Plus

Public Lighting Strategies for Sustainable Urban Spaces

PLUS (Public Lighting Strategies for Sustainable Urban Spaces), financed by the EU's INTERREG IVC programme, capitalises 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 (France)
- Patras (Greece)
- Sofia (Bulgaria)
- Tallinn (Estonia)
- LUCI (Lighting Urban Community International)

Programme: INTERREG IV C

Total budget: 1 689 508,00 Euros

Duration: October 2010 to December 2012

INTERREG IVC

European Union
European Regional Development Fund

PLUS marks its first year in action

Half of the project period has passed and PLUS has made significant progress. The cities of Lyon, Nice, Patras, Iasi, Bassano and Birmingham (making over half of the project partners) have hosted their Deep Dives, leading to the adoption and adaptation of the Deep Dive methodology and process - next year's upcoming Deep Dives will undoubtedly show some changes to reflect this.

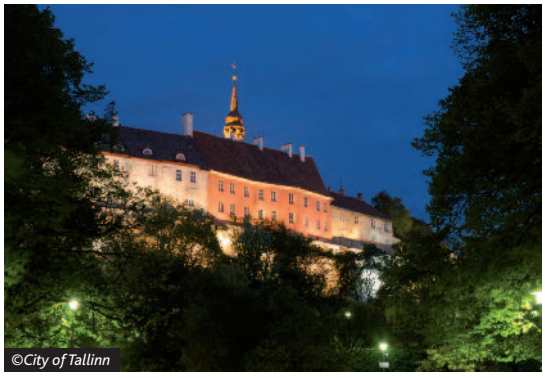
The project has also successfully organized its first briefing in Brussels, which presented PLUS and its best practices, along with some new perspectives on the project. To mark one year in action, PLUS will be presented at the LUCI AGM 2011 in Gothenburg in the framework of the City of Eindhoven's presidency of the LUCI Sustainable Lighting Commission. All in all, a busy and enlightening year for PLUS partners!

Workshop

Tallinn to host next PLUS Deep Dive

PLUS partners are invited to attend the Tallinn Deep Dive on the 12th and 13th of December 2011 where they will have the opportunity to discover the Estonian capital's lighting success stories and explore possibilities for the further development of its lighting strategy.

The City of Tallinn will demonstrate its lighting experiments such as its new LED luminaires for pedestrian crossings and its intelligent street lighting control system. The city will also present the experiences and knowledge gathered as a result of its LED-test street project, where over 30 different LED luminaires are presented. And what does Tallinn hope to accomplish with the Deep Dive? *"We hope to collect valuable suggestions from all the partners thereby helping us develop our city lighting plan and begin a new energy saving plan,"* explains Tarmo Sulg, Deputy Head of the Tallinn Municipal Engineering Services Department.



PLUS holds its first Brussels Briefing

The partner cities of the PLUS project briefed key European decision makers and representatives of civil society on the progress being made in European sustainable lighting initiatives on the 28th of September 2011 in Brussels. Over 40 participants were present at the event.

The Deputy Mayor of Sofia, Mr. Lyubomir Hristov, provided an insight into the ways in which the City of Sofia is adapting and using their lighting to make the city safer, provide more sustainable cycling routes, extend opening hours for businesses and increase recreational opportunities.

The City of Leipzig, represented by Mr. Siegfried Schlegel, Leipzig City Councillor, presented the "Intelligent City Lighting" project which seeks to reduce the city's carbon footprint by installing modern LED lighting in the city centre.

This conference, the project's first Brussels Briefing, also featured presentations by sustainability experts, Elke den Ouden, Professor at Eindhoven University of Technology, and Dr Dorothea Seebode, a specialist on sustainable innovation.

Go to www.luciassociation.org/plus to see the presentations

Lyon consults stakeholders in 2nd Regional Forum

The City of Lyon held its 2nd Regional Forum on the 20th of October 2011, presenting the results of its Deep Dive to selected partners including the cities of Grenoble, Besançon, Montpellier and Dijon, as well as major manufacturers and service providers from the region.

This second regional forum, which was preceded by field visits to demonstrate key projects, aimed at obtaining regional stakeholder involvement in identifying the strengths and weaknesses of Lyon's lighting strategy. The participants debated the objectives of the city's lighting strategy and their relevance today, the results of the implementation of this strategy and whether they met expectations.

This feedback, along with that of the PLUS experts, will serve as input for the next step of the PLUS process, Lyon's SWOT (Strengths, Weaknesses, Opportunities, Threats) analysis.

PLUS partners discover the lights of Iasi

The City of Iasi, Romania's second largest city with over 350 000 inhabitants, hosted its PLUS Deep Dive on the 6th and 7th of October 2011.

Iasi, which has been working with two contractors, Luxten and Flash for the management of its public lighting since 2005, currently has over 17 337 luminaires on 15 959 lighting poles. One of the city's main objectives is the optimization of energy consumption related to the public lighting. It has made significant progress regarding this, having already replaced all its mercury lamps. While the lamp sources for street and pedestrian lighting are now predominantly high pressure sodium, the sources for architectural lighting are mostly metal halides and LEDs.

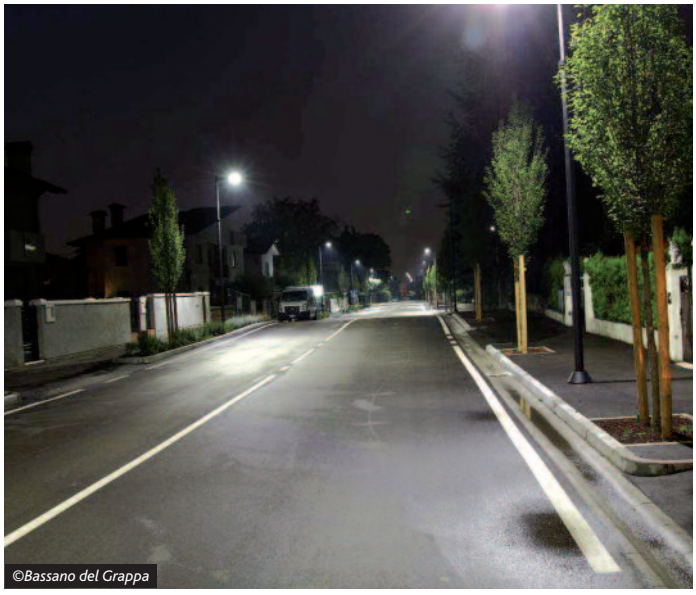
Both contractors have put in place environmental policies as well as procurement and management systems that take into account the environmental impact of lighting. A reduction in energy consumption has also been achieved by using LEDs, renewing the city's electrical networks, replacing conventional ballasts with electronic ballasts, and implementing a tele-metering system.

Iasi is currently executing new lighting projects with the objective of opening up public spaces and creating a new identity for the city. It aims to increase its cultural dynamism and reinforce its tourism economy


©City of Iasi

with new lighting attractions and better quality decorative lighting in tourist destinations, such as the 40 Martyrs Church, Church St.Teodori, St. Nicholas Church, and Eminescu's Copou Park. The city also aims to extend improved public lighting beyond the city centre to the entire urban metropolitan region as a whole.

New look for Monte Grappa Street in Bassano del Grappa


©Bassano del Grappa

The City of Bassano del Grappa, which hosted its Deep Dive on the 27th and 28th of October 2011, presented its project on the renovation of the Monte Grappa Street. The city administration has been renovating the street for vehicular and pedestrian use through the overhaul of its public lighting.

Following a series of area-tests, simulations and light level analyses, Bassano decided to implement a new lighting system with luminaires consisting of 36 LEDs with a nominal power of 46 W (total 58 W) on 6 feet high poles. The system is also equipped with an electronic power-pack that enables dimming, thus ensuring that there will be maximum light intensity in the first and last hours of operation and reducing energy consumption in the middle of the night when a lower level of lighting is required.

Furthermore, visual comfort is assured with glare-free lighting and comfortable colour temperatures of 4000 K. The new lighting solution will result in sufficiently high levels of lighting with good uniformity on the roads as well as the sidewalks, and overall energy savings of around 30%.

Birmingham implements ambitious LED street lighting system

The City of Birmingham, which is currently implementing a large-scale LED street lighting system, one of the first of its kind, had much to show visiting PLUS experts during its Deep Dive on the 7th and 8th of November 2011.

The Birmingham City Council, in collaboration with public services provider, Amey, with which it has signed a 25 year contract for the maintenance and management of the public lighting, will be replacing over 40 000 traditional luminaire lamps with remote monitored LEDs over the course of the next few years. A PLANet remote monitoring system is being used to control the performance of every new street light and will soon extend to monitoring all of the city's existing street lights. Within four years, this system will allow dimming of each of the city's 90 000 street lighting points. As the system enables technicians to set the power delivered to individual lighting positions by increments of a single watt, rather than tens of watts, it will be possible to use the minimum possible energy while maintaining the necessary lighting standards.

The new lighting solution is expected to cut carbon emissions by approximately 50% and the city anticipates significant savings as a result of the reduction in power consumed as well as the reduction in maintenance.

Forum

EU call for collaborative R&D proposals on OLAE

The European Competition for Collaborative R&D Funding organised an Information Day on organic & large area electronics (OLAE) on the 27th of October 2011 in Brussels. OLAE + is a transnational call for collaborative research and development proposals under the European Commission's ERA-NET Plus scheme with an estimated budget of €18 million. The aim is to seek proposals to develop and stimulate technology and business relationships within the European OLAE community, building the supply chain and removing barriers to industrialisation.

Open to participants from Austria, Catalonia, Flanders, Germany, Israel, Poland, Sweden and the UK, the call is organised as a competition for funding and will be implemented jointly by the national funding bodies who expect to fund a mixture of small and large bi- or multi-national projects, with total costs typically in the range of €0.5m to €3m. The competition opened on October 24th 2011 and the first proposal deadline is January 31st 2012 (13:00 CET).

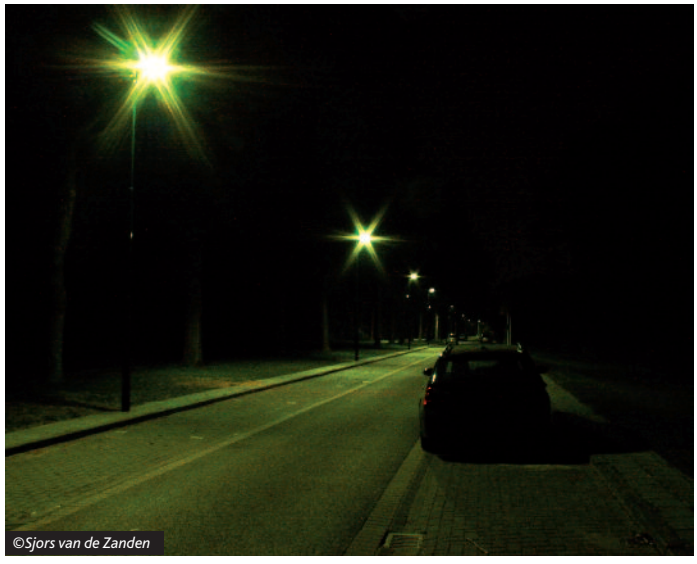
For further details go to www.olaeplus.eu

Eindhoven's Velddoornweg literally goes "green" in new pilot project

In search of a lighting solution that ensures safety, comfort and a pleasant experience for the users of Velddoornweg (a rural road connecting Eindhoven with surrounding villages) and yet minimizes energy consumption, light pollution and disturbance to the natural fauna, the City of Eindhoven has decided to install dynamic green LED lighting as part of a pilot project. 38 luminaires along the 1 km long road light up only when necessary through a dynamic system. The LEDs are equipped with a wireless radiofrequency system through which each LED can be controlled separately.

And why green LEDs? *"The lighting along the Velddoornweg is green - not because it fits the rural surroundings - but because, as proven by scientific research, the human eye sees best when green light is used in combination with a low light level"* explains project leader Sjors van de Zanden.

The system was delivered in the beginning of September and the city is currently experimenting with the technique and the different levels of light intensity. Being a "Living Lab", the City of Eindhoven chooses not to implement fully developed products and offers companies and researchers the chance to test and refine their products and ideas.



The "Rivers of Light" - lighting design as a touristic and cultural attraction in Valladolid (Spain)

The City of Valladolid has developed the "Rivers of Light" route which offers a new and innovative way of enjoying the cultural pleasures of Valladolid at night time. Rafael Gallego (áureolighting) and Lara Elbaz, the lighting designers involved, tell us more about this pioneering project...

"Beauty and sustainability"

What is the concept behind the "Rivers of Light" route?

The concept of this project revolves around the symbolic re-integration of the River Esgueva, which was re-routed in order to allow the city to grow. This virtual river is transformed into a River of Light which runs through the city, guiding people through its streets in a surprising and interactive way. It reveals the city's rich heritage and present splendours, showing step by step, tributary by tributary, its history, architecture and cultural heritage. The Rivers of Light route interconnects different parts of the centre of Valladolid using light. The objective is to provide users (citizens of Valladolid and tourists) with symbolism and visual comfort as they walk through the city. The route thus combines energy saving and design in the creation of a unique tourist route which highlights the city's architectural richness.

Tell us more about the lighting design of the project.

While the buildings and monuments have been lit according to their individual characteristics, the lighting of these targeted areas has also had the effect of ordering and harmonising the surroundings: colour temperature of the light sources have been unified and the lighting levels have been reduced in order to increase the degrees of shadow, making the night lit passages more visually effective. This has been done using the latest technology and low consumption LEDs. In total, the project has resulted in energy savings of 44.5% including 15 new buildings that were not previously lit. Light pollution is avoided and optimum energy efficiency has been achieved in all of the monuments by incorporating lighting control programmes, which allow lights to come on when it starts getting dark and turn off again at midnight. In addition, visual comfort has been prioritised, using antiglare devices when necessary. Finally, visual integration of the luminaires is assured as they disappear in the daylight.

How are colour codes used?

The walk makes use of a colour lighting code, which communicates different messages visually. First of all, a green-blue light is used throughout the walk to visually mark the route. Since rivers are alive and continuously changing, different lighting elements housing this 'river-green' light, easily recognisable by visitors, take on the role of a visual tour guide, accompanying visitors in the discovery of Valladolid. Secondly, the walk uses liturgical colours which are transferred to the interior of the church towers, communicating the sacramental message to the outside. Finally, to allow for municipal cultural spaces to be easily recognised along the walk, the purple light colour of the City of Valladolid is used to indicate each of these buildings.

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IDENTITY CHIP

Location: Valladolid (Spain)

Stakeholders

Contracting authority: Municipality of Valladolid
Manufacturers: Philips and Indal
Lighting design: Rafael Gallego (áureolighting) and Lara Elbaz
Installation: Elpa
Maintenance: Elpa

Technical details

Number of luminaires: 2 031
Lamps: 866 LED luminaires with different number of lamps
1 115 metal halide lamps, 50 fluorescent lamps.
Power: 112 421 W
Energy consumption: 84 091 kWh annually

Costs

Total project budget: 1 402 507.16 €
Functioning cost: 12 613.65 € (84 091 kWh x 0.15 €)

Implementation

Project start date: March 2009
Duration: 20 months
Inauguration: November 2010

ADVANTAGES:

- 44.5% energy savings
- led to a significant increase in the number of overnight visitors to the city
- the route is flexible and open to the introduction of new buildings and environments according to the needs of the city

DISADVANTAGES:

- complex installation due to the huge range of sites through the whole city centre
- the project includes 30 buildings owned by different proprietors that all had to approve the installations