



## Redevelopment of a residential building with hemp

by Nicola Preti / 2015-07-25 14:56:38 / Italia / 12820 / IT



**Extension + refurbishment**



**Primary energy need :**  
kWhpe/m<sup>2</sup>.anno  
(Calculation method : )

**ENERGY CONSUMPTION**

Consumption Range (kWhpe/m <sup>2</sup> .anno)	Energy Rating
< 50	A
51 à 90	B
91 à 150	C
151 à 230	D
231 à 330	E
331 à 450	F
> 450	G

*Economical building* (A, B, C, D, E) | *Building* (A) | *Energy-intensive building* (F, G)

**Building Type :** Terraced Individual housing  
**Construction Year :** 2015  
**Delivery year :** 2015  
**Address 1 - street :** Via Pomposa 30 37134 VERONA, Italia  
**Climate zone :** [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area :** 83 m<sup>2</sup> Superficie útil  
**Construction/refurbishment cost :** 105 000 €  
**Cost/m<sup>2</sup> :** 1265.06 €/m<sup>2</sup>

**Proposed by :**



### General information

The project concerns the restructuring with partial extension of a single house dating back to the 60s, in a residential neighborhood just outside the center of Verona. The original building was made up of a brick masonry structure with masonry floors and base in stone and lime. The design choice has been to explore the use of natural materials both for the structural part of enlargement, either for the reconstruction of the internal and external finishes. For this work has been made a study project and use of: biobricks hemp with wooden structure; wood-fiber panels for the isolation of the new part of the attic; clay for the painting of the interior walls; lime for exterior walls; wood for interior floors; solid brick foundation for the curbs. It has been also an interesting experiment of building techniques from the past and reinvented to meet the current energy standards. Were involved companies and manufacturers able to work with green building, through an open approach to research and experimentation with new techniques. The final aspect of the work is simple and elegant, the surfaces have a material grit which highlights, the use of materials from the soil like clay. It was accomplished through research on construction materials to identify those with a lower embodied energy, in particular with respect to the extraction and production area.

See more details about this project

<http://www.nicolapreti.it/>

## Data reliability

Self-declared

## Stakeholders

### Stakeholders

Function : Contractor

privato

Function : Designer

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Architectural design and construction supervision

## Contracting method

Build and sell construction

## Owner approach of sustainability

The goal of the owner was the functional restructuring of their home with the application of incentives for energy saving. This is why the initial objective of the project was the realization of a nearly zero energy building with low embodied energy materials. This was the first project of green building, following experience gained in the implementation of low-emission buildings but with the use of chemical-industrial origin materials

## Architectural description

Users had the need to enjoy large and bright spaces, so were eliminated partitions of the living area to have a local as enjoyable as possible. The need to replace all systems with the least possible impact on the masonry has been resolved through the creation of a drowned floor systems in a dry slab of glass blocks. This will also allow the easy disassembly and reusability of some materials at the end of the life of the building.

## Energy

## Renewables & systems

### Systems

Heating system :

- Condensing gas boiler
- Low temperature floor heating

Hot water system :

- Condensing gas boiler

Cooling system :

- No cooling system

Ventilation system :

- Natural ventilation

Renewable systems :

- No renewable energy systems

## Costs

## Construction and exploitation costs

Subsidies : 65 €

## Urban environment

The building is located in an urban residential area, served by public transport, numerous shops, sports areas. It contains many single-family buildings or small characterized by the presence of small private green areas. The project wanted to maintain and expand the green areas present, they have also been made permeable exterior paved surfaces (in washed gravel), instead of the existing in stoneware tiles.

## Land plot area

Land plot area : 386,00 m<sup>2</sup>

## Built-up area

Built-up area : 90,00 %

## Parking spaces

presence of private garage within the lot

## Building Environmental Quality

### Building Environmental Quality

- Building flexibility
- indoor air quality and health
- biodiversity
- works (including waste management)
- consultation - cooperation
- acoustics
- comfort (visual, olfactive, thermal)
- waste management (related to activity)
- energy efficiency
- products and materials

## Contest

### Building candidate in the category



Energy & Temperate Climates



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Sustainable Renovation Grand Prize



Users' Choice Award



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