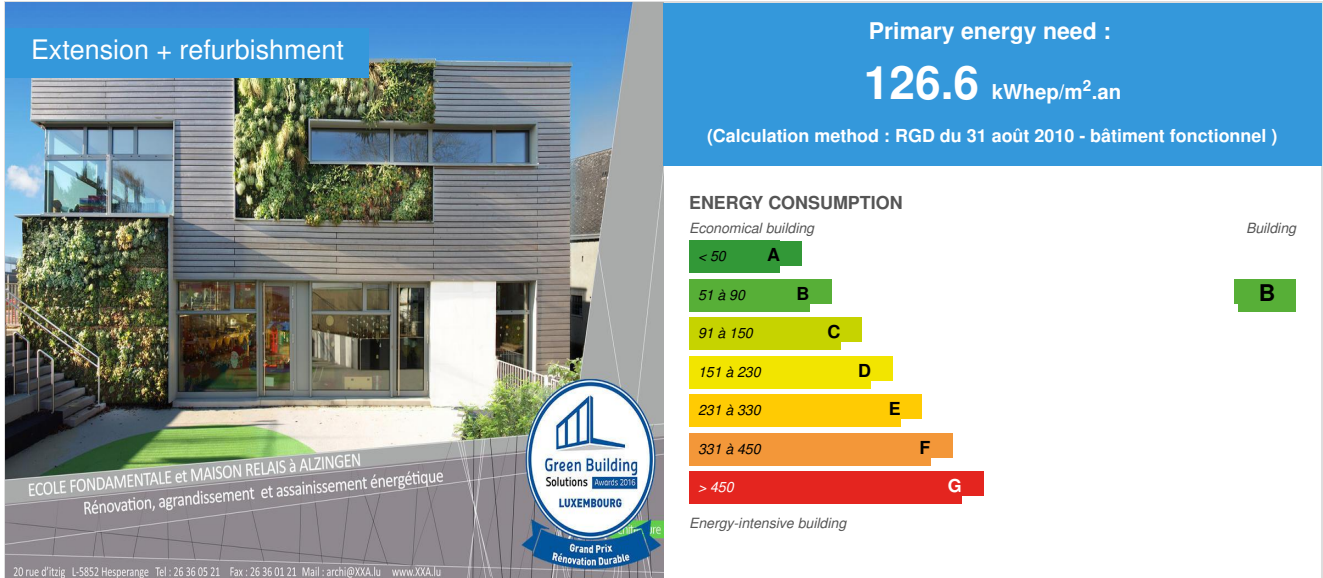


# Alzingen School and Kindergarten / Luxembourg

by Patricia Streber / 2016-07-08 11:17:42 / Luxembourg / 16084 / FR



**Building Type :** Preschool, kindergarten, nursery  
**Construction Year :** 2013  
**Delivery year :** 2013  
**Address 1 - street :** rue de l'école 5870 ALZINGEN, Luxembourg  
**Climate zone :** [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area :** 1 666 m<sup>2</sup> SRE  
**Construction/refurbishment cost :** 4 304 000 €  
**Number of Children :** 88 Children  
**Cost/m<sup>2</sup> :** 2583.43 €/m<sup>2</sup>

## General information

The building of Alzingen school, built in 1968, needed to be renovated and compliant to current standards, particularly in terms of accessibility and energy performance. Following exchanges with all stakeholders, we have reached the following program:

- Renovate and clean up the building from an energy and environmental point of view
- Assign Alzingen School in the early teaching and cycle. 1.
- Add a kindergarten with food production.
- Make schools accessible to people with reduced mobility.
- Renovate the gym / multipurpose hall
- Adapt the hall additional rooms to the needs of the clubs that use it.
- Add a music studio, a library, a conference room and a DIY studio.

## Data reliability

## Stakeholders

### Stakeholders

Function : Designer

XXA Architecture

STREBER Patricia

<http://www.xxa.lu/>

### Owner approach of sustainability

Willingness to bathe the children in a natural and inspiring environment to show them the way to face their future responsibilities.

### Architectural description

Innovative ecological concepts have been applied in the renovation of an existing school by integrating plant facades and a photo-voltaic glass roof.

## Energy

### Energy consumption

Primary energy need : 126,60 kWh<sub>ep</sub>/m<sup>2</sup>.an

Primary energy need for standard building : 194,20 kWh<sub>ep</sub>/m<sup>2</sup>.an

Calculation method : RGD du 31 août 2010 - bâtiment fonctionnel

Final Energy : -45 196,00 kWh<sub>ef</sub>/m<sup>2</sup>.an

Breakdown for energy consumption :

Thermal final energy demand: 11549

Electrical final energy demand: -20,266

Whole final energy demand: -8717

### Envelope performance

Envelope U-Value : 0,29 W.m<sup>-2</sup>.K<sup>-1</sup>

Building Compactness Coefficient : 0,45

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

Air Tightness Value : 1,50

## Renewables & systems

### Systems

Heating system :

- Condensing gas boiler

Hot water system :

- Solar Thermal

Cooling system :

- No cooling system

Ventilation system :

- Double flow

Renewable systems :

- Solar photovoltaic
- Solar Thermal
- Heat pump

## Products

### Product

Vegetated facade

Plant Design

Aurélie Mertens ; 15, rue Fernand Bernier B-1060Bruxelles

<http://www.plantdesign.be>

Product category :

Vegetated facade

Vegetated facade



## Costs

### Construction and exploitation costs

Total cost of the building : 6 250 000 €

## Urban environment

The building is located in Alzingen, in the town of Hesperange, which established the link between the nature with agricultural fields on one side, and on the other side the south of the capital, Luxembourg city, with some constructions of the old fortress.

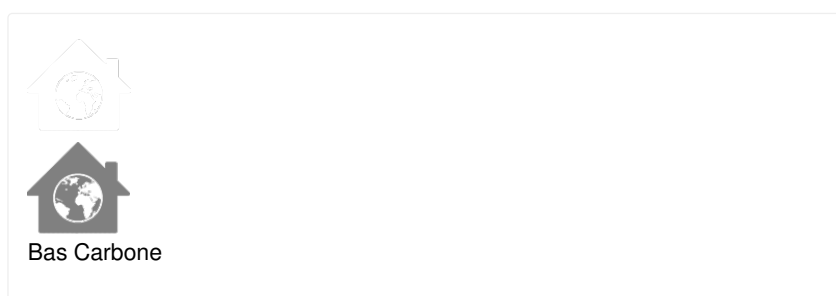
## Building Environmental Quality

### Building Environmental Quality

- indoor air quality and health
- biodiversity
- acoustics
- comfort (visual, olfactive, thermal)
- energy efficiency
- renewable energies
- products and materials

## Contest

### Building candidate in the category

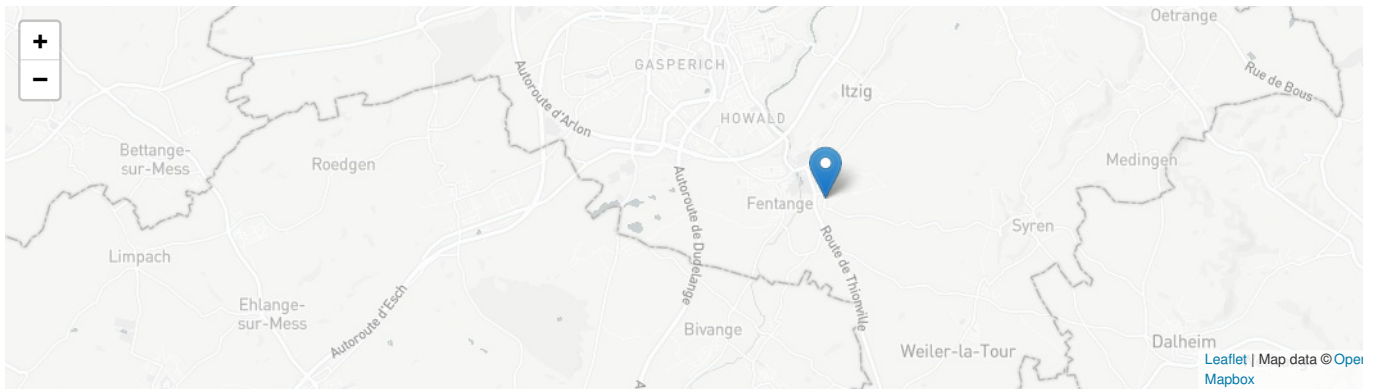




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