


Europassive® 2 Ho House

by Vincent KEMPF / 2016-05-17 17:55:41 / France / 11073 / FR

New Construction




Green Building Solutions
FRANCE
Comp. de Cost. des Internavies

Primary energy need :

92 kWhep/m².an

(Calculation method : Other)



ENERGY CONSUMPTION

Economical building

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

Energy-intensive building

Building

A

Building Type : Isolated or semi-detached house
Construction Year : 2014
Delivery year : 2014
Address 1 - street : 8, rue Majunga 67270 HOCHFELDEN, France
Climate zone : [Cfb] Marine Mild Winter, warm summer, no dry season.

Net Floor Area : 160 m² SHON
Construction/refurbishment cost : 320 000 €
Cost/m² : 2000 €/m²

Certifications :



General information

The house Europassive® 2 Ho result of a bioclimatic design integrating the constraints of a plot and regulation of new development. The general concept was to give an overall unit to two different organizational entities: the volume heated and unheated volume. Technically structural envelope to the passive volume is continuous (including tile) to prevent any thermal bridge. It is laid on concrete sleepers. The insulation consists of cellulose wadding and blown panels of wood fibers.

- In the end, its performances are exceptional: a heating requirement of 8 kWh / m² year
- A total primary energy consumption of 92kWh / m² / year

Sustainable development approach of the project owner

Attached is the testimony of the Masters Authority:

"Our prime contractor has been able to move towards solutions related to solar energy, recycled and bio-based materials, and a reduced carbon footprint. He recommended solar energy for heating and domestic hot water, insulation made from recycled materials (tissue paper). During construction, recycling of waste and scrap materials was favored, most of the artisans was chosen in a perimeter of 25 km, from the perspective of a "clean" construction and low in CO2. These actions are perfectly consistent with the approach of the construction by KMO agency, which is based on wood construction and the most modern eco-labels".

Architectural description

Bioclimatic design, bio-based materials, very healthy indoor air.

Building users opinion

Testimonies of Mr. & Mrs. POINSOT:

We were very happy to work with the agency KMO:

- Very available to give shape to the project from the design, reflect together, suggest solutions, and advise us,
- A follow very regular and extremely reassuring site: the Work of Master has been present every day on site at key moments. The site meeting was routine each week, with mandatory presence of the speakers,
- A requirement of the Master Work of inflexible vis-à-vis the companies working on the construction, which has borne fruit so that nothing is left to chance, and that all the details are known and controlled,
- An impeccable compliance deadlines, if not record,
- A result that meets our demand, in addition to being well within the requirements of the Passivhaus label.

If you had to do it again?

The project owners have reported me to have my full confidence and would even be ready to begin the adventure to further improve the concept.

See more details about this project

<http://www.architecture-kmo.fr/project/maison-europassive-2-ho/>

Stakeholders

Stakeholders

Function : Construction Manager

Agence KMO / Europassive®

Vincent KEMPF

<http://www.architecture-kmo.fr>

Type of market

Global performance contract

Energy

Energy consumption

Primary energy need : 92,00 kWh/m².an

Primary energy need for standard building : 103,00 kWh/m².an

Calculation method : Other

Breakdown for energy consumption : Water heater: 455 kWh

Cooking: 277 kWh

Towel dryer: 146 kWh

VMC & Canadian well: 6,64 kWh

Real final energy consumption

Final Energy : 103,00 kWh/m².an

Real final energy consumption/m² : 33,00 kWh/m².an

Year of the real energy consumption : 2 015

Envelope performance

Envelope U-Value : 0,10 W.m⁻².K⁻¹

More information :

Wooden floor slab:

tiles, anhydrite screed 40 mm, 22 mm OSB panel, I-beams and 360 mm of tissue, 16 mm wood fiber panel.

Walls:

Interior veneer 13 mm, technical empty 60 mm, 15 mm OSB panel, I-beams and 360 mm of tissue, 16 mm wood fiber board, wood lathing, wood siding 18mm.

Roof:

13 mm inner facing, technical vacuum vapor Majpell 5, I-beams and 400 mm of tissue, OSB 22 mm panel, polyurethane insulation Eurothane Bio Br 80 mm air gap 60 mm, 80 mm vegetation.

Indicator : n50

Air Tightness Value : 0,28

Renewables & systems

Systems

Heating system :

- No heating system

Hot water system :

- Solar Thermal

Cooling system :

- No cooling system

Ventilation system :

- Double flow heat exchanger
- Canadian well

Renewable systems :

- Solar Thermal

Environment

Urban environment

Land plot area : 752,00 m²

Built-up area : 20,00 %

Small town of Alsace with all amenities and great public transport links.

Products

Product

Europassive@ 2 Ho House

Agence KMO / Europassive@

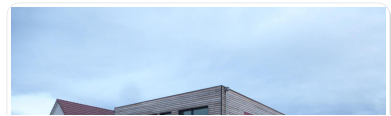
Vincent KEMPF

<http://www.architecture-kmo.fr>

Product category : Gros œuvre / Système passif

Bioclimatic design, wood frame all walls, bio-sourced materials, green roof, motorized venetian blinds, VMC double flow, Canadian well, etc.

The second project was a challenge for all players since aimed to improve the whole concept and the results of the first house Europassive®.



Costs

Construction and exploitation costs

Reference global cost : 2 700,00 €

Renewable energy systems cost : 15 000,00 €

Reference global cost/Dwelling : 2700

Cost of studies : 40 000 €

Total cost of the building : 450 000 €

Energy bill

Forecasted energy bill/year : 380,00 €

Real energy cost/m² : 2.38

Real energy cost/Dwelling : 380

Health and comfort

Indoor Air quality

A measurement of volatile organic compounds & aldehydes in indoor air is ongoing.

Carbon

Life Cycle Analysis

Eco-design material : Skeleton (low slab, exterior walls & roof) Timber wood from the Black Forest, cellulose wadding Climacell, fiberboard wood Agepan DWD, OSB Kronopoly OSB 4, interior partitions wood frame, slab intermediate timber frame.

Contest

Reasons for participating in the competition(s)

Highly energy efficient an technical: European Passive House certification.

Bioclimatic, this house is fully built with wood structure, including the floor slab.

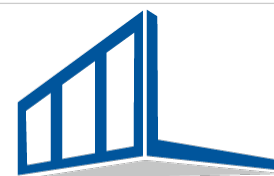
The thorough reduction of thermal bridges and rigorous air-tightness enable the house to achieve exceptional performances:

- Heating needs 8kWh/m².year ;
- Primary energy needs : 103 kWh/m².year

Building candidate in the category



Energie & Climats Tempérés

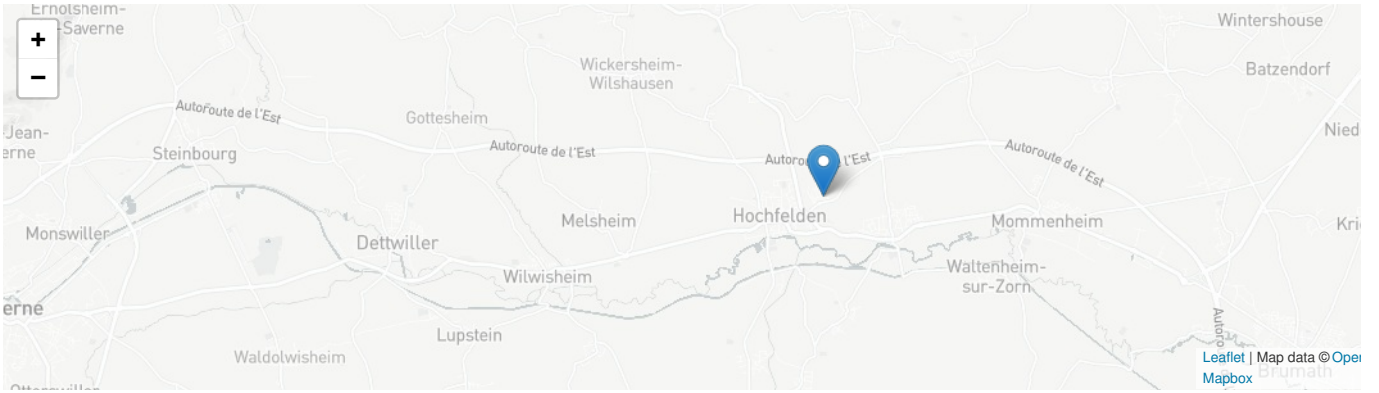


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Coup de Coeur des Internautes



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