

Region:	Calabria					Archetype code: RES_APPBLOCK_ 2001-2010_C_CAL		
Building category:	Residential buildings – Apartments (in multifamily blocks)							
Period of construction:	2001-2010							
Climatic zone:	C	Number of records:		25				
Description (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014): External walls: double layer of hollow bricks (12 cm + 12 cm) with uninsulated air gap (cod. MCV01). Roof slabs: no data available						Data sources: Survey data (52%) Measured data (16%) Expert assumptions (12%) Others (20%) #		
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
BUILDING GEOMETRY	Number of floors	n_f	-	2.12	1.72	1.00	1.00	3.00
	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	-	-	-	-	-
	Heated gross volume	$V_{H;g}$	m ³	-	-	-	-	-
	Heated net volume	$V_{H;n}$	m ³	-	-	-	-	-
	Compactness ratio	$A_{\text{env}}/V_{H;g}$	m ⁻¹	0.38	0.17	0.26	0.31	0.46
	WWR – North orientation	WWR_N	-	0.21	0.13	0.10	0.17	0.32
	WWR – South orientation	WWR_S	-	0.21	0.18	0.06	0.20	0.28
	WWR – East orientation	WWR_E	-	0.21	0.13	0.10	0.23	0.28
	WWR – West orientation	WWR_W	-	0.19	0.11	0.10	0.15	0.24
	Window to useful floor area ratio	A_{wi}/A_{use}	-	0.16	0.06	0.12	0.17	0.19
	ENVELOPE	Roof type	-					
U-value of the roof		$U_{fi;up}$	W/(m ² ·K)	1.00	0.71	0.36	0.75	1.42
External walls type		Hollow brick masonry: 100%						
U-value of the wall		U_{wi}	W/(m ² ·K)	0.74	0.48	0.50	0.57	1.00
Slab on ground floor type		-						
U-value of the floor		$U_{fi;lw}$	W/(m ² ·K)	1.05	0.70	0.45	0.92	1.46
Windows type		Double glazing, wooden frame: 28%, Double glazing, aluminum frame with thermal break: 24%, Double glazing, PVC frame: 24%, Double glazing, aluminum frame, no thermal break: 20%, Triple glazing, aluminum frame with thermal break: 4%,						
U-value of the windows		U_w	W/(m ² ·K)	3.79	1.14	2.85	3.14	4.95
Shading system type	Roller blinds: 52%, Shutter: 36%, Curtains: 12%							
GAINS and VENTILATION	Occupancy density	O_c	person/m ²	0.034	0.016	0.022	0.032	0.044
	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: 100%						
	Heating generator	Traditional Boiler: 76%, Condensing Boiler: 16%, Fireplace: 4%, Unknown: 4%						
	Daily operating time of the heating system *	t_H	h	8.00	0.00	8.00	8.00	8.00
	Energy carrier	Natural Gas: 84%, LPG: 4%, Solid biomass: 4%, Unknown: 4%						
	Heating emission sub-system	Radiators: 88%, Fan coil: 8%, Unknown: 4%						
	Cooling system type	Absent: 96%, Air-cooled chiller: 4%						
	Daily operating time of the cooling system *	t_c	h	8.00	0.00	8.00	8.00	8.00
	Cooling emission sub-system	Fan coil: 100%						
	DHW system type	-						
	DHW generator	-						
	# Standards (8%), Municipal database (8%), EPC database (4%). * These values were not available in the considered sources, and are thus derived from UNI EN Standards							

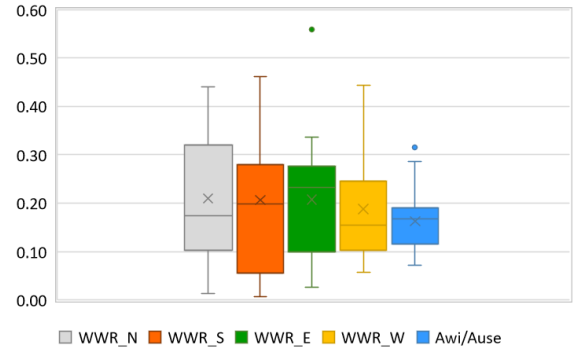
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Numerical variables – GEOMETRY

COMPACTNESS RATIO

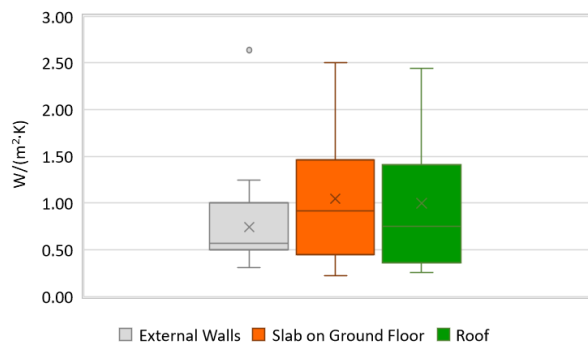


WINDOWS TO WALL RATIO

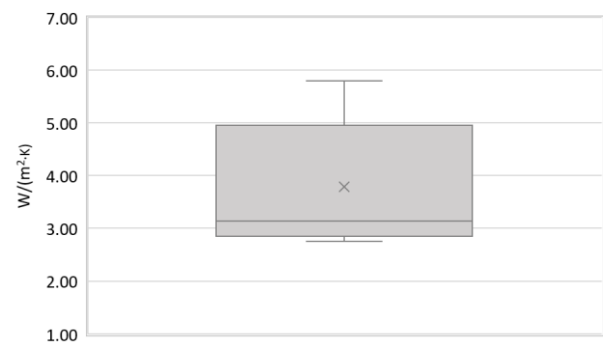


Numerical variables – ENVELOPE

OPAQUE BUILDING COMPONENTS U-VALUE



WINDOWS U-VALUE

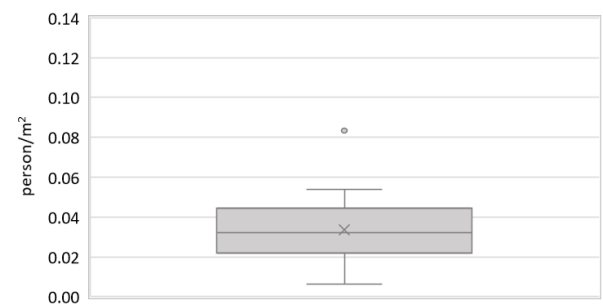


Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE

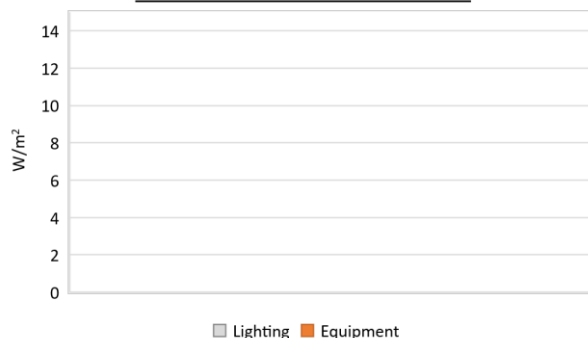
AIR EXCHANGE RATE



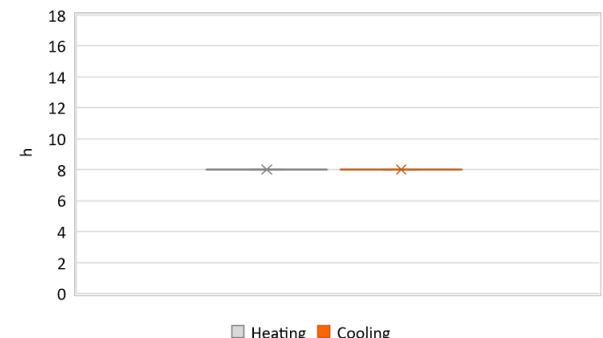
OCCUPANCY DENSITY



INTERNAL GAINS POWER DENSITY



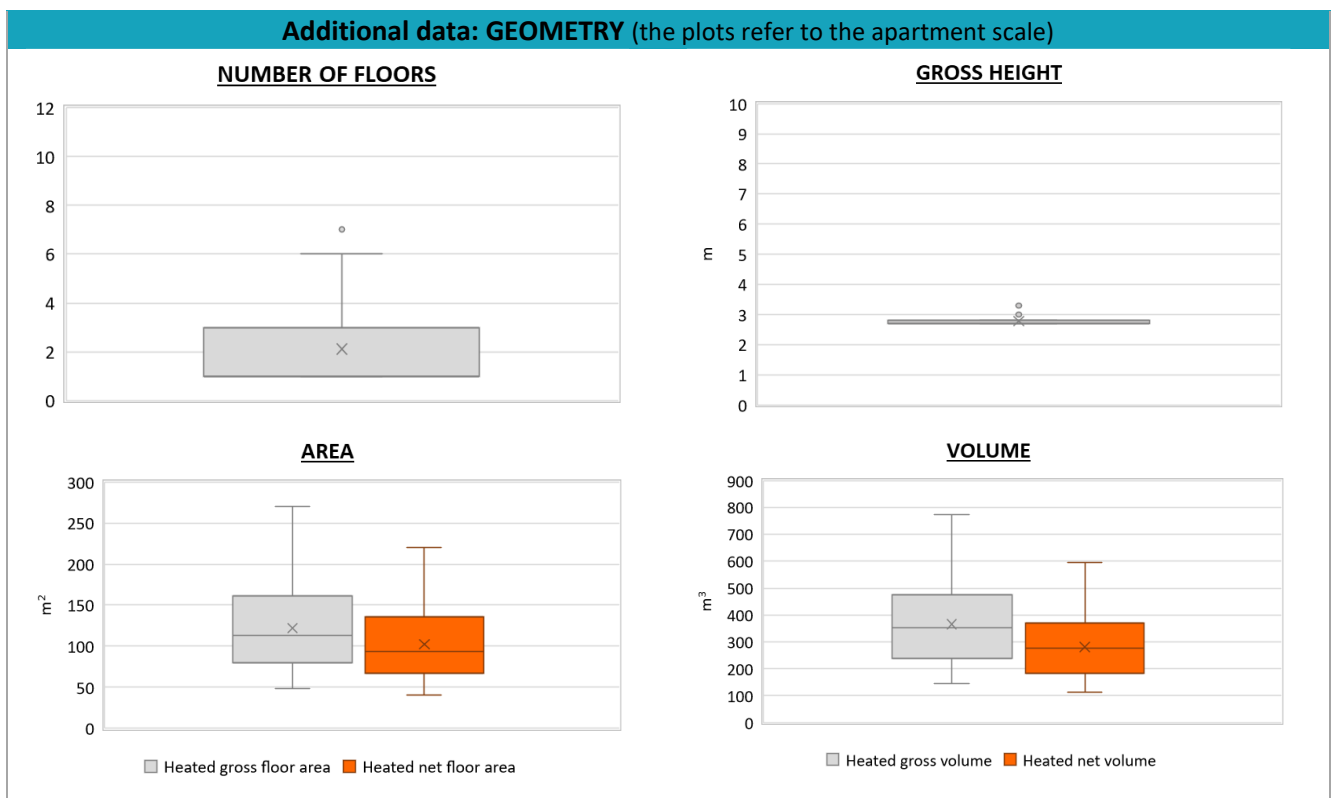
DAILY OPERATING TIME



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	2.78	0.15	2.70	2.70	2.80
	Heated gross floor area	$A_{H,g}$	m ²	167.91	123.96	82.79	124.03	185.20
	Heated net floor area	$A_{H,n}$	m ²	140.70	103.73	69.72	102.35	156.50
	Heated gross volume	$V_{H,g}$	m ³	517.58	409.88	244.42	381.02	559.26
	Heated net volume	$V_{H,n}$	m ³	397.44	314.44	188.24	286.20	430.70
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	25.64	2.83	24.00	24.20	27.30
	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	-	-	-	-	-
	Temperature of DHW	θ_w	°C	40.00	0.00	40.00	40.00	40.00
	DHW system power	$P_{W,gen}$	kW	-	-	-	-	-
* These values refer to the apartment scale								



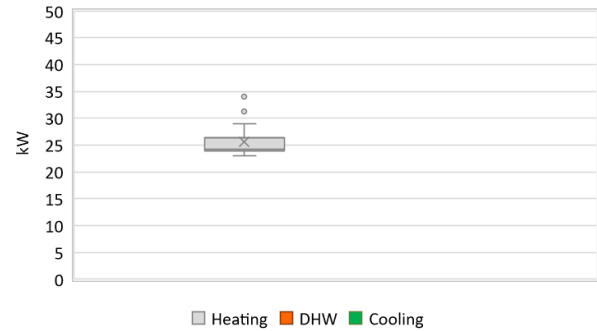
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Additional data: other numerical variables that are not included in the archetype

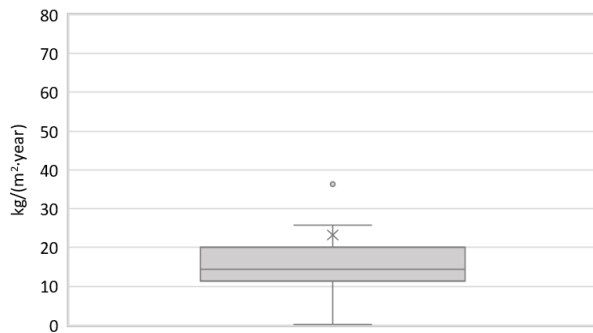
DHW SUPPLY TEMPERATURE



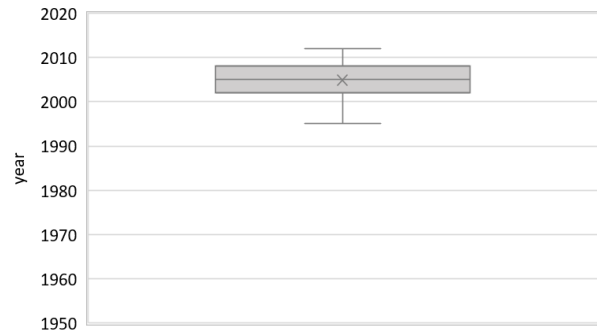
SYSTEM POWER



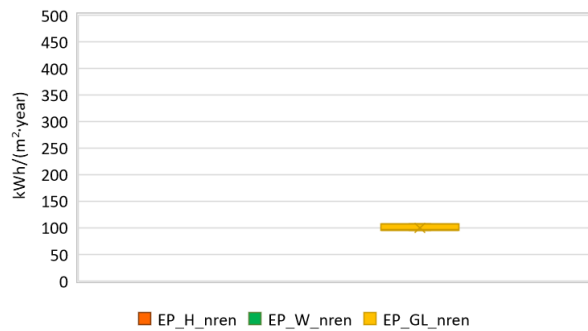
CO₂ EMISSION



HEATING SYSTEM INSTALLATION YEAR



NON-RENEWABLE PRIMARY ENERGY USE



RENEWABLE PRIMARY ENERGY USE

