



Industrial Building



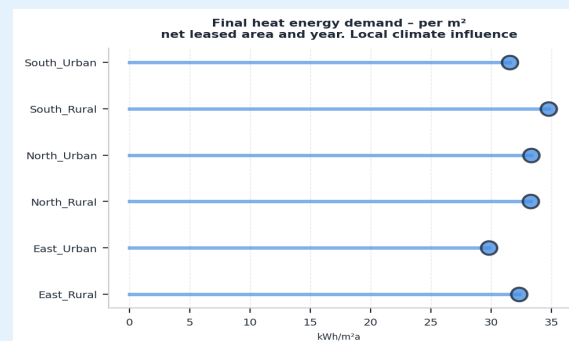
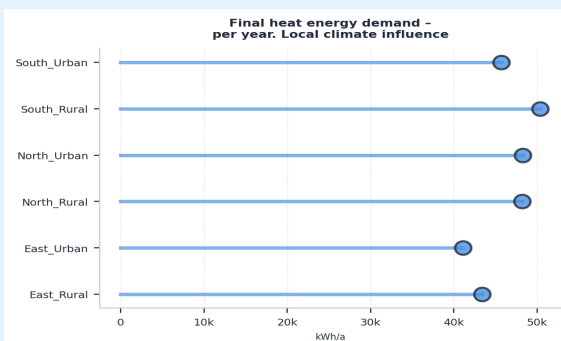
Net leased area [m²]	1448.5
Bldg Height [m]	8.3
Storeys a.g.	1.4
Storeys b.g.	0.4



Building Performance (KPIs)

KPI	Mean	95% CI	Unit	CV	n _{Sim}
Final heat energy demand - per year	45182.44	± 987.97	kWh/a	0.55	3240
Final heat energy demand - per m² net leased area and year	32.15	± 0.50	kWh/m²a	0.42	3240
Carbon footprint (GWP) from heat energy - per year	11332.01	± 245.79	kgCO ₂ eq,B6/a	0.54	3240
Carbon footprint (GWP) from heat energy - per m² net leased area and year	8.07	± 0.12	kgCO ₂ eq,B6/m²a	0.42	3240
Life Cycle Carbon footprint (GWP) - over 50 years	984469.64	± 21429.35	kgCO ₂ eq,full/50a	0.55	3240
Life Cycle Carbon footprint (GWP) - per m² net leased area and for 50 years	694.83	± 9.68	kgCO ₂ eq,full/m²50a	0.40	3240

Local Climate Influence

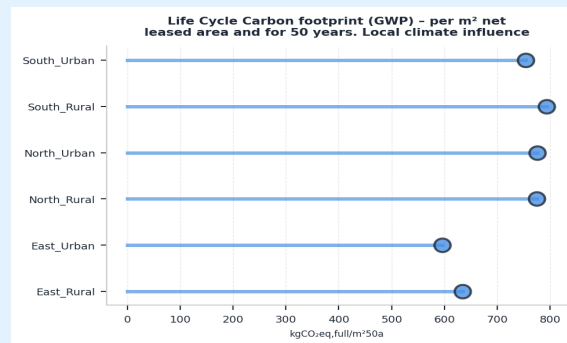
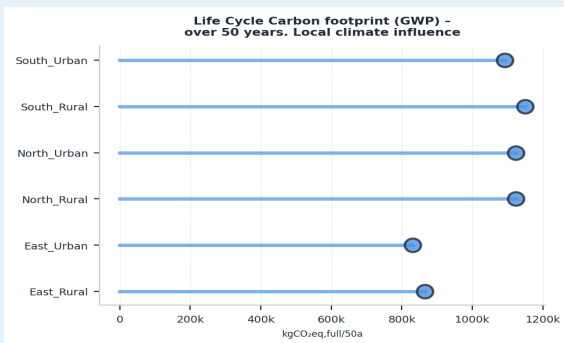
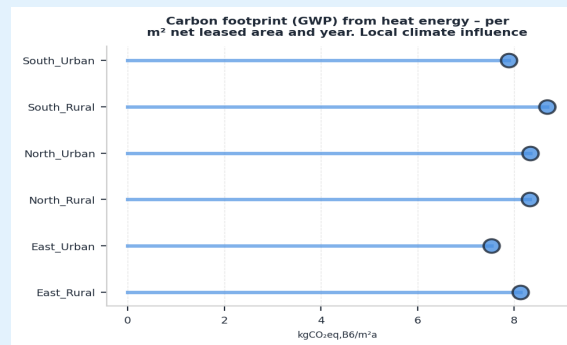
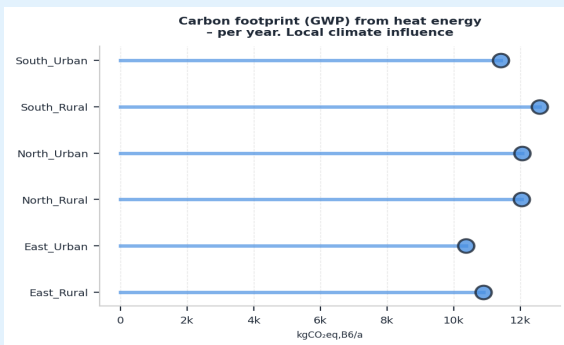




Industrial Building

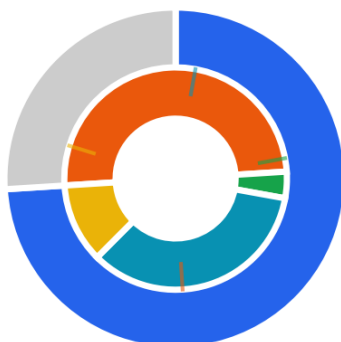


Net leased area [m²]	1448.5
Bldg Height [m]	8.3
Storeys a.g.	1.4
Storeys b.g.	0.4



Mean Life Cycle GWP

ABC



- Operational (74.0%)
- Exterior walls (13.00%)
- Roof (1.00%)
- Foundation (9.00%)
- Windows (3.00%)

Building element	D [kgCO ₂ eq/50a]
Exterior walls	2,856
Roof	1,976
Foundation	1,985
Windows	-3,153



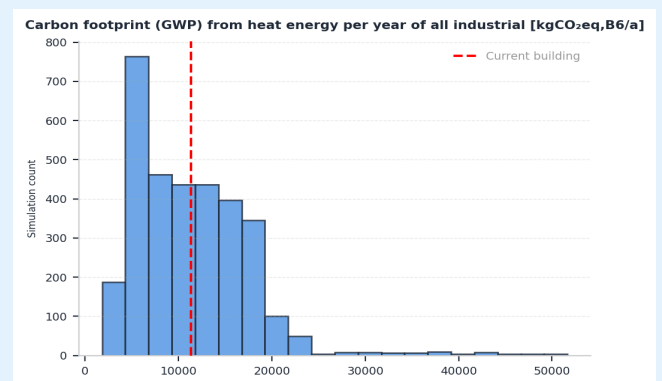
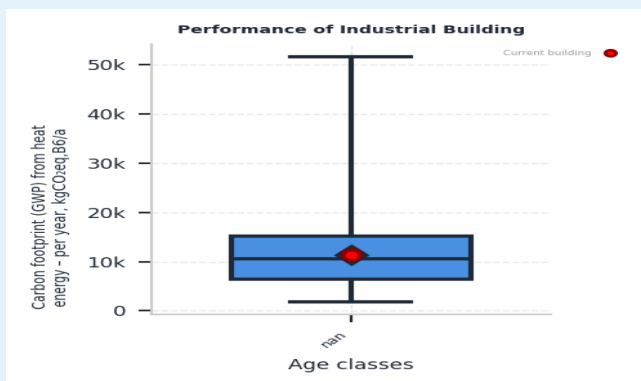
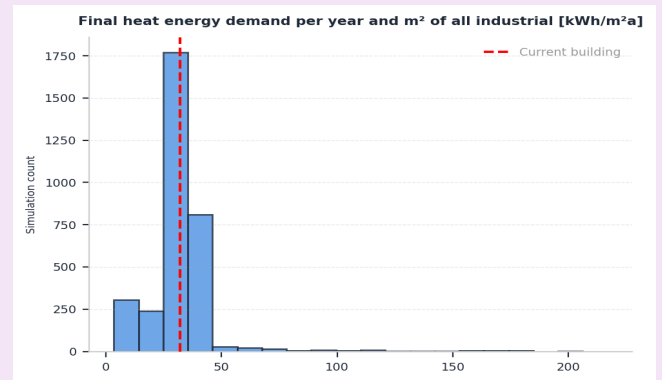
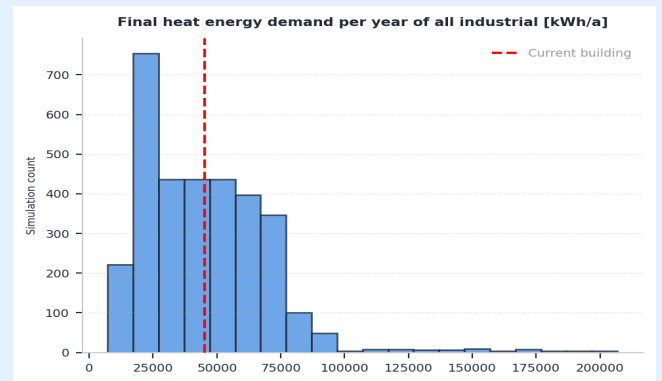
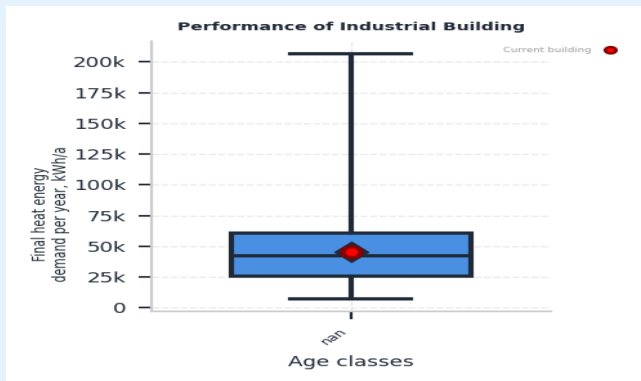
Industrial Building



Net leased area [m²]	1448.5
Bldg Height [m]	8.3
Storeys a.g.	1.4
Storeys b.g.	0.4



Building Performance





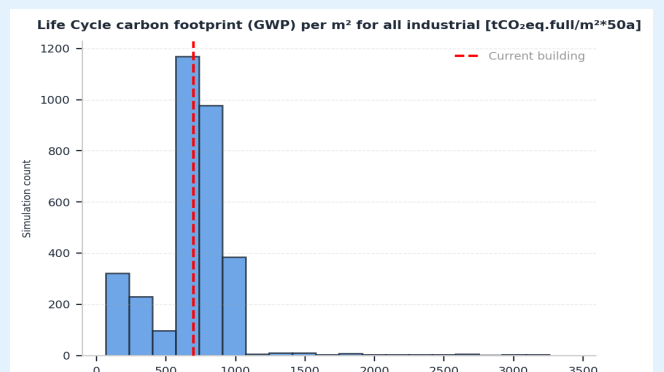
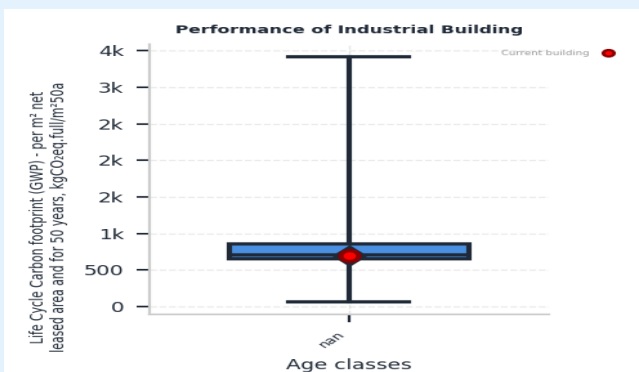
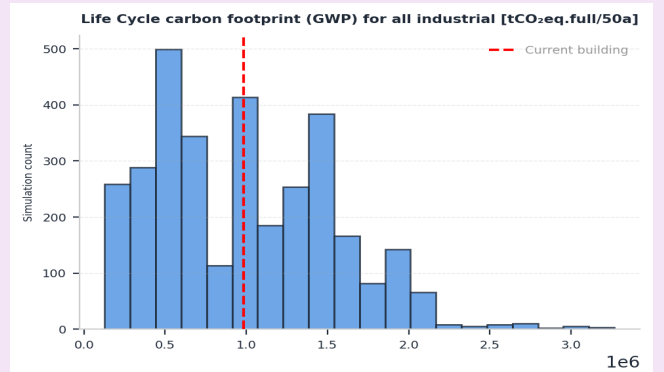
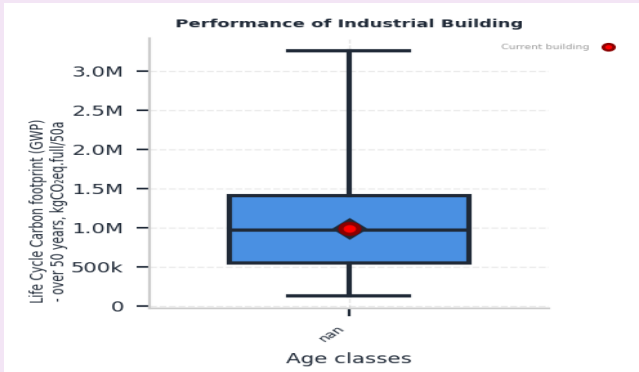
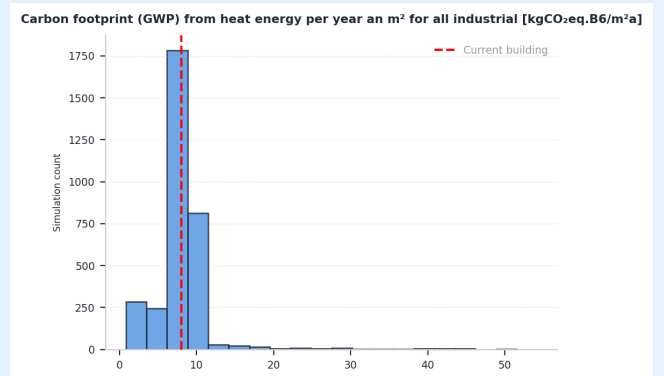
Industrial Building



Net leased area [m ²]	1448.5
Bldg Height [m]	8.3
Storeys a.g.	1.4
Storeys b.g.	0.4



Building Performance

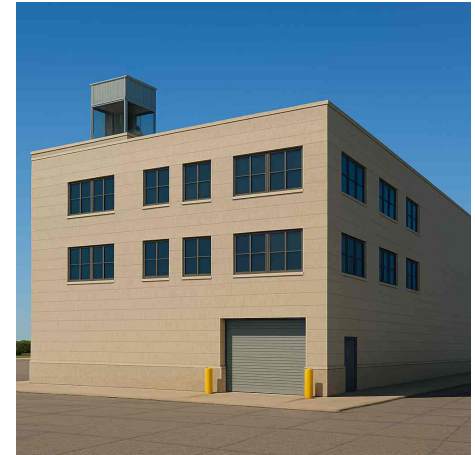




Industrial Building



Net leased area [m²]	1448.5
Bldg Height [m]	8.3
Storeys a.g.	1.4
Storeys b.g.	0.4



Exterior Wall

Type: massive

U [W/m²K]: 0.28

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	7	-
1	precast reinforced concrete	50	2400	2.04	776	8	-
2	mineral wool	3.27	60	0.04	850	4	-
3	resting air layer	6	1.184	0.026	1.005	10	-
4	concrete weather shell	12	2400	2.04	776	8	-

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	lime plaster	1	1600	0.7	850	7	-
1	reinforced concrete	10	2100	2.04	776	8	-
2	lime plaster	1	1600	0.7	850	4	-

Roof

U [W/m²K]: 0.16

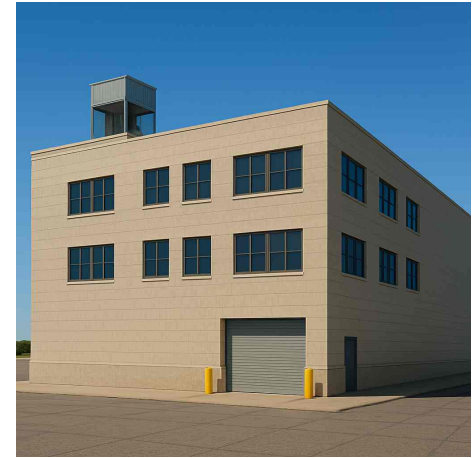
Layer	Material Name	t_i [cm]	ρ_i [kg/m³]	λ_i [W/mK]	c_i [J/kgK]	EPD ₁	EPD ₂
0	interior plaster	1	1400	0.7	850	7	-
1	reinforced concrete	50	2400	2.04	776	9	-
2	hardwood	8	600	0.14	1500	12	-
3	mineral wool	11.89	60	0.04	850	4	-
4	moving air layer	6	1.184	0.026	1.005	10	-
5	bituminized felt	1	1200	5	1000	3	-



Industrial Building



Net leased area [m²]	1448.5
Bldg Height [m]	8.3
Storeys a.g.	1.4
Storeys b.g.	0.4



Foundation

U [W/m²K]: 0.68

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	8.8	60	0.09	840	1	-
2	reinforced concrete	50	2104	1.94	776	8	-

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	50	2104	1.94	776	8	-

Window System

Glazing	EPD _{Gl}	Frame type	EPD _{Fr}	Shading type	EPD _{Sh}
2	11	pvc	5	-	-

Heating System

Unit type	Generator	EPD _{HEG}	Heating energy carrier	EPD _{HEC}
per_bldg	boiler_gas_large_condensing	14	gas	6



Industrial Building



Net leased area [m²]	1448.5
Bldg Height [m]	8.3
Storeys a.g.	1.4
Storeys b.g.	0.4

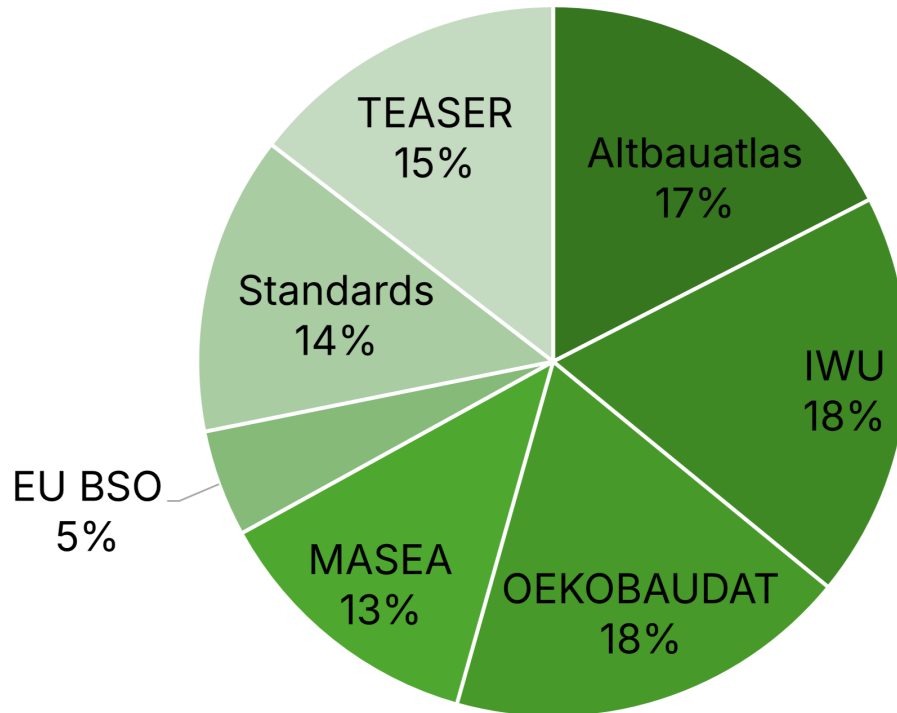


Façade length [m]							
N		S		E		W	
Mean	SE	Mean	SE	Mean	SE	Mean	SE
33.28	8.64	32.73	8.88	29.33	7.19	29.33	7.44

Façade area [m²]							
N		S		E		W	
Mean	SE	Mean	SE	Mean	SE	Mean	SE
344.45	111.79	343.57	114.88	295.69	89.45	295.94	92.13

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/m³)
3	27ccffb8-02ec-466d-b925-f6db91d4ef71	Bitumen sheets G 200 S4
4	50d421e2-3a7b-4659-92a4-f20d6a52fcf0	Mineral wool (facade insulation)
5	73de9e80-8ed2-47d8-b5b6-854c84166f24	Window sash PVC-U
6	84aa7483-9824-49a9-a3e3-f9fb092ea7b7	Use - 1 kWh of final energy from gas calorific value (according to GEG)
7	9a670d29-efb9-4fde-95ab-182a0b1e7280	Lime gypsum interior plaster
8	Synthetic_2	Concrete C30/37 with reinforcement steel
9	Synthetic_7	Ready-mix concrete C30/37 with reinforcement steel
10	Synthetic_8	Air layer
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://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/

* Building images are generated by AI