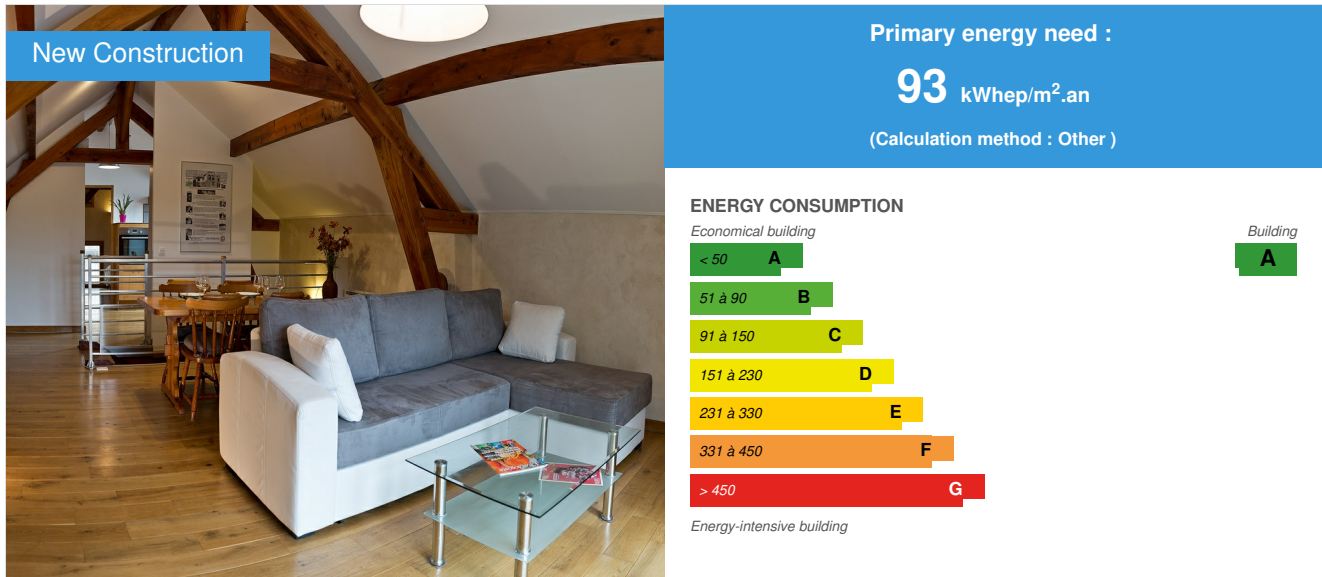


## Passive ecological gite

by Emmanuel Lafaye / 2017-05-26 16:43:32 / France / 7881 / FR



**Building Type** : Hotel, boarding house

**Construction Year** : 2015

**Delivery year** : 2016

**Address 1 - street** : 35 rue des Combeaux 77400 CARNETIN, France

**Climate zone** : [Cfc] Marine Cool Winter & summer- Mild with no dry season.

**Net Floor Area** : 286 m<sup>2</sup>

**Construction/refurbishment cost** : 530 000 €

**Number of Bedroom** : 5 Bedroom

**Cost/m<sup>2</sup>** : 1853.15 €/m<sup>2</sup>

### General information

As part of the design and implementation of a passive ecological deposit, we have adopted a holistic approach to building. Our goal is to disseminate our knowledge and know-how in the field of passive biosourced building.

### Sustainable development approach of the project owner

Bioclimatic house, biosourced materials, passive design, autonomy in water

### Architectural description

This building totally blends into its environment.

Located in the Ile de France, it is part of the landscape in all discretion. The facades are covered with an insulating coating very "perspirant" and then painted in a stone tone similar to the concrete coatings of the neighbors. A roof with two slopes covered with tiles harmonizes with the neighborhood. The exceptional elements are to be discovered inside.

### Building users opinion

House cool in summer and warm in winter. Very pleasant to live, no feeling of current of cold air. The lodge welcomes tourists from all five continents. The lodging has been unanimous since its opening.  
Average score given by the website visitors to the website Booking.com.

## If you had to do it again?

Energy production to make the project BEPOS

## See more details about this project

<http://www.lafayeconsultinggroup.fr/6/lafaye-construction-group-architecture-passive>

<https://www.construction21.org/france/data/sources/users/9038/docs/article-habitat-naturel-sur-gite-ecologique-passif-lafaye-group.pdf>



## Stakeholders

### Contractor

Name : Particulier

### Construction Manager

Name : Lafaye Consulting Group

Contact : Emmanuel Lafaye

<http://www.lafayeconsultinggroup.fr/6/lafaye-construction-group-architecture-passive>

### Stakeholders

Function : Construction Manager

Design, implementation, monitoring

Function : Construction company

Construction Alternative et Rénovation Ecologique à Energie Positive (Carbé+)

### Contracting method

General Contractor

### Type of market

Realization

## Energy

### Energy consumption

Primary energy need : 93,00 kWh/m<sup>2</sup>.an

Primary energy need for standard building : 93,00 kWh/m<sup>2</sup>.an

Calculation method : Other

Breakdown for energy consumption : Total losses are 37 kwh / m<sup>2</sup> / year offset by 12.1 kWh / m<sup>2</sup> / year of passive solar inputs and 10.5 of internal inputs. The heating requirement is 14.4 kWh / m<sup>2</sup> / year in standard use.

### Real final energy consumption

Real final energy consumption/m<sup>2</sup> : 60,00 kWh/m<sup>2</sup>.an

Year of the real energy consumption : 2 016

### Envelope performance

Envelope U-Value : 0,18 W.m<sup>-2</sup>.K<sup>-1</sup>

More information :

Double jacket insulation envelope from outside: insulated insulation, compressed wood fiber  
Bieber woodwork passive certified wood - exterior insulating plaster

Building Compactness Coefficient : 0,30

Indicator : n50

Air Tightness Value : 0,60

## More information

The calculation method used is PHPP. A regular follow-up allowed us to check that the house has been working perfectly for 5 years with 4 people. Since the opening of the lodging the consumptions have greatly increased. It is very difficult to educate visitors. This demonstrates how the use of a building affects its energy balance. It is imperative to have a responsible approach to energy to optimize the liability.

## Renewables & systems

### Systems

Heating system :

- Water radiator

Hot water system :

- Solar Thermal

Cooling system :

- No cooling system

Ventilation system :

- Double flow heat exchanger

☑ Rcupration de chaleur 97 pour cent

Renewable systems :

- No renewable energy systems

## Environment

### Urban environment

Land plot area : 2 000,00 m<sup>2</sup>

Built-up area : 7,50 %

Located on a plot of 2000 m<sup>2</sup> in semi urban area, set back from the communal road, this haven of peace is sported.

## Products

### Product

AMILO

AQUANIME

Loïc Sallet

☑ EN COURS <http://www.lafayeconsultinggroup.fr/>

Product category : Table 'c21\_china.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 = '14'

This innovative system that considers water through the 4 elements, coupled with a biological filtration system and lagooning ensures the home passive ecological self-contained water.

The AMILO diesel filtration system has been certified by:

- NSF independent international certification body for human health products
- Water Quality Information and testing laboratory products for industry and water professionals
- USA Environment Prtotection Agency Organization for the Protection of Human Health and the Environment Laboratories & Research



## Costs

### Construction and exploitation costs

Reference global cost : 2 300,00 €

Renewable energy systems cost : 16 000,00 €

Reference global cost/Bedroom : 2300

Cost of studies : 45 000 €

Total cost of the building : 530 000 €

## Carbon

### GHG emissions

GHG in use : 5,00 KgCO<sub>2</sub>/m<sup>2</sup>/an

Methodology used :

In use, priority is given to solar thermal, which covers about 60% of the domestic hot water requirements and contributes 20% to heating, and then wood covers 30% of the winter calories of the ball

GHG before use : 60,00 KgCO<sub>2</sub> /m<sup>2</sup>

Building lifetime : 100,00 année(s)

, ie xx in use years : 12

Based on ADEME method. The envelope consists of monomur terracotta brick, exterior cellulose insulation, wooden floor and brick wall of raw earth.

## Contest



Date Export : 20230517051319