House on the Mountain

by Juri Troy / 2017-05-04 14:05:02 / International / 9211 / EN

Primary energy need :

105 kWhpe/m².year

(Calculation method : Other)

ENERGY CONSUMPTION

Economical building *Building*

< 50	A
51 à 90	B
91 à 150	C
151 à 230	D
231 à 330	E
331 à 450	F
> 450	G

Energy-intensive building

Building Type : Collective housing < 50m
Construction Year : 2014
Delivery year : 2014
Address 1 - street : 6845 SULZBERG, Austria
Climate zone : [H] Highland Climate(mountainous terrain).

Net Floor Area : 604 m²
Construction/refurbishment cost : 750 000 €
Number of Dwelling : 4 Dwelling
Cost/m2 : 1241.72 €/m²

Proposed by :

VELUX®

General information

The **House on the Mountain** was conceived as house for one family with three additional holiday apartments.
It softly nestles against the slope and it's size, roof shape and materials are inspired by the traditional „Wälderhaus". The plot shapes the volume horizontally and vertically. As a result the public entrance can be accessed from the lower level and the private family entrance can be reached from the ground floor. The façade is covered by silver fir shingles and additionally structured through horizontal window strips. The interior is equally furnished in wood. The solid wood construction and the use of home grown wood allow for a minimal carbon dioxide consumption. The holistic energy concept comprises the use of a short distance district heating and an energy roof with 112 m² of photovoltaic that is ideally orientated and delivers electricity as well as warm water.

All together this house produces more energy than it consumes – is therefore a ACTIVEHOUSE – and can be used without producing any additional carbon!

Stakeholders

Stakeholders

Function : Construction company

Alpina Bau- und Holzelemente GmbH

Erlachstraße 2 A – 6971 Hard T +43 5574 73 595

http://www.alpinahaus.at
general contractor and wood construction

Function : Others

Oliver Singer, master builder

execution planning wood work

Function : Manufacturer

Velux Austria

Veluxstraße 1, A-2120 Wolkersdorf

http://www.velux.at/
daylight evaluation and skylights

Function : Company

SST Solar

Galinastraße 14, A-6820 Nenzing

http://sst-solar.com/de/
photovoltaic and solarthermics

Function : Other consultancy agency

DI Bernhard Weithas

Rosenweg 3c, 6923 Lauterach, Österreich

http://www.weithas.com/
building physics and energy calculation

Function : Company

Fischer Böden, Hard

Binsenfeld 23, A-6971 Hard

http://www.fischer-boeden.com/
screed work

Function : Company

Bawart & Söhne

Lindenweg 12, A-6832 Sulz

https://www.bawart.at/
flooring

Function : Company

Walter Hepp GmbH

Schmelzhütterstraße 17, A-6850 Dornbirn

http://www.hepp-installationen.at/
HVAC and sanitary installations

Kirchmann Elektro, Langen

Gschwend 178, A-6932 Langen bei Bregenz

http://kirchmann.at/
electric installations

Maximum use of home grown wood (construction, facade, heating)

Type of market

Energy

Energy consumption

Primary energy need : 105,00 kWhpe/m^2.year

Primary energy need for standard building : 170,00 kWhpe/m^2.year

Calculation method : Other

CEEB : 0.0001

Breakdown for energy consumption : warm water 27,29 kWh/m2a
heating 33,77 kWh/m2a
electricity 0,64 kWh/m2a

Envelope performance

Envelope U-Value : 0,25 $W.m^{-2}.K^{-1}$

More information :
Wall U-value 0.14 W/m2K
Roof U-value 0.12 W/m2K

Building Compactness Coefficient : 0,57

More information

CO2-emission: 6kg/m2a

Real final energy consumption

Final Energy : 29,00 kWhfe/m^2.year

Year of the real energy consumption : 2 015

Renewables & systems

Systems

Heating system :
- Urban network
- Others
- Low temperature floor heating
- Solar thermal

Hot water system :
- Urban network
- Solar Thermal

Cooling system :
- No cooling system

Ventilation system :
- Natural ventilation
- Nocturnal ventilation

Renewable systems :
- Solar photovoltaic
- Solar Thermal
- Other, specify

Renewable energy production : 64,00 %

Smart Building

Environment

Urban environment

rural area, outskirts of a small town, 1000m sea Level. 3 minutes walking distance to the bus station, 5 minutes walking distance to the center: Restaurant, kindergarden, post office, bacery, church, hair dresser, shoe shop, local cheese shop,

Land plot area : 901,00 m^2

Built-up area : 26,00 %

Green space : 660,00

Products

Product

Velux skylights including CO2 controlled ventilation system

Velux Austria

Veluxstraße 1, A-2120 Wolkersdorf

http://www.velux.at/

Product category : Génie climatique, électricité / Ventilation, rafraîchissement

Velux skylights including CO2 controlled ventilation system

Costs

Health and comfort

Water management

Consumption from water network : 280,00 m^3

Water Consumption/m2 : 0.46

Water Consumption/Dwelling : 70

Indoor Air quality

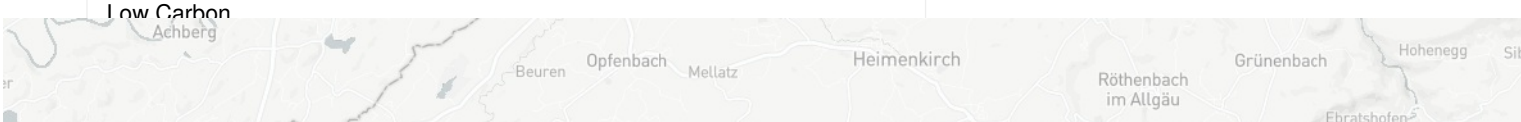
CO2 measuring in all main rooms
automatic window ventilation based on CO2 concentration and temperature > 14°C outside temperature
controlled domestic ventilation with heat recovery < 14°C outside temperature

Contest

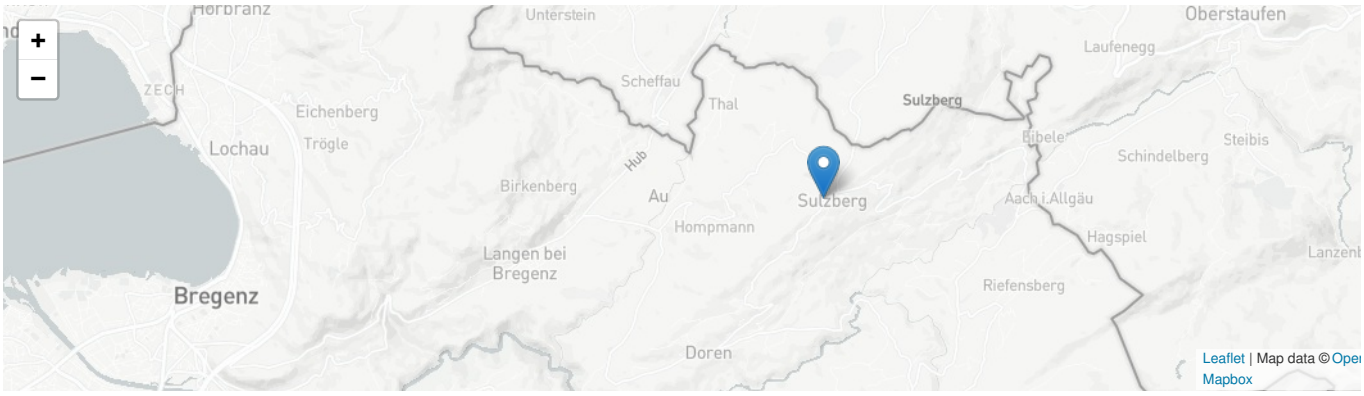
Reasons for participating in the competition(s)

Building candidate in the category

Low Carbon



Users' Choice



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