


## Passive House Farhaus AF1

by [Micheel Wassouf](#) / 2013-02-04 11:41:45 / España / 13235 / ES

New Construction



Primary energy need :  
**107** kWhpe/m<sup>2</sup>.year  
(Calculation method : Primary energy needs)

**ENERGY CONSUMPTION**

<i>Economical building</i>		<i>Building</i>
< 50	<b>A</b>	<b>A</b>
51 à 90	<b>B</b>	
91 à 150	<b>C</b>	
151 à 230	<b>D</b>	
231 à 330	<b>E</b>	
331 à 450	<b>F</b>	
> 450	<b>G</b>	
<i>Energy-intensive building</i>		

**Building Type** : Isolated or semi-detached house  
**Construction Year** : 2012  
**Delivery year** : 2012  
**Address 1 - street** : C/Moià 168 08183 CASTELLTERÇOL, España  
**Climate zone** :

**Net Floor Area** : 125 m<sup>2</sup> Superficie útil  
**Construction/refurbishment cost** : 150 000 €  
**Cost/m2** : 1200 €/m<sup>2</sup>

**Certifications** :



### General information

Detached family house in Castellterçol, a village 45kms in the north of Barcelona. The house has been built following the "Passivhaus standard", and is actually in certification process (02/2013). The heating demand is 13kwh/m2&year (with PHPP) which is 6 times less than the actual Spanish energy standard (CTE). The summer confort is reached without air conditioning. The overheating frequency (reference 25°C) meets the confort criteria established by international norm ISO-EN-7730.

[See more details about this project](#)

<http://www.energiehaus.es/index.php/consultoria/consultoria-estandar-passivhaus/ejemplos-passivhaus>

## Data reliability

3rd part certified

## Stakeholders

### Stakeholders

**Function :** Construction Manager

FARHAUS

Albert Fargas

<http://www.farhaus.com>

**Function :** Other consultancy agency

ENERGIEHAUS scp

Micheel Wassouf-Barcelona, info@energiehaus.es

<http://energiehaus.es>

**Function :** Designer

Fargas Arquitectes FGFRM slp (Jordi Fargas Soler, Marc Romero Puente, Jordi Grané Font i Josep Pratdesaba Fagas)

Calle Lepant, 7 08242 Manresa / Tel. 938770565 / e-mail. fgfr@fgfr.cat

<http://www.fgfr.cat>

### Contracting method

Other methods

### Owner approach of sustainability

Farhaus is an enterprise dedicated to build homes following the highest environmental and confort requests.

### Architectural description

Simple and modest architecture, prioritizing solar gains and compacity of the building.

### If you had to do it again?

Begin the energy development from the first planification.

### Building users opinion

The users are very happy and comfortable with the building.

The building is actually being monitorised to compare with PHPP results.

## Energy

### Energy consumption

**Primary energy need :** 107,00 kWhpe/m<sup>2</sup>.year

**Primary energy need for standard building :** 264,00 kWhpe/m<sup>2</sup>.year

**Calculation method :** Primary energy needs

**Final Energy :** 41,00 kWhfe/m<sup>2</sup>.year

**Breakdown for energy consumption :**

Heating: 7,7kWh/m2a

Sanitary water: 17,3kWh/m2a

Appliances: 12,6kWh/m2a

Auxiliar energy (ventilation included): 3,8kWh/m2a

**More information :**

Building actually in monitoring phase.

## Envelope performance

Envelope U-Value : 0,13 W.m<sup>-2</sup>.K<sup>-1</sup>

More information :

All materials of the thermal envelope (except foundations) are from vegetal or reused materials such as wood or paper.

Building Compactness Coefficient : 0,31

Indicator : n50

Air Tightness Value : 0,61

## Renewables & systems

### Systems

Heating system :

- Heat pump

Hot water system :

- Heat pump

Cooling system :

- No cooling system

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- Other, specify

## Environment

### GHG emissions

GHG in use : 28,10 KgCO<sub>2</sub>/m<sup>2</sup>/year

Methodology used :

PHPP - Passive House Design Package

### Life Cycle Analysis

Eco-design material : All materials used are from vegetal or reused materials such as wood or paper. Strong timber frame spruce structure.

### Indoor Air quality

The CO<sub>2</sub> concentration is actually measured with a Wöhler-CO<sub>2</sub> data logger. The CO<sub>2</sub> level does not exceed 1000ppm.

## Products

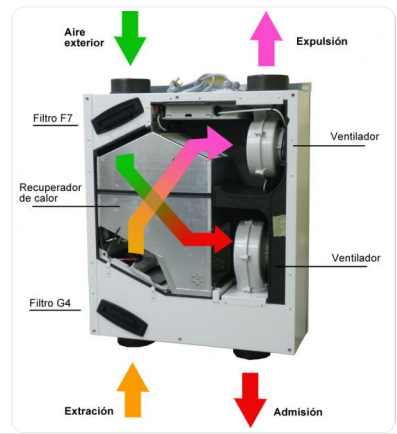
### Product

Zehnder Comfosystems

Zehnder Group Ibérica , +34 902 106 140

<http://www.zehnder.es>

Product category : Climatización / Ventilación, refrigeración



Pavatex

+49 (0) 75 61 – 98 55 – 0

<http://www.pavatex.de/>

Product category : Acabados / Acabado, aislamiento

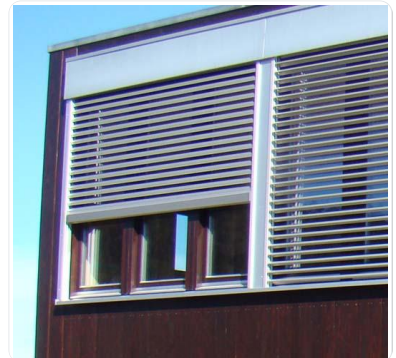


Griesser Persianas y Estores, S.L.

+0034 93 777 73 70

<http://www.griesser.es>

Product category : Acabados / Carpintería exterior - Puertas y Ventanas



Bombas GRUNDFOS España S.A.

+34 918 488 800

<http://es.grundfos.com/>

Product category : Climatización / Calefacción, agua caliente



## Costs

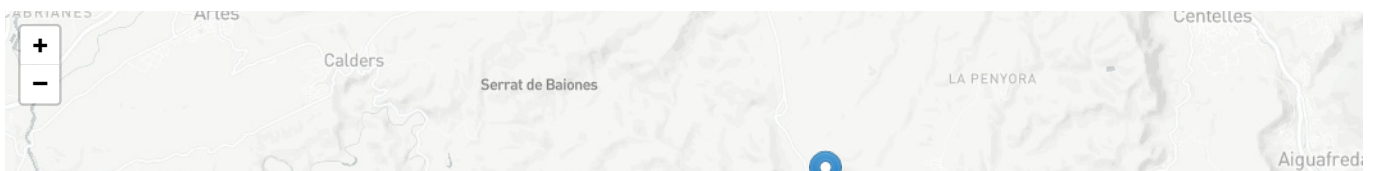
### Construction and exploitation costs

Total cost of the building : 250 000 €

### Energy bill

Forecasted energy bill/year : 1 300,00 €

## Contest





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