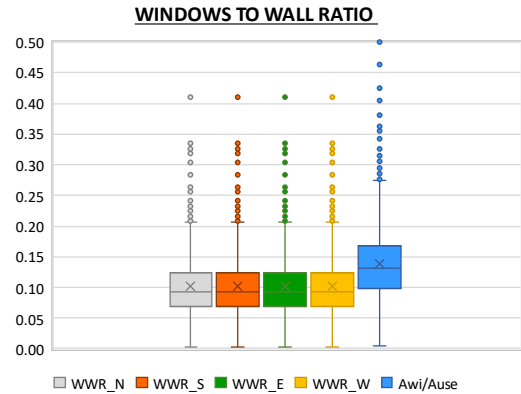
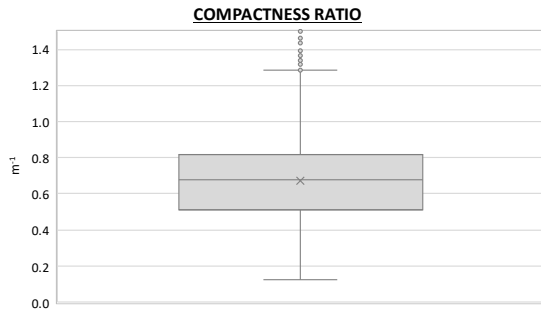


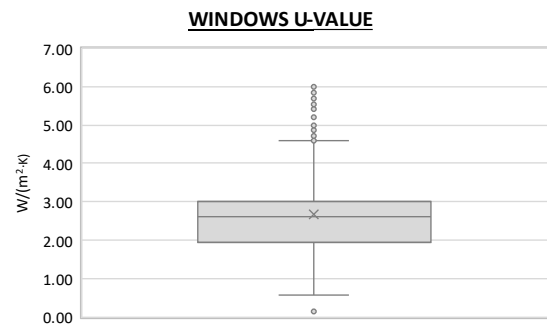
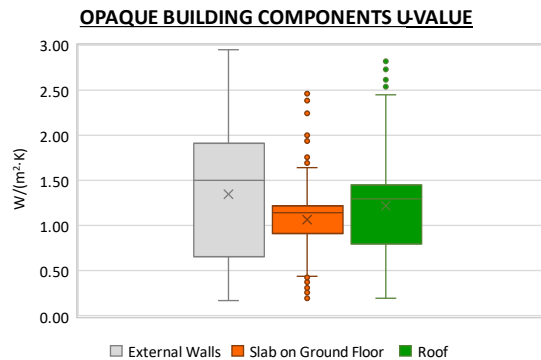
Region:	Aosta Valley						Archetype code: RES_APPBLOCK_-1919_E-F_VAL	
Building category:	Residential buildings - Apartments (in multifamily blocks)							
Period of construction:	< 1919							
Climatic zone:	E-F	Number of records:		2278				
Description (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014): External walls: stone wall (cod. MPI02) or solid brick masonry (cod. MLP01). Roof slabs: concrete floor slab (cod. SOL06).							Data sources: 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 <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>	0.67	0.24	0.51	0.68	0.82
	WWR – North orientation	$WWR_N$	-	0.10	0.05	0.07	0.09	0.12
	WWR – South orientation	$WWR_S$	-	0.10	0.05	0.07	0.09	0.12
	WWR – East orientation	$WWR_E$	-	0.10	0.05	0.07	0.09	0.12
	WWR – West orientation	$WWR_W$	-	0.10	0.05	0.07	0.09	0.12
	Window to useful floor area ratio	$A_{wi}/A_{\text{use}}$	-	0.14	0.06	0.10	0.13	0.17
ENVELOPE	Roof type	-						
	U-value of the roof **	$U_{f,up}$	W/(m <sup>2</sup> ·K)	1.22	0.54	0.79	1.30	1.46
	External walls type	Masonry with local stones: 53%; Solid Brick masonry: 37%; Unknown: 7%; Hollow brick masonry: 3%						
	U-value of the wall	$U_{wl}$	W/(m <sup>2</sup> ·K)	1.35	0.67	0.65	1.50	1.91
	Slab on ground floor type	-						
	U-value of the floor **	$U_{f,lw}$	W/(m <sup>2</sup> ·K)	1.07	0.37	0.91	1.15	1.22
	Windows type	Double glazing, wooden frame: 76%; Single glazing, wooden frame: 17%; Double glazing, PVC frame: 4%; Triple glazing, wooden frame: 2%; Triple glazing, PVC frame: 1%						
	U-value of the windows	$U_W$	W/(m <sup>2</sup> ·K)	2.68	1.00	1.93	2.62	3.00
GAINS and VENTILATION	Shading system type	-						
	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%						
THERMAL SYSTEMS	Air exchange rate *	$n$	h <sup>-1</sup>	0.30	0.00	0.30	0.30	0.30
	Heating system type	Autonomous: 77%; Centralized: 23%						
	Heating generator	Boiler (unknown type): 48%; Traditional Boiler: 21%; Fireplace: 15%; Condensing Boiler: 9%; Unknown: 5%; Heat exchanger of district heating/cooling: 1%; Air-source heat pump: 1%						
	Daily operating time of the heating system *	$t_H$	h	-				
	Energy carrier	LPG: 29%; Gas Oil: 28%; Solid biomass: 23%; Natural Gas: 19%; District heating: 1%						
	Heating emission sub-system	-						
	Cooling system type	Absent: 100%						
	Daily operating time of the cooling system *	$t_C$	h	-	-	-	-	-
	Cooling emission sub-system	-						
	DHW system type	Autonomous, coupled with heating: 50%; Autonomous, detached from heating: 36%; Centralized, coupled with heating: 13%; Centralized, detached from heating: 1%						
DHW generator	Unknown: 64%; Natural gas boiler: 23%; Electric boiler: 13%							
* 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.)								

Region:	Aosta Valley			Archetype code: RES_APPBLOCK_-1919_E-F_VAL
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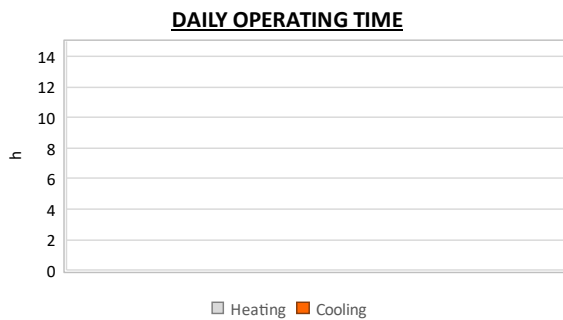
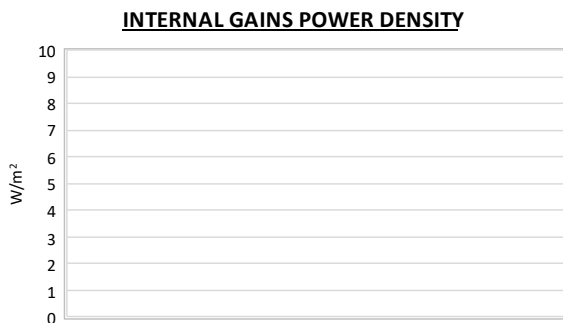
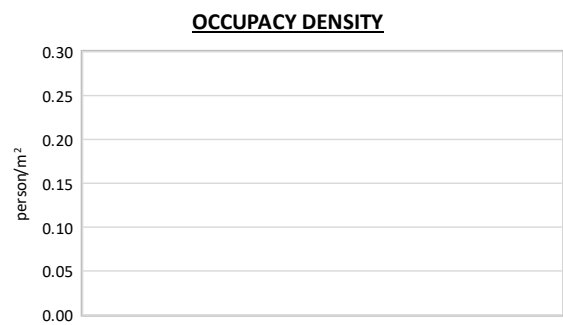
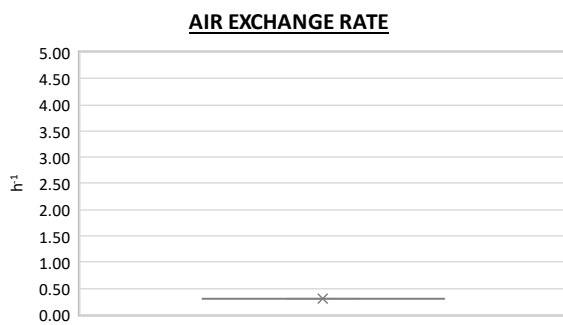
### Numerical variables – GEOMETRY



### Numerical variables – ENVELOPE



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

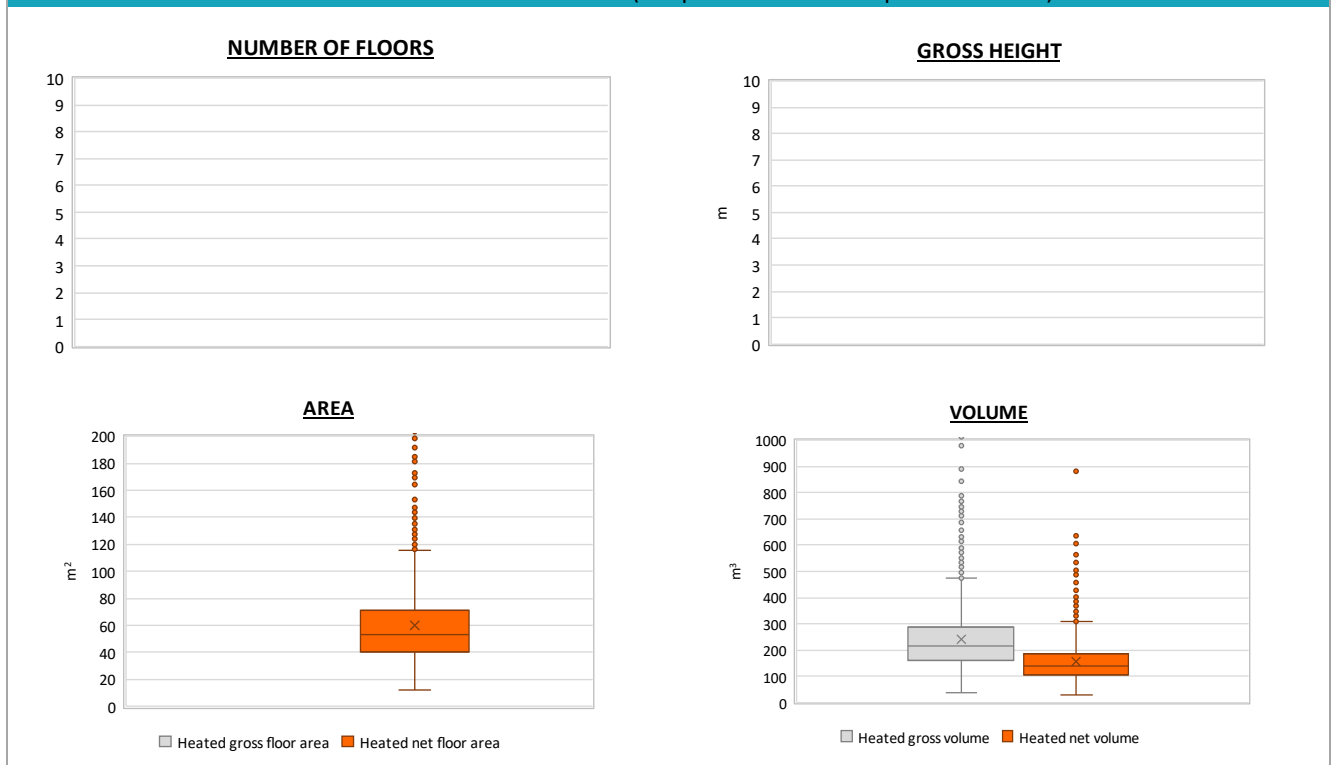


Region:	Aosta Valley			Archetype code: RES_APPBLOCK_-1919_E- F_VAL
Building category:	Residential buildings - Apartments (in multifamily blocks)			
Period of construction:	< 1919			
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ADDITIONAL DATA								
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
GEOMETRY: apartments	Inter-storey height	$H_n$	m	2.6	0.4	2.4	2.5	2.7
	Heated gross floor area	$A_{H,g}$	m <sup>2</sup>	-	-	-	-	-
	Heated net floor area	$A_{H,n}$	m <sup>2</sup>	59.8	29.2	40.5	53.5	70.7
	Heated gross volume	$V_{H,g}$	m <sup>3</sup>	242.3	126.4	161.5	213.8	287.0
	Heated net volume	$V_{H,n}$	m <sup>3</sup>	155.1	77.9	104.1	138.8	185.9
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	21.3	8.8	13.7	24.0	27.0
	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	5.5	0.7	5.3	5.5	5.8
	Temperature of DHW	$\vartheta_W$	°C	40.0	0.0	40.0	40.0	40.0
	DHW system power *	$P_{W,gen}$	kW	16.4	12.4	1.2	23.3	25.6

\* These values refer to the apartment scale

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



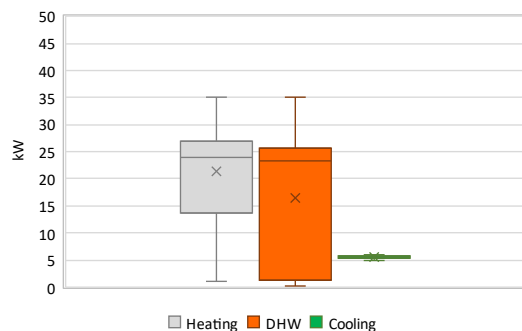
Region:	Aosta Valley			Archetype code: RES_APPBLOCK_-1919_E-F_VAL
Building category:	Residential buildings - Apartments (in multifamily blocks)			
Period of construction:	< 1919			
Climatic zone:	E-F	Number of records:	2278	

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

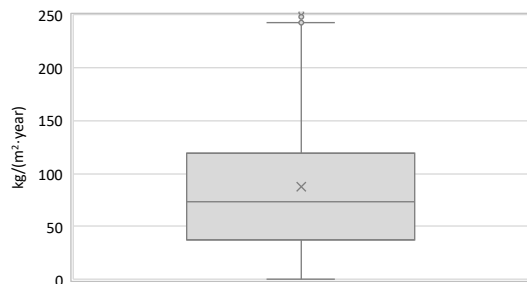
**DHW SUPPLY TEMPERATURE**



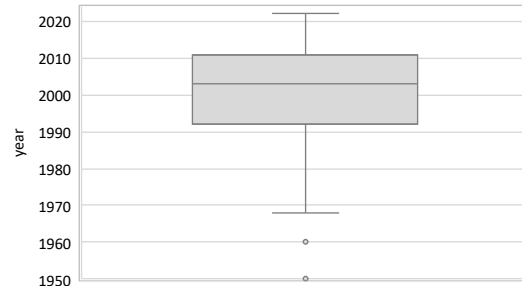
**SYSTEM POWER**



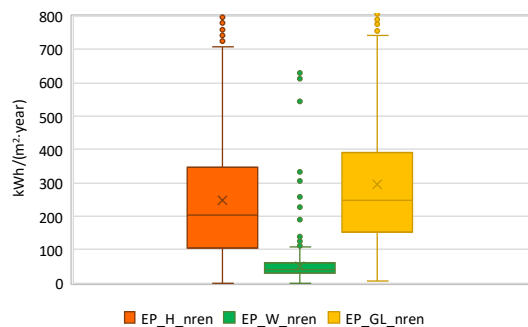
**CO<sub>2</sub> EMISSION**



**HEATING SYSTEM INSTALLATION YEAR**



**NON-RENEWABLE PRIMARY ENERGY USE**



**RENEWABLE PRIMARY ENERGY USE**

