

Region:		Calabria				Archetype code: RES_APPBLOCK_ 2001-2010_D_CAL			
Building category:		Residential buildings – Apartments (in multifamily blocks)							
Period of construction:		2001-2010							
Climatic zone:		D	Number of records:		33				
Description (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014): External walls: hollow bricks (8 cm), insulation (2 cm), semi-solid bricks (25 cm) (cod. MCV02). 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	-	2.42	2.22	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	0.41	0.15	0.30	0.39	0.50	
	WWR – North orientation	WWR_N	-	0.15	0.10	0.07	0.16	0.20	
	WWR – South orientation	WWR_S	-	0.21	0.12	0.09	0.24	0.30	
	WWR – East orientation	WWR_E	-	0.23	0.14	0.12	0.18	0.32	
	WWR – West orientation	WWR_W	-	0.23	0.19	0.09	0.18	0.36	
	Window to useful floor area ratio	A_{wi}/A_{use}	-	0.17	0.08	0.10	0.17	0.22	
	ENVELOPE	Roof type	-						
U-value of the roof		$U_{fi;up}$	W/(m ² ·K)	0.68	0.53	0.32	0.39	1.03	
External walls type		Hollow brick masonry: 94%, Solid brick masonry: 6%							
U-value of the wall		U_{wl}	W/(m ² ·K)	0.64	0.24	0.48	0.58	0.73	
Slab on ground floor type		-							
U-value of the floor		$U_{fi;lw}$	W/(m ² ·K)	0.69	0.50	0.32	0.42	0.97	
Windows type		Double glazing, wooden frame: 34%, Double glazing, aluminum frame, no thermal break: 24%, Double glazing, PVC frame: 21%, Double glazing, aluminum frame with thermal break: 9%, Single glazing, wooden frame: 6%, Single glazing, aluminum frame: 3%, Unknown: 3%							
U-value of the windows		U_W	W/(m ² ·K)	3.26	1.41	2.48	2.80	4.90	
Shading system type	Roller blinds: 64%, Shutter: 27%, Curtains: 6%, Unknown: 3%								
GAINS and VENTILATION	Occupancy density	O_C	person/m ²	0.041	0.015	0.033	0.042	0.053	
	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: 79%, Condensing Boiler: 18%, Fireplace: 3%							
	Daily operating time of the heating system *	t_H	h	8.00	0.00	8.00	8.00	8.00	
	Energy carrier	Natural Gas: 73%, Electricity: 12%, LPG: 9%, Solid biomass: 3%, Gas Oil 3%							
	Heating emission sub-system	Radiators: 100%							
	Cooling system type	Absent: 97%, Air-cooled chiller: 3%							
	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								

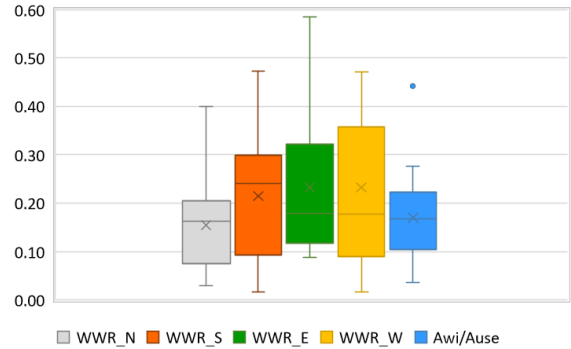
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Numerical variables – GEOMETRY

COMPACTNESS RATIO

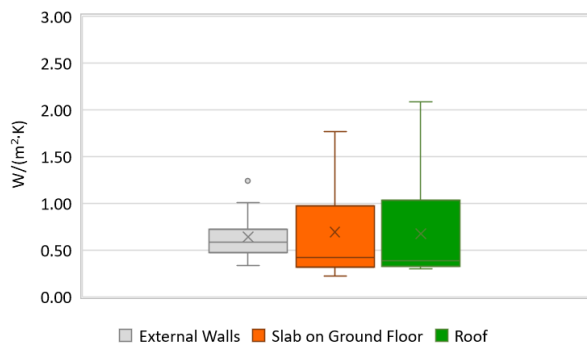


WINDOWS TO WALL RATIO

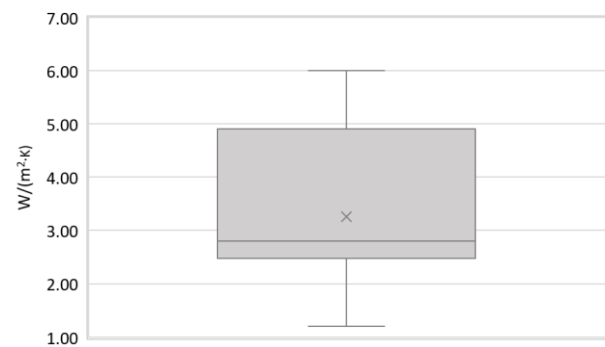


Numerical variables – ENVELOPE

OPAQUE BUILDING COMPONENTS U-VALUE



WINDOWS U-VALUE

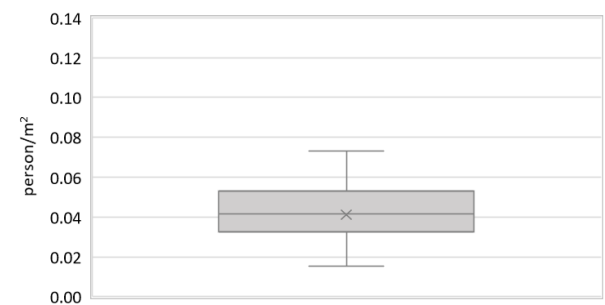


Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE

AIR EXCHANGE RATE



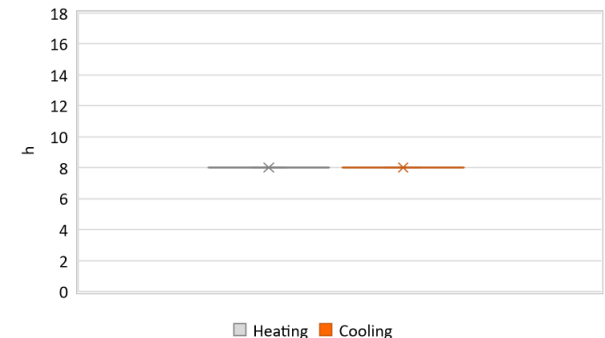
OCCUPANCY DENSITY



INTERNAL GAINS POWER DENSITY



DAILY OPERATING TIME

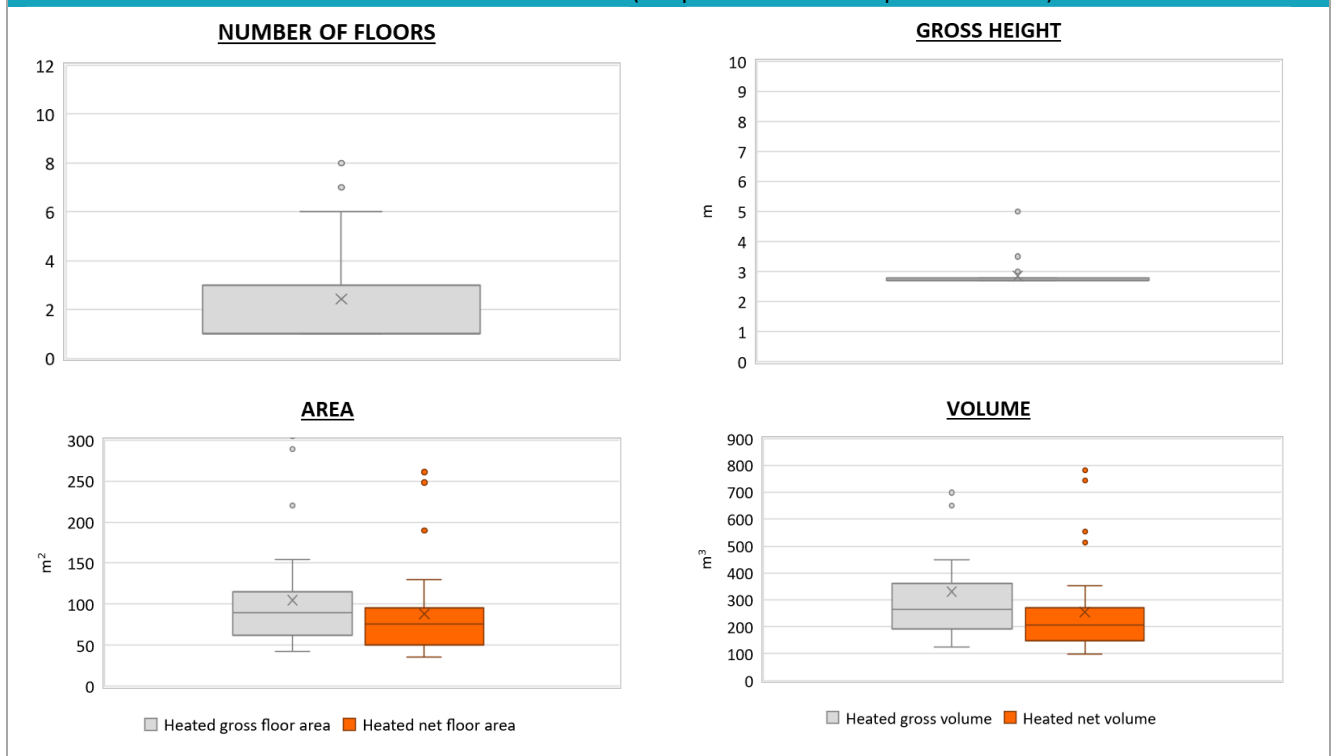


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ADDITIONAL DATA								
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
GEOMETRY: apartments	Inter-storey height	H_n	m	2.86	0.43	2.70	2.70	2.80
	Heated gross floor area	$A_{H,g}$	m ²	104.76	62.80	61.90	89.72	115.09
	Heated net floor area	$A_{H,n}$	m ²	88.26	53.99	50.80	76.00	95.67
	Heated gross volume	$V_{H,g}$	m ³	330.35	216.59	192.01	266.27	362.49
	Heated net volume	$V_{H,n}$	m ³	254.91	168.29	148.18	205.20	269.97
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	23.99	5.86	21.00	24.10	26.00
	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

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



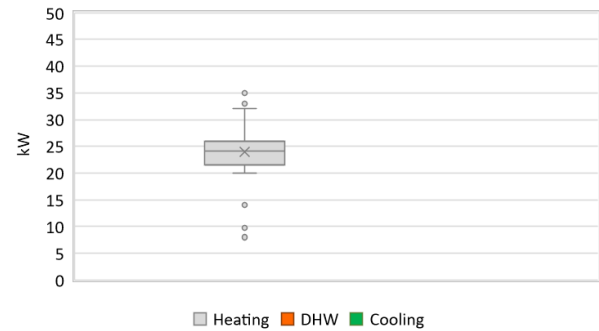
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Additional data: other numerical variables that are not included in the archetype

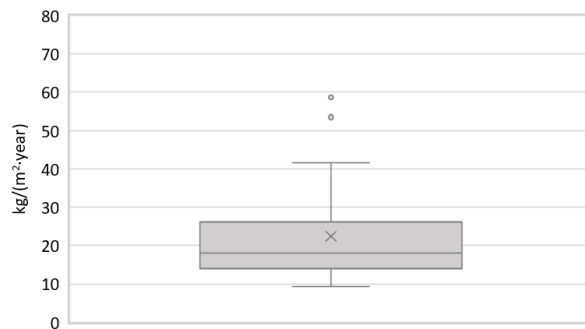
DHW SUPPLY TEMPERATURE



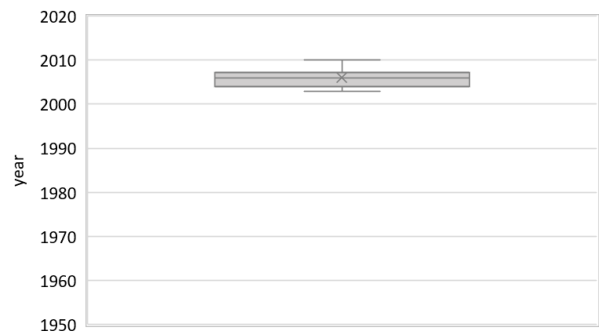
SYSTEM POWER



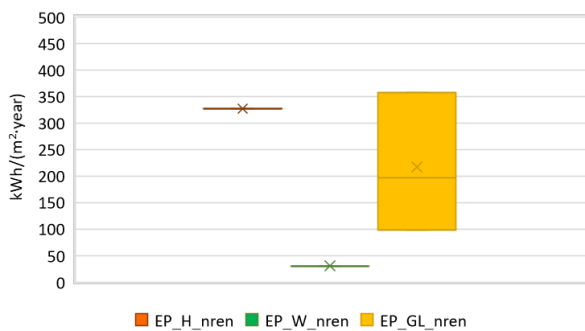
CO₂ EMISSION



HEATING SYSTEM INSTALLATION YEAR



NON-RENEWABLE PRIMARY ENERGY USE



RENEWABLE PRIMARY ENERGY USE

