# Palud houses

by Dominique BONNOT / 2015-06-18 17:31:36 / Francia / 27866 / FR


**Primary energy need :**

**31** kWhep/m².an

**(Calculation method : )**

**ENERGY CONSUMPTION**

*Economical building*

| | | |
|---|---|---|
| *< 50* | A | |
| *51 à 90* | B | |
| *91 à 150* | C | |
| *151 à 230* | D | |
| *231 à 330* | E | |
| *331 à 450* | F | |
| *> 450* | G | |

*Energy-intensive building*

*Building* **A**

**Building Type** : Isolated or semi-detached house
**Construction Year** : 2014
**Delivery year** : 2014
**Address 1 - street** : 20 rue des Frères Tilly 22700 PERROS-GUIREC, France
**Climate zone** : [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area** : 269 m²
**Construction/refurbishment cost** : 245 000 €
**Number of Dwelling** : 2 Dwelling
**Cost/m2** : 910.78 €/m²

**Certifications :**

## General information

This construction project consists on two phases of two detached wooden houses, the parcel with a total area of 638 m² forms two private gardens. SABA performs two individual terraced houses on parcels of 300 m2 each. The land is flat. The site is in a rural landscape, hedgerows are bordering the field on Southwest and East.
The surrounding field remain unchanged, only the access of the site will be relocated to fluidify the traffic.
The program consists of two identical houses (four-rooms houses) with very good energy performance (Passivhaus).
Each house is composed of three separate volumes, the residential part is treated in traditional two sides slate roof and zinc deck roof in the same tonality for the saddler.
The main volumes, oriented east-west, shelters the living areas on two levels. The second volumes, more modest, are perpendicular to the first and shelter a room downstairs. The lowest volume is the cellar and its roof terrace create an awning which marks and protects the house entrance.

## Sustainable development approach of the project owner

Environmental criteria were paramount in this project while ensuring visual, acoustic and olfactory comfort of the structure.

## Architectural description

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The main volumes, oriented east-west, shelters the living areas on two levels. The second volumes, more modest, are perpendicular to the first and shelter a room downstairs. The lowest volume is the cellar and its roof terrace create an awning which marks and protects the house entrance.
These two constructions are designed and constructed on a passive level. They respect the RT 2005 BBC Passivhaus standard with traditional construction techniques by increasing the insulation thickness. The energy consumption of heating, domestic hot water by thermodynamics balloon, dual-flow ventilation, auxiliary and home lighting is 31.0 kw hep/m2 (less than 42kwhep/m2 of Passivhaus label) and 6.35 kwh EF/m2 year (well less than 15 kwh EF/m2 year max of Passivhaus label).

## See more details about this project

# Stakeholders

## Stakeholders

Function : Designer

SABA ARCHITECTES

contact@saba-architectes.com

http://saba-architectes.com

# Energy

## Energy consumption

Primary energy need : 31,00 kWhep/$m^2$.an

Primary energy need for standard building : 42,00 kWhep/$m^2$.an

Calculation method :

## Envelope performance

Envelope U-Value : 0,10 W.$m^{-2}$.$K^{-1}$

More information :

Interior walls - Agglos + LdV 75 + 75mm R = 5.77 - U = 0.14 W / m2.K
roof: Rampant - LdV 100mm R = 3.1 - U = 0.08 W / m2.K
Attic - LdV 100mm R=3.1 - U= 0,16 W/m2.K
ceiling - PUR 100mm R=4.3 - U= 0,11 W/m2.K
joineries: PVC Bay DV TFE + Argon with the closure - U= 1.30 W/m2.K PF en PVC DV TFE + Argon with the closure - U = 1.20 W / m2. K.F PVC DV TFE + Argon with closure - U = 1.20 W / m2.K FT wooden DV TFE + Argon without closure - U = 1.40 W / m2.K Insulated entrance door - U = 1.40 W / m2.K Floor low floor TP - Insulation 200mm R = 9.09 - U = 0.10 W / m2.K

# Renewables & systems

## Systems

Heating system :

- Low temperature gas boiler
- Wood boiler

Hot water system :

- Other hot water system

Cooling system :

- No cooling system

Ventilation system :
- Double flow heat exchanger

Renewable systems :
- Wood boiler

## Environment

### Urban environment

Land plot area : 665,00 $m^2$

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## Products

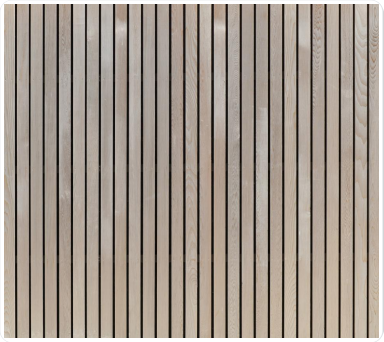
### Product

Red Cedar

saliou menuiserie

ZA Balaneyer 22700 Saint Quay Perros - 02 96 49 05 40

http://www.salioumenuiserie.fr/



Product category : Table 'c21_italy.innov_category' doesn't exist SELECT one.innov_category AS current,two.innov_category AS parentFROM innov_category AS oneINNER JOIN innov_category AS two ON one.parent_id = two.idWHERE one.state=1AND one.id = '6'

Noble wood, the Red Cedar is a naturally durable without sapwood which takes a beautiful silvery gray color with age. Imported from Canada

This material is appreciated for its natural beauty and durability. Indeed, the red cedar is richly textured. The colors range from pale amber to ochre brown. It allows multiple domestic uses. Free of pitch and resins, it accepts all finishings (oils, dyes, coatings, paints). Thanks to its preservation oils, the cedar naturally resists to the moisture, rot and insects. It is also naturally anti-microbial and fungicidal. It has acoustic properties that prevent the transfer of sound vibrations and is soundproof.

## Costs

### Construction and exploitation costs

Total cost of the building : 245 000 €

## Carbon

### GHG emissions

GHG in use : 1,80 $KgCO_2/m^2/an$

### Life Cycle Analysis

Eco-design material : The houses are made entirely of wooden frame. They are over-insulated, which has the effect of avoiding the use of triple glazing. Wooden cladding is left natural for the two main volumes. A rendered masonry is used for cellars and for limits constructions, a rainwater recovery system equip them.

## Contest

## Reasons for participating in the competition(s)

These two buildings are designed and constructed on a passive level. They respect the RT 2005 BBC Passivhaus standard with traditional construction techniques by increasing the insulation thickness. The energy consumption of heating, domestic hot water by thermodynamics balloon, dual-flow ventilation, auxiliary and home lighting is 31.0 kw hep/m2 (less than 42kwhep/m2 of Passivhaus label) and 6.35 kwh EF/m2 year (well less than 15 kwh EF/m2 year max of Passivhaus label).
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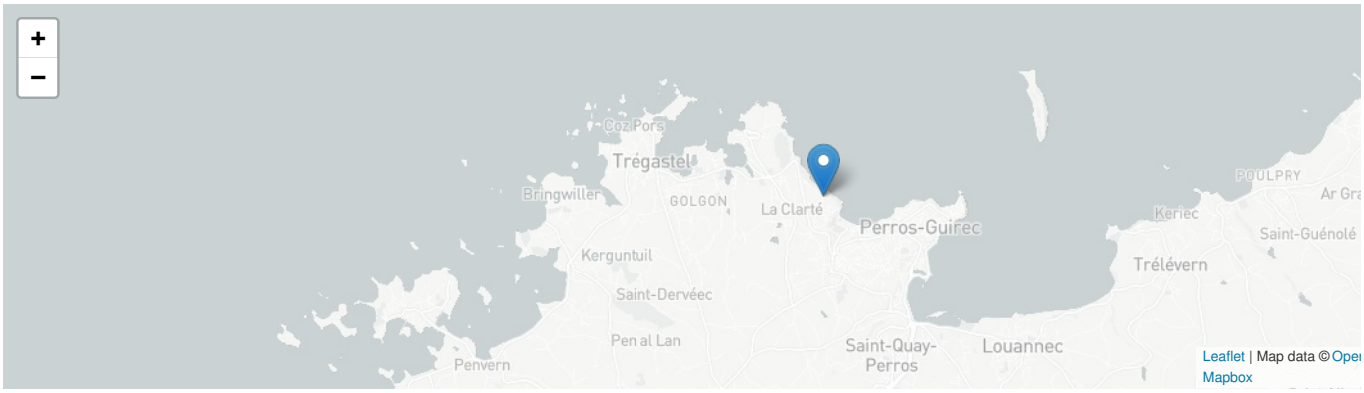
## Building candidate in the category

Matériaux bio-sourcés et recyclés

Green Building Solutions Awards 2015
powered by Construction21

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