Evaluation ENERBUILD-Tool – existing buildings

Kindergarten Thüringerberg

1 Basic information about the building

Name of the building	Kindergarten Thüringerberg
Address of the building	A-6721 Thüringerberg, Jagdbergstraße 273, Austria
Owner/investor	Municipality of Thüringerberg
Year of construction	2010
Building type	Kindergarten, fire station
Building method	Wood construction
Number of buildings	1
Number of levels above earth	2
Number of levels underground	0
Kind of the public use	Kindergarten, fire station
Effective area for public use in m ² (net)	430
Additional private uses	-
Effective area for private use in m ² (net)	-
Total effective area in m ²	430
Source of energy for heating	Biomass
Heating system	Teleheating
Water heating system	Teleheating
Date of the building evaluation	-

2 Execution of the building evaluation with the ENERBBUILD tool

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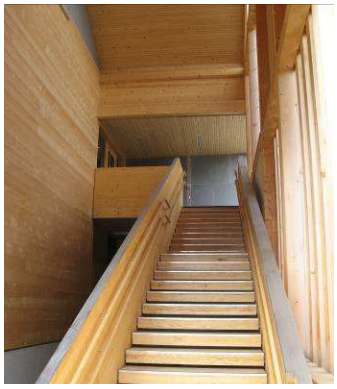
Temperature for thermal comfort in summertime: 0 % > 25 °C

Local limits for heating demand: 14 kWh/m²

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	CO2-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	$OI3_{TGH-lc}$ ecological index of the thermal building envelope (respectively OI3 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

The building combines a kindergarden with a fire department. Therefore it was a challenge to separate the parts in the building with different needs and demands in room temperature and comfort aspects. Also the ecological efforts had to be separated concerning the different parts and usage of the building.

b) About the planning process

The planning process was driven by the idea of life cycle cost efficieny and usage of regional wood.

c) About the building itself

The kindergarden is made of wood and clay. To ensure best indoor air quality was one of the most important aims in the project. The measurements of VOC (< 300 µg/m³) and formaldehyde (< 0,049 µg/m³) showed very good values.

d) About the evaluation process

5 Suggestions for improvement of the ENERBUILD-Tool

Make a suggestion how to deal with different results for indoor air quality in different rooms with different surfaces. How to get the points – is it the average, is it the worst value??