Health House of Vern sur Seiche

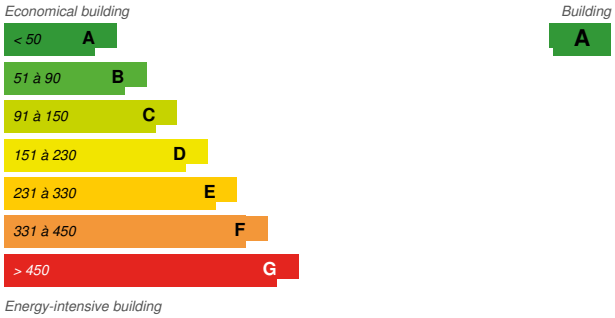
by Frédéric BEUNEUX / 2018-04-25 22:50:17 / France / 9460 / FR

Primary energy need :

63.8 kWhep/m².an

(Calculation method :)

ENERGY CONSUMPTION



Building Type : Other building
Construction Year : 2017
Delivery year : 2018
Address 1 - street : 2, rue François Rabelais 35770 VERN SUR SEICHE, France
Climate zone : [Cfc] Marine Cool Winter & summer- Mild with no dry season.

Net Floor Area : 970 m²
Construction/refurbishment cost : 1 490 000 €
Number of none : 25 none
Cost/m2 : 1536.08 €/m²

Certifications :

General information

A building labeled PassivHaus
The health center of Vern sur Seiche (35770) is among the winning projects ADEME "High-performance building and biobased materials" in Ille et Vilaine (35).
It was conceived by favoring the use of biobased materials and the choice to involve local companies.
The set includes 970 m2 of floor space on 3 levels and can accommodate loan of 25 health professionals.
It opened its doors to the public on February 26, 2018.

Sustainable development approach of the project owner

Building for health professionals in coordination to improve patient care. The characteristics of the construction, the materials used, the interior decoration, the indoor air management, the regulation of the lighting were chosen for a quality of reception and optimal work. In this logic, the master of work wanted an energy efficient building, environmental eco, biobased and obtaining the Passiv Haus Labeling.

Architectural description

Local business jobs

Bio-sourced materials, from the recycling streamProduction of materials near the site

Building users opinion

Very satisfied with the comfort, the quality of the materials, the soundproofing of the places ...
It's a total satisfaction

If you had to do it again?

We would do the same thing

See more details about this project

http://www.maisonsantevern.com

Stakeholders

Contractor

Name : SCI RSV
Contact : Frédéric BEUNEUX, fbeuneux@wanadoo.fr, 02 99 62 71 47
http://www.maisonsantevern.com

Construction Manager

Name : Batir France
Contact : Pinon Sébastien,sebastien.pinon@batir-france.fr,06 72 50 54 48
http://www.batir-france.com

Stakeholders

Function : Designer

CARLO Jean François

Jean François CARLO, 02 23 27 93 56

http://carlojfarchitecte.business.site

Function : Thermal consultancy agency

HINOKI

Thomas PRIMAULT, info@hinoki.eu 06 81 43 56 94

https://www.hinoki.eu
Certificate Passiv Haus

Contracting method

Maximum Guaranteed Price

Energy

Energy consumption

Primary energy need : 63,80 kWhep/m^2.an
Primary energy need for standard building : 143,00 kWhep/m^2.an

Calculation method :

CEEB : 0.0001

Breakdown for energy consumption : direct electric heating: 9.1 kWhEF / m² / year Auxiliary: 4 kWhEF / m² / year Overnight ventilation in summer: 4.4 kWhEF / m² / year ECS 5.7 kWhEF / m² / year Specific electricity (computers, lighting ...): 18 kWhEF / m² / year

Real final energy consumption

Final Energy : 41,40 kWhef/m^2.an

Envelope performance

Envelope U-Value : 0,28 $W.m^{-2}.K^{-1}$

More information :

very strong thermal insulation with biosourced materials (Thermibloc, wood wool insulation) + inertia with system isolated from the outside
Mixed indoor, Foam Glass in under basement, Cork in under basement, Misapor under slab

Building Compactness Coefficient : 0,34

Indicator :

Air Tightness Value : 0,41

Users' control system opinion :

very positive: external BSO controlled by facade according to the sun, no overheating, very good brightness, in the morning all the BSO are opened automatically before the arrival of the occupants. Use of natural light in addition to artificial light, brightness controlled by the presence detection system and light sensors.

More information

The calculated performances are given on the basis of the PHPP calculation which is rather pessimistic, the first real consumptions are below these calculations.

Renewables & systems

Systems

Heating system :

- Radiant ceiling

Hot water system :

- Individual electric boiler

Cooling system :

- No cooling system

Ventilation system :

- Double flow heat exchanger

Renewable systems :

- Solar photovoltaic

Renewable energy production : 30,00 %

Puissance 3 KWC

Other information on HVAC :

AIRXPERT system type ROTOBOX RTV 3400-T160ST-P16-AEA-SDB (high efficiency)
flow rate of blowing / recovery Nominal 2975m3 / h
rated temperature output: 91%

Free cooling function, over-ventilation at night in the summer, guaranteeing a temperature between 20 and 25 ° C max in summer

Environment

Urban environment

Land plot area : 650,00 m^2

Built-up area : 50,00 %

Green space : 162,00

Peri-urban site in medium-sized city, near a cultural, sports and radiology department.

Large green spaces with species like: Prunus, rhododendron, Camellia, Hydrangea and Agapantes Africanus as well as grasses on mulch.

Products

Product

ALGOpeinture

ALGO

Algo 15, rue de la Motte 35770 Vern sur Seiche

http://www.peinture-algo.fr

Product category : Second œuvre / Peinture, revêtements muraux

Painting based on seaweed, Breton manufacturing, which contributes to the quality of indoor air in our premises.
Respect for the environment, promotes the short circuit by integrating raw materials from local and renewable resources. This product has a very low carbon footprint
Made in local (Breton algae and manufacturing plant VERN SUR SEICHE)

It is an extraordinary painting in any respect (application, smell, resistance, washable, rendering, colors ...)

Se rendre sur Instagram maisonsantevern

THERMIBLOC

THERMIBLOC

XELIS GROUPE, ZA Piquet Sud Est 35 370 ETRELLES

https://www.thermibloc.fr

Product category : Gros œuvre / Structure, maçonnerie, façade

Thermibloc, formwork block made of mineralized wood fibers, incorporating insulation on the outside,
The insulation used is the wood wool on 16 cm thick, this complex (thermibloc with wood wool) was set up for the first time at the health house of Vern sur Seiche (Voier additional information about the product)

The insulation placed outside ensures a continuous mantle wall without thermal bridge
The concrete load-bearing wall of floors brings the benefit of a strong inertia, thus an excellent phase shift and limitation of temperature variations
Wood concrete highly permeable to water vapor participates in hygrometric regulation, it contributes by its acoustic absorption to attenuate the acoustic waves and thus creates a soothing interior atmosphere
This material is perfect for a passivhaus health home

Costs

Construction and exploitation costs

Cost of studies : 10 800 €

Total cost of the building : 1 490 000 €

Subsidies : 98 000 €

Energy bill

Forecasted energy bill/year : 5 000,00 €

Real energy cost/m2 : 5.15

Real energy cost/none : 200

Health and comfort

Water management

Consumption from water network : 10,00 m^3

Water Consumption/m2 : 0.01

Water Consumption/none : 0.4

Optimization of water consumption by automatic electronic valves.
Minimum water consumption by the flow and the right amount needed.

Indoor Air quality

The use of paint with a very low emissivity level (Algo), the installation of a very high efficiency CTA, lime renders, the use of Métisse (recycled cotton) insulation and Fermacel ensure the hygrometric regulation of the building.

The set contributes to the indoor air quality of our premises .In the meeting room, CO2 detector that controls an air flow control damper.

Comfort

Health & comfort :

VOC (volatile organic compounds) is less than 1g / liter or 10 times less than the minimum allowed by the A + standard.

The Métisse cotton wool provides exceptional acoustic comfort The triple glazing freed us from the cold zone and limits air movement.

Calculated thermal comfort : Inner summer temperature between 20 and 25 ° C, indoor winter temperature between 20 and 22 ° C
Measured thermal comfort : Room-by-room regulation of the temperature by ceiling radiating slabs, setpoint temperature adjustable in each room.

Acoustic comfort :

The mixed race (recycled cotton wool LE RELAIS) brings exceptional acoustic comfort.

Fibralith false ceilings (ORGANIC PURE brand KNAUF based on cement-coated wood fiber, forming an acoustic wave-absorbing surface) contributes to the acoustic and visual comfort of circulations and waiting rooms.

Carbon

GHG emissions

GHG in use : 1,50 $KgCO_2/m^2/an$

Life Cycle Analysis

Eco-design material :

Thermibloc (wood / concrete mix) + wood fiber insulationSheet insulation insulation and lining (recycled cotton wool by LE RELAIS) Insulation of the floor of the DRC floor in MISAPOR (recycled glass block) instead of polystyrenePALGO 98% plant on the ground set of wall and lining plate, made of gypsum and wood fiberIndustrial wall lining of natural hydraulic lime and white cement brand PRB 100Floor ceiling tiles of clearances and waiting rooms in ORGANIC PURE brand KNAUF spiced wood wool, mineralized and coated with cement binder and white lime, offering a very good acoustic performance

Contest

Reasons for participating in the competition(s)

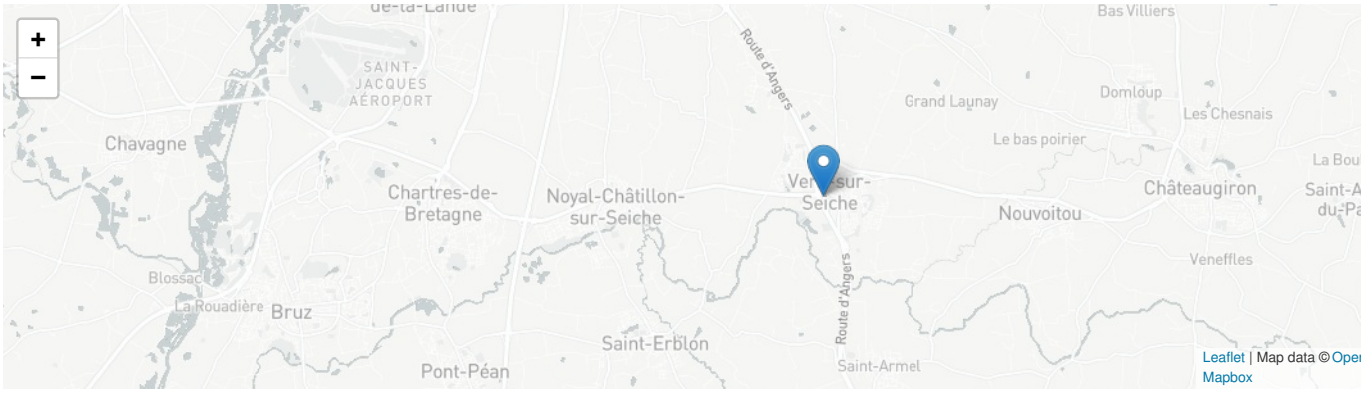
- An innovative building labeled PassivHaus.Label on the level of energy performance of the building. This one takes into account all the uses: lighting, equipment, heating, ventilation, waterproofing, etc ...
- An innovative and sustainable health home. This building of 970 m2 floor on 3 levels, is located at the entrance of the city. The entire internal organization is thought around the patient to welcome him in the best conditions.
- A building awarded the call for ADEME Projects in Ille et Vilaine in 2016 "High-performance buildings and bio-sourced materials".
- A controlled budget envelope

Building candidate in the category

Santé & Confort

Coup de Cœur des Internautes

Prix des Etudiants



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