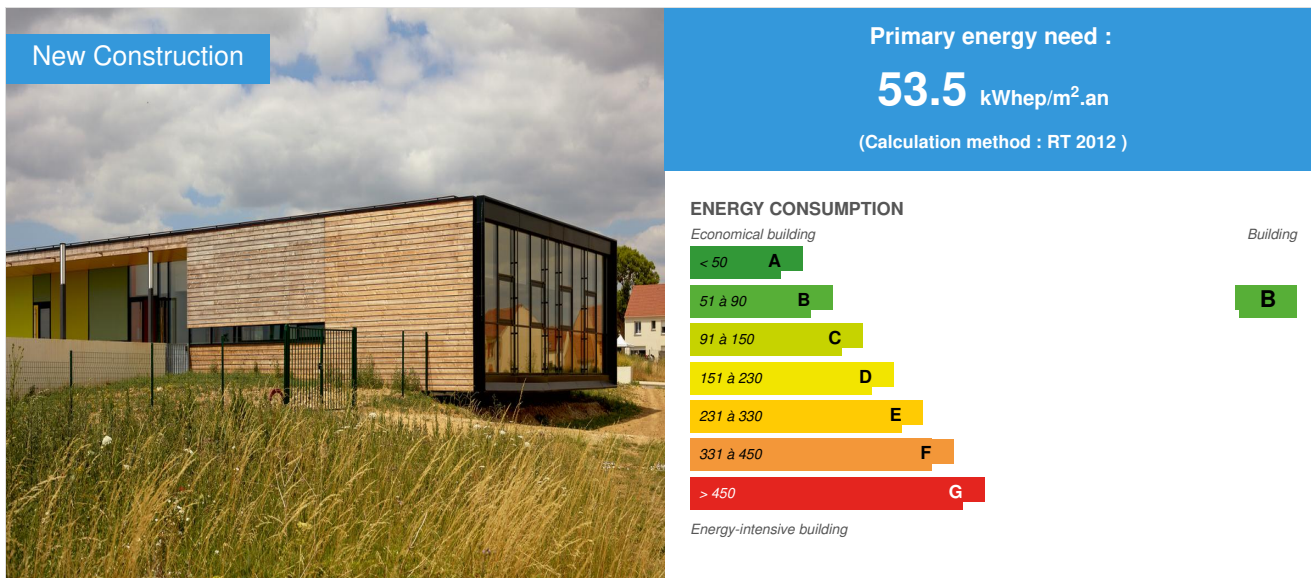


Extension of primary school - Chauconin-Neufmontiers

by Communication CERTIVEA / 2019-03-15 12:03:31 / France / 4152 / FR



Building Type : Preschool, kindergarten, nursery
Construction Year : 2015
Delivery year : 2017
Address 1 - street : 68 rue Charles Péguy 77124 CHAUCONIN - NEUFMONTIERS, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 930 m²
Construction/refurbishment cost : 2 300 000 €
Cost/m2 : 2473.12 €/m²

Certifications :



General information

In October 2017, the municipality of Chauconin-Neufmontiers officially inaugurates the new premises of the Marianne School, an unprecedented educational extension for this town of 3000 inhabitants.

The project is carried out as part of a HQE approach. It meets the BBC (RT 2012) criteria in the context of France's commitments in terms of sustainable development, energy savings and drastic reduction of greenhouse gas emissions, with a focus on comfort and convenience. occupant health and economical management of buildings.

The architectural concept allows a harmonious relationship of the building with its environment: location, volumetry, orientation, compactness, organization.

Good energy management has been favored, the architectural design optimizes energy consumption.

On this project, the environmental targets were achieved with a direct investment from the municipality in the outcome of this ecological approach.

The AMO HQE 2D Score has clearly identified the environmental characteristics of the materials selected for this construction allowing it to improve this target to the technical notation from P to TP.

The set is compact, its volumetry is simple and of great sobriety.

The total cost of the project (building + HVD) is 3,242,000 euros.

Sustainable development approach of the project owner

The Town Hall of Chauconin-Neufmontiers, owner of this extension of the school group, develops a highly environmental policy: it received the "zero phyt'eau" trophy on the public domain. The municipal infrastructure includes a hotel with swallows, a shared hen house, the creation of a sensitive area on 46 hectares. The rehabilitation of rural roads in harmony with the natural ecosystem was awarded with the "Grand Prix of the environment". The waters of the municipality are treated by a purification plant, valuing a local activated sludge sector. Farmers are encouraged to move towards a so-called "reasoned" agriculture with late mowing, flowering meadows ... As a continuation of these initiatives, the City Council has requested HQE certification for the extension of primary school. elementary school group consists of:

- 6 classes
- master's room
- entrance canopy
- lobby
- multi-purpose room-motor
- computer room
- yard
- health
- arrangement
- technical local

The HQE approach was notably supported by the AMO 2D Score, here is the technical detail of the notation obtained:

HIGH PERFORMANCE

- Target 1 - relation of the building to its environment (TP)
- Target 2 - Integrated Choice of Construction Products, Systems and Processes (TP)
- Target 4 - Energy Management (TP)
- Target 3 - worksite with low environmental impact (TP)
- Target 6 - Waste Management (TP)
- Target 7 - maintenance, maintenance and sustainability of performance
- Environmental (TP)
- Target 10 - visual comfort (TP)
- Target 12 - sanitary quality of spaces (TP)

PERFORMANCE

- Target 5 - water management (P)
- Target 8 - hygrothermal comfort (P)
- Target 11 - Olfactory comfort (P)
- Target 13 - Air Quality (P)
- Target 14 - water quality (P)

BASED

- Target 9 - acoustic comfort (performing for the dining room) (B)

Architectural description

This extension of the school group is organized around a plan of mass which frees the circulation around a central artery. The new district of Pré Bourdeau opens with a new facade of glass and painted wood cladding. The primary school is oriented North-West / Southeast, it is organized around a central clearing that separates the service areas in the north and the living areas (classes) in the south. An airlock provides access to the lobby, which in turn accesses the large central corridor serving classes, ancillary rooms and the multi-purpose room. This multi-motricity is the "prow" of the primary school, at the eastern end of the composition, it is oriented both to the forecourt, belvedere to the new neighborhoods and open on the playground. The architectural concept allows a harmonious relationship of the building with its environment: location, volumetry, orientation, compactness, organization.

See more details about this project

<http://chauconin-neufmontiers.fr/enfance-jeunesse/ecole/>

Stakeholders

Contractor

Name : Commune de Chauconin-Neufmontiers

Contact : Michel BACHMANN, Maire de la commune

<http://chauconin-neufmontiers.fr/>

Construction Manager

Name : B&N Architectes

Contact : Cyprien LEGER - Olivier NEYRAUD

Stakeholders

Function : Other consultancy agency

Qualiconsult

Mr. Goudenege Sébastien

<http://www.groupe-qualiconsult.fr/>

Office of Control and Security

Function : Thermal consultancy agency

Atelux

Mr. Bourdonnais

<http://atelux.fr/>

Thermal and fluid batch design and control

Function : Structures calculist

Gamba Acoustique

contact@acoustique-gamba.fr

<http://www.gamba-acoustique.fr/>

Calculation and prediction of the acoustic lot

Function : Other consultancy agency

Score 2D

Mr. Sabard

<http://score2d.eu/>

Environmental Study Board

Function : Assistance to the Contracting Authority

Terre et Toits

M. Bouchet

Technical Delegation

Contracting method

Separate batches

Type of market

Global performance contract

Energy

Energy consumption

Primary energy need : 53,50 kWh/m².an

Primary energy need for standard building : 110,00 kWh/m².an

Calculation method : RT 2012

Breakdown for energy consumption : CEP: - heating: 32.40 kWh EP is 60% of Cep spe - cooling: 0.00 kWh EP is 0% of Cep spe - ECS: 8.20 kWh EP is 15% of Cep spe - Auxiliary Ch / Raf / ECS: 0.90 kWh EP is 1% of Cep spe - Ventilation auxiliaries: 1.30 kWh EP or 2% of Cep spe - Cep lighting: 10.60 kWh EP is 19% of Cep spe - Electricity generation: 0.00 kWh EP * Cep spe: Cep on which the possible electrical production of the project has not been subtracted

Real final energy consumption

Year of the real energy consumption : 2 015

Envelope performance

Envelope U-Value : 0,53 W.m⁻².K⁻¹

More information :

The envelope consists mainly of wood materials: frame and wooden cladding. Gantry structure with glued laminated beam. The exterior joinery is made of wood.

Good energy management has been favored, the architectural design optimizes energy consumption:

By the elimination of thermal bridges,

The ability of the building envelope to reduce heating requirements, including a very good airtightness and very good insulation from the outside.

The building's ability to reduce lighting needs by optimizing the natural lighting of the teaching premises, of course, but also by paying particular attention to providing the maximum amount of natural light in the traffic and equipping the building efficient and economical electrical equipment.

By optimizing heating and ventilation systems: high efficiency condensing gas boiler and double flow ventilation

Indicator : EN 13829 - q50 » (en m³/h.m³)

Air Tightness Value : 0,76

More information

The Cep of this building complies with the decree of 26/10/2010 and 28/12/2012 Cep: 53.50 kWh EP Cep Max: 110.00 kWh EP Cep Gain: 51.4%

Renewables & systems

Systems

Heating system :

- Condensing gas boiler

Hot water system :

- Boiler fuel

Cooling system :

- Urban network

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- No renewable energy systems

Solutions enhancing nature free gains :

Le projet est conçu pour éviter toute sensation physique désagréable : Le confort d'hiver sera assuré par l'optimisation des systèmes de chauffage et de ventilation, les apports de calories liés aux surfaces vitrées de la façade Sud de l'école y participe

Environment

Urban environment

Chauconin-Neufmontiers, is a village of Seine-et-Marne west of Meaux and 45 km east of Paris. The town located 10 minutes from the Meaux station is served by the line 777 of the Couriers de l'Île de France. This extension of the school group is organized around a plan which is articulated on the edge of the commune, opened on the new district of meadows Bourdeau. The main exit of the building leads north to the center of the village.

Products

Product

Exterior facade cladding

Cruard Charpente

/

<https://cruard-charpente.com/>

Product category : Structural work / Carpentry, cover, tightness

Oak core, 21/145 section and 10 mm day

Apart from an "envelope" eliminating any thermal bridge, the architectural concept is a "prefabricated all-wood concept" that favors a great flexibility of evolution.



Costs

Construction and exploitation costs

Total cost of the building : 3 242 000 €

Health and comfort

Water management

In addition to the recommendation of water-saving solutions adapted to the different uses, a particular care is taken to the infiltration and the retention of the rain water thanks to the realization of green roof and the infiltration of the rain water in the basins provided for this purpose around the playground.

An entry forecourt (to the north) also has a porous asphalt that allows the infiltration of rainwater.

A rainwater collection tank is used for watering and maintenance of spaces.

Indoor Air quality

The project is designed to avoid any unpleasant physical sensation:

- The comfort of winter will be ensured by the **optimization of the heating and ventilation systems**, the contributions of calories related to the glazed surfaces of the south facade of the school will participate largely.
- Summer comfort will be assured on the south facade by the **wide roof overhang**, completed by wooden **sunshade blades**.

In the summer, the **natural ventilation at night** allows the cooling of the premises, an **adiabatic cooling unit** provides refreshment during the day.

Comfort

Health & comfort :

The playground is protected and framed by the school catering building and the school building, its shape allows **great versatility of use**. A bicycle shelter with cloakroom and showers will favor the use of bicycles, an aerial parking includes 6 stations electric vehicles, that is to say almost 30% of places. Exposed façades will be protected by external blinds.

- As part of the certification, **identification of the sources of electromagnetic emission**, carried out by an independent BE according to the standard NF EN 50499: the project does not present any equipment supposing to carry out a complementary risk analysis
- **Management of lighting on clock** guaranteeing safety and energy saving + arrangements made so that the lighting ensuring the signage of the site does not cause nocturnal visual disturbances for residents

This project is part of a neighborhood under construction wanted "eco-neighborhood". A new forecourt leads to the entrance porch-porch, it can accommodate children and parents, it also allows to park bicycles. The situation of the master-nursery room allows a surveillance of the entrances and exits, of the room multi-motricity and the playground.

Acoustic comfort :

Acoustic measurements to achieve target 9 "acoustic comfort" of the certification, according to the NFS-31 057 standard for checking the acoustic qualities of the building. Achieved level of performance:

- Airborne sound insulation between premises: Performant
- Impact noise level between premises: Performant
- Isolation vis-à-vis external noise: High performance
- Level of technical equipment noise: Performant
- Internal Acoustics: Base

Carbon

GHG emissions

Building lifetime : 50,00 année(s)

Life Cycle Analysis

Eco-design material :

The construction favors the wood, with a wooden frame, a wooden envelope, a vegetal terrace.

- Using **wood** as the main material of the extension
- Choice as much as possible of **biobased materials** .

The architect endeavored to choose bio-based materials, and to facilitate future deconstruction or change of use by the use of beam posts in a timber frame and facade building. The insulation is a **bio-based hemp** . For this material, the local sector has been favored, Seine-et-Marne being a producer. All doublings, partitions, false ceilings, are **easily removable, recoverable** to respond to subsequent educational developments. **Natural lighting** is naturally highlighted: central lighting directly lit, deep classes lit in the second day, large glazed areas for common premises. As the school is **labeled HQE** , it is coherent to continue this approach and to use for the whole of the maintenance, eco-labeled products which respect on the one hand the environment and on the other hand the health of the users places, as well as staff. The constructive and technical choices anticipated the maintenance and cleaning procedures of the various materials used to ensure the sustainability of the performance of the heating, ventilation, lighting and water management systems. This instruction is detailed in a user's **booklet and a maintenance booklet for staff and users of the school**.

Contest

Reasons for participating in the competition(s)

L'extension de 6 classes présentée est la première école certifiée HQE niveau Exceptionnel de France.

Le projet est présenté dans la catégorie « Bas Carbone ». Il met en oeuvre des solutions favorisant les matériaux bio-sourcés, l'utilisation et le stockage des ressources, ou encore l'intelligence artificielle.

Ainsi, la structure et les façades sont en bois, l'isolant utilisé en façades, cloisons, et sur certains faux-plafonds est bio-sourcé. Cet isolant met en avant les circuits court, il est composé de chanvre, plante poussant localement en Seine-et-Marne.

Les ressources naturelles sont au maximum favorisées et mis en avant : implantation bioclimatique (optimisation des apports solaires et réduction des besoins d'éclairage artificiel), gestion de l'eau réalisée durablement (cuve de récupération, toiture végétalisée, noues, parvis en béton poreux), gestion d'éclairage intelligente (détection de présence et détection lumière jour, gradations par zone), système de ventilation mixte performants (ventilation avec récupération de calories en hiver, ventilation naturelle en été, rafraîchissement par humidification), limitation des besoins en chauffage.

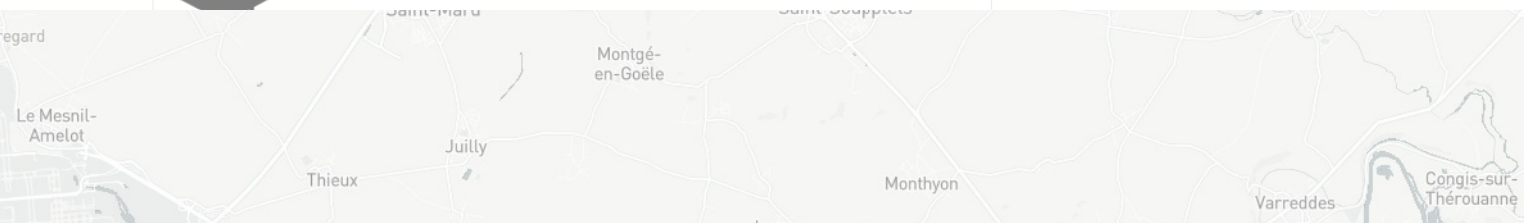
Building candidate in the category

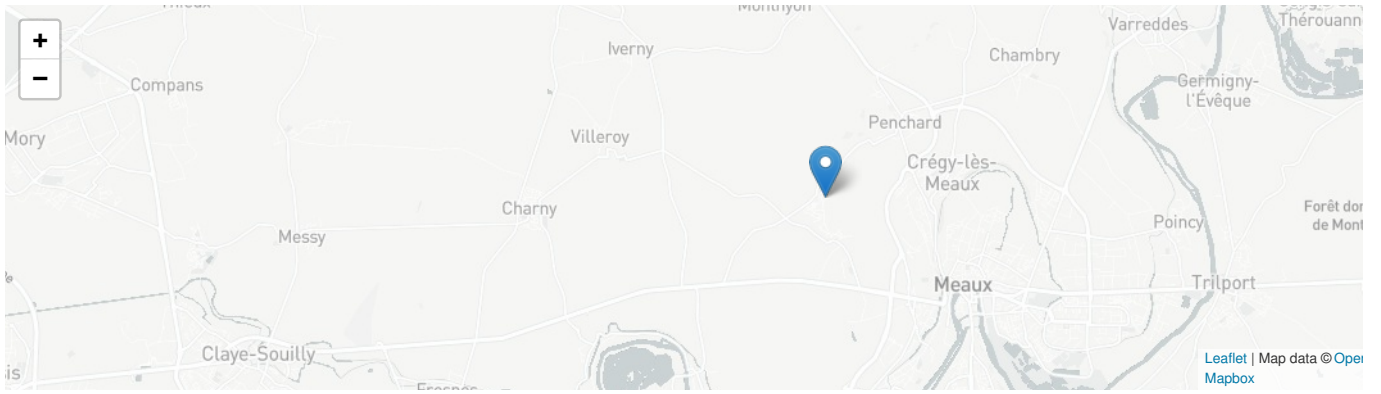


Bas Carbone



Prix du public





Date Export : 20230419235907