Energy monitoring of housing

"What can be measured, can be improved." William Thomson Kelvin

Energy monitoring systems in housing are the ideal resource to understand **energy consumption**, making them an effective tool for detecting possible improvements. Through independent equipment with meters to measure consumption, exterior weather conditions and interior conditions, excessive energy consumption can be detected and some recommendations given to promote more effective energy savings.

The development already has the maximum Energy Efficiency Certifications AA and the objective of the monitoring is to confirm the best energy efficiency, lower energy consumption and lower level of greenhouse gas emissions (GHGs) into the atmosphere.

Procedure

The planned installations consume two kinds of energy, electrical and gas:

- An individual, natural gas, mixed boiler for heating either using aluminium-panelled radiators with thermostat valves or underfloor heating, depending on the chosen building.
- An **individual, hot-cold electrical installation** using a system of pipes in dropped ceilings and emission grilles.
- A community solar panel installation on the roof to produce domestic hot water (DHW) and support the production of the individual mixed boiler located inside the housing.

Measurement of the following is planned:

- The electrical power consumed, measured directly from the electrical panel
- The thermal power consumed, measured directly from the gas boiler, independently obtaining the thermal consumption of the heating and that of the DHW.
- Finally, the **energy generated for the DHW** by the solar panel installation can be monitored using a solar control unit.



Energy monitoring of housing Passer Benet Cortada building. Sant Cugat del Vallès

The data obtained will be sent to the cloud and, from there, each user will be able to view their electrical and thermal consumption using **a smartphone app.**



Advantages

Measurements will be taken for approximately 2 years in properties that have given their express consent to the study.

At the end of this period, the energy analysis team will draw up and deliver, at no cost, a personalised report for each of the properties, which will report on the energy consumption parameters of the property and will include advice for more responsible energy consumption. Under no circumstances will be the study show personalised data.

During the 2-year duration of the study, Culmia **will cover the maintenance costs for the boiler**. This maintenance includes the obligatory annual revision of the installation (RITE, in Spanish) and the 6-month guarantee for any repair, movement, labour and spare parts.

Necessary requirements

The property must have a Wi-Fi router to send the data to the cloud and for them to be transmitted to the individual app and viewed by the energy analysis team.

Likewise, express consent will be essential to enjoy the aforementioned advantages by signing the document "Passer Building energy consumption analysis consent. Sant Cugat del Vallés"

