



Multi Family House



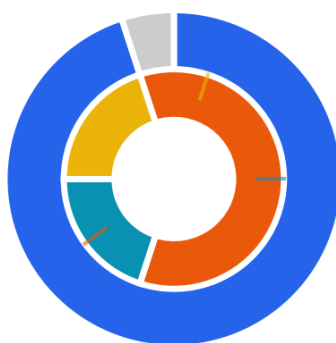
Region	east
Municipality Size	rural
Municipality Growth	growing
Age Class	1919-1948
Adjacency	detached
Net leased area [m²]	214.9
Storey Height [m]	2.7
Storeys a.g.	2.0



Building Performance (KPIs)

KPI	Mean	95% CI	Unit	CV	n _{Sim}
Final heat energy demand - per year	38141.85	± 2665.92	kWh/a	0.66	90
Final heat energy demand - per m² net leased area and year	179.06	± 12.29	kWh/m²a	0.65	90
Carbon footprint (GWP) from heat energy - per year	9547.67	± 665.15	kgCO ₂ eq,B6/a	0.66	90
Carbon footprint (GWP) from heat energy - per m² net leased area and year	44.82	± 3.07	kgCO ₂ eq,B6/m²a	0.65	90
Life Cycle Carbon footprint (GWP) - over 50 years	558316.83	± 45472.87	kgCO ₂ eq,full/50a	0.77	90
Life Cycle Carbon footprint (GWP) - per m² net leased area and for 50 years	2621.63	± 211.23	kgCO ₂ eq,full/m²50a	0.76	90

ABC



- Operational (95.0%)
- Exterior walls (3.00%)
- Foundation (1.00%)
- Windows (1.00%)
- Roof (0.00%)

Building element	D [kgCO ₂ eq/50a]
Exterior walls	-184.0
Roof	-165.0
Foundation	127.0
Windows	-703.7



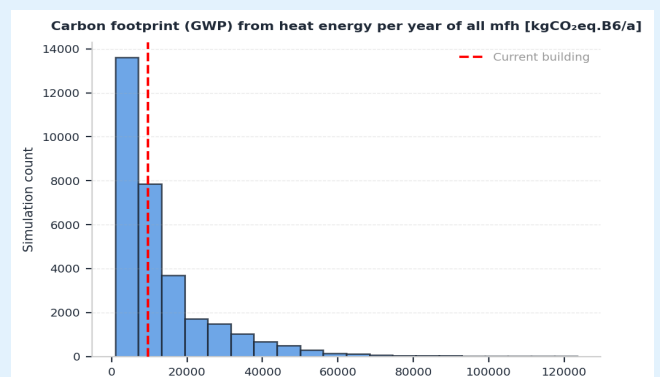
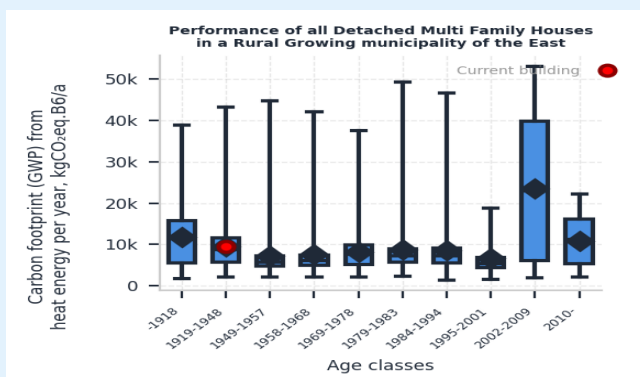
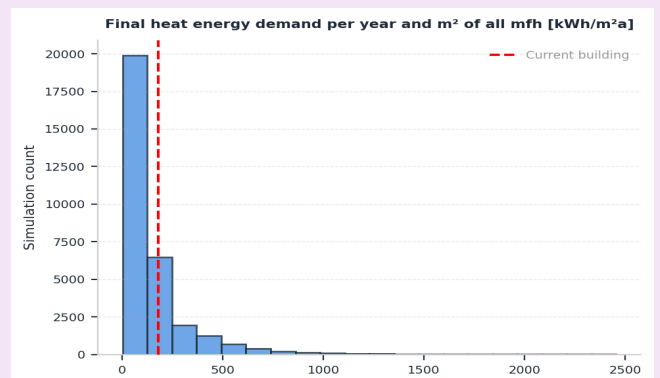
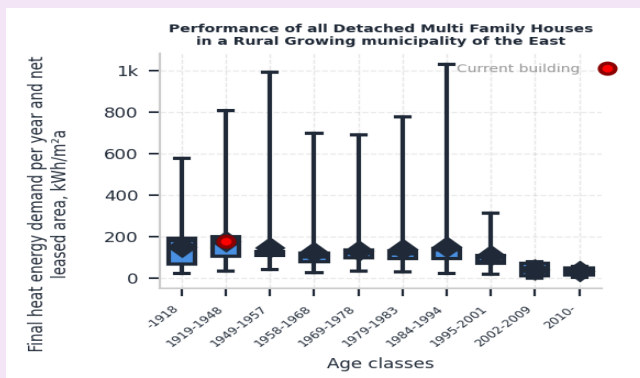
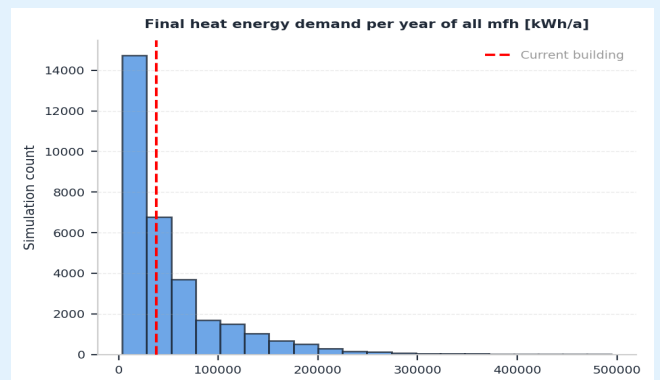
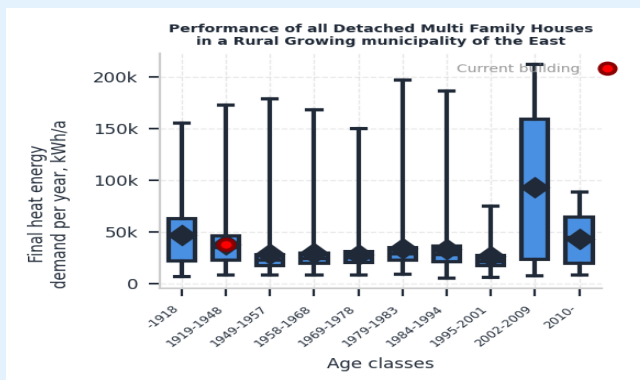
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Building Performance





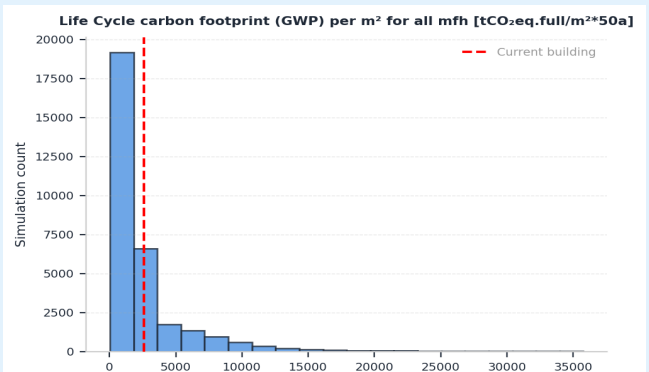
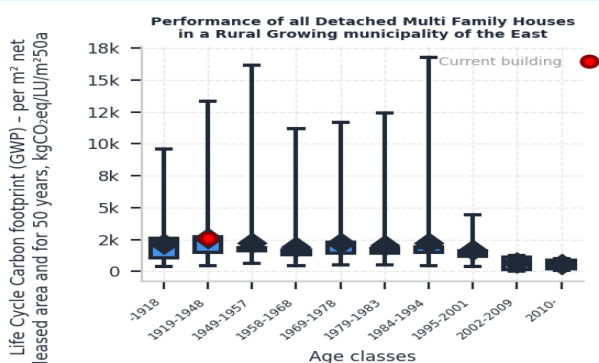
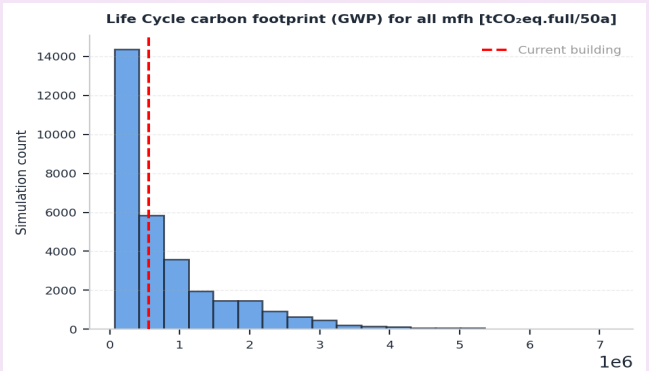
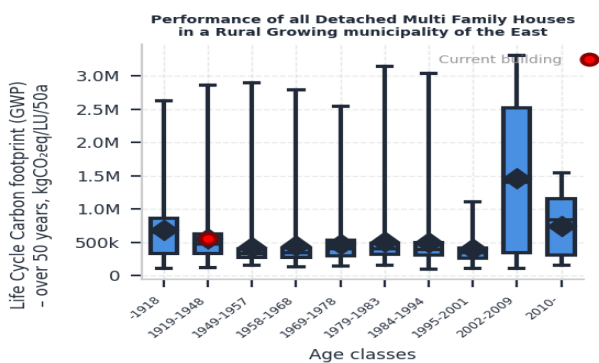
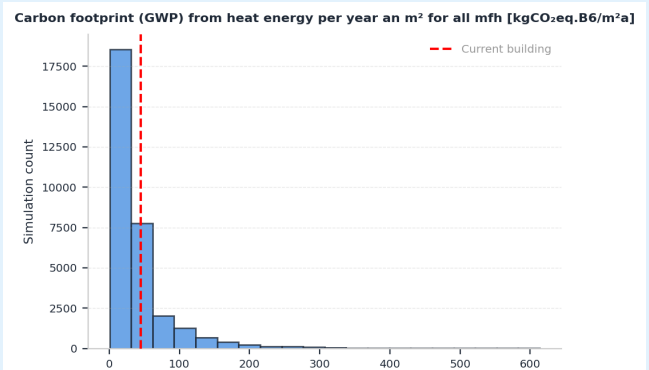
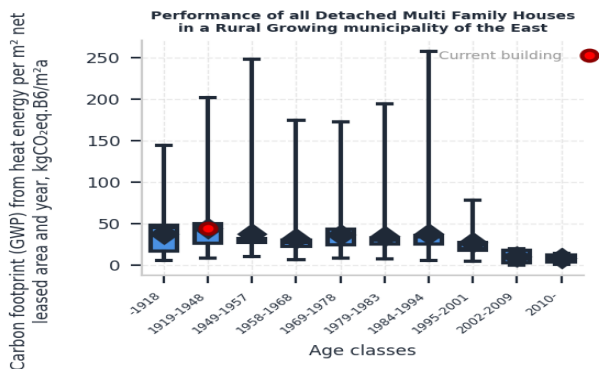
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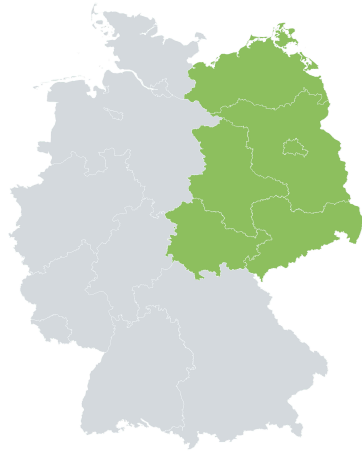


Building Performance





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Exterior Wall

Type: massive	U [W/m²K]		
	Actual: 1.340	Min: 0.180	Max: 1.700

Layer	Material Name	t _i [m]	ρ _i [kg/m³]	λ _i [W/mK]	c _i [J/kgK]	EPD ₁	EPD ₂
0	gypsum	0.015	850	0.3	1000	12	-
1	solid brick	0.3	1800	0.6	850	1	-
2	lime plaster	0.02	1600	0.7	850	10	-

Interior Wall

U [W/m²K]		
Actual: 2.170	Min: 0.190	Max: 2.100

Layer	Material Name	t _i [m]	ρ _i [kg/m³]	λ _i [W/mK]	c _i [J/kgK]	EPD ₁	EPD ₂
0	gypsum	0.015	850	0.3	1000	12	-
1	solid brick	0.15	1800	0.79	850	1	-
2	gypsum	0.015	850	0.3	1000	10	-

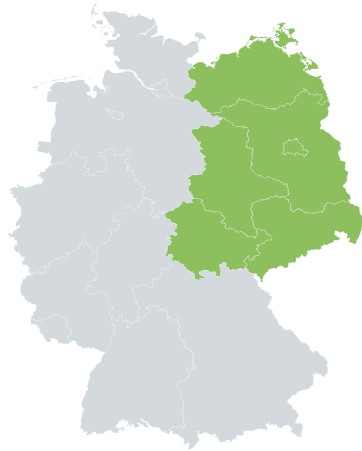
Roof

Type: wooden	U [W/m²K]		
	Actual: 0.430	Min: 0.180	Max: 1.400

Layer	Material Name	t _i [m]	ρ _i [kg/m³]	λ _i [W/mK]	c _i [J/kgK]	EPD ₁	EPD ₂
0	lime plaster	0.015	1600	0.7	850	10	-
1	wood wool board gypsum 420	0.12	2000	0.1	2000	2	-
2	hardwood	0.125	650	0.13	1500	11	-



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Foundation

Type: massive	U [W/m²K]		
	Actual: 0.520	Min: 0.180	Max: 1.200

Layer	Material Name	t_i [m]	ρ_i [kg/m³]	λ_i [W/mK]	c_i [J/kgK]	EPD ₁	EPD ₂
0	hardwood	0.05	650	0.13	1500	11	-
1	mineral wool	0.05	60	0.04	850	4	-
2	reinforced concrete	0.18	2400	2.04	776	7	-

Floor

U [W/m²K]		
Actual: 2.170	Min: 0.190	Max: 2.100

Layer	Material Name	t_i [m]	ρ_i [kg/m³]	λ_i [W/mK]	c_i [J/kgK]	EPD ₁	EPD ₂
0	hardwood	0.05	650	0.13	1500	11	-
1	reinforced concrete	0.18	2104	1.94	776	6	-

Window System

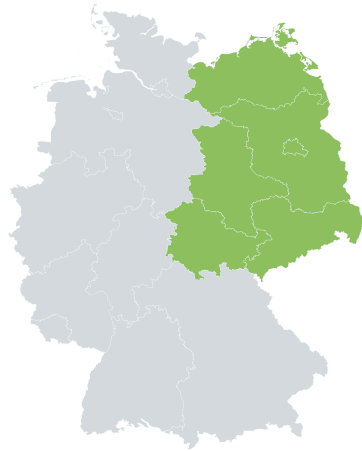
Glazing	EPD _{Gl}	Frame type	EPD _{Fr}	window wall share
2	9	wood	8	0.18494

Heating System

Generator 1	EPD	Heating energy carrier	EPD
boiler_gas_medium_low_temperature	3	gas	5



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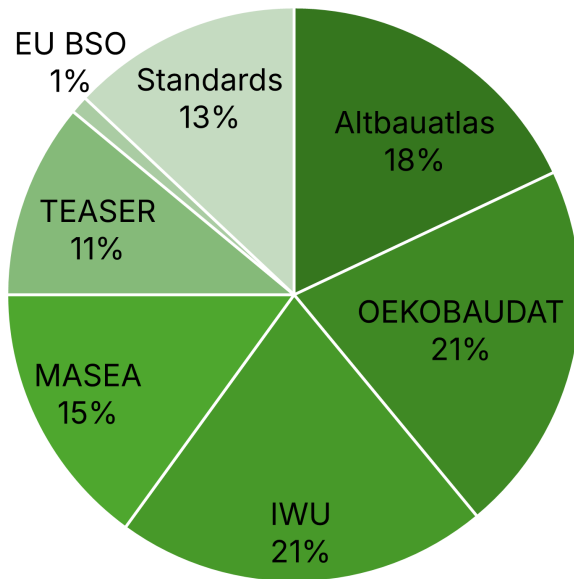


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EPD Summary Table

SPN	Full EPD ID	Material Title
1	127a23f5-d954-41c9-8f8a-ecca18aca691	Facing bricks
2	1d9ca1d8-7ff3-4533-b828-a4c96bf31066	gypsum fibre board
3	230155d8-a5df-4b32-b6e9-46bdbcf526b3	Gas low temperature boiler 20-120 kW (upright unit)
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	Synthetic_2	Concrete C30/37 with reinforcement steel
7	Synthetic_7	Ready-mix concrete C30/37 with reinforcement steel
8	b0c75d7b-4cce-41cf-b785-1db434ee9c3f	Window sash (spruce)
9	dcf38066-e336-46a7-b0a8-b2453dd2872d	Window glass, single
10	ddc96ae4-086c-4033-9e45-c5589f1661ba	Lime plaster
11	e131431f-4d99-4d7a-ae0a-744a06de3524	Hardwood lumber - kiln dried (German average)
12	e6c2de31-b1a6-4c5d-ba5e-df252391321b	Gypsum (CaSO4 alpha semihydrate)



This archetype represents :

- **0.51%** of all Multi-Family Houses
- **2.91%** of all Multi-Family Houses of the specific region
- **16.64%** of all Multi-Family Houses of the specific region and municipality type

Data source	Link
Altbauatlas	https://www.altbauatlas.de/index.php
OEKOBAUDAT	https://www.oekobaudat.de/en.html
IWU	https://datenbasis.iwu.de/ https://wohngebaeuedaten2016.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/