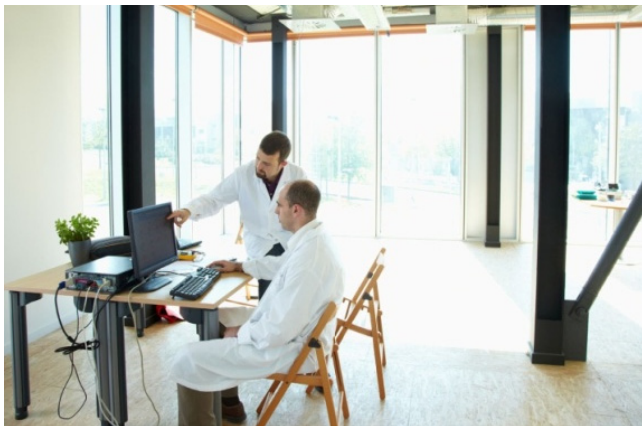


**KUBIK** by tecnalia

# Experimental Infrastructure for the Configuration of Zero Energy Buildings



## KUBIK by tecnalia

KUBIK - a unique experimental installation for R&D&i aimed at the **development of new concepts, products, and services for the improvement of Energetic Efficiency in Building.**

KUBIK supports the implementation of **Zero Energy Buildings** in new works and rehabilitation.

KUBIK investigates **Energetic Efficiency** resulting from the interaction of constructive solutions for the envelope, the intelligent management of climatization and lighting systems, and the supply of energy from renewable and conventional sources.

KUBIK generates realistic scenarios with varied uses: residential, services sector, sports complexes, educational...

KUBIK is a tool for the development of new products that aims to transform a mature sector, i.e. the Construction sector, into an innovative sector, through two fundamental vectors:

- **Sustainability**, laying special stress on the development of products and systems for the improvement of energetic efficiency in the sector.
- **Industrialization**, through support for new industrialized construction concepts and the development of innovative products.

The KUBIK by tecnalia brand name experimentally endorses the market launch of new sustainable industrial solutions.



## MAIN CHARACTERISTICS

The infrastructure consists of a **building able to reconfigure** a maximum of 500 m<sup>2</sup> distributed over a basement and as many as three storeys above ground level.

The supply of energy is based on a combination of **renewable energies** (geothermic, solar, wind power) **and if necessary conventional energy.**

KUBIK is equipped with a system of **monitoring and control** that provides the necessary information for the development of R&D&i activities: it has an advanced monitoring system with over 800 sensors that record interior and exterior conditions of the experimental installation and inside the architectural systems.

Clients have access **via Internet** to the measures as they are applied to the scenarios that are studied.

## INNOVATIVE ASPECTS

Kubik by tecnalia is a unique **“full-scale”** infrastructure\*, completely deconstructable and reconfigurable at three levels: structural, envelope and energetic supply.

## COMPETITIVE ADVANTAGE

Kubik contributes to the creation of **new business opportunities** in the framework of the energetic efficiency of products/ systems and buildings.

## POTENTIAL APPLICATIONS

- **“Full-scale”** experimental development and/or validation and under real working conditions of the energetic efficiency of:
  - Facade, window and shading systems
  - Roofing systems
  - Climatization and lighting systems
  - Building energy management and control systems
  - Renewable energy systems (geothermic, photovoltaic, wind power)
- Experimental design and validation of ventilation systems for **the improvement of comfort and air quality** in buildings.
- **“Full-scale”** experimental development and validation of the acoustic behaviour of architectural elements.
- **Thermal-acoustic experimentation** with new scenarios for different types of residential and service buildings.
- “Full-scale” experimental optimization/validation of the correct functioning of architectural products and systems under real working conditions, **before their launch on the market.**



## DEVELOPED TECHNOLOGY

Combination of monitoring / mathematical simulation / testing of **energy efficiency and acoustic** products / systems and buildings.

*(\*) TECNALIA is a partner in the European RIEEB project (Research Infrastructure on Energy Efficiency in Buildings) that may provide the foundation for the creation of the European network of Experimental Buildings for Energy in Building.*

### Contact Info:

Inés Apraiz  
ines.apraiz@tecnalia.com  
T +34 943 105 300

**TECNALIA** is a private applied research centre with the necessary human resources to generate technological knowledge. A combination of technology, tenacity, efficiency, courage and imagination.

TECNALIA has over 1.500 expert staff working together towards a common goal: generating business opportunities through applied research.

### TECNALIA

Parque Tecnológico de San Sebastián  
Mikeletegi Pasealekua, 2  
E-20009 Donostia-San Sebastián (Spain)  
T 902 760 000  
T +34 946 430 850 (International calls)  
[www.tecnalia.com](http://www.tecnalia.com)