

Evaluation ENERBUILD-Tool – existing buildings

PUEEL



1 Basic information about the building

Name of the building	PUEEL (Prefabbricato uso Uffici Energeticamente Efficiente in Legno)
Address of the building	Corso Casale 476, Torino
Owner/investor	Regione Piemonte
Year of construction	2011
Building type	Office building
Building method	Wood structure
Number of buildings	1
Number of levels above earth	1
Number of levels underground	
Kind of the public use	Office
Effective area for public use in m ² (net)	150
Additional private uses	-
Effective area for private use in m ² (net)	-
Total effective area in m ²	150
Source of energy for heating	Heat pump + PV
Heating system	Radiant floor
Water heating system	Solar panels + 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: 011 2257462

Email: andrea_moro@envipark.com

Temperature for thermal comfort in summertime: 26 °C

Local limits for heating demand: 21,5 kWh/m³

3 Results

Nr.		Title	Must criteria (M)	max. points	evaluated points
-----	--	-------	-------------------	-------------	------------------

A		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		Process and planning quality		max. 200	180
B	1	Decision making and determination of goals		25	15
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	40
B	5	Planning support for energetic optimization		60	60
B	6	Information for users		25	25

C		Energy & Utilities (Passive house)		max. 350	213
C	1	Specific heating demand (PHPP)	M	100	88
C	2	Specific cooling demand (PHPP)	M	100	0
C	3	Primary energy demand (PHPP)	M	125	125
C	4	CO ₂ -emissions (PHPP)		50	0

D		Health and Comfort		max. 250	125
D	1	Thermal comfort in summer		150	75
D	2	Ventilation - non energetic aspects		50	25
D	3	Daylight optimized (+ lightening optimized)		50	25

E		Building materials and construction		max. 200	180
E	1	OI ₃ _{TGH-1c} ecological index of the thermal building envelope (respectively OI ₃ of the total mass of the building)		200	180
Sum				max. 1000	746



4 Conclusions from the building evaluation with the ENERBUILD-Tool

a) Generally

PUEEL is a pilot building from the point of view of the energy performance and building materials. The objective was to realize an “active” building using photovoltaic and thermal solar panels, a strongly insulated envelop and high efficiency technical installations. The whole building is in wood, one of the first office buildings completely realized with renewable materials in the region.

b) About the planning process

The building has been financed by Regione Piemonte thanks to the elevated performance targets fixed for the planning process in the context of a financing program. In all the phases of the building design it has paid the maximum attention to monitor the achievement of the targets, in particular the energy performance and the use of eco-materials.

c) About the building itself

The most interesting characteristics of the building are the elevated energy performance and the experimental use of eco-materials. PUEEL means basically “low consumption office building constructed in local wood”. It is one of the first office buildings in Regione Piemonte almost completely realized in wood. The technical installations are quite advanced: all the needed energy, thermal and electric, is produced / compensated by PV panels and solar thermal panels.

d) About the evaluation process

In general, the results of the ENERBUILD Tool assessment reflect the green building strategies implemented in the building. One critical criteria has been the “Specific cooling demand”, because the elevated indoor thermal loads.

5 Suggestions for improvement of the ENERBUILD-Tool

For the energy related criteria ENERBUILD Tool assumes that the assessed building reaches a minimum performance that for a standard building is not usual. If ENERBUILD Tool has to be the base for a building certification system, it should be revised the level of the minimum performance requested.