Region:	Liguria		Archetype code:
Building category:	Residential buildings – Apartments in multi-family block		RES_APPBLOCK_ 2001-_C_LIG
Period of construction:	2001-		
Climatic zone:	C	Number of records: 2791	

Description:

External walls: no data available

Roof slabs: no data available

Data sources:
EPC databases (100%)

|	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Q2 (Median value)	Q3 (third quartile)
BUILDING GEOMETRY	Number of floors	n_f	-	-	-	-	-	-
	Gross height	H_g	m	-	-	-	-	-
	Footprint area	$A_{footprint}$	m²	-	-	-	-	-
	Heated gross floor area	$A_{H;g}$	m²	-	-	-	-	-
	Heated net floor area	$A_{H;n}$	m²	-	-	-	-	-
	Heated gross volume	$V_{H;g}$	m³	-	-	-	-	-
	Heated net volume	$V_{H;n}$	m³	-	-	-	-	-
	Compactness ratio	$A_{env}/V_{H;g}$	m⁻¹	0.65	0.24	0.46	0.66	0.79
	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}	-	0.11	0.03	0.09	0.10	0.12
ENVELOPE	Roof type				-			
	U-value of the roof	$U_{fl;up}$	W/(m²·K)	0.61	0.56	0.26	0.35	0.74
	External walls type				-			
	U-value of the wall	U_{wl}	W/(m²·K)	0.58	0.48	0.26	0.37	0.69
	Slab on ground floor type				-			
	U-value of the floor	$U_{fl;lw}$	W/(m²·K)	0.79	0.55	0.31	0.52	1.41
	Windows type				-			
	U-value of the windows	U_W	W/(m²·K)	2.58	1.22	1.52	2.27	3.32
	Shading system type				-			
GAINS and VENTILATION	Occupancy density *	O_C	person/m²	UNI EN 16798-1 - Table A.19				
	Lighting power density *	W_L	W/m²	UNI EN 16798-1 - A.8.3				
	Equipment power density *	W_A	W/m²	UNI EN 16798-1 - A.8.3				
	Type of ventilation			Natural: 94%; Mechanical: 6%				
	Air exchange rate *	n	h⁻¹	0.30	0.00	0.30	0.30	0.30
THERMAL SYSTEMS	Heating system type			Unknown: 96%; Autonomous: 4%				
	Heating generator			Unknown: 38%; Traditional boiler: 25%; Air-source heat pump: 24%; Condensing boiler: 11%; Fireplace: 1%				
	Daily operating time of the heating system *	t_H	h	10	0	10	10	10
	Energy carrier			Unknown: 38%; Electricity: 25%; Natural gas: 24%; Electricity and natural gas: 9%; LPG: 2%; Thermal energy from solar collectors: 1%; Electricity and solid biomass: 1%				
	Heating emission sub-system			Unknown: 38%; Radiators: 35%; Air Ducts: 10%; Radiant panels: 7%; Fan-coil: 6%; Convectors: 4%				
	Cooling system type			Unknown: 64%; Heat pump air-air: 28%; Heat pump air-water: 8%				
	Daily operating time of the cooling system *	t_C	h	-	-	-	-	-
	Cooling emission sub-system			-				
	DHW system type			-				
	DHW generator			Unknown: 69%; Condensing boiler: 17%; Electric boiler: 6%; Solar thermal: 5%; Natural gas boiler: 2%; Electric heat pump: 1%				
	* These values were not available in the considered sources, and are thus derived from UNI EN Standards							

Residential buildings – Apartment blocks – 2001- – Zone C – Italy

Region:	Liguria		Archetype code:
Building category:	Residential buildings – Apartments in multi-family block		RES_APPBLOCK_ 2001-_C_LIG
Period of construction:	2001-		
Climatic zone:	C	Number of records: 2791	

Numerical variables – GEOMETRY

COMPACTNESS RATIO

WINDOWS TO WALL RATIO

☐ WWR_N ☐ WWR_S ☐ WWR_E ☐ WWR_W ☐ Awi/Ause
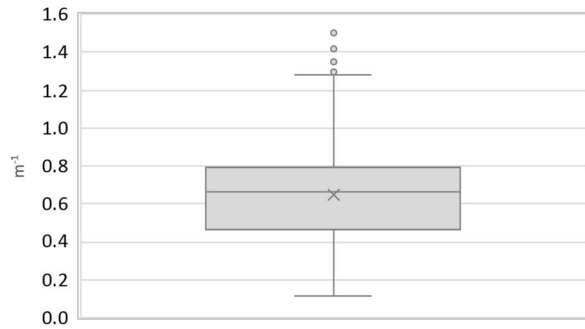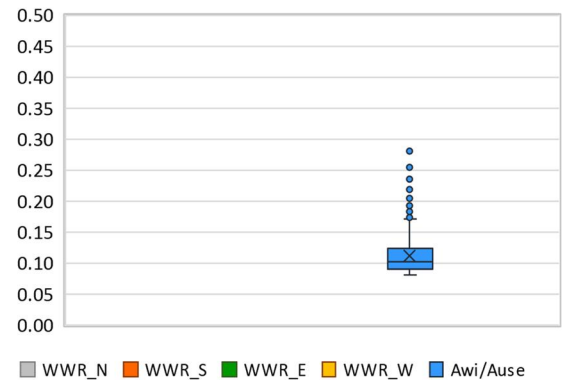
Numerical variables – ENVELOPE

OPAQUE BUILDING COMPONENTS U-VALUE

☐ External walls ☐ Slab on ground floor ☐ Roof
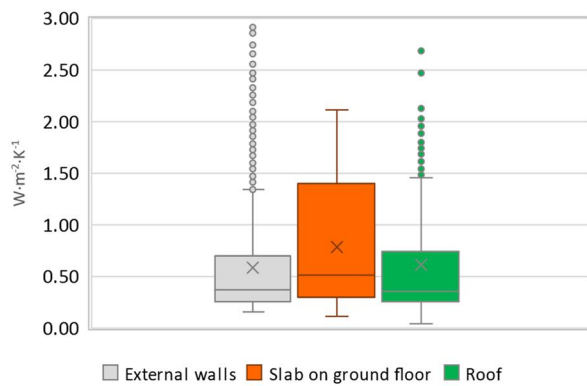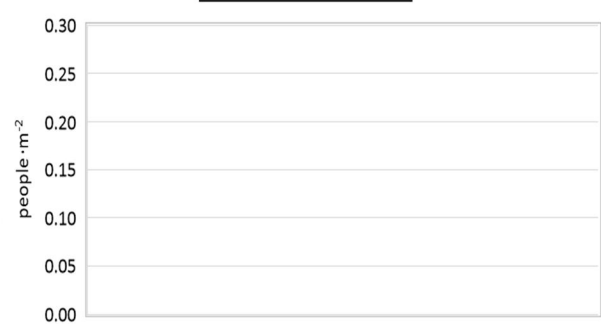
WINDOWS U-VALUE
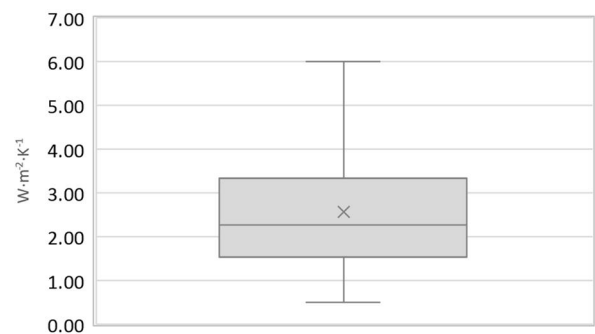
Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE (Standard Values)

AIR EXCHANGE RATE

OCCUPANCY DENSITY
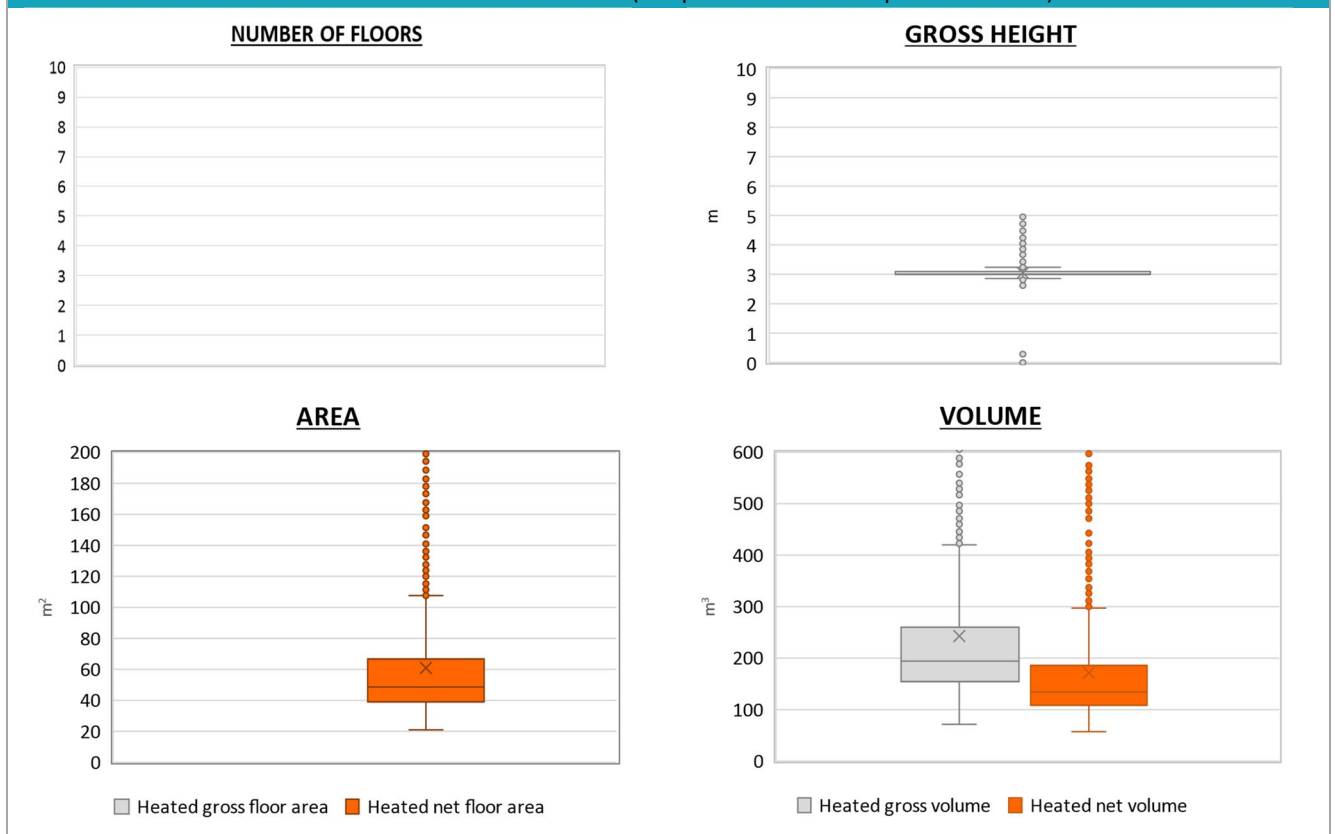

INTERNAL GAINS POWER DENSITY

DAILY OPERATING TIME

☐ Heating ☐ Cooling

Region:	Liguria		Archetype code:
Building category:	Residential buildings – Apartments in multi-family block		RES_APPBLOCK_ 2001-_C_LIG
Period of construction:	2001-		
Climatic zone:	C	Number of records: 2791	

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	3.1	0.2	3.0	3.0	3.1
	Heated gross floor area	$A_{H;g}$	m²	-	-	-	-	-
	Heated net floor area	$A_{H;n}$	m²	60.5	41.9	39.5	49.0	66.7
	Heated gross volume	$V_{H;g}$	m³	241.8	192.7	153.6	193.2	261.0
	Heated net volume	$V_{H;n}$	m³	170.9	141.1	109.9	135.6	185.2
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	17.3	9.7	6.2	23.7	24.1
	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	-	-	-	-	-
	DHW system power *	$P_{W;gen}$	kW	18.1	11.2	5.0	23.8	24.8
	* These values refer to the apartment scale							

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

NUMBER OF FLOORS

GROSS HEIGHT

AREA

VOLUME

☐ Heated gross floor area ■ Heated net floor area

☐ Heated gross volume ■ Heated net volume

Region:	Liguria		Archetype code:
Building category:	Residential buildings – Apartments in multi-family block		RES_APPBLOCK_
Period of construction:	2001-		2001-_C_LIG
Climatic zone:	C	Number of records: 2791	

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

DHW SUPPLY TEMPERATURE

SYSTEM POWER

Legend: Heating, DHW, Cooling

CO₂ EMISSION

HEATING SYSTEM INSTALLATION YEAR

NON-RENEWABLE PRIMARY ENERGY USE

Legend: EP_H_nren, EP_W_nren, EP_GL_nren

RENEWABLE PRIMARY ENERGY USE

Legend: EP_H_ren, EP_W_ren
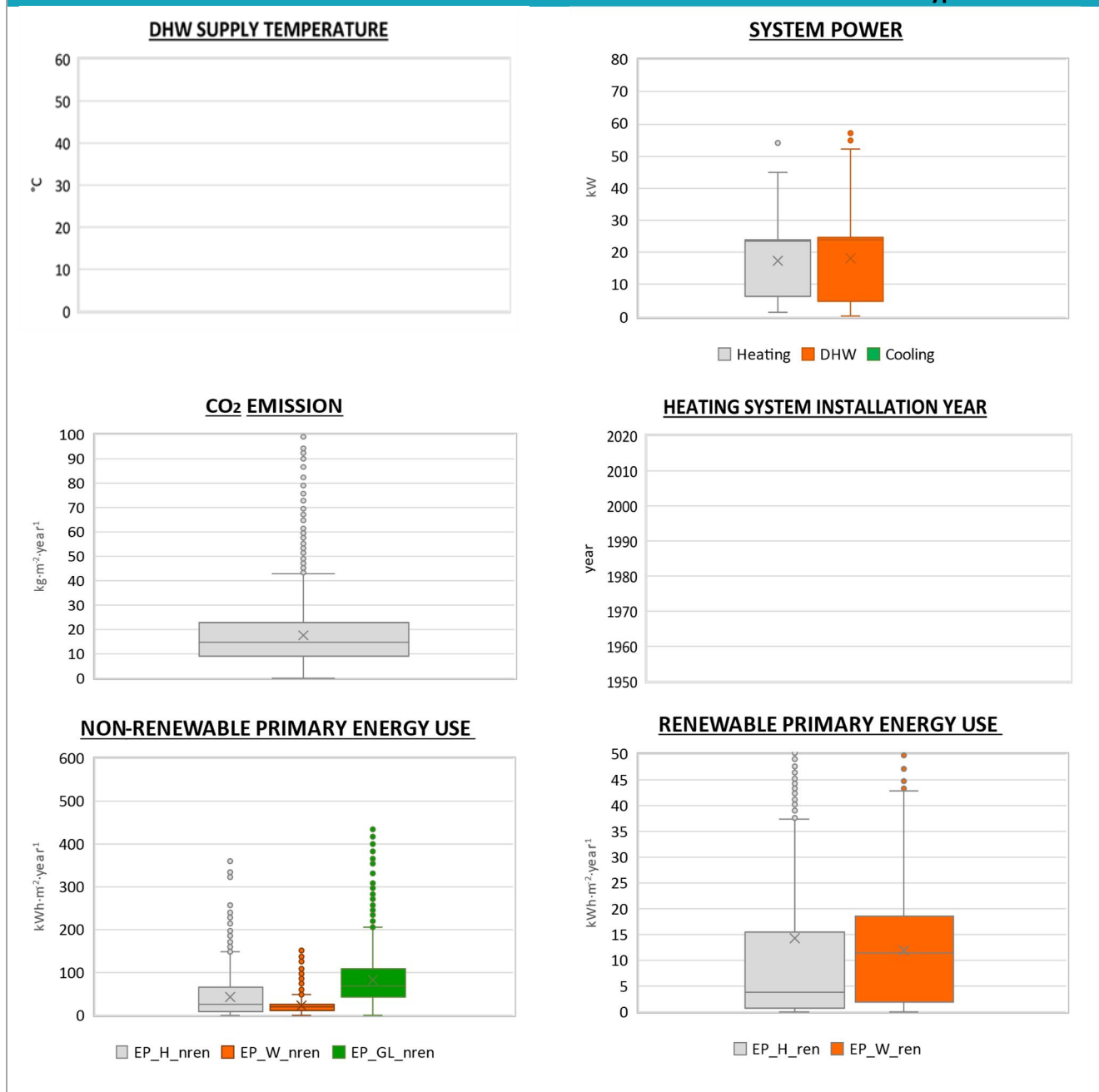
NOTE: Sample size of the analysed data.

Compactness ratio: 2761; Window to useful floor area ratio: 444; U-value of the roof: 876; U-value of the wall: 2477; U-value of the floor: 229; U-value of the windows: 2791; Inter-storey height: 2772; Heated net floor area: 2772; Heated gross volume: 2761; Heated net volume: 2761; Total heating power: 1187; DHW system power: 1746; CO2 Emission: 2748; EP_H_nren: 2649; EP_W_nren: 2670; EP_GL_nren: 2753; EP_H_ren: 2099; EP_W_ren: 1824