



THE CITIES OF LIGHT

NEWSLETTER

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editorial



Councillor

ALLAN STEWART

President of LUCI

Glasgow City Council

TECHNOLOGIES AT THE HEART OF DISCUSSIONS

Lighting technologies, which have undergone some major evolutions in the last 10 years, have been an important topic of discussion and debate throughout the development of the LUCI network.

In a context where energy saving is a crucial issue for most municipal decision makers, innovative technologies in urban lighting offer cities new perspectives and possibilities for the development of sustainable urban lighting strategies. LED lighting in particular has been at the heart of LUCI discussions in the last few months, with many LUCI events and conferences focusing on this technology.

Our first City under Microscope of the year in Eindhoven was, for instance, a very interesting opportunity to discover first-hand the city's use of intelligent LED lighting for its sports field as well as for the development of a green lighting solution in one of its suburban areas.

LED lighting was also at the centre of the Light+Building trade fair and LUCI's guided visit introduced the LUCI delegation to some of the latest products on the market and certainly many inspiring ideas for their future projects. Most of all, within the PLUS project in which LUCI is involved, LED lighting projects were also at the heart of the "Deep Dives" organized in Burgos, Birmingham, Lyon, Eindhoven, Tallinn and Leipzig, giving cities the opportunity to discuss in detail the use of LEDs for public lighting strategies.

However, although intelligent lighting and LED lighting projects have multiplied in municipalities worldwide, many questions remain and challenges lie ahead.

In this perspective, LUCI will continue to offer, through its events, conferences, and communication tools, the spaces to discuss the use of innovative lighting throughout the world. It will also continue to showcase exemplary experiences that not only prove a particular technology to be successful but also demonstrate its capacity to improve the urban environment of cities and the quality of life of their inhabitants.

➤ Jyväskylä - the northernmost City of Light

The City of Jyväskylä (Finland) will be hosting the next LUCI City under Microscope from the 19th to the 22nd of September 2012. Annukka Larsen, City of Light Coordinator, tells us more about the event...

■ How has Jyväskylä developed itself as a City of Light?

Jyväskylä started its journey to become the northernmost City of Light in 1996 when the control of the street lighting shifted from the local energy company to the city. Realizing that the long dark days of winter are an opportunity, and not a problem, the city continued the development of outdoor lighting with a special emphasis on energy-efficiency and aesthetics. By 2014, Jyväskylä aims to save over 40% of street lighting energy consumption by using new technologies and an intelligent control system.

■ What are the features of the recently updated lighting master plan?

The lighting master plan, developed in 2000, was the first of its kind in Finland. Its main purpose was to create an aesthetic vision of the nocturnal city and to identify specific areas to be highlighted. Now that there are more than 70 permanent illuminated locations in the city, the focus is more on technical and economic issues. The goals of the new master plan are more specific and it focuses not only on the city centre but also on the suburban areas.

■ Tell us more about the Trilogy of Light installation?

The Trilogy of Light, commissioned by the property owners of the pedestrian precinct in Jyväskylä, is the forerunner of permanent light, sound and image performance in Finland. Jukka Korpihete, the designer of the installation, derived his inspiration from local nature and folklore as well as from the old school building that serves as the stage for the unique work of art.



■ What will be the highlights of this City under Microscope?

The event will offer an insight into Jyväskylä's City of Light Project as well as discussions on topical issues such as light in green areas and light pollution. One of the highlights will be the opening of the annual City of Light event, which promises to be bigger than ever as the city celebrates its 175th anniversary this year. The participants will of course get a taste of Finnish culture with sauna, karaoke, local cuisine, a lake cruise, a rally driving experience, and more. Needless to say, the event is a must for all Alvar Aalto fans.

➤ Eindhoven showcases its lighting innovations

The City of Eindhoven demonstrated its lighting innovations at its LUCI City under Microscope from the 14th to the 17th of March 2012 - an event that saw a record 130 participants!

In particular, Eindhoven, a city known as The Netherlands' "City of Sport" as well as its "City of Light", took the opportunity to bring the two together by showcasing its sports lighting projects such as the use of LED beams in swimming pools to aid swimmers improve their technique.

The city, home to a large number of Olympic-class sports facilities and training centres, is also home to the world's first LED-lit sports park, which is illuminated upon command with LEDs that reach full power almost instantly and that can be dimmed to the lighting level required. *"Lighting in sports fields generally constitutes one of the largest concentrations of light projected into the night sky. This solution not only saves energy for the city, but the LED fittings have significantly reduced light pollution by reducing the amount of indirect light emitted,"* said Arthur Noordhoek, Project Manager Lighting for the City of Eindhoven.



©City of Eindhoven

Sports lighting wasn't the only item on the event's packed agenda: Eindhoven also presented its Strijp-S lighting strategy, test sites on dynamic lighting, presence detection and other living lab experiments, along with inspiring speeches by keynote speakers Rogier van der Heide and Marco Bevolo.

Download the event report from the LUCI members' area!
<http://extranet.luciclassassociation.org/extranet/>

LUCI CALENDAR

JUNE 2012

• 5 - 7

CapUrba trade fair - Lyon (France)

• 9 - 12

Guangzhou International Lighting Exhibition - Guangzhou (China)

• 20

PLUS conference on "LED Lighting Strategies for Urban Spaces" at EU Sustainable Energy Week 2012 (18 - 22 June) - Brussels (Belgium)

SEPTEMBER 2012

• 19 - 22

LUCI City under Microscope - Jyväskylä (Finland)

OCTOBER 2012

• 16 - 18

Noche Zero - Atacama Desert (Chile)

• 25

PLUS Final Event - Eindhoven (The Netherlands)

NOVEMBER 2012

• 14 - 18

10th LUCI Annual General Meeting - Medellin (Colombia)

DECEMBER 2012

• 6 - 9

Lyon Light Festival - Lyon (France)

➤ LUCI at GILE 2012

Join LUCI in the Lighting Design Gallery at Asia's largest lighting industry forum, the Guangzhou International Lighting Exhibition (9 - 12 June 2012) in China.

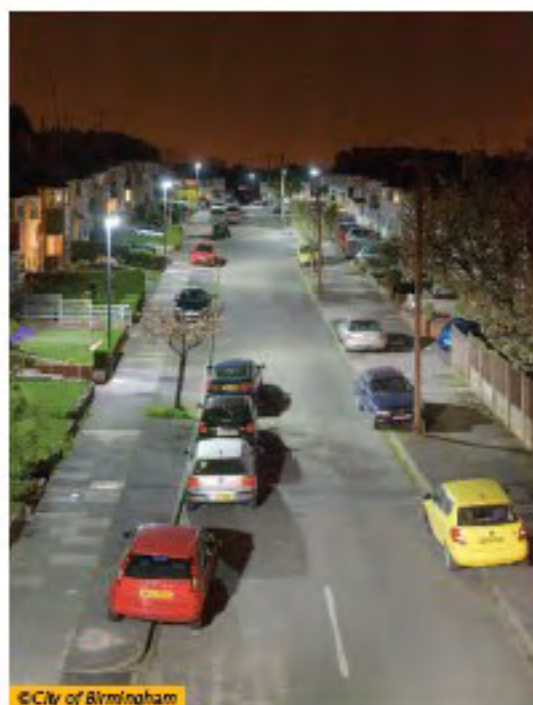
The Lighting Design Gallery, which brings together lighting associations and networks from around the world, will feature before and after photographs of inspiring lighting design projects.

guangzhou international lighting exhibition 广州国际照明展览会

The 17th edition of GILE will cover 220 000 m² at the China Import and Export Fair Complex in Guangzhou, China.

More information on GILE at
www.light.messefrankfurt.com.cn

➤ PLUS at EU Sustainable Energy Week 2012



©City of Birmingham



The PLUS project will be hosting a conference on "LED Lighting Strategies for Urban Spaces" during the EU Sustainable Energy Week in Brussels (18 - 22 June 2012).

Held on the 20th of June, the conference will address the challenges that cities face regarding the implementation of LEDs in their future lighting strategies.

It will bring together the knowledge on the use of LEDs in outdoor lighting in Europe and provide some of the first conclusions on the topic from the PLUS project, based on site visits ("Deep Dives") held in PLUS partner cities that have implemented LED lighting.

Cities and lighting professionals are welcome to attend!

Programme and registrations at
www.luciclassassociation.org/plus
 (Read more about the event on page 8)

↘ New horizons for the 10th LUCI AGM in Medellin

Created in 2002 by the City of Lyon, the LUCI network will be celebrating its 10th anniversary in Medellin (Colombia) during the LUCI AGM 2012 from the 14th to the 18th of November.

Medellin in a new light

How can a city recreate itself? Medellin, the second largest city in Colombia with over 3 700 000 inhabitants, has undergone a major transformation in recent years. It will show us how lighting has been a vital catalyst for change.

During this AGM, Medellin will unveil how it has used light as a tool for social and urban development, with presentations on its history and urban development its lighting master plan its use of lighting for



➤ Helsingborg brings together Love and Light



©City of Helsingborg

Helsingborg, a city of approximately 130 000 inhabitants on the southern Swedish coast, is one of LUCI's newest members. "We work with lighting to turn Helsingborg into a city that is welcoming and alive, even at night and during the dark winter season," says Birgitta Freudenthal, Project Manager at the Department of City Planning and Technical Services in Helsingborg.

The city's main strategy is to work together in broad cooperation between private and municipal interests in order to create a situation where street lighting, general illumination and architectural lighting all form part of the same picture.

Some of the other objectives of Helsingborg's Programme of Light, created in 2006, are to help enhance the safety of pedestrians and road users, and to contribute to people's sense of security. The city has also recently begun implementing experiments to find ways of reducing energy consumption through LED technology and dimmers, and is working on a document addressing the reduction of light pollution.

Helsingborg is also currently planning the second edition of its "Love and Light" festival, which was first held around Valentine's Day in 2009, with three permanent and 25 temporary light installations. "An important aspect of the festival was to create a sense of happiness in the city and encourage humorous projects such as waltz dances under chandeliers in the park, or chasing love lights in the square," explains B. Freudenthal. "We are planning to prepare a second edition of the festival soon, and we will naturally draw from LUCI members' collective knowledge and experience on light festivals," she says. Keep an eye out for more information on the festival!

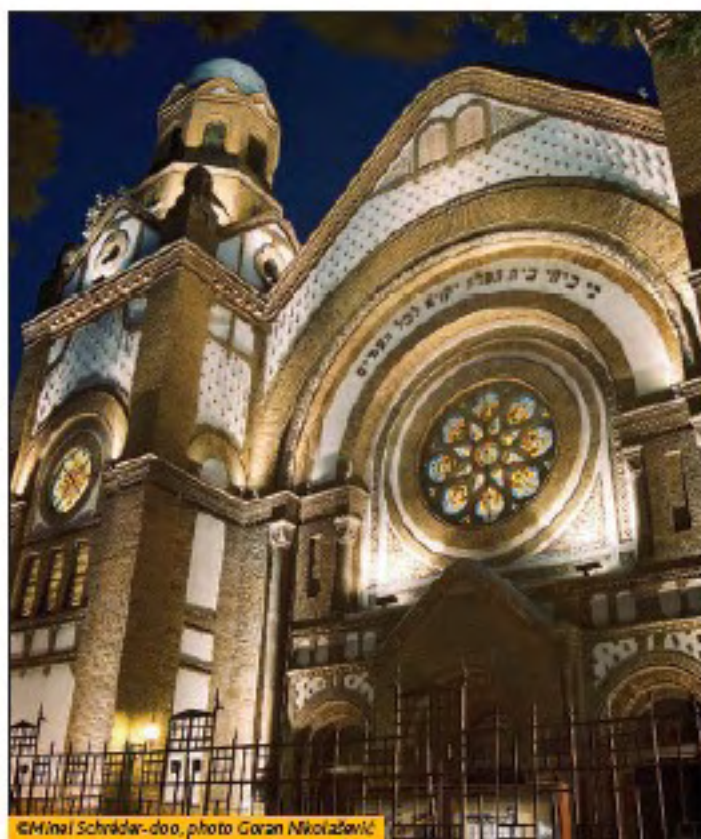
➤ A new lighting master plan for Novi Sad

The first Serbian city to join LUCI, Novi Sad is the administrative, economic, cultural, scientific and touristic centre of the Autonomous Province of Vojvodina. With a total population of around 400 000, it is the second largest city in Serbia.

Novi Sad has a total of 27 000 street lighting poles and one of its main priorities is to reduce the power consumption of its public lighting system as a whole. It has already replaced 3200 obsolete luminaires and 2000 street lighting poles, and is also implementing a tele-management system on 400 street lights. In addition to this, the city is in the process of testing LED lighting in several streets.

"Complementary to our objective to have an efficient and sustainable street lighting system, we also aim to use light to enhance our city. These objectives come within the framework of the development of a lighting master plan for the entire city area," explains Zorica Ninić Stupar, Assistant Director for Technical Operations at the Public Enterprise for City Construction and Development. Novi Sad places a particular emphasis on using light to improve the ambience in public parks as well as to preserve the architectural heritage of the city.

In line with this, the city has renovated its historical street lamps to incorporate improved optics, and has also installed energy efficient LEDs for decorative architectural lighting of several buildings such as the Parliament of Autonomous Province of Vojvodina and the Matica Srpska building.



©Mina Schröder-doo, photo Goran Nikolajević

Oslo: leading the way with intelligent urban lighting



©City of Oslo

The City of Oslo, with over 600 000 inhabitants, is one of the leaders in the implementation of intelligent street lighting.

Since 2004, the Norwegian capital has reduced energy consumption by 70% and CO₂ emissions by 1 440 tons per year through the introduction of an intelligent street lighting system on over 10 000 lighting points. The system monitors and controls the lights, dimming them based on traffic, weather and available light. It also identifies light failures.

The city, which is active on this theme in various European projects, namely the former E-street project and the current ESOLI project, is now bringing its knowledge to LUCI. "We are glad to share our experiences on intelligent lighting with LUCI cities. Becoming a member of LUCI is also the opportunity for us to discover new lighting practices for upcoming projects," declares Tom Kristofferson, Head of Section at the Agency for Urban Environment in Oslo.

Oslo is currently working on lighting projects in the newly developing Fjord City, within the framework of the overall strategy for the urban development of the waterfront area. It is also focusing on implementing the lighting plan for the city centre, the first phase of which is planned for 2014.

VNISI brings its lighting engineering expertise to LUCI

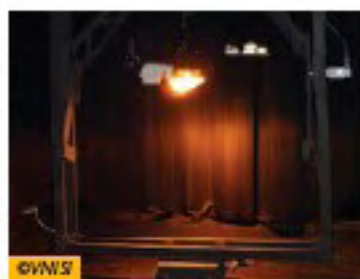
Founded in 1951, VNISI, the Russian Lighting Research, Design and Engineering Institute named after S.I. Vavilov, is the leading Russian national research centre for lighting engineering.

The centre specializes in knowledge-intensive problem solving in the fields of theory, methods, technology and standardization of lighting. It also develops high performance lighting fixtures and illumination devices, as well as lighting systems for military lighting equipment and space technology.

The institute, based in Moscow, is one of LUCI's latest associated members. "LUCI is a respected and active organization which unites the most successful cities in outdoor lighting. VNISI, is interested in being a part of the global network in this field," explains Anna Shakparunyants, General Director of VNISI.

During the last decade, VNISI has initiated a number of projects for the municipal organization of urban lighting in Moscow, state unitary

enterprise - Mossvet. Some of these include the mobile photometric laboratory (designed by VNISI), as well as the Common Concept of Lighting and Colour Environment of the City of Moscow (designed by VNISI with a number of authors under the guidance of the Moscow Architectural Committee).



©VNISI

■ VNISI

LOCATION: Moscow

YEAR FOUNDED: 1951

MAIN ACTIVITY: lighting research

NUMBER OF EMPLOYEES: 100

WEBSITE: www.vnisi.ru



Orpin de Lune: a new light in marketing

The Lyon-based Orpin de Lune consulting agency, which specializes in customized advice and support for the business development, planning and management of projects, has recently joined LUCI as associated member.

"I am eager to join in the conversation on cultural, social and sustainable lighting which are particularly interesting subjects in relation to the products that are being developed. It is important to identify best practices involving the most suitable products and the link between the city, its needs, and the lighting industry," says Sophie Cadlin from Orpin de Lune.

The agency's services are aimed at all types of organizations, manufacturers, distributors, installers and users, as well as local authorities.

■ ORPIN DE LUNE

LOCATION: Lyon

YEAR FOUNDED: 2011

MAIN ACTIVITY: marketing, communication and project management consulting, specializing in the field of indoor and outdoor lighting

WEBSITE: www.opindelune.fr



➤ Taxco de Alarcón continues lighting its heritage



The Mexican city of Taxco de Alarcón recently finished the second phase of its lighting master plan with the illumination of the main central square plaza and several squares and temples in the city.

A third phase will continue with the lighting of all streets and roads that unify these elements. "Our aim is to transform the city into a jewel of silver and light" adds Mexican lighting designer, Gustavo Aviles.

Taxco, which is renowned for its historical architectural heritage, is also the birthplace of the Taxco Charter, an international document outlining the basic principles of lighting design as applied to heritage monuments. The Taxco Charter was first drafted at the International Convention for the Lighting of Historical Monuments hosted in Taxco following the completion of the first phase of its lighting master plan in 2009.

➤ Lighting cooperation in Haiti

Concepteurs Lumières Sans Frontières - CLSF (Lighting Designers Without Borders) returned to Port-au-Prince (Haiti) in March to continue a rehabilitation project initiated following the earthquake in January 2010.

CLSF is working in partnership with the NGOs FOKAL and Quartiers pour Haiti to light certain areas of the city, such as the historical "Gingerbread" district and the Martissant Park. "The goal is to use light to preserve the memory and historical significance of these areas," explains Isabelle Corten, Lighting Designer and President of CLSF.

The CLSF team has so far conducted a number of training sessions on urban lighting for local architects and architecture students. In addition to holding workshops focused on light planning, the team also conducted on-site visits to discuss the choice of lighting equipment with local designers.

"This is a long-term project and it is important for us to accompany local designers throughout the process. The next field visits in 2012 and in 2013 will continue the knowledge transfer, with more training sessions specifically adapted to the requirements of the sites," adds I. Corten.

➤ New lighting for the Moulay el Hassan Bridge in Rabat

The Moulay el Hassan Bridge, one of the longest bridges in Morocco, has recently been renovated within the framework of a national effort to modernize urban infrastructures.

"We had three clear objectives for the new lighting of the bridge," explains Abderrahmane Mejdoubi Head of Public Lighting in Rabat. "We wanted it to be sustainable, energy efficient and to enhance the heritage of our city." The three-lane bridge, which also has a bicycle lane, a pedestrian foot path and a platform for two tram lines, required a special lighting solution ensuring maximum visibility and security.

The bridge has been lit by GE Lighting using 72 Iberia LEDs which improve the uniformity of lighting. This new system is expected to result in significant energy savings for the city.



➤ Embrace the darkness with Noche Zero in Chile

What does zero light pollution look like? Find out at the Noche Zero conference organized in Chile from the 16th to the 18th of October 2012.

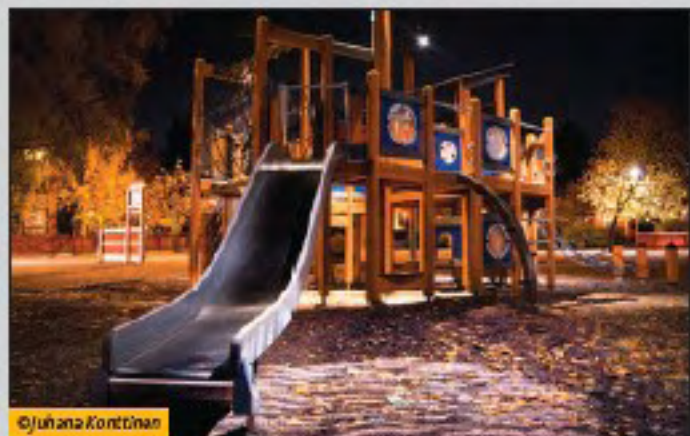
The conference, which will take place in the Atacama Desert (the driest place on earth with the clearest skies in the world), aims to be an inspirational event about the role of darkness in modern cities, lighting design and life.

LUCI is one of the partners of this conference which will cover the astronomical, ecological and medicinal aspects of light pollution and highlight why it is so important to regain the clear night sky for our cities and landscapes.

More information at www.nochezero.org

➤ Light in Green Areas

Urban parks and green spaces often determine the character of a city at night. Municipal policies on lighting green areas vary worldwide with different strategies for issues such as public safety, beautification, biodiversity, light pollution, etc. A conference on "Light in Green Areas", during the LUCI CUM in Jyväskylä (Finland) this September, will address some of these issues and choices made by cities. Mervi Vallinkoski, speaker at the conference and Landscape Architect at the City of Jyväskylä tells us more about some of the factors to take into account...



©Juhana Konttinen

■ **What role does lighting play in public parks and green areas?**
Lighting of green spaces should support the activities of the people. Jyväskylä, for example, has about 3700 hours of darkness per year and is known for its night-less nights in the summer and the long and dark winter period. Finns are outdoor people and green areas are a part of their everyday life. Lighting of these areas, with

passages for pedestrians and playgrounds for children, must take this into account.

■ **What is considered when lighting green areas?**

Usually the lighting consists of the overall lighting effect created with pole luminaires but there is also a lot of decorative illumination. Lit trees, light benches, bollards and projections can create a beautiful and lively environment. All the equipment used needs to be vandal-proof, and of course, energy efficiency must be incorporated into planning and decision-making.

Maintaining biodiversity in urban parks is also very important and biodiversity related issues should be taken into consideration whenever possible. For instance, in Harju Park located in the centre of Jyväskylä, parts of the park are left dark in order to ensure the protection of bats and their habitat.

■ **How has the lighting design of urban parks changed over the years? What are the current trends today?**

New lighting equipment has increased the imaginative use of light in green areas. For example, small-scale LED techniques give designers an opportunity to integrate lighting into park furniture design.

➤ Geneva: strategic guidelines for lighting urban parks

The City of Geneva, which recently renovated the lighting of its Eaux-Vives Park in 2011, has developed clear guidelines on the illumination of its urban green spaces.

The Swiss city has a two-pronged strategy guiding the illumination of urban parks. *"We differentiate between symbolic city parks which are historical green areas open to the public in the evenings and lit to highlight particular heritage elements, and between district parks which are lit in a more functional manner,"* explains Florence Colace, Lighting Designer and Architect with the City of Geneva.

The lighting of the symbolic Eaux-Vives Park for example, one of the oldest in the city, consists of the illumination of selected pathways in order to guarantee comfortable and secure access to citizens after dark. The paths have been lit using bollards which are more discrete in the daytime than the spherical lamps they replaced, and which also reduce light pollution. Certain exceptional trees have also been enhanced with light, as has the park's sole building.

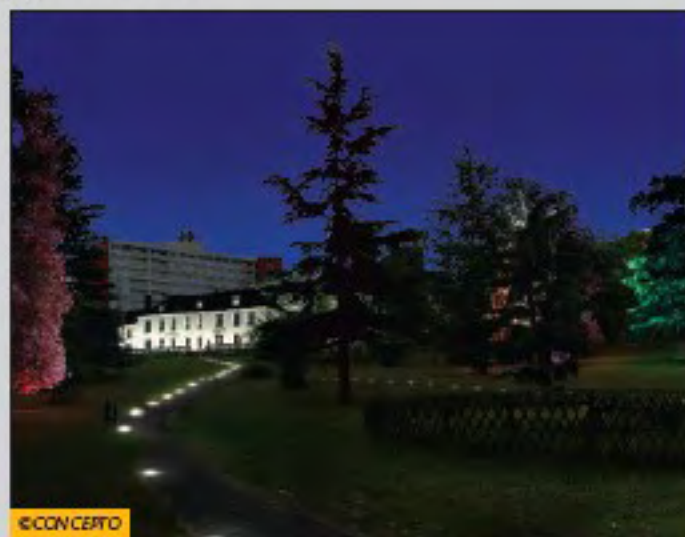
More information at: <http://www.ville-geneve.ch>

➤ Preserving nocturnal wildlife in Longjumeau

The Nativelle Park in Longjumeau (France) recently put in place a new lighting system specially designed to reduce light pollution. The lighting design agency, Concepto, working in collaboration with the environmental NGO, Noé Conservation, identified the best way to provide a lighting scenography for the park while simultaneously minimizing impact on its nocturnal wildlife.

This was done by identifying different zones in the park according to insect and animal activity. A path has thus been discretely marked out with light to provide visual orientation for visitors, certain trees have been highlighted in shades of blue and green to create an inviting area as seen from the outside, and the rest of the 90% of the park remains in darkness, preserving the habitat of its wild inhabitants.

The project, which falls within a public private partnership contract to renew the public lighting system, corresponds with the City of Longjumeau's policy to reduce energy consumption and light pollution in the area.



©CONCEPTO

PLUS (Public Lighting Strategies for Sustainable Urban Spaces), financed by the EU's INTERREG IVC programme, capitalizes on existing urban lighting best practices on energy efficiency in European cities. It aims to offer a set of recommendations leading to the improvement of cities' lighting strategies and action plans.

PLUS partners

- Lead Partner: Eindhoven (The Netherlands)
- Bassano del Grappa (Italy)
- Birmingham (UK)
- Burgos (Spain)
- Iasi (Romania)
- Leipzig (Germany)
- Lyon (France)
- Nice Côte d'Azur Métropole (France)
- Patras (Greece)
- Sofia (Bulgaria)
- Tallinn (Estonia)
- LUCI (Lighting Urban Community International)

Programme: INTERREG IVC
Total budget: 1 689 508 €
Duration: October 2010
to December 2012



With the hosting of the conference on "LED Lighting Strategies for Urban Spaces" in Brussels this June, the PLUS project now enters a new phase of reflection and analysis. The conference will provide only a brief preview of what project partners are hard at work developing - their cities' respective lighting action plans and future lighting strategies. Identifying, adapting and incorporating new lighting practices according to the need of one's own city are not only the key challenges but also the major benefits of this project.

Workshop

➤ Leipzig: 2nd Regional Forum



The City of Leipzig organised its 2nd Regional Lighting Forum on the 30th of March 2012, successfully bringing the city one step further in the development of its future lighting strategy.



©City of Burgos, photo Ordono & Ordono

"We were very excited to present the PLUS lighting experts' Deep Dive feedback to the lighting stakeholders in our municipality. This gave us the opportunity to discuss the strengths and weaknesses of the current lighting situation, which will contribute to the formulation of our SWOT analysis," explains Heike Besier, Deputy Leader Section Public Space Design in Leipzig.

The City of Leipzig hosted its Deep Dive event on the 16th and 17th of January 2012 where visiting PLUS lighting experts discussed Leipzig's public lighting with the heads of the lighting department, engineers and technicians, as well as partners from the university and the City Council in workshops and interview sessions. They also visited new lighting installations in the city centre and discussed Leipzig's sustainable lighting practices.

➤ PLUS perspective on LED lighting strategies in urban spaces

How can cities incorporate LEDs into their lighting strategies? What are the implications in terms of planning, procurement, and financing? How can they deal with the issue of social acceptance? Most of all, what could be the most appropriate timeline?

The PLUS conference on "LED Lighting Strategies for Urban Spaces", held on the 20th of June during the EU Sustainable Energy Week 2012, will bring together the knowledge on the use of LEDs in outdoor lighting as well as a preview of some of the first conclusions on the topic from the PLUS project. "It is important to discuss the challenges that confront cities as they

consider using LEDs, and this is what we aim to do at this conference," says Rik van Stiphout, PLUS Project Manager.

The conference will offer a wide variety of perspectives on LED projects and research with speakers such as Paolo Bertoldi from the European Commission Joint Research Centre (JRC), Michael Ziegler from the Photonics Unit of the European Commission, as well as presentations from other European projects such as BLISS and LED - Light in Public Space.

Programme and registrations at
www.luciasociation.org/plus

Get your copy of the PLUS magazine!

This June, the PLUS project will release a special issue magazine highlighting best practices in sustainable urban lighting within the PLUS project and beyond. Contact luci@luciasociation.org to get a free copy.

Feedback from the ESOLi project on intelligent street lighting

The European project, ESOLi (Energy Saving Outdoor Lighting), which aims to promote intelligent solutions for street lighting, held a conference in Frankfurt on the 17th of April 2012. Sabine Pillar, from the Berlin Energy Agency tells us what was discussed.

■ What knowledge has the ESOLi project gathered on intelligent street lighting (ISL), and how can this help municipalities?

The project offers information and advice to municipalities on specific public lighting issues and supports them by developing a series of practical tools. Now we are in the second part of the project duration and some of the results achieved include a best practice catalogue, over 30 national workshops, and an international conference training seminar. This year we will organize 2 study visits and 14 training seminars on ISL all over Europe.

■ What are the major challenges faced by cities in implementing intelligent street lighting?

Usually the biggest obstacle is that municipalities do not have sufficient funds to face the initial investment in ISL, although a lot of them are aware of the long term benefits. The public lighting systems are very often old, and ISL requires renovations and high investment costs. The payback period is variable but usually more than 5 years, depending on many factors, although savings on the electricity bill and on lower maintenance cost are immediate, as are the social/environmental benefits. An uncertainty factor for decision makers is the abundance of offered technologies and they often lack sufficient information to make their choice. Additionally, there are several concerns regarding LED technologies.

■ What were the trends in ISL as highlighted by the conference?

An increasing number of municipalities are now replacing their old fashioned and inefficient street lighting by LED street lighting systems.



The trend is going towards implementing so called "smart or intelligent lighting systems", providing the respective quantity of energy needed at the particular time and location.

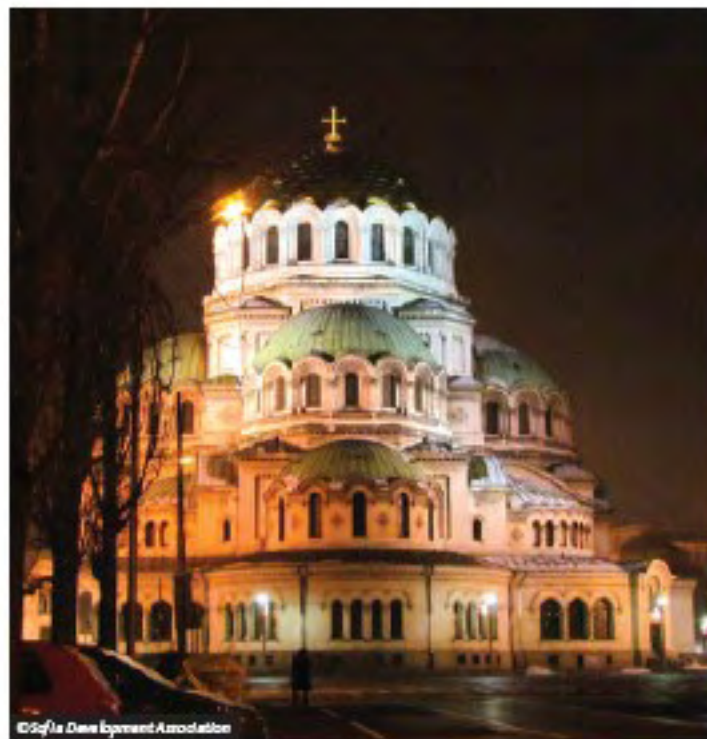
■ What were the conclusions of the conference?

From the practical point of view, the conclusion is that a lack of knowledge and experience in the modernization of street lighting systems constitutes a barrier for many municipalities and communal energy suppliers. To overcome existing restraints, it is important to involve both groups of actors - the municipalities and the utilities - in the project planning process for future innovative projects on street lighting.

Read the full interview

at <http://www.luciclassassociation.org/plus-forum.html>

Sofia introduces LED in street lighting



The City of Sofia recently developed and publicly presented its first LED street lighting project, which includes a package of technical measures that will modernize the public lighting system and cut its energy bills.

In some areas of the city, all sodium high pressure, mercury and luminescent lamps will be replaced by energy effective LED systems. These measures will result in an annual decrease of the electricity costs by 386 998 € and a further 191 979 € as maintenance and repairs savings.

The project, which is expected to start at the end of 2012, includes areas in the centre of Sofia as well as the regions Druzhba 1 and 2, Ovtcha Kupel 1 and 2, Tzarigradsko Shose boulevard and Bakya - representing approximately 12% of the Municipality's territory and approximately 10% of its population.

The overall value of the project is 5 million €, 20% of which are from the municipal budget, and the remaining 80% will be co-financed by the international fund "Kozloduy (2010- 2013)."

The international fund "Kozloduy" was established to manage the EU grant for early decommission of the first four blocks of the Kozloduy nuclear power plant. Among the funded measures are also those for the reduction of the negative consequences for the energy sector resulting from the closure of the blocks.

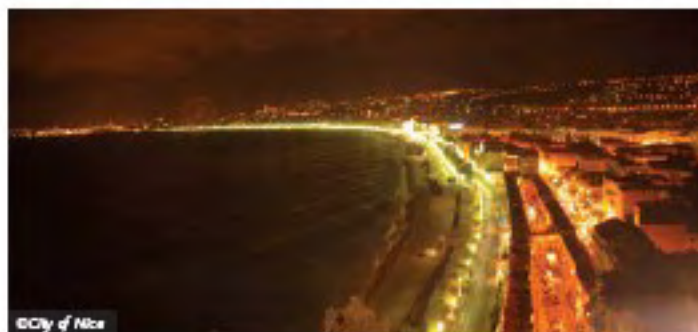
Nice to begin new mercury lamp replacement programme

The Public Lighting Directorate of Nice Côte d'Azur will be replacing 1300 mercury lamps as part of an initiative funded by the French Environment and Energy Management Agency.

The replacement programme will reduce energy consumption by 50% for each luminous point, reaching the so-called "factor 2". This operation not only has a positive effect on the environment, but will also generate savings of over 30 000 € per year. "This is one more step towards achieving the 20-20-20 objectives," declares Jean-Charles Maleysson, Project Manager in Nice.

Nice Côte d'Azur recently became the first inter-communality in France to turn into a "Metropole" gathering a total of 46 cities, and this project is in line with the Public Lighting Directorate's policy to ensure equal

access to public lighting throughout the new territory and to help smaller cities (under 2000 inhabitants) improve their energy efficiency.



City of Nice

Researchers explore public response to new street lighting practices



A symposium on "New ways of lighting the streets at night" will take place at the 22nd IAPS (International Association People and Environment Studies) Conference at the University of Strathclyde in Glasgow from the 24th to the 29th of June 2012. Antal Haans, Assistant Professor of environmental psychology of human-technology interaction in

Eindhoven, and organiser of this thematic session on lighting tells us more...

■ What is the objective of the symposium?

The symposium aims to bring together researchers interested in the psychological requirements behind, and end users' appraisal of, new lighting technologies. This is necessary as now, more than ever, we are seeing changes in how we light our streets. First of all, the technology itself is radically changing - think of LEDs, OLEDs, and new sensing and wireless communication possibilities that allow for adaptive lighting (i.e., adaptive to end users' needs and preferences). Secondly, there is the societal demand for more sustainable lighting, with respect to reducing both energy consumption and light pollution. Currently however, our psychological understanding of people's preferences and appraisal is far behind.

■ What have you learnt by evaluating users' experiences with new lighting technologies?

At the Intelligent Lighting Institute in Eindhoven we are currently investigating the technology and psychology of intelligent dynamic

lighting. What we have learnt from our initial field experiments on people's appraisal of various dynamic lighting scenarios is that it is difficult to formulate requirements for dynamic lighting installations, because we do not have sufficient theoretical understanding of how perceptions of safety are formed and what the role of lighting is in this process. This lack of theoretical understanding is not limited to dynamic lighting, but is general to the field of public lighting.

■ What are some of the factors that contribute to or impede public acceptance of new lighting technologies?

This remains to be seen. In any case, I suspect it to be a combination of people's beliefs about a lighting technology (e.g., with respect to environmental impact), their trust in the claims of municipalities and lighting manufacturers, the manner in which the new lighting system is implemented (i.e., do citizens have a say in, for example, the type of luminaire), and of course, their direct experience with such technologies when implemented in their own streets. As such, little has changed in comparison to more conventional lighting. However, I expect the end user's appraisal to become more important nowadays, simply because there will be more to choose from - because more technological options become available of which the public too is increasingly aware.

More information on the conference and full interview at <http://www.luciasociation.org/plus-forum.html>

ISO certification for Lyon's public lighting department

The Public Lighting Department of the City of Lyon has just received the ISO 14001 certification for environmental management. The certification is based on the principle of continuous improvement in environmental performance and continuous control of the ecological impact associated with the activity of an organisation.

The public lighting logistics department was audited by the BCD agency and was awarded the certification earlier this year. "The Public Lighting Department has been engaged in sustainable development for a number of years, and we wanted to reinforce this engagement through this process of certification," declares Antoine Bouchet, Director of Public Lighting in Lyon.

The department now aims to have all its subdivisions certified by 2013.



City of Lyon

➤ Tackling light pollution with green LEDs in Eindhoven (The Netherlands)

The City of Eindhoven has implemented an innovative new project using green LEDs on Velddoornweg, a rural road on the outskirts of the city. Arthur Noordhoek, Project Manager Lighting for the City of Eindhoven tells us more about this initiative...

"A new innovation for lighting that respects green areas"

■ What were the municipality's objectives in the project?

Velddoornweg is a road which runs through a rural area and which connects Eindhoven with the surrounding villages. This is an important cycling route through an area with lots of trees. Usually, if a key cycling route passes through a nature reserve, an assessment is made as to whether lighting which enhances safety for cyclists and which has a minimum harmful effect on the flora and fauna can be installed. We were looking for lighting respecting the green structure, meaning as less light pollution as possible and as less inconvenience as possible for the animals.

■ What are the main lines of action?

In search of a lighting solution that minimized energy consumption as well as light pollution and disturbance to the natural fauna, we decided to install dynamic green LED lighting. 38 luminaires along the 1 km long Velddoornweg road light up when necessary through a dynamic system. Doppler detectors are used to detect cyclists. The LEDs are equipped with a wireless radiofrequency system through which each LED can be controlled separately. The system was delivered in the beginning of September last year, and we are currently experimenting with the technique and the different levels of light intensity.

■ Why green LEDs?

We choose green lighting for Velddoornweg because, as proven by scientific research, at low light levels the human eye is more sensitive to light in the green part of the spectrum. Using this mesopic efficiency, less light can be used compared to normal light sources to get the same visibility. Additionally, when light is used for the detection of traffic, animals are more comfortable with the lower light level. This is a new innovation that we are experimenting with. Being a living lab, the City of Eindhoven chooses with emphasis not to implement fully developed products and offers companies and researchers the chance to test and refine their products and ideas.

■ What consequences has this project had?

The use of detectors in combination with green light results in a minimal disturbance of the ecological environment, while it also provides sufficient visibility for safe use by particularly slow traffic. The feedback from users has been generally positive although we have had some problems regarding vandalism and theft of detectors. An evaluation of the project is planned in the near future.



IDENTITY CHIP

Location: Velddoornweg, Eindhoven

Population: 218 000

Implementation

Project launch date: October 2010

Duration of the work: 6 weeks

Inauguration date: September 2011

Stakeholders

Contracting authority: City of Eindhoven

Lighting design: Mijnsen Dynamische Mobiliteit B.V.

Manufacturers: Innolumis Public Lighting B.V. (luminaires) - Nedal Aluminium B.V. (poles) - Maiken B.V. (controls)

Installation: Heijmans Technische Infra B.V.

Maintenance: Heijmans Technische Infra B.V.

Budget

Total cost: 67 500 €

Technical

Luminaires: Golden Green

Lamps: Lumis LED

Power (watts): 36 W

Energy consumption: variable (depending on detection)

Estimated life expectancy: 80 000 h

Find this experience and many others in the best practice database at www.luciclassassociation.org/plus



Brussels ©Mathieu Bauwens



Created in 2002 at the initiative of the City of Lyon, LUCI (Lighting Urban Community International) is an international network of cities on urban lighting. Through the organisation of international events and conferences, and its involvement in various lighting projects and research, LUCI creates spaces for exchange of knowledge and good practices in urban lighting.



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