Region:	Calabria			**Archetype code:** RES_APPBLOCK_ 1981-1990_C_CAL
Building category:	Residential buildings – Apartments (in multifamily blocks)			
Period of construction:	1981-1990			
Climatic zone:	C	**Number of records:**	42	

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	-	1.98	1.63	1.00	1.00	3.00
	Gross height	H_g	m	-	-	-	-	-
	Footprint area	$A_{footprint}$	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	$A_{env}/V_{H;g}$	m^{-1}	0.43	0.20	0.28	0.36	0.51
	WWR – North orientation	WWR_N	-	0.22	0.17	0.09	0.19	0.32
	WWR – South orientation	WWR_S	-	0.15	0.11	0.06	0.14	0.21
	WWR – East orientation	WWR_E	-	0.19	0.09	0.11	0.21	0.24
	WWR – West orientation	WWR_W	-	0.21	0.11	0.13	0.17	0.26
	Window to useful floor area ratio	A_{wi}/A_{use}	-	0.15	0.05	0.12	0.15	0.17
ENVELOPE	Roof type	-						
	U-value of the roof	$U_{fl;up}$	$W/(m^2 \cdot K)$	0.99	0.49	0.49	0.95	1.45
	External walls type	Hollow brick masonry: 83%, Solid brick masonry: 15%, Unknown: 2%						
	U-value of the wall	U_{wl}	$W/(m^2 \cdot K)$	0.85	0.31	0.58	0.90	1.09
	Slab on ground floor type	-						
	U-value of the floor	$U_{fl;lw}$	$W/(m^2 \cdot K)$	0.86	0.59	0.32	0.65	1.26
	Windows type	Single glazing, aluminum frame: 31%, Double glazing, wooden frame: 29%, Single glazing, wooden frame: 24%, Double glazing, PVC frame: 9%, Double glazing, aluminum frame, no thermal break: 7%						
	U-value of the windows	U_W	$W/(m^2 \cdot K)$	3.45	1.30	2.80	3.05	4.00
	Shading system type	Shutter: 50%, Roller blinds: 45%, Curtains: 3%, Unknown: 2%						
GAINS and VENTILATION	Occupancy density	O_C	person/m^2	0.034	0.013	0.027	0.034	0.041
	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: 98%, Centralized: 2%						
	Heating generator	Traditional Boiler: 86%, Condensing Boiler: 7%, Fireplace: 5%, Air-source heat pump: 2%						
	Daily operating time of the heating system *	t_H	h	8.00	0.00	8.00	8.00	8.00
	Energy carrier	Natural Gas: 74%, LPG: 14%, Solid biomass: 45%, Electricity: 2%, Unknown: 5%						
	Heating emission sub-system	Radiators: 95%, Fan coil: 3%, Unknown: 2%						
	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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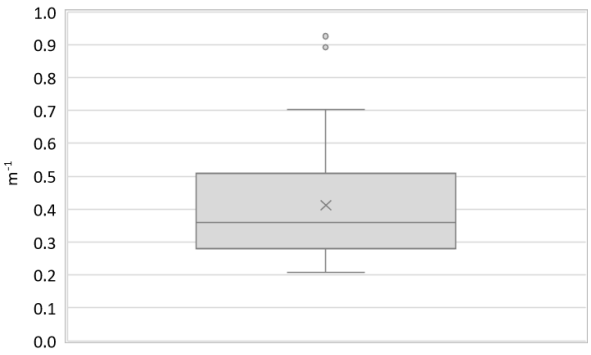
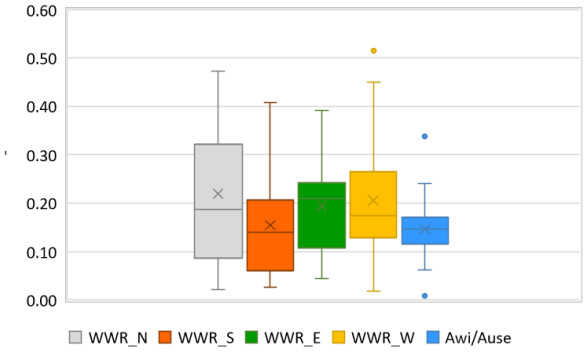
Numerical variables – GEOMETRY

COMPACTNESS RATIO

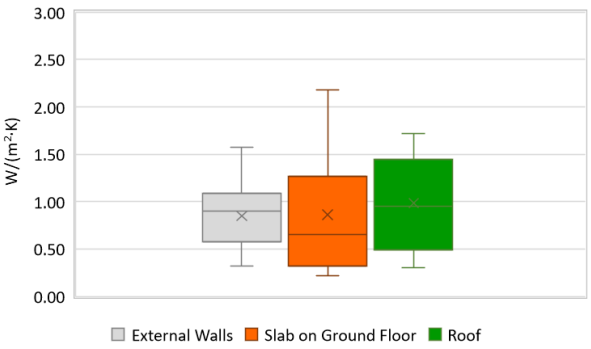


WINDOWS TO WALL RATIO

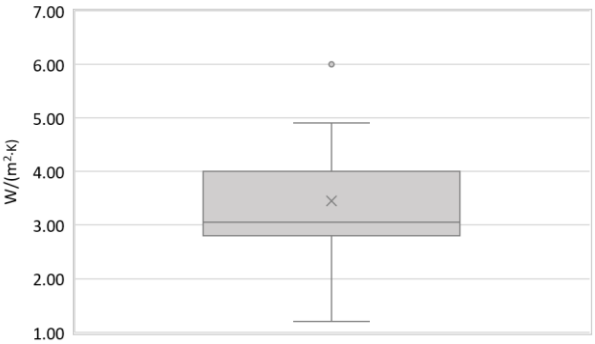


Numerical variables – ENVELOPE

OPAQUE BUILDING COMPONENTS U-VALUE



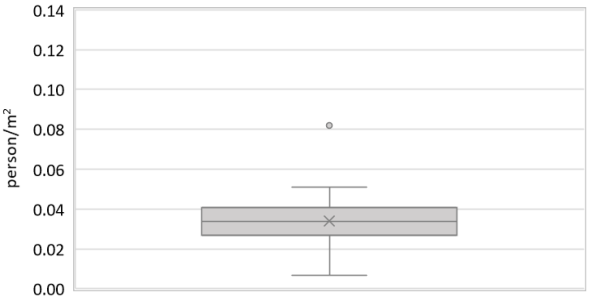
WINDOWS U-VALUE



Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE

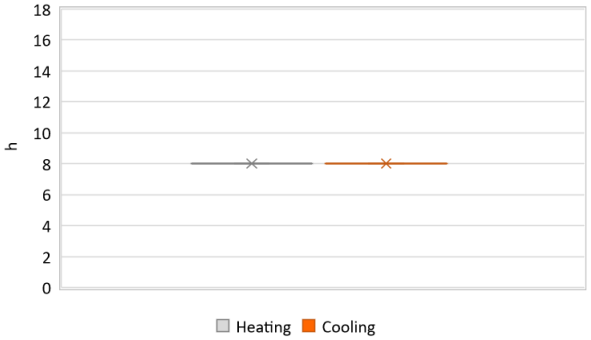
AIR EXCHANGE RATE

OCCUPANCY DENSITY



INTERNAL GAINS POWER DENSITY

DAILY OPERATING TIME



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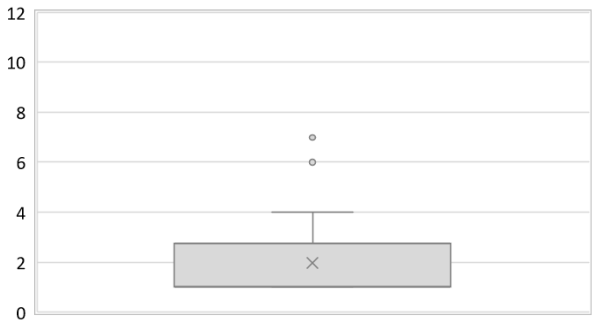
Building category:	Residential buildings – Apartments (in multifamily blocks)			RES_APPBLOCK_ 1981-1990_C_CAL
Period of construction:	1981-1990			
Climatic zone:	C	**Number of records:**	42	

ADDITIONAL DATA

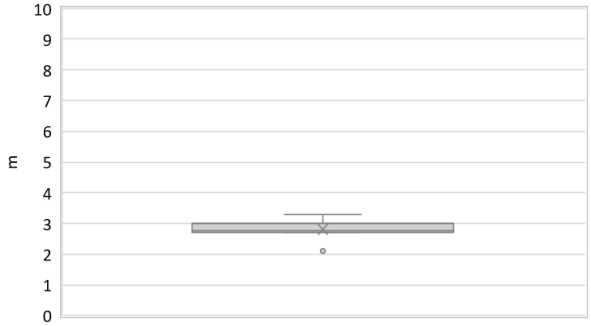
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
GEOMETRY: apartments	Inter-storey height	H_n	m	2.81	0.18	2.70	2.78	3.00
	Heated gross floor area	$A_{H;g}$	m^2	155.02	61.27	116.82	133.98	180.49
	Heated net floor area	$A_{H;n}$	m^2	129.90	51.41	98.56	115.05	150.00
	Heated gross volume	$V_{H;g}$	m^3	479.72	213.36	354.75	423.53	545.73
	Heated net volume	$V_{H;n}$	m^3	368.34	162.69	271.57	319.69	427.50
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	25.58	2.66	24.00	25.00	26.00
	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	-	-	-	-	-
	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)

NUMBER OF FLOORS

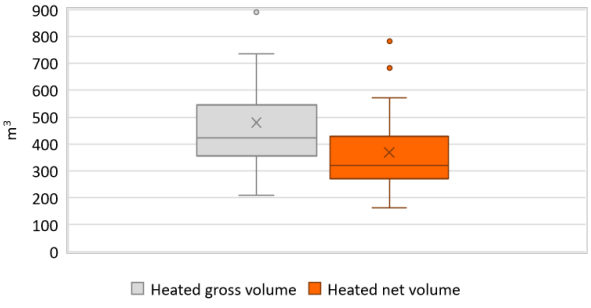


GROSS HEIGHT



AREA

VOLUME



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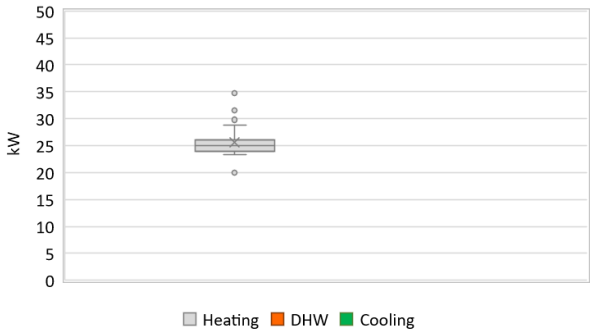
Climatic zone:	C	**Number of records:**	42	

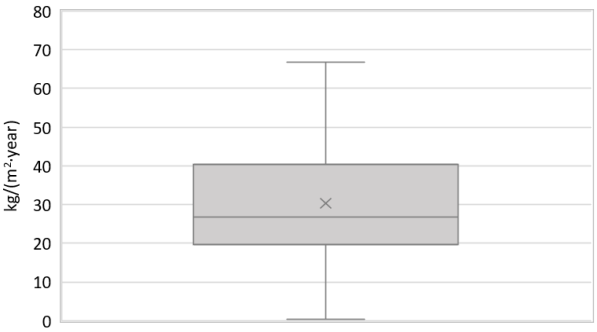
Additional data: other numerical variables that are not included in the archetype

DHW SUPPLY TEMPERATURE

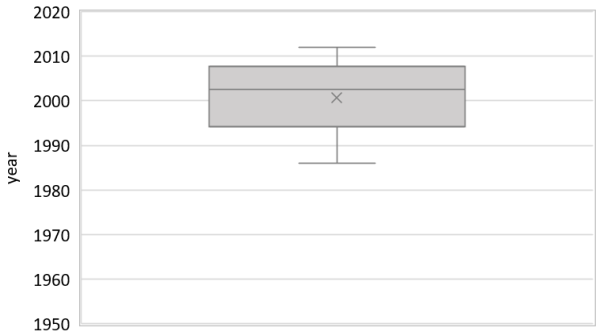
SYSTEM POWER



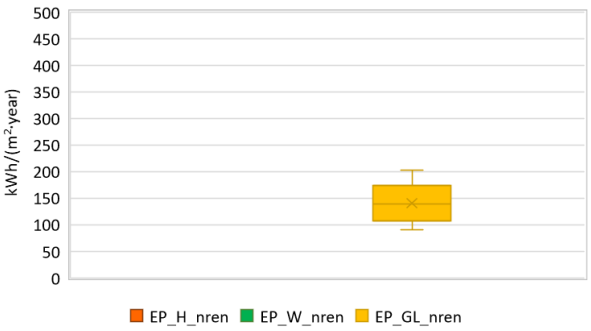
CO_2 EMISSION



HEATING SYSTEM INSTALLATION YEAR



NON-RENEWABLE PRIMARY ENERGY USE



RENEWABLE PRIMARY ENERGY USE