# **Building EnergyPlus Orru**

by Paolo Orru / (1) 2013-02-12 19:27:57 / Italie / (5) 6758 / 🍽 IT



 Building Type : Isolated or semi-detached house

 Construction Year : 2010

 Delivery year : 2010

 Address 1 - street : 39028 SILANDRO, Italia

 Climate zone : [Dwa] Humid Continental Hot Summer, severe, dry winter

Net Floor Area : 170 m<sup>2</sup> SHON Construction/refurbishment cost : 310 000 € Number of Dwelling : 1 Dwelling Cost/m2 : 1823.53 €/m<sup>2</sup>

Certifications :



#### General information

Passive House and Klimahaus Gold Plus, Passive House and CasaClima Oro Più, annual energy requirement of 3 kWh / m2a, 170m2 net, infrared electric heating system (1.5kW), 5.6kW photovoltaic system, solar thermal system, thermal coat 20cm rockwool, triple glazing fixtures.

### See more details about this project

C http://old.tekneco.it/progetto/abitazione-energy-plus/

# Data reliability

3rd part certified

C http://old.tekneco.it/progetto/abitazione-energy-plus/

### Stakeholders

#### Contractor

Name : Ing. Paolo Orru Contact : info@energyconsulting.eu vww.energyconsulting.eu

# **Construction Manager**

Name : Ing. Paolo Orru Contact : info@energyconsulting.eu www.energyconsulting.eu

### Stakeholders

Function: Designer Ing. Paolo Orru

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### Contracting method

Build and sell construction

# Owner approach of sustainability

self-sufficient building with almost zero environmental impact

### Architectural description

3-storey single-storey terraced building, sustainable materials on the outside and inside, free of thermal bridges. 1,5kW infrared electric heating system, photovoltaic system, thermal soles plant, controlled mechanical ventilation system with heat recovery, clay plaster

# If you had to do it again?

Anything

#### Building users opinion

very comfortable, nothing management expense

#### Energy

#### **Energy consumption**

Primary energy need : 5,00 kWhpe/m<sup>2</sup>.anno Primary energy need for standard building : 30,00 kWhpe/m<sup>2</sup>.anno Calculation method :

# Envelope performance

Envelope U-Value : 0,25 W/m<sup>2</sup>K More information : coat walls 20cm rockwool U 0.17 roof 32cm wood fiber U 0.14 Slab towards cellar 15cm perlite U 0.24

Building Compactness Coefficient : 0,43

Indicator : DIN 4108-7 Air Tightness Value : 0,60

# Real final energy consumption

Year of the real energy consumption : 2 017

Renewables & systems

# Systems

#### Heating system :

Electric heater

#### Hot water system :

Individual electric boiler

#### Cooling system :

No cooling system

#### Ventilation system :

Double flow heat exchanger

#### Renewable systems :

- Solar photovoltaic
- Solar Thermal

Renewable energy production : 100,00 %

Environment

#### **GHG** emissions

GHG in use : -9,00 KgCO<sub>2</sub>/m<sup>2</sup>/anno

# Products

#### Product

Self-sufficient electric heating system

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Product category :

Self-sufficient residential building

Excellent comfort, zero operating costs

#### Costs

# Construction and exploitation costs

Тіро	Edificio residenziale Nuova costruzione	Sup.utile PHPP Volume lordo	170 m² 649 m³
Strada Lucco	Via dei Campi 20 39028 Silandro (BZ)	Costruzione Unità abitativa	Struttura massiccia
Luogo	39020 Standro (BZ)	Unita acitative	1
U-tetto	0,13 W/m <sup>2</sup> K	Ug-vetro	0,60 W/m²K
U-parete esterna	0,15 W/m <sup>1</sup> K	Uf-telaio	0,97 W/m <sup>2</sup> K
U-pavimento	0,31 W/m <sup>a</sup> K	9	52%
Tenuta all'aria n50	0,6	Ud-porta	0,80 W/m <sup>2</sup> K
IE riscaldamento	3 kWh/m*a	IE raffrescamento	0.00 kWh/m*a
Carico invernale	9 W/m <sup>2</sup>	Carico estivo	4 W/m <sup>2</sup>
FPrim	81 kWh/m²a	Ore surriscaldate	
Impianto di ventilazione	Meccanica con recupero di calore		
Riscaldamento	Elettrico a infrarossi		
Impianto solare termico	Collettori solari 5m² + Impianto PV 5,6kW		

# Urban environment

Inserted in a complex of terraced buildings

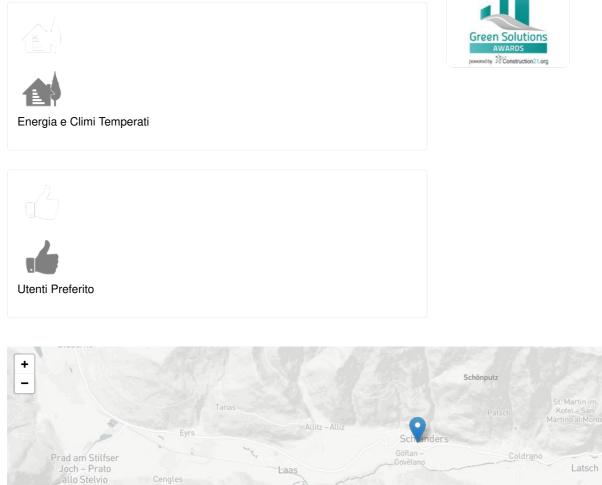
# Building Environnemental Quality

# **Building Environmental Quality**

- indoor air quality and health
- biodiversity
- acoustics
- comfort (visual, olfactive, thermal)
- energy efficiency
- renewable energies

Contest

# Building candidate in the category



Freibe Montef Tarsch – Tarres

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