Detached house on the island of A Creba

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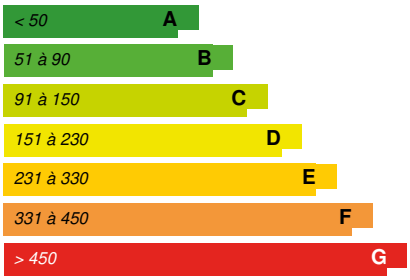

Building Type : Isolated or semi-detached house
Construction Year : 2014
Delivery year : 2015
Address 1 - street : 15250 MUROS, España
Climate zone : [Csb] Coastal Mediterranean - Mild with cool, dry summer.

Net Floor Area : 516 m^2
Construction/refurbishment cost : 144 264 €
Number of Dwelling : 1 Dwelling
Cost/m2 : 279.58 €/m^2

General information

A creba Island or **Illa da Creba,** is a Spanish island in the province of A Coruña. It is located on the estuary of Muros and Noia, 240 meters from the shore of the parish of Esteiro. With an area of 7.5 hectares, it is topped by a large house. It is a **building constructed in the early 80s,** with a floor space of 516 m² spread over 5 full bedrooms, kitchen, living room and technical areas an an outdoor pool of 35 m². The aim is to replace the existing energy source with a **total dependence on oil,** comprised of a generator and diesel boiler by other existing sources of renewable energy on the island, **always searching, when possible, the energy self-sufficiency,** which is achieved in most part of the summer period (May -September).

Data reliability

Self-declared

Stakeholders

Stakeholders

Function : Construction company
MAGARAL INGENIERÍA, S.L.

Manuel García - manuelgarcia@magaral.com

https://www.magaralingenieria.com
Running installation projects

Contracting method

Other methods

Owner approach of sustainability

The main objective of the promoter is self generation of the energy necessary for the proper functioning of the housing, showing the utmost respect for the environment and the natural environment of the area in which the house is located. Until now, all the services enjoyed by the house were totally dependent on fossil fuels, particularly diesel, and given the location in which it is located, supply had to be transported by boat. All these constraints meant that housing facilities proved to be totally ineffective, causing significant economic cost and considerable CO2 emissions into the atmosphere.

Architectural description

The house dates from the late 80s and is in good condition, so the only architectural reform is done in the kitchen, in order to adapt its conditions to a continued use of housing. It is a large house that has traditional bioclimatic strategies such as the high thermal inertia of its stone walls and the existence of local wood fireplaces.

Energy

Energy consumption

Primary energy need : 117,04 kWhpe/m^2.year
Primary energy need for standard building : 133,41 kWhpe/m^2.year
Calculation method :
CEEB : 0.0001
Initial consumption : 133,41 kWhpe/m^2.year

Envelope performance

Envelope U-Value : 1,58 W.m^{-2}.K^{-1}

Renewables & systems

Systems

Heating system :
- Water radiator
- Wood boiler
- Solar thermal

Hot water system :
- Solar Thermal
- Wood boiler

Cooling system :
- No cooling system

Ventilation system :
- Double flow heat exchanger

Renewable systems :
- Solar photovoltaic
- Solar Thermal
- Micro wind
- Biomass boiler

Renewable energy production : 100,00 %

Smart Building

Users' opinion on the Smart Building functions : Facilities include remote control via web, so that the user can access it at any time and know the consumption of each of the energies in both real-time and historical.

Environment

GHG emissions

GHG in use :2,03 $KgCO_2/m^2$/year
Methodology used :
Final energy conversion to CO2 emissions (not densified biomass).

Indoor Air quality

The air renewal system is modified by including air renewal equipment with heat recovery and complying to current regulations filters.

Products

Product

HDG Euro log boiler

HDG

info@pifu.es

http://pifu.es/hdg-bavaria/
Product category :
Biomass boiler with the possibility of burning wood logs up to half a meter, forest residues, wood chips and briquettes.
Comfortable filling with wood logs and overturned by a gate with pneumatic filling device.
Combustion control with lambda probe, including lift and return temperature waste heat utilization.
Long maintenance intervals thanks to large ash compartments.

Product accepted as first choice for brand recognition.

Solar thermal collector DIETRISOL PRO C250V

De Dietrich

http://www.dedietrich-calefaccion.es

http://www.dedietrich-calefaccion.es
Product category :
High performance, flat solar collector with flat aluminum absorber with selective coating and monotube exchanger with sinusoid form. Back Rockwool insulation 40 mm thick. Absorbing surface of 2,354 sqm, and optical performance of 0.819.

Product accepted as first choice for brand recognition.

DHW instantaneous production STIEBEL ELTRON

STIEBEL ELTRON

http://www.tegasca.com

https://www.stiebel-eltron.com/en/home.html
Product category :
Accumulator for production of instant ACS 1,500 liters.

Product accepted as first choice for brand recognition.

Collector Schüco MPE PS05 Solar photovoltaic

SCHÜCO

Schüco Iberia S.L. - 91 808 40 20

https://www.schueco.com/web2/es
Product category :
SCHÜCO Photovoltaic solar collector MPE PS05 power of 210 Wp. polycrystalline solar cells with high performance.
Aluminum frame torsion-resistant and corrosion anodized.

Product accepted as first choice for brand recognition.

Aerogenerador ANELION SW3.5-GT

ANELION

Francisco Climent - 607 65 75 13

http://www.anelion.com
Product category :

Miniaerogenerador ANELION SW3.5-GT 500 Wp power, valid for isolated systems and networking. High energy efficiency and low noise. Active electronic braking system. Dual redundant system electrical / mechanical passive safety.

Product accepted as first choice for brand recognition.

Costs

Construction and exploitation costs

Renewable energy systems cost : 57 000,90 €

Urban environment

A Creba Island is a unique attraction formation from the landscape point of view. It is an excellent vantage point for a wide panoramic view of the bottom of the estuary of Muros and Noia. The history and legends around this island give the place an aura of mystery and charm.

Building Environnemental Quality

Building Environmental Quality

- biodiversity
- energy efficiency
- renewable energies

Contest

Building candidate in the category

Energía & Climas Templerados

Edificio Inteligente

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