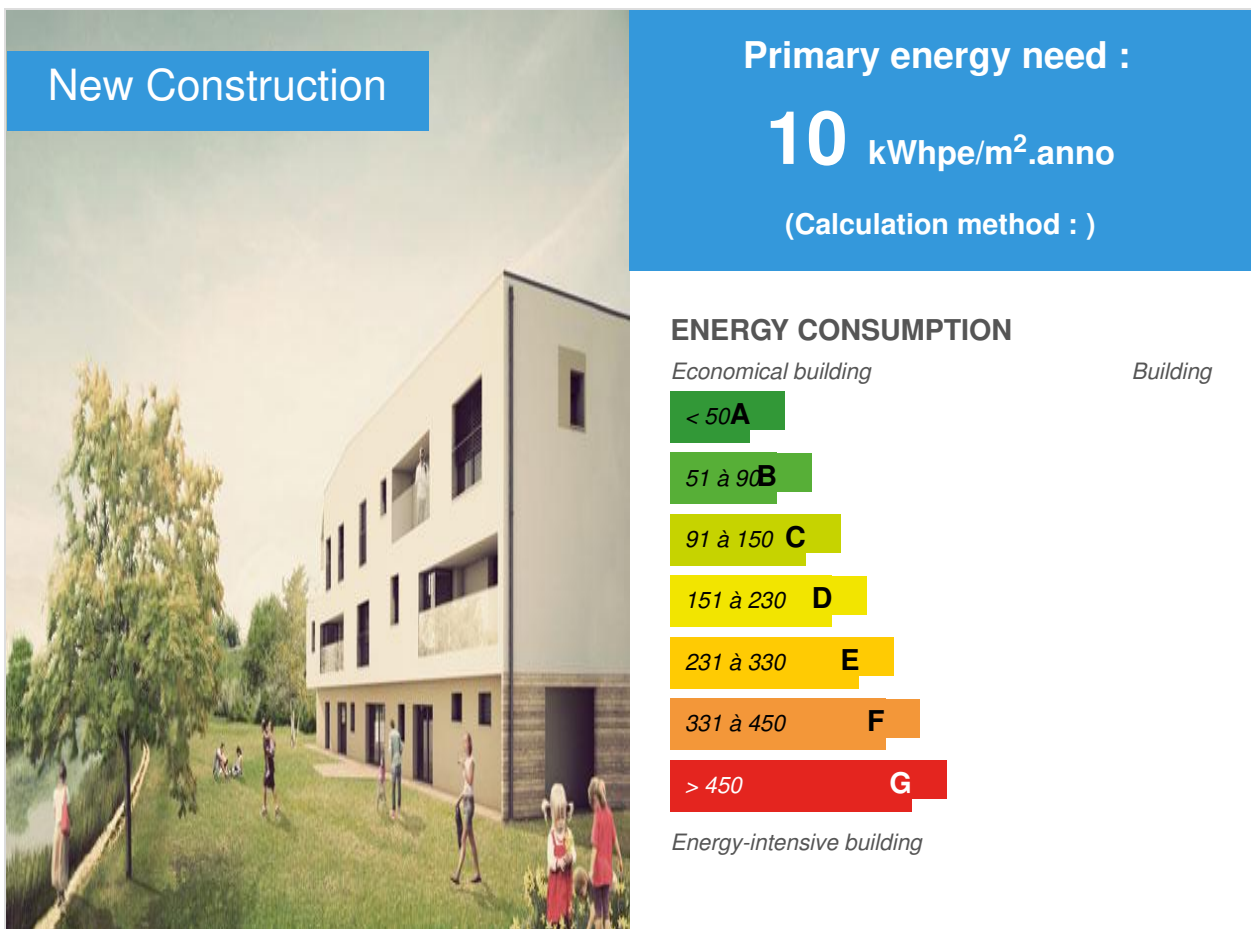


## Cohousing SANGIORGIO - FERRARA

by Giovanni Franceschelli / 2015-06-29 19:48:49 / Italie / 15235 / IT



**Building Type** : Collective housing < 50m

**Construction Year** : 2015

**Delivery year** : 2015

**Address 1 - street** : n° 222 - VIA RAVENNA 44124 FERRARA, Italia

**Climate zone** : [Cfb] Marine Mild Winter, warm summer, no dry season.

**Net Floor Area** : 820 m<sup>2</sup> SHON

**Construction/refurbishment cost** : 1 070 000 €

**Number of Dwelling** : 7 Dwelling

**Cost/m2** : 1304.88 €/m<sup>2</sup>

**Proposed by :**



## General information

Cohousing SANGIORGIO was made after careful consideration of the services, green areas, dellarete roads, cycle paths and transport systems in the area south of Ferrara: the choice èricaduta on a lot of 3500 square meters located approximately 2 km by CastelloEstense, located in the historic center of Ferrara. Lot in place along the river Po diPrimaro, attended a greenhouse and some buildings in poor condition-keeping, for which the demolition was carried out, while the land have been reclaimed. The building of cohousing is on three floors, has an area of 820 square meters and is home to 7 families, each of which was made a project on measuring the result of a process of participatory planning. The structure of the building was built with wooden panels X-LAM, both the walls and the floor slabs of coverage. All the materials used, with the exception of the cement for the foundations and screeds, are natural and recyclable, primarily derivatives of the wood as the heat insulation coat, thickness 20 cm, and coverage, high-density wood fiber and 24 cm thick. The flap solar facing south is home to more than 100 square meters of photovoltaic panels, capable of producing over 15 kw. Clean energy is connected to the heat pump produces domestic hot and cold, used for heating and cooling that occurs thanks to the radiant floor. Each housing unit is equipped with controlled mechanical ventilation with dehumidification system, able to clean and change the air inside 4 times a day. The windows are made of wood and have a value of less than  $U_w = 1.1 \text{ w / m}^2\text{K}$ , are shielded from external shading wooden or aluminum slats adjustable. The expected consumption of the building is less than 10 kWh / MQA, placing the building in class CLASS A + with values of the Net Zero Energy Building. A second structure of 130 square meters houses the garages and is detached from the main building by a lot on which will rise a second residential project.

## Data reliability

Self-declared

## Stakeholders

### Stakeholders

Function : Designer

RIZOMA ARCHITETTURA

ARCH. GIOVANNI FRANCESCHELLI

<http://www.rizoma.me/>

### Owner approach of sustainability

The goal at the beginning of the project was to share a way of life and time management, to save energy and reuse of all materials of construction, so 'as to share in the choices of construction technology, interior spaces and finishes . The project involved enabling all families to build their own dream to meet their own needs and those of the other components of cohousing.

### Architectural description

Compact building on three floors, finishing with plaster and wood paneling, wooden windows and shading, swiveling metal. Metal cover three flaps, one of which is entirely solar.

### Building users opinion

Families are making the move and are totally in love with their building.

## Energy

### Energy consumption

Primary energy need : 10,00 kWhpe/m<sup>2</sup>.anno

Primary energy need for standard building : 10,00 kWhpe/m<sup>2</sup>.anno

Calculation method :

### Envelope performance

Envelope U-Value : 0,13 W/m<sup>2</sup>K

#### More information :

Shaving grain 3 mm, 20 cm coat wood fiber high density ', 10 cm wooden panel x-lam, 6 cm internal counter with insulation made of wood fiber and plaster-fiber dual panel.

Building Compactness Coefficient : 0,70

## Renewables & systems

### Systems

#### Heating system :

- Heat pump
- Low temperature floor heating

#### Hot water system :

- Heat pump

#### Cooling system :

- Reversible heat pump
- Floor cooling

#### Ventilation system :

- humidity sensitive Air Handling Unit (hygro A

#### Renewable systems :

- Solar photovoltaic

Renewable energy production : 59,00 %

## Environment

### GHG emissions

Building lifetime : 70,00 anno/i

### Life Cycle Analysis

**Eco-design material :** The materials of construction of vertical and horizontal structure are plywood panels X-LAM, from Austria. The panels of the external insulation (20 cm) and

internal (5 cm in the counter-wall) are wood fiber high density recycled and recyclable .. The windows are wooden and glass-room double. The panels of acoustic insulation in the interior walls between units are polyethylene fiber recycled. The elements for the counter-ventilated attic floor (igloo) are recycled and recyclable plastic.

## Water management

It 'installed an underground tank with a capacity' 10700 liters for storage and reuse of rainwater for watering the garden and washing cars.

## Products

### Product

#### WOOD PANELS X-LAM

Ferruccio maestrami costruzioni, via del lavoro 7, loiano- Bologna

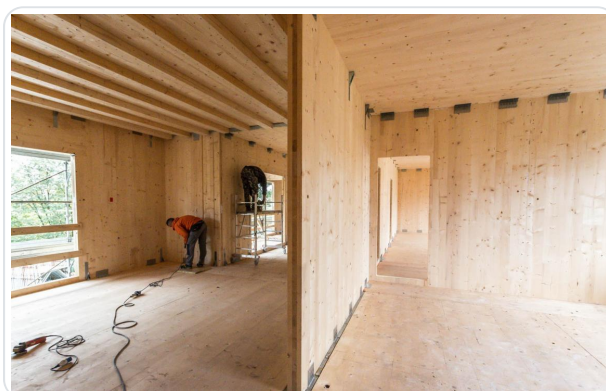
Ferruccio maestrami costruzioni, via del lavoro 7, loiano- Bologna

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

Product category :

The system with load-bearing panels x-lam and composed of wooden elements in 5 layers cut by numerical control machines, do not contain phenolic glues and are mounted with dry plates and titanium screws.

Client, business and technical team are excited to use this technology



## Costs

### Construction and exploitation costs

Cost of studies : 44 000 €

Total cost of the building : 1 070 000 €

## Urban environment

The building and 'served by public transport, a bicycle path in completion, overlooking a navigable river and and' provided a landing place for boats in the lot affected by the project.

## Green space

Green space : 700,00

## Parking spaces

18

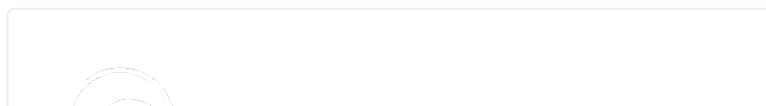
## Building Environmental Quality

### Building Environmental Quality

- indoor air quality and health
- works (including waste management)
- acoustics
- comfort (visual, olfactive, thermal)
- waste management (related to activity)
- water management
- energy efficiency
- renewable energies
- building end of life management
- building process
- products and materials

## Contest

### Building candidate in the category





**Bio-based Materials**



**Net zero energy buildings**