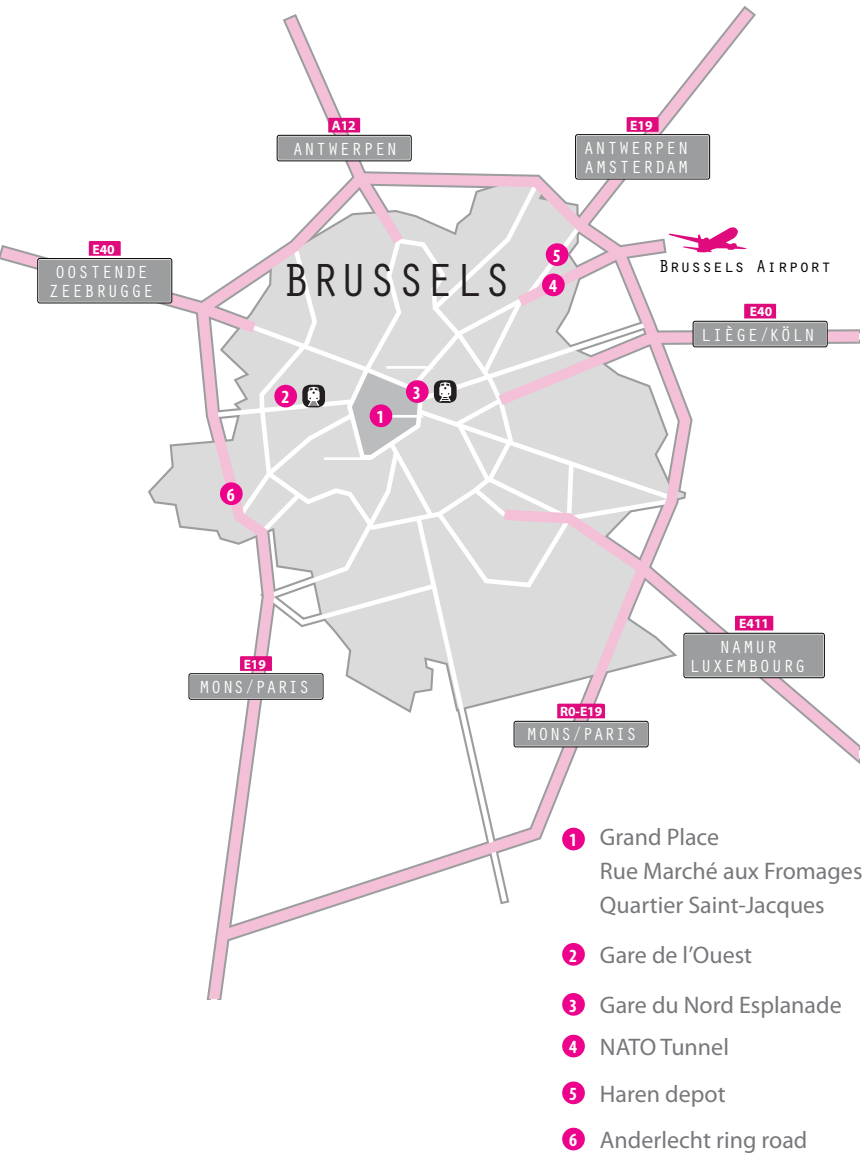


BRUSSELS





USING LIGHT TO
CREATE AN IDENTITY,
HIGHLIGHT HISTORIC
HERITAGE, CREATE A
SENSE OF WELL-BEING,
IMPROVE SAFETY,
SAVE ENERGY AND
REDUCE THE CARBON
FOOTPRINT.



Brussels, capital of Belgium and of Europe, is a cosmopolitan city with an abundance of treasures. Besides its historic monuments and architectural treasures, the city is also known for its comic strip creators, its surrealist movement (embodied in René Magritte), its cuisine, its friendliness etc.

Due to the multifaceted aspect of the city and the urban challenges to be met, the lighting solutions have to be varied, long-lasting, intelligent and adapted to each situation. Through this city notebook, discover how Schröder's lighting solutions have helped Brussels achieve its objectives of improving comfort for its inhabitants and visitors.

Firstly, in the heart of the city, the famous Grand Place district where low energy LED lighting solutions have enhanced the architectural heritage, while creating a homogeneous identity for the area as well as an enchanting illumination for Grand Place using unlimited lighting effects.

Next, the multi-modal Gare de l'Ouest station, where Schröder luminaires have improved the feeling of safety and created a pleasant atmosphere in this public space.

The esplanade of the Gare du Nord, situated in the business district, with its modern architecture presents another side of Brussels. Our challenge was to propose an energy saving solution whilst also creating a friendly atmosphere.

Further north, our complete and sustainable lighting solution for the NATO Tunnel guarantees maximum safety for drivers, while drastically reducing maintenance operations.

The LED lighting installation for the STIB tram depot provides excellent visibility for maximum staff safety. This low-energy, low-maintenance solution offers a payback time of less than five years.

To finish this tour of Brussels, the Brussels ring road in Anderlecht has been equipped with the first LED lighting scheme for a Belgian motorway. This new lighting solution, fitted with the Owllet remote management system, is improving the safety and comfort of drivers, reducing energy consumption and cutting maintenance costs by seven.

Have fun discovering Brussels!



- 1,600 linear LED luminaires - 50 Enyo floodlights
- More than 80% energy savings - all 27 buildings are illuminated using the same energy consumption as what was once used to light two
- Maintenance costs reduced by 4
- Combination of white and colour lighting scenographies for architectural illumination and light shows
- Control system with 6,160 addresses - unlimited series of colour sequences and effects





FREDDY THIELEMANS

MAYOR OF THE CITY OF BRUSSELS

WHY DID THE CITY OF BRUSSELS LAUNCH THIS PROJECT TO ENHANCE GRAND PLACE AND ITS ARCHITECTURAL HERITAGE?

The lighting installation was old and could have become defective at any time. We wanted a **modern and flexible illumination system**, with **low energy consumption**, that would **last** over time.

WHAT WERE THE OBJECTIVES OF THIS NEW LIGHTING SCHEME FOR GRAND PLACE?

We wanted a more subtle lighting for Grand Place, with a more coherent vision of Grand Place as a square. We wanted the new lighting system to highlight the architectural details of the buildings and the intricate texture of the City Hall. It was also important to use a broad palette of colours to create lighting effects during special events.

WERE ENERGY SAVINGS AND EASY MAINTENANCE IMPORTANT FACTORS IN THIS PROJECT?

A **lighting scheme with low energy consumption** was an essential requirement in this project. Maintenance was also important as access to the buildings is very difficult. We wanted a solution that would facilitate maintenance operations while reducing the need for them at the same time.

HOW DO YOU FEEL ABOUT THIS NEW LED LIGHTING SOLUTION THAT HAS BEEN IMPLEMENTED ON GRAND PLACE?

Grand Place in Brussels with its treasure of diverse architecture is renowned worldwide for its beauty. This new, modern, efficient and cost-effective solution reinforces the coherent image of the whole city.

The LED solution enhances the delicate architectural details of the buildings, something that was just not possible with traditional lights that swallowed them up. It also provides us with the opportunity of creating unlimited lighting effects during special events, without having to install temporary equipment.

WHAT HAVE BEEN THE MOST POSITIVE EFFECTS OF THIS NEW LIGHTING SCHEME FOR VISITORS?

A badly lit city is a sad city. We have to make the city stay alive and, **thanks to light, we can breathe life into the nocturnal landscape**. Visitors are particularly touched by the **magical ambience** the light creates on Grand Place while the residents are extremely proud of this new scheme which beautifies their historic heritage.



ISABELLE CORTEN

ISABELLE CORTEN, URBAN ARCHITECT AND LIGHTING DESIGNER, WORKS ON LIGHTING PROJECTS (MAINLY PUBLIC) IN BELGIUM AND ABROAD. ISABELLE IS THE FOUNDER OF THE AGENCY RADIANCE35, WHOSE WORK CONSISTS OF DRAWING UP MASTER LIGHTING PLANS AND PERMANENT OR TEMPORARY ILLUMINATION PROJECTS FOR SPECIAL EVENTS.



WHAT WERE THE MAIN INFLUENCES WHEN DESIGNING THE ILLUMINATION FOR GRAND PLACE?

The main approach was to **enhance this jewel**, Grand Place. This landmark is steeped in history which is embodied by the outstanding sculptures and architectural elements. The main goal was to reveal them with white light.

IN WHAT WAY DOES THE ILLUMINATION OF THE GRAND PLACE DISTINGUISH ITSELF FROM OTHER BIG EUROPEAN CITIES?

The installed system means that all sorts of lighting shows and effects can be created. On one hand, the system can **provide scenographies using white light**, which brings a really original touch as most cities only use lighting schemes with colour. On the other hand, **the whole palette of RGB colours is available** for each floodlight for use at a later stage. The Monuments and Sites Committee stated in its recommendations that it did not want additional equipment to have to be installed for lighting effects during special occasions. This **dynamic lighting system controls the 1,650 floodlights and can create many different nocturnal ambiances without the need for extra equipment.**

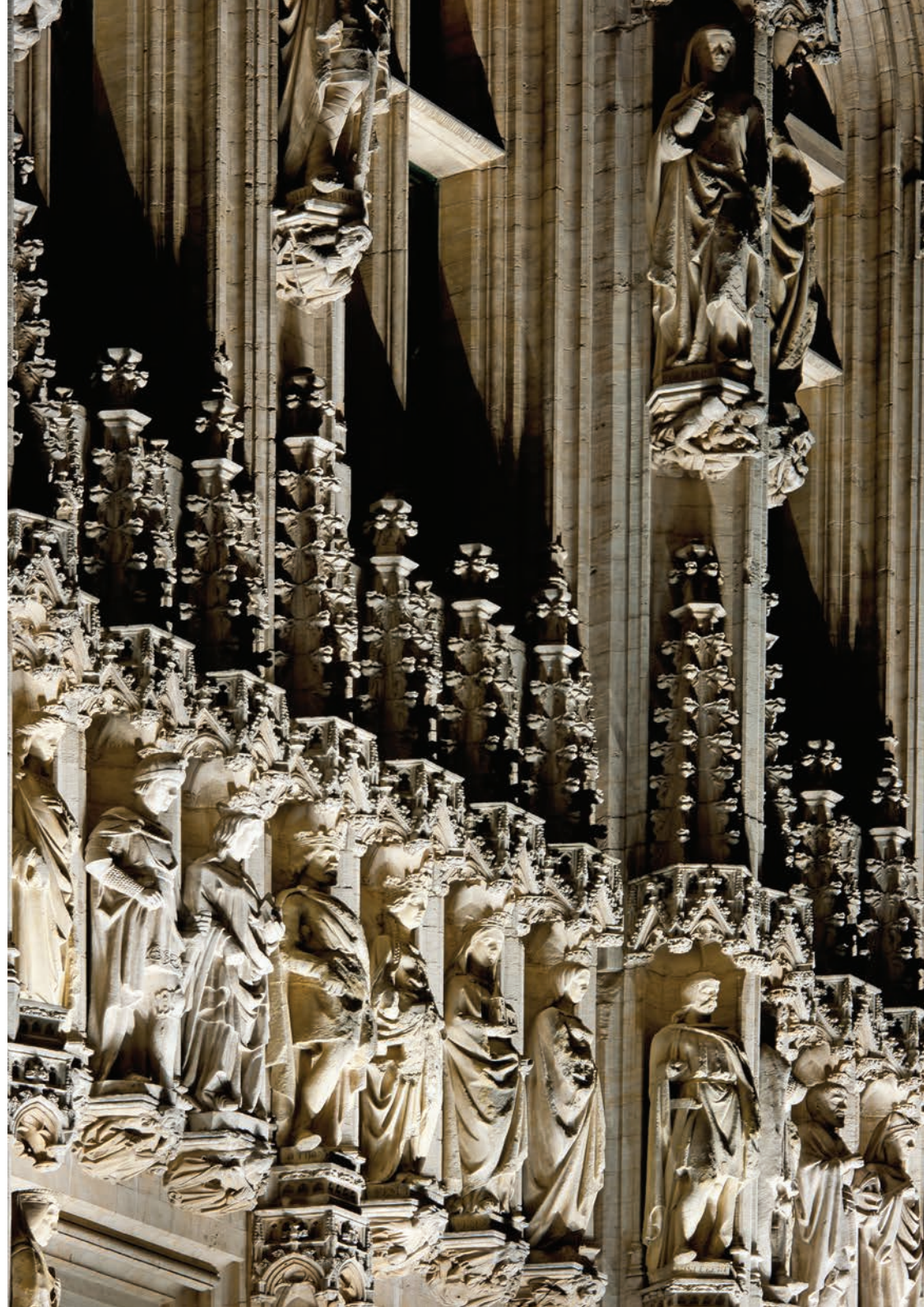
SUSTAINABILITY WAS AT THE HEART OF THE LIGHTING SCHEME FOR THE GRAND PLACE. COULD YOU TELL US MORE ABOUT THIS?

The Federal State and the City of Brussels' main concern was to have a sustainable lighting scheme to reduce the energy consumption. They really wanted to change the way the landmark was lit. Previously, only 2 buildings were illuminated (City Hall and the Bread House). Today, all of the façades on Grand Place are illuminated without increasing the energy consumption! Thanks to the low energy consumption of LEDs, it was obvious to everyone involved in the project that this technology should be used. Thanks to significant developments over the past 10 years, **it is now possible to light an entire square like this one in Brussels using only LED technology.**

HOW WOULD YOU DESCRIBE THE COLLABORATION WITH SCHRÉDER?

I am convinced that a project only works only if there is a perfect collaboration with the supplier. Schröder was very **proactive** and **showed great ability in coping with the various problems** that arose during the project. These are great qualities that are really appreciated. Personally, I feel that this gives the company an added value when working on these types of projects.







neuhaus

GODIVA

GODIVA

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PATRICK RIMOUX

PATRICK RIMOUX IS A LIGHT SCULPTOR, RENOWNED WORLDWIDE FOR HIS PERMANENT AND TEMPORARY LIGHTING PROJECTS. A CONTEMPORARY FRENCH ARTIST, LIGHT IS HIS TOOL.

HOW DID THE GRAND PLACE PROJECT EVOLVE?

This particularly interesting project changed during the design phase. The initial mission was an architectural lighting project to enhance the heritage. This evolved during the design process following discussions with the contractor, Beliris. We decided to go further by introducing lighting scenography for special occasions. The **initial lighting scheme, which was only going to use white light, progressed to include colour**, which provides unlimited lighting effects and colour variations.

WHY DID YOU CHOOSE LED TECHNOLOGY FOR THIS LIGHTING SCHEME?

LED technology stood out for various reasons. Firstly, the most essential aspect when illuminating a building like this is to discreetly integrate the equipment so that it is invisible to the eye in daylight. Secondly, this is the only technology today that can work with both white light and colours. Finally, because of the low energy consumption of LEDs. In the case of the Grand Place, **the energy used to illuminate the 27 buildings today is less than what was used to light 2 buildings previously with traditional light sources**. This technology also allows us to direct light precisely where we want it, which means that we need less power.

HOW DOES LED TECHNOLOGY CONTRIBUTE TO SCENOGRAPHIC LIGHTING?

This technology provides an immediate reaction from the luminaires. The control system installed on Grand Place manages approximately 6,160 addresses. For designers of lighting projects like us, this means that **we can create an unlimited series of colour sequences, even with white light**. This type of equipment allows us to create events and bring the city to life with light.

HOW DO YOU FEEL ABOUT USING NEW LIGHTING SOURCES IN PUBLIC LIGHTING?

As we live more and more at night, cities and states are asking us to create dynamic lighting schemes. To be more specific, lighting should be static with the possibility of creating dynamic effects. **The Grand Place is a good example of this type of lighting scheme.**



PASCAL CHENOT

SALES AREA MANAGER FOR CONSTRUCTIONS ELECTRIQUES SCHRÉDER, PASCAL CHENOT WAS IN CHARGE OF THE PROJECT FOR ILLUMINATING THE GRAND PLACE IN BRUSSELS.



ILLUMINATING ONE OF THE MOST BEAUTIFUL SQUARES IN THE WORLD IS A CHALLENGE. WHAT WERE THE MAIN ISSUES TO OVERCOME IN THIS PROJECT?

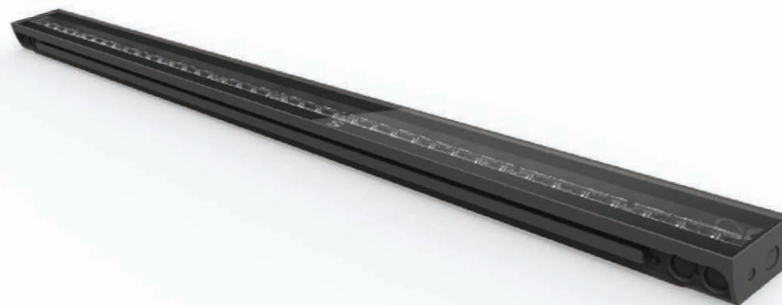
We faced two main challenges with this project. Firstly, using one control room to provide a **permanent architectural illumination as well as temporary lighting for special events**. This requirement led us to propose an open control platform that would be able to integrate the necessary elements for temporary light shows. Secondly, managing the installation of the floodlights in a very popular tourist destination. This work had to guarantee complete safety and interfere as little as possible with the constant activity on Grand Place.

WHAT SOLUTIONS DID SCHRÉDER PROPOSE TO MEET THE OBJECTIVES SET BY THE CUSTOMER?

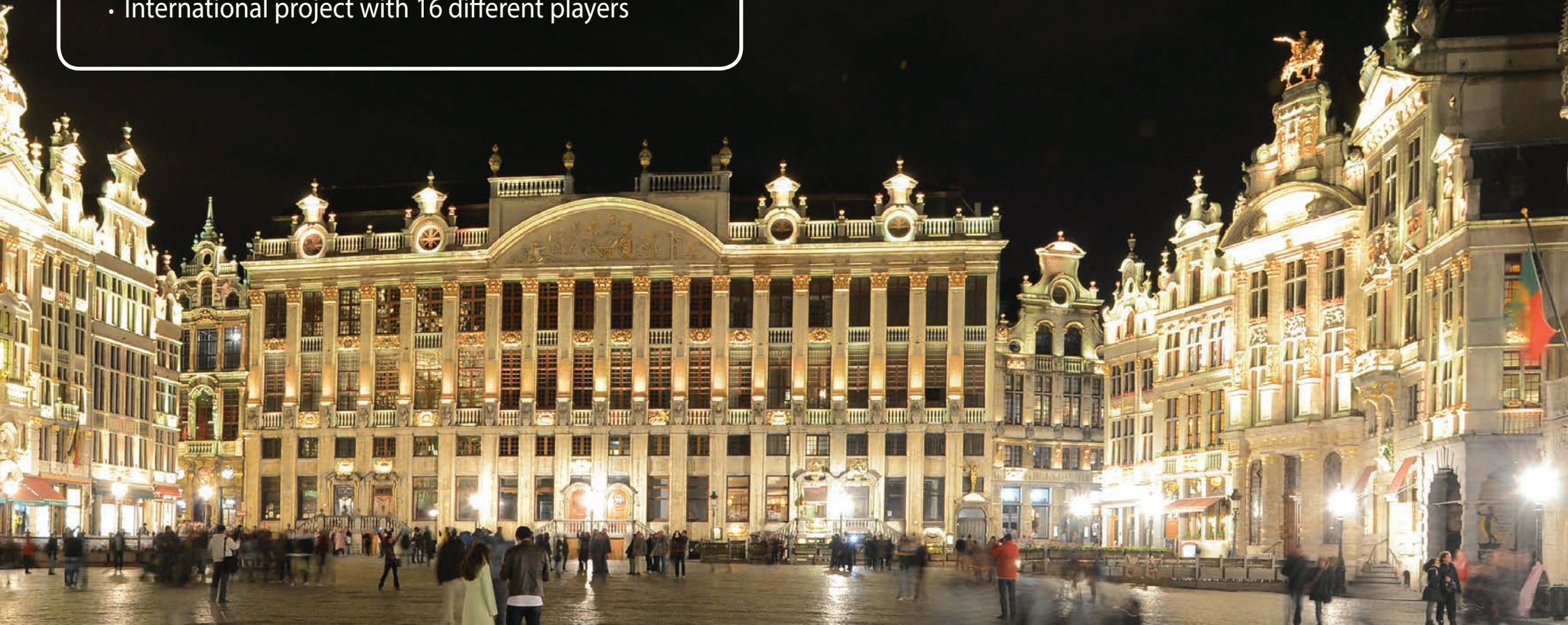
This evolved throughout the course of the project and **the illumination solution proposed by Schröder was adapted to the new specifications**. We combined LED technology with an intelligent control system. This solution provides an immediate reaction from the equipment, a wide range of lighting effects and great accessibility to the system. Indeed, this secured platform can be accessed via a simple Internet connection. Consequently **the lighting designer can interact with the equipment from anywhere on Grand Place or indeed the world, and see for himself the lighting effect he has created**.

WHY WAS THE SCHRÉDER SOLUTION SELECTED IN YOUR OPINION?

Firstly, the performance of the solution proposed by Schröder exceeded the expectations of the customer, in terms of the amount of energy consumed and the guarantees. Secondly, Schröder has an **internal unit specialised in illumination**. This unit is dedicated entirely to architectural illumination and has global experience in dynamic illumination solutions. Lastly, the customer only had one contact person to deal with, which simplified the management of the project. This person was in charge of managing the numerous project specifications and coordinating it, while maintaining a global view.



- 4km of power cables
- 15km of data cables
- 1.2km of fibre optic cables
- 2 WiFi antennas
- 8 webcams
- 1 centralised management system
- 6160 addresses with 18 DMX universes
- Integration of light and sound
- 1,600 linear LED projectors - 50 Enyo LED projectors
- Total luminaire output: 28.5kW
- Power consumption for white light illumination after adjustment: 3.25kW
- International project with 16 different players





RUE MARCHÉ AUX FROMAGES

Rue Marché aux Fromages, more commonly known as “Rue des Pitas” to local inhabitants and the numerous tourists, has had a substantial renovation in terms of lighting.

Situated a short walk away from Grand Place, Rue Marché aux Fromages is part of the UNESCO Historic Centre of Brussels. Consequently the City wanted a **clean, modern illumination** for the street. The objective was to create a coherent look for all the shop fronts to bring structure to the street.

The project was carried out in collaboration with Atrium, the Regional Agency for Urban Investment, the Neighbourhood Committee and the lighting designer Isabelle Corten. It was based on a three-fold approach:

- harmonising the shop signs while retaining the identity of each business
- redesigning the public lighting, using luminaires with white light
- scenographic lighting.

The scenographic lighting was provided by 90 custom-made linear LED luminaires installed vertically on the façades. This **low-energy, original illumination creates coherency** while **highlighting the heritage of the buildings and giving the street a unique identity.**

QUARTIER SAINT-JACQUES

The Saint Jacques district is a historic area of Brussels. In the 12th century, all the craftsmen and pilgrims gathered in this area as they visited the Saint Jacques Hospice. Over the centuries however, the area lost its charm as it was swallowed up by the phenomenon of urbanisation.

On the initiative of the local council and the Atrium Bruxelles Centre, and with the collaboration of the City of Brussels, the Brussels Capital Region, the lighting designer Isabelle Corten and her agency Radiance35, a project was launched to **enhance the Saint-Jacques district using light**.

The objective of the lighting plan was to **create a contemporary and sustainable light trail**. The project, based on a three-fold approach (redesigned public lighting, unified shop window lighting and scenographic lighting) creates a new, unique identity for the district and invites people discover the hidden treasures in these historic streets through light.

The scenographic illumination is delivered via scenes of everyday life, which are projected on to various façades. Each image is highlighted by a Focal floodlight with a gobo for a very efficient illumination. The precision of this floodlight and the originality of the concept **attracts the eye to the image to discover the heritage of the district**.

Isabelle Corten and the lighting design agency Radiance35 won 2 awards for this “Through the Walls” project: the Special Jury Award from the French Association of Lighting Designers and Engineers and the 2013 Award for Excellence in Public Contract Works from the Wallonia-Brussels Federation.





GARE DE L'OUEST

The opening of the Gare de l'Ouest metro station marked an historic step for the Brussels transport network. For 33 years after the inauguration of the first metro station, it completes the full circle for the number 2 line which serves the city centre, increasing the metro traffic by 40%, the frequency of the trains and generally improving the public transport network. The station is a multi-modal one, integrating metro and RER stations with above ground stops for trams and buses.

Brussels Mobility has invested considerable resources to make the station as functional as it is aesthetic. The **quality of the lighting, the acoustics, the level of safety and enhancement with contemporary art frescoes** bring coherence to this large-scale project.

Schröder provided over 300m of linear LED floodlights, 500m of Acoustilight, 100m of Astral luminaires and 42 Neos floodlights to light the platforms and open spaces. Over 140 ART floodlights were also installed to highlight the different works of art.

Outside the station, 13 Neos floodlights on Sextant columns were installed to **increase the level of lighting and reinforce safety**. The installation of 6 Nemo columns fitted with magenta LEDs have contributed to creating a **modern and friendly atmosphere** on the esplanade.



GARE DU NORD ESPLANADE

Energy savings, improved lighting levels and ambiance were the objectives when re-lighting the esplanade of the Gare du Nord, one of Brussel's main train stations. Situated in a busy business district of the city, the esplanade is a large pedestrian area that welcomes many commuters and tourists every day. It was essential that the **lighting create a sense of security and a convivial ambiance**. The local authorities were also keen to use LED technology to take advantage of the energy savings that it offers.

The Perla was the ideal choice thanks to its high performance and its pure aesthetic design which plays an important role both by day and by night and perfectly complements the modern architecture of the surrounding buildings.

The white light of the LEDs provides a warm colour temperature and optimal visual comfort at night to create a convivial atmosphere. A total of 17 Perla luminaires were installed providing **significant energy savings**, an improved quality of light and a safe, welcoming landscape.





NATO TUNNEL

With the construction of the new NATO headquarters and increasing businesses in the area, the local authorities in Brussels undertook major road works to improve mobility and accessibility in this strategic zone. One of the most important features was the NATO tunnel, a 2 x 2 lane tunnel for non-local traffic to bypass the busy area.

Schröder provided a complete and sustainable lighting solution to **ensure safety and excellent visual comfort** for all motorists while reducing maintenance closures.

Given the heavy traffic density in the area, a **robust luminaire with superior photometric efficiency** was essential. The AT-T was selected. Equipped with the latest generation T5 fluorescent lamps (49W), they not only provide a white light but also offer high efficiency, low energy consumption and a long life.

AF4 luminaires were installed for the reinforcement lighting to fortify the white light while maximising visual comfort. BJ marker lights were installed along the entire length of the tunnel walls. Permanently illuminated, they clearly indicate the road and **guide drivers naturally** through the tunnel under normal circumstances and pedestrians in case of fire.

A safe tunnel is first and foremost a well-lit tunnel. By taking advantage of our expertise, the NATO Tunnel benefits from an energy efficient solution that **guarantees the correct levels of luminance to avoid any visual adaptation problems**, excellent uniformity, visual comfort and visual guidance to maximise the safety and comfort of all users.





HAREN DEPOT

The Brussels Municipal Transport Authority (STIB) transports over half a million people every day through its metro, bus and tram lines. A significant increase in passengers in recent years and the growing challenges related to mobility led the STIB to invest in new means of transport offering more capacity.

The STIB built a new depot in Haren to house new generation trams.

Due to the little space between the parked trams, the objective was to create a perfectly lit depot to **guarantee maximum safety for the drivers** when boarding and leaving the trams.

A total of 184 Neo LED 2 LensoFlex® luminaires were installed underneath the gantries, providing **excellent uniformity** while 329 Neos 1 LED floodlights with a narrow distribution optimise the uniformity and enabled the spacing between the luminaires to be increased. This new lighting scheme **offers perfect visibility** for optimum safety for the staff.

Furthermore, this **low-energy, low-maintenance** installation in this secure depot, which is lit day and night, has a **payback time of less than five years**.



ANDERLECHT RING ROAD

The 6-lane Anderlecht section of the Brussels ring road has very high traffic density. Brussels Mobility wanted to improve safety and comfort for motorists while reducing energy and maintenance costs.

They decided to replace the luminaires, which diffuse a yellow light with no colour rendition, by LED luminaires that provide a neutral white light and optimum colour rendition. This white light also offers excellent visibility for any potential objects on the road so that they can be avoided.

In total, 120 Teceo 2 luminaires equipped with just 136 LEDs were installed. This LED lighting solution ensures that the lighting levels perfectly meet the lighting standards required for this 6km long section.

Thanks to the wireless Owlet remote management system, the installation generates **energy savings of 35%**. The immediate reaction of the LEDs via the **remote management system enables the lighting levels to be adjusted** during the night, while adapting to exceptional circumstances.

With an expected lifetime of 100,000 hours, **maintenance operations** have been **divided by 7** compared to the previous lighting scheme. Given the busy traffic on this section of the motorway, this is a major advantage and a significant benefit for the Brussels-Capital region.







SAFETY



WELL BEING



SAVINGS



SUSTAINABILITY



SOLUTIONS