

Francescut House

by Domenico Pepe / 2016-06-25 18:55:51 / Italie / 9054 / IT



Renovation

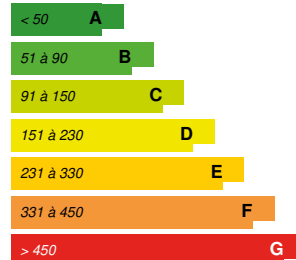
Primary energy need :

30 kWhpe/m².anno

(Calculation method :)

ENERGY CONSUMPTION

Economical building



Building

A

Energy-intensive building

Building Type : Isolated or semi-detached house

Construction Year : 2015

Delivery year : 2015

Address 1 - street : 22 via Liut 33080 FIUME VENETO, Italia

Climate zone : [Csa] Interior Mediterranean - Mild with dry, hot summer.

Net Floor Area : 110 m²

Construction/refurbishment cost : 55 000 €

Cost/m² : 500 €/m²

General information

The building is part of a complex of terraced houses in a urban context from the post-war building period of Fiume Veneto and is characterized by a compact volume and the main front practically oriented to the south.

The energy idea developed during the first phase of reflection with the customer already had changed the energy impact of the building through the installation of photovoltaic and replacement of the boiler condensing gas; changes that had not made a substantial improvement in overall energy relying only on the substantial reduction of the electricity bill, and slight reduction of costs for heating and hot water; after those initial interventions, however, it remained constant and repeated formation of mold on the interior surfaces.

The type of terraced house had some problems that were translated into two opposing alternatives:

- Pursuing the resolution of thermal bridges occupying portions of surfaces of other property
- Accept the presence of thermal bridges and low internal surface temperatures

The project objectives were two:

- Make the environments permanently healthy avoiding both the mold (through resolution and control of thermal bridges) either with the application of new painting in low VOC emissions
- The drastic reduction in energy requirements obtained thanks to the interventions that have affected mainly the whole building envelope (insulation, replacement

windows and timely mechanical ventilation with heat recovery) and part of the plant engineering for a result of high energy efficiency.

Particular attention was paid to the proper execution of tightness in both the perimeter of the fixtures either plugging with sealed air sponges existing corrugated pipes; the building has well stood the test of Blower Door Test.

The project actively demonstrates that the increase of the single heat generator efficiency and the installation of the photovoltaic does not cause a drastic reduction of requirements becoming true example of a correct ladder of interventions to be performed before re-qualifying the building envelope and then - only if required - take action on the plants.

The goal has been achieved and certified by an independent institute such as ClimateHouse which certifies energy-efficient buildings translating into Italian principles PassiveHouse.

The wholly outside thermal insulation position of the building allows the enhancement of the internal mass while the staircase landing on the flat roof in the summer allows the exploitation effect fireplace optimizing the operation in hot and humid climate of the lower Friuli.

See more details about this project

<http://www.domenicopepe.eu/2013-casa-francescut-fiume-veneto-pn/>

Data reliability

3rd part certified

Stakeholders

Stakeholders

Function : Designer

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Contracting method

General Contractor

Owner approach of sustainability

The project actively demonstrates that the increase of the single heat generator efficiency and the installation of the photovoltaic does not cause a drastic reduction of requirements becoming true example of a correct ladder of interventions to be performed before re-qualifying the building envelope and then - only if required - take action on the plants.

Architectural description

The type of terraced house had some problems that were translated into two opposing alternatives: - Pursuing the resolution of thermal bridges occupying portions of surfaces of other property - Accept the presence of thermal bridges and low internal surface temperatures

Energy

Energy consumption

Primary energy need : 30,00 kWhpe/m².anno

Primary energy need for standard building : 90,00 kWhpe/m².anno

Calculation method :

CEEB : 0.0011

Products

Product

null

null

null

Urban environment

The building is part of a complex of terraced houses in an urban context from the post-war building period of Fiume Veneto and is characterized by a compact volume and the main front practically oriented to the south.

Contest

Building candidate in the category



Low Carbon



Energy & Hot Climates



Users' Choice Award

