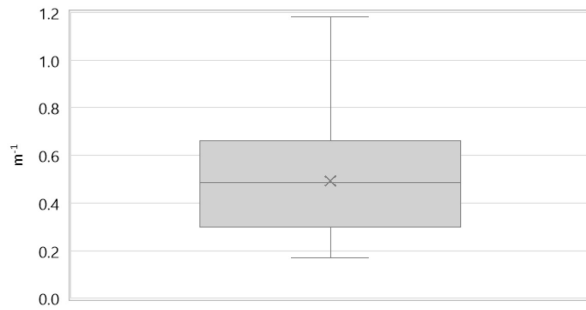


Region:	Lombardy						Archetype code: RES_APPBLOCK_2006- _E_LOM	
Building category:	Residential buildings – Apartments (in multifamily blocks)							
Period of construction:	2006 -							
Climatic zone:	E	Number of records:		30				
Description (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014): External walls: double layer of hollow bricks (8 cm + 12 cm) with insulated air gap (cod. MCV02) Roof slabs: reinforced brick-concrete slab (22 cm) plus uninsulated concrete screed (4 cm) (cod. SOL04)							Data sources: CURIT database (30%) Municipal database (23%) Visual inspection (16%) Others (31%) #	
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
BUILDING GEOMETRY	Number of floors	n_f	-	8.57	3.68	6.00	8.00	11.00
	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	0.49	0.21	0.30	0.49	0.66
	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	-						
	U-value of the roof	$U_{fi,up}$	W/(m ² ·K)	-	-	-	-	-
	External walls type	Hollow brick masonry, high insulation: 74%; Hollow brick masonry, medium insulation: 26%						
	U-value of the wall	U_{wl}	W/(m ² ·K)	0.48	0.22	0.38	0.40	0.50
	Slab on ground floor type	-						
	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)	1.84	0.53	1.47	1.52	2.07
GAINS and VENTILATION	Shading system type	Roller blinds: 83%; Shutter: 17%						
	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%						
THERMAL SYSTEMS	Air exchange rate *	n	h ⁻¹	0.30	0.00	0.30	0.30	0.30
	Heating system type	Centralized: 90%; Autonomous: 10%						
	Heating generator	Heat exchanger of district heating: 47%; Traditional Boiler: 37%; Condensing boiler: 16%						
	Daily operating time of the heating system *	t_H	h	14.00	0.00	14.00	14.00	14.00
	Energy carrier	Natural gas: 100%						
	Heating emission sub-system	Radiators: 95%; Radiant panels 5%						
	Cooling system type	Air-cooled chiller: 100%						
	Daily operating time of the cooling system *	t_C	h	-	-	-	-	-
	Cooling emission sub-system	Multisplit: 100%						
	DHW system type	District heating: 37%; Centralized, coupled with heating: 36%; Autonomous, detached from heating: 17%; Autonomous, coupled with heating: 10%						
	DHW generator	Natural gas boiler: 91%; District heating: 9%						
	# Local database (13%), CENED database (ACE) (11%), Standards (4%), Expert Assumption (2%), Energy audits (1%) * These values were not available in the considered sources, and are thus derived from UNI EN Standards							

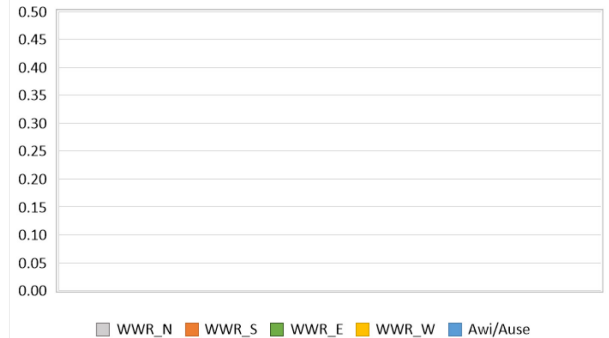
Region:	Lombardy	Archetype code: RES_APPBLOCK_2006- _E_LOM
Building category:	Residential buildings – Apartments (in multifamily blocks)	
Period of construction:	2006 -	
Climatic zone:	E	
Number of records:		30

Numerical variables – GEOMETRY

COMPACTNESS RATIO

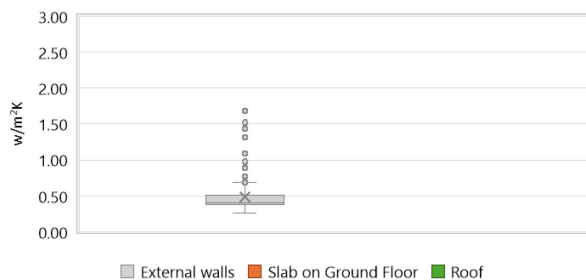


WINDOW TO WALL RATIO

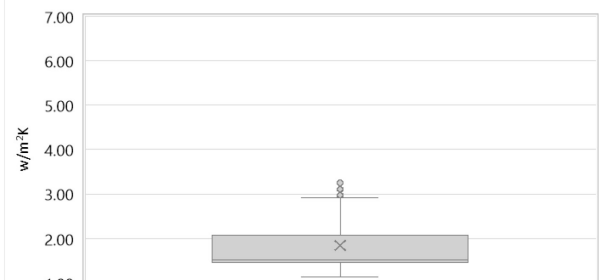


Numerical variables – ENVELOPE

OPAQUE BUILDING COMPONENTS U-VALUE

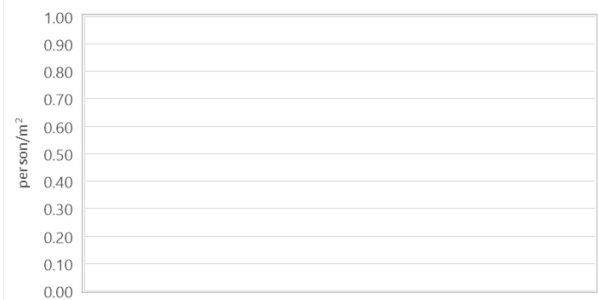


WINDOW U-VALUE



Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE

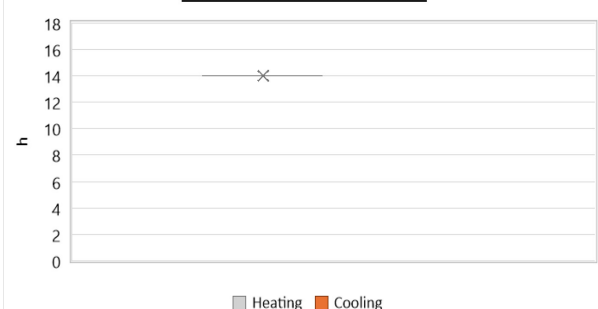
OCCUPANCY DENSITY



INTERNAL GAINS POWER DENSITY



DAILY OPERATING TIME

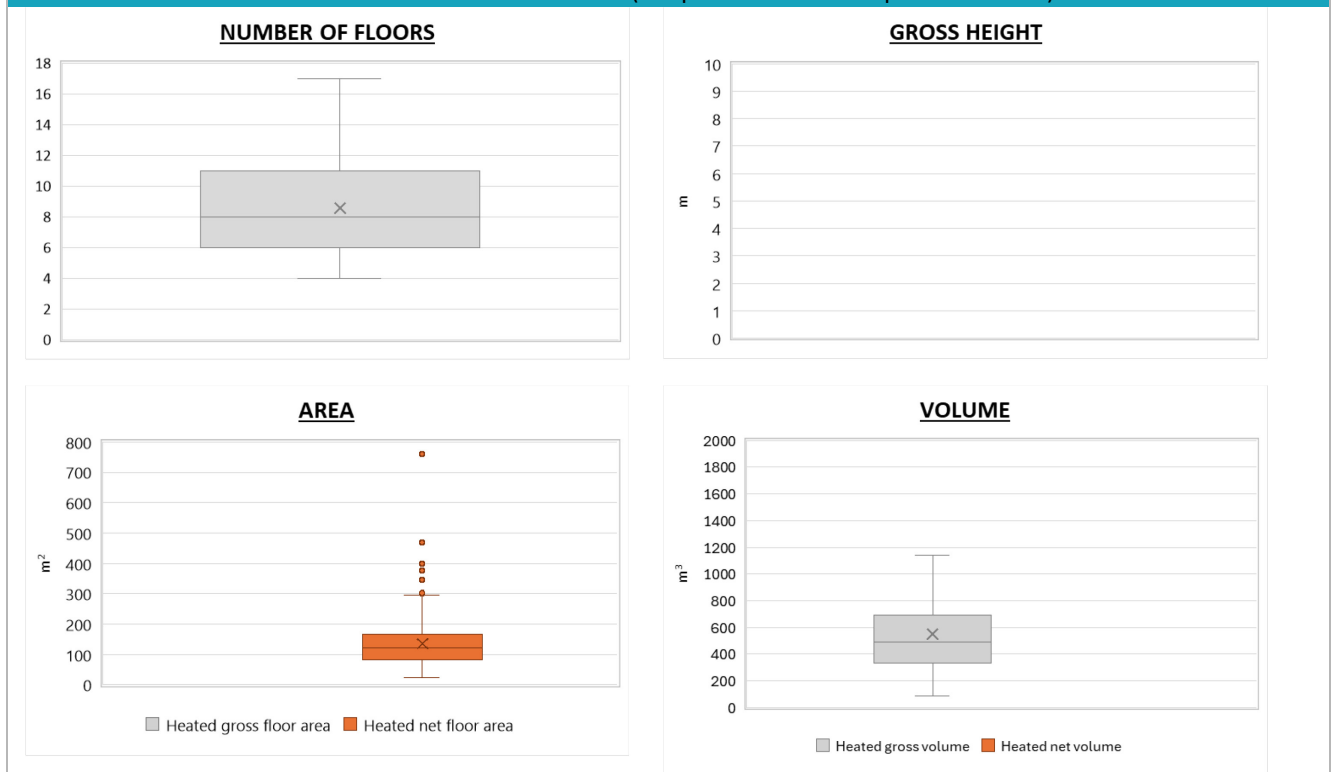


Region:	Lombardy			Archetype code: RES_APPBLOCK_2006- _E_LOM
Building category:	Residential buildings – Apartments (in multifamily blocks)			
Period of construction:	2006 -			
Climatic zone:	E	Number of records:	30	

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	135.83	84.04	81.07	122.99	167.83
	Heated gross volume	$V_{H;g}$	m ³	549.63	354.73	332.90	487.73	689.43
	Heated net volume	$V_{H;n}$	m ³	-	-	-	-	-
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	125.60	132.38	26.63	71.25	276.27
	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	86.49	118.68	4.68	25.00	240.24
	Temperature of DHW	ϑ_W	°C	40.00	0.00	40.00	40.00	40.00
	DHW system power *	$P_{W;gen}$	kW	121.45	127.22	26.23	64.35	276.27

* These values refer to the apartment scale

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



Region:	Lombardy	Archetype code: RES_APPBLOCK_2006- _E_LOM
Building category:	Residential buildings – Apartments (in multifamily blocks)	
Period of construction:	2006 -	
Climatic zone:	E	
Number of records:		30

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

