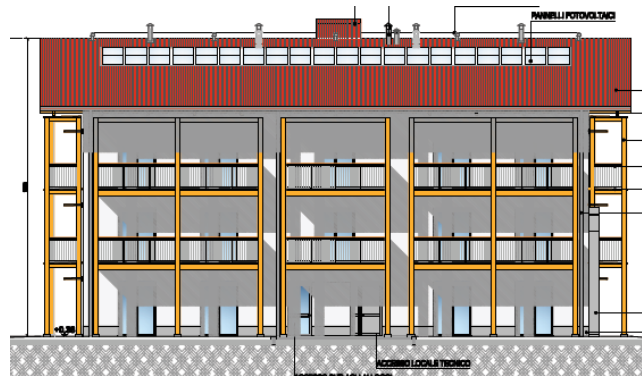


Evaluation ENERBUILD-Tool – Building in planning phase

Passive House for elderly persons



1 Basic information about the building

Name of the building	Passive House for elderly persons
Address of the building	Strada Case Sparse Battandero, Cirié (Torino, Italia)
Owner/investor	ATC Torino
Year of construction	2012
Building type	Residential
Building method	Concrete structure
Number of buildings	1
Number of levels above earth	3
Number of levels underground	-
Kind of the public use	Residential
Effective area for public use in m ² (net)	754
Additional private uses	-
Effective area for private use in m ² (net)	-
Total effective area in m ²	754
Source of energy for heating	Geothermal + Photovoltaic panels
Heating system	Heat pump
Water heating system	Heat pump
Date of the building evaluation	2011

2 Execution of the building evaluation with the ENERBUILD tool

Responsible Organisation: Environment Park

Contact person: Andrea Moro

Telephone: +390112257462

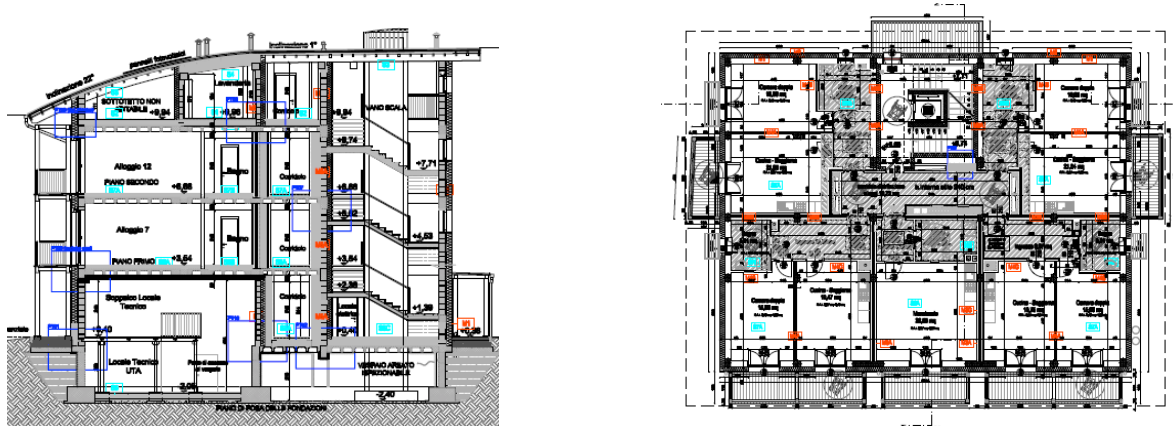
Email: andrea_moro@envipark.com

Temperature for thermal comfort in summertime: 26 °C

Local limits for heating demand: 53 kWh/m²

3 Results

Nr.		Title	Must criteria (M)	max. points	evaluated points
A					
		Quality of location and facilities		max. 100	50
A	1	Access to public transport network		50	0
A	2	Ecological quality of site		50	50
B					
		Process and planning quality		max. 200	189
B	1	Decision making and determination of goals		25	24
B	2	Formulation of verifiable objectives for energetic and ecological measures	M	20	20
B	3	Standardized calculation of the economic efficiency	M	40	40
B	4	Product-management - Use of low-emission products		60	20
B	5	Planning support for energetic optimization		60	60
B	6	Information for users		25	25
C					
		Energy & Utilities (Passive house)		max. 350	350
C	1	Specific heating demand (PHPP)	M	100	100
C	2	Specific cooling demand (PHPP)	M	100	91
C	3	Primary energy demand (PHPP)	M	125	125
C	4	CO ₂ -emissions (PHPP)		50	50
D					
		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
E					
		Building materials and construction		max. 200	140
E	1	OI ₃ ^{TGH-ic} ecological index of the thermal building envelope (respectively OI ₃ of the total mass of the building)		200	140
Sum				max. 1000	814



4 Conclusions from the building evaluation with the ENERBUILD-Tool

a) Generally

ENERBUILD Tool showed to be an effective evaluation tool, especially applied to low energy buildings located in the alpine space. The results achieved seem to correctly reflect the performance of the assessed building. Its application to “standard practice” buildings could be more critical, considering for instance that all the energy related criteria are calculated using the PHPP software that is specifically targeted to passive houses.

b) About the planning process

The tool has helped during the planning phases to define the performance targets and to monitor their achievement. This aspect has been of importance considering that this building is the first passive house in the field of social housing for the Piedmont Region. The decision process results to be quite difficult to document because it is formulated through different kind of documents (public acts, meeting minutes, etc.). The LCC analysis has been focused mainly on the cost/benefit analysis for energy consumptions. Product management seems to be critical to handle, due to the scarcity of eco-labels for building products in Italy. A very detailed manual for users has been developed.

c) About the building itself

Half of the score reached by the building is due to its high energy performance. The building materials don't have a particular ecologic performance. Indoor quality results to be sufficient. Concerning the construction site, no public transportation is available in the range of 300-500 meters while the area is characterized to have a very low ecological value.

d) About the evaluation process

The criteria more challenging are the ones related to the PHPP and OI3 calculations, because it has been necessary to learn the related software. Also the assessment of the criteria linked to the process has been difficult because a structured process/planning because the practice described in ENERBUILD Tool is not standard. But for this reasons, ENERBUILD Tool can contribute effectively to move the standard building practice to better levels.

5 Suggestions for improvement of the ENERBUILD-Tool

If there is the interest to apply the tool also to buildings that don't have a passive house performance, it would be necessary to revise the energy calculation models. Concerning the OI3 index, it should be addressed the issue to have a EU reference database for building products. Finally, the planning and process criteria should be more deeply described for a more effective application.