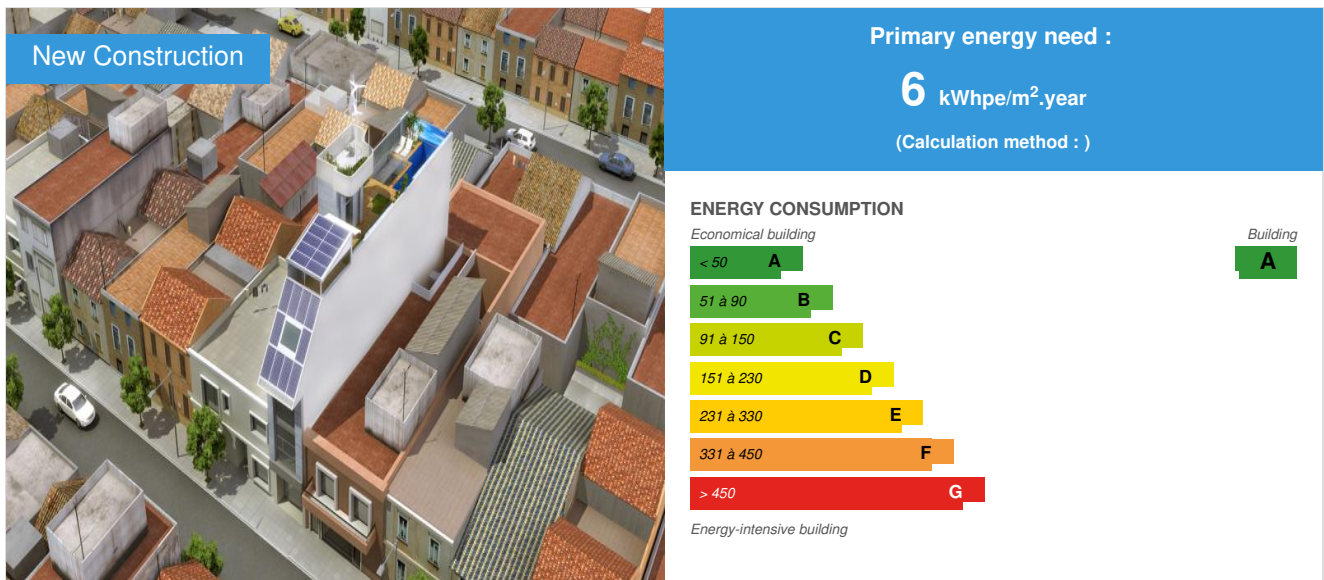


## GecohomeProject

by Gerardo Gonzalez / 2013-04-16 13:03:05 / Espagne / 14525 / ES



**Building Type** : Isolated or semi-detached house  
**Construction Year** : 2008  
**Delivery year** : 2015  
**Address 1 - street** : calle Balmes, 43 46740 CARCAIXENT, España  
**Climate zone** : [BSh] Subtropical Dry Semiarid (Steppe)

**Net Floor Area** : 600 m<sup>2</sup> SHON RT  
**Construction/refurbishment cost** : 1 500 000 €  
**Number of Dwelling** : 1 Dwelling  
**Cost/m<sup>2</sup>** : 2500 €/m<sup>2</sup>

### General information

Gecohomeproject is a sustainable housing project of urban regeneration. Urban Regeneration: Integrated with strategic potential for sustainable urban development and socially inclusive. New methods, old techniques:

We use cutting edge technologies, in search of an advanced house. To do this, we work closely with R & D companies and university institutes in order to achieve the best comfort and the best architecture.

Between medians: The house is built between medians, with all the leisure and recreation in green terrace.

20/20: The house is adapted to the standards of the provision of the CEE as mandatory from 2020.

### Data reliability

Assessor

### Stakeholders

Function : Developer

Gecohomeproject

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<http://gecohomeproject.com/>

### Contracting method

Build and sell construction

### Owner approach of sustainability

This project is for a family of 5 members, with a high green commitment and interested in sustainable building, for which we seek an old townhouse in ruins, where they decide in this urban lot make their mediterranean passive-house.

It was decided finally by a plot of twenty-three feet deep, with five and a half wide at the bottom and a front of only three fifties, for several reasons:

- \* First, the orientation of the façade of 3.5 meters is pure south. Although the facade is small has the best of possible orientations.

- \* Second, it is much more efficient and sustainable, to rehabilitate deteriorated urban

- \* Third, with this decision we recover green roof for the city

- \* Fourth: Family looking for a high social integration in their environment so the neighborly relationship and participation in their structures are considered very important, as well as proximity to all amenities. In less than 500 m, have access to market, shopping center, pharmacy, bakery, health center, etc. .. etc. .. and a hospital less than five miles.

#### DEMOLITION, RECOVERY AND RECYCLING

We performed a demolition project for the existing building, based on the following premises. Is an essential condition to make a selective demolition hand to achieve a perfect classification of all material and thereby be able to recover as much as possible getting to recycle and recover 90% of demolished material. Aggregates are developed and separate different metals. All this is incorporated into the future structure and foundation of the house, so we get another major objective, RECOVER, RECYCLE AND REUSE. These three "R" are code of ethics for sustainable construction and how could it be otherwise, for this project

### Architectural description

#### DESIGN AND PROJECT.

Plant organic garden and Wind Energy

Topping the block casetón circulation leads to the top floor of the house, site of the organic garden for planting vegetables and herbs designed terraced stairs.

Next to the garden, supporting the turbine (Design: Phillip Starck) also architectural and landmark auction of housing, the turbine provides a major source of clean energy.

Green cover.

It is on this level where the project gives its entire splendor, as combined in an interactive technology with leisure time for the enjoyment of its residents.

The Terrace has pool, solarium, garden, fish pond and gazebo with barbecue. The pool is heated during spring and autumn with the energy from the thermal plates and active curtain wall.

#### Roof Deck Facilities and Technical

Over the space we install a pergola gazebo technique also work as closure housing the thermal and photovoltaic solar modules.

Floor Facilities: Besides containing all necessary equipment and facilities to supply all housing, plays the role of thermal cap, generating a higher temperature insulation on floors housing use.

#### Night Floor

The second floor will house three bedrooms and three bathrooms, the partitions viroc be made in a dry closure wooden board / cement.

Installs flooring throughout the ground floor rolled.

#### Day Floor

This plant is configured as a single living space where kitchen, living room, dining room and library. By way of a clear floor, has all its space, certified wood flooring and glass enclosure system on the perimeter of the patio lights

This plant is the meeting place and daily family life, in addition to the green roof.

#### Ground Floor.

The ground floor houses on the north side room with bathroom, designed to support domestic service which also houses the cleaning room has central vacuum throughout. This room will have all the services and functions independently of the rest of the house.

On the south side next to the lobby is located a professional office, designed for customers if necessary, the lobby acting as a waiting room.

The hall has access from the garage to the house. All these spaces have the same treatment as the upper floors. The garage has automatic door remote control.

In the house's access there is a system of recognition and video surveillance throughout the telephone network including mobile housing are remote controls, touch also on the ground, with solar tube passes light to the basement .

The façade is made of limestone in the area, aired on a three-layer mortar weber breathable and thermal, which makes up the entire building envelope and eliminates the possibility of thermal bridges or unwanted infiltration, sealing around the perimeter.

#### Basement (Facilities)

The space also has installed a heat recovery vmc (controlled mechanical ventilation). This system takes air from the basement and recirculated tempered and all plants, recovering both in winter and in summer up to 90% of the indoor temperature in his exchange with the outside air. Fundamentally this basement serves as a "bell" that takes air from the floor skylight atrium of ending in the ground and that the recirculated air through the system.

This system is of the highest usable energy efficiency and a single control system becomes hidroregulable housing.

## Energy

### Energy consumption

Primary energy need : 6,00 kWhpe/m<sup>2</sup>.year

Primary energy need for standard building : 10,00 kWhpe/m<sup>2</sup>.year

Calculation method :

Breakdown for energy consumption :

PASSIVE SYSTEM HEATING / COOLING\* Active Curtain Wall: The transparent enclosure of the south façade consists of a radiator system + refresher. This prototype system, developed by the firm Intelliglass consists of a triple glazed curtain wall glass dual chamber, one of these and other air circulating water, which absorbs up to 90% of solar radiation in summer being cooled by means of well water in summer. In winter water circulation stops and the water deposited on glass chamber is heated by the sun acting as a heat sink to the interior, while leaving in sunlight.\* Heat Recovery - Thermodynamic: By VMC (controlled mechanical ventilation), both in winter and in summer the ventilation system does not release the fresh air and gives way to the incoming air temperature outside in the exchanger with an efficiency of over 90% as well as to control moisture inside. In cold weather, the heat exchanger will be compensated with a heat pump to provide the necessary kilocalories.\* El Patio de Luces, through cross ventilation during the night, opening the patio and walls overlooking it, will cool the house naturally. This system also has the shading produced by a solar store backed by a pool of water and existing plants on the ground floor, cause the air inlet (with skylight) to the basement, is at least 5 degrees. In summary, this passive design makes the temperature of the incoming air patio lights, go down slowly and evenings in summer is a source of air intake for cross ventilation of the house. Total energy for heating and cooling of the house less than 15 kWh/m<sup>2</sup>/yr. This house has many alternatives and facilities should be handled at any time depending on external and internal conditions, in order to achieve the right degree of comfort. Energy Production: a) wind electricity production through wind b) photovoltaic electricity production through solar panels c) power inverter that synchronizes sent by the wind turbine and photovoltaic roof, pouring everything produced to the grid. The combined system of photovoltaic roof and vertical axis wind turbine, we can produce about four or five kw, an amount considered sufficient for the consumption of housing itself, so we understand this housing as a zero energy building.

## Renewables & systems

### Systems

Heating system :

- Heat pump
- VAV System

Hot water system :

- Solar Thermal

Cooling system :

- VAV Syst. (Variable Air Volume system)

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- Solar photovoltaic
- Solar Thermal
- Other, specify

Renewable energy production : 100,00 %

## Environment

### GHG emissions

Methodology used :

Demolition of existing building with 90% recovery of material reused as aggregate in the building structure

## Products

### Product

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Product category :

Urban Regeneration Integrated with strategic potential for sustainable urban development and socially inclusive. New methods, old techniques We use cutting edge technologies, looking for an advanced housing. To do this, we work closely with R & D companies and university institutes with objetvo to achieve the best comfort and the best architecture. Among medians We build homes between medians, with all the leisure and recreation in green terrace. terrain Locate the best plots in the area concerned. We study the feasibility and suitability. Our real estate experts will handle the necessary tramitación. We perform legal purchase process. A home to suit you We project that meets your own needs and best constructive proposals. We build energy the following criteria: Passive House and energy classification bioclimatic high. Housing only, a work for you exclusively. We use the latest technology and technological advancements. The house will be adapted to the standards of the provision of the EEC as mandatory from 2020. (Zero Carbon house / Zero energy house)



## Costs

### Construction and exploitation costs

Global cost/Dwelling : 1500000

Global cost : 1 500 000,00 €

### Urban environment

Its location is the result of seeking a high social integration in their environment where neighborhood relations and participation in their structures are considered very important, as well as proximity to all services within 500 meter radius, such as : market, shopping center, pharmacy, bakery, health center and a hospital less than five miles. We find it much more efficient and sustainable rehabilitate deteriorated housing in town and replace it with a high efficiency home, to occupy land or green plot and build on it. With this philosophy, we recover green roof for the city.

### Built-up area

Built-up area : 90,00 %

## Contest

### Building candidate in the category



Energías renovables



**Green Building  
Solutions Awards 2015**

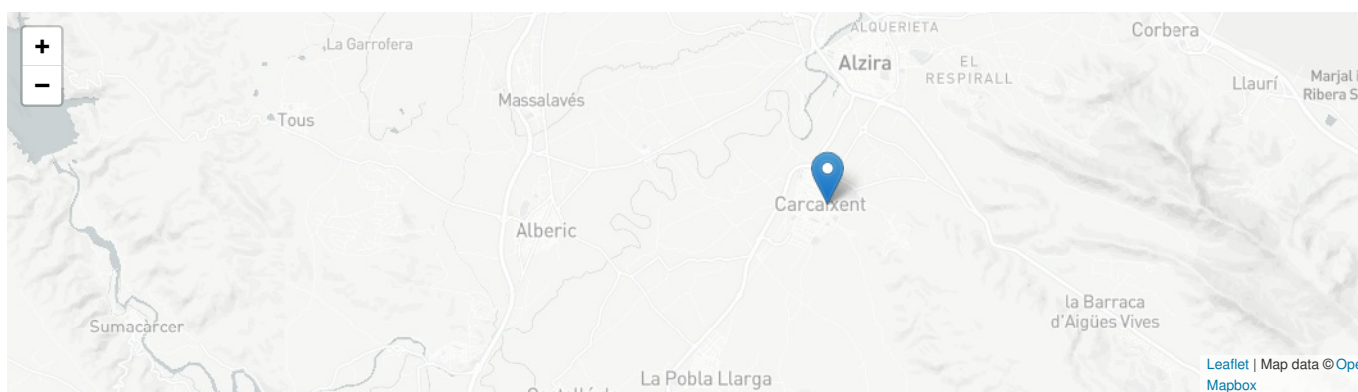
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Edificios de consumo nulo



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