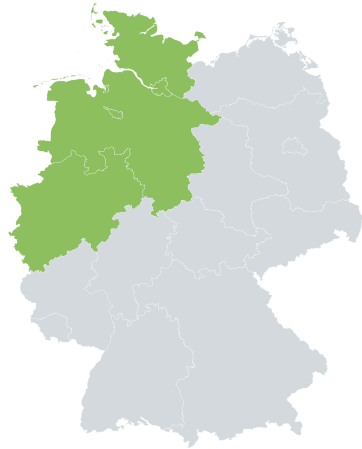




Office Building



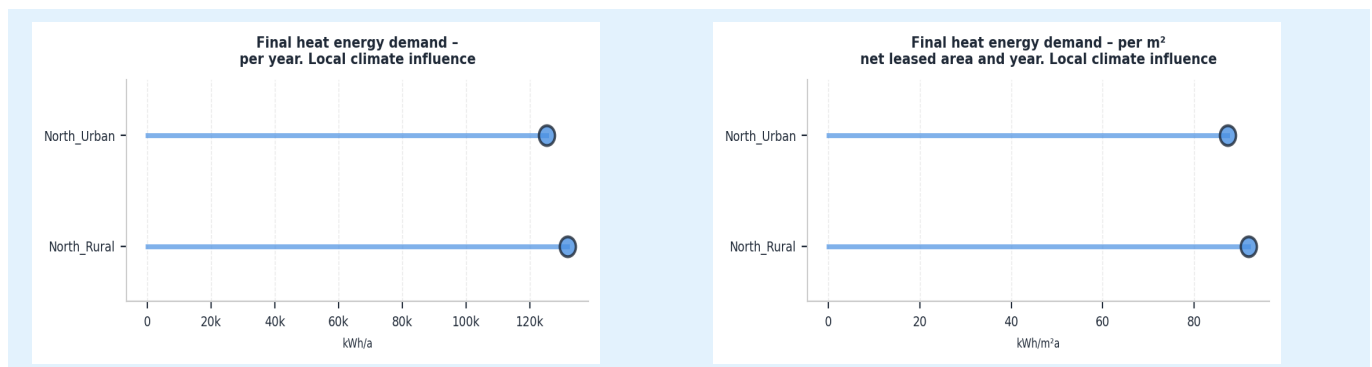
Region	north
Age Class	1984-1994
Net leased area [m²]	1434.4
Bldg Height [m]	9.0
Storeys a.g.	2.2
Storeys b.g.	0.2



Building Performance (KPIs)

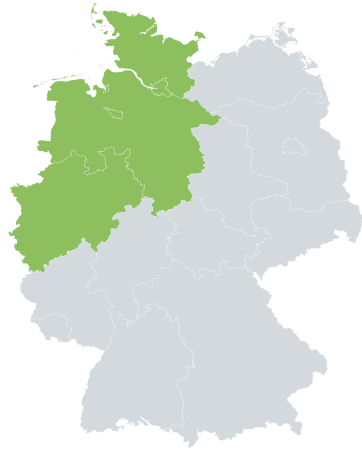
KPI	Mean	95% CI	Unit	CV	n _{Sim}
Final heat energy demand - per year	128492.16	± 2053.09	kWh/a	0.32	810
Final heat energy demand - per m² net leased area and year	89.59	± 0.55	kWh/m²a	0.12	810
Carbon footprint (GWP) from heat energy - per year	32102.99	± 512.95	kgCO ₂ eq,B6/a	0.32	810
Carbon footprint (GWP) from heat energy - per m² net leased area and year	22.38	± 0.14	kgCO ₂ eq,B6/m²a	0.12	810
Life Cycle Carbon footprint (GWP) - over 50 years	1898207.40	± 29943.14	kgCO ₂ eq,full/50a	0.32	810
Life Cycle Carbon footprint (GWP) - per m² net leased area and for 50 years	1323.43	± 7.47	kgCO ₂ eq,full/m²50a	0.11	810

Local Climate Influence

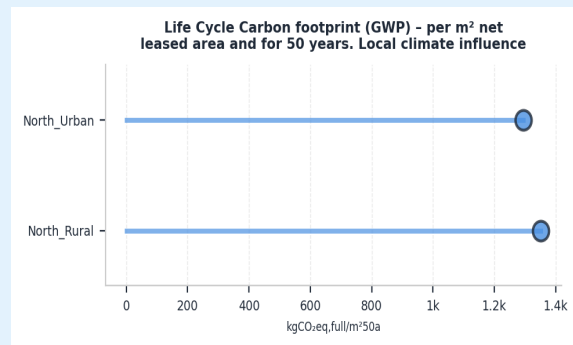
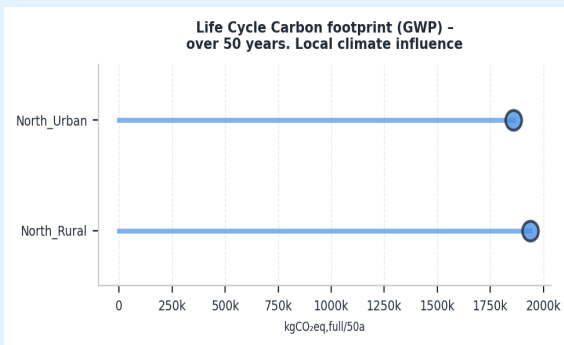
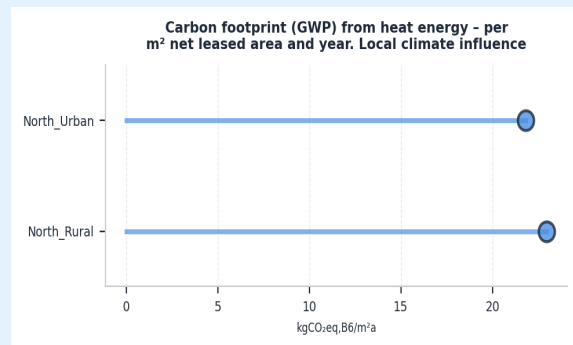
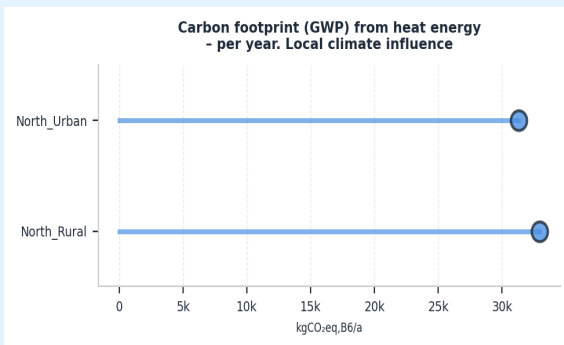




Office Building

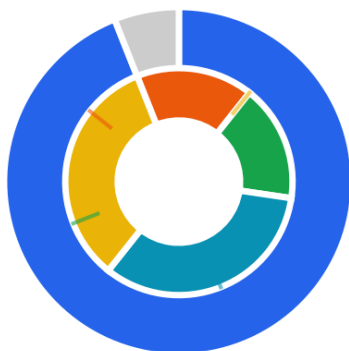


Region	north
Age Class	1984-1994
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Storeys b.g.	0.2



Mean Life Cycle GWP

ABC

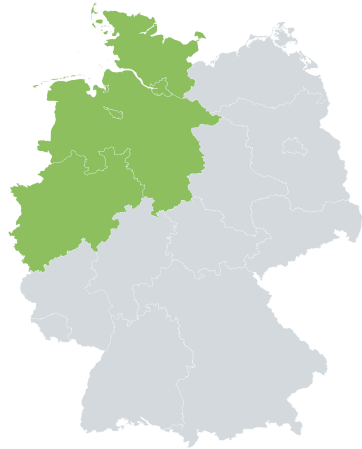


- Operational (94.0%)
- Exterior walls (1.00%)
- Roof (1.00%)
- Foundation (2.00%)
- Windows (2.00%)

Building element	D [kgCO ₂ eq/50a]
Exterior walls	4,752
Roof	-988.9
Foundation	-176.0
Windows	-8,064



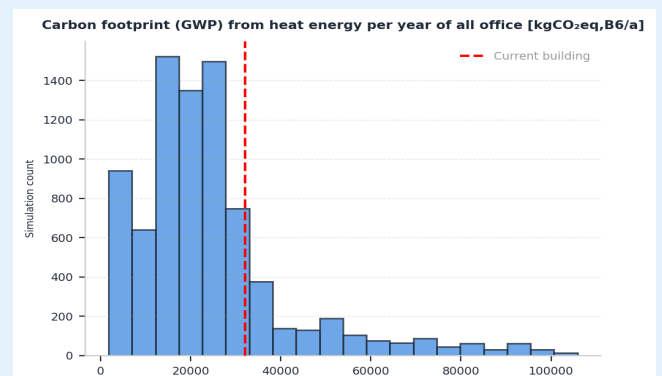
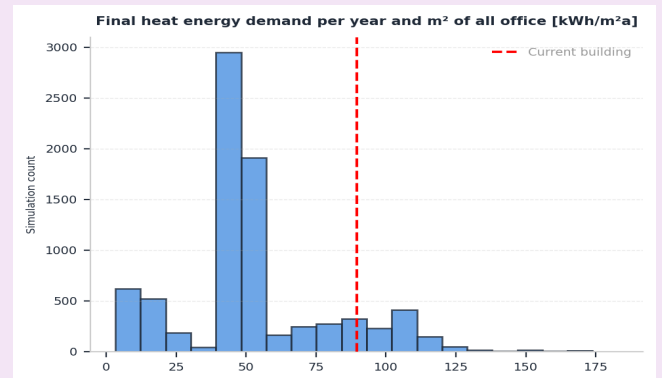
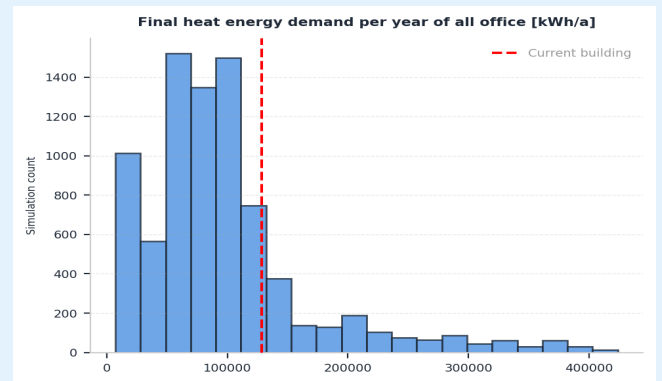
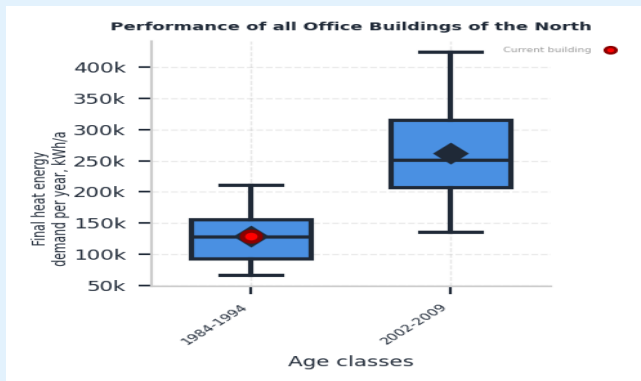
Office Building



Region	north
Age Class	1984-1994
Net leased area [m ²]	1434.4
Bldg Height [m]	9.0
Storeys a.g.	2.2
Storeys b.g.	0.2

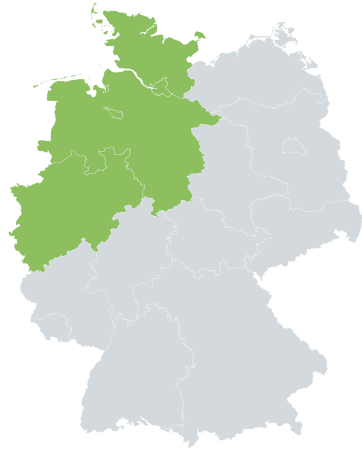


Building Performance





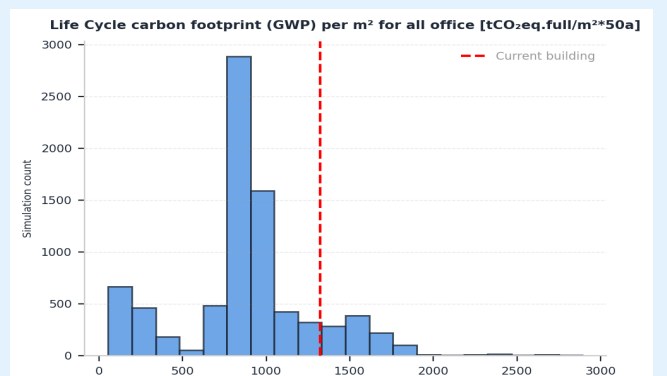
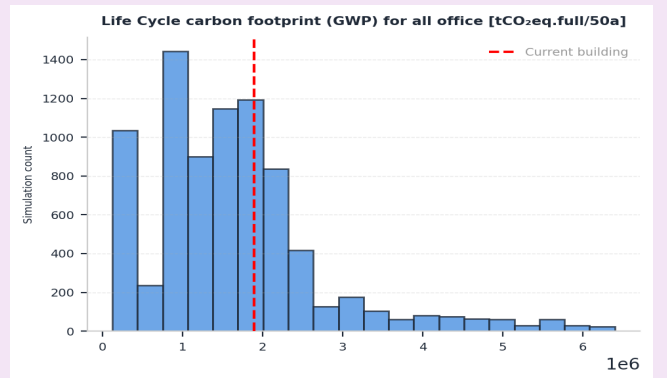
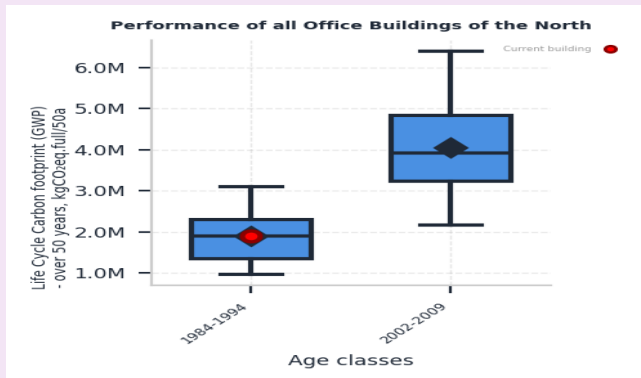
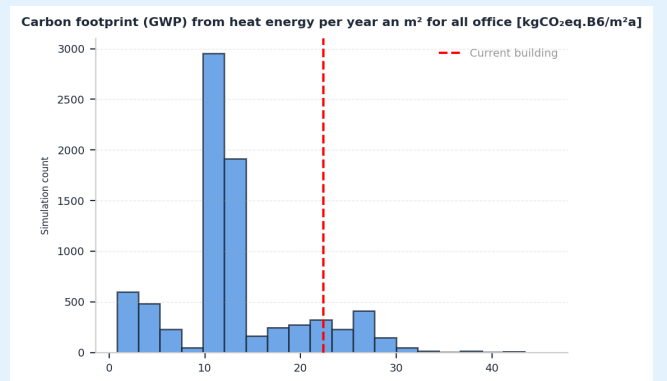
Office Building



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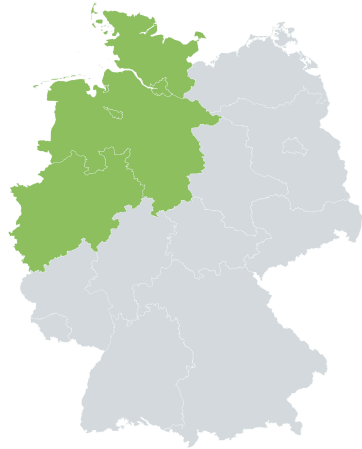


Building Performance





Office Building



Region	north
Age Class	1984-1994
Net leased area [m ²]	1434.4
Bldg Height [m]	9.0
Storeys a.g.	2.2
Storeys b.g.	0.2



Exterior Wall

Type: massive

U [W/m²K]: 0.63

Layer	Material Name	t_i [cm]	ρ_i [kg/m ³]	λ_i [W/mK]	c_i [J/kgK]	EPD ₁	EPD ₂
0	interior plaster	1	1400	0.7	850	7	-
1	aerated concrete blocks	29.2	1600	0.87	1050	9	-
2	mineral wool	4.24	60	0.04	850	4	-
3	exterior plaster	1.5	1800	0.87	850	1	-

Interior Wall

U [W/m²K]: 4.04

Layer	Material Name	t_i [cm]	ρ_i [kg/m ³]	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	9	-
2	lime plaster	1	1600	0.7	850	4	-

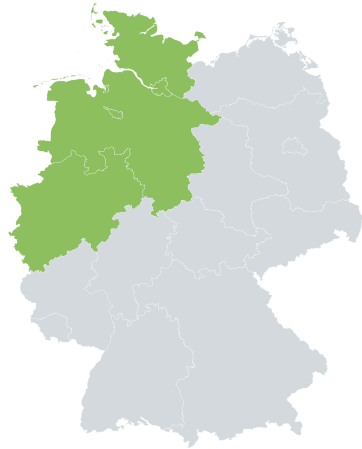
Roof

U [W/m²K]: 0.17

Layer	Material Name	t_i [cm]	ρ_i [kg/m ³]	λ_i [W/mK]	c_i [J/kgK]	EPD ₁	EPD ₂
0	interior plaster	1	1400	0.7	850	7	-
1	reinforced concrete	27.6	2400	2.1	776	8	-
2	rafters	8	600	0.13	1500	15	-
3	mineral wool	10	60	0.04	850	4	-
4	moving air layer	6	1.184	0.026	1.005	11	-
5	roof tiles	2	1786	0.55	889	12	-



Office Building



Region	north
Age Class	1984-1994
Net leased area [m ²]	1434.4
Bldg Height [m]	9.0
Storeys a.g.	2.2
Storeys b.g.	0.2



Foundation

U [W/m²K]: 0.31

Layer	Material Name	t_i [cm]	ρ_i [kg/m ³]	λ_i [W/mK]	c_i [J/kgK]	EPD ₁	EPD ₂
0	cement screed	4	2000	1.4	1000	6	-
1	polystyrene	10	40	0.035	1380	3	-
2	reinforced concrete	22.8	2400	2.04	776	10	-

Floor

U [W/m²K]: 4.04

Layer	Material Name	t_i [cm]	ρ_i [kg/m ³]	λ_i [W/mK]	c_i [J/kgK]	EPD ₁	EPD ₂
0	reinforced concrete	26	2400	2.1	778	8	-
1	mineral wool	4	60	0.04	850	4	-

Window System

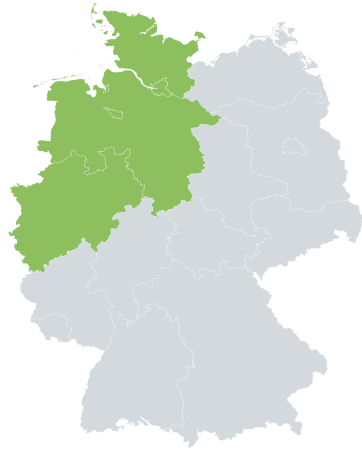
Glazing	EPD _{Gl}	Frame type	EPD _{Fr}	Shading type	EPD _{Sh}
2	14	aluminium	13	exterior_variable	2

Heating System

Unit type	Generator	EPD _{HEG}	Heating energy carrier	EPD _{HEC}
per_bldg	boiler_gas_large_condensing	16	gas	5



Office Building



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Bldg Height [m]	9.0
Storeys a.g.	2.2
Storeys b.g.	0.2

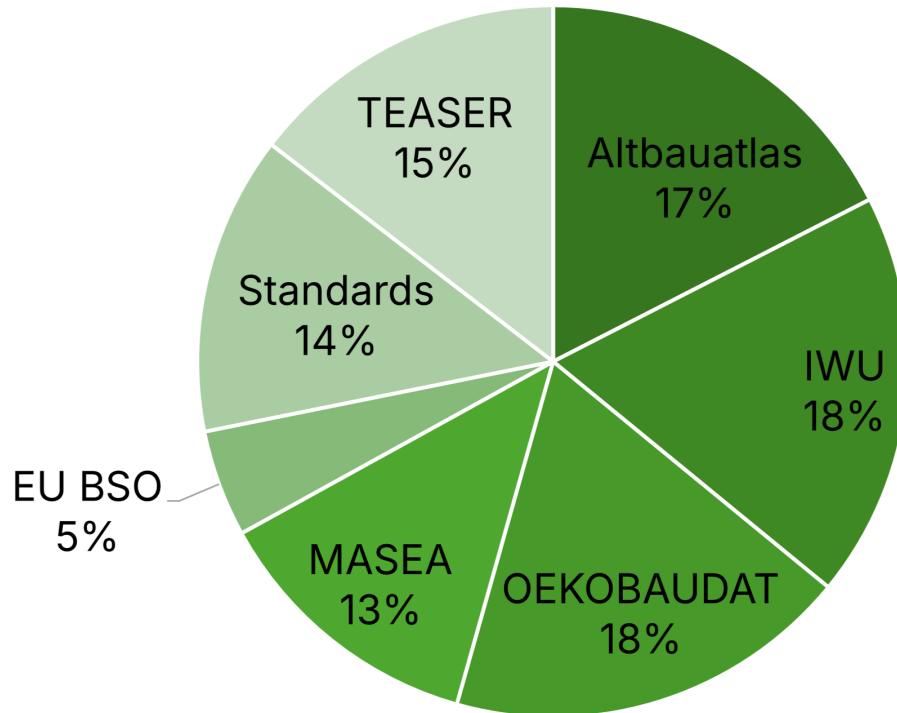


Façade length [m]							
N		S		E		W	
Mean	SE	Mean	SE	Mean	SE	Mean	SE
27.82	6.13	28.53	6.48	25.06	5.98	23.69	5.37

Façade area [m²]							
N		S		E		W	
Mean	SE	Mean	SE	Mean	SE	Mean	SE
273.39	79.19	283.9	84.36	236.32	66.86	222.16	58.95

EPD Summary Table

Serial No.	Full UUID	Material Name
1	004f3f4e-5bb8-4d9e-a104-6999a9e8ad5b	Gypsum lime plaster
2	447dea90-8a8f-44f5-9451-3e15ce5fab10	Sun protection (metal blinds)
3	4e83c488-bb36-40b0-bfd4-b2aa7f1c0f04	Expanded Polystyrene (EPS) Foam Insulation (density 30 kg/m³)
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	86d919ee-8f30-4ca4-9b7e-717aecba6ac0	Cement screed
7	9a670d29-efb9-4fde-95ab-182a0b1e7280	Lime gypsum interior plaster
8	Synthetic_2	Concrete C30/37 with reinforcement steel
9	Synthetic_6	Autoclaved aerated concrete elements with reinforcement steel
10	Synthetic_7	Ready-mix concrete C30/37 with reinforcement steel
11	Synthetic_8	Air layer
12	a6d60a75-7a4e-4dfc-87cc-fd40f68d279a	Roofing tiles (including accessories)
13	d0e0f205-2f4d-4c7f-b63a-23a9abd6e60a	Aluminium frame profile, powder coated
14	dcf38066-e336-46a7-b0a8-b2453dd2872d	Window glass, single
15	efa55966-4f29-4f15-bfec-8c08b3945923	Glued laminated timber
16	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