


## House on the Mountain

by Juri Troy / © 2017-05-04 14:05:02 / International / © 9285 / EN

**New Construction**



**Primary energy need :**

**105** kWhpe/m<sup>2</sup>.year

(Calculation method : Other )

**ENERGY CONSUMPTION**

*Economical building* *Building*

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

*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 m<sup>2</sup>  
**Construction/refurbishment cost** : 750 000 €  
**Number of Dwelling** : 4 Dwelling  
**Cost/m2** : 1241.72 €/m<sup>2</sup>

Proposed by :



### 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 its 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 m<sup>2</sup> 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

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**Function :** Others

Oliver Singer, master builder

execution planning wood work

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**Function :** Manufacturer

Velux Austria

Veluxstraße 1, A-2120 Wolkersdorf

<http://www.velux.at/>

daylight evaluation and skylights

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**Function :** Company

SST Solar

Galinastraße 14, A-6820 Nenzing

<http://sst-solar.com/de/>

photovoltaic and solarthermics

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**Function :** Other consultancy agency

DI Bernhard Weithas

Rosenweg 3c, 6923 Lauterach, Österreich

<http://www.weithas.com/>

building physics and energy calculation

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**Function :** Company

Fischer Böden, Hard

Binsfeld 23, A-6971 Hard

<http://www.fischer-boeden.com/>

screed work

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**Function :** Company

Bawart & Söhne

Lindenweg 12, A-6832 Sulz

<https://www.bawart.at/>

flooring

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**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)

## Contracting method

General Contractor

## Type of market

Realization

## Energy

### Energy consumption

Primary energy need : 105,00 kWhpe/m<sup>2</sup>.year

Primary energy need for standard building : 170,00 kWhpe/m<sup>2</sup>.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<sup>-2</sup>.K<sup>-1</sup>

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<sup>2</sup>.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, bakery, church, hair dresser, shoe shop, local cheese shop,

Land plot area : 901,00 m<sup>2</sup>

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 : Table 'c21\_china.innov\_category' doesn't exist SELECT one.innov\_category AS current,two.innov\_category AS parentFROM innov\_category AS oneINNER JOIN innov\_category AS two ON one.parent\_id = two.idWHERE one.state=1AND one.id = '19'

Velux skylights including CO2 controlled ventilation system



### Costs

### Health and comfort

#### Water management

Consumption from water network : 280,00 m<sup>3</sup>

Water Consumption/m<sup>2</sup> : 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

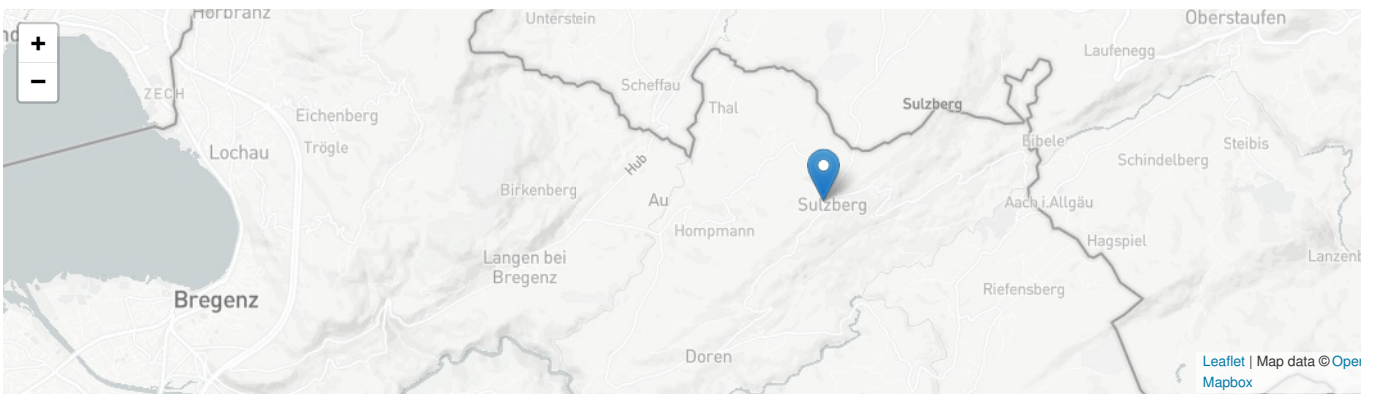
Green Solutions

AWARDS

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Users' Choice



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