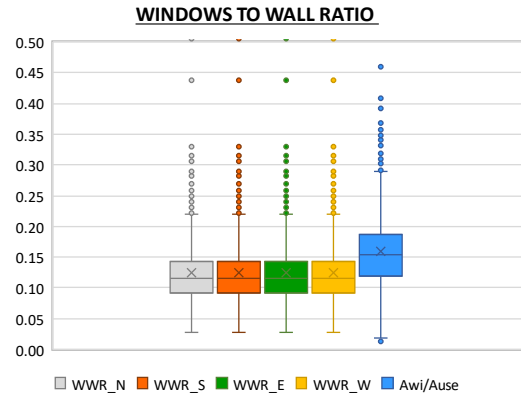
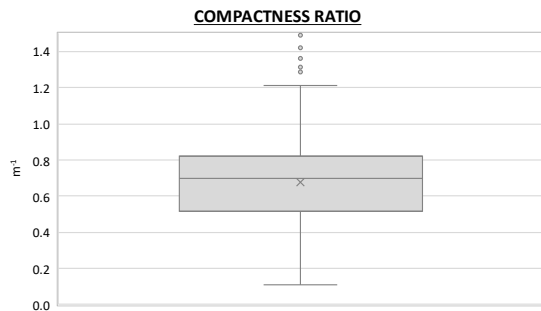


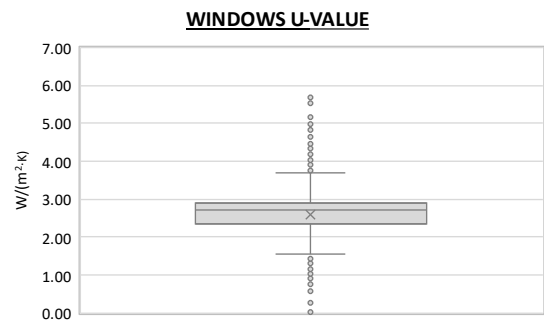
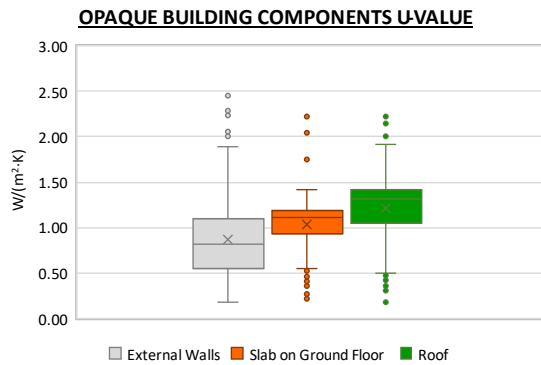
Region:	Aosta Valley						Archetype code: RES_APPBLOCK_1982-1991_E-F_VAL	
Building category:	Residential buildings - Apartments (in multifamily blocks)							
Period of construction:	1982 - 1991							
Climatic zone:	E-F		Number of records:		1540			
Description (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014): External walls: hollow brick masonry with thermal insulation (cod. MCV02) or solid brick masonry with thermal insulation (cod. MCV04). Roof slabs: reinforced concrete floor slab (cod. SOL04).							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>	0.68	0.23	0.52	0.70	0.82
	WWR – North orientation	$WWR_N$	-	0.12	0.05	0.09	0.12	0.14
	WWR – South orientation	$WWR_S$	-	0.12	0.05	0.09	0.12	0.14
	WWR – East orientation	$WWR_E$	-	0.12	0.05	0.09	0.12	0.14
	WWR – West orientation	$WWR_W$	-	0.12	0.05	0.09	0.12	0.14
	Window to useful floor area ratio	$A_{wi}/A_{\text{use}}$	-	0.16	0.06	0.12	0.15	0.19
ENVELOPE	Roof type	-						
	U-value of the roof **	$U_{fi,up}$	W/(m <sup>2</sup> ·K)	1.21	0.39	1.05	1.32	1.42
	External walls type	Hollow brick masonry: 60%; Solid Brick masonry: 30%; Masonry with local stones: 4%; Concrete wall: 3%; Unknown: 3%						
	U-value of the wall	$U_{wl}$	W/(m <sup>2</sup> ·K)	0.86	0.40	0.55	0.82	1.10
	Slab on ground floor type	-						
	U-value of the floor **	$U_{fi,lw}$	W/(m <sup>2</sup> ·K)	1.03	0.26	0.93	1.11	1.18
	Windows type	Double glazing, wooden frame: 85%; Double glazing, PVC frame: 9%; Single glazing, wooden frame: 4%; Triple glazing, wooden frame: 1%; Triple glazing, PVC frame: 1%						
	U-value of the windows	$U_W$	W/(m <sup>2</sup> ·K)	2.60	0.73	2.35	2.70	2.90
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	Centralized: 55%; Autonomous: 45%						
	Heating generator	Boiler (unknown type): 41%; Traditional Boiler: 28%; Condensing Boiler: 12%; Heat exchanger of district heating/cooling: 10%; Fireplace: 5%; Unknown: 3%; Air-source heat pump: 1%						
	Daily operating time of the heating system *	$t_H$	h	-				
	Energy carrier	Gas Oil: 50%; Natural Gas: 17%; LPG: 16%; Solid biomass: 14%; District heating: 4%						
	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, detached from heating: 46%; Autonomous, coupled with heating: 28%; Centralized, coupled with heating: 25%; Centralized, detached from heating: 1%						
	DHW generator	Unknown: 56%; Natural gas boiler: 24%; Electric boiler: 19%; Electric Heat Pump: 1%						
* 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.)								

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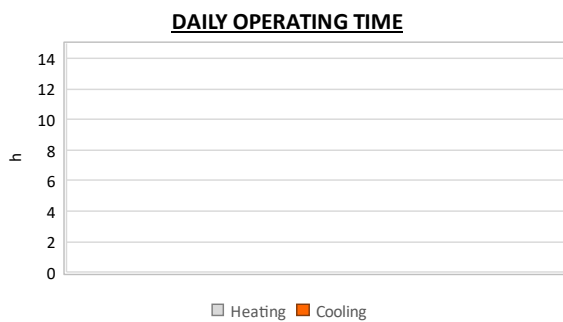
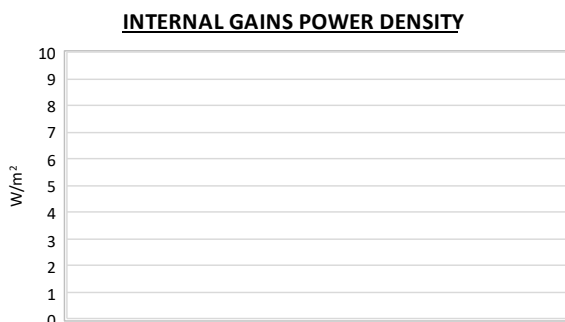
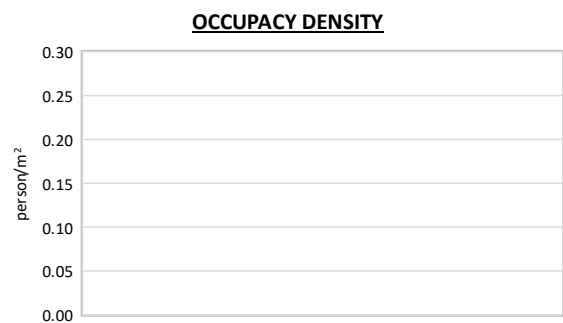
### Numerical variables – GEOMETRY



### Numerical variables – ENVELOPE



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

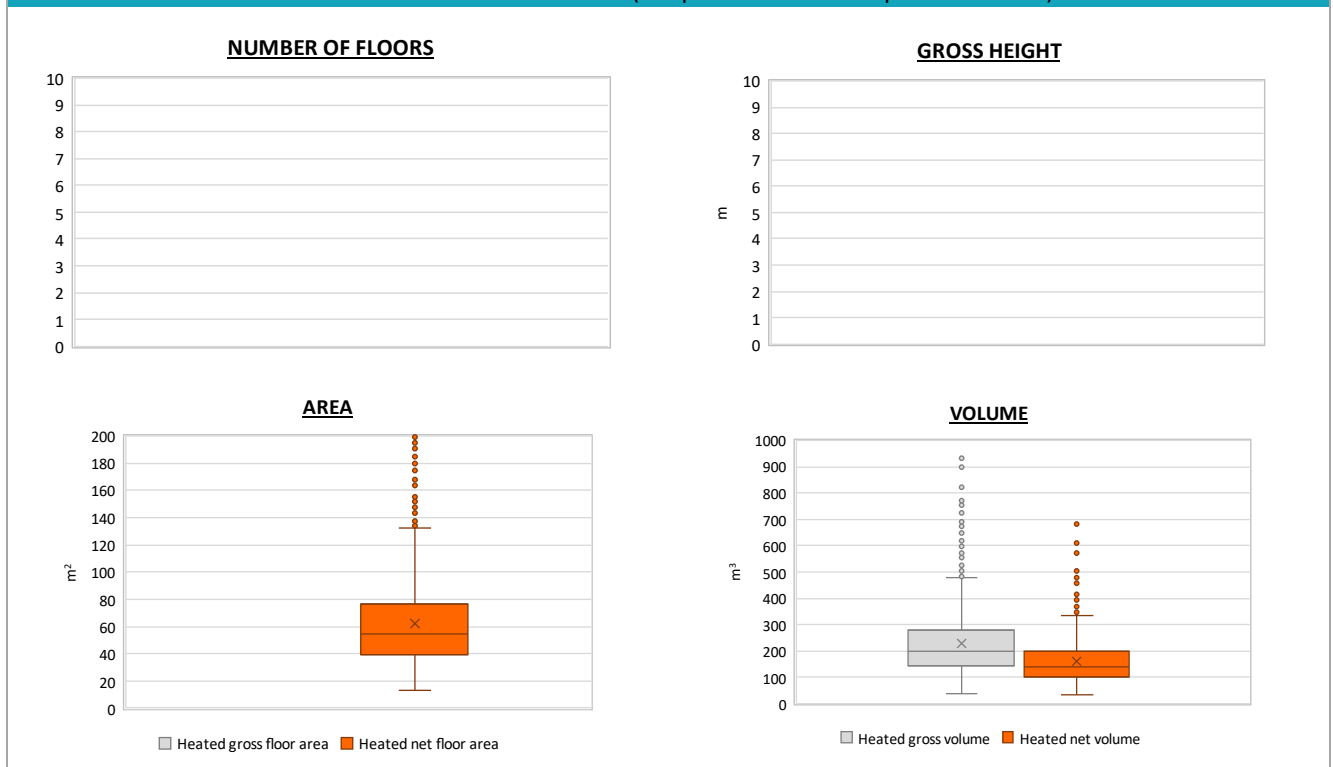


Region:	Aosta Valley			Archetype code: RES_APPBLOCK_1982- 1991_E-F_VAL
Building category:	Residential buildings - Apartments (in multifamily blocks)			
Period of construction:	1982 - 1991			
Climatic zone:	E-F	Number of records:	1540	

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	0.3	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>	62.2	32.3	39.6	54.9	76.9
	Heated gross volume	$V_{H,g}$	m <sup>3</sup>	226.4	122.0	143.9	197.9	279.3
	Heated net volume	$V_{H,n}$	m <sup>3</sup>	159.6	86.9	101.0	140.4	199.2
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	22.4	9.2	15.0	24.0	30.0
	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	4.6	2.1	3.5	3.8	4.9
	Temperature of DHW	$\vartheta_W$	°C	40.0	0.0	40.0	40.0	40.0
	DHW system power *	$P_{W,gen}$	kW	11.6	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)



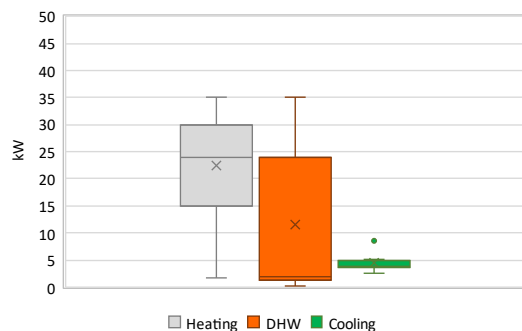
Region:	Aosta Valley	Archetype code: RES_APPBLOCK_1982- 1991_E-F_VAL
Building category:	Residential buildings - Apartments (in multifamily blocks)	
Period of construction:	1982 - 1991	
Climatic zone:	E-F	
Number of records:		1540

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

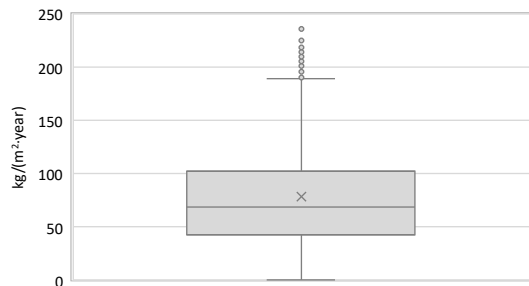
**DHW SUPPLY TEMPERATURE**



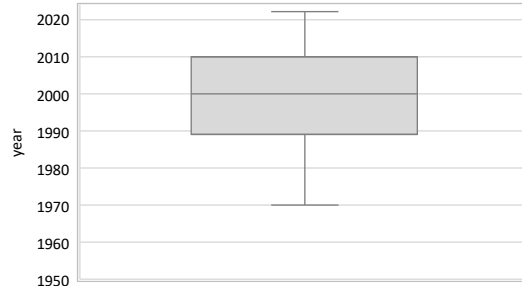
**SYSTEM POWER**



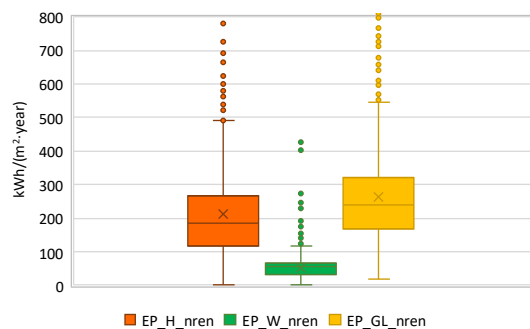
**CO<sub>2</sub> EMISSION**



**HEATING SYSTEM INSTALLATION YEAR**



**NON-RENEWABLE PRIMARY ENERGY USE**



**RENEWABLE PRIMARY ENERGY USE**

