CONSTRUCTION21

12 passive housing for seniors and people with reduced mobility

by Romain CLARET / () 2022-03-29 00:00:00 / France / 💿 1808 / 🍽 FR



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

Net Floor Area : 836 m² Autre type de surface nette 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 C https://www.Impt-coop.fr/

Construction Manager

Name : ATELIER DES MONTAINES Contact : ELIE BOUCHE

Stakeholders

Function : Thermal consultancy agency PLAN 9

Romain CLARET

C https://www.plan-9.fr/ Support for Passivhaus labeling

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 : 2 020

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 concrete 2,100 250 U-value = 0.218 W/(m2K)

Roof Cellulose wool 0,047 480 Cellulose wool 0,047 Wooden structure 0,130 120 Empty space 1,220 200 Plaster 0,320 13 U-value = 0.077 W/(m2K)

Frame Paget Menuiserie, Schuco

U w-value = 0.8 W/(m2K) Glazing U g-value = 0.65 W/(m2K) g -value = 63 %

Entrance door Minco Brenus U d-value = 0.8 W/(m2K)

Indicator : n50 Air Tightness Value : 0,60

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 : Génie climatique, électricité / Eclairage

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.



Construction and exploitation costs

Total cost of the building : 1 450 000 €

Contest

Reasons for participating in the competition(s)

- Passive and comfortable buildings for vulnerable groups;
- Use of biosourced and local materials: wooden walls, straw and wood fiber insulation, wood wool insulation, cellulose wadding insulation.

Building candidate in the category





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