

Press Note of Ponent School (cRRescendo Building) "CEIP Ponent"

On September 2012, 300 students started classes in the New Primary School Ponent, on the West District of Viladecans City. New generation smart devices and energy systems make the school as the first "Smart School" in the municipality. Light sensors, digital blackboards, fibre optic cable or photovoltaic panels for energy self-consumption are some of the elements that this building has, becoming a model for other equipments in the city.

The school has the maximum building certification in terms of energy efficiency awarded by ICAEN (Catalan Institute of Energy), in addition to modern lighting and heating systems and other "smart" devices that make energy performance very high.

A Certification

In total, it has 394 solar photovoltaic panels distributed in 650 m² that produce 125.000 kWh (equivalent to 60 dwelling) and that serve for self-consumption. Specifically, it allows covering 70% of total annual consumption of the school with "green" energy. In addition, all the lighting includes low consumption light bulbs and fluorescent lighting and rooms and toilets have presence sensors for saving energy.

Regarding class rooms, sensors detect light intensity coming from windows and adapt the intensity of fluorescent or bulb lights to that. In the toilets there are presence sensors to make the light on or off automatically depending on the presence of people.

High Performance Heating and Cooling

Regarding heating, there is a high efficiency condensing boiler able to use calorific power from generated water vapour having a better performance. In addition, all radiators are automatically regulated by thermostatic valves.

Ventilation system is designed in order to recover 50% of energy from the air going out from the classrooms. So, hot air coming from classrooms is mixed with outside air so less energy is needed for heating it.

In addition to solar photovoltaic panels for producing electricity, 9 solar thermal panels heat sanitary water meaning 60% of energy saving.

Building design has been made with energy efficiency criteria such as ventilated walls and cover, low emission windows with air thickness, thermal bridge breaking, passive solar protection, among others.

Building materials and equipments accomplish with all the actual rules and norms. The annual energy consumption is calculated to be 608.059 kWh/year, meaning 124 kWh/m². The annual CO₂ emissions are calculated to be 51.560 kgCO₂/year, meaning 10 kgCO₂/m².

A new managing model

Ponent School is an energy management testing model for other equipments in the city. Nowadays, the city is working in installing an online managing system of energy consumption for all the municipal buildings that will allow making an on-time following of all energy flows for each building or area in order to set up corrective actions, managing energy demand regarding those results, accumulate energy and reusing it.

W!SCHOOL with digital blackboards and fibre optic cable

Ponent school has interactive digital blackboards in the frame of W!School project set up by the Municipality on 2010 (www.wiladecans.cat/W-ESCOLA.51.0.html) for installing those kind of tools in primary schools in the city. In addition, it is planned to install 100MB fibre optic cable in all the schools that will optimise educative potentials of digital blackboards around the city.

The inauguration has been possible thanks to the investment made by the City Council (6,5 M€) two years ago as an advance of the investment to be done by Catalonia Regional Government.

CEIP Ponent is one of the biggest schools in the city; it can host 3 groups per course. It has 4.987,60 m² of built surface and 8.000 m² of plot, having ground floor and two more floors where 40 classrooms are distributed, one gym with changing rooms, dining hall with kitchen, one library and a room for Parents Association. The schoolyard has separated spaces for younger and older students.

Smart Cities World Congress

The CEIP Ponent School will be presented as a case study by Viladecans Municipality in the "Smart City Expo World Congress" in Barcelona on 13th to 15th November 2012.

www.smartcityexpo.com

www.smartcityviladecans.com