YOUR CHALLENGES
DRIVE OUR SMART
SOLUTIONS

inspire

LIGHTING AIRPORTS

Schréder

YOUR PARTNER BEYOND LIGHT

YOUR CHALLENGES **DRIVE OUR SMART SOLUTIONS**

SCHRÉDER PARTNERS WITH YOU TO MANAGE AIRPORT PROJECTS EFFICIENTLY.

OUR LIGHTING ENGINEERS PROVIDE COMPLETE SOLUTIONS TO THE CHALLENGES OF LIGHTING AIRPORTS. SCHRÉDER SOLUTIONS NOT ONLY DELIVER SAFE, COMFORTABLE ENVIRONMENTS, BUT ALSO REDUCE ENERGY CONSUMPTION AND TOTAL COST OF OWNERSHIP.

WE OFFER SOLUTIONS FOR THE FOLLOWING AREAS:

- **INBOUND/OUTBOUND ROADS**
- **INDOOR/OUTDOOR PARKING FACILITIES**
- **PUBLIC TRANSPORTATION AREAS**
- **AIRPORT TERMINALS**
- **DEPARTURE / SECURITY / SHOPPING ZONES**
- **APRONS, PARKING STANDS & DE-ICING AREAS**
- **AIRLINE HANGARS**
- **TUNNELS**
- **PERIMETER SECURITY**
- **SMART CONTROL SYSTEMS**

Schréder

SOLUTIONS

SAFE AND RELIABLE SOLUTIONS WITH HIGH ADDED-VALUE

Schréder provides efficient lighting solutions for multiple airport areas.

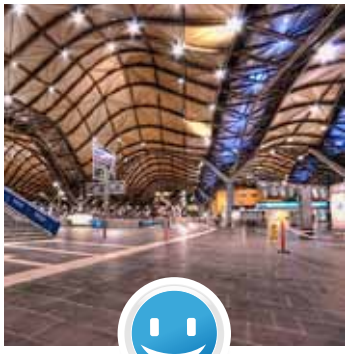
Our offer covers the full scope of the project from design to after-sales services, including smart technology for a fast and easy installation, adaptive lighting, intelligent control systems and safety equipment.

Our dedicated solutions transform airports into safe, comfortable, sustainable and intelligent environments with engaging experiences for the users and operational benefits for the airport authorities, airlines and air traffic control managers.

SAFETY

An efficient lighting solution allows people to avoid obstacles, to see and be seen, to avert accidents in the high risk environments such as the airport apron, luggage handling, maintenance hangars and tunnels.

An interactive monitoring system can detect failures, isolate repairs and facilitate maintenance operations to ensure an efficient lighting at all times.



WELL-BEING

Lighting solutions incorporating LED luminaires and control systems ensure reliability and reduce maintenance operations and thus the frequency of closures.

Parking areas, departure halls, transportation hubs with the correct lighting levels provide stress free environments for passengers and airport employees.

SUSTAINABILITY

Preserving the environment is a collective obligation. Schréder uses recyclable materials for its efficient solutions. Our smart solutions enable the quantity of luminaires to be reduced and incorporate the most efficient high-quality LEDs and control systems.

They generate huge energy savings and an impressive reduction in CO_2 emissions.

SAVINGS

Schréder's offer incorporates the most efficient high-quality LED luminaires with lighting control systems. They are designed to meet the rigorous day to day demands whilst delivering the ultimate lighting experience with a minimum total cost of ownership. They reduce energy and maintenance costs and can be quickly installed thanks to their mechanical design, quick cabling and wide range of mounting options.

AIRPORTS

INBOUND/OUTBOUND ROADS

The demand for air travel is set to grow significantly in the coming years. Major airports will need to expand while mid-sized airports will play a greater role in air travel to gain maximum operational efficiency and build a wider aviation network.

While airports are currently faced with limitations in the capacity of passengers that they can transport, they will need to invest in new infrastructure such as new runways, air traffic tracking software and access to the facilities.

Roads will have to be built and access for public transportation will have to carefully planned to ensure a fluid flow of traffic to and from the arrival and departure halls.

For many passengers, travelling to an airport is a stressful experience. Especially if they do not travel often and are not familiar with the complex road network which are typical of airports. The many roads and signs leading to the arrival and departure halls, car parks, car rental and cargo zones often confuse people.

The right lighting can help guide people towards their destination. Schréder LED luminaires provide a white light which improves visibility, so people can easily ascertain where they need to go, leading to less confusion.

Roads leading to and from airports vary in size and can be located on ground level or be elevated. Each road has different lighting requirements and this is where our wide variety of photometries play an important role. Our LED luminaires can diffuse an extensive (wide and far) or intensive (short and concentrated) light distribution to meet the required uniformity and lighting levels.

Our LED luminaires can be equipped with smart control systems to dim the light when an area is not being used as well as monitor the lighting installation.

INDOOR/OUTDOOR PARKING FACILITIES

The majority of airports have several parking facilities located nearby the terminal. Many of them cover a large surface area at ground level or are multi-storey. They can be managed by the airport authority or outsourced to concessionaires. Some of the car parks are for employees while others are for passengers or car rental firms.

More and more parking facilities are built along the entry routes to the airport in order to free the area for expansion of terminals. Buses or mini vans usually transport passengers to and from the airport as part of the public transportation facilities.

These parking facilities require a certain level of light to ensure easy facial recognition, to enable people to take luggage in and out of their cars and to find a free space.

The lighting in these areas must also avoid any upward light trespass which could disturb pilots´and control towers´ vision during take-off and landing, especially in bad weather conditions when light pollution can be particularly aggravating.

Schréder LED luminaires can be equipped with the latest technology to reduce the light output during periods at night when the car park is not used or when no-one is present.

Smart control solutions integrating sensors and or scheduled dimming means the light output can be reduced in certain areas when it is not needed and increased to full lighting levels in others when a car or person is detected. After a pre-defined time interval, the light is dimmed again.

Schréder solutions can therefore dramatically cut energy costs while providing the necessary lighting levels.

AIRPORTS

PUBLIC TRANSPORTATION AREAS

Passengers and employees need to reach and leave the airport.

A good public transportation network is crucial for uncongested flow and provides an alternative means of transport for passengers who are unfamiliar with the airport environment and want to reach their destinations by land quickly and without stress.

Public transportation facilities are also used by the car rental and car park management companies to bring their customers to and from the terminals. Large airports often have buses or a light rail vehicle to ferry passengers between terminals.

The stops where the passengers arrive need to be lit so that people can move in complete safety and comfort. Architectural lighting can enhance these spaces to improve the travel experience.

Schréder has a wide range of luminaires to light the various bus stops, train stations and metro platforms as well as a large selection of fixtures for tunnels and underground tracks.

Our portfolio of floodlights can illuminate the floors, walls and ceilings of these areas to beautify these public spaces. These floodlights can be equipped with white LEDs or coloured LEDs for dynamic lighting schemes that are based on pre-defined scenarios or triggered by specific events.

AIRPORT TERMINALS

An airport is the entrance to a country or city. It gives visitors the first impression and helps shape their overall perception of a destination.

It is the first welcome they receive. The airport terminal needs to deliver a positive, passenger-centric experience with a striking architectural design.

Many airports are asking famous architects and renowned engineering firms from all over the world to create stunning environments that meet the requirements of the different zones in an airport while conveying the essence of the city where they are located.

Each environment, including the roads, public transportation zones, arrival and departure halls, retail complexes, security screening areas, perimeters, hotels and business centres must be carefully studied to display a strong identity.

Lighting plays a major role in creating this visual identity. It provides the means for people to work and travel in safety and comfort while architectural lighting can highlight certain details to contribute to the atmosphere that the airport wants to communicate.

The Schréder portfolio of luminaires meets all the demands that an architect could wish for, integrating aesthetic designs that compliment the design of the terminal while offering dynamic lighting schemes with white or coloured scenarios.

AIRPORTS

DEPARTURE / SECURITY / SHOPPING ZONES

While Schréder is renowned worldwide for outdoor lighting solutions, we also have a range of luminaires that perfectly suits the indoor environments of airports.

Our luminaires can provide the specific photometry needed to meet the lighting requirements for interior spaces with high ceilings. They are also completely water resistant so that they continue to work if the fire sprinkler systems are set off in an emergency situation.

Schréder lighting solutions can be programmed to maximise daylight so that artificial light plays a supporting role in achieving the required lighting levels at all times, thus minimising energy consumption.

Our range of luminaires is so diverse that architects can create designated zones expressing different atmospheres. From industrial working environments like luggage handling zones to cosy and relaxing lounges for passengers, Schréder has the perfect solution.

Our smart solution “Shuffle” integrates in a single pole various Lights, Camera, Wifi, Sound & Car Charging points and is ideal for security check point lanes or areas which require one or all of the above options.

APRONS, PARKING STANDS & DE-ICING AREAS

Aprons, parking stands and de-icing areas are at the heart of operations in an airport.

Good lighting increases the hours of operation, considerably facilitates the movements for pilots, increases safety during manoeuvering and improves visibility during quality inspections; all important factors for reliable flight services.

The International Civil Aviation Organisation (ICAO) has issued international standards and recommendations for horizontal & vertical illuminance as well as uniformity for different areas. However, in many airports, the installed lighting solutions consume a lot of energy and are thus costly to run. Almost 25% of the energy bill of an airport is related to lighting.

Schréder has successfully installed LED lighting solutions that meet the lighting requirements while reducing energy savings and CO_2 emissions by up to 80%. In addition, our solutions with LED technology dramatically cut maintenance costs and the expensive operations associated with replacing the lamps. Less operational downtime increases the availability of the aprons, parking stands and de-icing areas and avoids operating under reduced capacity.

We offer luminaires with specific light distributions for the requirements of each designated area. For the aprons, our luminaires are able to direct light beyond the tail of the aircraft whilst eliminating glare and light pollution that could disturb pilots and air traffic controllers in the tower.

The bright white light and uniformity improve visibility so that baggage handlers can easily read the luggage tags, speeding up the process of loading and unloading cargo.

Our luminaires are also designed to withstand the harsh environment of the de-icing areas so that operations are not interrupted.

Furthermore, our LED solutions can incorporate smart control systems with detectors and scheduled dimming so that the light output can be reduced when there is no activity and increased to 100% when an airplane arrives, thus generating energy savings.

AIRPORTS

AIRLINE HANGARS

Airline hangars are, without a doubt, buildings with some of the largest spans in the world. They may be used for parking private jets but are mainly used as workshops to perform the regular maintenance operations required by aircraft manufacturers and aviation authorities.

Due to their size and required lighting levels, the hangar roofs are covered with luminaires so that the employees can perform the tasks in ideal working conditions.

When a light is malfunctioning, it is not always possible to reach the luminaire to replace the lamp, as aircrafts may be parked underneath it. For this reason, maintenance teams regularly carry out bulk lamp replacements in all of the luminaires at once, even when some of the lights are still working. These operations not only involve unnecessary purchases but jeopardise the light uniformity as they often result in dark spots. In addition, no activity can take place in the hangar during this procedure.

Schréder LED lighting solutions ensure that these interventions are no longer necessary as they have a long life span of up to 100,000 hours and guarantee the correct light output from their installation to their end-of-life.

They can be equipped with intelligent sensors to adapt the light output according to natural light levels so that the luminaires do not need to be switched on at 100% at all times. The light levels gradually increase as daylight fades, generating a significant reduction in energy costs and CO_2 emissions.

Our lighting solutions contribute to creating optimal working environments that increase productivity and eliminate downtime.

TUNNELS

Airports can incorporate quite a large number of tunnels. Some are used to bring passengers and luggage to remote aircraft stands while others are used by catering, fuel and cargo trucks.

Tunnels, and their lighting requirements, are more complex environments than they appear. They must guarantee that the visual perception of a driver is maintained, both during the day and night, by avoiding excessive variations in lighting levels when entering and exiting the tunnel.

At night, the level of luminance in a tunnel should be constant and equivalent to the level on the access road leading into the tunnel.

By day however, due to the high level of external light, it is necessary to avoid a black hole effect and thus a reduction in visual perception. At the tunnel exit, the level of luminance should also be increased to avoid drivers being subjected to glare effects from the light outside.

To help drivers´ eyes adapt easily and quickly, the first part of the tunnel, called the threshold zone, is strongly lit. Thus a driver can see a possible obstacle situated inside the tunnel from outside the tunnel.

The threshold zone is followed by a transition zone in which the level of luminance is gradually reduced over a distance that is always determined by the authorised speed limit. At the end of the transition zone, luminance is reduced to the value chosen for the lighting of the interior zone of the tunnel.

The exit zone - less critical in terms of visual adaptation - is lit in such a way as to prepare drivers for the return to external light and the perception of obstacles in the exit zone.

Thanks to a wide range of mounting systems, lumen packages and light distributions, Schréder can offer solutions adapted to all tunnel geometries, taking into account the needs of each zone in the tunnel.

AIRPORTS

PERIMETER SECURITY

Airport areas are restricted zones, sometimes they also have military purposes.
To protect these zones and crucial infrastructure, almost all airports have perimeter security surveillance.

When lighting airports, careful attention must be paid to sufficiently light a specific area and to the potential light pollution that the luminaires could cause for pilots during take-off and landing. A straight line of light along the airports' perimeter should not be confused with the actual runway lighting.

CCTV camera suppliers can provide adequate solutions to detect and view intrusions during the night and trigger the necessary alarms. Optimal lighting of the perimeter is therefore crucial to achieve the highest security and safety at night. In many cases, a combination of infrared and white light is required.

Schréder LED solutions can perfectly integrate with these systems to switch on and provide light when and where an intrusion is detected. This to frighten the intruder or to guide the on-site intervention team to the exact location. The luminaires can be triggered individually or in groups.

Our smart lighting solutions provide a more energy and cost efficient solution, reduce light pollution and guarantee a more dynamic response.

SMART CONTROL SYSTEMS

Schréder is not only a partner for lighting solutions. We can deliver smart control systems through our OWLET division.

The OWLET IoT Management System (Internet of Things), which is based on Open Standards, can interact with larger smart platforms. In fact, OWLET IoT is not only a high performing remote lighting management system, it can also exchange data or interoperate with neighbouring systems such as traffic management sensors, environmental monitoring systems or security devices.

One of the fundamentals of IoT (Internet of Things) is that the devices intended to be connected to a larger network communication platform have to be 'addressable' in a similar way. This method of addressing devices can generate an almost unlimited number of unique combinations to connect non-traditional components to the Internet or computer network.

It's important to understand that OWLET IoT is not a stand-alone 'silo type' system, but future oriented and open to 3rd party integration.

Airport authorities can manage Schréder or 3rd party luminaires equipped with the open protocol, through the OWLET system to have a full overview of all the installed light points at the airport.

Standard day-to-day operations will run automatically and the maintenance teams will receive alarm notifications regarding potential failures. These messages will be very detailed to pinpoint exactly which luminaire needs intervention, where it is located on the premises and can even provide a component level diagnostics. Preventive maintenance can be scheduled based on operational running time.

In case of non-standard operations, pre-defined scenarios can be put in place or airport operators can control each light point individually or as a group of luminaires to assure an adequate response to the situation.

OUR **SOLUTIONS BENEFITS**

ENERGY
REDUCTION

LED LIGHT SOURCES GENERATE ENERGY SAVINGS THANKS TO THEIR LOW ENERGY CONSUMPTION AND LONG LIFE SPAN.

THANKS TO PRE-PROGRAMMED DIMMED LIGHTING OR SENSORS, ENERGY SAVINGS OF UP TO 80% CAN BE ACHIEVED COMPARED WITH CONSTANT LIGHTING WITH CONVENTIONAL LAMPS.

THE LIGHT OUTPUT CAN BE PROGRAMMED TO PROVIDE LESS LIGHT WHILE ENSURING SAFETY WHEN AN AREA IS NOT BEING USED. A TRIGGER CAN INSTANTLY INCREASE THE LIGHT OUTPUT TO FULL LEVEL WHEN A PRESENCE IS DETECTED.

INSTALLATION
SPEED

THE EASY MOUNTING SPEEDS UP THE INSTALLATION AND REDUCES THE SIZE OF THE WORKFORCE NEEDED.

STANDARDIZED NON-INTERFERENCE COMMUNICATION PROTOCOLS ENSURE PLUG AND PLAY FUNCTIONALITY WHILE ASSURING INTEROPERABILITY FOR NEW DEVELOPMENTS AND FUTURE UPGRADES WITH MULTIPLE NON-PROPRIETY SYSTEMS FROM SCHRÉDER OR THIRD-PARTIES .

MAINTENANCE
FACILITY

WITH ROBUST AND LONG LASTING LUMINAIRES, THE MAINTENANCE IS EFFECTIVELY REDUCED TO SPORADIC INTERVENTIONS CAUSED BY EXTERNAL FACTORS.

INTERVENTIONS AT APRONS CAN CAUSE DISTURBANCES IN FLIGHT SCHEDULES.

WITH LONG LASTING LOW MAINTENANCE LUMINAIRES A MAXIMUM USAGE OF THE GATES IS GUARANTEED, ENSURING FULL UTILIZATION OF AIRPORT CAPACITY.

ALL INSTALLED LIGHTING POINTS CAN BE MANAGED AND OVERSEEN CENTRALLY AVOIDING NECESSARY MANUAL CHECKS ON-SITE.

ALARMS TRIGGER ACTION, PREVENTIVE MAINTENANCE CAN BE SCHEDULED

LIGHT LEVEL
PHOTOMETRY

AN AIRPORT IS LIT BY MANY DIFFERENT LIGHT SOURCES, ALL WITH DIFFERENT SPECIFIC PHOTOMETRICAL REQUIREMENTS (TERMINAL, APRON, RUNWAY, MAINTENANCE HANGAR, ROAD AND CAR PARK…). SCHRÉDER HAS A DEDICATED SOLUTION FOR EACH AREA.

IT IS IMPORTANT TO MAINTAIN THE REQUIRED SAFE LIGHTING LEVELS FOR EACH AREA WHILE NOT DISTURBING CRUCIAL PLAYERS LIKE PILOTS, AIR TRAFFIC CONTROL AND AIRPORT OPERATORS.

BY CHOOSING A CUSTOMISED LED PHOTOMETRY, THE CORRECT LIGHTING LEVELS ARE GUARANTEED EXACTLY WHERE THEY ARE NEEDED WHILE AVOIDING GLARE AND LIGHT TRESPASS.

SCHRÉDER SOLUTIONS INCREASE PRODUCTIVITY, REDUCE COSTS AND ELIMINATE DOWNTIME

DESIGNED FOR LONG-LASTING PERFORMANCE

AIRPORTS, LOCATED ALL OVER THE WORLD, FACE DIFFERENT KINDS OF HARSH WEATHER CONDITIONS.
OUR PRODUCTS ARE DESIGNED AND TESTED TO WITHSTAND HARSH CONDITIONS.

› CORROSION

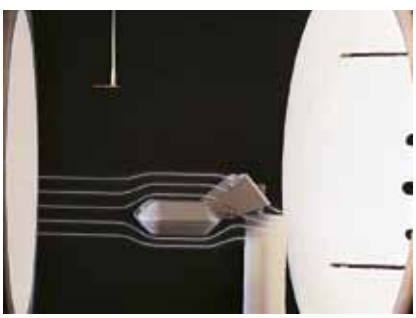
All Schréder products undergo corrosion tests in laboratories and on-site.

› FIRE

Our products are composed of non-flammable materials to comply with the most demanding requirements (M1, Vo, etc) and do not give off toxic fumes (o% halogen, F1, etc).

› TIGHTNESS

Schréder products offer a high level of protection against micro-particles and water splashes (cleaning with high-pressure jets).

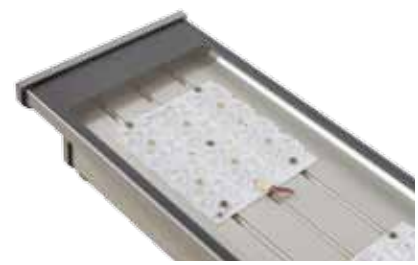


› VIBRATIONS AND WIND

Schréder luminaires are subjected to intense vibrations and gusts of air. In collaboration with universities, Schréder rigorously tests its products and mountings in laboratories and wind tunnels.

› SHOCKS

Jet blasts can make small objects fly and hit devices in the surrounding area. Our products are duly tested to resist violent shocks.



› PROTECTION

Most Schréder LED luminaires are sealed with flat glass to guarantee a more constant efficiency than luminaires where the lenses are in direct contact with the atmosphere. They ensure better safety for users, reduce maintenance requirements and contribute to energy efficiency.

SCHRÉDER PRODUCT PORTFOLIO RANGE

WE HAVE AN EXTENSIVE PRODUCT PORTFOLIO TO SUIT THE VARIOUS LANDSCAPES OF AN AIRPORT.

SOME ARE DESIGNED TO LIGHT SPECIFIC ENVIRONMENTS LIKE APRONS AND TUNNELS WHILE OTHERS INTEGRATE AESTHETICS TO SUIT AREAS WHERE PASSENGERS AND EMPLOYEES SPEND TIME.

THE FOLLOWING LIGHTING SOLUTIONS ARE A LIMITED SELECTION, VISIT OUR WEBSITE WWW.SCHREDER.COM OR CONTACT YOUR LOCAL SCHRÉDER OFFICE FOR DETAILS OF THE FULL RANGE AVAILABLE IN YOUR COUNTRY.

YOA

TECEO

CMS

SMARTLUME

CONTILED

FV32

ASTRAL

GL2

STYLAGE

INOA

ALURA

PILZEO

OMNIFLOOD

OMNISTAR

OMNIBLAST

SCULPCOLLECTION

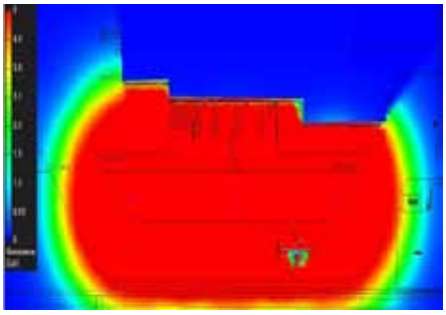
SHUFFLE

YOUR **PERSONAL SOLUTION**

SERVICES
SOFTWARE
HARDWARE
CONFIGURATION

OUR EXPERTISE AND OUR PROJECT APPROACH IS YOUR GUARANTEE TO RECEIVE THE BEST SOLUTION FOR YOUR ENVIRONMENT BASED ON AN EFFICIENT COMBINATION OF STANDARD, PERFORMING AND RELIABLE PRODUCTS.

SERVICES



OUR TEAM OF EXPERTS ANALYSES YOUR ENVIRONMENT, GIVES ADVICE AND CARRIES OUT APPLICATION STUDIES TO DESIGN THE BEST SOLUTION. OUR SIMULATION TOOLS PROVIDE PRECISE INFORMATION ABOUT THE EFFICIENCY, THE COMPLIANCE, THE LAYOUT OF THE INSTALLATION, THE SUSTAINABILITY AND THE TOTAL COST OF OWNERSHIP.

With your consent, we define a plan and manage the entire project with third parties, incorporating the installation, commissioning, testing and validation. Our offer also includes training, after-sales services, maintenance and optimisation over time.

SOFTWARE/HARDWARE

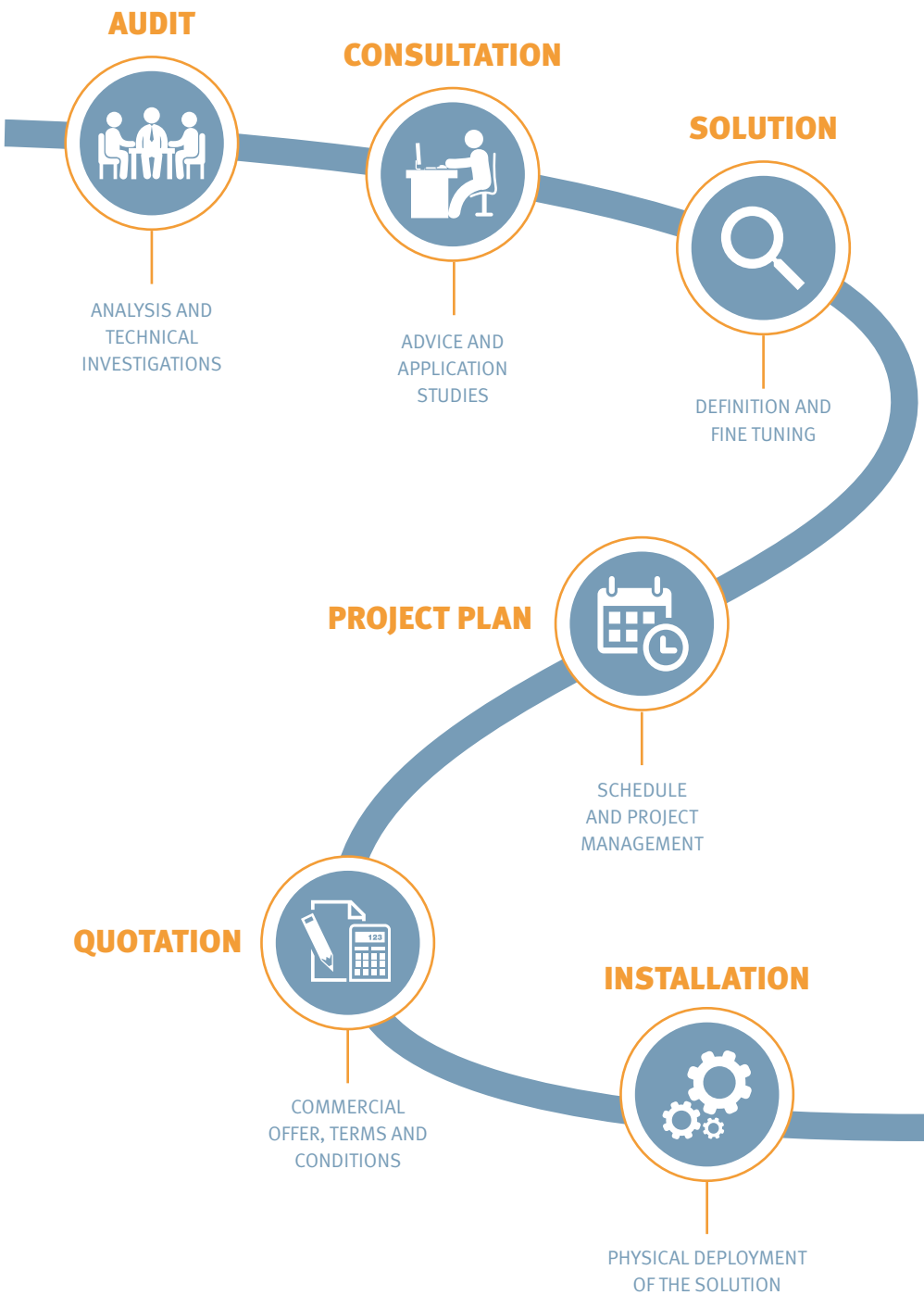
We propose cutting-edge LED luminaires, state-of-the-art control systems, sensors, robust and fireproof cables and connectors.

CONFIGURATION

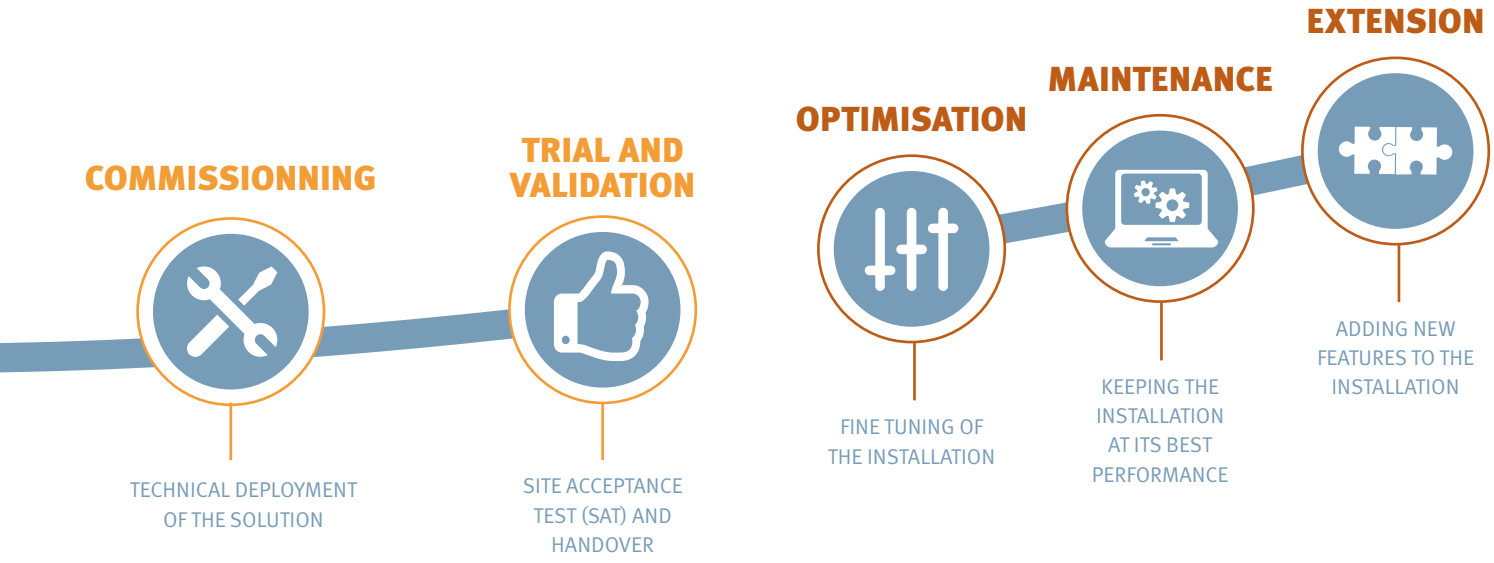
We take on board the factory (FAT) and on-site configuration/tests (SAT) of the whole system, including driver programming (dimming profile), lighting network development (controls), detection and architectural lighting scenarios.

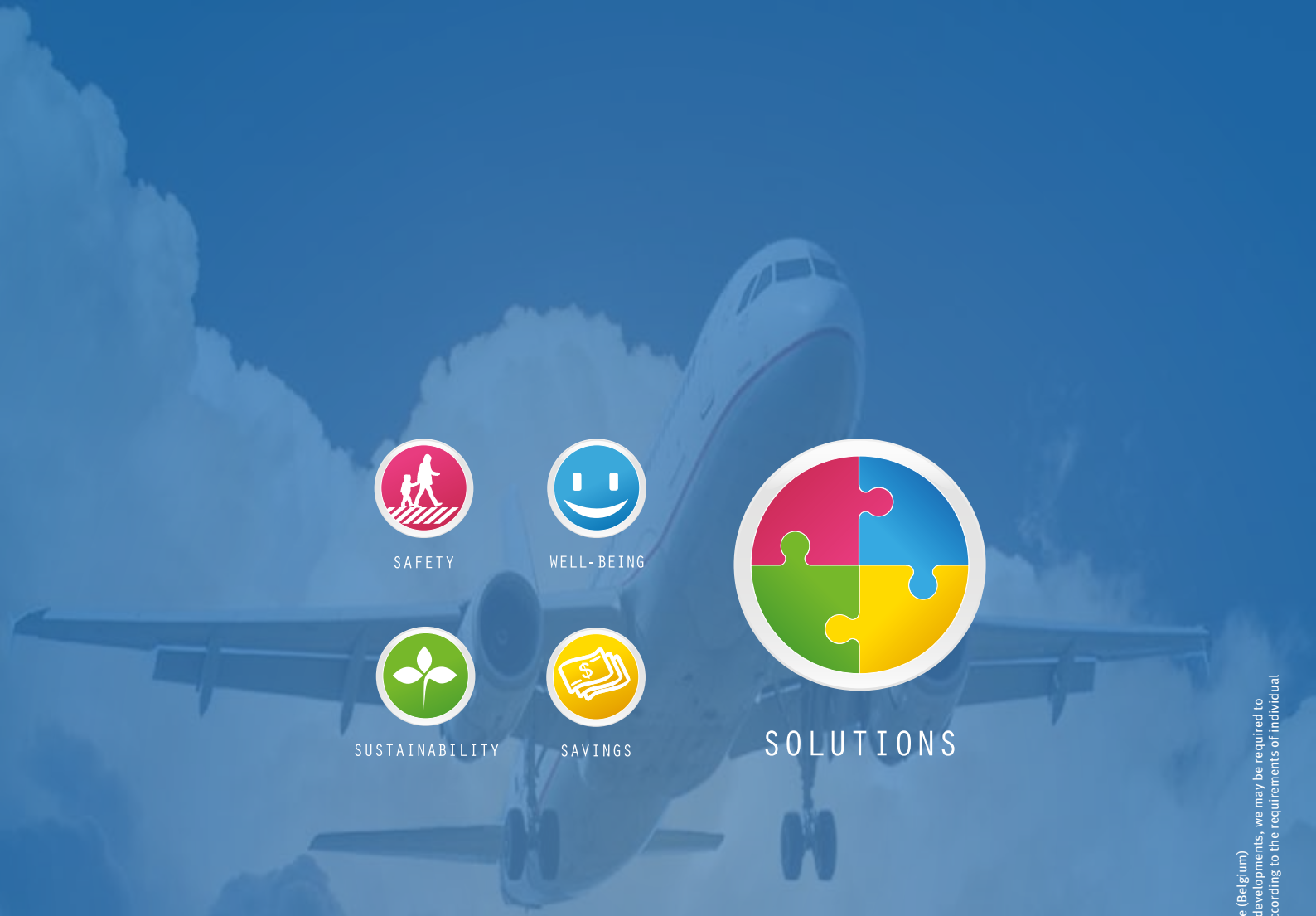
PROJECT SEQUENCE

FROM THE FIRST ANALYSIS TO THE HANDOVER AND EVEN THEREAFTER, SCHRÉDER TAKES CHARGE OF THE PROJECT MANAGEMENT. WE ARE YOUR PARTNER OF CHOICE TO MAKE THE MOST OF YOUR ENVIRONMENT, TODAY AND TOMORROW.




Long Stay


COMMISSIONNING
TECHNICAL DEPLOYMENT OF THE SOLUTION
TRIAL AND VALIDATION
SITE ACCEPTANCE TEST (SAT) AND HANDOVER
OPTIMISATION
FINE TUNING OF THE INSTALLATION
MAINTENANCE
KEEPING THE INSTALLATION AT ITS BEST PERFORMANCE
EXTENSION
ADDING NEW FEATURES TO THE INSTALLATION



Some airports around the world who benefit from Schréder Solutions

Montevideo, Montreal, Bogota, Cochabamba, São Paulo, Campinas, Belo Horizonte, Goiania, Brussels, Liège, Charleroi, London Heathrow, Johannesburg, Cape Town, Budapest, Milan, Bologna, Pisa, Ancona, Rimini, Bari, Cagliari, Hong Kong, Singapore, Kuala Lumpur, Edmonton, Christchurch, Belgrade, Rio de Janeiro, Santo Domingo, Aruba, Acoma, Miami, Rochester, Houston, Portland, Lagos, Abuja, Port Harcourt, Kano, Kaduna, Lisbon, Faro, Cabo Verde, Samara, Moscow, Bagotteville, Saskatoon, Toronto, Gander, Mine Raglan Donaldson, Yellowknife, Kamloops

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