HUB4LCA

e3D Lehrstuhl für Energieeffizientes Bauen | RWTH AACHEN UNIVERSITY

RETAIL

Bldg Type	Non-residential
Variant	Minimal
Rel Anzahl	0.91
NLA [m²]	2434.62
Height [m]	6.84
storeys a.g.	1.46
storeys b.g.	0.69

Exterior Wall

Type: massive | U [W/m²K]: 0.25

Layer	Material Name	t_i [cm]	ρ_i [kg/m³]	λ_i [W/mK]	c_i [J/kgK]	EPD_1	EPD_2
0	interior plaster	1	1400	0.7	850	6	-
1	precast reinforced concrete	35.625	2400	2.04	776	7	-
2	mineral wool	5.21	60	0.04	850	4	-
3	resting air layer	6	1.184	0.026	1.005	9	-
4	concrete weather shell	12	2400	2.04	776	7	-

Interior Wall

U [W/m²K]: 4.04

Layer	Material Name	t_i [cm]	ρ_i [kg/m³]	λ_i [W/mK]	c_i [J/kgK]	EPD_1	EPD_2
0	interior plaster	1	1400	0.7	850	6	-
1	precast reinforced concrete	35.625	2400	2.04	776	7	-
2	mineral wool	5.21	60	0.04	850	4	-
3	resting air layer	6	1.184	0.026	1.005	9	-
4	concrete weather shell	12	2400	2.04	776	7	-

Floor

U [W/m²K]: 4.04

Layer	Material Name	t_i [cm]	ρ_i [kg/m³]	λ_i [W/mK]	c_i [J/kgK]	EPD_1	EPD_2
0	floating cement screed	4.5	2200	2	1000	13	-
1	EPS_040_15	6	15	0.04	1500	2	-
2	reinforced concrete	20.688	2104	1.94	776	7	-

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Roof

U [W/m²K]: 0.17

Layer	Material Name	t_i [cm]	ρ_i [kg/m³]	λ_i [W/mK]	c_i [J/kgK]	EPD_1	EPD_2
0	interior plaster	1	1400	0.7	850	6	-
1	reinforced concrete	22	2400	2.04	776	8	-
2	hardwood	8	600	0.14	1500	12	-
3	mineral wool	11.27	60	0.04	850	4	-
4	moving air layer	6	1.184	0.026	1.005	9	-
5	bituminized felt	1	1200	5	1000	3	-

Foundation

U [W/m²K]: 0.75

Layer	Material Name	t_i [cm]	ρ_i [kg/m³]	λ_i [W/mK]	c_i [J/kgK]	EPD_1	EPD_2
0	floating cement screed	4	1940	1.4	1000	13	-
1	stone wool	9.04	60	0.09	840	1	-
2	reinforced concrete	18.5	2104	1.94	776	7	-

Window System

Percentage of walls	Glazing	EPD_{Gl}	Frame type	EPD_{Fr}	Shading type	EPD_{Sh}
...	2	11	aluminium	10	-	-

Heating System

Unit type	Generator	EPD_{HEG}	Heating energy carrier	EPD_{HEC}
per_bldg	boiler_gas_large_condensing	14	gas	5

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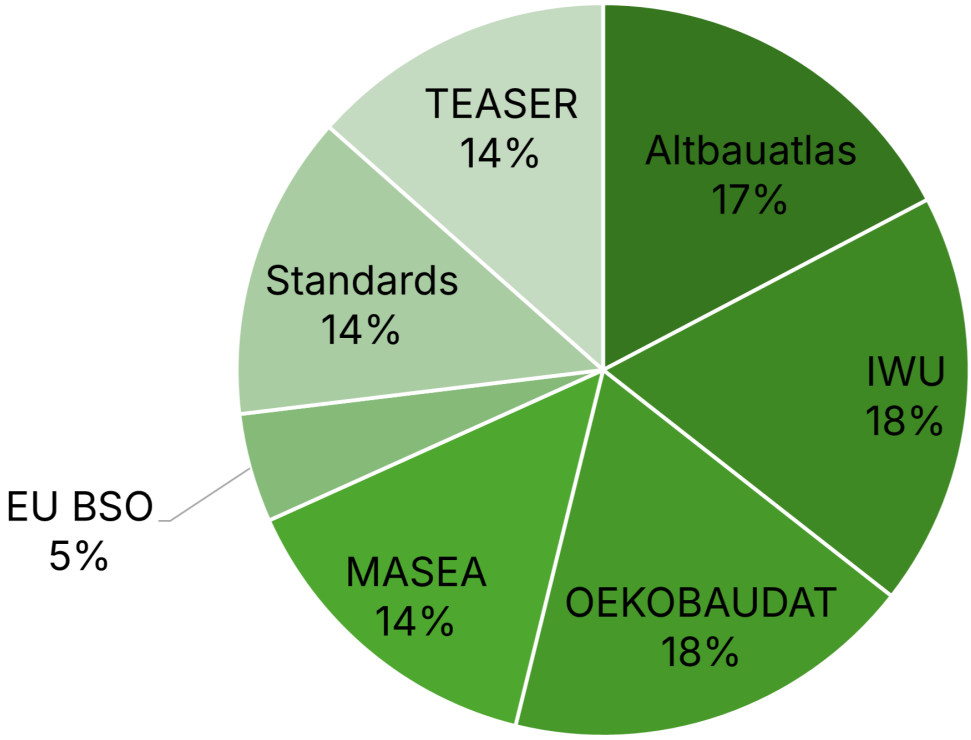
Façade length [m]							
N		S		E		W	
Mean	SE	Mean	SE	Mean	SE	Mean	SE
35.2	10.96	35.53	12.06	35.26	11.34	34.17	11.42

Façade area [m²]							
N		S		E		W	
Mean	SE	Mean	SE	Mean	SE	Mean	SE
264.09	100.66	264.34	107.43	267.43	99.19	258.77	101.05

EPD Summary Table

Serial No.	Full UUID	Material Name
1	155a3b83-ed73-4462-a4f1-69ce64e24981	Mineral wool insulation (high bulk density range)
2	205b761d-e344-49c3-a3a9-bb1bfd59b916	Expanded Polystyrene (EPS) Foam Insulation (density 15 kg/mÂ³)
3	27ccffb8-02ec-466d-b925-f6db91d4ef71	Bitumen sheets G 200 S4
4	50d421e2-3a7b-4659-92a4-f20d6a52fcf0	Mineral wool (facade insulation)
5	84aa7483-9824-49a9-a3e3-f9fb092ea7b7	Use - 1 kWh of final energy from gas calorific value (according to GEG)
6	9a670d29-efb9-4fde-95ab-182a0b1e7280	Lime gypsum interior plaster
7	Synthetic_2	Concrete C30/37 with reinforcement steel
8	Synthetic_7	Ready-mix concrete C30/37 with reinforcement steel
9	Synthetic_8	Air layer
10	d0e0f205-2f4d-4c7f-b63a-23a9abd6e60a	Aluminium frame profile, powder coated
11	dcf38066-e336-46a7-b0a8-b2453dd2872d	Window glass, single
12	e131431f-4d99-4d7a-ae0a-744a06de3524	Hardwood lumber - kiln dried (German average)
13	fe371be5-c72f-4203-8569-a085ef375ba4	CALCIUM SULPHATE FLOWING SCREED AND CONVENTIONAL CALCIUM SULPHATE SCREED
14	fe91b985-60da-45dc-b3fd-29b9e632d49f	Gas condensing boiler120-400 kW (upright unit)



Data source	Link
Altbauatlas	https://www.altbauatlas.de/index.php
OEKOBAUDAT	https://www.oekobaudat.de/en.html
IWU	https://datenbasis.iwu.de/ https://wohngebaeudedaten2016.iwu.de/
MASEA	https://www.masea-ensan.de/
TEASER	https://ebc-tools.eonerc.rwth-aachen.de/en/teaser
EU BSO	https://building-stock-observatory.energy.ec.europa.eu/database/

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