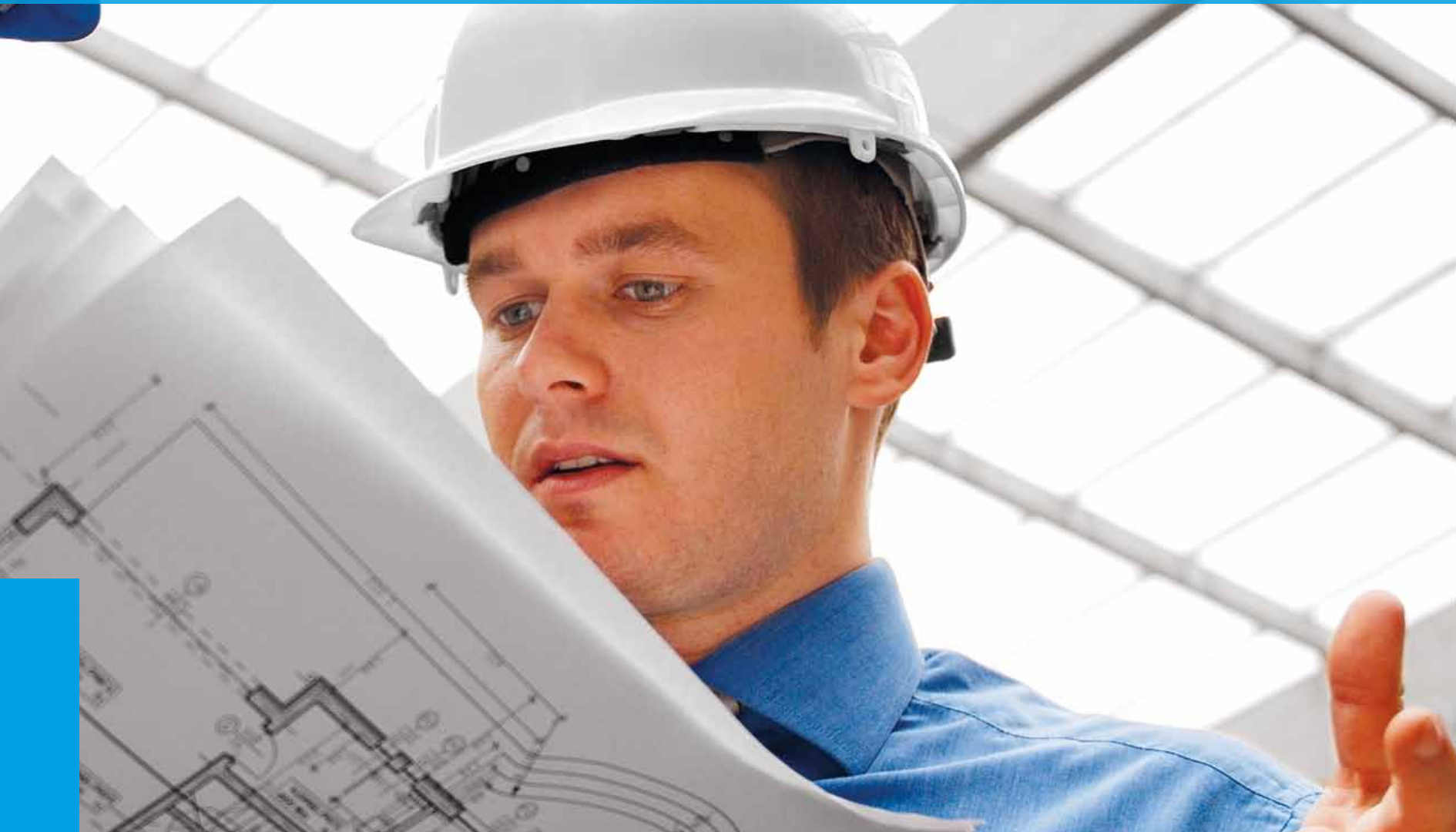
### INPUT

- Luminaire type
- Emergency system type

### OUTPUT

- Maintenance plan
- Emergency system control method
- Testing plan
- Control protocol

Compulsory inspection of emergency system functionality is required by law, and we will provide you with a plan of exactly when and how.



# Emergency lighting design

Luminaire selection

Emergency lighting calculation

Emergency system selection

Detailed inspection plan

**Fire protection project**

## Fire protection project

**A complete fire protection project ensures that the emergency system fulfils not only the lighting needs but also the fire prevention and protection needs of the space.** This includes determining the use of battery and monitoring systems, and the defining of suitable electrical materials and routing of wiring.



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*A fire protection project includes the selection of appropriate luminaires and signage as well as the calculation of any substitute safety lighting. It also defines the number and location of fire extinguishers and first aid kits in the space.*

### INPUT

- Descriptions of the space
- Project documentation
- Fire protection documentation for existing buildings

### OUTPUT

- Emergency lighting type
- Emergency system selection
- Luminaire and component selection
- Fire protection and emergency lighting documentation
- Overall fire protection project for new buildings

The extra step that gives you complete confidence  
in the safety of your buildings.



## Energy savings

The constant depletion of natural resources in combination with rapidly increasing energy prices has brought to the fore our need to act in an environmentally and financially responsible manner. This change in attitude can be increasingly seen across households and industries alike, with it becoming a focal point of the lighting industry in particular. **OMS has been focused on the reduction of energy consumption for a long time and can provide expert and experienced support.** Quantifiable energy and financial savings potential is of equal importance as respect for the environment. **Our services are aimed at providing customers with transparent information about the costs associated with their lighting system and the provision of more effective and economical solutions that take into account not only savings but also return of investment.**

Emergency lighting design

**Energy savings**

Wiring design and LMS

Project documentation

- Lighting energy audit
- Return of investment calculation
- Energy certification of buildings

Caring about costs  
and the environment don't  
have to be mutually exclusive  
as reductions in energy  
consumption can give you  
the best of both.

# Lighting energy audit

## Lighting energy audit

Return of investment calculation

Energy certification of buildings

## Lighting energy audit

**The lighting energy audit is a key part of the energy saving aspect of a lighting project**, whether it be a reconstruction or a new installation. It also provides all the basic information needed for the compulsory energy certification of buildings. **The goal is to gain a comprehensive overview of the current state of your lighting system, based upon which we can design a new and better solution and provide quantifiable energy saving, financial and return of investment values.** The lighting energy audit is a systematic process that includes:

- Expert assessment of the lighting system within the framework of the reconstruction project or the assessment of the lighting design for a new project
- Collation of all information about the lighting system
- Lighting measurements
- Energy measurements
- Processing and analysis of collected data
- Optimisation of the collected data (is it a convenient solution)
- The energy balance of a solution
- The design and implementation of the newly optimised solution



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*When planning the reconstruction of any public lighting system, the first step is to measure the current illumination of all roads and paths.*

### INPUT

- Definition of the area
- Drawing documentation
- Location of workplaces
- Electrical project
- Inspection of the area
- Analysis of currently used luminaires
- Energy consumption
- Illumination
- Working regime
- Energy price

### OUTPUT

- Energy evaluation of the current system
- Quality evaluation of the current system
- Optimisation and improvement plan
- Overall estimated investment costs



We will assess the current state of your lighting system and offer you a new, better solution.



*Here the measured illumination does not meet normative requirements.*

*A comprehensive evaluation of the currently used luminaires and light sources is included as part of the overall energy audit. Based upon the unsatisfactory lighting we suggested to the customers a complete replacement of the original luminaires with new ones using LED technology.*

# Economic comparison and return on investment calculation

Lighting energy audit

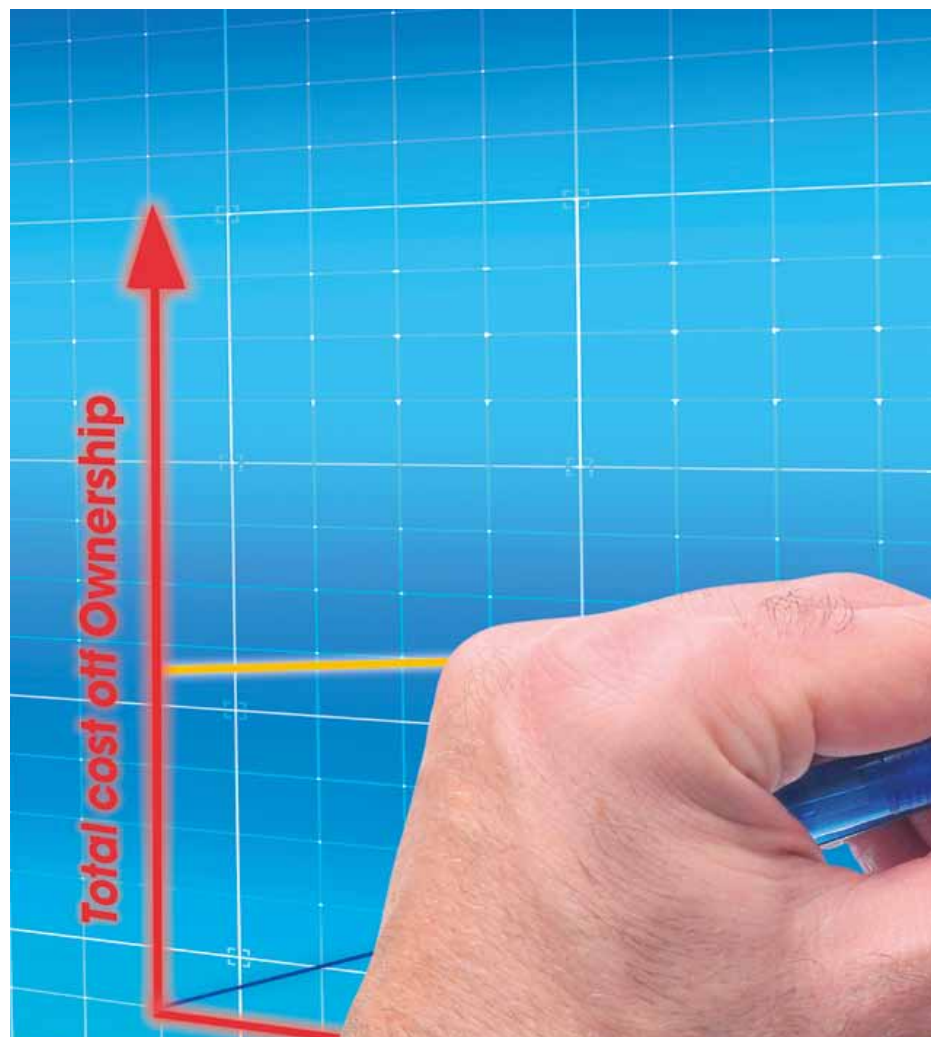
**Return of investment calculation**

Energy certification of buildings

## Return of investment calculation

Using the latest technologies and high levels of short term savings can seem very attractive. However, based on many years of experience in the production of lighting fixtures and provision of tailored lighting solutions, **we are able to calculate the best result from a long term point of view.**

Our return of investment calculations are based on the lighting energy audits of existing or theoretical solutions. If the parameters are unsuitable we will prepare several additional variants and calculate for each. In this way **customers can compare all options and decide which is best for them.** Return of investment calculations are provided as part of the lighting energy audit or as an independent service.



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We calculate the energy savings and payback time of the new solution using SEGIM M with LED light sources (new solution) compared to FORSTREET 04 with high-pressure sodium lamps (old solution).

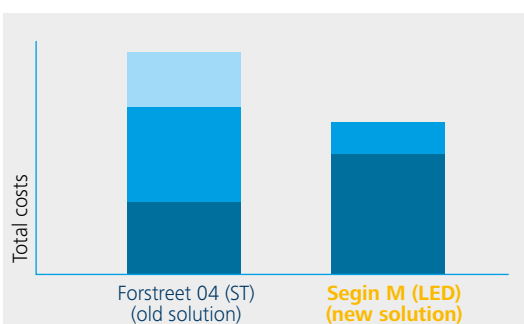
### INPUT

- Old and new lighting solution
- Luminaire type
- Number of the luminaries
- Working hours
- Price of kWh
- Luminaire price
- Labour costs
- Cost of installation

### OUTPUT

- Energy consumption comparison
- Annual operational costs comparison
- Annual energy consumption and CO2 emission comparison
- Investment comparison
- Payback comparison

A high level of savings over a short period of time are not always profitable long term, we will help you decide what is best for now and the future.



The total cost of ownership for both luminaires.

■ Cost and replacement of light sources  
 ■ Energy consumption  
 ■ Cost of luminaire and installation

Product	FORSTREET 04	SEGIN M
Light source	ST	LED
Energy consumption (W)	86	42
Light output (lm)	3403	3850
System efficacy (lm/W)	40	92
Savings comparison with LED (%)	51	-

Comparison of the energy consumption, light output and system efficacy of both solutions. SEGIN M is an ideal luminaire for outdoor application. It has excellent lighting parameters, an impressive design and an acceptable price.

# Energy certification of buildings

Lighting energy audit

Return on investment

calculation

## Energy certification of buildings

### Energy certification of buildings

Energy is inseparable from each space. In buildings it ensures people are warm and comfortable and contributes to quality of life. However, this **comfort must be balanced with responsibility**. We offer customers the service of energy and green building certification.

The energy certification of buildings is based upon the European Directive 2002/91/EC which is obligatory for EU member states. This document contains all the necessary instructions concerning the energy economy and assessment of buildings, covering the following parameters: heating, insulation, water heating, wiring (for lighting, air conditioning and ventilation).

**The value assigned, from A to E, is the result of the energy certification**

**of the building.** It shows the energy consumption per m<sup>2</sup> of the building, whilst at the same time showing the customer what further energy saving potential the building has.

**Within the framework of this service we also offer green building certification.** The assessment of a building for this certification reflects an overall ecological approach rather than one focused solely on energy economy. This certification assesses the ecological character of the materials and technologies used for heating and water heating, the use of alternative sources of energy and the ability of the building to actively produce energy.



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The energy certification of buildings results in a rating ranging from A to G, representing the energy consumer per metre square of the evaluated building.

#### INPUT

- Building use
- Drawing documentation, ground plan, profile (DWG, PDF)
- Electrical project
- Inspection of the space
- Analysis of currently used luminaires
- Energy consumption
- Illumination
- Working regime
- Energy price

#### OUTPUT

- Energy evaluation of the current system
- Quality evaluation of the current system
- Optimisation and improvement plan
- Estimated costs
- Assignment of an energy rating
- Certification

One letter, from A to E, will tell you all you need to know about the energy efficiency of your building.

Lighting specification

Visualisation

Lighting calculations

LQS project

## Wiring design and LMS

When building or reconstructing any space legislation requires the submission of extensive technical documentation. Due to the rigorous professional and technical specifics required it is vital to involve an authorised specialist. **As specialists in lighting solutions we are able to provide you with high-level services in the area of wiring design, Lighting Management System (LMS) design and the creation of personalised Graphical User Interfaces (GUI)**, thanks to which you are able to simply and effectively control your lighting system.

Emergency lighting design

Energy savings

**Wiring design and LMS**

Project documentation

- Wiring design
- LMS design
- GUI design

We will make sure that you do not lose your way in the labyrinth of electrotechnical documentation.

# Wiring design and LMS

## Wiring design

LMS design

GUI design

### Wiring design

The wiring project is technical documentation which provides an in-depth explanation of how all the electrical elements of a system unify into one functional unit. The wiring design services we provide are not limited to lighting system installation only, as **our specialists are able to provide complete wiring designs for any space.** Within the framework of this service we cover all three legally required steps: the building permit documentation, the realisation of the design and the installation. **Our customer receives complete technical documentation with a technical report, a list of materials and components and an installation blueprint that shows all components and their wiring and connections.** The preliminary budget is included as part of the documentation.

#### Three design phases, one specialist:

The wiring project has three steps. Our specialists guarantee that you will obtain a high-quality project in compliance with the valid legislation and standards confirmed by an authorised person from the construction industry.

#### Building permit documentation:

You will receive a simple and transparent document with the basic data about the electrical and lighting system design. Its purpose is to provide all necessary information about the input power of the system necessary for connection to the electrical grid.

#### Realisation of the design:

This includes detailed wiring instructions for the installation company. It specifies the luminaires, light sources, wires, Lighting Management System control devices and how to connect them all.

#### Installation:

This is one of the most important parts of the project which reflects the real layout and connection of the components. During wiring implementation we frequently face deviations from the original project. All these deviations are to be taken into account and mapped.



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An electrical installation project results in the provision of a technical drawing that shows the wiring and connection of all lighting components.

#### INPUT

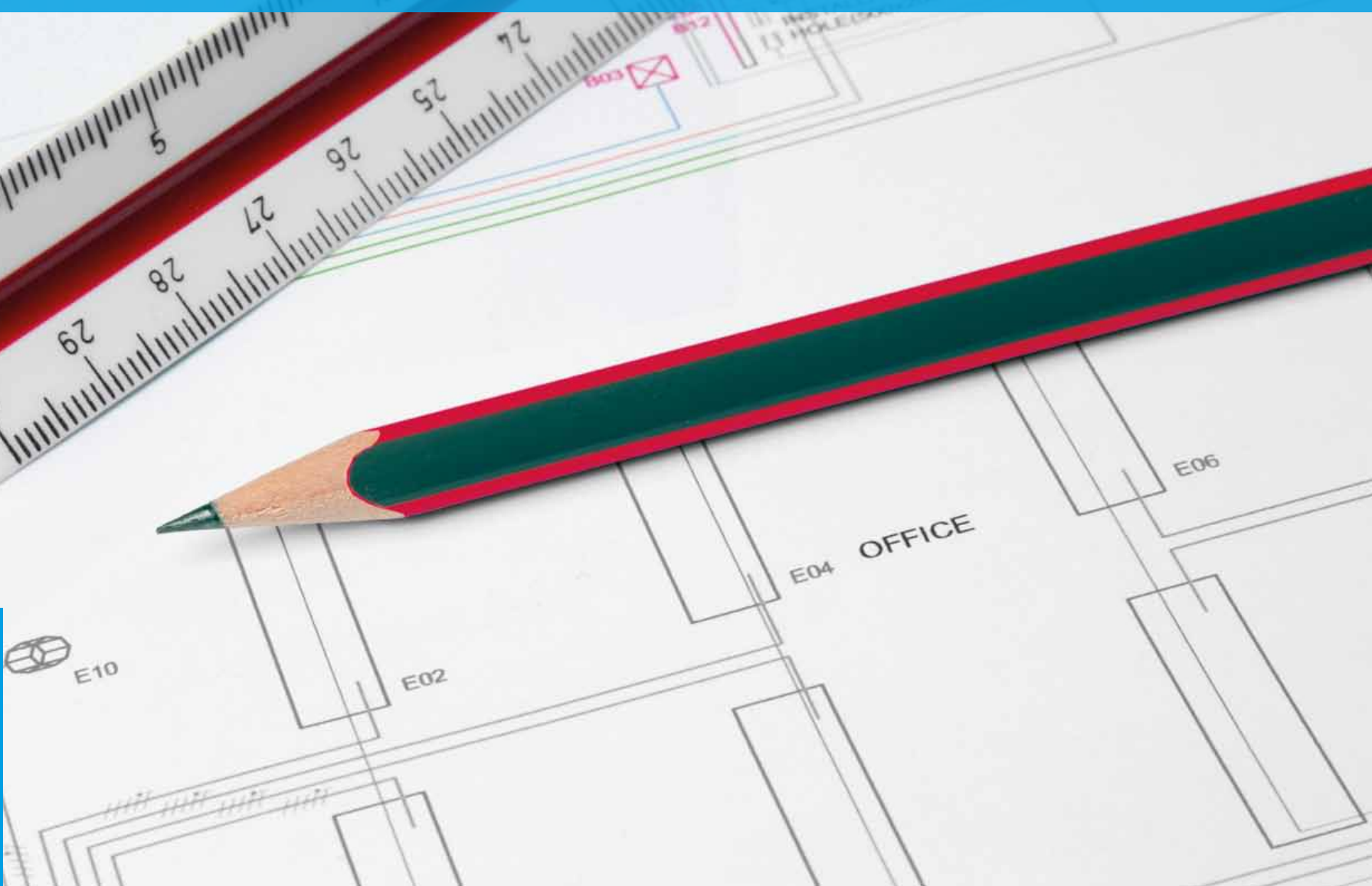
- Lighting calculation
- Drawing documentation, ground plan, profile (DWG, PDF)
- Wiring possibilities
- Use of the space
- Customer intention
- Personal inspection of the space (in case of reconstruction)

#### OUTPUT

- Project documentation based on the European technical norms
- Technical report
- Full electrical wiring and connection schematic
- Ground plan of the wiring
- Distribution system (positioning of the devices)
- List of norms relating to the safe control of electrical devices by means of personal inspection and testing, and the norms demanded for safety at work



There is much to do before you can see the light.



# Wiring design and LMS

Wiring design

**LMS design**

GUI design

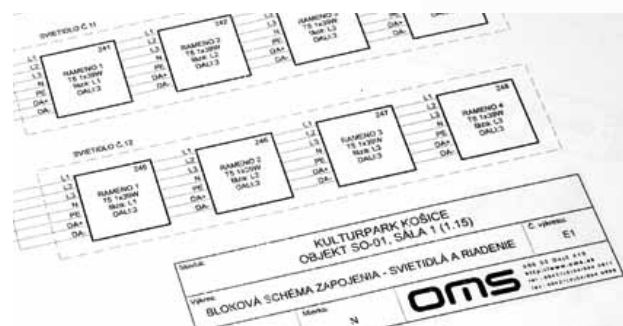
## Lighting management system (LMS)

**An LMS is part of the electrical and lighting design**, used for the control and regulation of a lighting system in order to increase the potential for energy savings and provide user comfort in the form of autonomous lighting. **The wide range of control devices and methods available means that each LMS can be tailored to the simplest or most demanding of needs.**

If you choose a controlled lighting system we will be able to specify and plan in detail the functional connection of all incorporated components including the luminaires, sensors and control devices. Selection of the correct kind of control device(s) depends to a large extent on the type of lighting system and the space for which it is determined, and can be controlled using standard wall switches or touch panels, using a smartphone, tablet or computer, and even from a remote location over the internet. **The effective design and implementation of an LMS will enable light to be provided to the correct level at the time and place needed.** We can provide the LMS design service both along with the wiring design or independently, for new lighting solutions or for reconstructed ones where lighting regulation is not yet implemented.



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An LMS project gives the electrical installation company detailed instructions on how to connect all luminaires and control components to create a functional whole.

### INPUT

- Description of the space
- Lighting project
- Drawing documentation, ground plan, profile (DWG, PDF)
- Control requirements
- If not part of the electrical installation project it is necessary to submit information on the positioning of all electrical components
- Type, number and location of control components
- Photo documentation of the designed space
- Location of windows and skylights, and the orientation of the building
- Simplified description of the activities taking place in the space

### OUTPUT

- Summary of the control components
- Full electrical wiring and connection schematic
- Ground plan of the wiring
- Description of functionality

The correct incorporation of lighting controls into your lighting system will provide energy savings and bring you a high level of user comfort.



# Wiring design and LMS

## Wiring design

LMS design

GUI design

## GUI design

The tools used in an LMS provide the lighting system with an autonomous character and bring great potential for savings in energy. However, **customers need to choose the most suitable type of control device for their needs**, with the most modern devices enabling control by touch display or using a smartphone or tablet. For such devices we can design a customised GUI. The first step is to choose the device and then we match the interface to your needs and incorporate corporate elements such as logos. Thanks to simple to understand icons, through a panel of buttons you can easily and effortlessly control all functions of the LMS. **Our tailored GUI will transform your imagination of lighting control into reality.**



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The Graphical User Interface (GUI) can be used on a computer, tablet or smartphone with Android or iOS.

### INPUT

- LMS project
- Graphic design requirements

### OUTPUT

- Graphical output for the interface
- Data for programming the interface (PC, touch panel, tablet...)
- Functional map of the application
- Description of functionality

The possibility to control your lighting simply by touch is no longer a figment of the imagination.



The resulting application enables customers to regulate their lighting using simple and intuitive touch control.



The GUI allows for the increases and decreasing of illumination level, or the change of light colour according to desire or need.

Lighting specification

Visualisation

Lighting calculations

LQS project

## Project documentation

**We offer you the services of our experienced specialists during all stages of the lighting project**, beginning with specification of the illumination using visualisation services, lighting calculations, wiring projects, LMS projects and the quantification of energy savings. You will be in possession of a complete and high quality lighting project, which you can assign to the installation company of your choice.

Emergency lighting design

Energy savings

Wiring design and LMS

**Project documentation**

Make use of our complete  
portfolio of design services!

# Project documentation

**Thanks to our extensive portfolio of services, our Lighting Solutions specialists can provide you with comprehensive support throughout all phases of your lighting project,** starting with definition of the idea through to searching for the most economical and energy efficient solution, from selection of the most suitable luminaires and management tools **to complete project documentation and tailored realisation.** . In this way, our wide-ranging services will save you both time and money. We are a reliable and experienced providers of lighting solutions and have many excellent references to support us. **If you entrust us with your lighting project it means you will avoid any unnecessary mistakes, will remain well-informed throughout and will receive as the result the best possible lighting solution you can. During the individual project stages you will receive the following:**

## Lighting specification

- Luminaire type and dimensions
- Chosen light source
- Choice of the appropriate light distribution and optical system
- Specified technical parameters of luminaires

## Defining of the illuminance according to standards

- Illuminance values for the space being planned
- Lighting uniformity values
- Colour Rendering Index (CRI) values
- Correlated Colour Temperature (CCT) values
- Glare ratings
- Definition of the space being planned
- Definition of any other lighting parameters

## Design of the lighting according to the RIGHT LIGHT methodology

- Definition of lighting parameters (illuminance, lighting uniformity, CRI, CCR, glare) taking into account normative requirements and their revision based on the latest scientific knowledge and our extensive practical experience

## Visualisation

- Exact specification of illuminance requirements (normative and other), luminaire selection, their layout and installation method, definition of the lighting distribution, a preliminary financial budget connected with demonstrations according to the type of service.

## Support during creating the lighting design

- Definition of how the solution will model the space.
- Demonstration through visualisation services.

## Defining the design concept

- Assessment of the first lighting design draft and its adaptation to illuminance, effectiveness and energy saving requirements.

## 3D model (3ds, obj, dae, skp, c4d, xml)

- Creation of a model with the possibility to observe the effects of the designed lighting solution. The model can also serve as the lighting calculation and is necessary for the 3D visualisation.

## 3D render

## 3D visualisation in 3D interface

- The possibility to view the effects of the lighting design in 3D using the most modern technologies.

## Video presentation

- Dynamic video footage of the lighting design in action.

## Lighting demonstration

- A chance to see the lighting design in reality.
- Demonstration of various illumination possibilities.
- Specification of the technical parameters of the luminaires.
- Luminaire installation method.
- Technical support.

## Light for rent

- One-off rental of luminaries
- Visualisation of the designed lighting solution



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# Where others see obstacles, we see solutions

## Calculation of daylight availability

- Daylight availability parameters
- Distribution of daylight within the space
- Proportion of daylight

## Calculation of artificial lighting

- Exact type, number, wiring and position of luminaries
- Direction and installation height of luminaries
- Maintenance Factor
- Illumination parameters
- Lighting scenes

## LQS Project

- Comparison with an ideal state
- Energy consumption
- CO<sub>2</sub> savings
- LENI rating
- A proposal to improve the solution according to LQS
- Energy consumption after optimisation
- CO<sub>2</sub> savings and LENI rating after optimisation

## Emergency lighting design

- Luminaire type
- Light source and optical system type
- Technical parameters, direction and luminaire dimension
- Photometric measurements
- Installation height of the luminaries
- Maintenance Factor
- Lighting parameters
- Lighting scenes

- Emergency system selection
- Selection of the components for monitoring, managing and controlling the system
- Battery selection and functionality
- Maintenance plan, testing plan and emergency system control method
- Control protocol
- Fire protection and emergency lighting documentation
- Overall fire protection project for new buildings

## Lighting energy audit

- Overall fire protection project for new buildings
- Quality evaluation of the current system
- Optimisation and improvement plan
- Overall estimated investment costs

## Energy savings and payback calculations

- Energy consumption comparison
- Annual operational costs comparison
- Annual energy consumption and CO<sub>2</sub> emission comparison
- Investment comparison
- Payback comparison

## Energy certification of buildings

- Energy evaluation of the current system
- Quality evaluation of the current system
- Optimisation and improvement plan
- Estimated costs
- Assignment of an energy rating
- Certification

## Wiring design

- Project documentation based on the European technical norms
- Technical report
- Full electrical wiring and connection schematic
- Ground plan of the wiring
- Distribution system (positioning of the devices)
- List of norms relating to the safe control of electrical devices by means of personal inspection and testing, and the norms demanded for safety at work

## LMS project

- Summary of the control components
- Full electrical wiring and connection schematic
- Ground plan of the wiring
- Description of functionality

## Graphical user interface (GUI)

- Graphical output for the interface
- Data for programming the interface (PC, touch panel, tablet...)
- Functional map of the application
- Description of functionality

# SUPPORT

## SUPPORT

### Installation and programming of the lighting system

- Wiring installation
- Lighting installation
- LMS installation
- LMS programming
- Fine-tuning of the lighting
- Technical supervision
- Removal and recycling of old lighting components
- Maintenance plan

### Technical support

- Expert lighting system surveys
- Lighting measurements
- Consumption measurements
- Luminaire administration and maintenance
- Fine-tuning of the lighting
- Consultation
- 3D scanning of the space
- Guarantee program
- Complaints
- Online services
- Technical training and education
- Technical Sales Support
- Project registration
- Project management
- Customer presentations
- Financing



## Installation and programming of the lighting system

Technical support

- Wiring installation
- Lighting installation
- LMS installation
- LMS programming
- Fine-tuning of the lighting
- Technical supervision
- Removal and recycling of old lighting components
- Maintenance plan

# Installation and programming of the lighting system

A complete lighting project is the first step to the realisation of your lighting solution. **To transform project plans into reality requires the cooperation of a quality company who will manage the installation of all electric equipment.** They will install and connect all the necessary components according to the project documentation and convert the lighting system plan into a functional whole. **Our company uses the services of certified contractual partners across numerous countries for this purpose, thanks to which we are able to realise complete projects anywhere in the world.**



# Installation

## Wiring installation

Lighting installation

LMS installation

LMS programming

Fine-tuning of the lighting

Technical supervision

Removal and recycling  
of old lighting components

Maintenance plan

## Wiring installation

Wiring distributes the electric energy that supplies the lighting system. Its design and realisation is subject to stringent standards and legislation in order to ensure safety. **High quality wiring is a necessary element in the flawless operation of a lighting system.** If it is realised in full compliance with project documentation it provides users with convenience, thanks to which they are unaware of its presence. Wiring includes the installation of wires, distributors, switches and all the components necessary for lighting fixture mounting.



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*The professional realisation of an electrical project is accordance with the appropriate documentation guarantees the smooth operation of the final lighting system.*

### INPUT

- Electrical project

### OUTPUT

- Fully installed lighting system

High quality wiring is characterised by the fact that you never notice it.



# Installation

Wiring installation

**Lighting installation**

LMS installation

LMS programming

Fine-tuning of the lighting

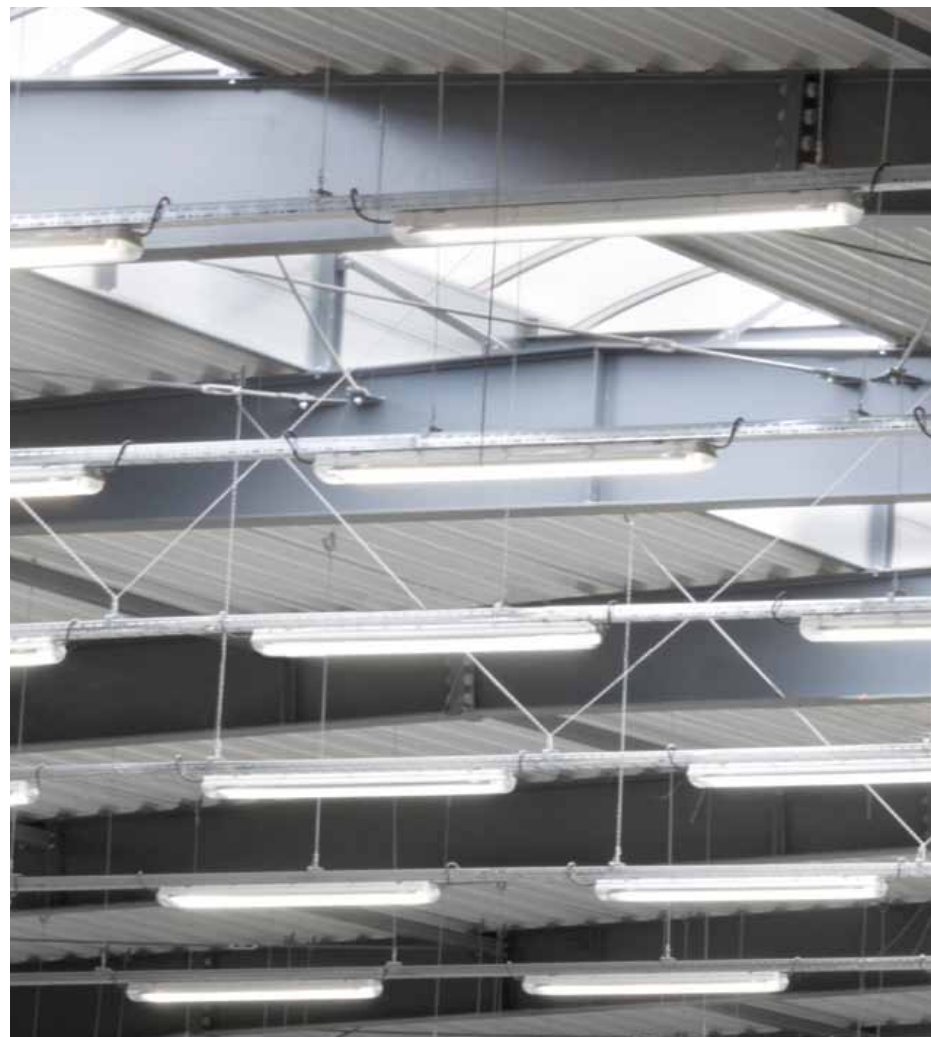
Technical supervision

Removal and recycling of  
old lighting components

Maintenance plan

## Lighting installation

**The correct installation of lighting fixtures is the culmination of many small steps, and must be done by suitable professionals.** Connection of lighting fixtures to the prepared wiring by non-certified personnel could result in damage to the system and components, and leaves users open to possible injury. We want to be sure that the solution we provide will work safely and without error, so we offer you the installation services of our verified professional partners.



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*The installation of luminaires consists of the three necessary steps, all of which demand a professional touch.*

### INPUT

- Lighting calculation
- Planned location of luminaires
- Orientation of the luminaires

### OUTPUT

- A functional lighting system



Even the seemingly simplest of things require a professional approach and the presence of an expert.



*The installation of switches, controls and other components must be done safely.*



*For luminaires to work without any trouble it is important to connect them properly under the supervision of professionals.*



# Installation

Wiring installation

**Lighting installation**

LMS installation

LMS programming

Fine-tuning of the lighting

Technical supervision

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old lighting components

Maintenance plan

## LMS installation

The use of a Lighting Management System (LMS) provides a much higher level of user comfort, convenience and potential for energy savings. Intelligent regulation devices enable lighting to be dimmed, switched on to pre-set brightness levels, and in the case of RGBW lighting fixtures allows for colour and brightness changes according to desire, all in combination with various types of sensors. Now it is possible to control all these functions simply using remote control or from a smartphone, tablet or computer. To be able to fully benefit from such regulation it is necessary to incorporate the necessary components into the prepared wiring. **The professional services provided by our partners guarantee that all elements of the LMS will be correctly installed and fully functional.**



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Control panels that enable the increasing and decreasing of illumination level can be installed as part of a lighting system.

### INPUT

- LMS design

### OUTPUT

- Complete connection of the lighting control system

Are you afraid of the dark... we will install a Lighting Management System that will turn on the lighting before you even pass through the door.



*Lighting intensity sensors detect the level of illumination in a space and automatically regulate the output of controlled luminaires in order to ensure a desired brightness.*

# Installation

Wiring installation

Lighting installation

LMS installation

**LMS programming**

Fine-tuning of the lighting

Technical supervision

Removal and recycling of  
old lighting components

Maintenance plan

## LMS programming

After the professional installation of the lighting and all control components it is necessary to fine-tune the system, starting with the programming of the lighting fixtures and control devices. **According to customer requirements we create a control program and using a series of tests verify the functionality of all equipment.** Next, we train customers how to operate the system. **We also offer the service of remote administration and maintenance of the LMS through the internet**, a service that allows us to connect to and adjust the control program at any time and to monitor all system components, taking the burden off your shoulders.



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*Before a lighting system can 'come to life', the control functionality must be programmed.*

### INPUT

- LMS design

### OUTPUT

- Creation of the control logic
- Setting of the functionality
- Maintenance training

For the wiring, lighting fixtures and control components to properly communicate with each other, it is necessary to program them.



*At times with limited activity in the space it is possible to switch on only the luminaires needed in the necessary location by selecting the suitable lighting scene.*



*In a space with a controlled lighting system it is possible to choose a lighting scene suitable for maintenance and cleaning activity or for a break.*



*Outside of working hours the lighting can be dimmed to a safety level suitable for monitoring.*

# Installation

Wiring installation

Lighting installation

LMS installation

LMS programming

**Fine-tuning of the lighting**

Technical supervision

Removal and recycling of

old lighting components

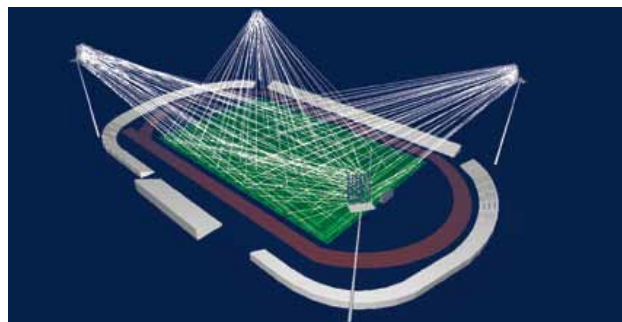
Maintenance plan

## Fine-tuning of the lighting

For the lighting system to meet the many illumination parameters defined by standards it is not enough to simply install the lighting fixtures, we also need to precisely adjust the direction of the light to make sure it falls exactly where needed – onto the task area, the road, the operating table, the wall or the sports field. **Our technicians are thoroughly familiarised with each project we prepare and have precise lighting calculations based upon which they adjust individual lighting fixtures so that their output corresponds with requirements.**



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*When designing the lighting for a football stadium it is important to direct the illumination properly.*

### INPUT

- Functional installation of the luminaries
- Lighting calculations
- Positioning of the luminaries
- Drawing documentation (DWG, PDF)

### OUTPUT

- Directing of the illumination according to need

To have just the right amount of light in the right place,  
it needs to be directed.



*Before the illumination can be directed the calculation of suitable measuring points must be performed.*



*Measuring points are marked with small targets.*



*Measuring points are then marked with small targets.*

# Installation

Wiring installation

Lighting installation

LMS installation

LMS programming

Fine-tuning of the lighting

**Technical supervision**

Removal and recycling of  
old lighting components

Maintenance plan

## Technical supervision

**Before we perform the first start-up of the lighting system we want to make sure, again and again, that everything is ready.** Within the framework of technical supervision we offer you the expertise and practical knowledge of our specialists at every stage of the project. **Our technical supervision will assure you that all wiring, lighting fixtures and control components are installed and set-up perfectly so that the system we hand over to you will function without error.**

*So that our customers can be sure that their lighting system is installed properly, we offer to check and adjust it before operation.*



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### INPUT

- Complete technical documentation

### OUTPUT

- Correct following of all defined installation steps
- The installation meets the requirements placed upon it



Even a small error can cause a major problem, however we can keep an eye on the installation to ensure that everything is done properly.



# Installation

Wiring installation

Lighting installation

LMS installation

LMS programming

Fine-tuning of the lighting

Technical supervision

**Removal and recycling of  
old lighting components**

Maintenance plan

## Removal and recycling of old lighting components

**Any old lighting installation consists of many components which must be removed and recycled in compliance with relevant legislation.** The biggest part of this process is the disposal of conventional light sources, all of which contain various amounts of heavy metals like mercury and lead, along with other dangerous substances. They must therefore be **disposed of as hazardous waste and recycled using special equipment** in order to ensure that no damage is caused to the environment, and no harm caused to individuals. We will provide this service, disposing of all removed components including light sources and wiring. In this way you don't need to think about this complex task, we will take away everything and arrange for its disposal at specialist facilities. **This will save you stress, time and money.**



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*The removal of old luminaires, light sources, wiring and materials requires safety and professionalism. If you choose, we can also arrange the recycling of all waste materials.*

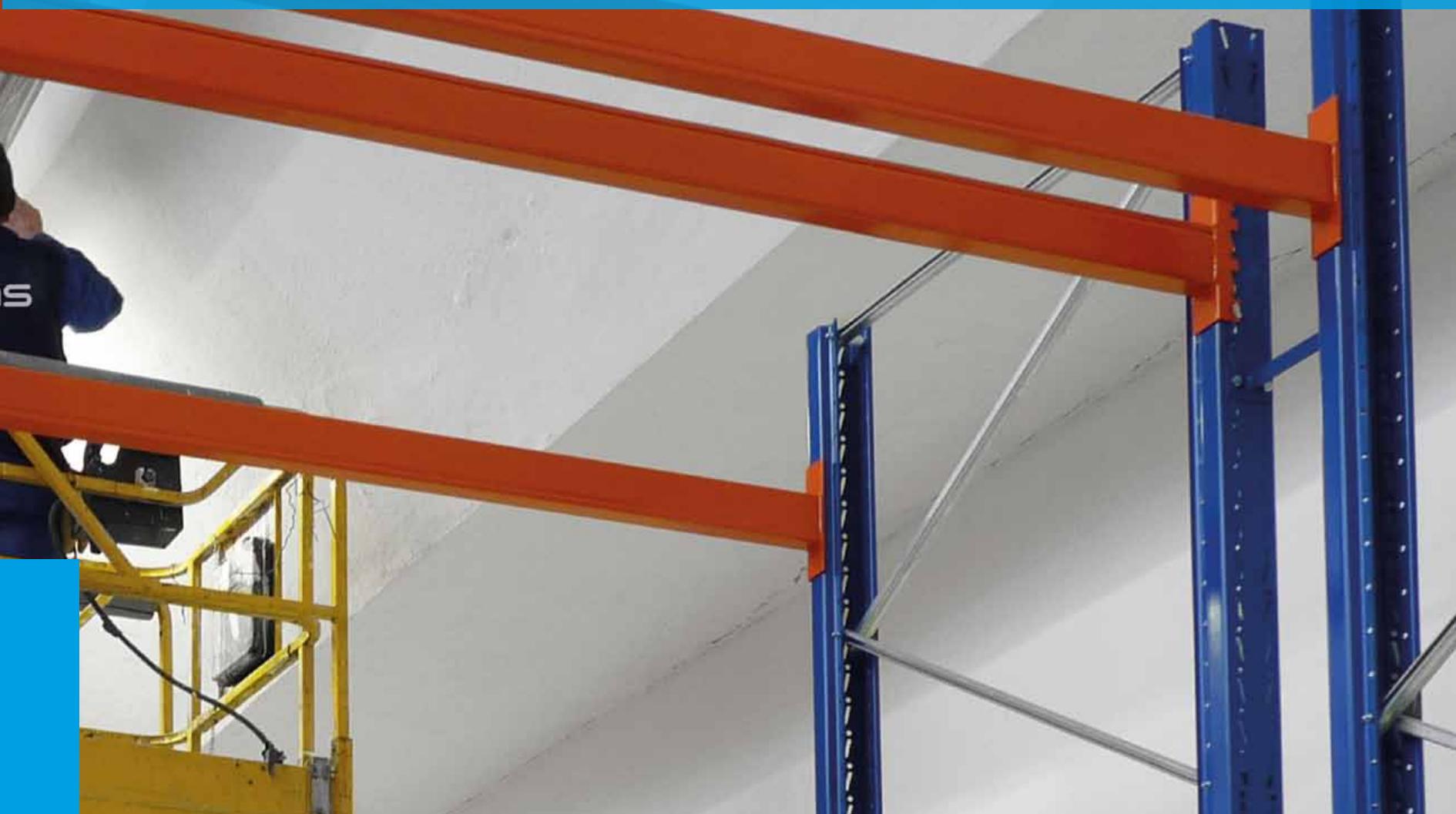
### INPUT

- Access to the site
- Time schedule or the space

### OUTPUT

- Disassembly of the lighting
- Ecological and safe removal of waste materials

You need not worry about what to do with the old lighting installation, we will take care of the recycling, saving you time and money.



# Installation

Wiring installation

Lighting installation

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Fine-tuning of the lighting

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Removal and recycling of  
old lighting components

**Maintenance plan**

## Maintenance plan

**All lighting systems require regular maintenance, consisting of the cleaning and replacement of optical parts and light sources, and the cleaning and care of windows and skylights.**

The maintenance interval depends on the type of space and its use. In spaces where there are high levels of vapours, dust and pollution it is necessary to pay increased attention to maintenance activities, when compared to sterile environments for example. In order for your lighting system to consistently meet the lighting requirements placed upon it, throughout its entire lifetime, maintenance must be performed in accordance with the plan we design specifically for it.



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*In order than a lighting system perform as needed throughout its entire life it is necessary to adhere to a maintenance plan. We will design a schedule specifically for your system.*

### INPUT

- *Lighting calculations*
- *Use of the space*
- *Luminaire type*

### OUTPUT

- *Maintenance plan*
- *Cleaning schedule*

There is no technology capable of caring for your lighting system better than you, and we will teach you how to do it.



- Expert lighting system surveys
- Lighting measurements
- Consumption measurements
- Luminaire administration and maintenance
- Fine-tuning of the lighting
- Consultation
- 3D scanning of space
- Guarantee program
- Complaints
- Online services
- Technical training and education
- Technical Sales Support
- Project registration
- Project management
- Customer presentations
- Financing

## Technical support

**Our technical support services cover a wide range of activities aimed at consultancy, consumption measurements and customer training.** They are partial services that can be requested either within the framework of the individual phases of a lighting project or independently. Our specialists are able to answer any questions, and give you, the customer, all the knowledge and technical support you need.



# Technical support

## Expert lighting system surveys

### Lighting measurements

### Consumption measurements

### Luminaire administration and maintenance

### Fine-tuning of the lighting

Consultation

3D scanning of space

Guarantee program

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## Expert lighting system surveys

Obsolete luminaires, yellowed reflectors and defective wiring? Are you still hesitating to begin reconstruction? Call us, and we will carry out an expert survey for you. Based on this simple assessment we can draw your attention to the problematic and dangerous aspects of your current lighting system, and then we will advise you how to resolve those issues.

## Lighting measurements

Does the level of illumination in your space meet standards? Our lighting measurements service means you can have the answer within just a few hours.

## Consumption measurements

Why pay more than necessary! Do you know the current energy consumption of your lighting system? Based on a few simple measurements, our technicians can tell you what you can do to save, and if reconstruction could help. The measurements will inform you about the annual consumption of your current system, and what that means in terms of quantifiable energy payments.

## Luminaire administration and maintenance

If you lack the workforce and technologies needed for the management and maintenance of your lighting system, we can do it for you. We provide cleaning and repair services as well as the replacement of light sources as needed. All without disruption to the routine operation of the spaces being serviced.

## Fine-tuning of the lighting

For the lighting to fulfill requested parameters, it is not enough to just correctly install the luminaires. It is necessary to direct them properly, so that the light is cast right where it's needed. We realize directing the luminaires within the installation, but on demand also as a separate service.

### INPUT

- *Making the premises to be inspected accessible*
- *Expert*

### OUTPUT

- *Assessment of the current state*
- *Highlighting of the advantages and disadvantages of the lighting system*

### INPUT

- *Making the premises accessible during the measurement period*
- *Presenting the maintenance plan*
- *Specifying the type of measurement*

### OUTPUT

- *Protocol of measuring the illuminance*

### INPUT

- *Electrical design documentation*
- *Expert*
- *Making the premises and measuring point accessible*

### OUTPUT

- *Protocol of measuring the consumption*

### INPUT

- *Presenting requirements and levels*
- *Adjustments*
- *Maintenance plan*

### OUTPUT

- *Maintenance and administration of the lighting system*

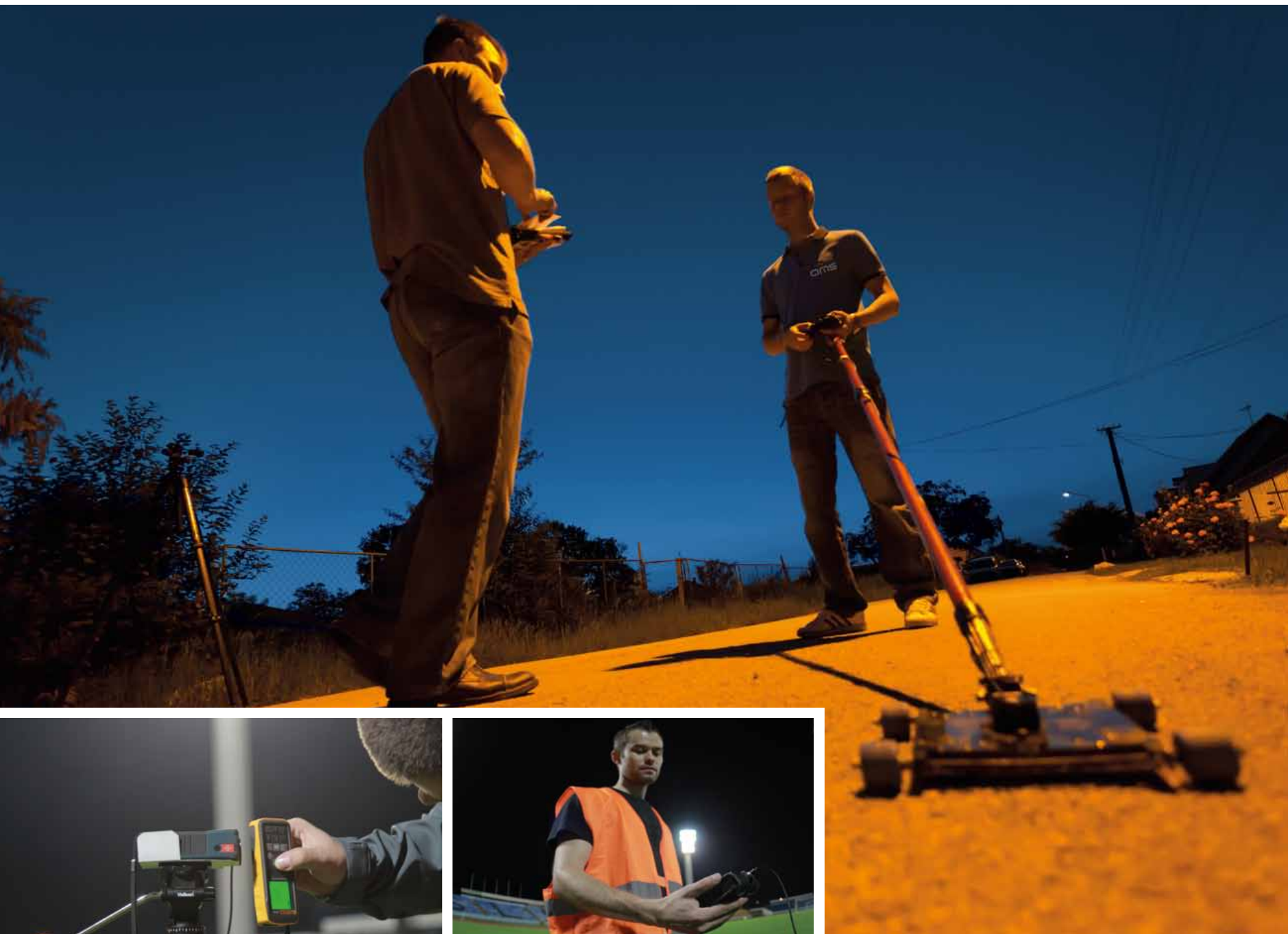
### INPUT

- *Functional installation of luminaires*
- *Lighting calculation*
- *Position of luminaires*
- *Drawing documentation*

### OUTPUT

- *Adjusting the lighting system*





# Technical support

Expert lighting system  
surveys  
Lighting measurements  
Consumption  
measurements  
Luminaire administration  
and maintenance  
Fine-tuning of the lighting  
**Consultation**  
**3D scanning of space**  
**Guarantee program**  
**Complaints**  
**Online services**  
**Technical training and  
education**  
**Technical Sales Support**  
Project registration  
Project management  
Customer presentations  
Financing



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## Consultation

Does your lighting system need reconstructing? Are you rebuilding a space and need advice about which luminaires to use? Do you need a more economical lighting solution? We will gladly provide answers to all your questions, and if needed will visit you in person.

## 3D scanning of a space

Do you need a 3D model or visualisation? Do you have incomplete project documentation? We can do a 3D scan of your space to provide you with all the information you need. This can be done as part of our visualisation service or independently.

## Guarantee program

We offer, after a project is registered with our partners, a five year guarantee for the key components of your lighting system: light sources, control gears, LMS components and LED luminaires.

## Complaints

We are always here for you and want to eliminate any faults in our services and products

## Online services

We are here for you 24 hours a day. Our specialists will help you solve your minor technical problems online or ensure their resolution within the shortest possible time.

## Technical training and education

We will gladly share our knowledge with you. We can provide comprehensive training to users on how to manage our products. We can also provide longer-term and continuous training and seminars for our contract partners.

### INPUT

- *Presentation of the technical problem*

### OUTPUT

- *Providing solution*

### INPUT

- *Presentation of the measurement levels*
- *Making the space of interest accessible*

### OUTPUT

- *3D files of the space*

### INPUT

- *Technical description of the project*

### OUTPUT

- *Contract of guarantee*

### INPUT

- *Subject of the claim*
- *Expert examination and measurement of the technical parameters*

### OUTPUT

- *Clarification of possibilities and the offer of a solution*

### INPUT

- *Technical description of the problem*

### OUTPUT

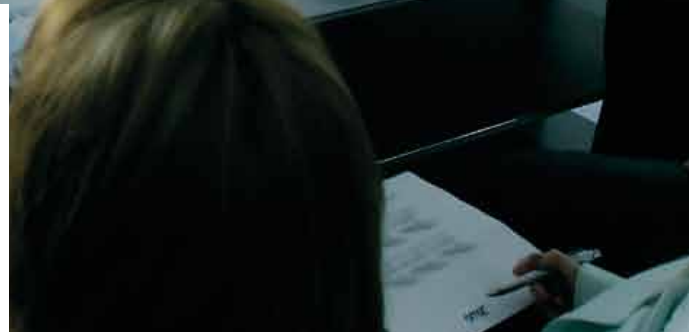
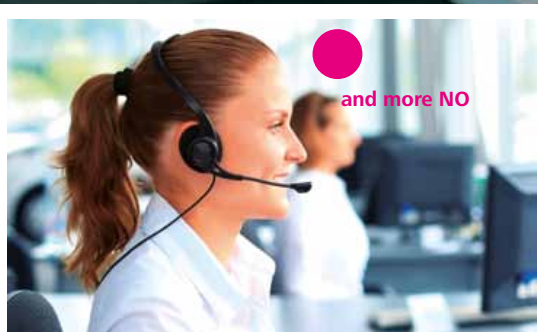
- *Clarification of the possibility and offering a solution*

### INPUT

- *Specification of the scope of the training*

### OUTPUT

- *Training regarding the defined issues*



# Technical support

Expert lighting system  
surveys  
Lighting measurements  
Consumption  
measurements  
Luminaire administration  
and maintenance  
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**Customer presentations**  
**Financing**



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## Technical support

Are you interested in our luminaires and technologies? Before you decide to buy we can explain the possibilities and functionality of any product face to face, and help you understand how each product can affect the quality of illumination in any space.

## Project registration

We want to make sure that only the best people work on your project. To this purpose, we keep an extensive database of customers, partners and projects. Once we register your project in our database we can select the best and most appropriate partners to work on your solution.

## Project management

We use a very simple type of project management. Each project is entrusted to one key person who will communicate with all departments and specialists on your behalf. So, should there be any question or problem, you know exactly who to contact.

## Customer presentations

Have you decided to use OMS? We will pay a visit to your company and present to you a comprehensive explanation of the many services we provide and how we structure our solutions. And if you have any questions, we are there to answer them.

## Financing

Are you wondering about how to finance your project? Our strong position as a leading company with provable results enables us to help you find the best and safest deals with finance institutions.

### INPUT

- *Explanation of the intension under discussion*

### OUTPUT

- *Preparation of the lighting solution*
- *Preparation of project documentation*
- *Preparation of technical back-up for the project*
- *Presentations for customers*

### INPUT

- *Project form with the necessary information about a project*
- *Registration of the specific technical solution*
- *Presentation of a business model*

### OUTPUT

- *Registration of the project with OMS*

### INPUT

- *Project documentation*
- *List of necessary contacts*
- *Definition task schedule*

### OUTPUT

- *Management of all stages and processes of the project*

### INPUT

- *Time and place of the presentation*
- *Subject of the presentation*
- *Communication language*

### OUTPUT

- *Presentation of the solution*

### INPUT

- *Presentation of the project*
- *Intent of the project*
- *Time management*

### OUTPUT

- *Financing model*
- *Mutual agreement*

