

Object name

Kalmthout, single family house**Belgium****Object description**

This building lot was completely surrounded by trees, including the south side of the building. The trees, who lose their leaves in winter, result in free shading during summertime, and in an astounding view from the house on the surrounding garden and forest.

To the south of the house, a swimming pool and a walled garden create an enclosed space, with big windows towards the living area to capture a maximum of solar energy during winter. To the west and north side of the house, the living areas look out over the beautiful garden. The architect opted for a completely glazed wall here, with an important impact on the energy consumption.

To compensate, the wooden I-joint construction is insulated with a thick layer of cellulose. The façade is finished in wood, but local legislation prohibited a completely wooden façade, so part of the façade is clad in fiber cement board.

The large window surfaces are completely frameless, only the windows and doors that open, have a normal wooden frame.

Fact sheet

Single family house in Kalmthout
 Treated Floor Area 190 m²
 Number of apartments -
 Completion date 2008

Energy standard [PHPP]

Heat requirement / year 13 kWh/m²a
 Heat load 11 W/m²
 Primary energy requ. 78 kWh/m²a
 Air-tightness (n₅₀-value) 0,25 1/h
 Building type Timber frame walls

U-value

Exterior wall 0,11 W/m²K
 Roof 0,08 W/m²K
 Basement floor / Floor slab 0,11 W/m²K
 Windows / average 0,93 W/m²K

Specification ventilation system

Central ventilation (compact unit)

Heating installation

Compact unit

Construction costs 1315 Euro/m²

Building owner

Gert Willemen

Architect/Planner

Art-men architecten

Photo credits

Gert Willemen