

Object name

Residential house in Dobravlje**Slovenia**

Object photo



Object description

House in Dobravlje is passive house made from wooden skeleton founded in cellulose insulation. House has ground floor and mansard, altogether 162 m² of heated area.

Central ventilation system provides heat for heating. During heating season solar radiation and internal heat released from electrical appliances and residents also contributes to heating of the house. Controlled ventilation with ventilation enables influx of fresh and clean air. Measured rate of influx is $n_{50} < 0.6 \text{ h}^{-1}$ and enabled sufficient air-tightness of the house.

Efficient thermal insulation of outer nontransparent parts of walls without thermal bridges and highly efficient triple glazed windows enable constant temperature inside in summer and in winter. With climatic conditions of Vipavska Valley annually need for heating is 17 kW h/m² a. In house is only electrical energy used, which is directly transferred in heat.

Summed consumption of electrical energy is 40 kW h/m² a, from which: 22 kW h/m² a for heating of rooms and for heating of sanitary water (with considered losses of installation and gains of solar system 20 m² subtracted), 18 kW h/m² a for household and for appliances. Monthly need for electricity is around 300 kWh. For electrical radiators and electrical floor heating were in first 12 month of operating needed 760 kW h of electricity. 600 kW h were needed for heating of sanitary water. Rest of altogether 4400 kW h were needed for kitchen (30 %), other electrical appliances (30 %), light (20 %), construction works (20 %). For next year of operating prediction for needed electricity is 4000 kW h.

The house was designed and constructed by the company Eko produkt d.o.o.

Fact sheet

Residential house in Dobravlje

Treated Floor Area	162 m ²
Number of apartments	1
Completion date	2007

Energy standard [PHPP]

Heat requirement / year	17 kWh/m ² a
Heat load	10.3 W/m ²
Primary energy requ.	111 kWh/m ² a
Air-tightness (n_{50} -value)	0.6 1/h
Building type	wood construction

U-value

Exterior wall	0.138 W/m ² K
Roof	0.096 W/m ² K
Basement floor / Floor slab	0.146 W/m ² K
Windows / average	0.88 W/m ² K

Specification ventilation system

Central system

Heating installation

Electrical radiator

Construction costs	1000 Euro/m ²
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Building owner

Private

Architect/Planner

Mag. Janez Lajovic

Photo credits

Owner