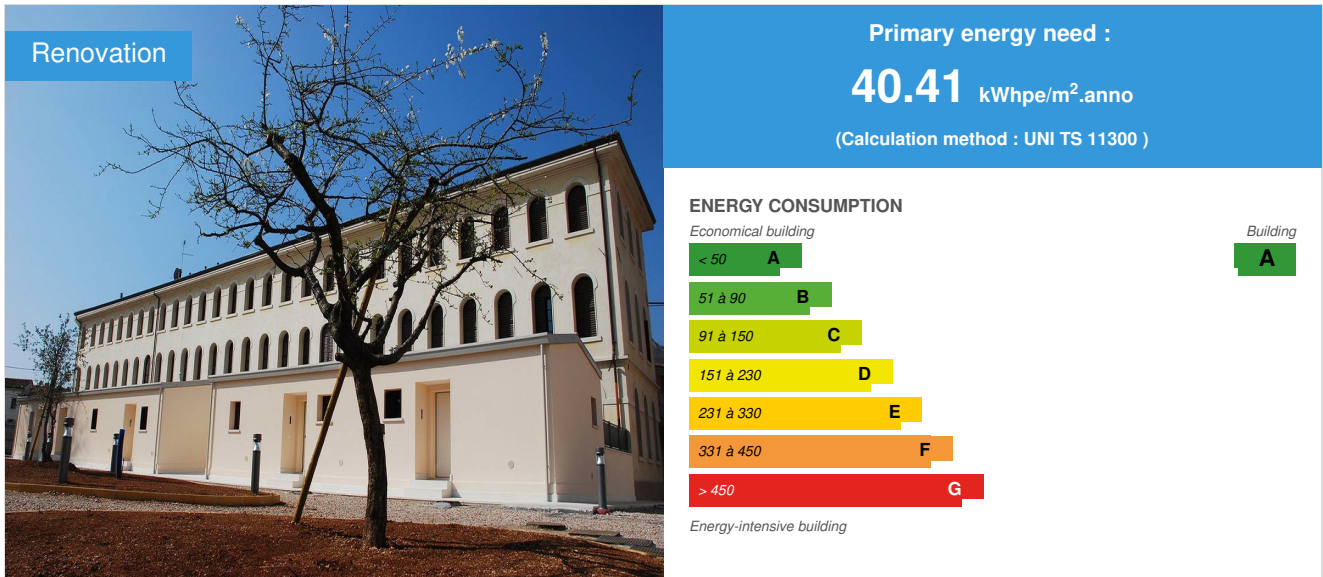


## Residence Borgo Meschio - Vittorio Veneto (TV)

by Elisa Salvadori / 2017-05-23 10:10:47 / Italia / 10396 / IT



**Building Type** : Collective housing < 50m  
**Construction Year** : 2012  
**Delivery year** : 2012  
**Address 1 - street** : 31029 VITTORIO VENETO (TV), Italia  
**Climate zone** : [CsC] Interior Mediterranean - Mild & dry summer.

**Net Floor Area** : 3 711 m<sup>2</sup> Other  
**Construction/refurbishment cost** : 5 000 000 €  
**Cost/m2** : 1347.35 €/m<sup>2</sup>

Certifications :



Proposed by :



### General informations

The **prestigious residential complex** (class A), **commercial and executive**, consists of five buildings with a courtyard and green spaces. Edilvi has submitted the Borgo Meschio to architectural restoration work characterized by the respect of the original materials of prestige and the realization of **elegant finishes** of the highest quality.

All over Italy, Borgo Meschio is the first complex with a bond of **fine arts** that has become, through a restoration, a **class A** building.

The restoration was inspired by modern **bio-building** according to the criteria of **sustainable construction** with the exploitation of **renewable energy** for heating, cooling rooms and hot water production. During the work **environmentally-friendly materials** such as roofing in Wood with insulation made of wood fiber and low-conductibility ground bricks made of mineral natural material free from chemical additives.

The beautiful blend between the architectural recovery of the old and the comfort of the most modern technology is able to ensure maximum efficiency from the use of **clean and renewable energy**, guaranteeing remarkable energy and economic savings but without sacrificing the spectacular design given by The historicity of the complex.

## See more details about this project

<http://www.edilvi.it/borgo-meschio/>

<http://www.edilvi.it/garage-posti-auto-vittorio-veneto/>

<http://www.edilvi.it/appartamento-bilocale-vittorioveneto/>

<http://www.edilvi.it/appartamento-nevegal/>

## Data reliability

Self-declared

## Stakeholders

### Stakeholders

Function : Construction company

Edilvi S.p.A.

Geom. Diego Pavan - via Roma, 164 Loc. Castrette 31050 Villorba (TV) - 0422 9144

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

Construction company

Function : Company

Idrotermica La Marca S.r.l.

Via Piemonte, 14 – 31029 VITTORIO VENETO (TV) - +39 0438 912420

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

Running Radiant systems

Function : Company

Mosaico S.r.L.

Via G. Pascoli, 9 - Fagarè di D. Biagio di C. (TV) - 0422 890061

Design of electrical systems and thermoregulation

Function : Company

Enercret

Bundesstraße 20 6832 Rõthis Austria - +43 5522/21527-0

<http://www.enercret.uk/>

Design and execution of geothermal plant

## Contracting method

Other methods

## Owner approach of sustainability

Our work gives great satisfaction and urges the best virtues. "It always happens to me: first dream, then project, then build. In the end, I see people living inside my buildings, and it gives me satisfaction and pride to have it realized" We focus on a single energy carrier (electricity) by eliminating the gas that emits CO2 emissions.

## Architectural description

The prestigious residential complex (class A), commercial and executive, consists of five buildings with a courtyard and green spaces. Edilvi has submitted the Borgo to architectural restoration work characterized by the respect of the original materials of prestige and the realization of elegant finishes of the highest quality. Throughout Italy, Borgo Meschio is the first complex with a bond of fine arts that has become a class A building through a restoration. The restoration was inspired by modern bio-building according to the criteria of sustainable building with the exploitation of renewable energies for Heating, refrigeration and hot water production. During the work, environmentally friendly materials such as wood-fiber insulation made of wood fiber and low-conductivated brickwork made of mineral-free mineral material are used. The beautiful blend between the architectural recovery of the old and the comfort of the most modern technology is able to ensure maximum efficiency from the use of clean and renewable energy, guaranteeing remarkable energy and economic savings but without sacrificing the spectacular design given by The historicity of the complex. Heating, cooling and conditioning of buildings and the production of sanitary hot water are carried out without the use of boilers, but through heat pumps. These are connected to 13 vertical geothermal probes and 81 energy poles, which drain free and renewable energy from the subsoil to a depth of about 100 meters. All our homes feature an induction hob and heating system with heat pump. This completely eliminates the need for a gas supply. The total absence of fossil fuels cancels the risks of any leakage and resets CO2 emissions into the environment. The heating in winter and the cooling in summer are distributed in the rooms through a plant with radiant ceiling, floor and wall panels. The system ensures a lower circulation of dust in

the air and reduces the present humidity, saving considerable savings compared to normal wall radiators. Ceiling heating works as a result of irradiation and spreads heat in all directions. In this way, the differences in temperature between different areas of the room tend to be eliminated and a good thermal balance is created from the ceiling to the floor. The Aquapol wall drainage system prevents the environment from dampening. Thanks to the natural magnetic field released by the device, moisture moves slowly into the wall and returns to the ground. In this way the walls remain dry and only a residual natural moisture content remains in the air. The energy required for the operation of the power plant and the common parts of the Borgo is provided by a solar photovoltaic plant of 15.19 kW. For energy management, Edilvi's ESCo division deals with supply, energy efficiency, operation and overall maintenance of plants, with 24-hour emergency assistance. This allows for further tax savings on VAT on fuels, goods and services. Costs are accounted for individually based on the kW's actually required and supplied. The rainwater from the roofs is recovered and collected in an underground tank, filtered and connected to the irrigation system. This avoids the waste of drinking water and, above all, reduces consumption costs.

## Building users opinion

In 2012, a customer satisfaction survey was sent to all users, with 40 multiple-choice questions and a score from 1 to 5 (from "Bad" to "Great"). The average of the ratings received was 4/5, in particular we received the highest votes in questions about interior comfort, material quality, and relationship with the site manager.

## Energy

### Energy consumption

Primary energy need : 40,41 kWhpe/m<sup>2</sup>.anno

Primary energy need for standard building : 56,40 kWhpe/m<sup>2</sup>.anno

Calculation method : UNI TS 11300

Final Energy : 60,15 kWhfe/m<sup>2</sup>.anno

Breakdown for energy consumption :

56.3% heating environments 20.7% ACS 23% cooling environments

Initial consumption : 287,60 kWhpe/m<sup>2</sup>.anno

### Envelope performance

Envelope U-Value : 0,30 W/m<sup>2</sup>K

More information :

Structure in stone masonry sp approx. 60 cm, internal insulation with 5 cm of EPS expanded polystyrene and counterwall in double gypsum board with 5 cm of rock wool

Building Compactness Coefficient : 0,49

## Renewables & systems

### Systems

Heating system :

- Urban network
- Geothermal heat pump
- Radiant ceiling

Hot water system :

- Urban network
- Heat pump

Cooling system :

- Geothermal heat pump
- Radiant ceiling

Ventilation system :

- humidity sensitive Air Handling Unit (hygro A)
- Humidity sensitive Air Handling Unit (Hygro B)
- Double flow heat exchanger

Renewable systems :

- Solar photovoltaic
- Heat pump (geothermal)

Renewable energy production : 25,00 %

<https://www.construction21.org/italia/data/sources/users/2901/presentazione-impianto-geotermico-vittorio-veneto.pptx>

#### Other information on HVAC :

Presence of thermostat and humidistat detecting the percentage of relative humidity, acting on the cooling system when it exceeds a certain threshold.

The energy required for the operation of the power plant and the common parts of the Borgo is provided by a solar photovoltaic plant of 15.19 kW.

## Smart Building

#### BMS :

Remote Building Management, Energy Service

#### Smartgrid :

Energy management with a ten-year contract,  $CANON = C_v + C_m + C_f$  (where  $C_v$  = variable costs due to actual consumption,  $C_m$  = maintenance costs,  $C_f$  = fixed component)

## Environment

### GHG emissions

GHG Cradle to Grave : 9,00 KgCO<sub>2</sub> /m<sup>2</sup>

The emission data is calculated on the basis of estimated electrical consumption

### Life Cycle Analysis

**Eco-design material :** Use of materials from renewable sources: Plaster, Biocalce, Wood beams and planks, Wood fiber thermal insulation, Wooden shutters, wooden windows; Use of Recycled / Recovered Material: Copper - Recovered Material at 50%; Wooden beams: 50% reclaimed material; Wood fiber - recycled material; Dark wood - recovered material; Wooden frames - recovered material.

### Water management

Consumption from water network : 876,00 m<sup>3</sup>

Consumption of harvested rainwater : 136,00 m<sup>3</sup>

Water Self Sufficiency Index : 0.13

Water Consumption/m<sup>2</sup> : 0.24

Water Consumption/Dwelling : 24.33

The rainwater from the roofs is recovered and collected in an underground tank, filtered and connected to the irrigation system. This avoids the waste of drinking water and, above all, reduces the cost of consumption.

## Products

### Product

Aquapol

AQUAPOL LAISON WEST EUROPE

49 A, Rue Grimaldi, 98000 Monaco (MC) P.Iva FR 04000077080 Telephone: +39 800 199 771 E-mail: info@aquapol.it

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

Product category : Management / Others

A system that contrasts rising humidity using the Earth's geomagnetic field

The system is innovative and effective, does not consume energy, is ecological and does not create electrosmog.



Contabilizzatori

Coster Group

via San G.B. De La Salle, 4/A - 20132 Milano tel: +39 022722121

<http://www.coster.info>

Product category : HVAC / Riscaldamento, Acqua calda sanitaria

ACS, AFS, Heat and Cooler Contabilizers

The system is innovative and effective, the accuracy in energy management has been appreciated.

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Geothermal probes on micropiles

Enercret

ENERCRET GmbH Bundesstraße 20 6832 Röthis Austria

<https://www.enercret.com/>

Product category : HVAC / Riscaldamento, Acqua calda sanitaria

Geothermal probes with micropiles, absorb thermal energy from the ground and transport it to the thermal plant by means of a fluid.

Innovative renewable energy exploitation system

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Knauf Brio + Trockenschüttung Dry Substrate

Knauf

Knauf Milano Via Alberelle, 72 20089 Rozzano (MI) Tel. 02 52823711 Fax 02 52823730

<http://www.knauf.it/divisioneSottofondi.aspx>

Product category : Opere di finitura / Pavimentazione

Dry substrates, made of fiber plaster slabs coupled with wooden wool, with bent edge, screwed together, laid on a layer of perlite level.

In some cases, especially with wooden floors, the lightness of the substrates becomes a structural requirement. Knauf has developed a complete system of inerts and slabs characterized by high resistance and positional speed, capable of combining thermal insulation and excellent soundproofing sound for aircraft noise and tread. The plates are lightweight, durable, and easy to install thanks to the hinges.

## Costs

### Construction and exploitation costs

Renewable energy systems cost : 170 000,00 €

Cost of studies : 8 000 000 €

Total cost of the building : 5 000 000 €

Subsidies : 35 000 €

### Energy bill

Forecasted energy bill/year : 18 000,00 €

Real energy cost/m<sup>2</sup> : 4.85

Real energy cost/Dwelling : 500

## Urban environment

Residence Borgo Meschio, located in the historic center of Vittorio Veneto (zone A - The buildings are bound by the superintendence under D.Lgs 42/2004), is located in an area well served by means of transport and shops. The closest bus stop is only 100 m away.

### Land plot area

Land plot area : 5 700,00 m<sup>2</sup>

### Built-up area

Built-up area : 3 711,00 %

### Green space

Green space : 1 200,00

### Parking spaces

## Building Environmental Quality

- Building flexibility
- indoor air quality and health
- consultation - cooperation
- comfort (visual, olfactive, thermal)
- water management
- energy efficiency
- renewable energies
- maintenance
- building process
- products and materials

## Contest

### Building candidate in the category



Energia e Climi Temperati

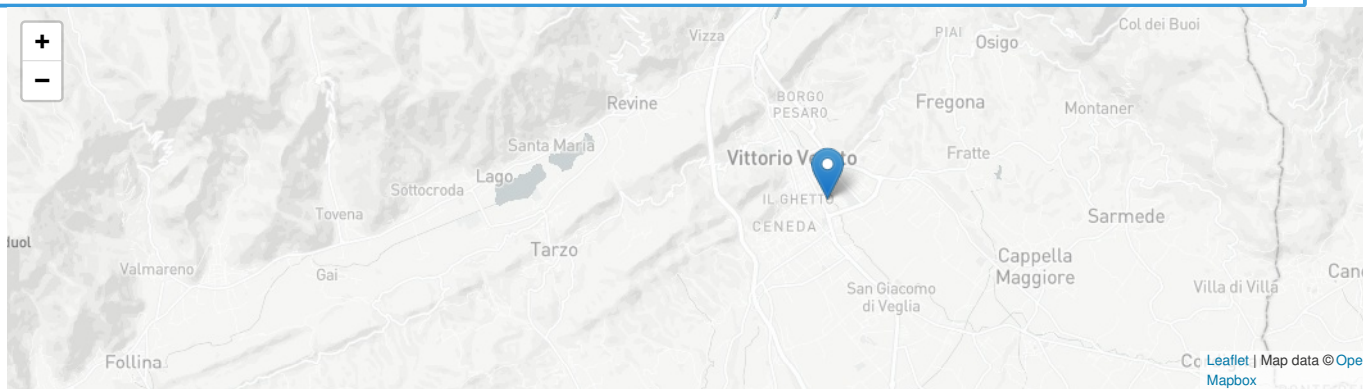


Salute e Comfort



Edifici Intelligenti





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