



Low energy buildings - Case Study: **Massive Passive House** concept of Recticel Insulation



Category / year

New construction: nearly zero energy building or better - Small residential (1-2 family houses) / 2009



Address

Belgium, Bottelare (near Gent)



Contact details

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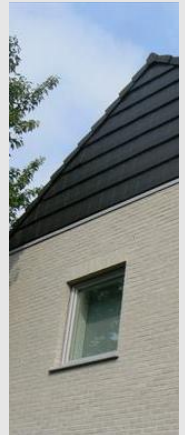
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Pictures





Description of the building

Detailed description:

The massive passive house in Bottelare is a family house built for 6 people. The building has the official passive house certificate 'Passiefhuiscertificaat' ('Passiefhuisplatform vzw') and was the launch of many other massive passive house buildings in Belgium. For example, they are now building a massive passive hotel and a massive passive sports centre.

Building envelope:

- *Pitched roof insulation:* 160 mm PU insulation
- *Flat roof insulation:* 200 mm PU insulation
- *Cavity wall insulation:* 164 mm PU insulation
- *Ground floor insulation:* 200 mm PU insulation
- *Windows:* triple glazing

Renewables:

In the design of the massive passive house, 33 photovoltaic solar panels of 78 Wp and 36 photovoltaic solar panels of 81 Wp were installed.

- 33 x 78 Wp = 2 574 Wp - in Belgium (1 000 Wp - 850 kWh/year) - 2 188 kWh/year - according to the orientation (96 % of the optimal orientation) = 2 100 kWh/year
- 36 x 81 Wp = 2 916 Wp - in Belgium (1 000 Wp - 850 kWh/year) - 2 487 kWh/year - according to the orientation (70 % of the optimal orientation) = 1 735 kWh/year



Energy consumption

Energy values:

- 15 kWh/m²/year heating demand
- 34 kWh/m²/year final energy demand (far below the required 42 kWh/m²/year instructed by the Belgian 'Passiefhuis-Platform')

Use of renewables:

- No RES for hot water production / no RES for cooling



Links

Websites illustrating the building:

- www.massiefpassief.be
- www.recticelinsulation.be
- www.passiefhuisplatform.be (Passiefhuis Platform vzw)
- www.maisonpassive.be (Plate-forme Maison Passive asbl)

Promotional material online:

- <http://www.recticelinsulation.be/topic/het-massief-passiefhuis> (video available behind this link)

