

Evaluation ENERBUILD-Tool – existing buildings

Kindergarten Bizau



1 Basic information about the building

Name of the building	Kindergarten Bizau
Address of the building	6874 Bizau, Austria
Owner/investor	Municipality of Bizau
Year of construction	2009
Building type	Kindergarten
Building method	Wood construction
Number of buildings	1
Number of levels above earth	2
Number of levels underground	1
Kind of the public use	Kindergarten
Effective area for public use in m ² (net)	440
Additional private uses	-
Effective area for private use in m ² (net)	-
Total effective area in m ²	440
Source of energy for heating	Heating oil
Heating system	Teleheating
Water heating system	Teleheating
Date of the building evaluation	-

2 Execution of the building evaluation with the ENERBUILD tool

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Temperature for thermal comfort in summertime: 53 % > 26 °C

Local limits for heating demand: 19 kWh/m²a

3 Results



Criteria

Nr.	Title	Must criteria (M); Minimum standard	max. points	Points
A	Quality of location and facilities		max. 100	50
A 1	Access to public transport network		50	20
A 2	Ecological quality of site		50	30
B	Process and planning quality		max. 200	200
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	35
B 4	Product-management - Use of low-emission products		60	60
B 5	Planning support for energetic optimization		60	60
B 6	Information for users		25	25
C	Energy & Utilities (Passive house)		max. 350	264
C 1	Specific heating demand (PHPP)	M	100	84
C 2	Specific cooling demand (PHPP)	M	100	50
C 3	Primary energy demand (PHPP)	M	125	100
C 4	CO ₂ -emissions (PHPP)		50	30
D	Health and Comfort		max. 250	60
D 1	Thermal comfort in summer		150	0
D 2	Ventilation - non energetic aspects		50	50
D 3	Daylight optimized (+ lightening optimized)		50	10
E	Building materials and construction		max. 200	192
E 1	OI _{3TGH-IC} ecological index of the thermal building envelope (respectively OI ₃ of the total mass of the building)		200	192
Sum			max. 1000	766



4 Conclusions from the building evaluation with the ENERBUILD-Tool

a) Generally

For rural areas it is difficult to achieve high score in criteria „A1 - access to public transport network“: Even if the building of interest can be reached frequently but only by one single bus line, only 20 points can be achieved.

In criteria „E1 – Building materials and construction“ the formula for calculation of OI3 needs to be adapted.

b) About the planning process

Although PHPP was calculated there was no information about PED (Primary Energy Demand) and CO₂-emissions available.

The Tool helped in describing the aims of the project. So it helped in the decision making process in the municipality.

The PHPP tool first showed problems in aspects of thermal comfort in summer. It led the planning team to improvements of the building envelope and arrangement of windows.

c) About the building itself

The building fulfills the criteria of a nearly zero energy. It is built of timber regional provenance.

d) About the evaluation process

No relevant problems in the evaluation process because the project was a part of Nachhaltig:Bauen in der Gemeinde – a special service for municipalities in developing sustainable buildings.

5 Suggestions for improvement of the ENERBUILD-Tool

1. Reduce Points for access to public transport network – too much weight in rural areas
2. Adaptation of Ecosoft 4.0 necessary (in process)
3. Quality Management in calculation of Energy Demand necessary respectively recommended (maybe give points for a QM-System)