

 Region:
 Liguria
 Archetype code:

 Building category:
 Residential buildings – Apartments in multi-family block
 RES_APPBLOCK_

 Period of construction:
 1991-2000
 1991-2000_C_LIG

 Climatic zone:
 C
 Number of records:
 817

Description: Data sources:

External walls: no data available Roof slabs: no data available

EPC databases (100%)

Mumber of floors						Roof slabs: no data available						
Number of floors	Q3 (third					Unit of	Symbol	Data				
Gross height	quartile)	value)	quartile)	deviation	value							
Footprint area A Footprint M²		-	-	-	-		<u> </u>					
Heated gross floor area Alug m² -			-	-	-							
Heated net floor area A _{Hcn} m² -	-	-	-	-	-			<u> </u>	OMETRY			
WWR - East orientation WWRE	-	-	-	-	-							
WWR - East orientation WWRE -		-	-	-	-							
WWR - East orientation WWRE -		-	-	-	-							
WWR - East orientation WWRE		-	-	-	-			Heated net volume	99			
WWR - East orientation WWRE - - - - - - -	0.78	0.64	0.40	0.24	0.61	m ⁻¹	A _{env} /V _{H;g}	Compactness ratio	2			
WWR - East orientation WWRE - - - - - - -	-	-	-	-	-	-	WWR _N	WWR – North orientation	₫			
WWR - West orientation WWRw - - - - - -	-	-	-	-	-	-	WWR _S	WWR – South orientation	B			
Window to useful floor area ratio Awi/Ause - 0.11 0.03 0.09 0.10 0.10 0.00	-	-	-	-	-	-	WWR _E	WWR – East orientation				
Roof type	-	-	-	-	-	-	WWR _W	WWR – West orientation				
U-value of the roof Ufi;up W/(m²·K) 1.24 0.52 0.85 1.30	0.12	0.10	0.09	0.03	0.11	-	A _{wi} /A _{use}					
External walls type				-				Roof type				
U-value of the wall U_w W/(m²-K) 1.03 0.46 0.66 1.03	1.64	1.30	0.85	0.52	1.24	W/(m²⋅K)	U _{fl;up}	<i>U</i> -value of the roof				
Windows type				-				External walls type				
Windows type	1.27	1.03	0.66	0.46	1.03	W/(m²⋅K)	$U_{ m wl}$	<i>U</i> -value of the wall	DE			
Windows type			Slab on ground floor type	Ë								
Windows type	1.59	1.54	1.18	0.41	1.42	W/(m²⋅K)	U _{fl;lw}	<i>U</i> -value of the floor	Ž			
Shading system type Occupancy density * UNI EN 16798-1 - Table A.19 Lighting power density * Equipment power density * Type of ventilation Air exchange rate * Heating system type Unknown: 94%; Autonomous: 6% Heating generator Daily operating time of the heating system * The system type Lighting power density * W _L W/m² UNI EN 16798-1 - A.8.3 UNI EN 16798-1 - A.8.3 Natural: 98%; Mechanical: 2% Unknown: 94%; Autonomous: 6% Traditional boiler: 46%; Unknown: 36%; Electric heating: 9%; Condensing boiler: 9% source heat pump: 3%; Fireplace: 1% Daily operating time of the heating system * Lighting power density * W _L W/m² UNI EN 16798-1 - A.8.3			Windows type	_								
Occupancy density * Oc 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: 98%; Mechanical: 2% Air exchange rate * n h·¹ 0.30 0.00 0.30 0.30 Heating system type Unknown: 94%; Autonomous: 6% Heating generator Source heat pump: 3%; Fireplace: 1% Daily operating time of the heating system *	4.84	3.71	3.00	1.13	3.84	W/(m²⋅K)	Uw	<i>U</i> -value of the windows				
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 Air exchange rate * n h-1 0.30 0.00 0.30 0.30 0.30 Heating system type Heating generator Daily operating time of the heating system * Lighting power density * W _L W/m ² UNI EN 16798-1 - A.8.3 Natural: 98%; Mechanical: 2% Unknown: 94%; Autonomous: 6% Traditional boiler: 46%; Unknown: 36%; Electric heating: 9%; Condensing boiler: 9%; Condensing boiler				-				Shading system type				
Heating system type Heating generator Daily operating time of the heating system * Heating system type Unknown: 94%; Autonomous: 6% Traditional boiler: 46%; Unknown: 36%; Electric heating: 9%; Condensing boiler: 5 source heat pump: 3%; Fireplace: 1% heating system * Traditional boiler: 46%; Unknown: 36%; Electric heating: 9%; Condensing boiler: 5 source heat pump: 3%; Fireplace: 1%		- Table A.19	Occupancy density *	z								
Heating system type Heating generator Daily operating time of the heating system * Heating system type Unknown: 94%; Autonomous: 6% Traditional boiler: 46%; Unknown: 36%; Electric heating: 9%; Condensing boiler: 5 source heat pump: 3%; Fireplace: 1% heating system * Traditional boiler: 46%; Unknown: 36%; Electric heating: 9%; Condensing boiler: 5 source heat pump: 3%; Fireplace: 1%		-1 - A.8.3	Lighting power density *	and TO								
Heating system type Heating generator Daily operating time of the heating system * Heating system * Unknown: 94%; Autonomous: 6% Unknown: 36%; Electric heating: 9%; Condensing boiler: 5 source heat pump: 3%; Fireplace: 1% Do 10 10		-1 - A.8.3	Equipment power density *	NS ILA								
Heating system type Heating generator Daily operating time of the heating system * Heating system type Unknown: 94%; Autonomous: 6% Traditional boiler: 46%; Unknown: 36%; Electric heating: 9%; Condensing boiler: 5 source heat pump: 3%; Fireplace: 1% heating system * Traditional boiler: 46%; Unknown: 36%; Electric heating: 9%; Condensing boiler: 5 source heat pump: 3%; Fireplace: 1%			Type of ventilation	SAI								
Heating generator Traditional boiler: 46%; Unknown: 36%; Electric heating: 9%; Condensing boiler: 5 source heat pump: 3%; Fireplace: 1% Daily operating time of the heating system * Traditional boiler: 46%; Unknown: 36%; Electric heating: 9%; Condensing boiler: 5 source heat pump: 3%; Fireplace: 1%	0.30	0.30	0.30	0.00	0.30	h-1	n	Air exchange rate *	~ ≥			
Daily operating time of the heating system * source heat pump: 3%; Fireplace: 1%		%	utonomous: 6	own: 94%; Aı	Unkn			Heating system type				
Daily operating time of the heating system * $t_{\rm H}$ h 10 0 10	r: 5%; Air-		Heating generator									
	10					h	t _H					
Heating emission sub-system Radiators: 61%; Unknown: 35%; Air Ducts: 2%; Fan-coil: 1%; Radiant panels: Cooling system type Unknown: 93%; Heat pump air-air: 6%; Heat pump air-water: 1%	6; LPG 6%;			rems								
Cooling system type Unknown: 93%; Heat pump air-air: 6%; Heat pump air-water: 1%	s: 1%	: 1%; Radiant pa	Heating emission sub-system	SYS								
			Cooling system type	AL:								
Daily operating time of the cooling system *	-	-	-	-	-	h	t _C	Daily operating time of the cooling system *	HERM			
Cooling emission sub-system -				F								
DHW system type -			DHW system type									
DHW generator Unknown: 81%; Condensing boiler: 13%; Electric boiler: 4%; Electric heat pump Natural gas boiler: 1%	np: 1%;	%; Electric heat p										
* These values were not available in the considered sources, and are thus derived from UNI EN Standards												



Region: Liguria Archetype code: **Building category:** Residential buildings - Apartments in multi-family block RES_APPBLOCK_ 1991-2000_C_LIG 1991-2000 **Period of construction:** Climatic zone: С **Number of records: Numerical variables – GEOMETRY COMPACTNESS RATIO** WINDOWS TO WALL RATIO 1.6 0.50 0.45 1.4 0.40 1.2 0.35 0.30 E 0.8 0.25 0.6 0.20 0.15 0.4 0.10 0.2 0.05 0.0 0.00 ■ WWR_N ■ WWR_S ■ WWR_E ■ WWR_W ■ Awi/Ause **Numerical variables – ENVELOPE WINDOWS U-VALUE OPAQUE BUILDING COMPONENTS UVALUE** 7.00 3.00 6.00 2.50 5.00 2.00 4.00 1.50 3.00 1.00 2.00 1.00 0.50 0.00 0.00 ■ External walls ■ Slab on ground floor ■ Roof Numerical variables - GAINS, VENTILATION and SYSTEMS USAGE (Standard Values) AIR EXCHANGE RATE **OCCUPANCY DENSITY** 1.00 0.30 0.90 0.25 0.80 0.70 0.20 people·m⁻² 0.60 0.50 0.15 0.40 0.10 0.30 0.20 0.05 0.10 0.00 0.00 **INTERNAL GAINS POWER DENSITY DAILY OPERATING TIME** 10 20 9 18 8 16 14 12 5 10 3 6 2 4 2 0 The data can be used for analysis, modeling, and research purposes, as long as it remains unaltered in its



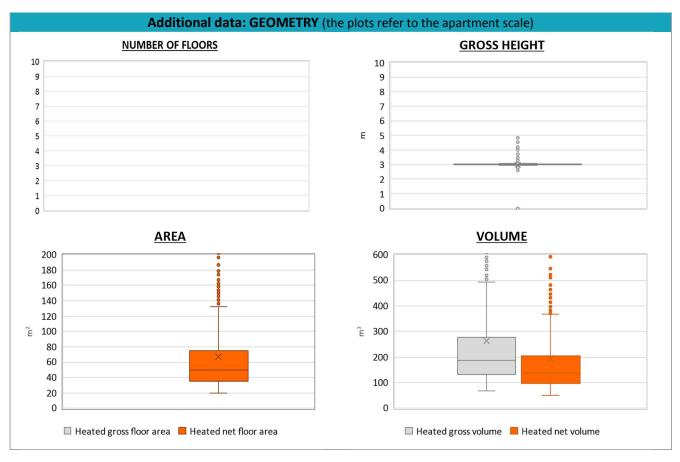
 Region:
 Liguria
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 Residential buildings – Apartments in multi-family block
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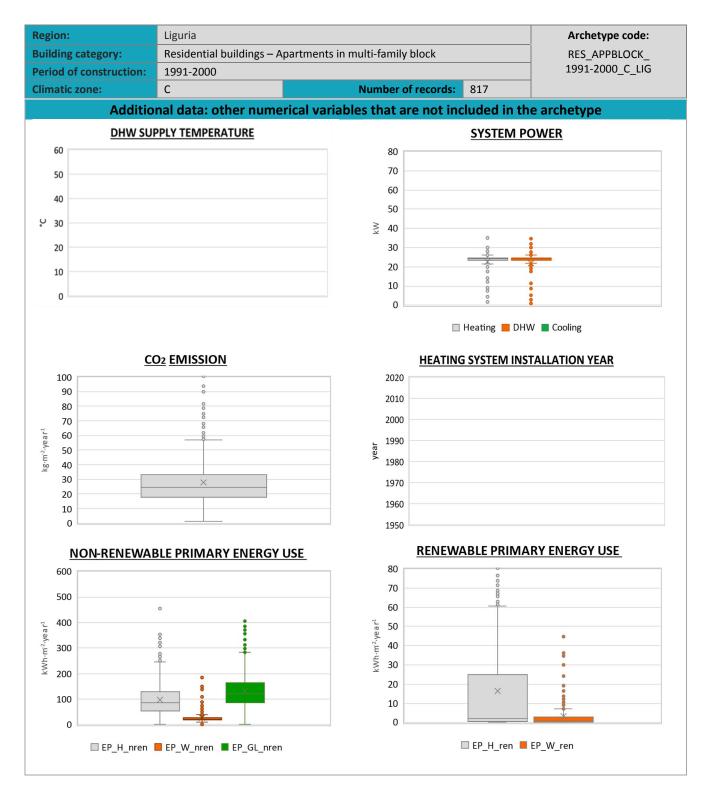
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ADDITIONAL DATA										
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)		
GEOMETRY: apartments	Inter-storey height	H _n	m	3.1	0.2	3.0	3.0	3.0		
	Heated gross floor area	A _{H;g}	m²	-	-	-	-	-		
	Heated net floor area	A _{H;n}	m²	67.3	74.0	35.8	50.0	75.0		
	Heated gross volume	$V_{H;g}$	m³	263.7	364.5	132.3	187.3	277.4		
	Heated net volume	V _{H;n}	m³	192.2	249.7	97.7	138.2	206.1		
	Heating efficiency or COP	η _{H;gen} or <i>COP</i> H;gen	-	This value has to be retrieved from suitable datasheets						
	Total heating power *	P _{H;gen}	kW	22.6	5.9	23.3	24.0	24.5		
	Cooling efficiency or EER	η _{C;gen} or <i>EER</i> _{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 *	$P_{ m W;gen}$	kW	22.0	6.9	23.3	24.0	24.4		
	* These values refer to the apartment scale									







NOTE: Sample size of the analysed data.

Compactness ratio: 803; Window to useful floor area ratio: 147; U-value of the roof: 189; U-value of the wall: 728; U-value of the floor: 44; U-value of the windows: 817; Inter-storey height: 803; Heated net floor area: 803; Heated gross volume: 803; Heated net volume: 803; Total heating power: 351; DHW system power: 506; CO2 Emission: 811; EP_H_nren: 813; EP_W_nren: 775; EP_GL_nren: 812; EP_H_ren: 561; EP_W_ren: 318