

Nursery Marie Curie in St Chamond

by Julien RIVAT / 2013-02-08 15:32:56 / France / 10606 / FR



Renovation

Primary energy need :

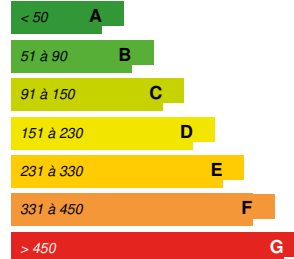
72.4 kWh_{ep}/m².an

(Calculation method : RT 2005)

ENERGY CONSUMPTION

Economical building

Building



A

Energy-intensive building

Building Type : Preschool, kindergarten, nursery

Construction Year : 2011

Delivery year :

Address 1 - street : 10 rue du Berry 42400 SAINT CHAMOND, France

Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 753 m²

Construction/refurbishment cost : 950 000 €

Cost/m² : 1261.62 €/m²

General information

Rehabilitation of a building into a passive level nursery.

Current certification PASSIVHAUS. label received PREBAT ADEME 2011.

SUB Award 2013: the contribution of this building to "the city of the future"

This project raises the question of the rehabilitation of the built heritage of the 20th century and its integration into the contemporary city. How to rehabilitate the existing, to restore the use of the value? The city of the future must incorporate into its infrastructure management scheme of this type of heritage. One can construct and deconstruct everything goes. We should be able to reuse the existing while transforming and make it compatible with current needs. This project proposes an answer based on the conservation elements of the past, incorporating today's lifestyle with energy performance tomorrow.

Sustainable development approach of the project owner

objective: to minimize energy requirements.

Architectural description

The existing building was "over-insulated" double insulated exterior and interior, the choice of materials and equipment was determined by their energy performance.

[See more details about this project](#)

Stakeholders

Stakeholders

Function : Contractor

Ville de saint chamond

François PAULET

Function : Thermal consultancy agency

ILTEC

Yohan LEROY

Function : Construction Manager

RIVAT

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Contracting method

Separate batches

Type of market

Global performance contract

Energy

Energy consumption

CEEB : 0.0001

Primary energy need : 72,40 kWh/m².an

Primary energy need for standard building : 168,50 kWh/m².an

Calculation method : RT 2005

Breakdown for energy consumption : Heating: 8.3 Breakdown: 29 = 1.9 Lighting = 33.3

Initial consumption : 150,00 kWh/m².an

Envelope performance

Envelope U-Value : 0,23 W.m⁻².K⁻¹

Building Compactness Coefficient : 0,85

Indicator : I4

Air Tightness Value : 0,30

Renewables & systems

Systems

Heating system :

- Geothermal heat pump
- Aerotherm Heater

Hot water system :

- Individual electric boiler

Cooling system :

- Reversible heat pump
- Floor cooling

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- Heat Pump on geothermal probes

Renewable energy production : 90,00 %

Smart Building

BMS :

Management : city-St Chamond - connection to existing GTC

Environment

Urban environment

Land plot area : 3 254,00 m²

Built-up area : 750,00 %

Green space : 1 900,00

Social houses

Products

Product

external insulation

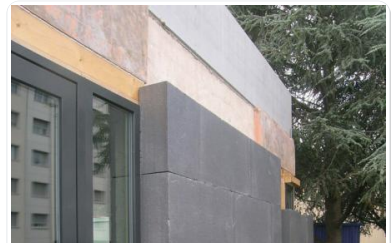
STO

tél : 0820 20 27 20

<http://www.sto.fr>

Product category : Finishing work / Partitions, insulation

external insulation made from expanded polystyrene 300 mm thick



Costs

Construction and exploitation costs

Global cost/Children : 26683,25

Reference global cost/Children : 800000

Global cost : 1 067 330,00 €

Reference global cost : 800 000,00 €

Renewable energy systems cost : 30 000,00 €

Energy bill

Real energy cost/m² : 9.03

Real energy cost/Children : 170

Forecasted energy bill/year : 6 800,00 €

Carbon

Chambœuf

Avezieux

Crammond

Marcenod

sur-Dargoire

Saint-Jean-
de-Toussas

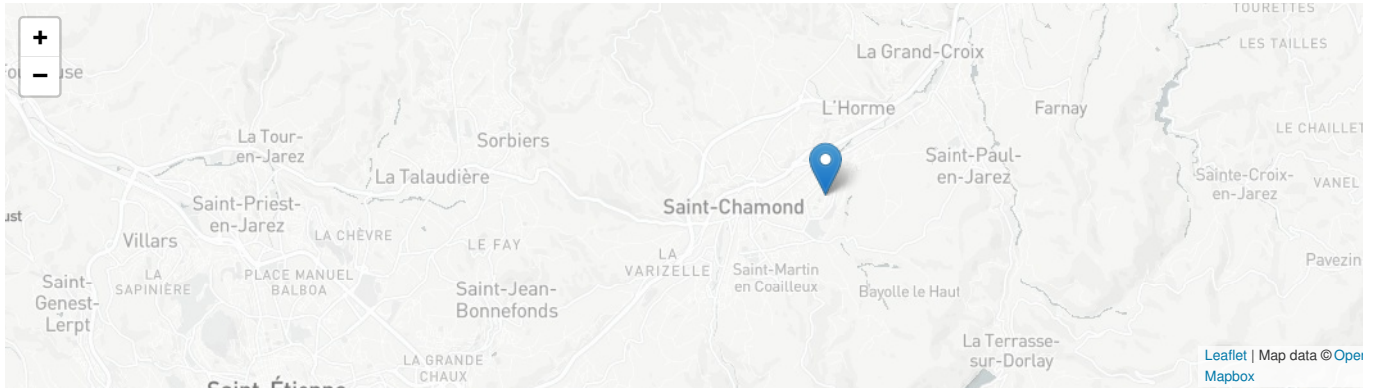
le-Chat

Sai

GHG emissions

GHG in use : 7,40 KgCO₂/m²/an

Contest



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