



SMARTSPACES PROJECT

MURCIA CITY COUNCIL



Commitment to reduce energy consumption, water and carbon footprint in municipal facilities.

- **2008: Covenant of Majors Signature. Reduction of Carbon Footprint by 40% by 2020 based on 2007 baseline.**
- **2009: Murcia is awarded as Sustainable City in Spain**
- **2013: Murcia SmartCity. Murcia manages the Energy Smart Cities Group in Spain**
- **2014: Majors Adapt Signature. Climate Change**



Saving Energy in Europe's Public Buildings Using ICT

- **3 years duration (2012-2014)**
- **26 partners from 8 countries**
- **11 pilots sites**
- **More than 550 buildings with almost 20.000 staff users and reaching more than 6 million visitors annually**
- **Overall budget of almost 7 million Euro.**



Murcia is participating in SMARTSPACES project with a selection of 3 public buildings.

- ❑ **among the greatest electricity consumers of the city.**
- ❑ **well known by the citizens and are used by hundreds of people everyday.**
- ❑ **They have great potential of energy saving**



Murcia City Council

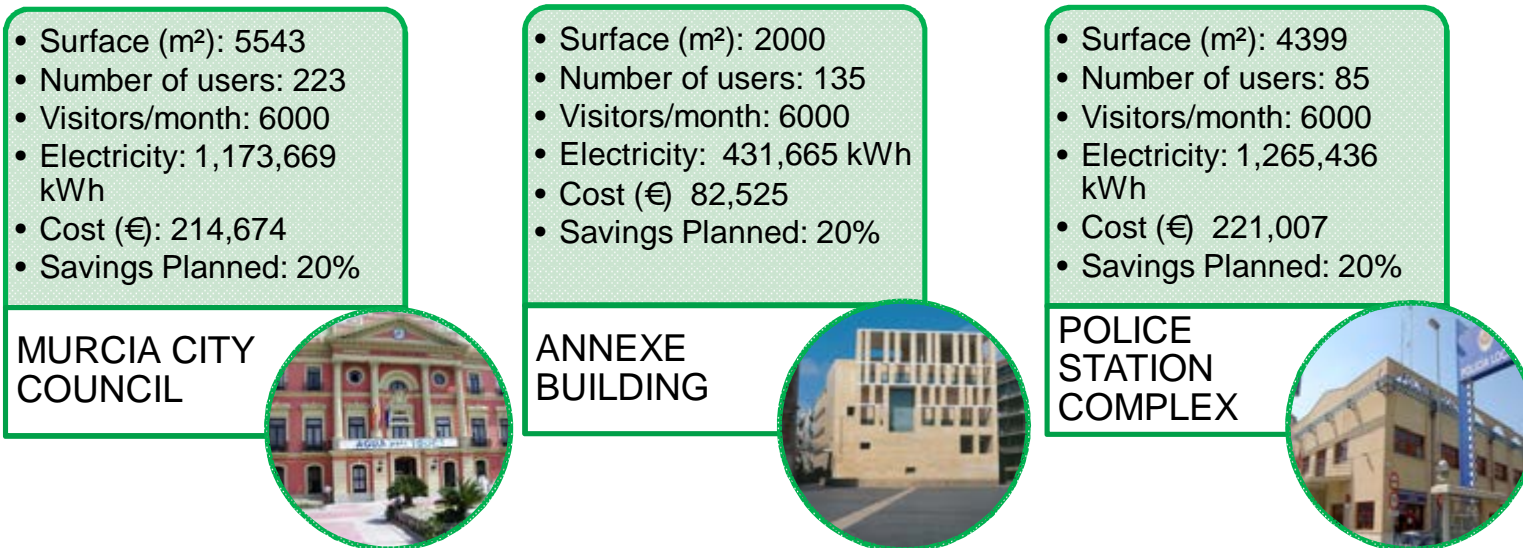


Annex Building



**Security Complex of
Local
Police, Firemen, Traffic
and Civil Protection**

Main goal: 20 % Energy Saving



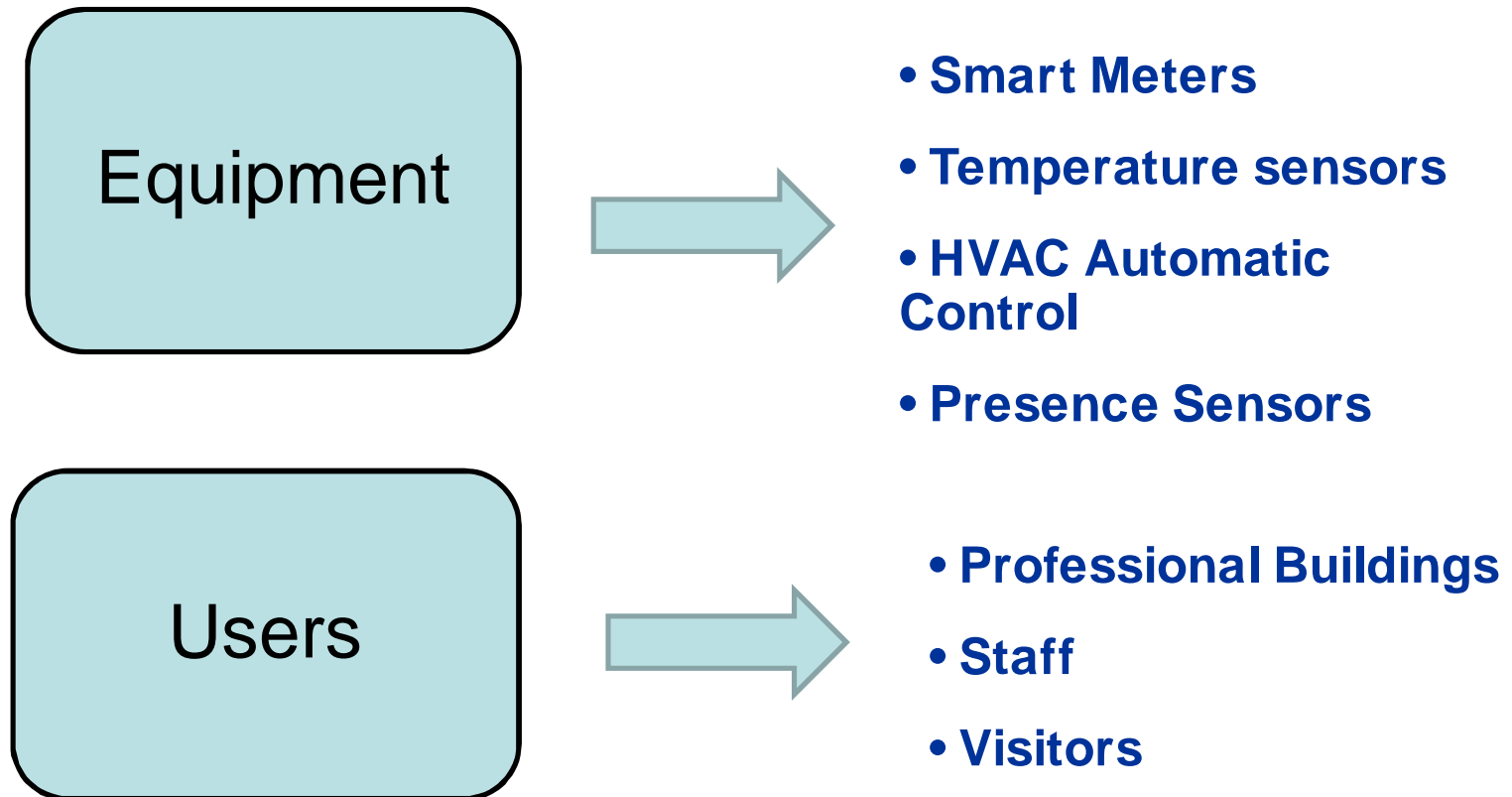
Expected outcomes

Savings: 103.641,20 €/year

Energy savings: 574.154,00 Kwh/year

Reduction in emissions: 269.852,38 KgCO₂/year

How to save Energy?



Energy Management System (EMS)



- **Control Climatización**
- **Program and receive alerts**
- **Adressed to professionals**
- **ALEM coordination**

Energy Decision Support (EDS)



- **Influence to Energy Behaviour**
- **Adressed to staff**
- **ALEM coordination**

The implemented system allows us to fulfil with the following tasks:

- ❑ **Collect Real time data of electric consumption** in all buildings. That information can be served via web portal or visually in the dashboard of the device installed in consumers spots.
- ❑ **Program and receive alerts** in sms or email of malfunctions, excess of electric consumption, alterations in the electric consumption habits, etc.
- ❑ **Analyse and compare** energy consumption in different parts of the buildings or different periods of time.
- ❑ Introduce current electricity supplier tariffs in order to **forecast monthly electricity bill**.
- ❑ Provide the **council website** with information of **real time energy consumption** of all buildings site.
- ❑ Program monthly or **weekly reports** about energy consumption and send them via email to building professionals.

Equipment Installed



Temperature meter



Intelligent Central device "CENTI"

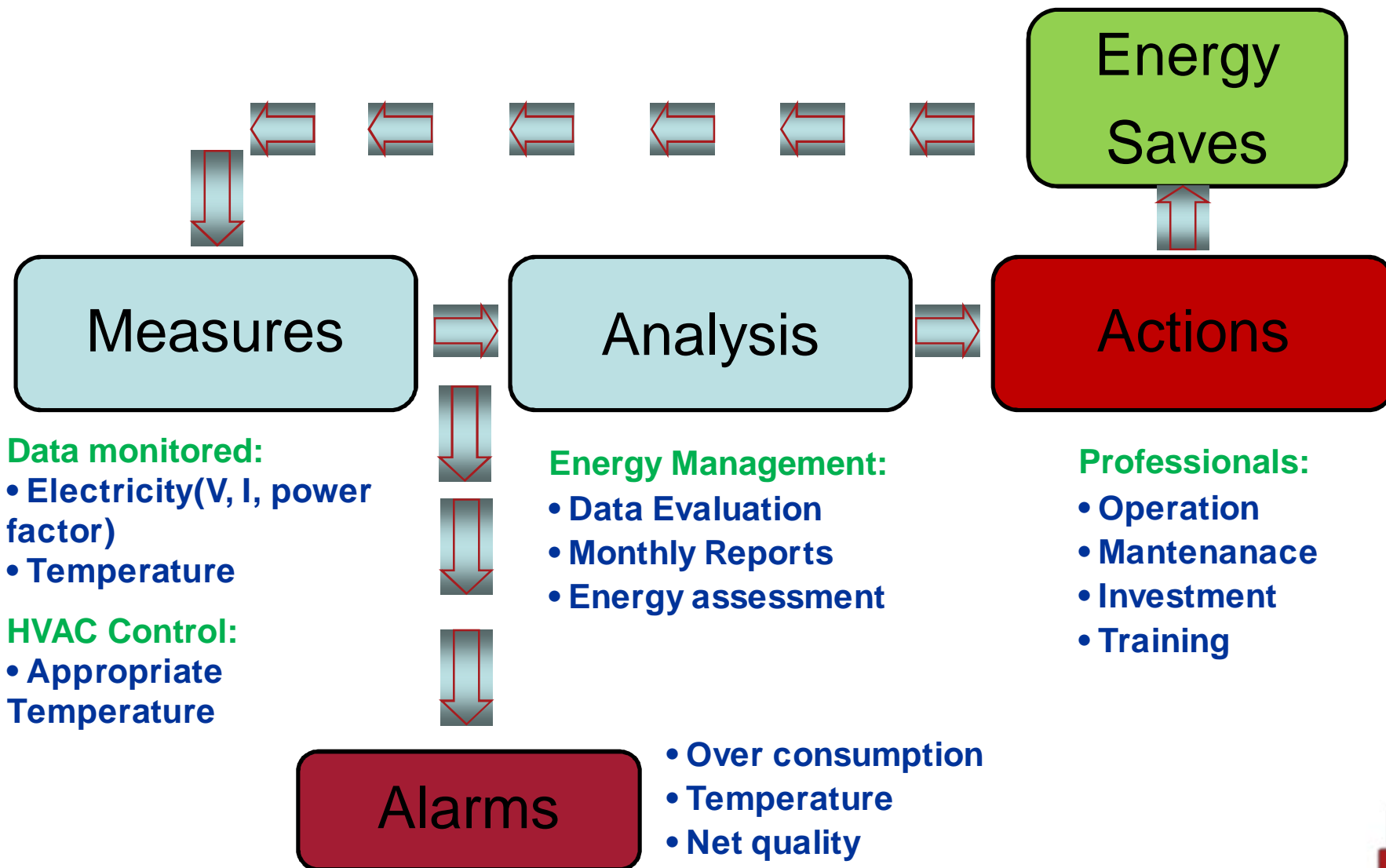


Signal Amplifier



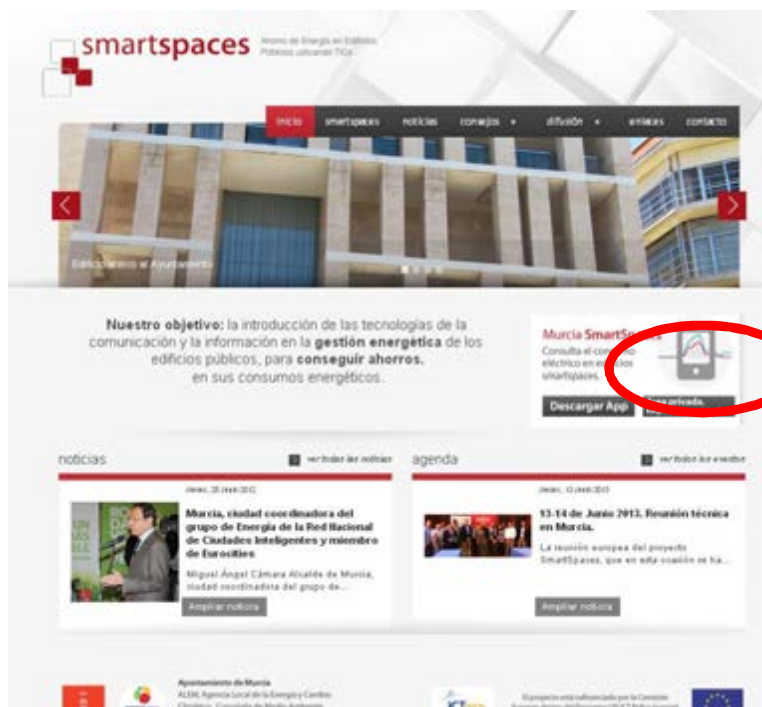
Metering Module

	Metering Module	Temperature meter
City Council	17	12
Annex	11	5
Secuirity Complex	9	29
TOTAL	37	46

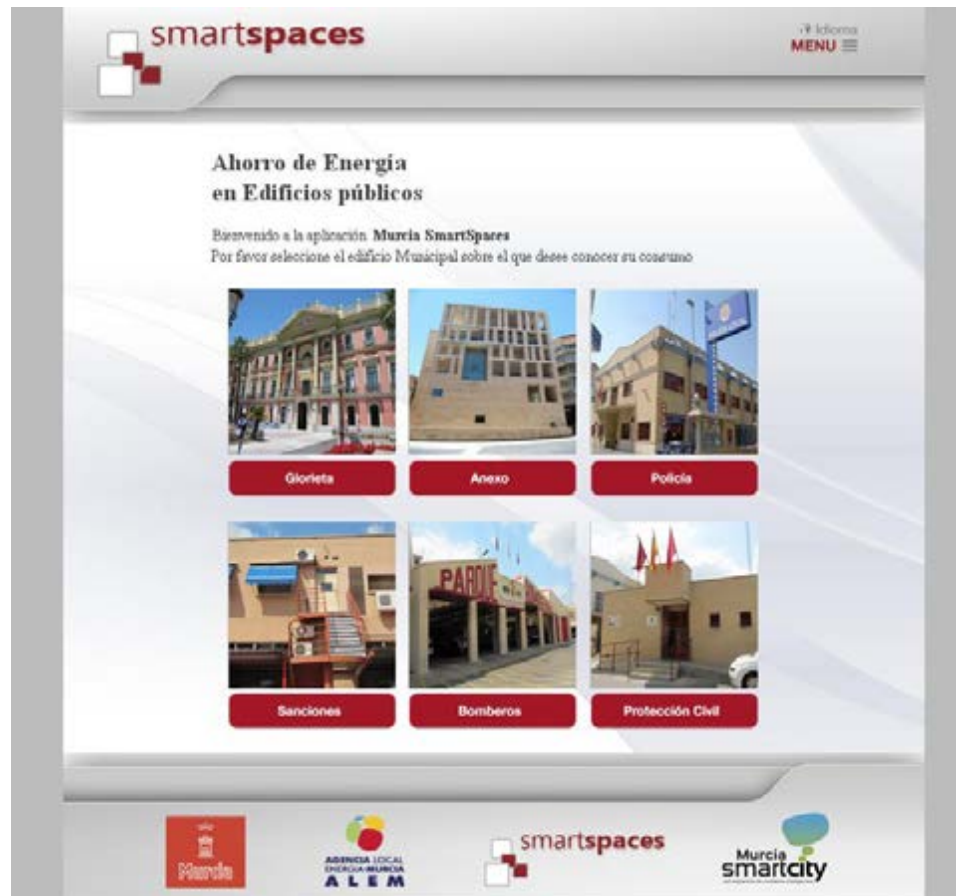


SmartSpaces Web Application

- URL: <http://smartspaces.energiamurcia.es>



External Application

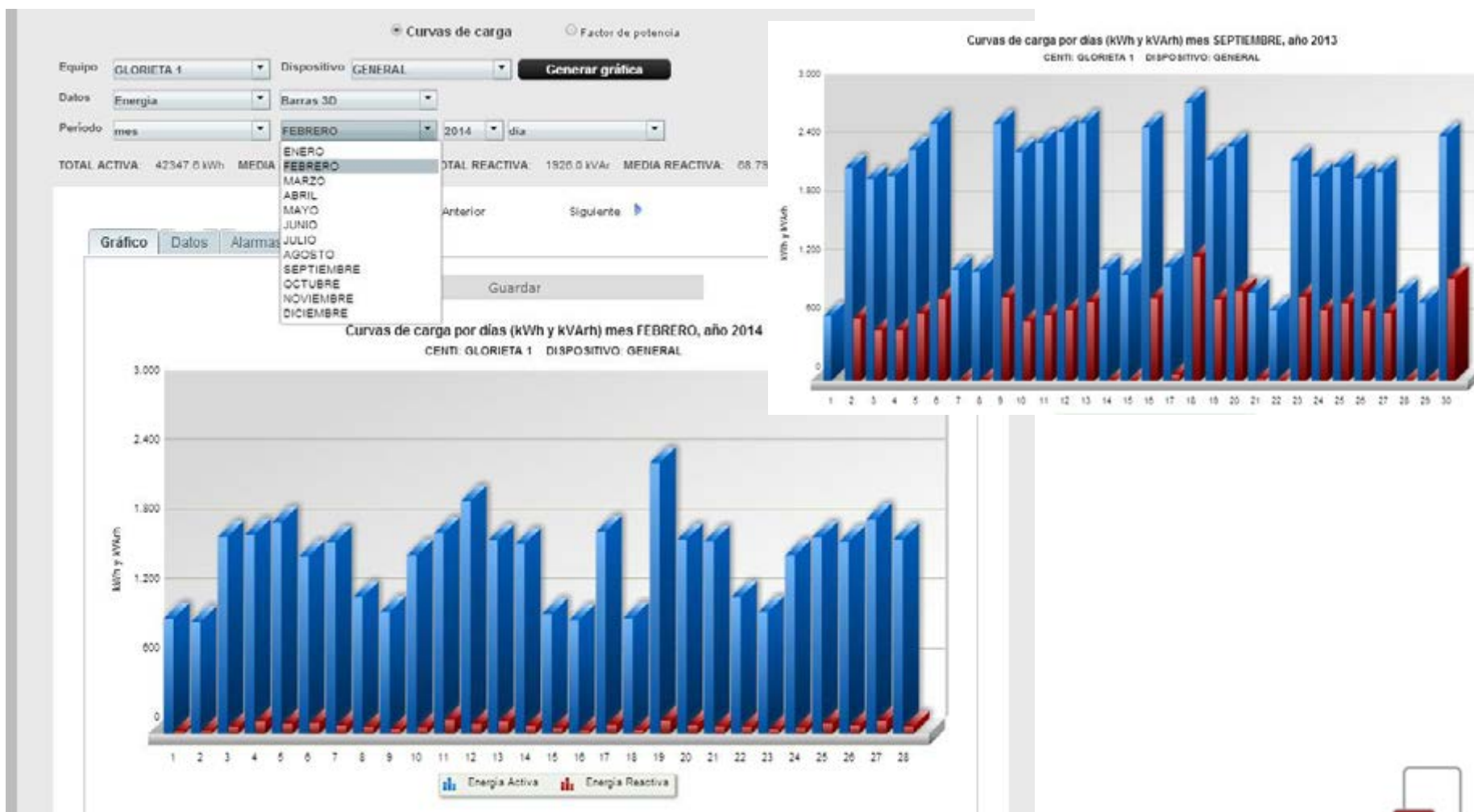


Visitors

Open to all citizens

**Transparent Municipal
consumption data**

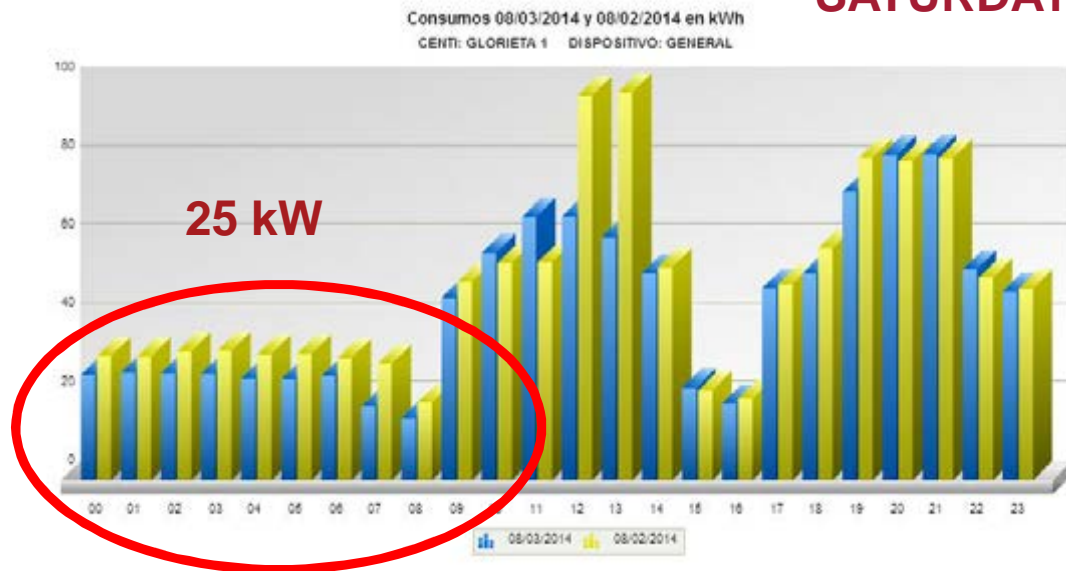
Visualization-Data





Consumption Benchmarking

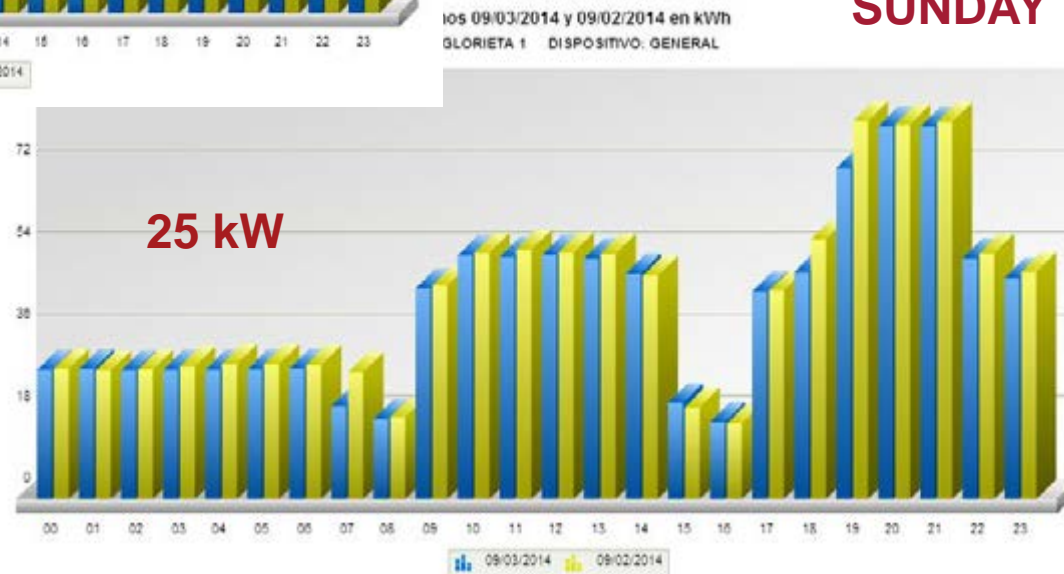
SATURDAY



MURCIA CITY COUNCIL

- Night consumption (00h -08h): 25-30 kWh
- Year figures: 78.840 kWh / 13.000 €

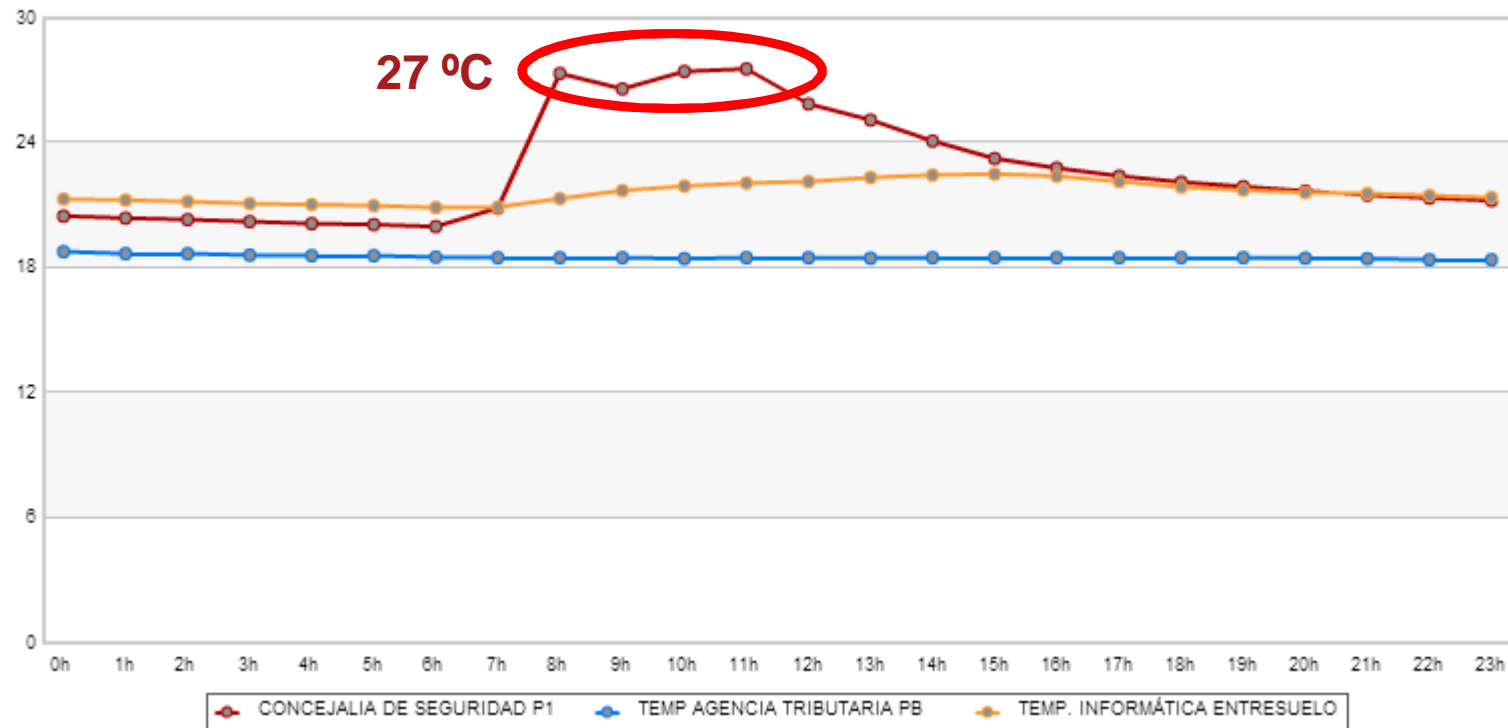
SUNDAY





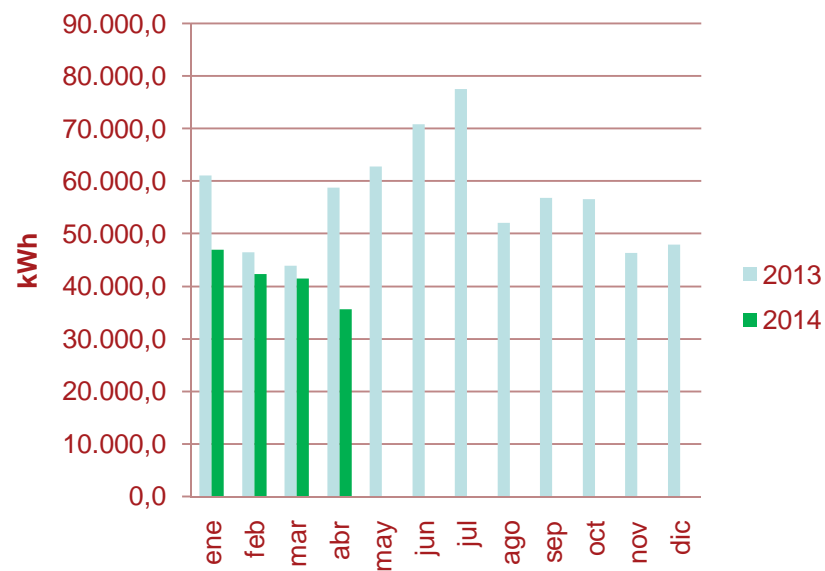
Temperatures Benchmarking

Comparativa temperaturas: día 11, mes FEBRERO, año 2014
CENTI: GLORIETA 1

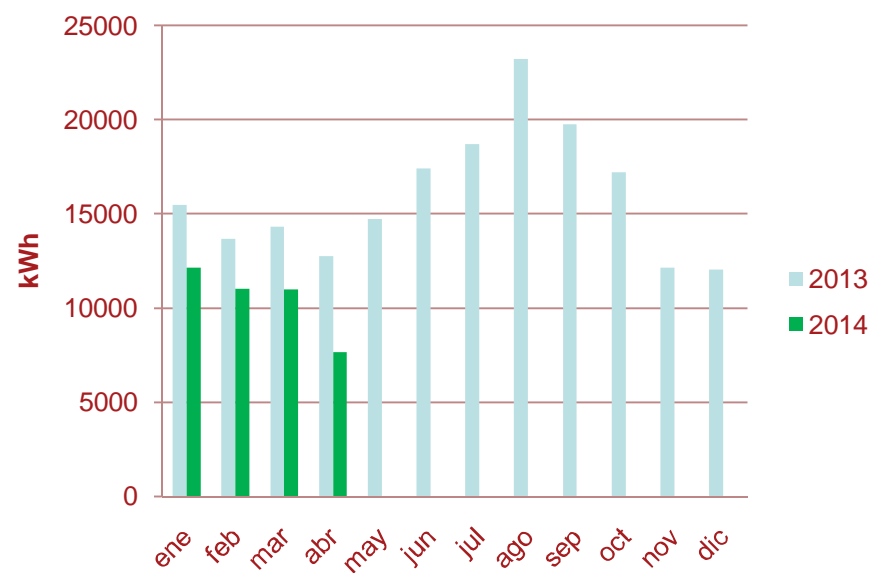


WINTER-WORKING DAY

Glorieta



Anexo



Energy Reduction

Staff Training

- ❑ 1 hour duration
- ❑ Small groups of 4-8 people
- ❑ 10 workshops held, including staff, building professionals and politicians
- ❑ Passwords
- ❑ Distribution of merchandising for attendance staff to training (ej. Coffee Mug with logo)
- ❑ Training workshops continue during 2014





STICKERS

- To remember best practices at consumption points



ENERGY ASSESSMENT

- SmartSpaces Web Site



BROCHURES, FLYERS



ENERGY DECALOGUE

Raising Awareness Campaign

Energy Saving Stickers: PC, scanner, printer, light switches



2012-2013	Publications	Events
Murcia	20	15

