

## Evaluation ENERBUILD-Tool – existing buildings

### Elementary School Scheifling



#### 1 Basic information about the building

Name of the building	Volksschule Scheifling, Elementary School
Address of the building	Schulgasse 3, A-8811 Scheifling
Owner/investor	Marktgemeinde Scheifling, municipality Scheifling
Year of construction	Construction 1957, extensive reconstruction 2012
Building type	School
Building method	Concrete Massive Construction
Number of buildings	1
Number of levels above earth	3
Number of levels underground	1
Kind of the public use	Education
Effective area for public use in m <sup>2</sup> (net)	999
Additional private uses	No
Effective area for private use in m <sup>2</sup> (net)	0
Total effective area in m <sup>2</sup>	999
Source of energy for heating	Wood Chips (from Biomass District Heating)
Heating system	District Heating Connection, Radiators
Water heating system	Decentral Electric Water Heating
Date of the building evaluation	01.12.2011

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

Responsible Organisation: Energieagentur Obersteiermark

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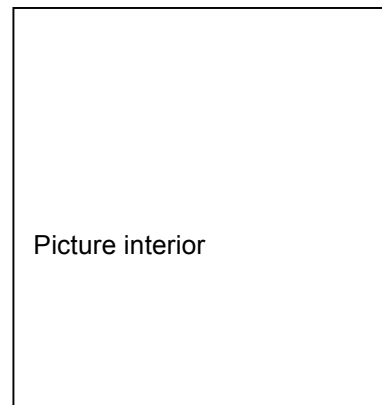
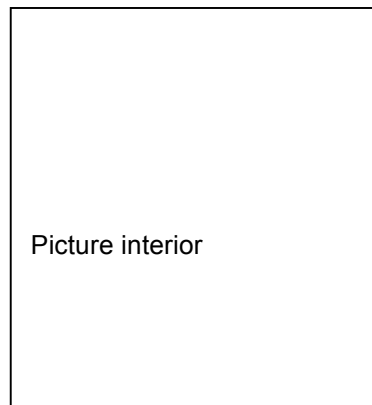
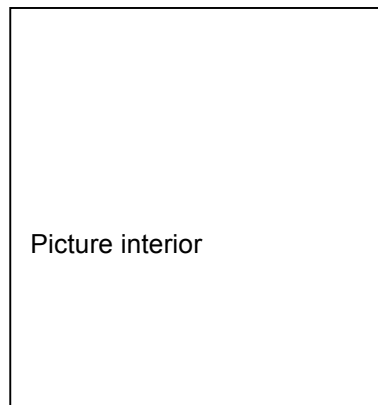
Email: [office@eao.st](mailto:office@eao.st)

Temperature for thermal comfort in summertime: 26°C

Local limits for heating demand: 65 kWh/m<sup>2</sup>(at the year of construction)

## 3 Results

Nr.		Title	Must criteria (M)	max. points	evaluated points
<b>A</b>		<b>Quality of location and facilities</b>		<b>max. 100</b>	<b>100</b>
A	1	Access to public transport network		50	50
A	2	Ecological quality of site		50	50
<b>B</b>		<b>Process and planning quality</b>		<b>max. 200</b>	<b>160</b>
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	0
B	4	Product-management - Use of low-emission products		60	40
B	5	Planning support for energetic optimization		60	50
B	6	Information for users		25	25
<b>C</b>		<b>Energy &amp; Utilities (Passive house)</b>		<b>max. 350</b>	<b>209</b>
C	1	Specific heating demand (PHPP)	M	100	91
C	2	Specific cooling demand (PHPP)	M	100	28
C	3	Primary energy demand (PHPP)	M	125	76
C	4	CO <sub>2</sub> -emissions (PHPP)		50	14
<b>D</b>		<b>Health and Comfort</b>		<b>max. 250</b>	<b>250</b>
D	1	Thermal comfort in summer		150	150
D	2	Ventilation - non energetic aspects		50	50
D	3	Daylight optimized (+ lightening optimized)		50	50
<b>E</b>		<b>Building materials and construction</b>		<b>max. 200</b>	<b>156</b>
E	1	OI <sub>3-TGH-ic</sub> ecological index of the thermal building envelope (respectively OI <sub>3</sub> of the total mass of the building)		200	156
<b>Sum</b>				<b>max. 1000</b>	<b>875</b>



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

### a) Generally

The elementary school Scheifling, particularly the main building called “alte Hauptschule” (old Secondary School) has been erected in the year 1957 and is due for renovation. The goal is to include with the necessary repair works also the improvement of the school from an energetic point of view. The current energy class is D on the verge of E with energy consumption of 148.6 kWh/m<sup>2</sup>/year.

### b) About the planning process

In the course of the refurbishment of the school, it is planned to decrease the energy demand of the building significantly near to passivhaus standard by the application of thermal insulation of the building envelope and the top ceiling as well as the installation of a PV-plant of 20 kWp on the roof. Further improvements, additional to these core efforts, will be implemented according to the effective amount of acquired subsidies.

### c) About the building itself

The building has always been used for education purposes. It served as secondary school before becoming the accommodation of the elementary school and is still called this way, “alte Hauptschule”. The building is oriented for maximum daylight use and well suited for a photovoltaic plant on the roof. As a result, the window shading plays an important role for heat and daylight management.

### d) About the evaluation process

The evaluation of the building both in current and as planned condition with the ENERBUILD-Tool emphasizes the importance not only of sustainable energy measures but an energy aware course of action in the life cycle of a building, planning, construction, use and demolition, as a whole. The evaluation procedure successfully highlighted the conditions and implications of successful thermal insulation.

## 5 Suggestions for improvement of the ENERBUILD-Tool

In the planning phase, the ENERBUILD-Tool is used as mean for pointing out options and consequences of building and reconstruction solutions. This valuable function could be improved in its effect with a graphical depiction of result and conclusions. Customers are already used to the energy classes and respond very well to simple yet informative illustrations.