# Groupe Scolaire Sainte Therese - Saint Joseph La Salle

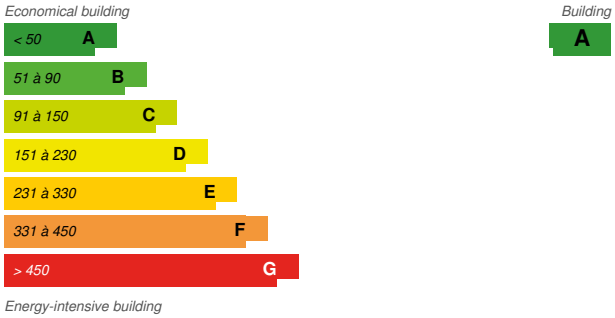
by Annick Worobel / 2014-02-27 18:35:51 / France / 14719 / FR


**Primary energy need :**

**58.6** kWhep/m².an

**(Calculation method : RT 2012 )**

**ENERGY CONSUMPTION**




**Building Type** : School, college, university
**Construction Year** : 2013
**Delivery year** : 2013
**Address 1 - street** : 6 boulevard Montois 89000 AUXERRE, France
**Climate zone** : [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area** : 1 947 m² Other
**Construction/refurbishment cost** : 2 640 000 €
**Number of Pupil** : 300 Pupil
**Cost/m2** : 1355.93 €/m²

**Certifications :**

MINERGIE-P®

## General information

First school in France Minergie labeled P, Swiss label requiring the Groupe Scolaire Saint ThÃ©rÃ¨se is composed of 13 classes (3 kindergartens and 10 elementary, extensible , 4 and 11), an entrance hall, a school care, a library, a computer room, a dedicated part administration, gymnasium and playgrounds.

project develops real performance and environmental qualities in the service of children. The south orientation is preferred for classes and using the sun and natural light as renewable energy.

### Sustainable development approach of the project owner

The design fully involves the building owner and users. Design 'Engineering: everything has been specified in advance. The project was to develop real performance and environmental qualities in the service of children: health, well-being, quality of air inside for better conditions for studies and education.The objectives therefore were:- Building very low power consumption,- Anticipate RT 2012 (not yet in force at the time of conception)- A 3 eligible european labels, BBC Effinergie, Minergie P Passiv Haus.To achieve this, it was decided to:- Privileging the main South orientation for buildings,- Produce compact buildings and

consume little energy,- Mark the main entrance of the school necessarily situated between two buildings preserved- Organize the interior circulation from the entrance.- Promoting the quality of outdoor areas, physical activities and gathering- Work on Plant screens.

## Architectural description

The new Sainte Therese school consists of three buildings:- The South Pole including airlock entrance, the school care, multimedia, administration and kindergarten.- The pole Gymnasium.- Primer pole.The buildings are all on one level. Future extensions are anticipated.South faÃ§ade is privileged for the light, passive solar gain, especially for classes. Sun breezes are present on the southern facades, more particularly. They are made of wood covered with a monolayer membrane, to protect them from the elements.All buildings are on open ground with 3x100 mm insulation under paving cross-laminated.The covers are vegetated roof terraces to maintain predominance Plant spaces and bring inertia with wood constructions.The buildings are wood frame of 147 mm with a very strong insulation distributed (150 mm), indoor (60 mm) and outdoor (100 mm). Kindergarten and primary bards are by horizontal clapboard larch with parts delineated by crepi your stone facades following. The Extracurricular activities and gyms are bards by vertical clapboard saturated orange red color.The windows are wood painted light gray. The primary is triple glazed windows and other buildings are double glazed. Sequences of colored glass from blue to purple describing an arc-en-ciel, are scatteredin the school (at the entrance, to kindergarten, elementary) to facilitate traffic areas.Solar panels are installed on the roof of Primary above the engine room and are used to produce hot water and health supplement to floor heating.The tightness of buildings air is treated throughout the envelope in the ground by a vapor barrier between the second and third layer of insulation in the wall with a vapor barrier to the bare interior of framing and the top floor with a vapor barrier on wood panels.Double flow ventilation INDIVIDUALIZED were installed by class (formaldehyde pollution and dust mites, better oxygenation of children)Heating is by heat pump and distributes low floor temperature.Warm and healthy materials chosen for sustainability and maintenance. Bright colors, lots of natural light.Cared treatment of natural areas. The recreation yard is coated. Preaux the courses are designed in the spirit of capitals, gathering places of celebration. They are galvanized steel structure covered with a bright white canvas, weather resistant (snow, rain, wind ...) and self-cleaning. The canvas preaux diffuse natural light in the space they serve. A basketball court and volleyball court is in the feeder primaries.The rest of the fieldfree or 2855 mÂ², is arbores feeder green spaces and grassed. Either on a right field 7035 mÂ², more than 40% of the land. Of the 32 existing trees, 16 are preserved and integrated in the project. 24 additional trees and shrubs are planted 5 (white alders, linden, walnut, maples and oaks) some of which are fruit (apple, cherry, quince).

## Building users opinion

Teachers and administrative staff, but also the students parents are very pleased with the atmosphere and the comfort of their new school.

## If you had to do it again?

For reasons of cost, in the end, only one label was research and obtained the Minergie P.Predict simple shading devices and weakening of the light intensity for the period or the trees are not mature yet and do not fulfill their role of protection.

## See more details about this project

http://atria-archi.com/rassembler/scolaire/sainte-therese

# Stakeholders

## Stakeholders

Function : Contractor

OGEC Saint Joseph La Salle

http://saint-joseph-auxerre.fr/ecole-sainte-therese-auxerre.html

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Function : Designer

ATRIA Architectes

Annick Worobel, Architecte et Jean-Pierre Bosquet, Architecte; membres de la Compagnie des Architecteurs

http://www.atria-archi.com

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Function : Thermal consultancy agency

Viapositive

M. Dusan Novakov, Ingénieur EnR, partenaire Minergie

http://www.viapositive.com/

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Function : Others

## Contracting method

Other methods

# Energy

## Energy consumption

Primary energy need : 58,60 kWhep/$m^2$.an

Primary energy need for standard building : 171,70 kWhep/$m^2$.an

Calculation method : RT 2012

Breakdown for energy consumption : Heating: 26.48 kWh / mÂ² year.Lighting: 16.74 kWh / mÂ² year.Ventilation: 13.53 kWh / mÂ² year.Auxiliary: 1.78 kWh / mÂ² year.

## Real final energy consumption

Final Energy : 58,60 kWhef/$m^2$.an

## Envelope performance

Envelope U-Value : 0,18 $W.m^{-2}.K^{-1}$

More information :
U wall. W.m 0.111 mÂ² KU floor. W.m 0.094 mÂ² KU roof. W.m 0.092 mÂ² KUg. W.m 0.6 K Â²

Building Compactness Coefficient : 0,70

Indicator : EN 13829 - n50 » (en 1/h-1)

Air Tightness Value : 0,60

# Renewables & systems

## Systems

Heating system :
- Heat pump
- Low temperature floor heating
- Solar thermal

Hot water system :
- Heat pump
- Solar Thermal

Cooling system :
- No cooling system

Ventilation system :
- Double flow heat exchanger

Renewable systems :
- Solar Thermal

Renewable energy production : 100,00 %

# Environment

## Urban environment

Land plot area : 7 035,00 $m^2$

Built-up area : 28,00 %

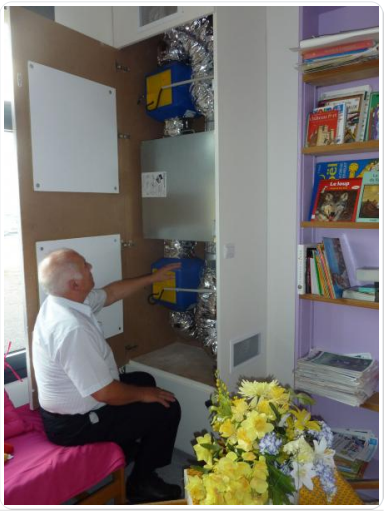
Green space : 2 855,00

The school is situated in a Catholic school education complex comprising, in a sort of campus, college and high school. This complex is located on the so-called peripheral boulevards neighborhoods "of the Hauts d'Auxerre", consisting of housing and residential areas.

# Products

## Product

Individual Dual Flow Ventilation by Classroom



Product category : HVAC, électricité / ventilation, cooling

VMC double modular flow at very high efficiency BC90 Autogyre range pro -Exchanger has croises flow technologiesHCE - higher thermal efficiency90% according to EN 131 41-7 - Double speed in order to manage by classroom needs of air.Removal of pollutants, dust mites and allergies, regulation of moisture and odors, better oxygenation for children's concentration.

Users appreciate the comfort of the air and breathe air deals mainly after a morning of classes. They also appreciate the silence of the small wardrobes.

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Reflechissante membrane air tightness S28


Valsem

contact@valsem.com

http://www.valsem.com/index_fr.php

Product category : Management / Others

Realized by a vapor barrier membrane air tightness reflechissante Valsem S28 polyethylene aluminum weldable aluminum face up or inside

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Regulation of heating by room

Thermozyklus

http://www.thermozyklus.de/fr/home.html

Product category : Management / Facility management

Overall management of the 5 buildingscentralized regulation and predictiveRadio Control heat pumps

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Windows, doors windows and doors Striegel Triple Glazing

Striegel

info@fenster-striegel.de

http://www.fenster-striegel.de/start.php?Sprache=FR&s=1

Product category : Finishing work / Exterior joinery - Doors and Windows

Windows, doors and windows triple glazed doors Striegel level Passiv Haus Uw = 0.72 W/m2/K. g = 0.61

# Costs

## Construction and exploitation costs

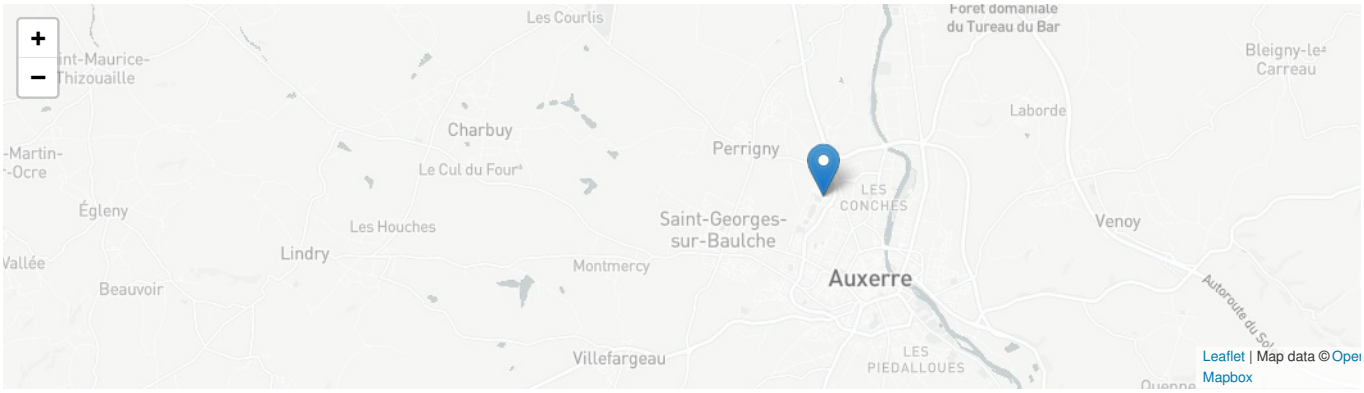
Renewable energy systems cost : 3 775,00 €

# Health and comfort

## Indoor Air quality

INDIVIDUALIZED double flow ventilation were installed by class in individual lockers. Direct elimination of pollution (formaldehyde and mites). Better oxygenation of children continuously for increased attention to the end time courses and better academic results (study conducted in Switzerland on geographically neighboring schools).

## Contest

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