

Region:	Trentino Alto Adige						Archetype code: RES_APPBLOCK_ -1930_E_TN	
Building category:	Residential buildings – Apartments (in multifamily blocks)							
Period of construction:	<1930							
Climatic zone:	E	Number of records:				4107		
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	830	953	370	483	737
	Heated gross volume	$V_{H,g}$	m ³	-	-	-	-	-
	Heated net volume	$V_{H,n}$	m ³	3631	4492	1557	2087	3259
	Compactness ratio	$A_{\text{env}}/V_{H,g}$	m ⁻¹	0.51	0.13	0.43	0.50	0.58
	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		$U_{\text{fi;up}}$	W/(m ² ·K)	-	-	-	-	-
External walls type		-						
U-value of the wall		U_{wl}	W/(m ² ·K)	-	-	-	-	-
Slab on ground floor type		-						
U-value of the floor		$U_{\text{fi;lw}}$	W/(m ² ·K)	-	-	-	-	-
Windows type		-						
U-value of the windows		U_{W}	W/(m ² ·K)	-	-	-	-	-
Shading system type		-						
GAINS and VENTILATION	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%						
	Air exchange rate *	n	h ⁻¹	0.30	0.00	0.30	0.30	0.30
THERMAL SYSTEMS	Heating system type	Autonomous: 54%, Centralized: 14%, Unknown: 32%						
	Heating generator	Traditional boiler: 14%; Air source heat pump: 3%, Condensing boiler: 9%, Boiler (unknown type): 68%, DHC: 1%, Unknown: 5%						
	Daily operating time of the heating system *	t_{H}	h	14	0	14	14	14
	Energy carrier	Natural gas: 95%, Electricity: 1%, Gas Oil: 2%, Solid biomass: 1%, LPG: 1%						
	Heating emission sub-system	-						
	Cooling system type	Air-cooled chiller: 2%, Unknown: 98%						
	Daily operating time of the cooling system *	t_{C}	h	0	0	0	0	0
	Cooling emission sub-system	-						
	DHW system type	Autonomous – coupled with heating: 59%, Autonomous - detached from heating: 9%, Centralized – coupled with heating: 11%, Unknown: 21%						
	DHW generator	Natural gas boiler: 70%, Electric boiler: 2%, Electric Heat Pump: 7%, Unknown: 21%						
	* These values were not available in the considered sources, and are thus derived from UNI EN Standards							

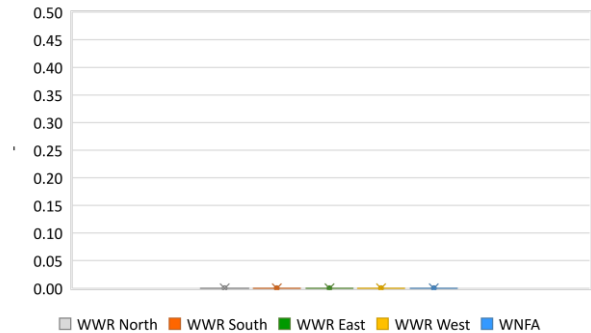
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Number of records:		4107 apts 87 buildings

Numerical variables – GEOMETRY

COMPACTNESS RATIO

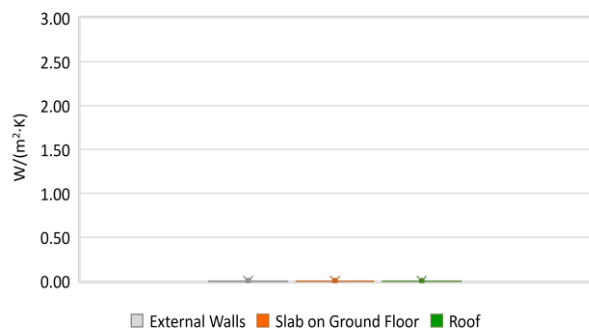


WINDOWS TO WALL RATIO



Numerical variables – ENVELOPE

OPAQUE BUILDING COMPONENTS U-VALUE

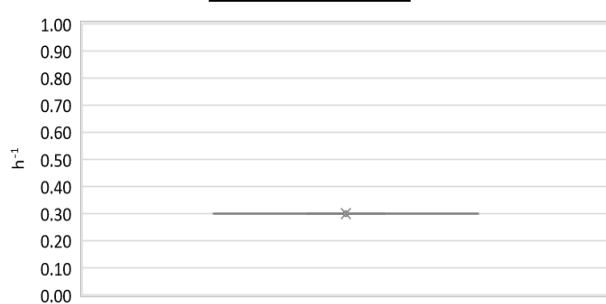


WINDOWS U-VALUE



Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE

AIR EXCHANGE RATE



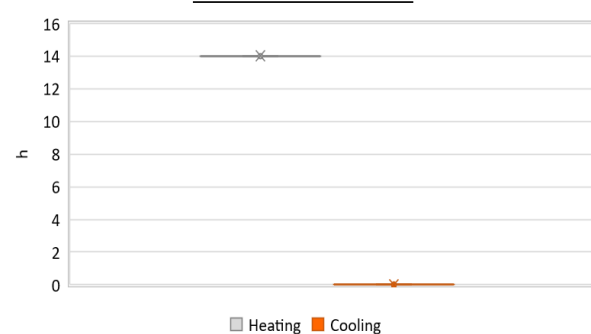
OCCUPANCY DENSITY



INTERNAL GAINS POWER DENSITY



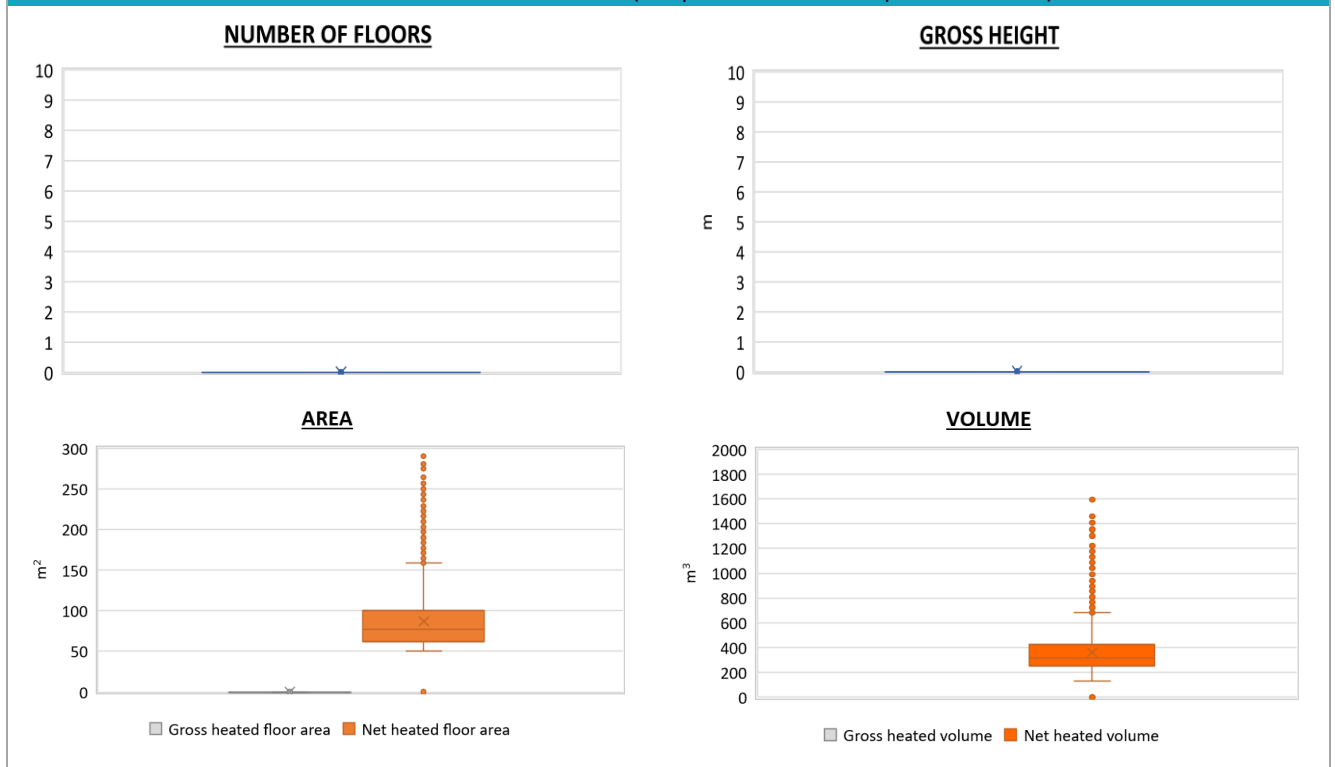
DAILY OPERATING TIME



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ADDITIONAL DATA								
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
GEOMETRY: apartments	Inter-storey height	H_n	m	-	-	-	-	-
	Heated gross floor area	$A_{H,g}$	m ²	-	-	-	-	-
	Heated net floor area	$A_{H,n}$	m ²	89	38	63	78	102
	Heated gross volume	$V_{H,g}$	m ³	-	-	-	-	-
	Heated net volume	$V_{H,n}$	m ³	370	168	260	323	428
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	34	77	24	25	29
	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	15	31	4	6	14
	Temperature of DHW	ϑ_W	°C	40	0	40	40	40
	DHW system power *	$P_{W,gen}$	kW	34	77	24	25	29
* These values refer to the apartment scale								

Additional data: GEOMETRY (the plots refer to the apartment scale)



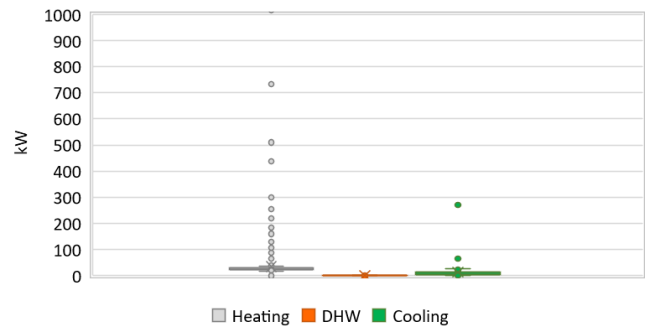
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Additional data: other numerical variables that are not included in the archetype

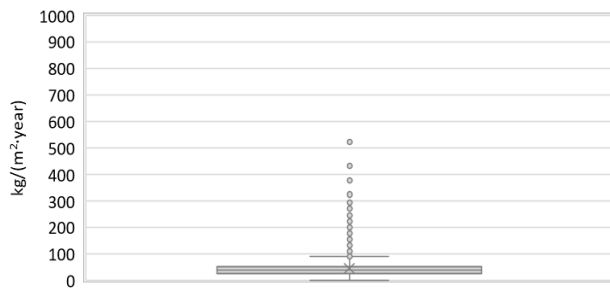
DHW SUPPLY TEMPERATURE



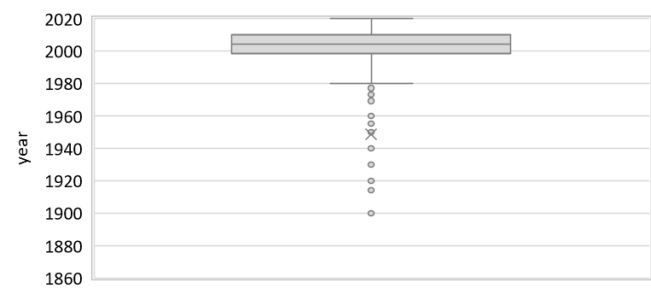
SYSTEM POWER



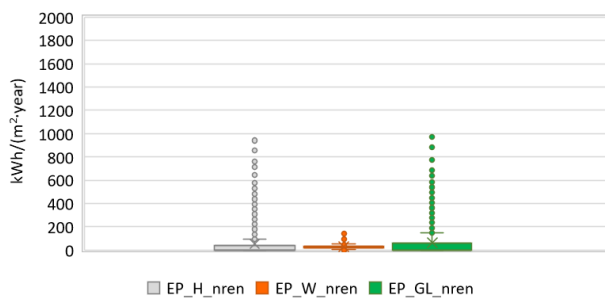
CO₂ EMISSION



HEATING SYSTEM INSTALLATION YEAR



NON-RENEWABLE PRIMARY ENERGY USE



RENEWABLE PRIMARY ENERGY USE

