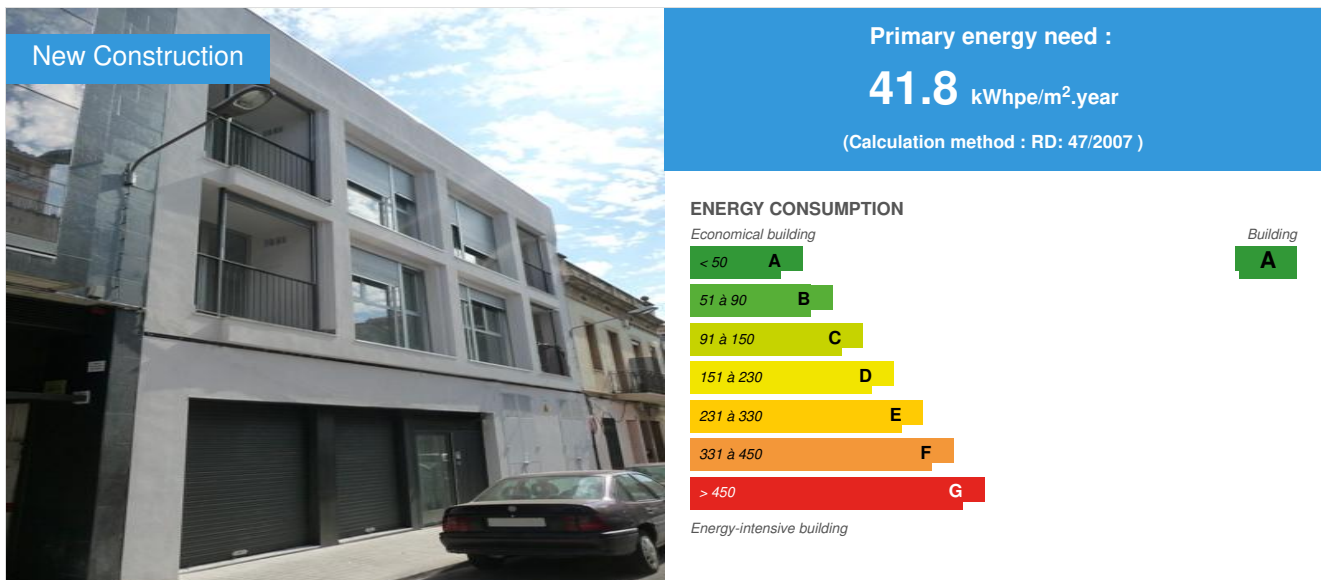


## Social dwellings building to rent, commercial shop and parking

by [Lluís Grau Molist](#) / 2012-04-27 13:45:33 / España / 9220 / ES



**Building Type** : Collective housing < 50m  
**Construction Year** : 2010  
**Delivery year** : 2010  
**Address 1 - street** : Melendez Valdes 15-17 08301 MATARÓ, España  
**Climate zone** : [BSH] Subtropical Dry Semiarid (Steppe)

**Net Floor Area** : 1 119 m<sup>2</sup> Superficie útil  
**Construction/refurbishment cost** : 1 212 000 €  
**Number of Dwelling** : 7 Dwelling  
**Cost/m<sup>2</sup>** : 1083.11 €/m<sup>2</sup>

### General information

The building is solved with a single vertical communications hub that connects the upper floors.

On the first floor are arranged four identical dwellings, two street-oriented and two backyard, all with private terrace, bedroom and living area of 31 m<sup>2</sup>. On the second floor are arranged three units, two of which are identical to those of the first floor and a third bigger unit with 2 bedrooms and a living area of 61 m<sup>2</sup> in total.

The dwelling floors are solved with a central "dark core" of access formed by the common elements of access and services and housing lobbies so that, peripherally arranged rooms, kitchens and bedrooms with direct natural lighting.

This disposition enables a major rationalization of facilities (mostly centralized) in their paths, entrances to homes and arrangement of the control mechanisms and reading private consumption.

The design prevails passive systems over active systems for the control of energy balance sheet, water consumption and health surveillance of users.

### Data reliability

## Stakeholders

### Stakeholders

**Function :** Designer

Lluís Grau i Molist

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**Function :** Developer

PUMSA (Promocions Urbanístiques de Mataró SA)

C/P.Iglesias, 65 08302 Mataró. Tel 937578538

<http://www.grup-pumsa.cat>

### Contracting method

General Contractor

### Owner approach of sustainability

The public housing promoter understands that building sustainability must be part of the product offered to the society. In particular, energy and water vectors are treated systematically in almost all of the buildings promoted by PUMSA, assessing what the consumption can mean savings for users of public housing. The social and environmental approach must always be linked to the economic approach so that sustainable building is not more expensive than similar conventional one. It also assesses the experimental and educational aspects which can lead to familiarization with techniques, systems, materials, etc. playing in other operations, both public and private

### Architectural description

The building is the result to make compatible both architecture and sustainability, understood in its broadest sense. The social dwelling program is focussed on small size living units to rent, commercial shop on the ground floor and parking and storage rooms in the basement. Location is proposed on urban environment, small sized plot, between party walls having a central core access and services that enables to arrange the main building spaces on their periphery (on facades). It is totally composed by four 1 bedroom units on the first floor; 3 units on the second floor, two 2 bedroom and one, two bedrooms. The space saving and sustainability (saving water and energy) recommended a community laundry, located with other community facilities in low-cover plant, where are also located clotheslines. This arrangement allows great rationalization of facilities and, in the homes of two bedrooms, natural cross ventilation and double orientation of the main space.

### If you had to do it again?

I would add more inertia and improve indoor thermal transmittance holes façade.

## Energy

### Energy consumption

Primary energy need : 41,80 kWhpe/m<sup>2</sup>.year

Primary energy need for standard building : 94,58 kWhpe/m<sup>2</sup>.year

Calculation method : RD: 47/2007

### Envelope performance

**More information :**

Facades : 0.37 W/m<sup>2</sup>K

Windows : 2.92 W/m<sup>2</sup>K

Cover : 0.16 W/m<sup>2</sup>K

Ground Floor : 0.46 W/m<sup>2</sup>K

Building Compactness Coefficient : 0,30

## Renewables & systems

## Systems

### Heating system :

- Geothermal heat pump
- Water radiator

### Hot water system :

- Heat pump

### Cooling system :

- Geothermal heat pump
- Others

### Ventilation system :

- humidity sensitive Air Handling Unit (hygro A)

### Renewable systems :

- Heat Pump on geothermal probes

## Environment

### GHG emissions

GHG in use : 1 715,00 KgCO<sub>2</sub>/m<sup>2</sup>/year

Building lifetime : 50,00 year(s)

### Life Cycle Analysis

Eco-design material : Recycled glass panels (STOventec), fixed on wood batten for a ventilated cladding on party wall (septum storm)

### Water management

Drinkable water consumption: 75 l/per day (promoter datum). 80% of rain water are re-used with the grey waters. Mechanical filtered and electronic decalcification (communal) of drinkable water.

### Indoor Air quality

Interior levels of CO<sub>2</sub> and relative humidity are checked

## Products

### Product

Grey waters treatment (Kit Water Dolo)

Innovacions Tecnològiques Doló

C/Lluís Millet, 2 08304 Mataró. Tel 937572075

<http://www.dolo.cat>

Product category : Acabados / Fontanería - Instalaciones sanitarias

Grey waters treatment system with (double) ozone injection. In GF : separative collection/ small accumulation/ filtered/ first ozone injection and pumping to under-roof floor : great accumulation/ second ozone injection and gravity distribution to lavatory and floor cleaning takes.

Specialized maintenance is required



Solatube

Sol Tènic Ecològic 2000 SL

Tel 972 270 240

<http://www.soltecnic.com>

Product category : Acabados / Instalaciones interiores

Tube natural lighting for the common elements in connection with artificial lighting automated low-power and ruled with dusk sensor

Top level of acceptance. Null maintenance



Metal radiator placed as ceiling

Energie Solaire SA

Ile Falcon, Case postale 353. CH-3960 Sierre. info@energie-solaire.com. Tel +47 27 451 13 20

<http://www.energie-solaire.com>

Product category :

Very efficient water radiator placed in the ceiling (or wall) with very easy interior integration

Top level of acceptance. Maintenance is required



Geothermal catchment

Geotics Innova SL

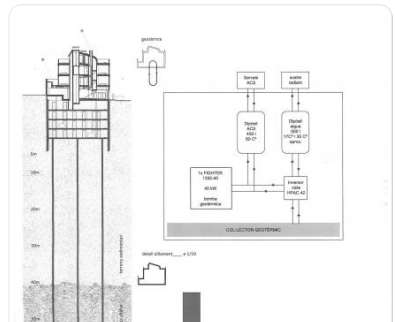
C. Diputació, 119-121 08015 Barcelona. info@geotics.net. Tel 93 4515986

<http://www.geotics.net>

Product category :

Geothermal catchment and production and accumulation devices both for heating and cooling as for hot water production with a CoP upper 4,5

Top level of acceptance



## Costs

### Construction and exploitation costs

Renewable energy systems cost : 104 313,00 €

### Urban environment

Urban environment within the historical consolidated quarter. Public transport , schools, parks, theatres,... nearby

### Land plot area

Land plot area : 206,00 m<sup>2</sup>

## Built-up area

Built-up area : 1 468,00 %

## Parking spaces

Parking with 4 levels below grade. Number of places: 20 pcs. with storage room (2 places in Sot-1 and 6 places in each of the three remaining floors Sot -2, -3 and -4)

## Contest



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