Co-funded by the Intelligent Energy Europe Programme of the European Union

Operational success story

Wealth House

Year of construction (2012-13), Magré (Bz), (IT)

GENERAL INFORMATIONS

Owner:	CASASALUTE S.R.L. Herta Peer,Klaus Romen www.casa-salute.it
Architect:	Architetto Marco Sette M7 Architecture + Design www.m-7.it
Static Engineer	Attilio Marchetti Rossi
Mechanic Engineer	Energytech - www.energytech.it
Use:	Office building with private house
Heated surface*:	300m² (net heated floor area)
Gross volume*:	1200m³
Built in:	2011-13
Cost	-

*referring to the energy performance above (regional calculation)

ENERGY PERFORMANCE

Type of certification:	*CasaClima certification (mandatory certification for Energy Demand for Heating):* 4 kWh/m²y standard 'Casa Clima Gold nature'.
Primary energy (monitored):	5,57 kWh/m²a
Total CO2 Emissions:	9 kg CO_2/m²a
Total saving :	6 kWh/m²a (due to PV system)
Total CO2 saving :	180.000 kg CO_2 saved only in the wood construction

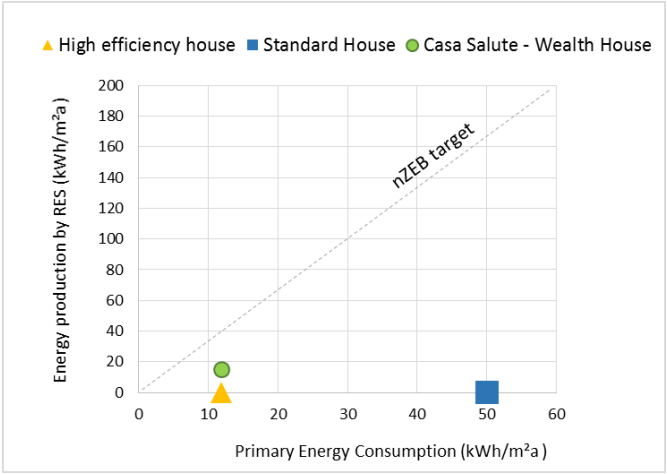

Grafico 1: Energy balance (Source: KlimaHouse certification)

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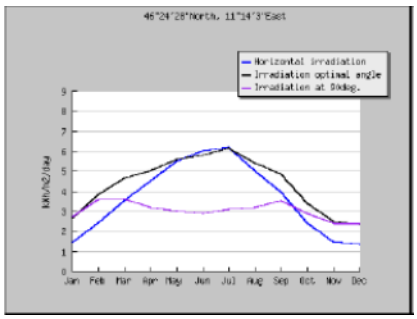
DESCRIPTION OF THE CLIMATE:

Address:	Magrè Sulla Strada del Vino, Alto Adige, Italy.
GPS:	Latitude = 46.408, Longitude =11.235
Altitude:	243 m
Yearly solar radiation:	3,03 kWh/m²*day (Average sum of horizontal global irradiation per square meter received) 1580 kWh/m² (Average sum of horizontal global irradiation per square meter received) (http://re.jrc.ec.europa.eu/pvgis/apps4/pvest.php)
HDD20:	HDD20= 3131 Bolzano, IT (11.33E,46.46N) (http://www.degreedays.net/)
CDD26:	CDD26= 106 Bolzano, IT (11.33E,46.46N) (http://www.degreedays.net/)
Italian Classification: (Italian law: n. 412 26/August/1993)	HDD20= 3074 Caldaro, IT (46,4141; 11,2422)



SPECIFICATIONS OF THE BUILDING

1) Building Envelope

S/V: 0,63 1/m

Data collected:

U-value of the opaque surface

- Walls: U-value: 0.13 W/m²K
- Roof: U-value: 0.12 W/(m²K
- Basement: U-value: 0,13 W/(m²K)
- Windows: Triple glazing Uw-value: 0.87 W/(m²K).
  - g-value: 0.48
  - Ug: 0.42 W/(m²K)

Guadagni termici solari: 7.183 kWh/a

Blower Door: h-1 measured air tightness

The big windows are composed of triple glass exterior with air chamber and another fixed glass. The glass is extra-clear because during the summer, when the sun is high, the solar radiation is intercepted by the balcony, that works like a fixed shading. On the other side, in winter, when the sun is low, the solar radiation can enter and heat the building.

Wall

NUR-HOLZ 26 cm, λ 0,089 W/mK + 16 cm wood fiber Pavawall 0,040 W/mK

2) Building systems

Heating system

Heat pump: compact machine: Geothermal heat pump (air-brine)
Domestic hot water combined with ibrid panels on the roof

3) Ventilation system

Two Meltem Vmc M-WrcK with heating recover (100 mc/H)

4) Renewable energy production

Hybrid panels on the roof (hot water) and photovoltaic 43,44 %- electric production 18.866 Kwh/a

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CONTEXT AND HISTORY OF THE BUILDING

2011

The construction site is located south of Bolzano in the village of Magrè.
The lot as a triangular form with surrounded by a street and a small river .
The south is located on the vertex of this triangle so the building envelope is curved in south direction to maximize solar exposition.

2011-2012

Construction phase

In August 2011 started the construction of the concrete foundation plate insulated from the terrain with compact foam rocks in different size.In Febraury 2012 started the montage of the prefabricated wood structure. In july 2014 the building was finish.

2014

Utilization of the building

From August 2014 the building started to be used. The comfort is elevated and the bulding performances are very high: the building is active, is producing more energy as is consuming. The difference of temperature of the air and the external walls is only 0.2 Celsius degrees.

2014

Friday, 05/09/2014 at Castel Mareccio Bolzano, the Energy Agency KlimaHouse, has assigned for the twelfth time the best project the award that exemplarily apply the criteria of energy efficiency and sustainability required by certifications KlimaHaus quality to Wealth House..