

Region:		Trentino Alto Adige					Archetype code: RES_APPBLOCK_2011_E_TN	
Building category:		Residential buildings – Apartments (in multifamily blocks)						
Period of construction:		>2011						
Climatic zone:		E	Number of records:		2239			
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	1031	837	472	705	1169
	Heated gross volume	$V_{H,g}$	m ³	-	-	-	-	-
	Heated net volume	$V_{H,n}$	m ³	3972	3027	1906	2753	4447
	Compactness ratio	$A_{\text{env}}/V_{H,g}$	m ⁻¹	0.55	0.09	0.49	0.55	0.60
	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	0.30	-	0.30	0.30	0.30
	Heating system type	Autonomous: 22%, Centralized: 58%, Unknown: 20%						
	Heating generator	Boiler (unknown type): 75%, Air source heat pump: 10%, Condensing boiler: 7%, DHC: 6%,Traditional boiler: 2%						
	Daily operating time of the heating system *	t_H	h	14	-	14	14	14
	Energy carrier	Natural gas: 93%, Electricity from PV, wind turbines, hydraulic turbines: 4%, Electricity: 1%, Solid biomass: 1%, LPG: 1%						
	Heating emission sub-system	-						
	Cooling system type	Unknown: 95%, Air-cooled chiller: 5%						
	Daily operating time of the cooling system *	t_C	h	-	-	-	-	-
	Cooling emission sub-system	-						
	DHW system type	Centralized – coupled with heating: 48%, Autonomous – coupled with heating: 25%, Autonomous - detached from heating: 17%, District heating: 5%, Unknown: 5%						
	DHW generator	Natural gas boiler: 77%, Electric heat pump: 14%, Solar thermal: 4%, Unknown: 4%						
* These values were not available in the considered sources, and are thus derived from UNI EN Standards								

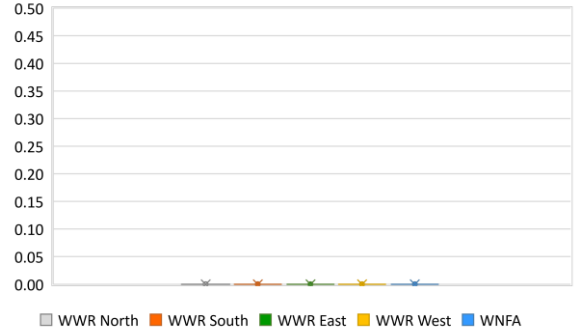
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Numerical variables – GEOMETRY

COMPACTNESS RATIO

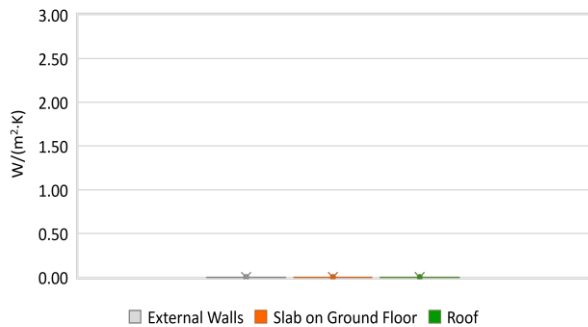


WINDOWS TO WALL RATIO

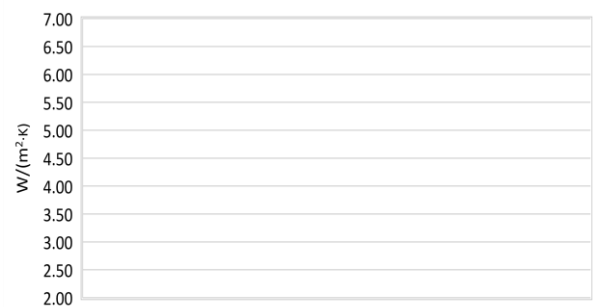


Numerical variables – ENVELOPE

OPAQUE BUILDING COMPONENTS U-VALUE



WINDOWS U-VALUE



Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE

AIR EXCHANGE RATE



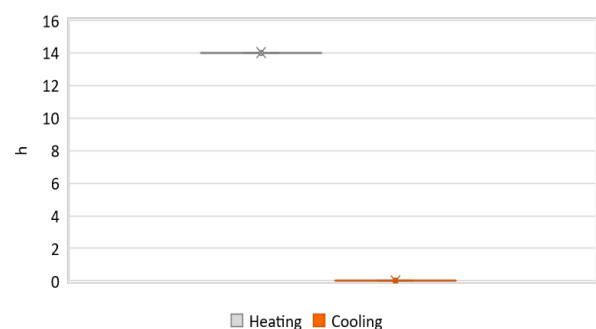
OCCUPANCY DENSITY



INTERNAL GAINS POWER DENSITY



DAILY OPERATING TIME



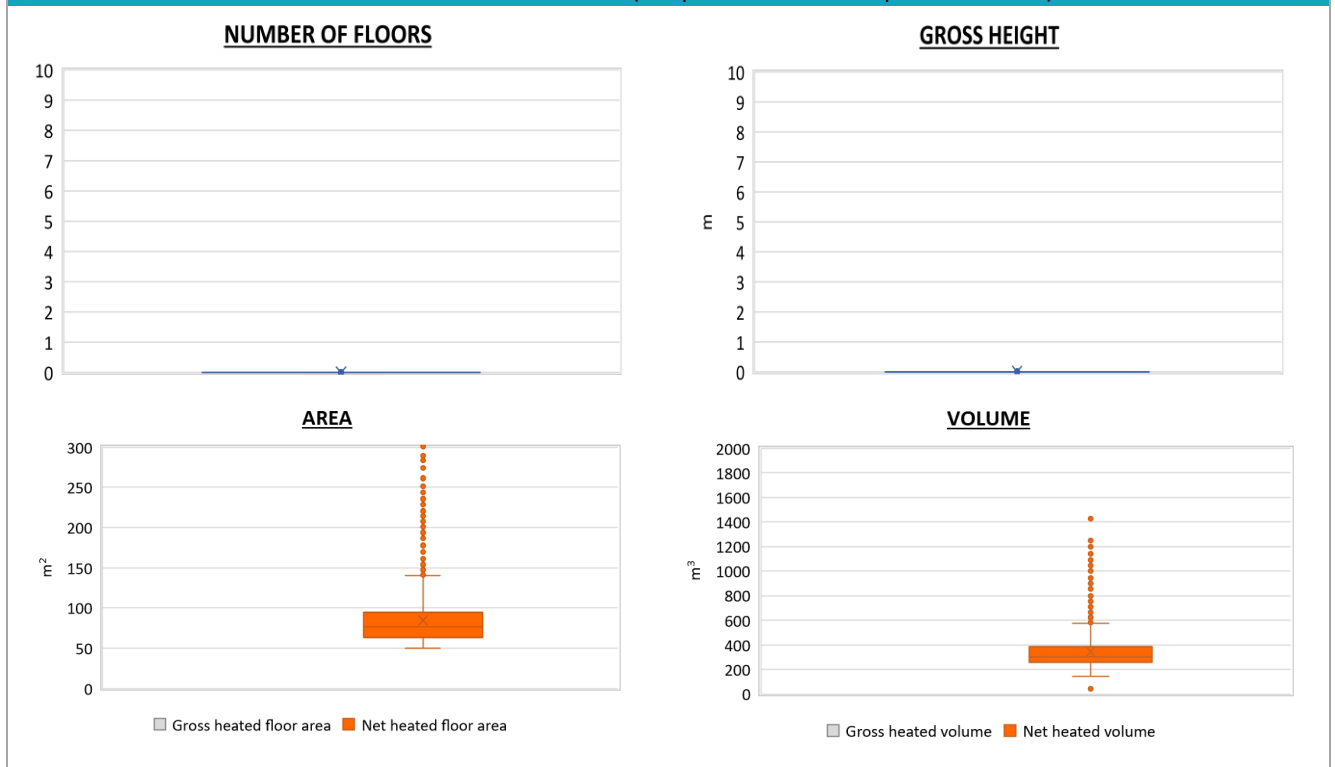
The data can be used for analysis, modeling, and research purposes, as long as it remains unaltered in its original form. Users are free to publish results based on the data, provided they credit the original source.

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ADDITIONAL DATA								
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
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	34	85	63	76	94
	Heated gross volume	$V_{H,g}$	m ³	-	-	-	-	-
	Heated net volume	$V_{H,n}$	m ³	343	149	255	302	385
THERMAL SYSTEMS	Heating efficiency or COP	$\eta_{H,gen}$ OR $COP_{H,gen}$	-	This value has to be retrieved from suitable datasheets				
	Total heating power *	$P_{H,gen}$	kW	79	119	26	55	105
	Cooling efficiency or EER	$\eta_{C,gen}$ OR $EER_{C,gen}$	-	This value has to be retrieved from suitable datasheets				
	Total cooling power *	$P_{C,gen}$	kW	37	24	17	34	52
	Temperature of DHW	ϑ_W	°C	40	-	40	40	40
	DHW system power *	$P_{W,gen}$	kW	79	119	26	55	105

* 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

