

# Success story

## Saving water with Smart Irrigation System in Barcelona



# Intro

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Councils and governments are conscious about the significance of improving public areas. Not only to reduce costs, but also to show their commitment with inhabitants and tourists that visit their cities. This is one of the main reasons why **Smart Cities are more than a phenomena**, actually they are a reality and the trend that every public institution wants to follow.



Barcelona, Spain

Barcelona is a great example in the Smart Cities field. With different projects to ease citizens lives, it has become one of the worldwide references of innovative and technological developments. With Barcelona Council and Starlab, Libelium has worked in a smart water **project to control the irrigation system in Poblenou Park Centre**.

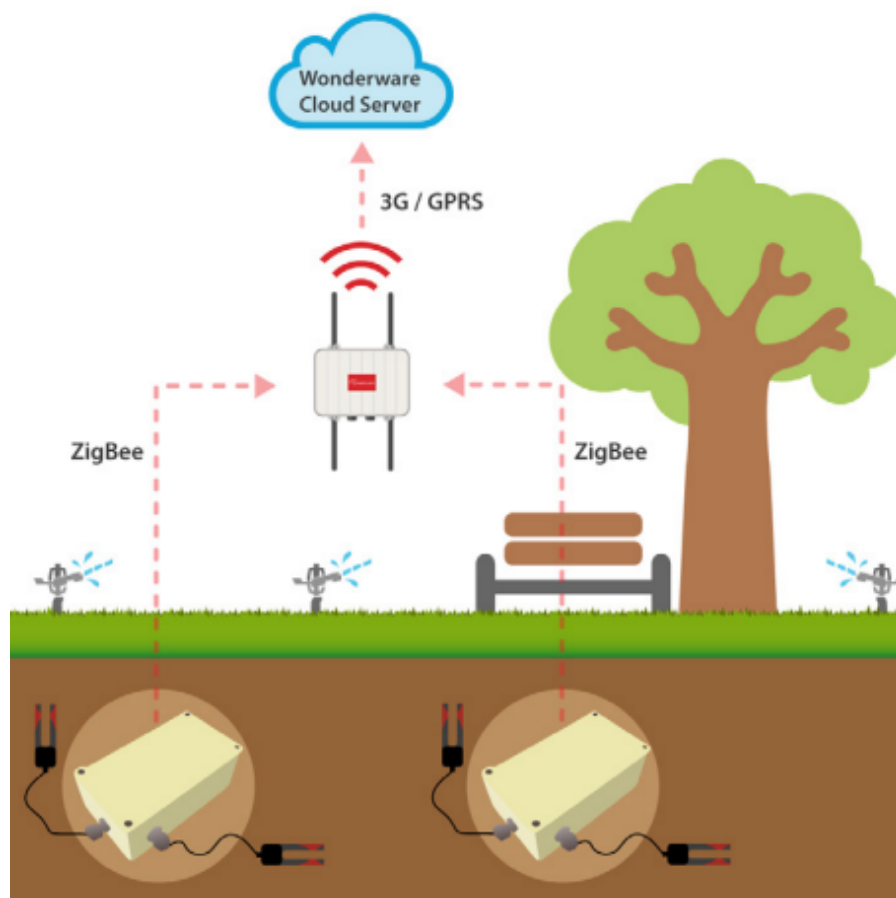
## Irrigation system management with only a click

[Starlab](#), together with other companies, has deployed a remote control irrigation system for Barcelona that will help to reinforce its Smart City status. Starlab's contribution to the service is by soil moisture monitoring with in situ probes that use **Libelium technology**. The deployment is **based on sensors technology and consists in allowing remote control of the irrigation system** to facilitate the management of the water network.

Before starting the project, each zone of the park was studied and analyzed in order to know their specific needs. The [SmartIrrigation](#) system is controlled and monitored thanks to different soil moisture sensors which measure humidity and water flow in strategic points of the area.

The deployed probes datalogger is based on [Wasp mote Sensor Platform](#) with sensors probes from a third party. This fact gives an impression of the versatility of this device. It enables connection with a wide range of sensor probes that does not have to be from the same manufacturer.

In SmartIrrigation project soil moisture probes are located underground together with Wasp mote Sensor Platform, which are put inside waterproof boxes that ensure highly durability. Besides, these devices are powered by a long-life battery with one year autonomy.



Smart Irrigation System

Data gathered by Wasp mote Sensor Platform can be sent to a gateway or directly to the cloud. It can be done through several communication protocols, such as GPRS, 3G, 4G, LoRaWAN, LoRa, Sigfox, 868 MHz, 900MHz, ZigBee, 802.15.4, WiFi, RFID, NFC and Bluetooth 4.0. In this project, **data is sent through ZigBee to Meshlium Gateway**, also provided by Libelium, **and from there to the cloud using 3G**. All the Meshlium installed are located in the gardener huts to facilitate the communications.

The information collected in the Meshlium Gateway can be visualized in a platform which concentrates and allows knowing the state in each zone. Two departments of Barcelona Council, Urban Services and Computing, have worked with [Wonderware](#) to carry out the application which can be **controlled with computers, smartphones and also tablets**.

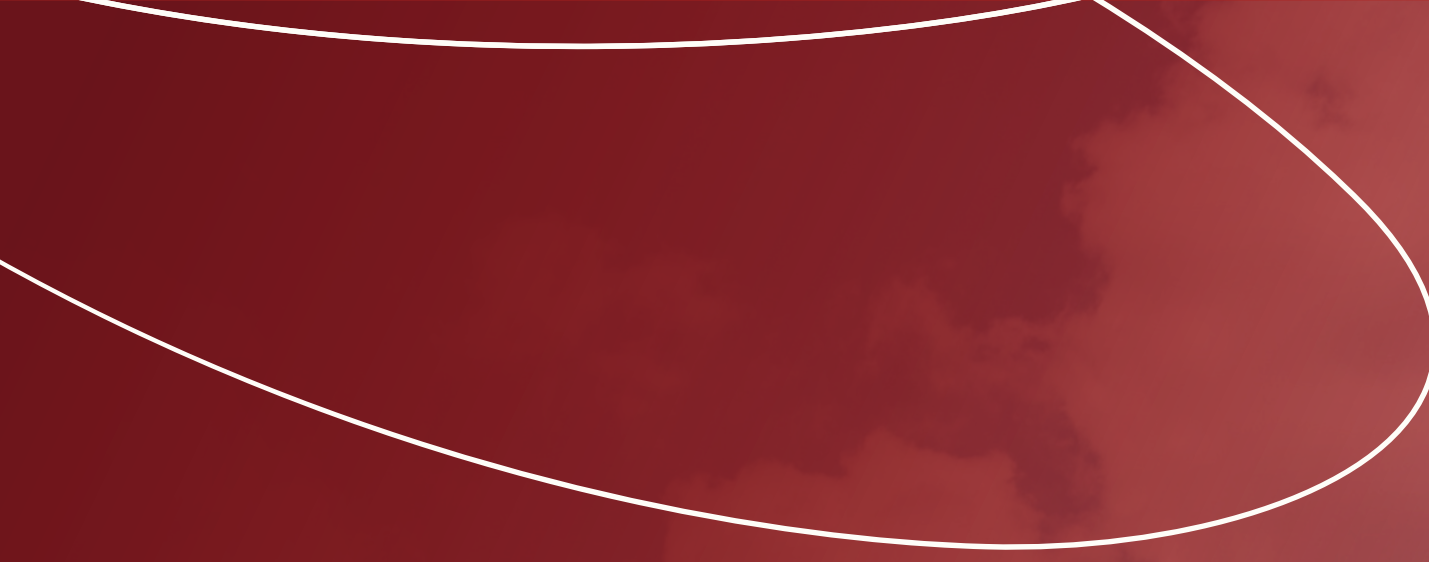


Visualizer developed by Barcelona Council and Wonderware

If you are enjoying nature, sitting on a bench or walking through Poble Nou Park Centre, you will probably see some members of Barcelona Parks staff and Gardeners using tablets. This is not the way how they spend their break times, the tablets are their new work tools. **The new irrigation management system allows an automatic control of the electronic valves that close or open the water flow**

## Cutting down water and money

The Council of Barcelona led this project which is part of Barcelona Smart City project. Cristina Vila, General Manager of Water Cycle in the city, considered the deployment as a great success because “the system optimizes water consumption because it irrigates with the proper amount **according to weather conditions and the plants’ needs**”.



Thanks to this new management system the municipal water bill has been cut down near a 25% in the city. Moreover, this reduction is not just about money, the water usage has been reduced too. Barcelona is saving resources such as water with Internet of Things technology and contributing to enhance the environment too. For gardeners, their daily work tasks has been eased too. Controlling the irrigation system and detecting any incidents that may have occurred can nowadays be checked in real-time.

For more information about our products, contact the [Libelium Sales Department](#).

# More info:

- For technical details on Wasp mote hardware, sensors and how to program a Smart Agriculture application: [Smart Agriculture Board Technical Guide](#)
- Read more about Libelium sensor product lines in the [Wasp mote](#), [Wasp mote Plug & Sense! Sensor Platform](#) and [Meshlium Gateway](#) websites.

# References:

- Starlab: [www.starlab.es](http://www.starlab.es)
- SmartIrrigation: [www.star2earth.com](http://www.star2earth.com)
- Wonderware: [www.creatingsmartcities.es](http://www.creatingsmartcities.es)

# References of the service:

- BCN Smart City: <http://smartcity.bcn.cat/en/telemanaging-irrigation.html>

Discover our [Smart Agriculture Kits](#) at [The IoT Marketplace](#).

More case studies at: <http://www.libelium.com/resources/case-studies>



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