


Beaurepaire school canteen

by Jean-Marie LE TIEC / 2023-03-10 00:00:00 / France / 704 / FR

New Construction



Primary energy need :

76.3 kWhep/m².an

(Calculation method : RT 2012)

ENERGY CONSUMPTION

Economical building *Building*

< 50	A	
51 à 90	B	B
91 à 150	C	
151 à 230	D	
231 à 330	E	
331 à 450	F	
> 450	G	

Energy-intensive building

Building Type : Restaurant
Construction Year : 2021
Delivery year : 2022
Address 1 - street : rue gutenber 38270 BEAUREPAIRE, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 498 m² SHON RT
Construction/refurbishment cost : 1 334 866 €
Number of Place : 185 Place
Cost/m2 : 2680.45 €/m²

Certifications :



General information

The new school restaurant composes with the communal heritage while asserting a contemporary identity making perceptible the vocation of the equipment . It finds a "soft" inscription on the scale of the town center, in conjunction with the two squares that surround it. The volumetry of the project, reinterpreting the vernacular architecture, with a large pitched roof, wide overhangs and a tiled roof, refers to the local heritage and makes it possible to make the link between the Gambetta school establishment and the residential houses. . The project aims to be in harmony with the identity of its territory, not only by volume but also by **the use of local materials: raw earth (adobe and adobe), wood and tiles** . Raw earth brings **hygrometric and acoustic comfort** to the building.

A square, forecourt of access to the school canteen, is fitted out in connection with Place Goudard and the Gambetta school. Presenting a secure and friendly space, it allows the waiting of children and the meeting of parents in peace and under cover. The project recomposes a new facade on the Place Goudard, it is the 3rd pendant of the whole formed by the elementary and nursery school. Its envelope is simple, linear, sheltered under a single large roof. Its rectangular seat offers a homogeneous interior volume organized according to a regular pattern. The project thus positioned makes it possible to create a protected recreational space for children to the east of the plot.

Photo credit

NAMA Architecture

Stakeholders

Contractor

Name : Commune de Beaurepaire

Contact : mariele.bruyas[a]ville-beaurepaire.fr

<https://www.ville-beaurepaire.fr/>

Construction Manager

Name : NAMA Architecture

Contact : contact[a]nama-archi.fr

<http://nama-archi.fr/>

Type of market

Realization

Allocation of works contracts

Separate batches

Energy

Energy consumption

Primary energy need : 76,30 kWh/m².an

Calculation method : RT 2012

Breakdown for energy consumption :

- Heating consumption: 28.3 kWh EP
- Air conditioning consumption: 0 kWh EP
- DHW consumption: 24.1 kWh EP
- Lighting consumption: 4.1 kWh EP
- Consumption of ventilation auxiliaries: 19.2 kWh PE
- Consumption of hydraulic auxiliaries: 0.6 kWh EP

Total primary energy consumption: 76.3 kWh PE

Envelope performance

Air Tightness Value : 0,97

Renewables & systems

Systems

Heating system :

- Condensing gas boiler
- Water radiator
- Low temperature floor heating

Hot water system :

- Condensing gas boiler

Cooling system :

- No cooling system

Ventilation system :

- Single flow
- compensated Air Handling Unit
- Double flow heat exchanger

Renewable systems :

- No renewable energy systems

Environment

Risks

Hazards to which the building is exposed :

- Flooding/Slow flood

Risks measures put in place :

Low hazard of the risk of flooding: elevation of 60 from level 0 of the building.

Urban environment

The objective of our project is to be anchored in its territory, to be attentive to the architectural and urban qualities of the site in order to fit into a mixed built space and to forge links with its inhabitants.

Products

Product

Pisé

Archivolte

Laurent PETRONE - laurent.petrone[at]free.fr

Product category : Gros œuvre / Structure, maçonnerie, façade

The adobe technique (raw earth compacted in a formwork in successive layers using a pestle (or dame, pisoir, pisou) is a technique for implementing the ancestral earth material, used in works that are several centuries old around the world and some of which, in a perfect state of conservation, are classified as World Heritage by Unesco. In recent years, we have witnessed a revival of this technique in new buildings, public or private, with contemporary architecture. and this in particular for its multiple aesthetic, physical and ecological qualities.



Adobe

Archivolte

Laurent PETRONE - laurent.petrone[at]free.fr

Product category : Second œuvre / Cloisons, isolation

The dividing wall between the two dining rooms made of adobe makes it possible to bring material, a non-smooth wall into the spaces: this is a real plus for the acoustics of the rooms.



Costs

Construction and exploitation costs

Cost of studies : 207 540 €

Total cost of the building : 1 542 406 €

Subsidies : 976 611 €

Carbon

Life Cycle Analysis

Eco-design material :

The wooden frame is the main construction method for this project. The construction system mainly uses elements coming directly from the local wood industry, most often used raw, solid and relatively unprocessed, in a search for economy, simplicity and durability, and enhancement of the natural material. We will try to avoid, as far as possible, the use of glued laminated timber.

The geographic location of the project calls for the use of this biosourced material. It is the local resource par excellence, not only present nearby in local forests, but also sawable nearby. We propose on this point to prescribe a supply with local woods answering at least to the label "Bois des Alpes" and by trying to guarantee the most local origin of the resource and the place of its transformation. This approach makes it possible to stabilize jobs on the territory of our projects, while guaranteeing the quality of the wood used and limiting the carbon footprint of the project. The wood will mainly be present inside, in the structure of the curtain walls or on the underside of the ceilings.

The raw earth is found on the west facade in the form of rammed earth and for the wall separating the elementary room from the nursery rooms in the form of coated raw earth bricks. In France, earth as a construction material is widely used throughout the territory in the built heritage. The rammed earth technique is a technique for implementing the ancestral earth material, used in multi-centenary works present throughout the world and some of which, in a perfect state of conservation, are classified as World Heritage by Unesco. In recent years, we have witnessed a revival of this technique in new buildings, public or private, with contemporary architecture, and this in particular for its multiple aesthetic, physical and ecological qualities.

The use of raw earth in construction is all the more relevant as specialists in sustainable development and environmental impacts in the field of construction point to industrial materials with high energy production costs such as cement and steel. Rammed earth is a mineral material with high inertia, close to concrete in its structure and composition, but using only raw materials. Today it is a real alternative to all-concrete construction. Its other great quality is its reversibility. Indeed, without the addition of chemical binder, this material is infinitely recyclable. It does not lose its mechanical, hygrometric or even aesthetic characteristics.

These intentions lead to the definition of interior atmospheres resolutely dominated by matter: it feels, it touches, it sees. All these principles are part of a frugality approach aimed at minimizing maintenance costs over the long term, while providing optimal comfort for future users. We wish to favor the use of the "right" material, thus, the very demanding parts of the building (technical rooms) or in contact with the ground are made of concrete in order to be able to protect the biosourced envelope coming to rest on this base, ensuring thus its sustainability and its foundation.

Contest

Reasons for participating in the competition(s)

- Organic and geosourced materials:
 - Raw earth, with the technique of rammed earth and adobe;
 - Wood frame with wood wool insulation.
- Respect for local architecture: the volumetry of the project, reinterpreting vernacular architecture, with a large pitched roof, wide overhangs and tile covering, refers to the local heritage.

