

# Evaluation ENERBUILD-Tool – Building in planning phase

## Torre Balfredo



### 1 Basic information about the building

Name of the building	Torre Balfredo
Address of the building	Località Torre Balfredo
Owner/investor	ATC Torino
Year of construction	2012
Building type	Residential
Building method	Concrete structure and brick walls
Number of buildings	2
Number of levels above earth	3
Number of levels underground	1
Kind of the public use	Residential
Effective area for public use in m <sup>2</sup> (net)	1141
Additional private uses	-
Effective area for private use in m <sup>2</sup> (net)	1141
Total effective area in m <sup>2</sup>	1141
Source of energy for heating	Condensation Boiler
Heating system	Radiant floor
Water heating system	Solar panels
Date of the building evaluation	2011

## 2 Execution of the building evaluation with the ENERBUILD tool

Responsible Organisation: Environment Park

Contact person: Andrea Moro

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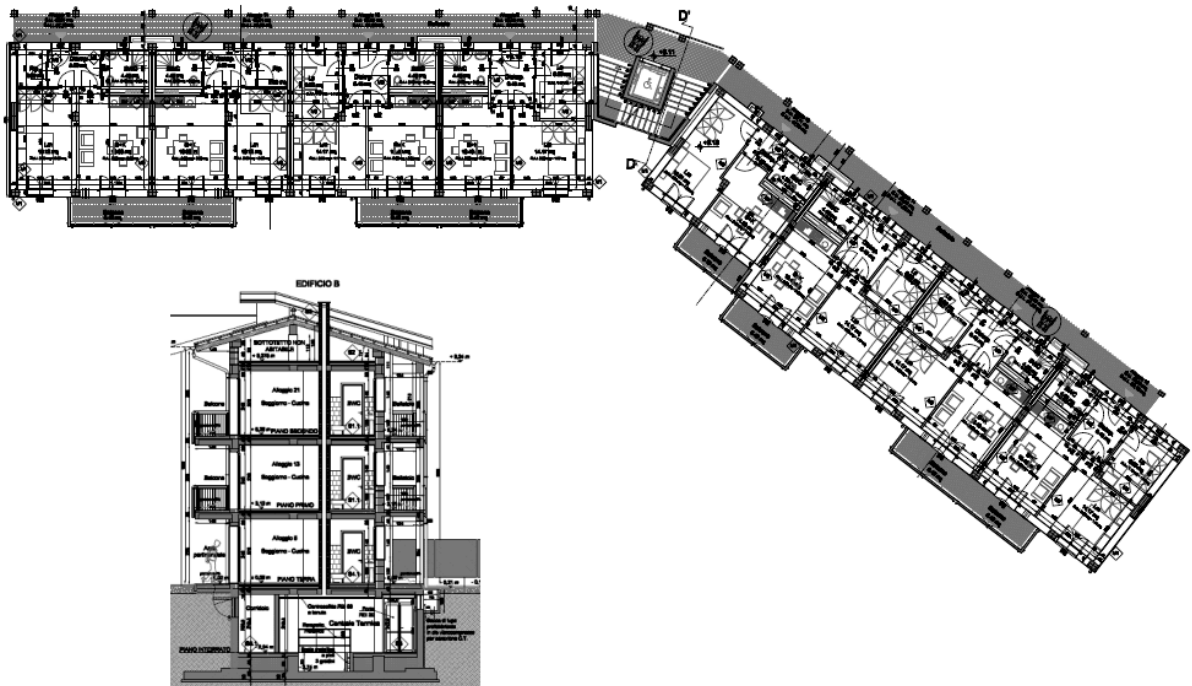
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Temperature for thermal comfort in summertime: 26 °C

Local limits for heating demand: 49,14 kWh/m<sup>2</sup>

## 3 Results

Nr.		Title	Must criteria (M)	max. points	evaluated points
<b>A</b>					
		Quality of location and facilities		max. 100	48
A	1	Access to public transport network		50	10
A	2	Ecological quality of site		50	38
<b>B</b>					
		Process and planning quality		max. 200	150
B	1	Decision making and determination of goals		25	25
B	2	Formulation of verifiable objectives for energetic and ecological measures	M	20	20
B	3	Standardized calculation of the economic efficiency	M	40	20
B	4	Product-management - Use of low-emission products		60	30
B	5	Planning support for energetic optimization		60	30
B	6	Information for users		25	25
<b>C</b>					
		Energy & Utilities (Passive house)		max. 350	162
C	1	Specific heating demand (PHPP)	M	100	22
C	2	Specific cooling demand (PHPP)	M	100	0
C	3	Primary energy demand (PHPP)	M	125	90
C	4	CO <sub>2</sub> -emissions (PHPP)		50	50
<b>D</b>					
		Health and Comfort		max. 250	85
D	1	Thermal comfort in summer		150	50
D	2	Ventilation - non energetic aspects		50	25
D	3	Daylight optimized (+ lightening optimized)		50	10
<b>E</b>					
		Building materials and construction		max. 200	150
E	1	OI <sub>3</sub> <sup>TGH-ic</sup> ecological index of the thermal building envelope (respectively OI <sub>3</sub> of the total mass of the building)		200	150
Sum				max. 1000	595



#### 4 Conclusions from the building evaluation with the ENERBUILD-Tool

##### a) Generally

This building can be considered a low consumption construction with regard to the standard practice in social housing. The main characteristics of the building are a low energy demand and the production of renewable energy (PV panels).

##### b) About the planning process

The building has been funded by Regione Piemonte in the framework of the “10.000 apartments by 2012” program. To obtain the incentive, it was requested by the Region a minimum performance of 2.5 applying Protocollo ITACA. Since the beginning of the design process a strong attention has been paid to the environmental and energy issues. This good performance has been reflected in the score reached in some of the ENERBUILD Tool criteria.

##### c) About the building itself

The objective of the design was primarily to reduce the energy consumptions. For this reason an high efficiency condensation boiler, PV panels and solar thermal panels have been installed.

##### d) About the evaluation process

The cross assessment (ENERBUILD Tool / Protocollo ITACA) has facilitated the process. The main issue is the clear scope of ENERBUILD Tool for assessing passive houses while the Protocollo ITACA has a broad scope.

## 5 Suggestions for improvement of the ENERBUILD-Tool

If the future intent is to use ENERBUILD Tool to assess buildings in regions where the passive house is not a mandatory standard, the main issue is to revise the performance scales of the criteria to allow a more suitable assessment of more conventional construction.

Another issue is to define performance scales based on the different uses of buildings. In particular for energy demands, because consumptions can be very different.