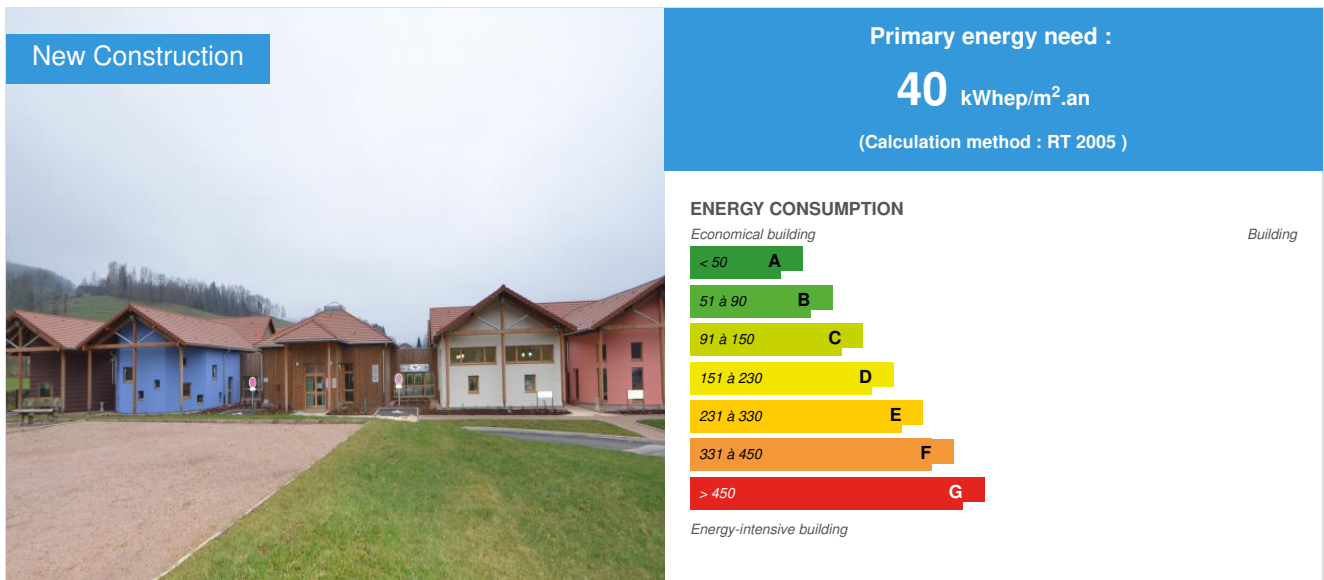


## School in Ban de Laveline (88)

by Marie-Laure Aubriot / 2014-06-18 00:00:00 / France / 5411 / FR



**Building Type :** Preschool, kindergarten, nursery  
**Construction Year :** 2012  
**Delivery year :** 2012  
**Address 1 - street :** Rue du stade 88520 BAN DE LAVELINE, France  
**Climate zone :** [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area :** 1 559 m² SHON  
**Construction/refurbishment cost :** 2 818 600 €  
**Cost/m² :** 1807.95 €/m²

Proposed by :



### General information

- Certified BBC Effinergie
- LQE 2013 prize winner

The conception and design of the building were lead by one strong wish: to give priority to wood material usage, equally on the structural, the envelope and the esthetics levels. The use of wooden structure and cladding, encasing cellulose wadding, allows to limit the energy needs of the building, thanks to thermal inertia of wooden material.

The project meets several criteria of the HQE ® approach:

- the relation to its environment,
- the choice of materials,
- the water and energy management.

Other criteria such as mobility, bioclimatism, value to products and local knowledge are also representative of the project.

## Sustainable development approach of the project owner

LQE 2013 prize winner

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- the relation to its environment,
- the choice of materials,
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Hygrothermal comfort

- Efficient insulation
- Air-tightness, reduction of thermal bridges
- Unglazed windows sills to avoid feeling of cool walls
- Nighttime over-ventilation
- Cooling by groundwater
- Sun-Breaker

Acoustic comfort

- Buffer space between classrooms and activity rooms
- Walls' acoustic insulation and flexible floor coverings.

Visual comfort

- Natural light in all rooms
- Two lighting areas per classroom.
- Views on the surrounding landscape
- Dynamic and bright shades of the walls

Low environmental impact building site

- Prefabrication of wood-frame walls
- Local companies

Miscellaneous: 240 m2 of photovoltaic panels

## Architectural description

The conception and design of the building were lead by one strong wish: to give priority to wood material usage, equally on the structural, the envelope and the esthetics levels. The use of wooden structure and cladding, encasing cellulose wadding, allows to limit the energy needs of the building, thanks to thermal inertia of wooden material.

Orientation: North-South

Architectural volumetry on scale of site and children

## See more details about this project

<http://www.lqe.fr/home/upload/fiches/FicheGroupeScolaireBanDeLaveline.pdf>

## Stakeholders

### Stakeholders

Function : Contractor

Commune de Ban de Laveline (88)

Function : Thermal consultancy agency

Gest'Energie

<http://www.gestenvironnement.fr/gest-energie/presentation-gest-energie.html>

Function : Structures calculist

Meistersheim

Function : Others

Apave

<http://www.apave.com/>

Function : Structures calculist

CRITT Bois

<http://www.crittbois.com/>

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Function : Company

Spie Batignolles

<http://www.spiebatignolles.fr/>

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Function : Company

Charpente Houot

<http://www.charpente-houot.com/>

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Function : Company

Francesconi

<http://www.marbrerie-francesconi.fr/servlet/ShowInfo?M=S132SFR-1RF>

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Function : Company

Sodel

<http://www.sodel.net/>

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Function : Designer

ASP architecture, Eric Schmitt

## Type of market

Global performance contract

## Energy

### Energy consumption

Primary energy need : 40,00 kWh/m<sup>2</sup>.an

Primary energy need for standard building : 165,00 kWh/m<sup>2</sup>.an

Calculation method : RT 2005

### Envelope performance

More information :

- Wooden façade cladding, clay tile, coat.
- Insulation: Roof: 30 cm of cellulose wadding + 10 cm of mineral wool for ceiling installation (acoustic). Walls: 16 cm of cellulose wadding + 5 cm mineral wool (acoustic). Sol: 10 cm over the entire surface.
- Glazing: Double and triple glazing.

Indicator : EN 13829 - q50 » (en m<sup>3</sup>/h.m<sup>3</sup>)

Air Tightness Value : 0,56

## Renewables & systems

### Systems

Heating system :

- Individual gas boiler
- Geothermal heat pump

Hot water system :

- No domestic hot water system

Cooling system :

- Geothermal heat pump

#### Ventilation system :

- Double flow heat exchanger

#### Renewable systems :

- Solar photovoltaic
- Heat pump (geothermal)

## Smart Building

#### BMS :

Access facility to machine room and containers shelter for waste sorting

## Costs

### Construction and exploitation costs

Cost of studies : 205 000 €

Total cost of the building : 2 918 600 €

Subsidies : 1 997 730 €

## Health and comfort

### Water management

- Green roofs
- Rainwater harvesting
- Infiltration of rainwater in a retention ditch
- Permeable circulation

### Indoor Air quality

- Double flow ventilation.
- Water-based paint

## Carbon

### Life Cycle Analysis

Eco-design material : Cellulose wadding; wood; terracotta tiles.

