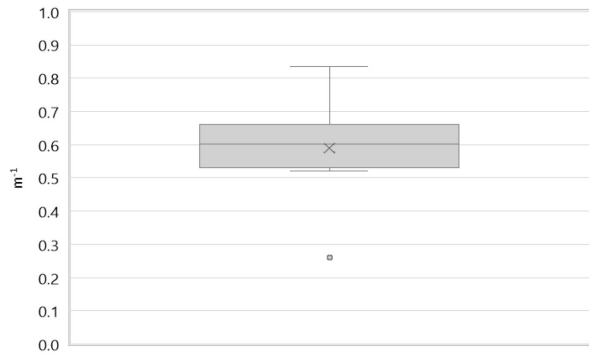


Region:	Lombardy						Archetype code: RES_APPBLOCK_- 1900_E_LOM	
Building category:	Residential buildings – Apartments (in multifamily blocks)							
Period of construction:	< 1900							
Climatic zone:	E	Number of records:				39		
Description (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014): External walls: Solid Brick masonry (60 cm) (cod. MLP01) Roof slabs: Masonry with lists of bricks and concrete (6 cm + 24 cm) (cod. SOL03)							Data sources: Municipal database (28%) CURIT database (27%) CENED database (APE) (15%) Others (30%) #	
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
BUILDING GEOMETRY	Number of floors	$n_f$	-	4.10	0.91	3.00	4.00	5.00
	Gross height	$H_g$	m	-	-	-	-	-
	Footprint area	$A_{\text{footprint}}$	m <sup>2</sup>	-	-	-	-	-
	Heated gross floor area	$A_{H,g}$	m <sup>2</sup>	-	-	-	-	-
	Heated net floor area	$A_{H,n}$	m <sup>2</sup>	-	-	-	-	-
	Heated gross volume	$V_{H,g}$	m <sup>3</sup>	-	-	-	-	-
	Heated net volume	$V_{H,n}$	m <sup>3</sup>	-	-	-	-	-
	Compactness ratio	$A_{\text{env}}/V_{H,g}$	m <sup>-1</sup>	0.59	0.15	0.53	0.60	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	$A_{wi}/A_{\text{use}}$	-	-	-	-	-	-
	ENVELOPE	Roof type	Wood structure and planking with tiles: 100%					
U-value of the roof		$U_{fi,up}$	W/(m <sup>2</sup> ·K)	-	-	-	-	-
External walls type		Solid Brick masonry: 58%; Hollow brick masonry, low insulation: 21%; Hollow brick masonry, medium insulation: 17%; Hollow brick masonry, high insulation: 4%						
U-value of the wall		$U_{wl}$	W/(m <sup>2</sup> ·K)	0.98	0.44	0.62	0.85	1.36
Slab on ground floor type		Masonry with lists of stones and concrete: 100%						
U-value of the floor		$U_{fi,lw}$	W/(m <sup>2</sup> ·K)	-	-	-	-	-
Windows type		-						
U-value of the windows		$U_W$	W/(m <sup>2</sup> ·K)	2.29	0.73	1.68	2.04	3.02
GAINS and VENTILATION	Shading system type	Shutter: 89%; Roller blinds: 11%						
	Occupancy density *	$O_C$	person/m <sup>2</sup>	UNI EN 16798-1 - Table A.19				
	Lighting power density *	$W_L$	W/m <sup>2</sup>	UNI EN 16798-1 - A.8.3				
	Equipment power density *	$W_A$	W/m <sup>2</sup>	UNI EN 16798-1 - A.8.3				
	Type of ventilation	Natural: 100%						
	Air exchange rate *	$n$	h <sup>-1</sup>	0.30	0.00	0.30	0.30	0.30
THERMAL SYSTEMS	Heating system type	Autonomous: 71%; Centralized: 29%						
	Heating generator	Traditional boiler: 100%						
	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: 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 - coupled with heating: 68%; Autonomous - detached from heating: 32%						
	DHW generator	Natural gas boiler: 77%; Electric boiler: 23%						
	# Visual inspection (15%), Expert Assumption (11%), Standards (3%), Energy audits (1%) * These values were not available in the considered sources, and are thus derived from UNI EN Standards							

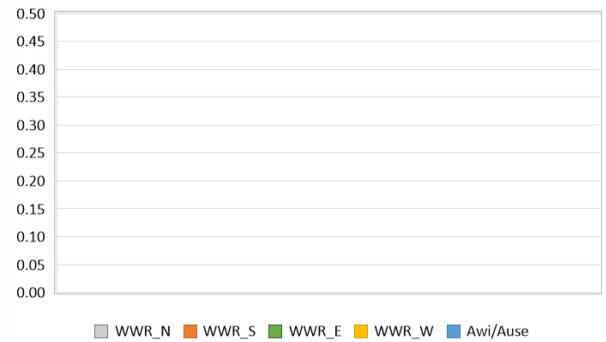
Region:	Lombardy	Archetype code: RES_APPBLOCK_- 1900_E_LOM
Building category:	Residential buildings – Apartments (in multifamily blocks)	
Period of construction:	Before 1900	
Climatic zone:	E	
Number of records:		39

### Numerical variables – GEOMETRY

**COMPACTNESS RATIO**



**WINDOW TO WALL RATIO**

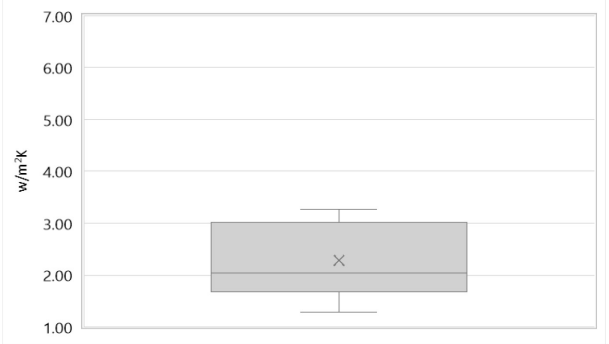


### Numerical variables – ENVELOPE

**OPAQUE BUILDING COMPONENTS U-VALUE**

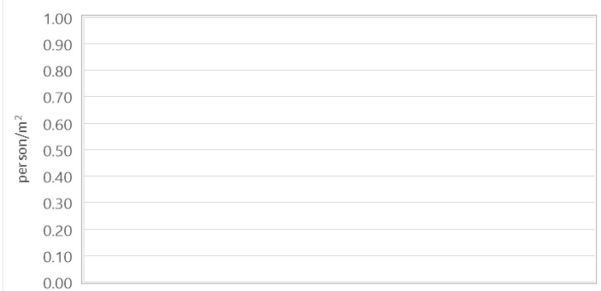


**WINDOW U-VALUE**



### Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE

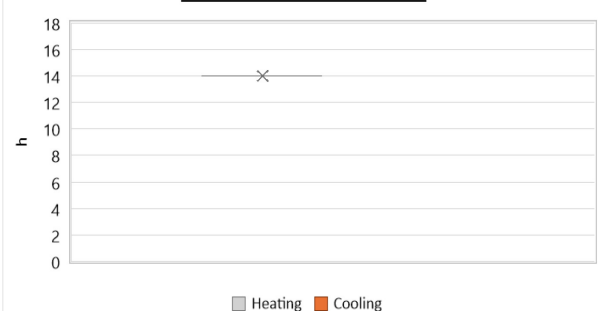
**OCCUPANCY DENSITY**



**INTERNAL GAINS POWER DENSITY**



**DAILY OPERATING TIME**

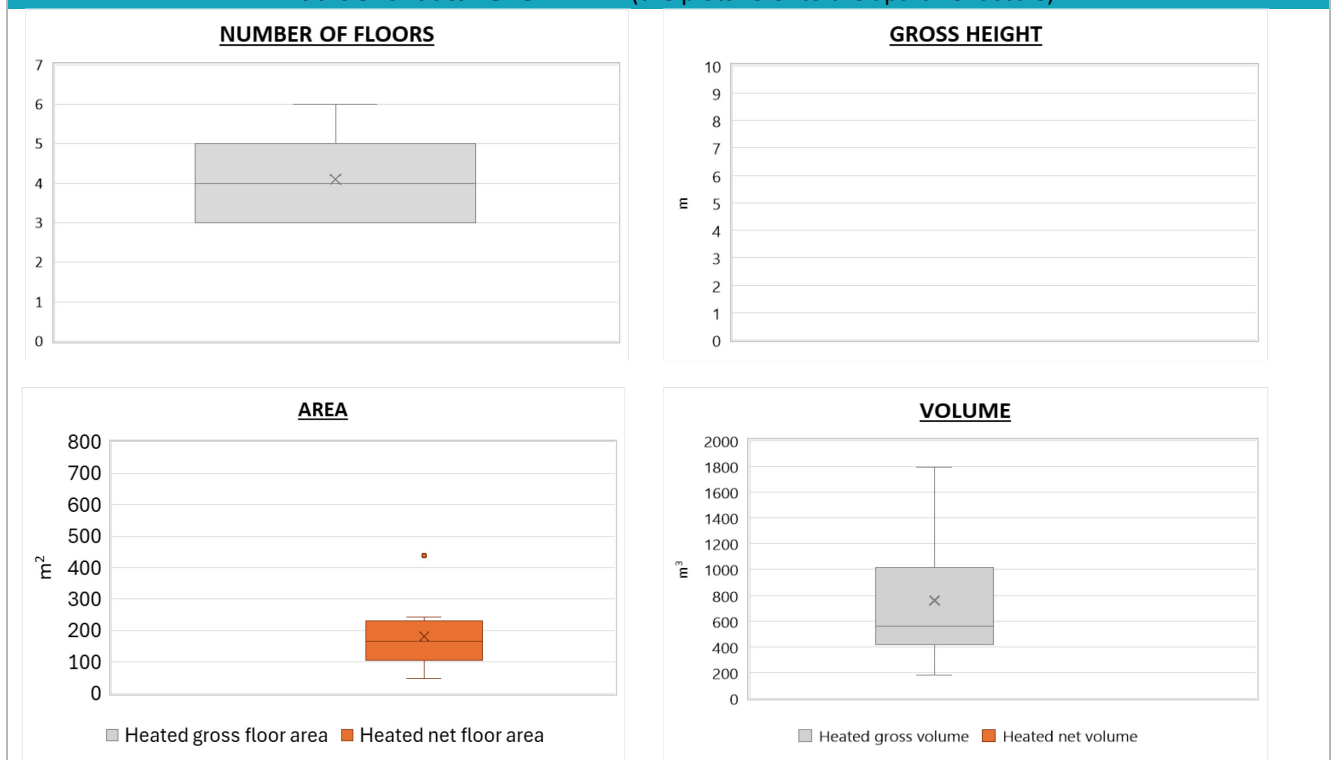


Region:	Lombardy	Archetype code: RES_APPBLOCK - 1900_E_LOM
Building category:	Residential buildings – Apartments (in multifamily blocks)	
Period of construction:	Before 1900	
Climatic zone:	E	
Number of records:		39

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 <sup>2</sup>	-	-	-	-	-
	Heated net floor area	$A_{H;n}$	m <sup>2</sup>	181.82	114.15	106.08	166.66	230.46
	Heated gross volume	$V_{H;g}$	m <sup>3</sup>	759.97	487.08	415.03	562.53	1015.80
	Heated net volume	$V_{H;n}$	m <sup>3</sup>	-	-	-	-	-
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	36.82	25.32	24.00	26.60	51.60
	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	19.42	32.97	3.55	6.80	20.43
	Temperature of DHW	$\vartheta_W$	°C	40.00	0.00	40.00	40.00	40.00
	DHW system power *	$P_{W;gen}$	kW	37.89	34.26	18.50	26.60	51.60

\* These values refer to the apartment scale

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



<b>Region:</b>	Lombardy	<b>Archetype code:</b> RES_APPBLOCK_- 1900_E_LOM
<b>Building category:</b>	Residential buildings – Apartments (in multifamily blocks)	
<b>Period of construction:</b>	Before 1900	
<b>Climatic zone:</b>	E	
<b>Number of records:</b>		39

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

