



BIPV

TECNALIA

KUBIK: Full scale test facility BIPV components characterisation under real conditions of use

Location of the infrastructure: Derio, Spain

Contact person: Inés Apraiz

Phone : +34 946 430 850

E-mail : ines.apraiz@tecnalia.com

Objectives: Development of new concepts, products and services to improve energy efficiency in buildings.

Main features :



KUBIK, is an experimental facility for R&D that provides an experimental, adaptable and reconfigurable building to build realistic scenarios to analyse the energy efficiency obtained from the holistic interaction of the constructive solution for the envelope, the intelligent management of the HVAC and lighting systems and the supply from renewable energy. It allows the assembly of the constructive solutions for the envelope and management of the energy supply (conventional and renewable energy sources) with special emphasis on the electricity (Photovoltaic technology) and thermal generation.

Limitations or constraints:

KUBIK can integrate all type of elements that are commonly used in construction, not only architectural but also thermal generation and storage equipment (thermal energy, solar cooling equipment,...) electricity generation and storage solutions as well as BMS and/or building automation concept.

Typical services or results:

- Possibility of using the building as a test laboratory under real conditions.
- Total monitoring to analyze each one of the BIPV elements from the point of view of comfort and thermal/energetic behaviour.
- Possibility to test energy storage systems in combination with Photovoltaics (batteries, super-capacitors, flywheels).
- Analysis of the energy control systems,
- Study energy efficiency arising from the interaction between the constructive solutions for the building envelopes under real conditions, with IMS
- Evaluation of the energy/thermal performance of buildings through simulation
- Evaluation of ventilation control strategies.

Examples of research projects:

- SPORTE2: Energy Efficiency for European Sport Facilities
- EnRiMa: Energy Efficiency and Risk Management in Public Buildings
- AEROCOINS: AEROgel-based Composite/hybrid nanomaterials for cost-effective building super-INSulation systems
- FIEMSER: Friendly Intelligent Energy Management System for Existing Residential Buildings
- TeACH: Technologies and tools to prioritize assessment and diagnosis of air pollution impact on immovable and movable cultural heritage.