

Interreg

CENTRAL EUROPE



Dynamic Light

European Union
European Regional
Development Fund

TAKING
COOPERATION
FORWARD



Dynamic Light FINAL CONFERENCE WISMAR 26/27 March 2019



Pilot Plant in CESENA (IT)

Green public areas lighted on a human scale!



Sofia Burioli - Municipality of Cesena

Cesena City

- Cesena is situated in the heart of **Emilia-Romagna Region**
- Cesena counts **97.557 inhabitants** (2018).
- The **PUBLIC LIGHTING SERVICE** is managed by **Hera Luce Ltd** a company specializes in management of public lighting installations



*1 - PILOT PLANT IN CESENA:
"FORMER SUGAR REFINERY AREA"*





Historical value

- **Big discarded industrial area** (220.000 sqm) redeveloped in 2008
- **Eridania sugar manufacturing plant built in 1901** and active up to the 70's



Strategic position

Located to the **north-west of the city center**, it connects the historic city center, with the river Savio and the large green area of the Hippodrome.



Social value

- **Residential headquarters (257 apartments) (social housing/student flats)**
- Business center (Bank of Cesena, offices, a hotel, restaurants)
- Shopping center (10.000 sqm) and Parking areas (17.000 sqm)
- **Green areas (72.000 sq.m.)** and Pedestrian paths (10.000 sqm)
- **Committee“ZUCCHEROVIVO“**
- **New UNIVERSITY CAMPUS** (Oct 2018)



FORMER SUGAR REFINERY AREA: 2 PILOT GREEN AREAS



2 GREEN PILOT AREAS CRITICAL LIGHTING POINTS

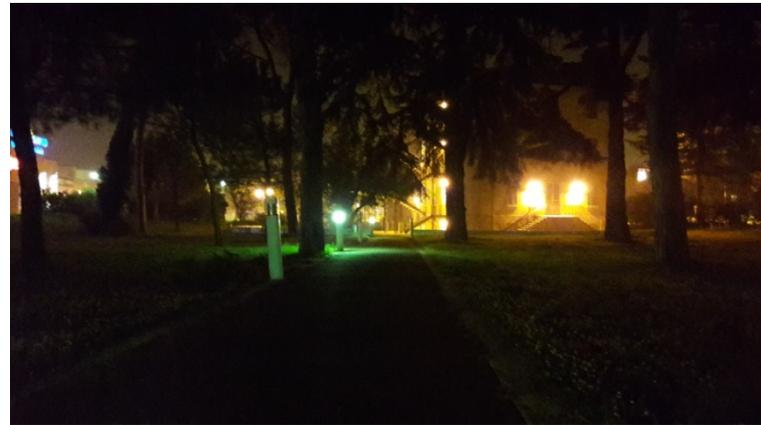
Etruscan Archeological site (broken lights - dirty- homeless during the night)



Empty fountain (inefficient lights - currently not in use - potentially interest to use for children area)



GREEN PILOT AREAS CRITICAL LIGHTING POINTS



2 - SOCIAL NEEDS ANALYSIS AND SOCIAL LIGHT DESIGN



MUNICIPALITY

- Establishment of an interdisciplinary working group
- Questionnaires/Interviews
- Technical panel and Political panel

HERA LUCE LTD

- Data exchange
- Questionnaires on social needs
- Technical panel

UNIVERSITY (future potential users of the area)

- Questionnaires on social needs
- Interviews



RESIDENT'S COMMITTEE "ZUCCHERIVIVO"

- It is one of the few committees of self-proclaimed citizens present in the city
- Born in 2015 with the aim to revitalize the neighborhood and its public spaces

ENGAGEMENT ACTIVITIES

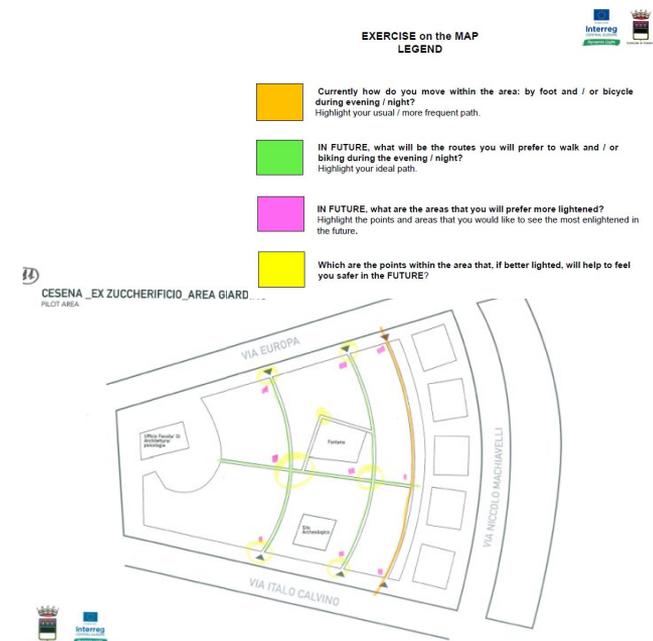
- Questionnaires on social needs for residents families
- **2 workshops** (12th April 2017 and 3rd October 2017)
- **Mapping Activities**



I workshop (12th Apr 2017)



II workshop (3rd Oct 2017)



Mapping Activity (12 Apr 2017)



MAIN RESULTS

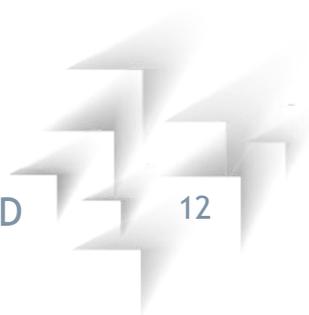
SPECIFIC LIGHTING SOCIAL NEEDS OF THE AREA

Increase the general level of illumination in the 2 parks to:

- Create a **safe atmosphere** and pleasant atmosphere to stay in the 2 parks
- **Diminish the sense of insecurity;**
- **Increase the attendance** time of the 2 parks;
- **Diversify the use** of the 2 parks (not only for passing but also for sports, games, recreational activities in summer time etc.);
- **Increase the attractiveness** of the two 2 parks even for economic activities (eg bar and summer kiosks etc.)



3 - THE DYNAMIC LIGHT SOLUTIONS



OBJECTIVES

- 1 – Increase the light quality and the accessibility of the green areas and cycle/pedestrian routes
- 2 – Expected energy saving of 77%
- 3 – Less light pollution

COSTS

The total investment amount is € 67.995,01

“C.Darwin Park”
Park



“11 Sept 2001”
Park



11 SEPTEMBER 2001 PARK



Removal of 69 lighting units, of which:

- 38 bollard lamps (125W- mercury lamps)
- 31 ground lighting fixtures (24W - fluorescent lamp)

Installation of:

- 25 new LED luminaires (with poles 4,5 m high)
- Equipped with Dynamic motion sensors
- Model CREE Ledway



C. DARWIN PARK



Removal of 22 luminaires

(high-pressure sodium lamps of 70 watt and mercury lamp of 80 watt)

Installation of:

- new 22 LED luminaires (with poles 4,5 m high)
- Equipped with Dynamic motion sensors
- Model CREE Ledway

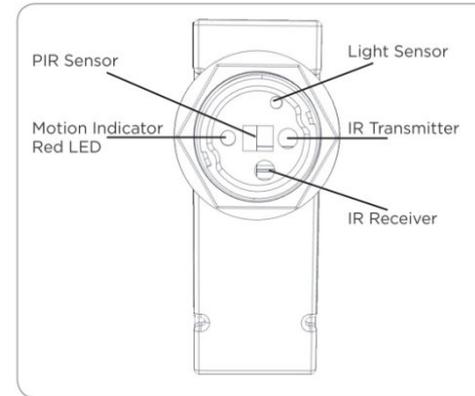


The new Lighting poles are equipped with:

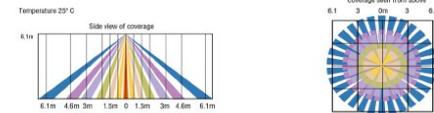
1 - Occupancy sensors to detect outdoor activity within a certain area. They provide convenience by dimming lights automatically when no motion is detected.

The sensors use passive infrared (PIR) sensing technology that reacts to changes in infrared energy (moving body heat) within the coverage area. Once the sensor stops detecting movement and the time delay elapses, lights will go from high to low mode.

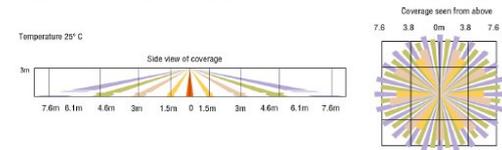
2 - In particular, the sensor can detect the presence of pedestrians at 3 different distances (6m, 7 m, 12 m). Now the sensors are set over a distance of 7 meters.



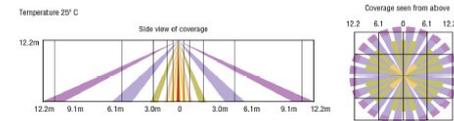
Lens 1
 For installation heights from 3m to 9.1m. Coverage diameter equal to installation height.



Lens 2
 For installation heights from 3m to 4.6m. Coverage diameter equal to 2.5 times the installation height.



Lens 3
 For installation heights from 6m to 12.2m. Coverage diameter equal to installation height.



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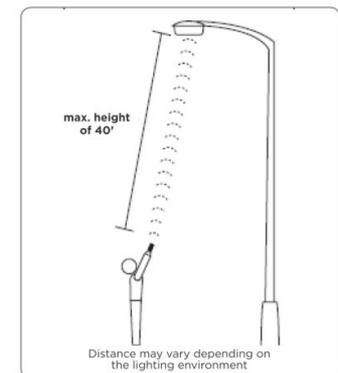
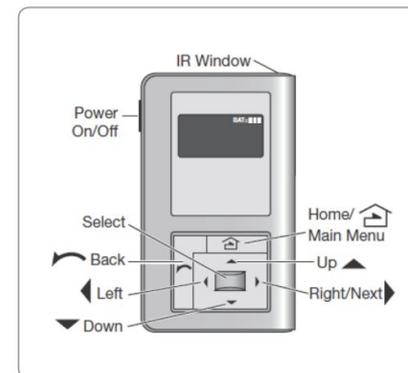
3 – REMOTE CONTROL SYSTEM

The use of a remote controller will **allow to evaluate the current status of the system and to change sensor parameters such as high/low mode, sensitivity, time delay, cut off and more.**

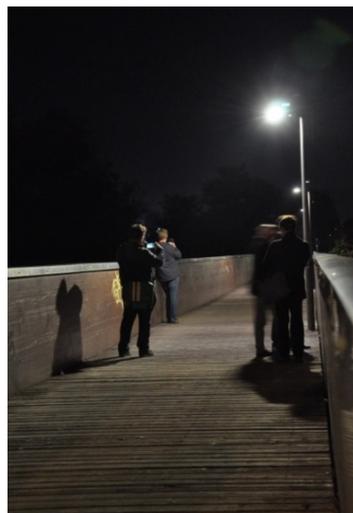
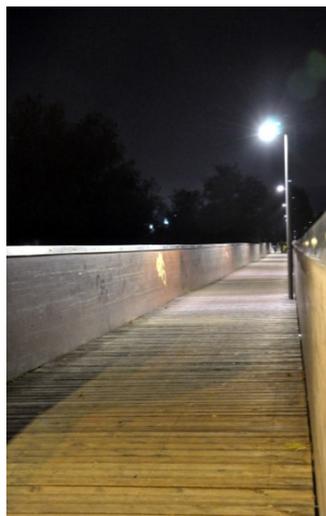
This system will provide a **flexible tool to adjust light output to the activity around each light point** and, moreover, it will allow us **to experiment and validate different dimming profiles.**

Different dimming profiles will be used to understand which one best suits people needs and will focus on the following main issue:

- increasing light levels on pedestrian paths and concrete seatings;
- assuring good horizontal and vertical illuminance;
- creating a comfortable and pleasant atmosphere at night;
- ensuring a safe atmosphere.



OFFICIAL INAUGURATION ON 22TH OCTOBER 2018



4 - LESSONS LEARNT



1 – Merging urban planning, lighting design and social needs

- The designers/technicians learnt how to rethink the future lighting plants taking into account the social aspect and not just the energy saving standard
- Cesena's pilot showed how the dynamic lighting represents a real opportunity to meet the specific social needs of citizens related to public illumination

2 – Social impact of urban light

Even the best lighting plant could not meet people needs if they didn't ask for it

3 – A good practice that can be easily replicated

- **At local level** (12 districts)
- **In other municipalities** (Union of the municipalities of the Savio Valley)



Thank you!

MUNICIPALITY OF CESENA
SERVICE FOR INTEGRATED MUNICIPAL, NATIONAL AND EUROPEAN PROJECTS

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