

WHAT'S HAPPENING IN

SAXONY & UPPER AUSTRIA?

Passivhaus on a scale and elegance for children

Kindergarten

Location: Heidenau (near
Dresden) Saxony, Germany

Building Type: Kindergarten

Architect: Reiter + Rentzsch

Year built: 2007

Size: 660 m² (7,104 ft²)

Cost: 1.05MM Euro



Kindergarten

Enclosure:

- PH certified windows
- Masonry with ext. mineral wool with a U value of $0.11 \text{ W/m}^2 \text{ K}$
- Extensive Green Roof

Mechanical System:

- ERV by zone with CO₂ control
- On the district heating system with fin tube distribution
- 12 m² of solar hot water w/ 750 liter tank for 70% load
- Rainwater collection

Design Energy Standard:

- Passivhaus at $15 \text{ kWh/m}^2 \text{ A}$ as a modeled heating load

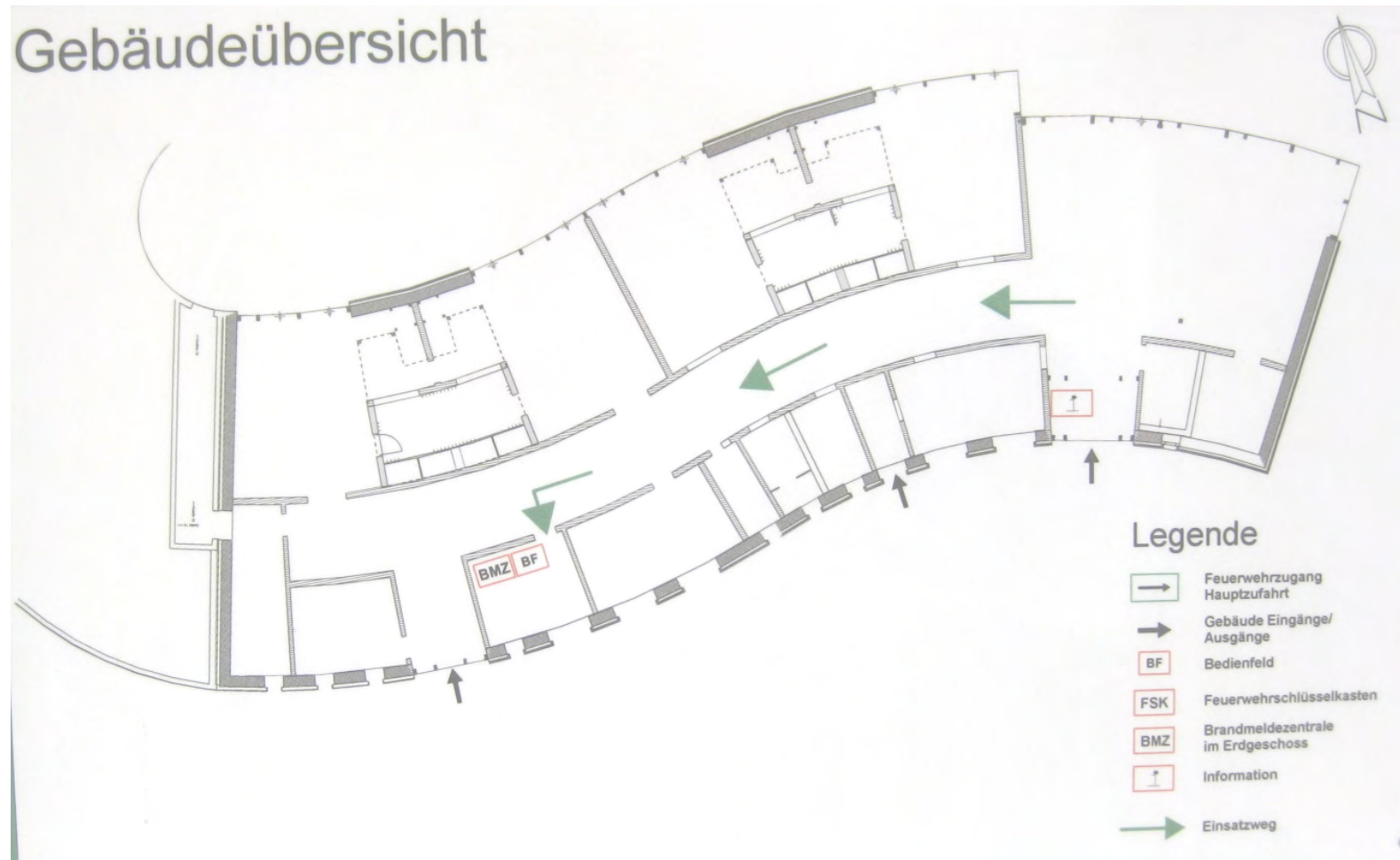
Energy Use:

- No measured data available, but airtightness is 0.44 ACH_{50}



Kindergarten

Floor Plan



Kindergarten - Envelope Assemblies

Gebäudehülle im Detail

Fenster : Holzfenster mit Purenitdämmkern und dreifach Wärmeschutzverglasung

U_{Glas}	0,54	W/m ² K
U_{Rahmen}	0,67	W/m ² K
U_{Gesamt}	0,84	W/m ² K
g - Wert	0,52	

Außenwand : Poroton Ziegel mit Perlitfüllung

U - Wert	0,123	W/m²K	
Aufbau	15	mm	Kalk-Gips-Putz
	425	mm	Perlitgefüllter Ziegel Poroton T8 WLK 080
	100	mm	Mineralwolle WLK 035/Holz
Gesamtdicke	540	mm	

Außenwand gegen Erde : Beton WDVS

U - Wert	0,128	W/m²K	
Aufbau	300	mm	Normalbeton
	5	mm	Abdichtung
	300	mm	XPS WLK 035
Gesamtdicke	605	mm	

Boden gegen Erde : Massiv mit Polystyrol Dämmung

U - Wert	0,125	W/m²K	
Aufbau	5	mm	Linoleum
	65	mm	Zement-Estrich
	140	mm	PS- Dämmung WLG 035
	5	mm	Abdichtung
	300	mm	Normalbeton
	120	mm	XPS WLG 035
Gesamtdicke	655	mm	

Dach : Holz mit Zellulose

U - Wert	0,107	W/m²K	
Aufbau	1	mm	Dampfbremse
	360	mm	Zellulose WLG 040/Träger
	40	mm	Rauspundschalung
	5	mm	Abdichtung
			Dachbegrünung
Gesamtdicke	406	mm	

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Remarkable Features:

- A beautifully detailed building with thoughtful attention to detail-scaled for children
- Lighting and controls were well designed
- Exterior shading panels on lower at ground levels
- Adaptable large central space
- Children seemed happy



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View of the central hall and Large space



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Scaled for children

Olaf Reiter, Architect



Kindergarten

Potential Issues:

- We found a bypass duct on the ERV that was open in the winter- this is intended for swing seasons
- The back door was used more often than intended and without a closer let in cold air.
- An access for tricycles had the thermal envelope on the back wall and allowed cold air in as well- no heating in this location



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Mechanicals on view for children
To ask their parents...

The extensive roof with partial
access for the kids



Kindergarten

The back door

