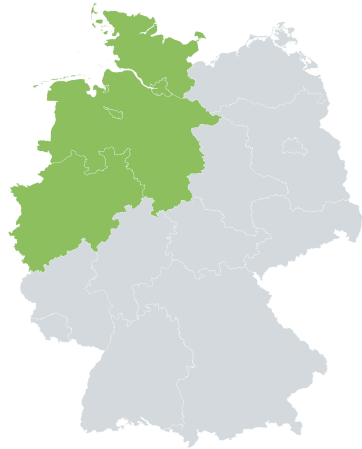




Hospitality Building



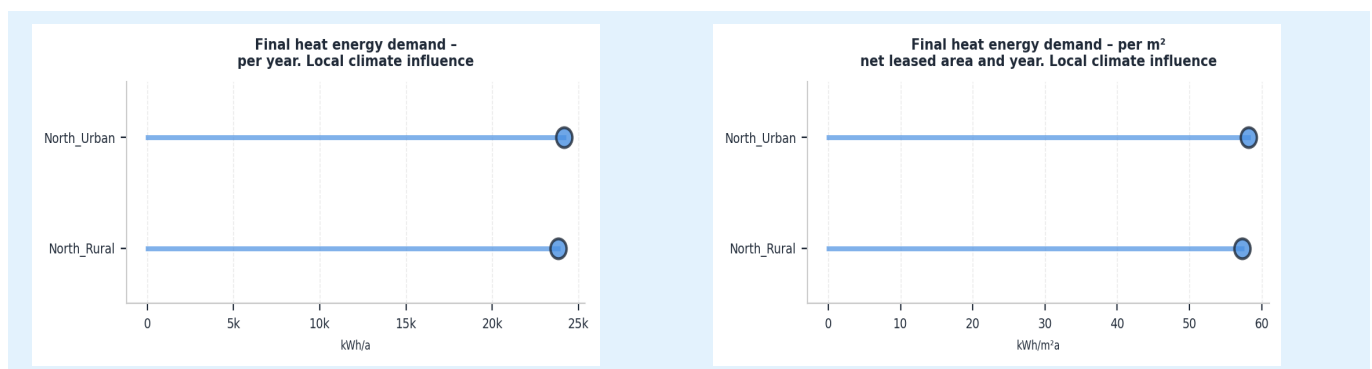
Region	north
Age Class	-1918
Net leased area [m²]	415.6
Bldg Height [m]	8.0
Storeys a.g.	1.9
Storeys b.g.	0.3



Building Performance (KPIs)

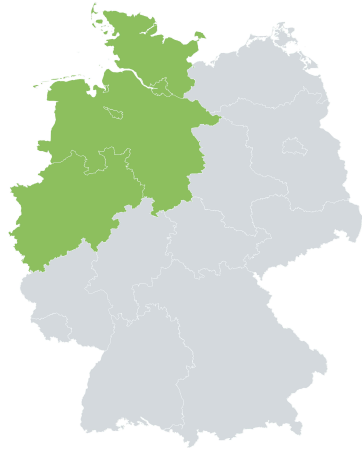
KPI	Mean	95% CI	Unit	CV	n _{Sim}
Final heat energy demand - per year	23997.04	± 364.38	kWh/a	0.31	810
Final heat energy demand - per m² net leased area and year	57.75	± 0.27	kWh/m²a	0.09	810
Carbon footprint (GWP) from heat energy - per year	5995.51	± 91.04	kgCO ₂ eq,B6/a	0.31	810
Carbon footprint (GWP) from heat energy - per m² net leased area and year	14.43	± 0.07	kgCO ₂ eq,B6/m²a	0.09	810
Life Cycle Carbon footprint (GWP) - over 50 years	363389.14	± 5505.14	kgCO ₂ eq,full/50a	0.30	810
Life Cycle Carbon footprint (GWP) - per m² net leased area and for 50 years	874.49	± 4.03	kgCO ₂ eq,full/m²50a	0.09	810

Local Climate Influence

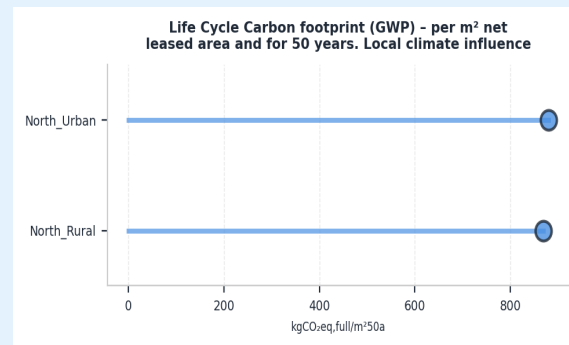
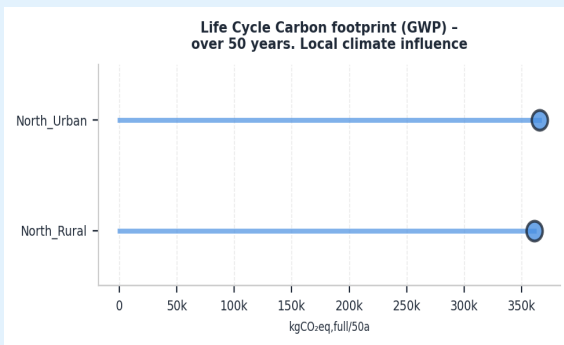
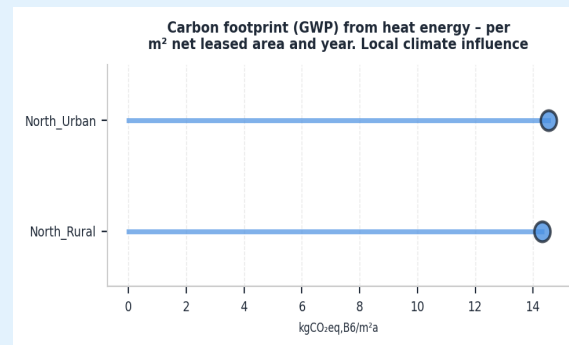
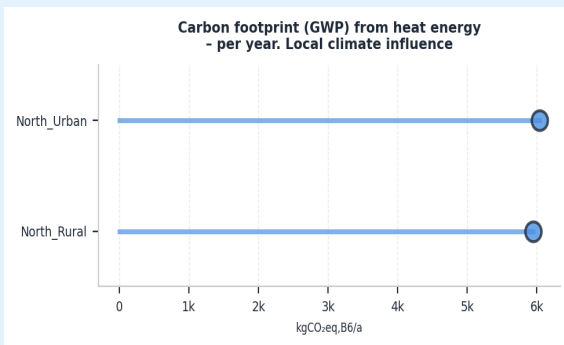




Hospitality Building

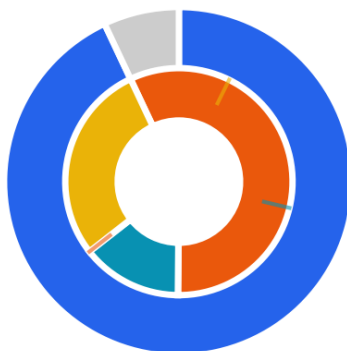


Region	north
Age Class	-1918
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Mean Life Cycle GWP

ABC

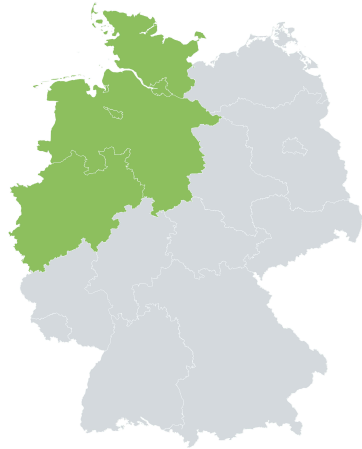


- Operational (93.0%)
- Exterior walls (4.00%)
- Roof (0.00%)
- Foundation (1.00%)
- Windows (2.00%)

Building element	D [kgCO ₂ eq/50a]
Exterior walls	232.1
Roof	28.4
Foundation	598.1
Windows	-625.0



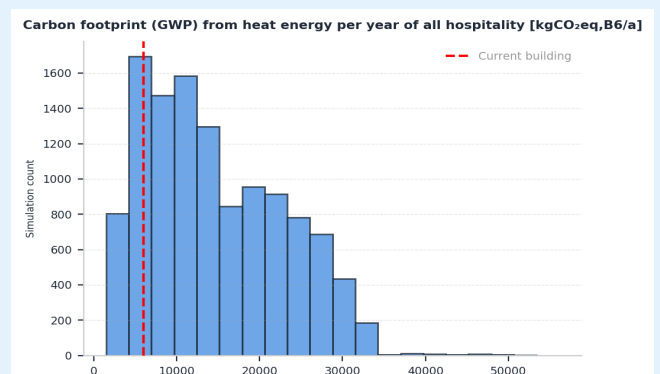
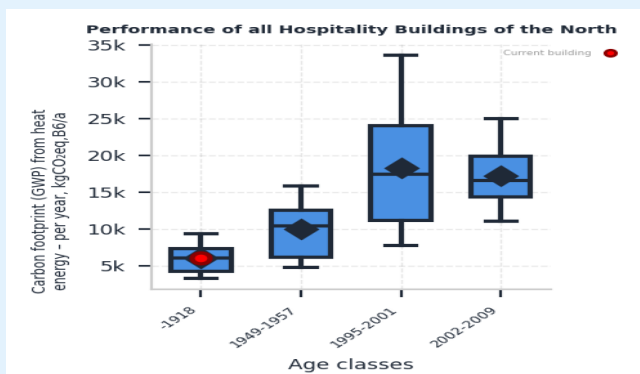
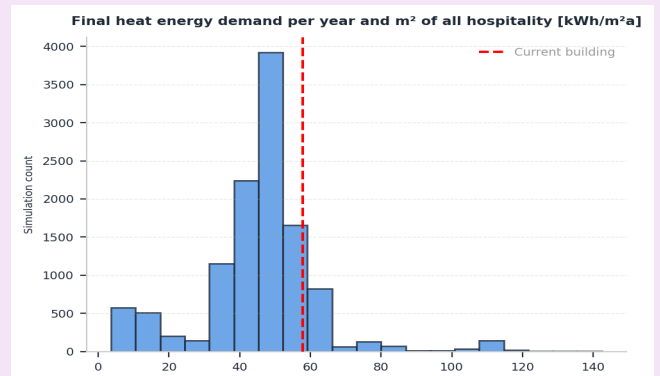
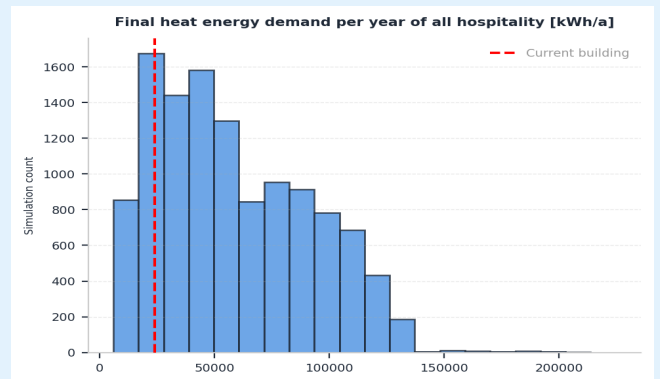
Hospitality Building



Region	north
Age Class	-1918
Net leased area [m ²]	415.6
Bldg Height [m]	8.0
Storeys a.g.	1.9
Storeys b.g.	0.3

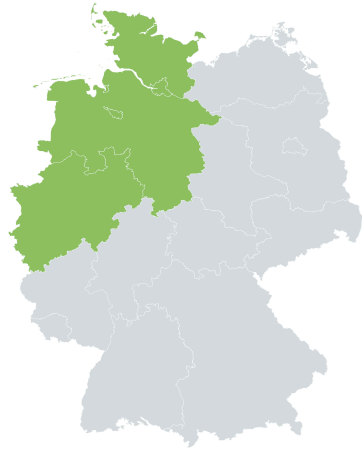


Building Performance





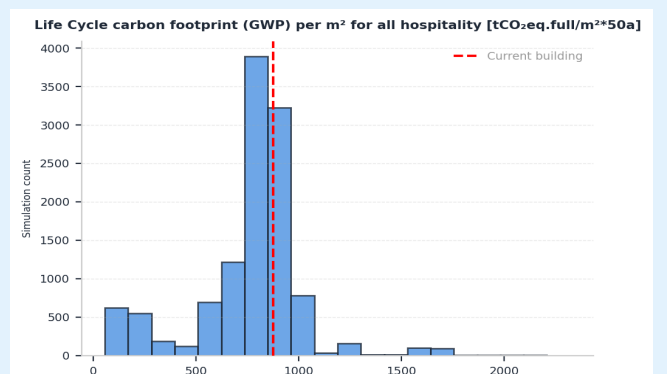
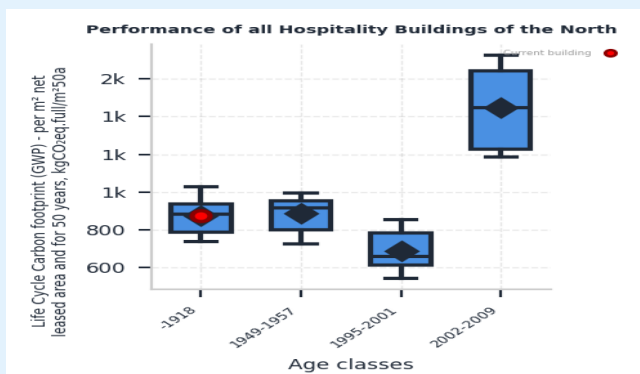
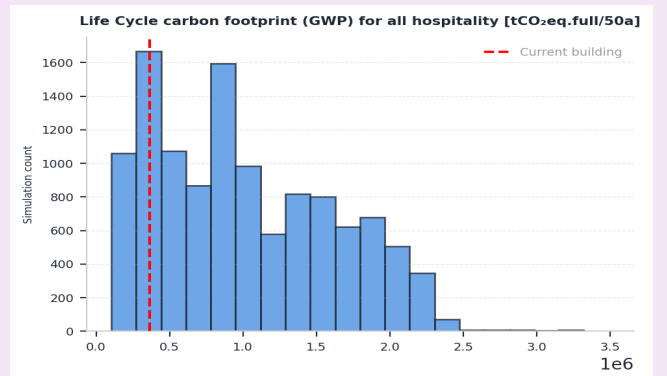
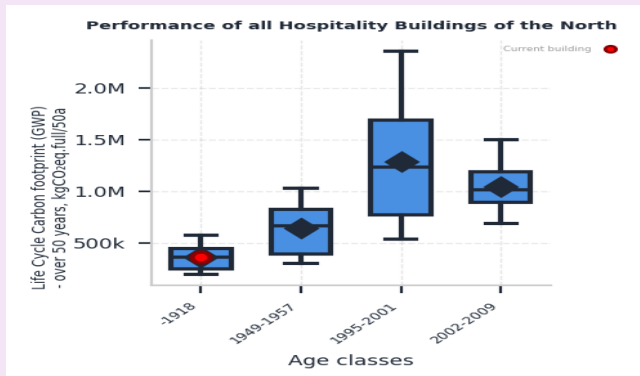
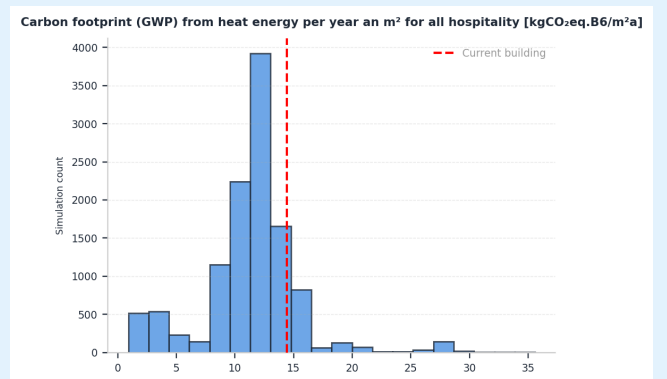
Hospitality Building



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Storeys a.g.	1.9
Storeys b.g.	0.3

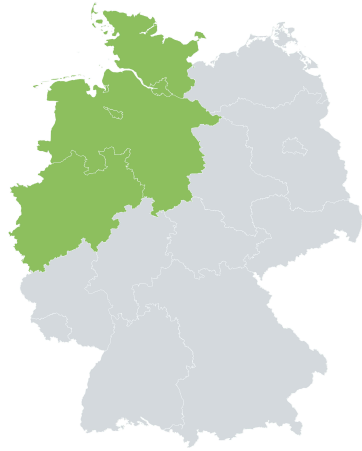


Building Performance





Hospitality Building



Region	north
Age Class	-1918
Net leased area [m²]	415.6
Bldg Height [m]	8.0
Storeys a.g.	1.9
Storeys b.g.	0.3



Exterior Wall

Type: massive

U [W/m²K]: 0.55

Layer	Material Name	t_i [cm]	ρ_i [kg/m³]	λ_i [W/mK]	c_i [J/kgK]	EPD ₁	EPD ₂
0	gypsum	1.5	850	0.3	1000	12	-
1	reinforced concrete	15	2400	2.1	776	5	-
2	mineral wool	6.08	60	0.04	850	3	-
3	exterior plaster	1.5	1600	0.87	850	1	-

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	12	-
1	reinforced concrete	10	2100	2.04	776	5	-
2	lime plaster	1	1600	0.7	850	3	-

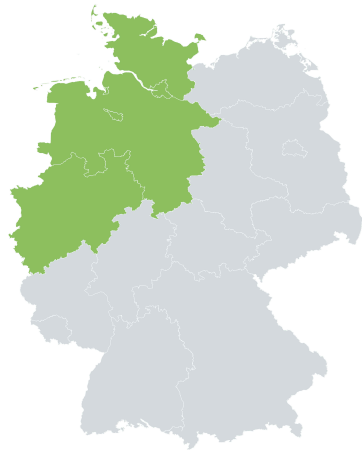
Roof

U [W/m²K]: 0.34

Layer	Material Name	t_i [cm]	ρ_i [kg/m³]	λ_i [W/mK]	c_i [J/kgK]	EPD ₁	EPD ₂
0	hardwood	3	600	0.14	1500	11	-
1	concrete_wz05	15	2400	2.1	776	5	-
2	mineral wool	10	60	0.04	850	3	-



Hospitality Building



Region	north
Age Class	-1918
Net leased area [m²]	415.6
Bldg Height [m]	8.0
Storeys a.g.	1.9
Storeys b.g.	0.3



Foundation

U [W/m²K]: 0.31

Layer	Material Name	t_i [cm]	ρ_i [kg/m³]	λ_i [W/mK]	c_i [J/kgK]	EPD ₁	EPD ₂
0	hardwood	5	650	0.13	1500	11	-
1	mineral wool	10	60	0.04	850	3	-
2	reinforced concrete	18	2400	2.04	776	6	-

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	hardwood	5	650	0.13	1500	11	-
1	reinforced concrete	18	2104	1.94	776	5	-

Window System

Glazing	EPD _{Gl}	Frame type	EPD _{Fr}	Shading type	EPD _{Sh}
2	10	wood	8	-	-

Heating System

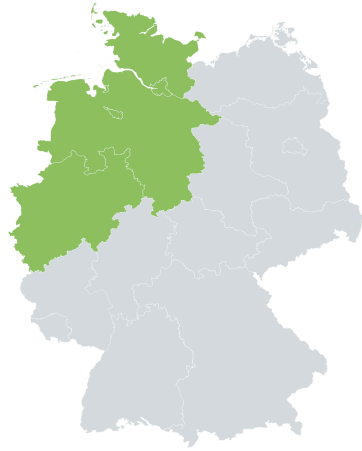
Unit type	Generator	EPD _{HEG}	Heating energy carrier	EPD _{HEC}
per_bldg	ventilation_heating_and_cooling_small	2	R410a	7

HVAC System

Converter	EPD _{HEC}	Ventilation heating	Ventilation cooling	Energy source	EPD _{HES}
boiler_gas_large_condensing	13	yes	no	gas	4



Hospitality Building



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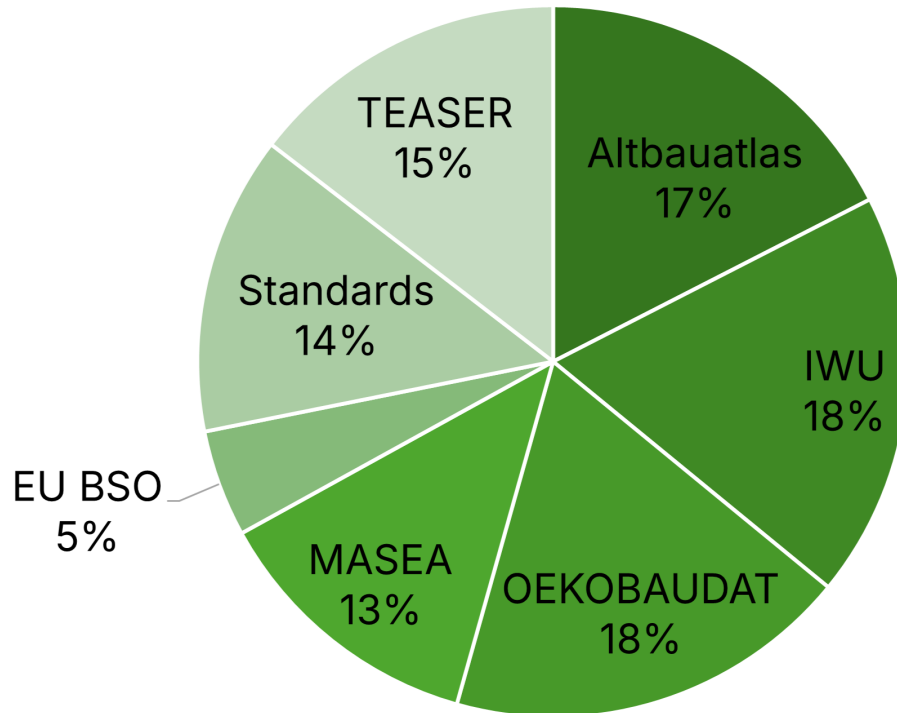


Façade length [m]							
N		S		E		W	
Mean	SE	Mean	SE	Mean	SE	Mean	SE
11.71	2	10.31	1.95	9.26	3.09	8.18	3.6

Façade area [m²]							
N		S		E		W	
Mean	SE	Mean	SE	Mean	SE	Mean	SE
102.72	15.45	99.22	17.32	80.01	25.65	77.34	26.94

EPD Summary Table

Serial No.	Full UUID	Material Name
1	004f3f4e-5bb8-4d9e-a104-6999a9e8ad5b	Gypsum lime plaster
2	214f9360-6b24-496c-afaa-07348538b790	Ventilation centralized per 5000 m3/h
3	50d421e2-3a7b-4659-92a4-f20d6a52fcf0	Mineral wool (facade insulation)
4	84aa7483-9824-49a9-a3e3-f9fb092ea7b7	Use - 1 kWh of final energy from gas calorific value (according to GEG)
5	Synthetic_2	Concrete C30/37 with reinforcement steel
6	Synthetic_7	Ready-mix concrete C30/37 with reinforcement steel
7	a9ab7d02-744c-4269-b3e1-a9fc7304e95e	Refrigerant R410a
8	b0c75d7b-4cce-41cf-b785-1db434ee9c3f	Window sash (spruce)
9	cc071698-9d73-4315-b470-e13dfcdba10a	Chiller (500kW)
10	dcf38066-e336-46a7-b0a8-b2453dd2872d	Window glass, single
11	e131431f-4d99-4d7a-ae0a-744a06de3524	Hardwood lumber - kiln dried (German average)
12	e6c2de31-b1a6-4c5d-ba5e-df252391321b	Gypsum (CaSO4 alpha semihydrate)
13	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