PARIS CERTAINLY IS THE CITY OF LIGHT BECAUSE IT NOT ONLY SAW THE BIRTH OF PUBLIC LIGHTING IN THE 17th CENTURY, BUT ALSO BECAUSE IT EMBODIES THE GREAT CULTURAL CAPITAL OF THE AGE OF ENLIGHTENMENT.

PARIS... AND THEN THERE WAS LIGHT

The city of Paris, a pioneer in public lighting, discovered the tremendous tool that is light very early on. Well thought out and planned lighting enables inhabitants to discover their heritage and to take ownership of their city. Lighting improves the quality of the perception of a city both for the inhabitants and for those who visit it. Lighting also represents safety in the city.

The city of Paris makes use of this tool to enhance the cultural richness, that it owes to its history and to its vast heritage.

Through the lighting of its streets and the illumination of its monuments, museums, libraries and its many buildings, Paris continually transports us through time and space.

Schréder, a partner of the city, was able to deploy all of its know-how to contribute to bringing this magic to life.

Schréder designed and produced this luminaire for Jean-Claude Decaux, using a design by Jean-Michel Wilmotte, to light the Champs-Elysées.
**Is Paris still the City of Light?**

VM: A city of light yes, but a different kind of city of light! As a matter of principle, the City of Paris has a reputation to defend; it wishes to remain the City of Light, but a City of Light that adapts itself to the environmental context.

**What are the major themes of the Paris lighting policy?**

VM: The first theme is the management of the heritage of our stock. The second area is sustainable development. Our sustainable development policy establishes in particular the objective of reducing energy consumption by 30% by 2020.

MP: This is an intermediate target within the Kyoto objective, which aims to reduce energy consumption by 75% by 2050. It is with this goal in mind that we first of all drew up a plan of attainable savings with existing technologies. We then theoretically estimated the impact of foreseeable technological developments. Let us take, for example, luminaires equipped with LEDs - we still do not know their actual performance in the field.

MP: In the context of our energy reducing objective and following a call for tenders, we shared one of our first projects with Schréder. The majority of our illumination installations dated back to the 1950s when the Queen of England visited the city of Paris. More recently and for stock management reasons, it was necessary to remove the entire infrastructure of incandescent floodlights. We took advantage of this to generate energy savings by replacing them with floodlights equipped with metal halide sources. This operation enabled us to halve the number of floodlights and to reduce the installed power by a factor of six, for a return on investment in less than 5 years.
The Louvre Museum, on the bank of the Seine, is illuminated by 120 Focal floodlights, equipped with 70W metal halide lamps, which create a soft white light (3000K), characteristic of the romanticism of Paris.

The Cathedral of Notre Dame de Paris was illuminated by the lighting designers Louis Clair and Roger Narboni. The Corus floodlight was chosen to enhance the architectural details of the upper main openwork gallery thanks to its slender profile and subtle integration.
In the context of a sustainable development policy, the city of Paris replaced all of its old floodlights equipped with incandescent lamps with Schréder floodlights equipped with metal halide lamps. In all, no less than 1300 floodlights were delivered: Focal, Terra and Neos. 

The Madeleine Church was the pilot project for this programme in 2004. The City replaced 80 floodlights with an installed power of 40 kW by 45 Focal floodlights with an installed power of 6.75 kW. The result: operating savings of over 70% per year.
In 2001, the city of Paris launched a project to re-develop some of its major boulevards into “civilised spaces”. The main objectives are to: re-conquer public spaces for pedestrians, bicycles and buses, limit the speed of motorists, improve travelling conditions for all by strengthening security and enhance the quality of life.

The city of Paris is very attached to its line of lighting furniture, characterised by rounded forms. With a view to consistency, the Scala+Lutecia unit was selected to light the major roads that are Boulevard Magenta, Avenue Jean Jaurès and Boulevard Barbès.

The contemporary design of the Alura perfectly blends into the environment of this shopping street in the 15th district.

The boulevard Bonne Nouvelle, typically Parisian in its architecture, is very lively due to its many cafés, cinemas and theatres such as the Gymnase Theatre, built in 1820. The Tempore luminaire with its “art nouveau” design is perfectly suited to lighting this area, so full of life.

**AVENUE JEAN JAURÈS**

<table>
<thead>
<tr>
<th>Light Source</th>
<th>Power (W)</th>
<th>Spacing (m)</th>
</tr>
</thead>
<tbody>
<tr>
<td>SCALA MIDI</td>
<td>70</td>
<td>15</td>
</tr>
<tr>
<td>SCALA MAXI</td>
<td>150</td>
<td>30</td>
</tr>
</tbody>
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$L_{ave} = 1.62 \, cd/m^2$

$U_o = 51\%$

$U_l = 71\%$
To improve drivers' visibility at night and to increase security, 130 Scala+Lutecia units were installed every 30 metres on Boulevard Magenta. They are equipped with 150W high-pressure sodium lamps.

Over 135 Scala+Lutecia ensembles were installed every 30 metres in staggered rows, along Avenue Jean Jaurès. These ensembles consist of a Scala Maxi at a height of 9 metres to light the road and a Scala Midi luminaire installed at a height of 4 metres to light the pavement. Furthermore, a Scala Midi, on a 4-metre lighting column is installed between each ensemble.
Louis Clair is a lighting designer. He works not only in France but worldwide. Among his many projects, he orchestrated the lighting for Paris’ new tramline which was inaugurated in December 2006.

**How do you “feel” light in the city?**
I come from the world of theatre and cinema. The perception of light is always for me an emotional perception. A perception of light on the bank of the Seine with the passing of the river boats is totally different from a perception of light on the Champs-Elysées, with the Christmas illuminations. Then the professional angle comes into play. Moreover I feel the same way everyone does about light. Do I feel safe? Can I easily manage to do the things I have to do? Is it a pleasure to look around me? Right there, in a nutshell, is all the relevance of a lighting plan. It organises the lighting, its impact and creates ambiances in each area of the city.

**Are there rules in lighting design?**
To create ambiances, certain combinations of shadow and light, and of colours and movements are universal. They evoke the same emotions.

**Lighting furniture is increasingly complex and there are luminaires for all types of spaces. What are your criteria for choosing the most appropriate material?**
A luminaire has two functions. The first function is to provide the lighting we want, with the necessary and sufficient quality and quantity for the area where we want it and for a long time. It must not be costly to maintain and to operate. As a lighting designer, I analyse the area to be lit even if there is volume to take into consideration, and I look at where I can place my luminaire so that it disturbs as few people as possible. Next, I reconstruct the beam according to the function to be fulfilled and then according to the desired nocturnal atmosphere.
Secondly, lighting equipment “furnishes” urban spaces, just like furniture inside a house. It has to give its environment an identity, an aesthetic and even qualitative physical expression. I choose luminaires according to the identity of the place, the space to be dressed, the desired ambiance and the budget.
You are the lighting designer for Paris’ new tramline. What ambiance did you want to create?

Paris, like many cities, is marked by its many trees. I wanted to give this new tramline an identity in the city that was more convivial than the other avenues by enhancing the trees. I wanted to give the vegetation back its true colour.

My idea was therefore to switch to white light with lamps with good colour rendering to give the trees back their natural shine and to improve the quality of life with a better visual comfort. I took it upon myself to re-examine one of Schréder’s luminaires, designed by Jean-Michel Wilmotte, in order to insert into it an adjustable up-lighter optical system to illuminate the trees. This creates a magical atmosphere, even in winter.

A second optic with its own lamp was integrated into the Scala luminaire to illuminate the arch of the trees from underneath, enabling the public to make the most of the landscape ambiance at any time. This system presents the advantage of being able to separately turn off the lamp that illuminates the trees. It also makes it possible to simplify installation and maintenance while putting the equipment out of the reach of vandalism.

While Paris is characterised by yellow lighting on the streets, the whole tramline platform will be lit by white light. This lighting improves security, creates a more convivial atmosphere, promoting neighbourhood life and marking the tramline’s identity.
What makes Paris’ tramway original? What was the philosophy of the project?
The tramline follows the large Marechaux boulevards. We set it up in the centre of these boulevards and we widened the pavements on each side so that the local cafés and traders as well as the local inhabitants could take advantage of the public space. The cycle path was integrated into the pavements to make the cyclist’s experience more user-friendly – I find it unthinkable to ride a bike between lorries and the tramline. The many institutions and facilities established along the boulevards make them very busy metropolitan roads.

How does lighting fit into this project and does it enhance the urban landscape?
The poles had to blend in with the alignment of the trees. We combined the public lighting and the catenaries on the same support. This considerably reduces the number of poles to provide a clearer view and to improve traffic flow.

With the lighting designer, Louis Clair, we suggested a small “lighting” revolution by switching to white light; the city had always lit its roads with yellow light. The advantage of white light is not only to enhance the archway of trees and the façades but to ensure visual comfort for pedestrians at night, to encourage people to socialise in the evening.

Are Parisians pleased with their new tramline? What has been the general reaction?
Parisians, suburban commuters and visitors are very pleased with the tramline. Motor vehicle traffic has been reduced by 25% and therefore the associated pollution as well.

Thanks to the quality of the lighting, we have noticed that the café terraces are developing. There are going to be more and more of them. We have removed the pejorative image of these spaces to create a convivial nocturnal atmosphere.

Furthermore, a recent study has shown that the land value of private property along the tramline is that which has increased the most since the tramline was built.
The landscape of over 7.9 kilometres of the Marechaux boulevards has been transformed into a genuine “green boulevard”. The infrastructure has been intelligently thought out: 2072 Scala luminaires with Lutecia brackets were installed both on the tramline catenary poles and on 1667 Lutecia poles.