



Hospitality Building



Region	south
Age Class	-1918
Net leased area [m²]	1013.2
Bldg Height [m]	8.2
Storeys a.g.	2.8
Storeys b.g.	1.2



Building Performance (KPIs)

KPI	Mean	95% CI	Unit	CV	n _{Sim}
Final heat energy demand - per year	44771.19	± 584.91	kWh/a	0.26	810
Final heat energy demand - per m² net leased area and year	44.19	± 0.29	kWh/m²a	0.13	810
Carbon footprint (GWP) from heat energy - per year	11185.81	± 146.14	kgCO ₂ eq,B6/a	0.26	810
Carbon footprint (GWP) from heat energy - per m² net leased area and year	11.04	± 0.07	kgCO ₂ eq,B6/m²a	0.13	810
Life Cycle Carbon footprint (GWP) - over 50 years	735050.55	± 9275.28	kgCO ₂ eq,full/50a	0.25	810
Life Cycle Carbon footprint (GWP) - per m² net leased area and for 50 years	725.52	± 4.14	kgCO ₂ eq,full/m²50a	0.11	810

Local Climate Influence

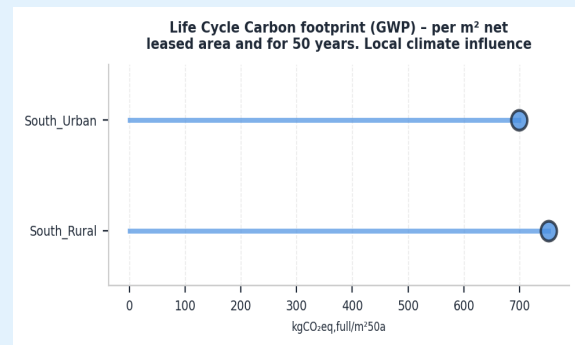
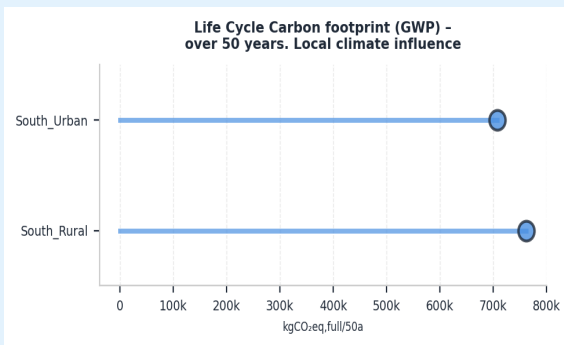
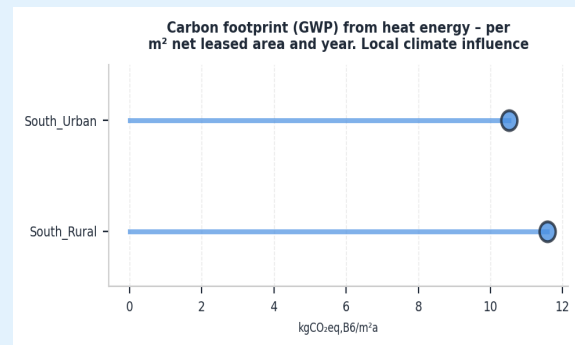
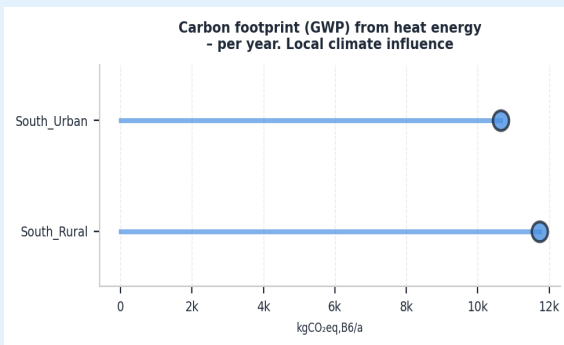




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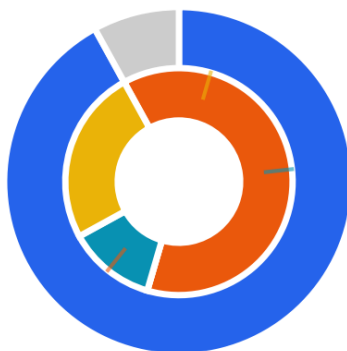


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Mean Life Cycle GWP

ABC



- Operational (92.0%)
- Exterior walls (5.00%)
- Roof (0.00%)
- Foundation (1.00%)
- Windows (2.00%)

Building element	D [kgCO ₂ eq/50a]
Exterior walls	565.8
Roof	69.2
Foundation	1,458
Windows	-1,524

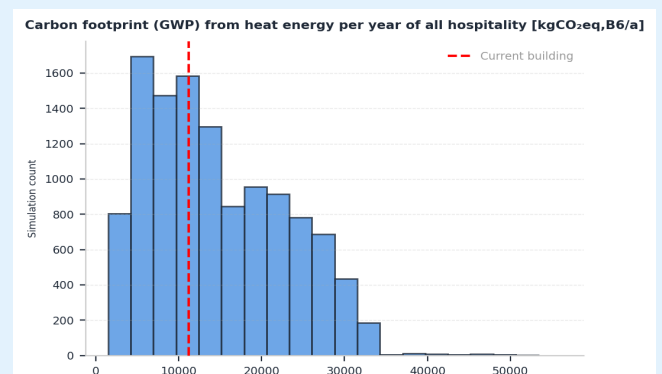
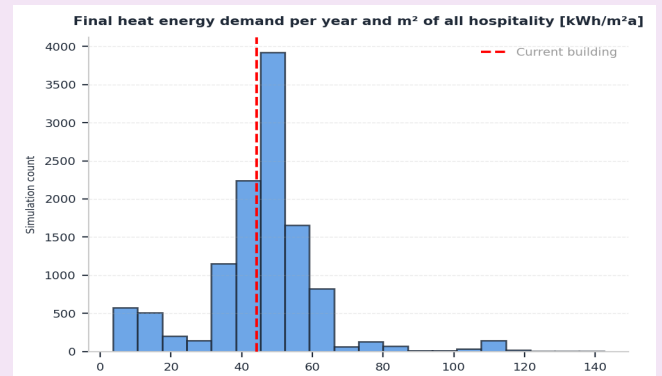
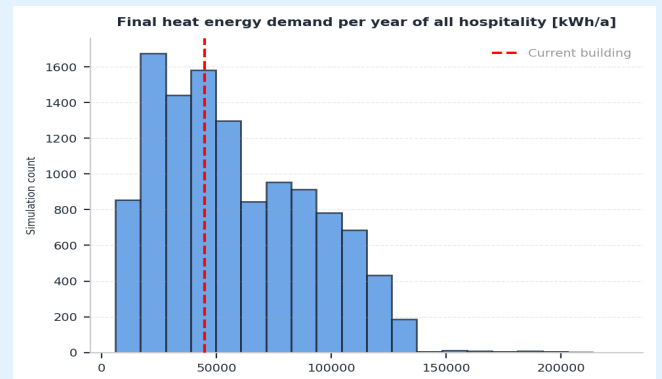


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Building Performance



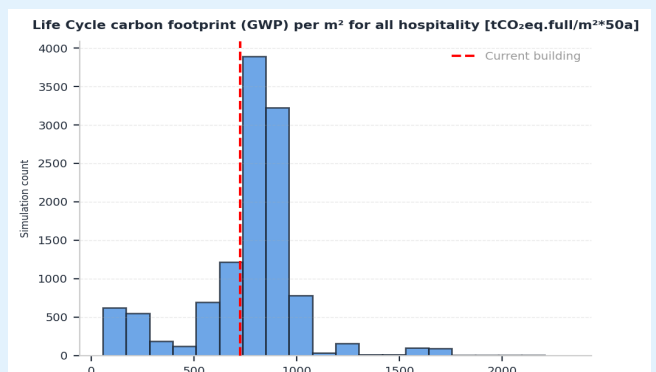
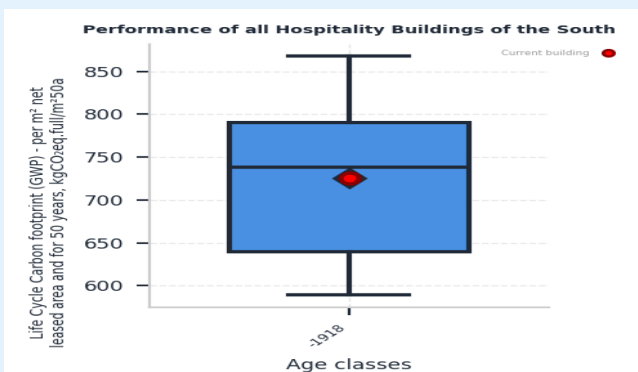
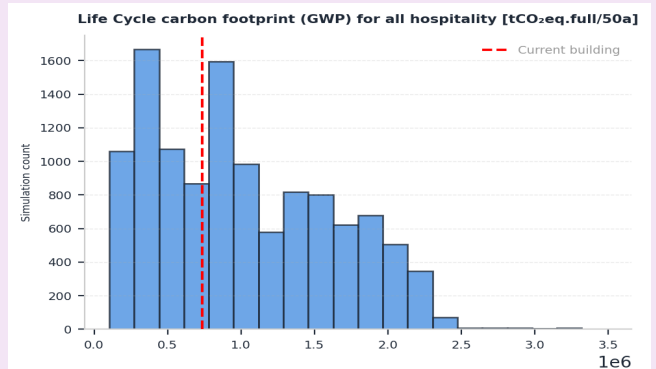
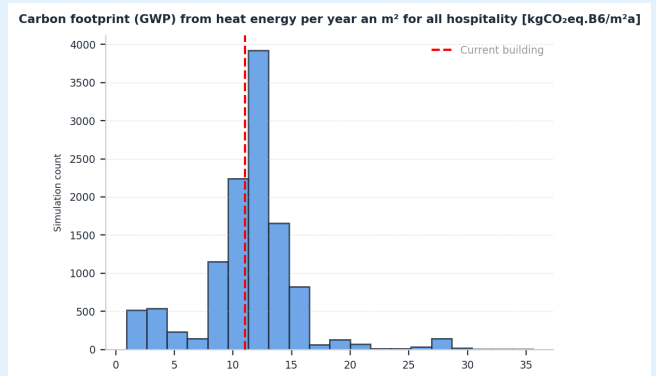


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Exterior Wall

Type: massive

U [W/m²K]: 0.54

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	9	-
1	reinforced concrete	15	2400	2.1	776	4	-
2	mineral wool	6.2	60	0.04	850	2	-
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	9	-
1	reinforced concrete	10	2100	2.04	776	4	-
2	lime plaster	1	1600	0.7	850	2	-

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	8	-
1	concrete_wz05	15	2400	2.1	776	4	-
2	mineral wool	10	60	0.04	850	2	-



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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	hardwood	5	650	0.13	1500	8	-
1	mineral wool	10	60	0.04	850	2	-
2	reinforced concrete	18	2400	2.04	776	5	-

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	hardwood	5	650	0.13	1500	8	-
1	reinforced concrete	18	2104	1.94	776	4	-

Window System

Glazing	EPD _{Gl}	Frame type	EPD _{Fr}	Shading type	EPD _{Sh}
2	7	wood	6	-	-

Heating System

Unit type	Generator	EPD _{HEG}	Heating energy carrier	EPD _{HEC}
per_bldg	boiler_gas_large_condensing	10	gas	3



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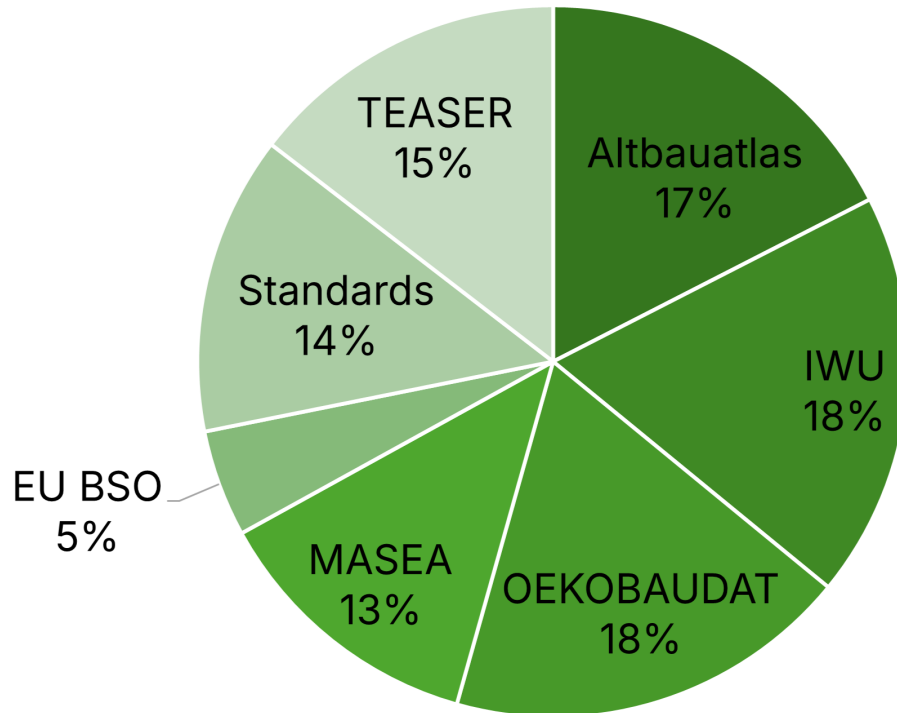


Façade length [m]							
N		S		E		W	
Mean	SE	Mean	SE	Mean	SE	Mean	SE
18.44	3.49	16.92	4.93	19.27	5.54	21.26	4.64

Façade area [m²]							
N		S		E		W	
Mean	SE	Mean	SE	Mean	SE	Mean	SE
171.97	42.76	165.63	49.91	172.56	56.55	182.21	51.53

EPD Summary Table

Serial No.	Full UUID	Material Name
1	004f3f4e-5bb8-4d9e-a104-6999a9e8ad5b	Gypsum lime plaster
2	50d421e2-3a7b-4659-92a4-f20d6a52fcf0	Mineral wool (facade insulation)
3	84aa7483-9824-49a9-a3e3-f9fb092ea7b7	Use - 1 kWh of final energy from gas calorific value (according to GEG)
4	Synthetic_2	Concrete C30/37 with reinforcement steel
5	Synthetic_7	Ready-mix concrete C30/37 with reinforcement steel
6	b0c75d7b-4cce-41cf-b785-1db434ee9c3f	Window sash (spruce)
7	dcf38066-e336-46a7-b0a8-b2453dd2872d	Window glass, single
8	e131431f-4d99-4d7a-ae0a-744a06de3524	Hardwood lumber - kiln dried (German average)
9	e6c2de31-b1a6-4c5d-ba5e-df252391321b	Gypsum (CaSO4 alpha semihydrate)
10	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