

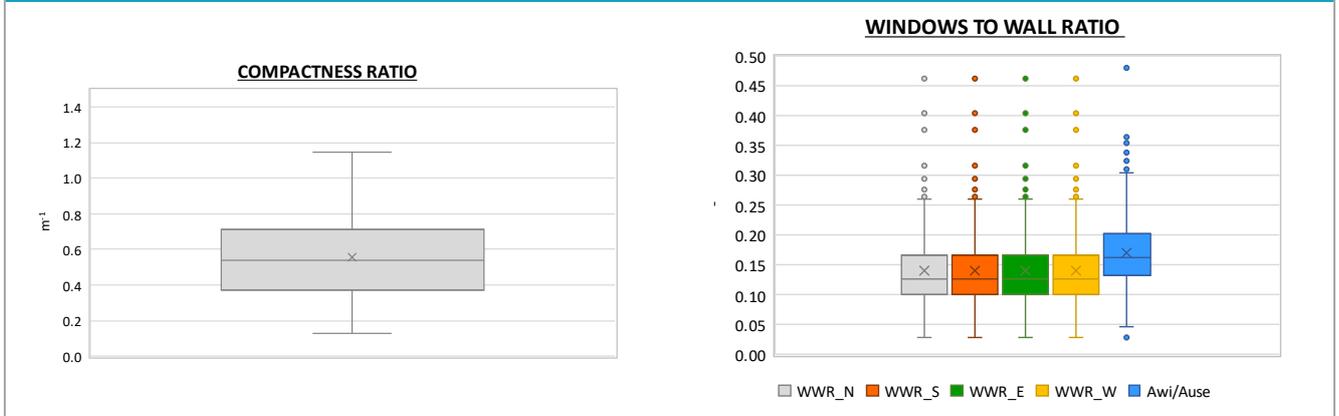
Region:	Aosta Valley (Aosta, Quart, Saint-Christophe, and Sarre)						Archetype code:		
Building category:	Residential buildings - Apartments (in multifamily blocks)						RES_APPBLOCK_1982-1991_E_VAL		
Period of construction:	1982 - 1991								
Climatic zone:	E	Number of records:		645					
Description (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014):						Data sources:			
<u>External walls:</u> hollow brick masonry with thermal insulation (cod. MCV02). <u>Roof slabs:</u> reinforced concrete floor slab (cod. SOLO4).						EPC databases (100%)			
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)	
BUILDING GEOMETRY	Number of floors	n_f	-	-	-	-	-	-	
	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	0.56	0.23	0.37	0.54	0.71	
	WWR – North orientation	WWR_N	-	0.14	0.06	0.10	0.13	0.17	
	WWR – South orientation	WWR_S	-	0.14	0.06	0.10	0.13	0.17	
	WWR – East orientation	WWR_E	-	0.14	0.06	0.10	0.13	0.17	
	WWR – West orientation	WWR_W	-	0.14	0.06	0.10	0.13	0.17	
	Window to useful floor area ratio	A_{wi}/A_{use}	-	0.17	0.06	0.13	0.16	0.20	
ENVELOPE	Roof type	-							
	U-value of the roof **	$U_{fi;up}$	W/(m ² ·K)	1.13	0.45	0.78	1.32	1.42	
	External walls type	Hollow brick masonry: 80%; Solid Brick masonry: 15%; Unknown: 3%; Concrete wall: 2%							
	U-value of the wall	U_{wi}	W/(m ² ·K)	0.82	0.35	0.48	0.90	1.09	
	Slab on ground floor type	-							
	U-value of the floor **	$U_{fi;lw}$	W/(m ² ·K)	1.00	0.30	0.83	1.11	1.13	
	Windows type	Double glazing, wooden frame: 83%; Double glazing, PVC frame: 14%; Single glazing, wooden frame: 2%; Triple glazing, PVC frame: 1%							
	U-value of the windows	U_w	W/(m ² ·K)	2.56	0.78	2.23	2.67	2.90	
Shading system type	-								
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: 72%; Autonomous: 28%							
	Heating generator	Boiler (unknown type): 51%; Heat exchanger of district heating/cooling: 18%; Traditional Boiler: 17%; Condensing Boiler: 11%; Fireplace: 2%; Unknown: 1%							
	Daily operating time of the heating system *	t_H	h	14.0	0.0	14.0	14.0	14.0	
	Energy carrier	Natural Gas: 59%; Gas Oil: 23%; District heating: 9%; LPG: 7%; Solid biomass: 2%							
	Heating emission sub-system	-							
	Cooling system type	Absent: 99%; Air-cooled chiller: 1%							
	Daily operating time of the cooling system *	t_C	h	-	-	-	-	-	
	Cooling emission sub-system	-							
	DHW system type	Autonomous, detached from heating: 39%; Centralized, coupled with heating: 38%; Autonomous, coupled with heating: 22%; Centralized, detached from heating: 1%							
	DHW generator	Unknown: 64%; Natural gas boiler: 24%; Electric boiler: 12%							
* These values are derived from UNI EN ISO Standards; ** U-values of the upper and lower slabs face unconditioned spaces (i.e., attic, basement, etc.)									



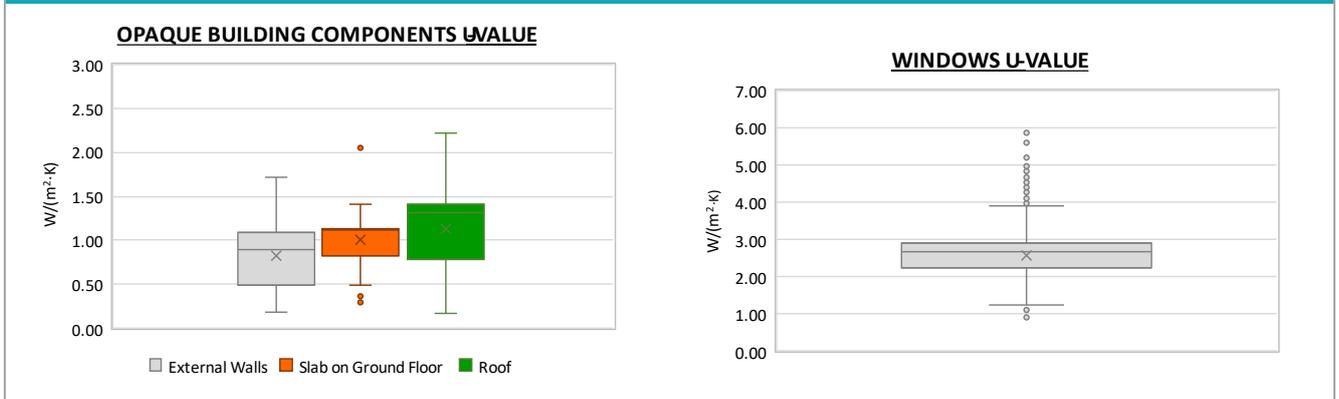
The data can be used for analysis, modeling, and research purposes, as long as it remains unaltered in its original form. Users are free to publish results based on the data, provided they credit the original source.

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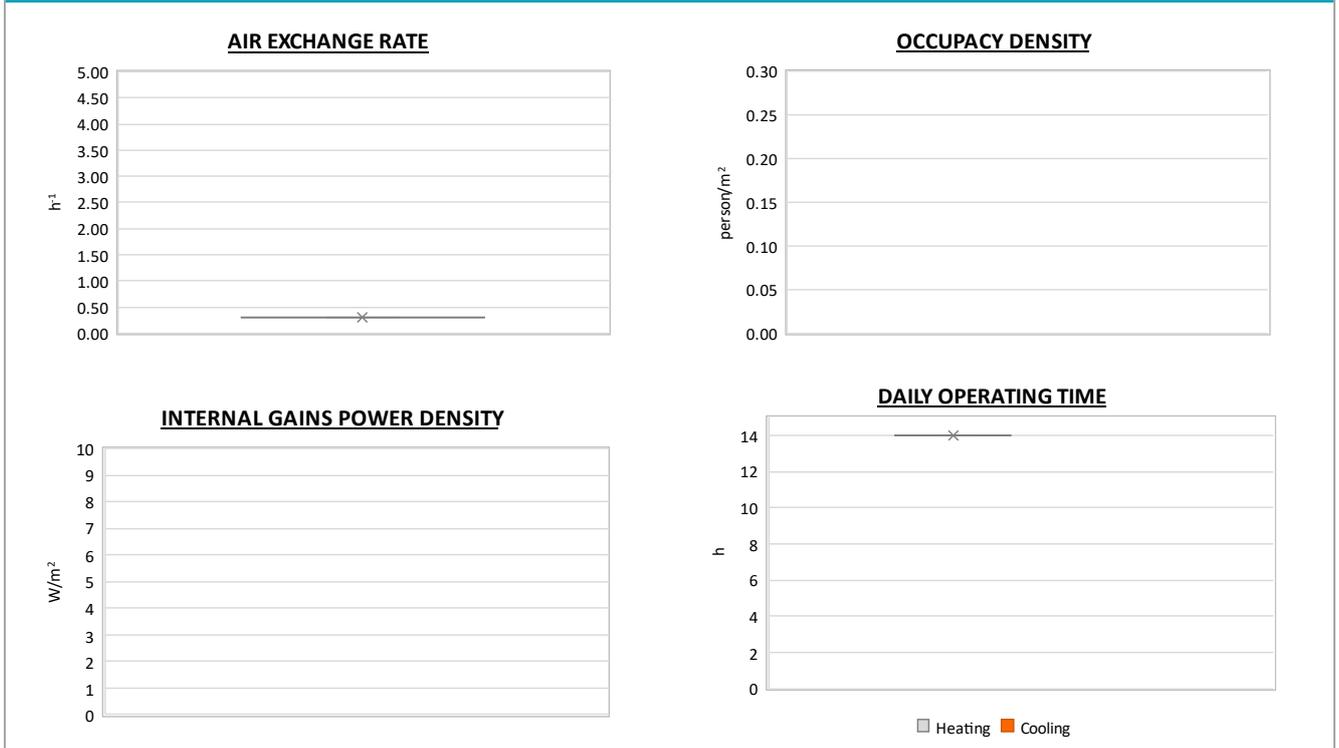
Numerical variables – GEOMETRY



Numerical variables – ENVELOPE



Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE



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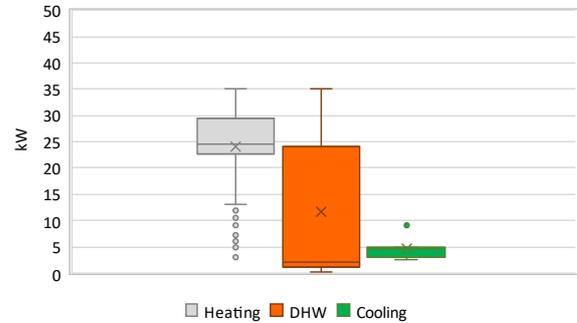
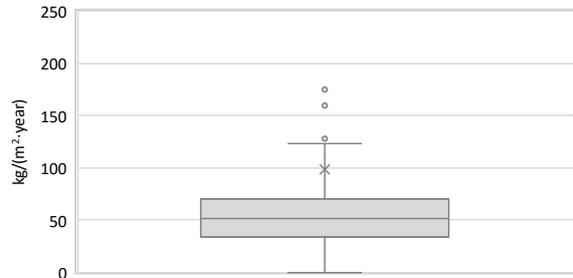
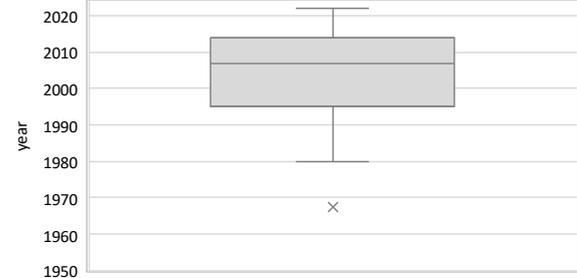
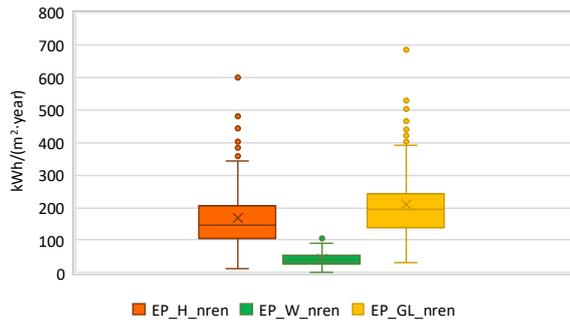
ADDITIONAL DATA								
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
GEOMETRY: apartments	Inter-storey height	H_n	m	2.7	0.2	2.6	2.7	2.7
	Heated gross floor area	$A_{H,g}$	m ²	-	-	-	-	-
	Heated net floor area	$A_{H,n}$	m ²	75.9	53.9	51.3	72.7	88.2
	Heated gross volume	$V_{H,g}$	m ³	275.9	202.3	183.0	262.8	320.1
	Heated net volume	$V_{H,n}$	m ³	196.4	165.4	132.6	192.8	226.0
THERMAL SYSTEMS	Heating efficiency or <i>COP</i>	$\eta_{H,gen}$ or $COP_{H,gen}$	-	This value has to be retrieved from suitable datasheets				
	Total heating power *	$P_{H,gen}$	kW	24.0	7.8	22.8	24.6	29.4
	Cooling efficiency or <i>EER</i>	$\eta_{C,gen}$ or $EER_{C,gen}$	-	This value has to be retrieved from suitable datasheets				
	Total cooling power *	$P_{C,gen}$	kW	4.7	2.4	2.9	4.6	5.0
	Temperature of DHW	ϑ_w	°C	40.0	0.0	40.0	40.0	40.0
	DHW system power *	$P_{W,gen}$	kW	11.7	12.4	1.2	2.0	24.0

* These values refer to the apartment scale

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


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

SYSTEM POWER

CO₂ EMISSION

HEATING SYSTEM INSTALLATION YEAR

NON-RENEWABLE PRIMARY ENERGY USE

RENEWABLE PRIMARY ENERGY USE
