12 passive housing for seniors and people with reduced mobility

by Romain CLARET / 2022-03-29 00:00:00 / France / 1660 / FR

New Construction

Primary energy need :
-18 kWh/(m².an)
(Calculation method : RT 2012 )

ENERGY CONSUMPTION

Economical building

<table>
<thead>
<tr>
<th>Building Type</th>
<th>Primary energy need</th>
</tr>
</thead>
<tbody>
<tr>
<td>50-90 - A</td>
<td>-18 kWh/(m².an)</td>
</tr>
<tr>
<td>91-150 - C</td>
<td>-18 kWh/(m².an)</td>
</tr>
<tr>
<td>151-250 - D</td>
<td>-18 kWh/(m².an)</td>
</tr>
<tr>
<td>251-350 - E</td>
<td>-18 kWh/(m².an)</td>
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<tr>
<td>351-450 - F</td>
<td>-18 kWh/(m².an)</td>
</tr>
<tr>
<td>&gt; 450 - G</td>
<td>-18 kWh/(m².an)</td>
</tr>
</tbody>
</table>

Building Type : Collective housing < 50m
Construction Year : 2018
Delivery year : 2019
Address 1 - street : rue de vonchaud 39170 SAINT LUPICIN, France
Climate zone : [Cbc] Mild, dry winter, warm and wet summer.

Net Floor Area : 836 m²
Construction/refurbishment cost : 1 450 000 €
Cost/m² : 1734.45 €/m²

Certifications :

General information

Creation of 12 housing units for Seniors and PMR in the municipality of St Lupicin 39170. The request of OPH St Claude is to carry out a BEPOS project in wood frame and straw. The project management (Elie Bouche architect DPLG commissioned in November 2014 assisted by thermal engineer Romain Claret – PLAN 9) presents a team and leads the project to design a passive structure labeled by the Passiv Haus Institute. At the initiative of the project (2013) the BEPOS objective made it the first BEPOS social housing project in Bourgogne-Franche-Comté.

Photo credit
Stakeholders

Contractor

Name: OPH de SAINT CLAUDE / La maison pour Tous
Contact: Philippe BAILLY
https://www.lmpt-coop.fr/

Construction Manager

Name: ATELIER DES MONTAINES
Contact: ELIE BOUCHE

Stakeholders

Function: Thermal consultancy agency
PLAN 9
Romain CLARET
https://www.plan-9.fr/
Support for Passivhaus labeling

Contracting method

Separate batches

Type of market

Global performance contract

Energy

Energy consumption

Primary energy need: -18,00 kWhep/m².an
Primary energy need for standard building: 104,00 kWhep/m².an
Calculation method: RT 2012
CEEB: 0.0001
Breakdown for energy consumption: Heating 25.5 DHW 10 Lighting 1.1 Windward 3.8 Others 16.7

Real final energy consumption

Real final energy consumption/m²: -22.00 kWhef/m².an
Year of the real energy consumption: 2020

Envelope performance

Envelope U-Value: 0.18 W.m⁻².K⁻¹
More information:
Exterior wall Wood wool 0.043 80
Straw 0.065 Wood 0.130 OSB 0.130 120
Straw 0.065 Wood fiber 0.043 OSB 0.130 140
Straw 0.065 Wood 0.130 OSB 0.130 120
OSB 3 0.130 15
Wood wool 0.040 0.130 40
Plaster 0.320 13
U-value = 0.115 W/(m²K)
Basement floor / floor slab Foam glass 0.093 400
cement 2,100 250
More information

-34 kWhEP/m² according to RT2012 regulatory requirements Balance of consumption and photovoltaic production

Renewables & systems

**Systems**

- **Heating system:**
  - Electric radiator
- **Hot water system:**
  - Heat pump
- **Ventilation system:**
  - Double flow heat exchanger
- **Renewable systems:**
  - Solar photovoltaic

- **Renewable energy production:** 100,00 %
- **Other information on HVAC:**
  - Double flow ventilation with back-up by hot battery and additional towel dryer in bathrooms
  - 4*15 kWp of photovoltaic solar panels, producing an average of 4*20,000 kWh per year

Environment

Urban environment

The construction is located in the center of the town, close to the shops. It is part of a rural area included in the Haut-Jura regional natural park, with many hiking trails and protected areas.

Products

**Product**

straw insulation

**Product category:** HVAC, électrique / lighting

Implementation of straw insulation

The natural straw insulation with a thickness of 45 cm makes it possible to naturally reinforce the insulation rate of the building. Combined with the photovoltaic panels, the building remains energy balanced throughout the year.
Costs

Construction and exploitation costs

Total cost of the building: 1,450,000 €

Contest

Reasons for participating in the competition(s)

- Des bâtiments passifs et confortables pour des publics vulnérables;
- Utilisation de matériaux biosourcés et locaux: murs bois, isolation paille et fibre de bois, isolation laine de bois, isolation ouate de cellulose.

Building candidate in the category

Prix du public