

Region:	Trentino Alto Adige						Archetype code: COMM_2011-_E_TN	
Building category:	Commercial buildings							
Period of construction:	>2011							
Climatic zone:	E	Number of records:				166		
Description (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014): External walls: no data available Roof slabs: no data available							Data sources: APE (100%)	
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
BUILDING GEOMETRY	Number of floors	n_f	-	-	-	-	-	-
	Gross height	H_g	m	-	-	-	-	-
	Footprint area	$A_{\text{footprint}}$	m ²	-	-	-	-	-
	Heated gross floor area	$A_{H,g}$	m ²	-	-	-	-	-
	Heated net floor area	$A_{H,n}$	m ²	649	1069	83	221	762
	Heated gross volume	$V_{H,g}$	m ³	-	-	-	-	-
	Heated net volume	$V_{H,n}$	m ³	3604	6578	395	1031	3954
	Compactness ratio	$A_{\text{env}}/V_{H,g}$	m ⁻¹	0.54	0.17	0.41	0.53	0.63
	WWR – North orientation	WWR_N	-	-	-	-	-	-
	WWR – South orientation	WWR_S	-	-	-	-	-	-
	WWR – East orientation	WWR_E	-	-	-	-	-	-
	WWR – West orientation	WWR_W	-	-	-	-	-	-
	Window to useful floor area ratio	A_{wi}/A_{use}	-	-	-	-	-	-
ENVELOPE	Roof type	-						
	U-value of the roof	$U_{fi,up}$	W/(m ² ·K)	-	-	-	-	-
	External walls type	-						
	U-value of the wall	U_{wi}	W/(m ² ·K)	-	-	-	-	-
	Slab on ground floor type	-						
	U-value of the floor	$U_{fi,lw}$	W/(m ² ·K)	-	-	-	-	-
	Windows type	-						
	U-value of the windows	U_W	W/(m ² ·K)	-	-	-	-	-
GAINS and VENTILATION	Shading system type	-						
	Occupancy density *	O_C	person/m ²	UNI EN 16798-1 - Table A.19				
	Lighting power density *	W_L	W/m ²	UNI EN 16798-1 - A.8.3				
	Equipment power density *	W_A	W/m ²	UNI EN 16798-1 - A.8.3				
	Type of ventilation	Natural: 100%						
THERMAL SYSTEMS	Air exchange rate *	n	h ⁻¹	UNI EN 16798-1				
	Heating system type	Unknown: 51%, Autonomous: 28%, Centralized: 21%						
	Heating generator	Boiler (Unknown type): 36%, Air source heat pump: 34%, Condensing boiler: 13%, DHC: 6%, Traditional boiler: 5%, Unknown: 4%, Water-source heat pump: 2%						
	Daily operating time of the heating system *	t_H	h	14	-	14	14	14
	Energy carrier	Natural gas: 64%, Electricity: 26%, Electricity from PV, wind turbines, hydraulic turbines: 4%, LPG:2%, Solid biomass: 2%, District heating: 1%, Liquid and gaseous biomass: 1%						
	Heating emission sub-system	-						
	Cooling system type	Unknown: 73%, Air-cooled chiller: 23%, Water-cooled chiller: 4%						
	Daily operating time of the cooling system *	t_C	h	-	-	-	-	-
	Cooling emission sub-system	-						
	DHW system type	Autonomous - detached from heating: 49%, Unknown: 18%, Autonomous – coupled with heating: 16%, Centralized – coupled with heating: 12%, District heating: 5%						
	DHW generator	Natural gas boiler: 30%, Unknown: 17%, Electric boiler: 14%, Electric heat pump: 38%, Solar thermal: 1%						
* These values were not available in the considered sources, and are thus derived from UNI EN Standards								

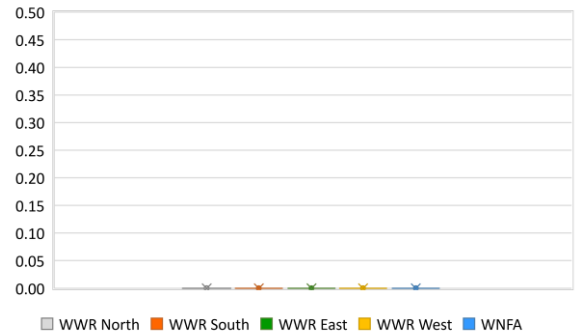
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Numerical variables – GEOMETRY

COMPACTNESS RATIO

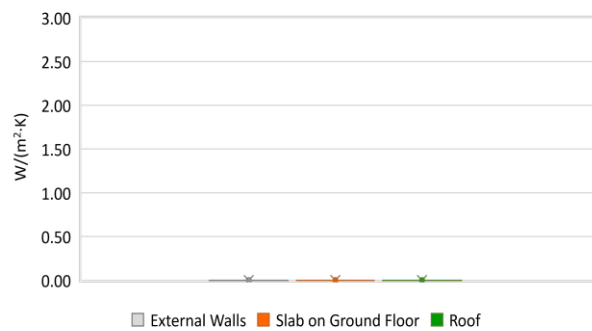


WINDOWS TO WALL RATIO

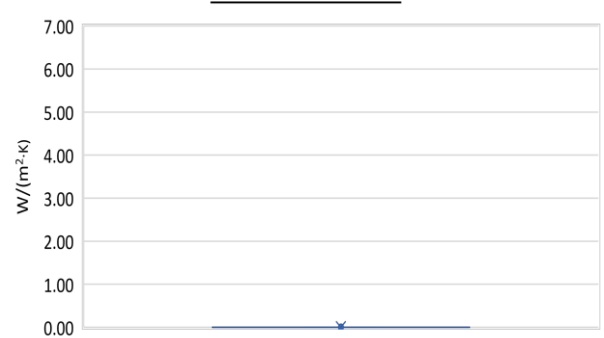


Numerical variables – ENVELOPE

OPAQUE BUILDING COMPONENTS U-VALUE

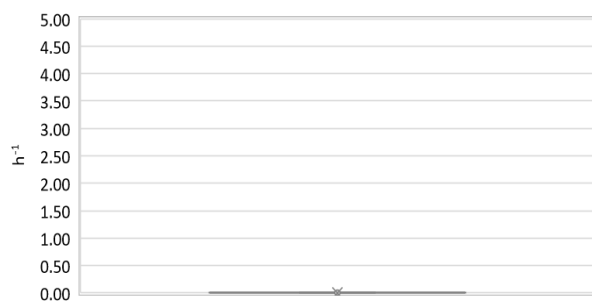


WINDOWS U-VALUE



Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE

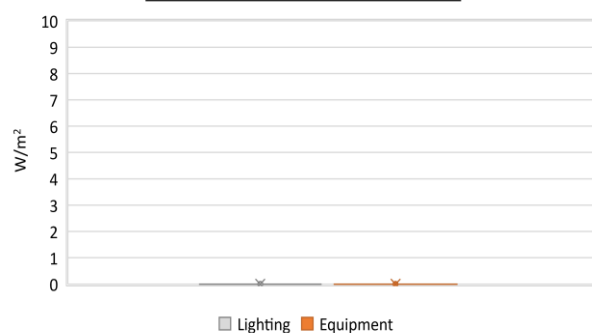
AIR EXCHANGE RATE



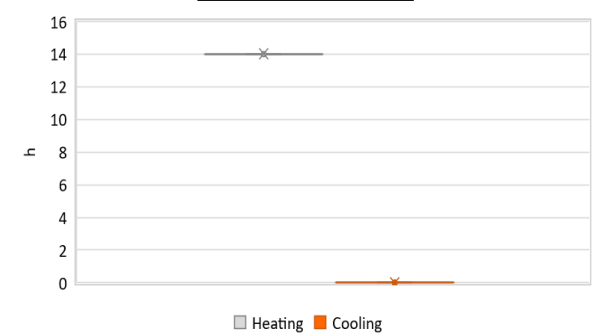
OCCUPANCY DENSITY



INTERNAL GAINS POWER DENSITY



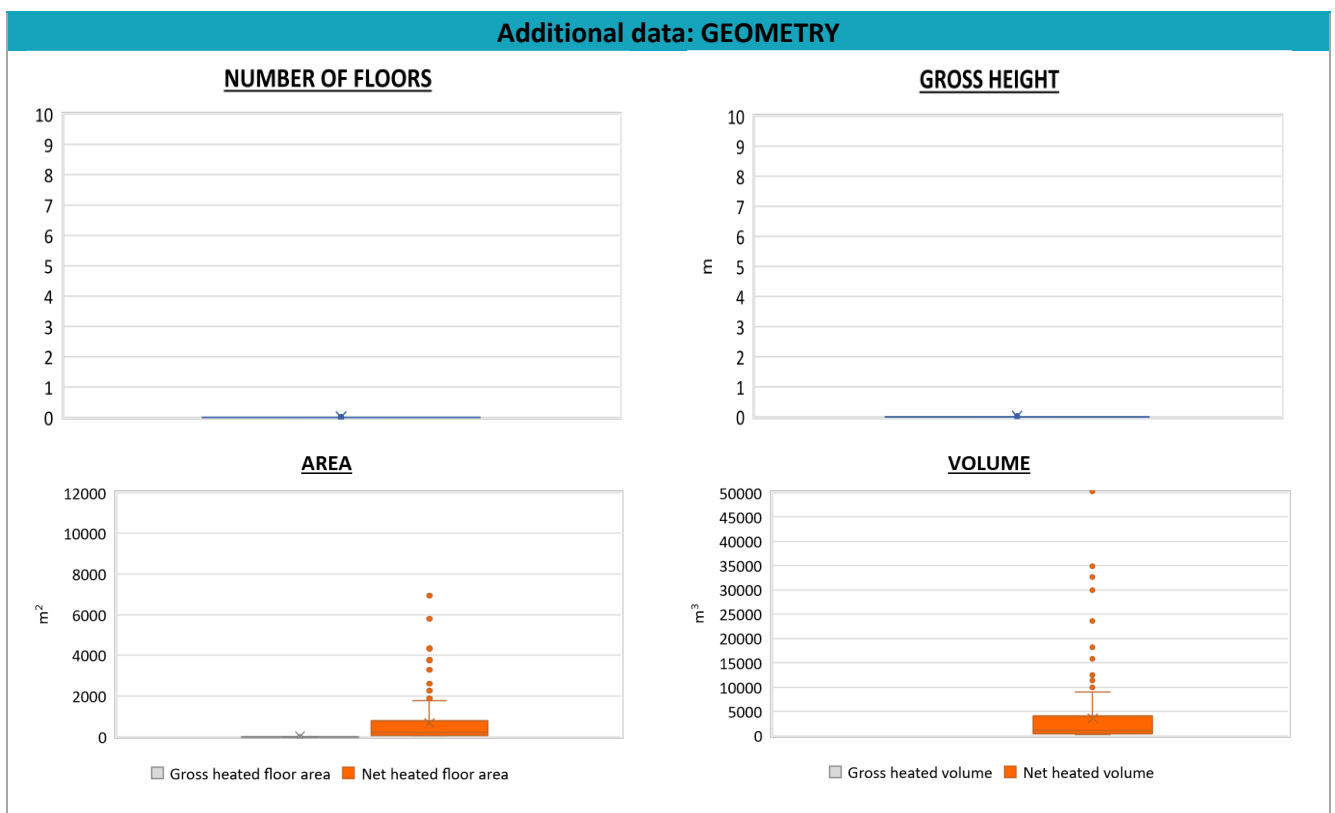
DAILY OPERATING TIME



The data can be used for analysis, modeling, and research purposes, as long as it remains unaltered in its original form. Users are free to publish results based on the data, provided they credit the original source.

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ADDITIONAL DATA								
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
THERMAL SYSTEMS	Heating efficiency or <i>COP</i>	$\eta_{H,gen}$ or $COP_{H,gen}$	-	This value has to be retrieved from suitable datasheets				
	Total heating power	$P_{H,gen}$	kW	91	107	24	46	110
	Cooling efficiency or <i>EER</i>	$\eta_{C,gen}$ or $EER_{C,gen}$	-	This value has to be retrieved from suitable datasheets				
	Total cooling power	$P_{C,gen}$	kW	122	162	21	76	116
	Temperature of DHW	ϑ_W	°C	40	-	40	40	40
	DHW system power	$P_{W,gen}$	kW	-	-	-	-	-



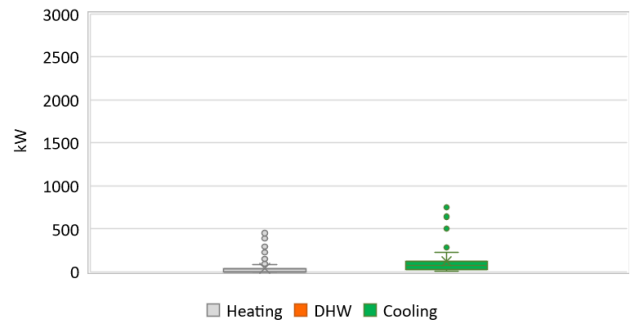
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Number of records:		90

Additional data: other numerical variables that are not included in the archetype

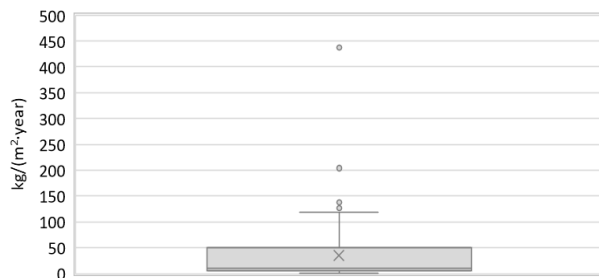
DHW SUPPLY TEMPERATURE



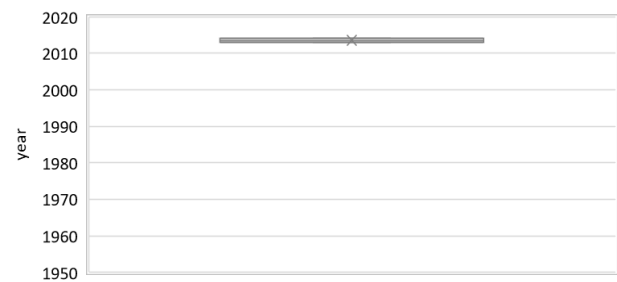
SYSTEM POWER



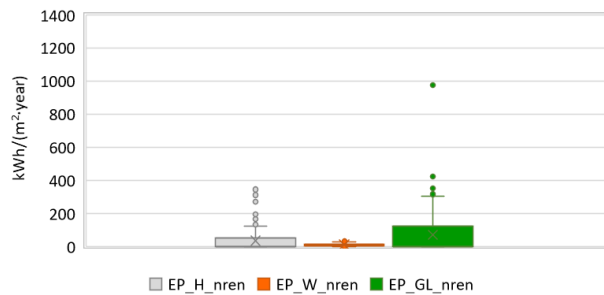
CO₂ EMISSION



HEATING SYSTEM INSTALLATION YEAR



NON-RENEWABLE PRIMARY ENERGY USE



RENEWABLE PRIMARY ENERGY USE

