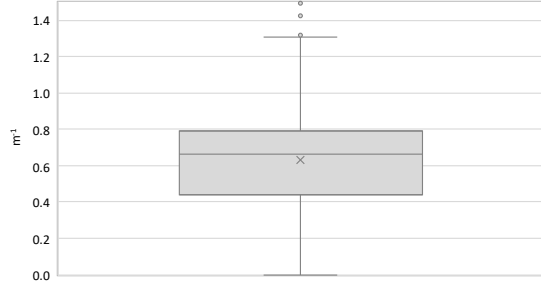


Region:	Aosta Valley						Archetype code: RES_APPBLOCK_1972-1981_E-F_VAL	
Building category:	Residential buildings - Apartments (in multifamily blocks)							
Period of construction:	1972 - 1981							
Climatic zone:	E-F		Number of records:		3190			
Description (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014): External walls: hollow brick masonry with thermal insulation (cod. MCV02). 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 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	0.63	0.24	0.44	0.66	0.79
	WWR – North orientation	WWR_N	-	0.13	0.06	0.10	0.12	0.15
	WWR – South orientation	WWR_S	-	0.13	0.06	0.10	0.12	0.15
	WWR – East orientation	WWR_E	-	0.13	0.06	0.10	0.12	0.15
	WWR – West orientation	WWR_W	-	0.13	0.06	0.10	0.12	0.15
	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)	1.23	0.49	0.99	1.32	1.46
External walls type		Hollow brick masonry: 64%; Solid Brick masonry: 25%; Unknown: 4%; Concrete wall: 4%; Masonry with local stones: 2%; Prefabricated panels: 1%						
U-value of the wall		U_{wl}	W/(m ² ·K)	0.98	0.39	0.76	1.01	1.21
Slab on ground floor type		-						
U-value of the floor **		$U_{fi,lw}$	W/(m ² ·K)	1.08	0.23	1.02	1.11	1.18
Windows type		Double glazing, wooden frame: 73%; Single glazing, wooden frame: 17%; Double glazing, PVC frame: 8%; Triple glazing, wooden frame: 2%						
U-value of the windows		U_W	W/(m ² ·K)	2.80	0.97	2.27	2.75	3.05
GAINS and VENTILATION	Shading system type	-						
	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%						
THERMAL SYSTEMS	Air exchange rate *	n	h ⁻¹	0.30	0.00	0.30	0.30	0.30
	Heating system type	Centralized: 63%; Autonomous: 37%						
	Heating generator	Boiler (unknown type): 44%; Traditional Boiler: 25%; Heat exchanger of district heating/cooling: 14%; Condensing Boiler: 9%; Fireplace: 4%; Unknown: 3%; Air-source heat pump: 1%						
	Daily operating time of the heating system *	t_H	h	-				
	Energy carrier	Gas Oil: 53%; Natural Gas: 19%; Solid biomass: 14%; LPG: 9%; District heating: 5%						
	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	Centralized, coupled with heating: 38%; Autonomous, detached from heating: 34%; Autonomous, coupled with heating: 25%; Centralized, detached from heating: 3%						
DHW generator	Unknown: 62%; Natural gas boiler: 25%; Electric boiler: 11%; Electric Heat Pump: 2%							
* 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.)								

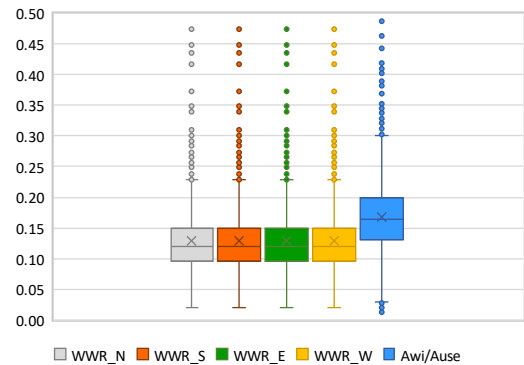
Region:	Aosta Valley			Archetype code: RES_APPBLOCK_1972- 1981_E-F_VAL
Building category:	Residential buildings - Apartments (in multifamily blocks)			
Period of construction:	1972 - 1981			
Climatic zone:	E-F	Number of records:	3190	

Numerical variables – GEOMETRY

COMPACTNESS RATIO

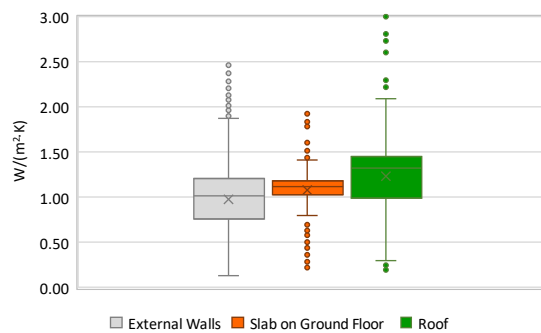


WINDOWS TO WALL RATIO

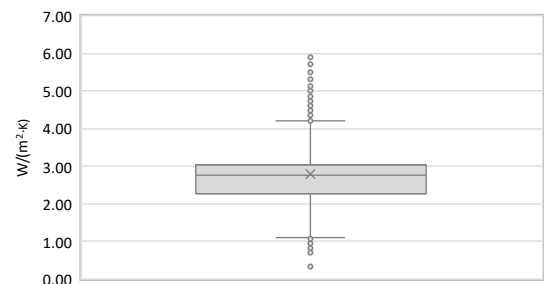


Numerical variables – ENVELOPE

OPAQUE BUILDING COMPONENTS U-VALUE

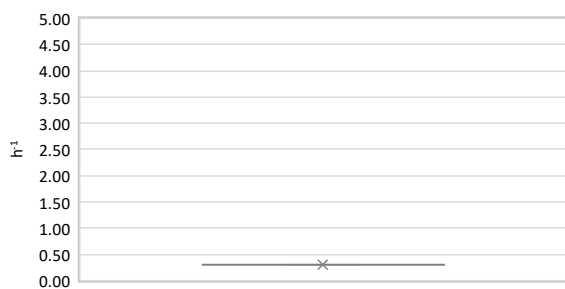


WINDOWS U-VALUE

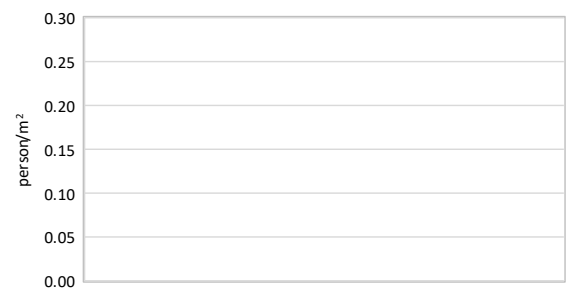


Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE

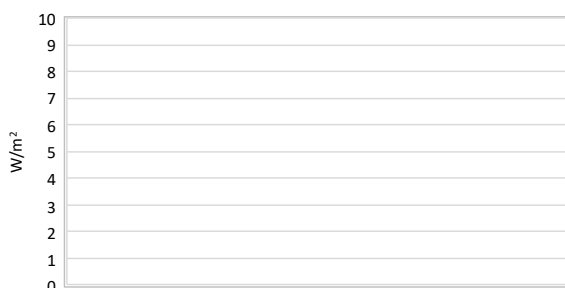
AIR EXCHANGE RATE



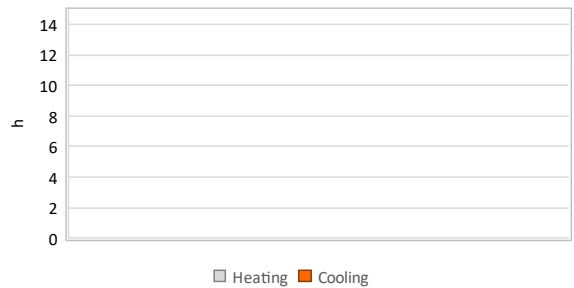
OCCUPANCY DENSITY



INTERNAL GAINS POWER DENSITY



DAILY OPERATING TIME

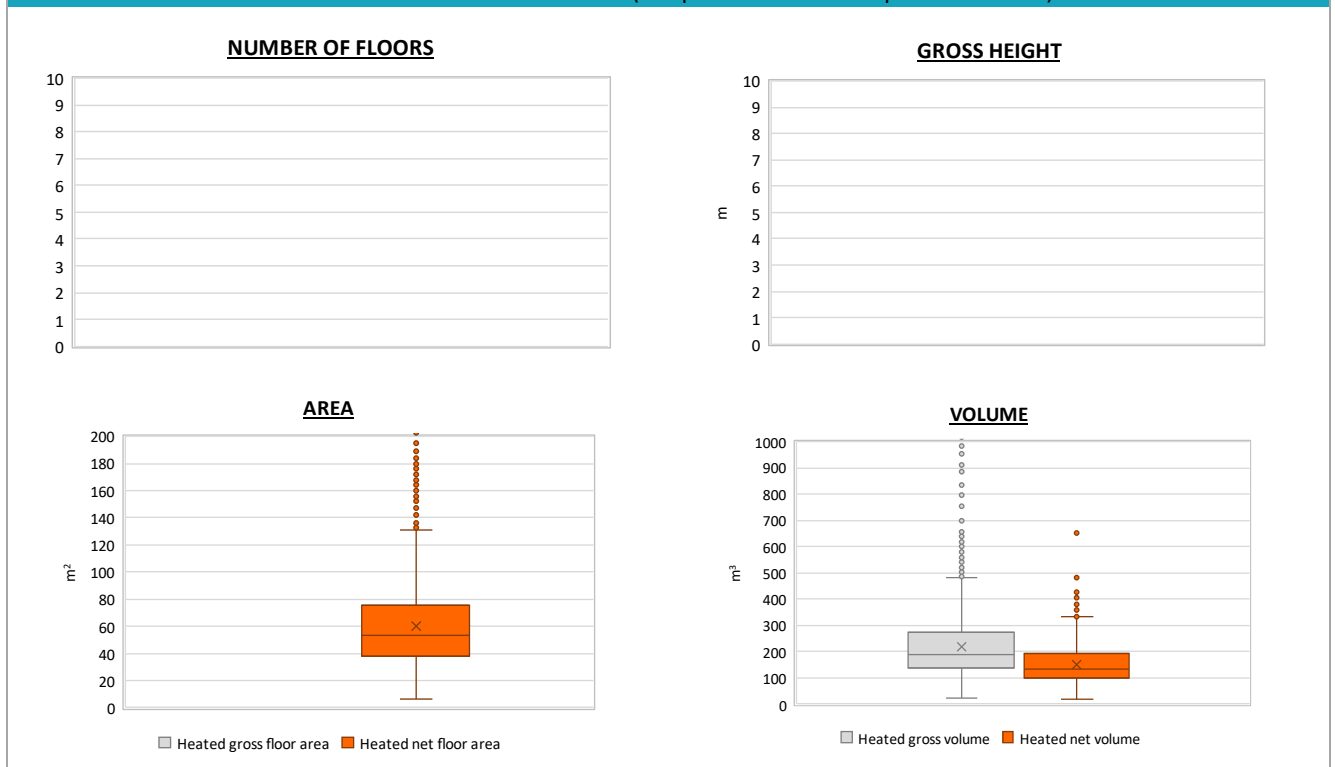


Region:	Aosta Valley			Archetype code: RES_APPBLOCK_1972- 1981_E-F_VAL
Building category:	Residential buildings - Apartments (in multifamily blocks)			
Period of construction:	1972 - 1981			
Climatic zone:	E-F	Number of records:	3190	

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 ²	-	-	-	-	-
	Heated net floor area	$A_{H,n}$	m ²	59.8	30.8	38.1	53.1	75.3
	Heated gross volume	$V_{H,g}$	m ³	216.9	119.1	134.4	188.4	273.0
	Heated net volume	$V_{H,n}$	m ³	150.7	71.7	98.7	134.0	191.9
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	22.0	9.6	13.6	24.2	29.7
	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	4.8	1.9	3.5	5.2	5.4
	Temperature of DHW	ϑ_W	°C	40.0	0.0	40.0	40.0	40.0
	DHW system power *	$P_{W,gen}$	kW	11.9	12.6	1.2	2.0	24.4

* These values refer to the apartment scale

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



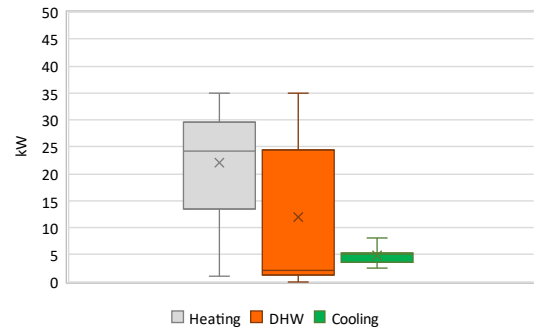
Region:	Aosta Valley	Archetype code: RES_APPBLOCK_1972- 1981_E-F_VAL
Building category:	Residential buildings - Apartments (in multifamily blocks)	
Period of construction:	1972 - 1981	
Climatic zone:	E-F	
Number of records:		3190

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

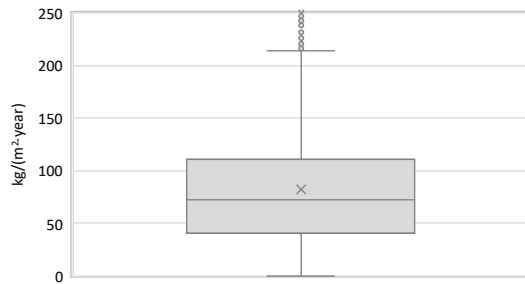
DHW SUPPLY TEMPERATURE



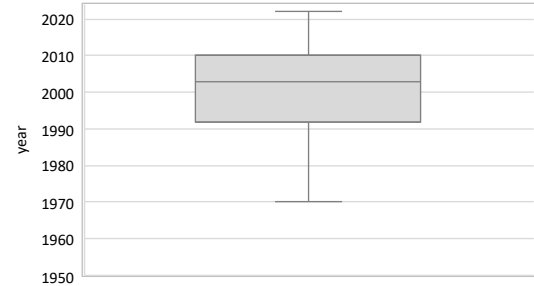
SYSTEM POWER



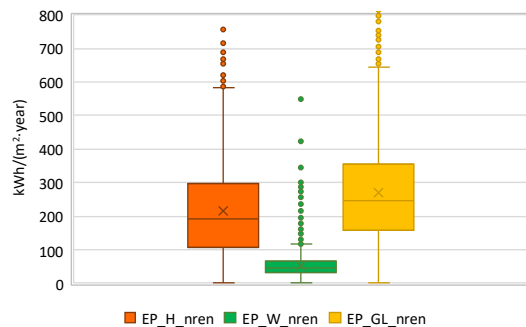
CO₂ EMISSION



HEATING SYSTEM INSTALLATION YEAR



NON-RENEWABLE PRIMARY ENERGY USE



RENEWABLE PRIMARY ENERGY USE

