Semi-detached nearly zero energy building

by Gianpaolo Gritti / 2016-07-01 17:22:33 / Italia / 9790 / IT

Primary energy need :

11.5 kWhpe/m².anno

(Calculation method : Primary energy needs)

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 : Terraced Individual housing
Construction Year : 2013
Delivery year : 2015
Address 1 - street : 24050 GHISALBA, Italia
Climate zone : [Cfa] Humid Subtropical - Mild with no dry season, hot summer.

Net Floor Area : 270 m² Superficie útil
Construction/refurbishment cost : 350 000 €
Number of Dwelling : 2 Dwelling
Cost/m2 : 1296.3 €/m²

General information

The lot, where is located the present building, is in a development plan that includes the construction of buildings with residential use only. The type of input is expected to be called "Family villa" or "semi-detached" built on two floors. As a result the finding of existing urban morphological structure, the project was driven by a desire to pursue some peculiar typological characterizations. In particular it seeks to consistently interpret the intent of the Plan: specifically by placing an approximately linear housing body along the North-South axis, the one which is best irradiation conditions. Also aims to produce a high performance energy using specific building materials, combined with a conscious design of bioclimatic issues.

Data reliability

Assessor

Stakeholders

Stakeholders

Function : Designer

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Contracting method

Build and sell construction

Owner approach of sustainability

The incentive for energy-efficient design was a specific request of the customer, who interested in issues of environmental sustainability of the project, followed directly all phases of work.

Architectural description

The building consists of an elementary body of two floors without basement. Each level has its own accommodation. The plant of the building in on the North-South axis, in particular there is a terrace on the southern facade at the first floor, covered by a veranda for which is arranged the realization of a light covering composed of photovoltaic modules. The building consists of structure in concrete walls, the outer rear-end collisions in foamed concrete blocks and a polystyrene foam coating of 27 cm.

Energy

Energy consumption

Primary energy need : 11,50 kWhpe/m^2.anno

Primary energy need for standard building : 87,00 kWhpe/m^2.anno

Calculation method : Primary energy needs

CEEB : 0.0002

Envelope performance

Envelope U-Value : 0,10 W/m^2K

Renewables & systems

Systems

Heating system :

- Heat pump

Hot water system :

- Heat pump

Cooling system :

- Reversible heat pump

Ventilation system :

- Nocturnal Over ventilation
- compensated Air Handling Unit

Renewable systems :

- Solar photovoltaic

Renewable energy production : 55,00 %

Products

Product

Coat insulation system consists of insulation panels made of expanded polystyrene according to EN 13163

Sto Italia Srl

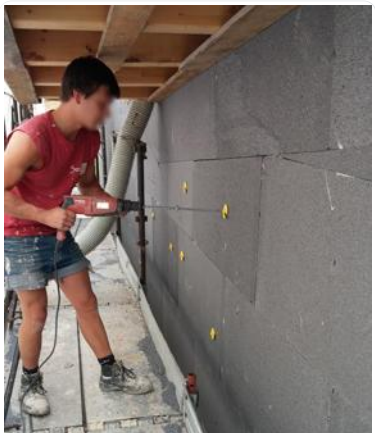
info.it@sto.com

http://stoitalia.it/it/home/home.html

Product category : Obras estructurales / Carpintería, cubierta, estanqueidad

The plate is part of an articulated stratigraphy that represents the finish of the building system.
Presents, when applied in conjunction with other products designed to make up the "package", a high resistance to mechanical stress, a system security, a security against cracking due to organic-based coating cycle high resistance to microorganisms (algae and fungi). It also allows the painting with dark colors.
It has a high resistance to bad weather but is permeable to water vapor and CO2.

The high degree of performance allowed prompted the commission to accept with optimism the use of this finishing system.



Costs

Construction and exploitation costs

Global cost : 466 000,00 €

Reference global cost : 372 000,00 €

Global cost/Dwelling : 233000

Reference global cost/Dwelling : 372000

Cost of studies : 25 000 €

Total cost of the building : 466 000 €

Urban environment

The project is part of a field of building development to the south of a small town in the lowlands in the province of Bergamo. The context is then characterized by residential types of similar size.

Building Environnemental Quality

Building Environmental Quality

- comfort (visual, olfactive, thermal)
- products and materials

Contest

Building candidate in the category

Energy & Temperate Climates

Green Building Solutions Awards 2016
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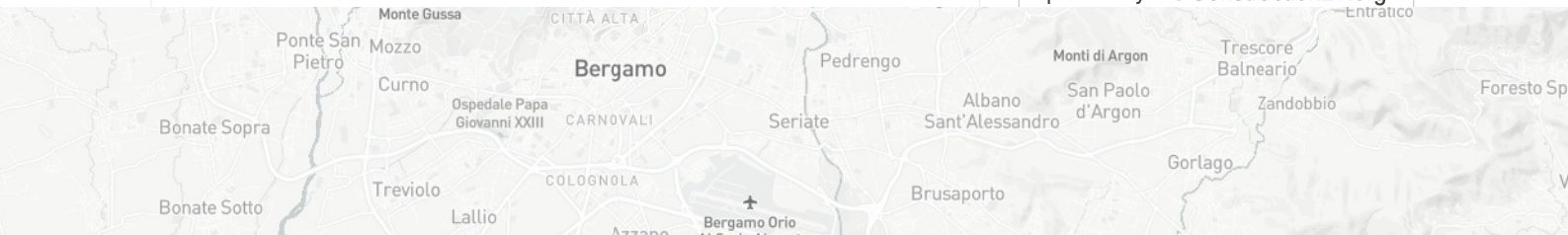
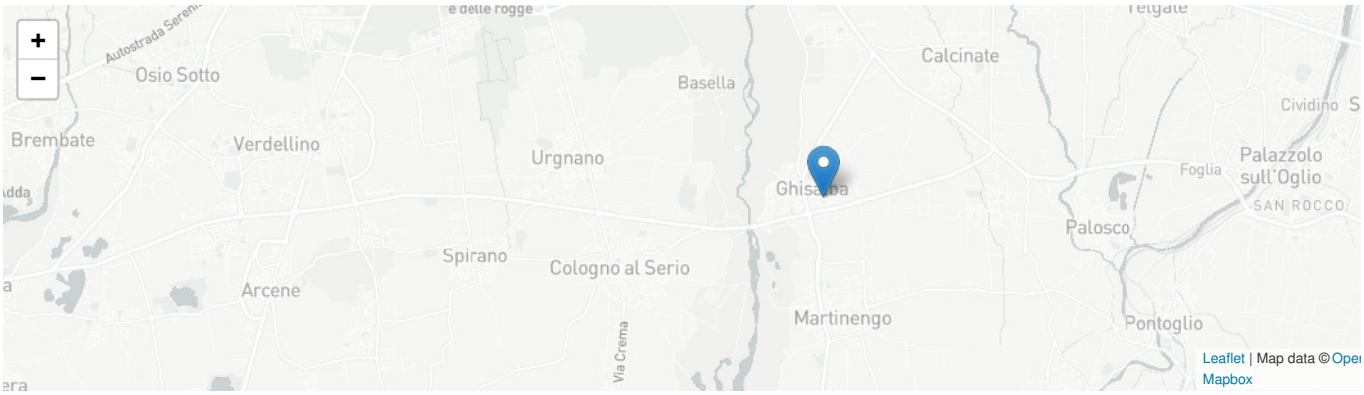


Users' Choice Award



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