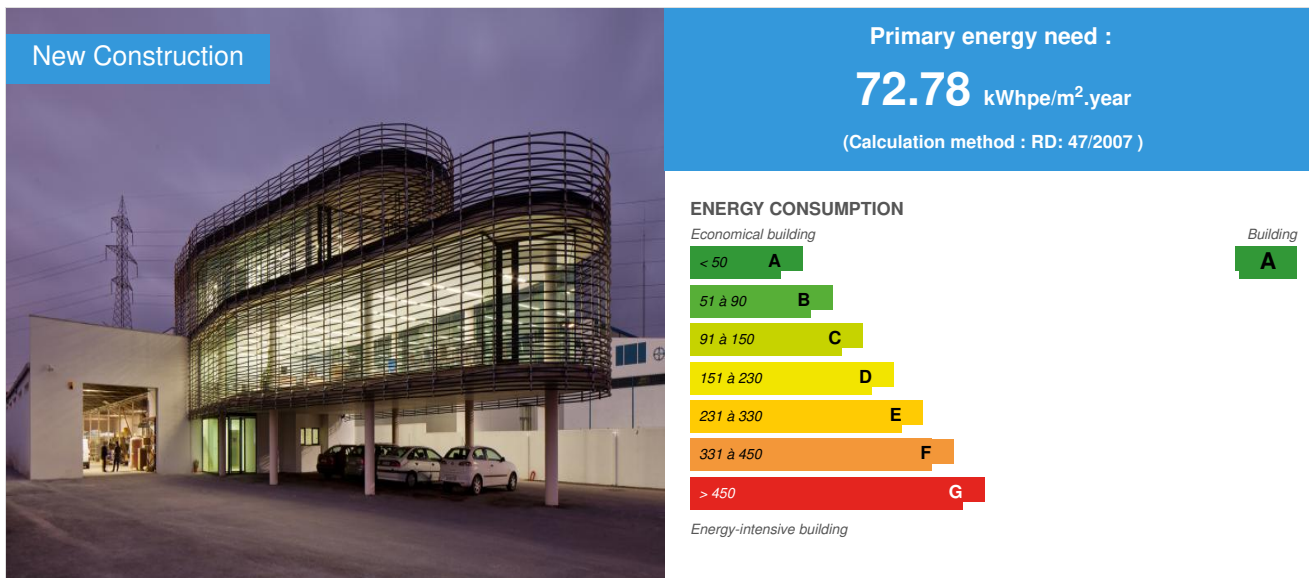


## New head office of Fojansa Installations

by Juan Beldarrain / 2012-11-29 17:39:54 / España / 7861 / ES



**Building Type** : Office building < 28m

**Construction Year** : 2011

**Delivery year** :

**Address 1 - street** : Capelamendi nº 5 01013 VITORIA-GASTEIZ, España

**Climate zone** : [Csa] Interior Mediterranean - Mild with dry, hot summer.

**Net Floor Area** : 380 m<sup>2</sup> Superficie útil

**Construction/refurbishment cost** : 391 170 €

**Cost/m2** : 1029.39 €/m<sup>2</sup>

### General information

Fojansa is a company with a 15-year experience in installations of plumbing, heating and air-conditioning systems that is committing itself strongly in the field of renewable energy research. For the design of its offices, it has engaged Beldarrain studio, expert in sustainable architecture, with the intention that its new corporate image may transmit, on the one hand, its innovation purpose and, on the other hand, its environmental concern. To this end, they have adopted a clear and categorical building strategy, the power of which, as concerns image, is doubtless in spite of using very cheap materials. A new body of offices, with an apparently elliptical shape, has been constructed fitting it in the former nave, leaning towards the street façade as much as allowed by the city regulations. So doing, the new body has become the protagonist of the new corporate image at the industrial development. A thick skin made of black polyethylene pipes intertwined together as if composing a wicker basket, endows the new office body with an object-like and abstract character that contrasts with the old nave. Its rounded shape evokes, maybe, organic rather than architectonic shapes, enhancing the proposal and thus standing out in the environment of the industrial development. The above-mentioned skin of intertwined pipes forms a dense lattice that protects the glass panes from the summer sun. But this thick skin, that draws the attention of the passers-by, makes the building itself become an object of research in the field of renewable energies and of energetic efficiency. It constitutes a peculiar sun collector and energy exchanger that, combined with an 8-pit geothermic collector, pretends to reduce to a minimum the energetic consumption of the building. With the incorporation to the project of photovoltaic panels on the roof deck of the existing naves, a building with positive energetic balance is achieved.

### Data reliability

Self-declared

### Stakeholders

Function : Developer

Instalaciones Fojansa

<http://www.fojansa.com/>

Function : Designer

Estudio Beldarrain

Juan Beldarrain

<http://www.beldarrain.com>

### Contracting method

Off-plan

### Owner approach of sustainability

When it comes to approaching the construction of its new head office, Instalaciones Fojansa knows clearly that it wants to transmit two messages, one is the innovation will and the other one its environmental concern. This is why the building is conceived as one that produces more energy than it consumes. These two purposes are reflected in the implementation of systems having duly-tested energetic efficiency such as geothermic energy and photovoltaic panels together with a more innovative system such as the use of the façade as an energy source.

### Architectural description

The building programme was the usual basic one for a company's head office: office space, meeting room and some closed offices. When it came to designing the office, some basic concepts of sustainable design for this type of buildings were used, .- spaces with lots of natural illumination .- good orientation of the building .- cross ventilation

## Energy

### Energy consumption

CEEB : 0.0004

Primary energy need : 72,78 kWhpe/m<sup>2</sup>.year

Primary energy need for standard building : 214,03 kWhpe/m<sup>2</sup>.year

Calculation method : RD: 47/2007

Final Energy : 27,96 kWhfe/m<sup>2</sup>.year

### Envelope performance

Envelope U-Value : 1,30 W.m<sup>-2</sup>.K<sup>-1</sup>

More information :

STOPLUX glazing

Indicator : HE1 BD

Air Tightness Value : 27,00

## Renewables & systems

### Systems

Heating system :

- Geothermal heat pump
- Low temperature floor heating
- Solar thermal

Cooling system :

- Reversible heat pump
- VAV Syst. (Variable Air Volume system)

#### Ventilation system :

- Natural ventilation

#### Renewable systems :

- Solar photovoltaic
- Heat pump (geothermal)
- Other, specify

## Environment

### GHG emissions

GHG in use : 24,97 KgCO<sub>2</sub>/m<sup>2</sup>/year

Methodology used :

CALENER

## Products

### Product

Mangueras de polietileno (polyethylene pipes)

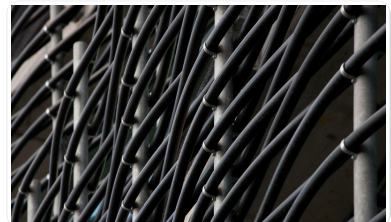
Product category : Obras estructurales / Estructura - Albañilería - Fachada

The three main objectives intended through this façade are:

- In the first place, to assess if it is possible to use the façade acting as a second skin so as to mitigate the air temperature that gets in contact with the main façade. That is, to create an intermediate microclimate between the exterior and the interior, and to calculate the energetic savings this may entail.

- - In the second place, to evaluate the use of the hydraulic circuit that constitutes our external façade in order to gain and dissipate heat depending on the different seasons of the year, and to increase the energetic output of the water-water heat pump in combination with geothermia. The machine that has been chosen has high values of energetic efficiency in partial charges thanks to the optimization of heat exchangers.

- The third objective is to evaluate the exploitation of the solar radiation, which is caught through the façade and stored in a hot water tank, for heating the offices by means of a radiant floor.



### Land plot area

Land plot area : 3 986,00 m<sup>2</sup>

### Built-up area

Built-up area : 53,00 %

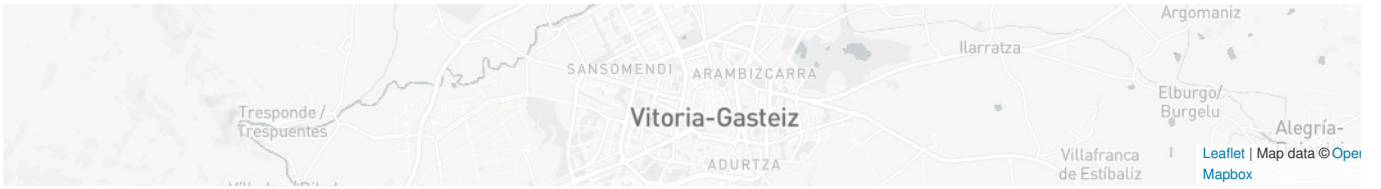
### Green space

Green space : 2,00

### Parking spaces

Surface parking, with 12 parking places, 5 of them under the building to prevent the cars from heating with the sun.





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