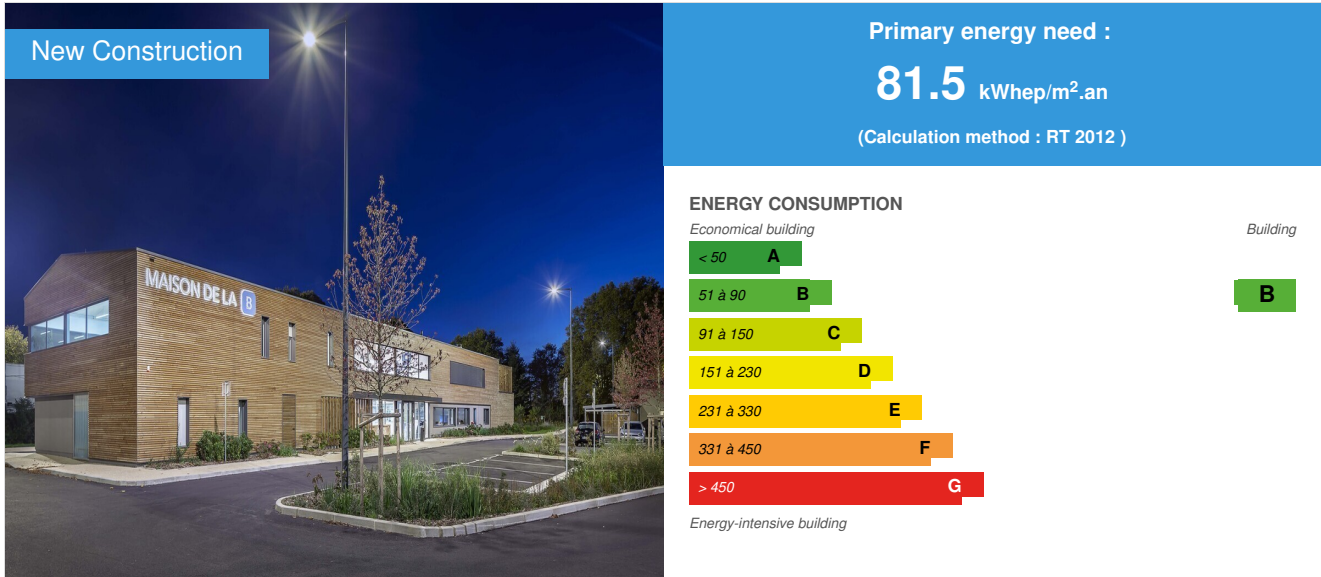


Maison de la B (UO of the Traction Establishment - Production of RER B)

by [Yasmina Sandoz](#) / © 2023-01-26 18:32:22 / France / 532 / FR



Building Type : Other building
Construction Year : 2021
Delivery year : 2022
Address 1 - street : Parc SNCF 77290 MITRY-MORY , France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 1 059 m² SHON
Construction/refurbishment cost : 3 100 000 €
Cost/m² : 2927.29 €/m²

Certifications :



Proposed by :



General information

The French energy transition law imposes energy and environmental exemplarity for new constructions under state contracting authority. Example at the end of line B of the Ile-de-France RER.

An exemplary public building in Mitry-Mory (77)

"All new constructions under the supervision of the State, its public establishments or local authorities demonstrate energy and environmental exemplarity and, whenever possible, positive energy and high environmental performance", indicates the decree of April 10, 2017, which specifies the decree of December 21, 2016 which itself defines the provisions of article 8 of the French Energy Transition for Green Growth law.

These provisions, applicable to new buildings, concern projects for which the building permit was filed after September 1, 2017. Clearly, despite the entry into force of the new environmental regulation RE2020 at the start of the year, 2022 will be marked by the delivery of such exemplary projects.



A new Operational Unit for RER B

This is the case of the Maison de la B in Mitry-Mory (77) that has been delivered in September 2023. Alongside the new RATP maintenance workshop for rolling stock, at the terminus of line B of the RER, the new Unit Mitry Operational is an R+1 building comprising the living quarters and offices of the teams of RER drivers and SNCF shunting agents from the Traction Production Establishment on line B, and a landscaped car park with 125 spaces.



Dominique Dosne, SNCF Gares & Connections architect, specifies that in this context, there are two approaches to communicating about the environmental performance of construction. On the one hand, the energy-carbon benchmark (E+C-), on the other, the EMC2B approach, specific to Gares & Connexion and Arep, which analyzes projects in relation to the environmental issues of energy, materials, carbon, climate and biodiversity.

E2C1 level

According to the energy-carbon benchmark, the project involves the production of renewable energies (solar energy, geothermal energy, heat pump, etc.), the carrying out of a Bepos study (which completes RT2012) and compliance with the regulatory threshold E3 .

Dominique Dosne indicates: "In the case of the Maison de la B, we reach the E2 requirement level thanks to reinforced thermal insulation and the production of solar energy on the roof with photovoltaic panels."

As far as carbon is concerned, it involves carrying out a Life Cycle Assessment and respecting the maximum threshold C1, which is not very demanding.

Dominique Dosne specifies: "Although the building is designed in wood (wooden frame walls, solid wood slab, wood frame and wood and biosourced insulation), having the ground floor slab and the concrete foundations does not allow reach the C2 level, more efficient."



EMC2B approach

If we take into account the EMC2B approach (energy, matter, carbon, climate and biodiversity), the criteria are more diversified. As far as **energy** is concerned, in order to reach the E3 level (demanding), photovoltaic panels have been integrated into the project from the design phase. The **material** box is ticked by the extensive use of wood and biosourced insulation. The challenge was to change the construction habits of the SNCF, but also to create a warm atmosphere in the interior spaces of the Maison de la B.

As for the **carbon** box, the architect points out that the building stores carbon thanks to its wooden structure; this constructive choice limits the building's greenhouse gas emissions over its entire life cycle. In addition, the landscaping of the car park includes 40 trees and plants that will absorb carbon throughout their life and help improve the project's carbon footprint.

As far as the **climate** is concerned, a bioclimatic study has concluded that it is necessary to maintain auxiliary air conditioning in summer, during heat peaks, in the offices and meeting rooms on the South-West facade.

As for **biodiversity**, the challenge was to limit the impact of the overall operation on the site with the construction of a 5700m² RATP maintenance workshop. The biodiversity present on the site is reinforced through the planned developments, the rest areas under the large existing trees, the retention basin with wet plants in the extension of the building, the alignments of American sweetgum in the valleys planted with depolluting plants in the car park, perennial lines and grasses. The building itself can promote biodiversity with a wooden claustra on the facade on which vegetation can grow vertically.



BBCA label in sight!

A Life Cycle Analysis on construction products and equipment was carried out in the "studies" phase, followed by a new LCA carried out at the end of the project with a view to obtaining the BBCA label.

Balance sheet

The energy and environmental exemplary nature of a new construction under State contracting authority resulted in a building whose performance cannot be linked to RE2020, insofar as the E+C- approach is not ultimately not correlated anymore. If we refer to the E+C- calculation, we obtain an E2C1 level, the exemplary nature of which remains relatively common.



- **Funders:** IDF Region / SNCF MOBILITES Transilien
- **Client :** SNCF Réseau (Saint-Denis, 93)
- **Architect :** SNCF Gares & Connexions - DGIF - Design & Construction Department (Paris)
- **General project management (EXE) :** AREP, DA-PBI
- **BET wood structure (studies):** Tradicad (Paris)
- **BET wood structure (EXE) :** CBS (Choisy-le-Roi, 94)
- **EG/Carpenter :** Lifteam (IDF subsidiary, 94)
- **Supply :** Ecotim (La Rochette, 73)
- **Landscaper, VRD:** Atelier Tournesol
- **SP / SU :** 984 / 938 m²
- **Total amount of wood work :** €590,000 excluding tax
- **Amount of the contract:** €3,100,000 excluding VAT

Realization TCE: CBS-Lifteam, Aricson Pires Rocha, Works supervisor TCE Lifteam, Jean-Luc Lemoine, Director of Wood Works at Lifteam for all transverse construction sites, on the wood part, safety and training.



Author of the article: Jonas Tophoven

Jonas Tophoven has been a journalist for the professional construction and wood press in France and Germany for 30 years. The theme which is particularly close to his heart is the drastic reduction of GHG emissions in construction, the world's largest human emitter ahead of agriculture, with a greater impact in France. He first worked for 12 years on dry construction, then for 15 years on prefabricated wood construction and he has been collaborating for 10 years in the programming of some 150 annual conferences of the Forum Bois Construction, congress of actors in biosourced construction.

See more details about this project

[https://cbs-cbt.com/fr/realisations/Maison-de-la-B,-Mity-Mory-\(77\)-6-0-142](https://cbs-cbt.com/fr/realisations/Maison-de-la-B,-Mity-Mory-(77)-6-0-142)

<https://www.batirama.com/article/52501-un-batiment-public-exemplaire-a-mity-mory-77.html>

Photo credit

Stakeholders

Contractor

Name : SNCF Réseau, MOA Déléguée pour la Région IDF et SNCF Mobilités Transiliens, financeurs
<https://www.transilien.com/fr/>

Construction Manager

Name : SNCF Gares & Connexions - DGIF C/R (Paris)
Contact : Dominique Dosne, architecte ; Julian Carrasco, assistant
<https://www.garesetconnexions.sncf/fr>

Stakeholders

Maître d'œuvre général:

SNCF Réseau (phase études) & Aurélie Poix – AREP - DA - PBI (phase EXE)

Maître d'œuvre Travaux

Lionel Dubois, SNCF GARES & Connexions - EMT IDF- ABE PN/GAT

Function : Construction company

CBS-Lifteam

Jean-Luc Sandoz (PDG), Guillaume Lavorel (BE), Jean-Luc Lemoine (Bois), Aricson Pires (TCE),

<https://cbs-cbt.com/fr/>

BE, manufacturing, wood construction and TCE

Function : Manufacturer

ECOTIM

Benoît Demolis

<http://www.ecotim.com>

Manufacture of wooden structural elements

Function : Structures calculist

Traciacad en phase amont (MOE Etudes)

Guillaume Fossati

Function : Others

Atelier Tournesol - Paysagiste, VRD

Energy

Energy consumption

Primary energy need : 81,50 kWh/m².an

Calculation method : RT 2012

Real final energy consumption

Final Energy : 94,40 kWh/m².an

Envelope performance

More information :

Wooden frame walls, wooden coffers on the roof, blown-in biosourced insulation (cellulose), reinforced on the facade by an outer layer of 6cm of rigid wood wool, wooden cladding.

Renewables & systems

Systems

Heating system :

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

Hot water system :

- Condensing gas boiler

Cooling system :

- Tape

Ventilation system :

- compensated Air Handling Unit

Renewable systems :

- Solar photovoltaic

Renewable energy production : 37,00 %

Other information on HVAC :

Heating and hot water systems: gas heating with condensing boiler by radiators in non-air-conditioned rooms and underfloor heating in the entrance hall called "salle des pas perdus".

Ventilation and air conditioning systems: CTA and reversible air conditioning heating, powered by electricity including PV.

Energy production by PV.

Production d'EnR : 30KWh/m².an

Environment

Biodiversity approach

Landscaping of the surroundings in relation to the character of the site and the listed wooded area of the Cité du Bois, in compensation for the impact on the site of the creation of a maintenance workshop and pit tower at the RER B terminus .

40% of the space is treated with vegetated and/or permeable soils.

Landscaper: Atelier Tournesol

Mitigation actions on soil and biodiversity :

The biodiversity present on the land is reinforced through the planned developments, the rest areas under the large existing trees, the retention basins and the planted valleys. Rainwater will be collected and cleaned up in the valleys and basins by plants. The building itself can promote biodiversity with a wooden claustra on the facade on which vegetation can grow vertically.

Landscaper: Atelier Tournesol

Products

Product

Cellulose wadding insulation

This insulation makes it possible to achieve good thermal inertia, while ensuring good summer comfort. It is particularly suitable for wooden constructions.

Costs

Construction and exploitation costs

Total cost of the building : 3 100 000 €

Additional information on costs :

Total amount of wood work: €590,000 excluding tax

Carbon

Carbon sink

Wood and biobased construction

The wood construction of this project includes 211.9 tons of Biogenic Carbon.

Initiatives promoting low-carbon mobility

- 2 wheel shelter
- Pre-cabled car park for 25 spaces for electric vehicles (out of 130)

GHG emissions

GHG in use : 3,90 KgCO₂/m²/an

Methodology used :

Indicators relating to the E+C- label (in kg eq CO₂/m²SDP):

- Age PCE: 952.9
- Carbon storage: 215.3
- Eges Worksite: 37
- Eges Energy: 195.7
- Eges Project: 1191.0

GHG before use : 989,90 KgCO₂/m²

Building lifetime : 50,00 année(s)

, ie xx in use years : 253.82

Life Cycle Analysis

Eco-design material :

Wood and biobased materials

Contest

Reasons for participating in the competition(s)

- Significant use of wood and biosourced insulation;
- Obtaining 3 labels (including one in progress), guaranteeing the exemplary nature of the construction;
- Production of renewable energy on the roof;
- A project that sets an example for future public buildings governed by the Energy Transition for Green Growth law;
- Above all, an internal issue at the SNCF!





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