



Low energy buildings - Case Study: **Passive House Lac de Vouglans (Jura 39)**



Category / year

Renovation and extension - Small residential (1-2 family houses) / 2014-2015



Address

90 Impasse Brillat, 39260 Maisod (France)



Contact details

Construction:

Acquistapace SARL (Acquistapace got a twenty years expertise in the building sector. From design to realisation, a representative-coordinator trained to passive house is dedicated to each project)

Supervisor:

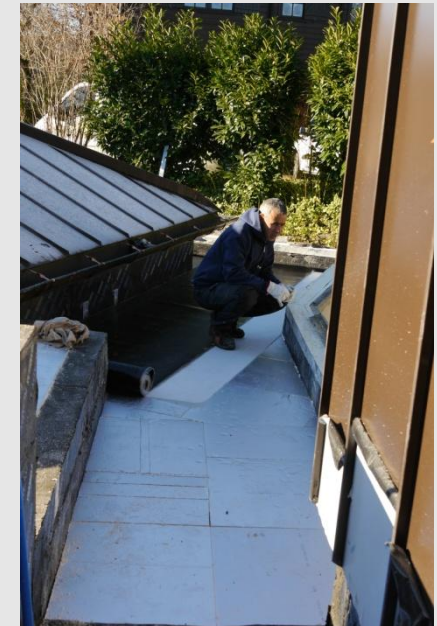
Peggy Vichot

For further questions:

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Pictures





Description of the building

Detailed description:

The passive house at the Lac de Vouglans is a family house built for 4 people.

Total living surface: 150 m².

Building envelope:

- *Flat roof:* 24 cm (12 cm + 12 cm) of Utherm Roof PIR insulation boards (heavy protection – R=10.70 m²·K/W)
- *Roof extension:* 28 cm (22 cm + 6 cm) of PIR roofing elements Rexotoit HPU Non Latté of 20.5 cm + wood wool 6 cm (R=10.30 m²·K/W)
- *Walls:* concrete 20 cm + expanded polystyrene graphite 28 cm (R=9 m²·K/W)
- *Floors:* Utherm Floor PIR insulation boards of 11.7 cm (R=5.20 m²·K/W) in addition to an insulating concrete layer

Energy efficiency technologies:

- Controlled mechanical ventilation with heat recovery up to 90 % combined with solar collectors
- Hydraulic Canadian well: geothermal heat exchanger using the relatively constant temperatures below the basement
- Heat collection from waste water
- Small heat pump for hot water and extra heating

Renewables:

- 16 solar panels of 4 kw in total (self-consumption and resale)
- 2 solar thermal panels for hot water production and extra heating



Energy consumption

Energy values:

- *Heating demand:* 15 kWh of energy per m² per year
- *Cooling demand:* 0 kWh/m²/year
- *Final energy demand:* 60 kWh/m²/year

Use of renewables:

- 60 % RES fraction in the heating energy demand
- 60 % RES fraction in the hot water energy demand
- 80 % RES fraction in the total final energy demand



Links

Websites illustrating the building:

- www.acquistapace-constructeur.fr
- <http://www.unilininsulation.com/fr/Références/Maison-passive/>