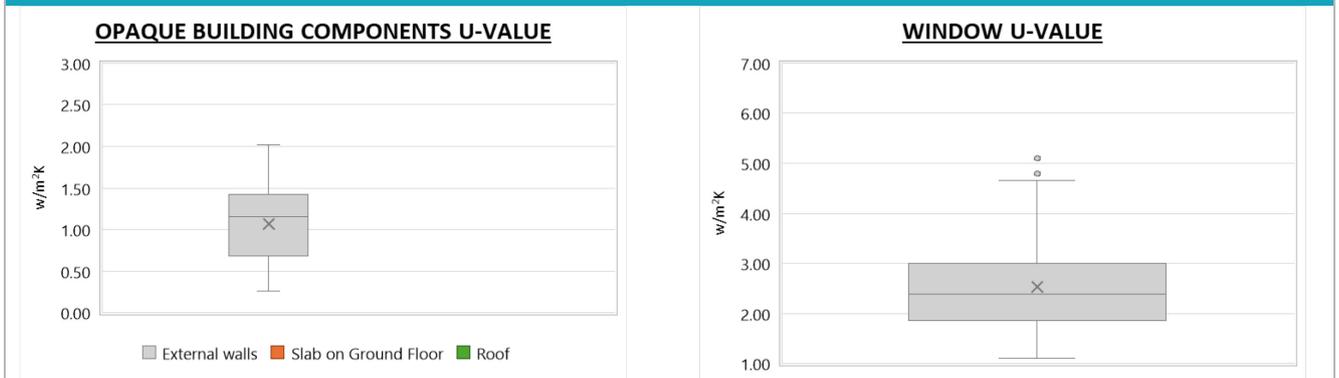
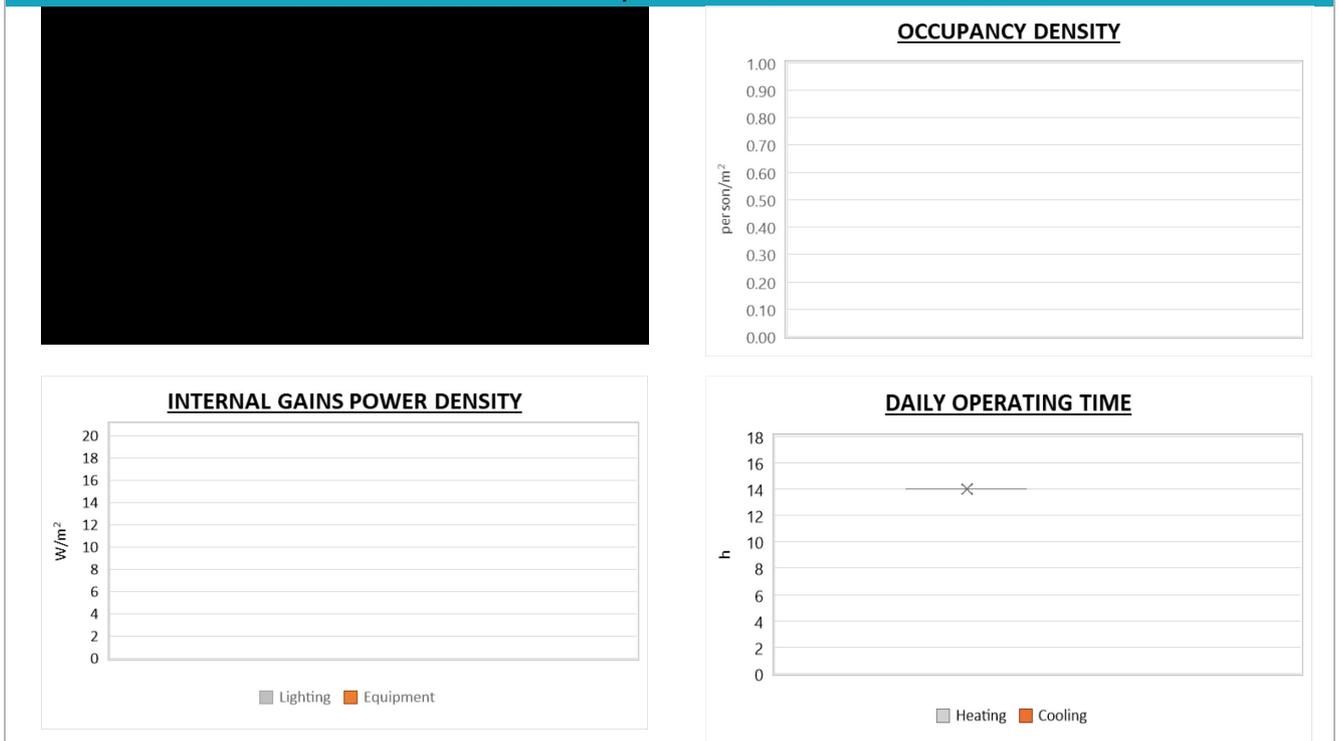


Region:		Lombardy					Archetype code:		
Building category:		Residential buildings – Apartments (in multifamily blocks)					RES_APPBLOCK_1921-1945_E_LOM		
Period of construction:		1921-1945							
Climatic zone:		E	Number of records:		37				
Description (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014):							Data sources:		
External walls: double layer of hollow bricks (8 cm + 12 cm) with uninsulated air gap (cod. MCV02).							Municipal database (32%)		
Roof slabs: reinforced brick-concrete slab (22 cm) plus uninsulated concrete screed (4 cm) (cod. SOL04)							CURIT database (27%)		
							Visual inspection (19%)		
							Others (22%) [#]		
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)	
BUILDING GEOMETRY	Number of floors	n_f	-	4.73	0.84	4.00	4.00	5.50	
	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	0.50	0.19	0.36	0.50	0.65	
	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	Reinforced brick-concrete slab: 33%; Wood structure and planking with tiles: 25%; Reinforced brick-concrete slab low insulation: 25%; Reinforced brick-concrete slab, high insulation: 17%							
	U-value of the roof	$U_{fi;up}$	W/(m ² ·K)	-	-	-	-	-	
	External walls type	Hollow brick masonry, medium insulation: 84%; Solid Brick masonry: 16%							
	U-value of the wall	U_{wl}	W/(m ² ·K)	1.07	0.46	0.69	1.15	1.42	
	Slab on ground floor type	Reinforced brick-concrete slab with concrete screed: 100%							
	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)	2.54	0.90	1.86	2.40	3.00	
Shading system type	Roller blinds: 100%								
GAINS and VENTILATION	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%							
	Air exchange rate *	n	h ⁻¹	0.30	0.00	0.30	0.30	0.30	
THERMAL SYSTEMS	Heating system type	Centralized: 100%							
	Heating generator	Traditional boiler: 80%; Condensing boiler: 20%							
	Daily operating time of the heating system *	t_H	h	14.00	0.00	14.00	14.00	14.00	
	Energy carrier	Natural gas: 94%; Electricity: 6%							
	Heating emission sub-system	Radiators: 100%							
	Cooling system type	Heat pump: 100%							
	Daily operating time of the cooling system *	t_C	h	-	-	-	-	-	
	Cooling emission sub-system	-							
	DHW system type	Autonomous - detached from heating: 100%							
	DHW generator	Natural gas boiler: 74%; Electric boiler: 26%							
# CENED database (ACE) (14%), Local database (6%), Standards (4%), Expert Assumption (4%)									
* These values were not available in the considered sources, and are thus derived from UNI EN Standards									

Region:	Lombardy	Archetype code: RES_APPBLOCK_1921-1945_E_LOM
Building category:	Residential buildings – Apartments (in multifamily blocks)	
Period of construction:	1921-1945	
Climatic zone:	E	

Numerical variables – GEOMETRY

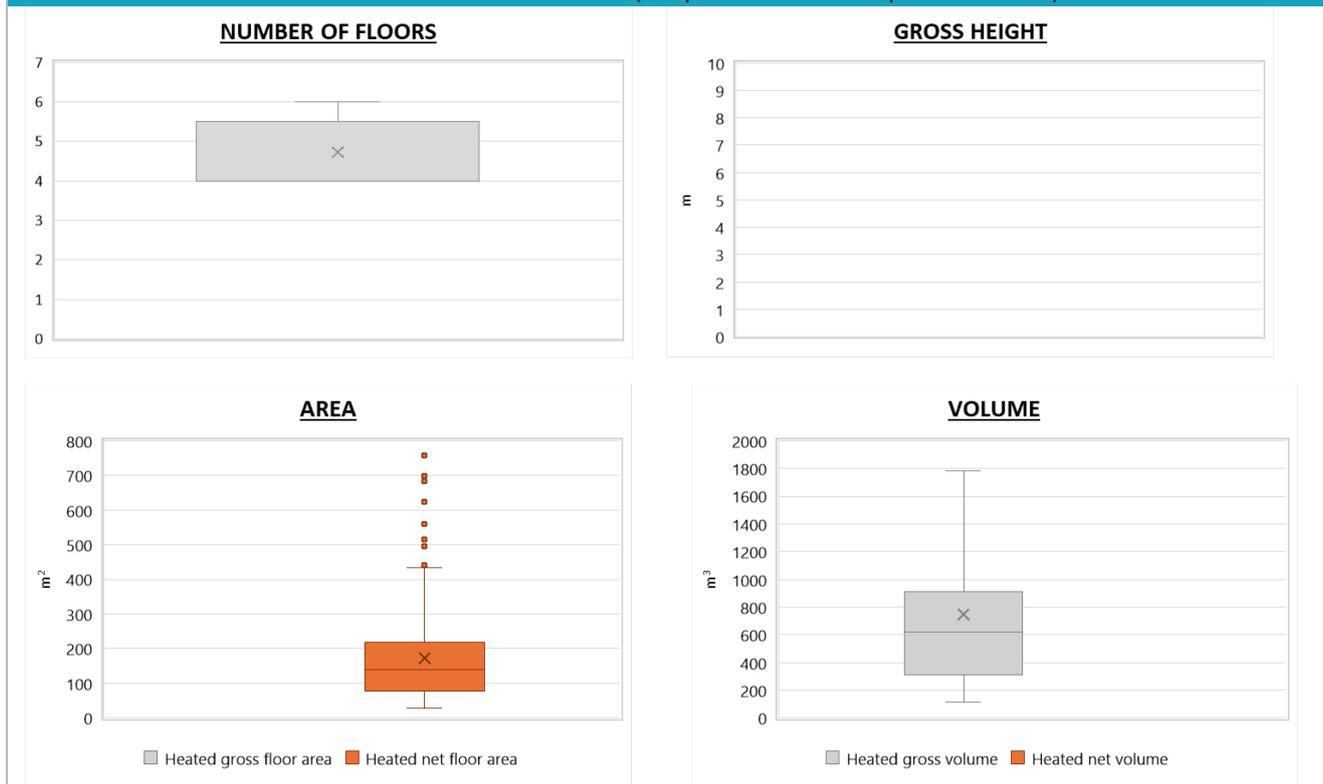
Numerical variables – ENVELOPE

Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE


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.

Region:	Lombardy	Archetype code: RES_APPBLOCK_1921-1945_E_LOM
Building category:	Residential buildings – Apartments (in multifamily blocks)	
Period of construction:	1921-1945	
Climatic zone:	E	

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	172.10	135.58	76.43	140.91	220.04
	Heated gross volume	$V_{H;g}$	m ³	747.93	615.52	311.00	624.17	913.33
	Heated net volume	$V_{H;n}$	m ³	-	-	-	-	-
THERMAL SYSTEMS	Heating efficiency or <i>COP</i>	$\eta_{H;gen}$ Or $COP_{H;gen}$	-	<i>This value has to be retrieved from suitable datasheets</i>				
	Total heating power *	$P_{H;gen}$	kW	118.71	168.51	24.00	30.30	140.15
	Cooling efficiency or <i>EER</i>	$\eta_{C;gen}$ Or $EER_{C;gen}$	-	<i>This value has to be retrieved from suitable datasheets</i>				
	Total cooling power *	$P_{C;gen}$	kW	98.50	226.14	3.50	5.20	10.82
	Temperature of DHW	ϑ_W	°C	40.00	0.00	40.00	40.00	40.00
	DHW system power *	$P_{W;gen}$	kW	81.98	134.68	24.00	28.00	34.95

* These values refer to the apartment scale

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


Region:	Lombardy	Archetype code: RES_APPBLOCK_1921- 1945_E_LOM
Building category:	Residential buildings – Apartments (in multifamily blocks)	
Period of construction:	1921-1945	
Climatic zone:	E	

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