

Region:	Aosta Valley						Archetype code: RES_SINGLE_1919-1945_E-F_VAL	
Building category:	Residential buildings - Single family houses							
Period of construction:	1919 - 1945							
Climatic zone:	E-F	Number of records:		255				
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: pitched wooden roof (cod. CIN05).							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>	89.8	76.5	52.7	71.0	98.7
	Heated gross volume	$V_{H,g}$	m <sup>3</sup>	364.4	291.2	206.2	294.4	403.1
	Heated net volume	$V_{H,n}$	m <sup>3</sup>	243.6	229.2	131.4	197.1	258.9
	Compactness ratio	$A_{\text{env}}/V_{H,g}$	m <sup>-1</sup>	0.84	0.24	0.69	0.83	0.99
	WWR – North orientation	$WWR_N$	-	0.09	0.04	0.06	0.08	0.11
	WWR – South orientation	$WWR_S$	-	0.09	0.04	0.06	0.08	0.11
	WWR – East orientation	$WWR_E$	-	0.09	0.04	0.06	0.08	0.11
	WWR – West orientation	$WWR_W$	-	0.09	0.04	0.06	0.08	0.11
	Window to useful floor area ratio	$A_{wi}/A_{\text{use}}$	-	0.15	0.05	0.11	0.14	0.18
ENVELOPE	Roof type	-						
	U-value of the roof **	$U_{fi,up}$	W/(m <sup>2</sup> ·K)	0.61	0.65	0.26	0.37	0.51
	External walls type	Masonry with local stones: 50%; Solid Brick masonry: 35%; Hollow brick masonry: 8%; Unknown: 5%; Concrete wall: 2%						
	U-value of the wall	$U_{wi}$	W/(m <sup>2</sup> ·K)	1.17	0.72	0.46	1.14	1.86
	Slab on ground floor type	-						
	U-value of the floor **	$U_{fi,lw}$	W/(m <sup>2</sup> ·K)	0.97	0.58	0.45	0.97	1.40
	Windows type	Double glazing, wooden frame: 76%; Single glazing, wooden frame: 18%; Double glazing, PVC frame: 4%; Triple glazing, wooden frame: 2%						
	U-value of the windows	$U_W$	W/(m <sup>2</sup> ·K)	2.62	1.10	1.71	2.52	3.14
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%						
	Air exchange rate *	$n$	h <sup>-1</sup>	0.30	0.00	0.30	0.30	0.30
THERMAL SYSTEMS	Heating system type	Autonomous: 100%						
	Heating generator	Boiler (unknown type): 47%; Fireplace: 27%; Traditional Boiler: 14%; Condensing Boiler: 6%; Unknown: 5%; Air-source heat pump: 1%						
	Daily operating time of the heating system *	$t_H$	h	-				
	Energy carrier	Solid biomass: 35%; LPG: 26%; Natural Gas: 26%; Gas Oil: 12%						
	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: 58%; Autonomous, detached from heating: 39%; Centralized, coupled with heating: 3%						
	DHW generator	Unknown: 74%; Natural gas boiler: 17%; Electric boiler: 8%; Electric Heat Pump: 1%						
* These values are derived from UNI EN ISO Standards; ** U-values of the upper slab face the external environment, and the lower slab is in contact with the ground								

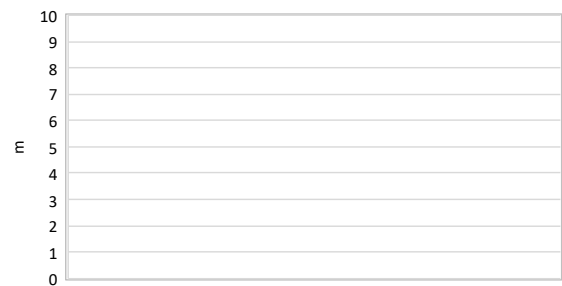
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### Numerical variables – GEOMETRY

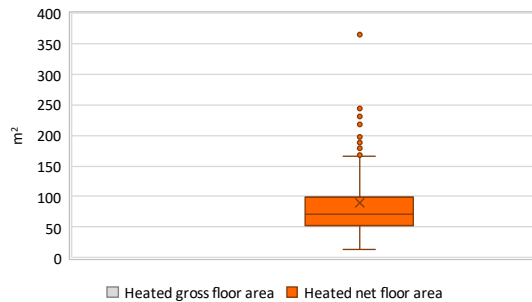
**DAILY OPERATING TIME**



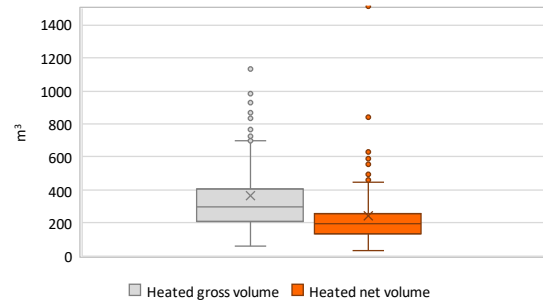
**GROSS HEIGHT**



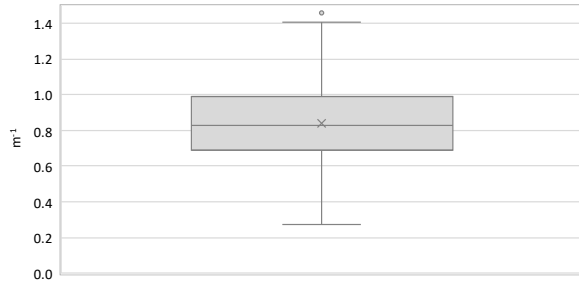
**AREA**



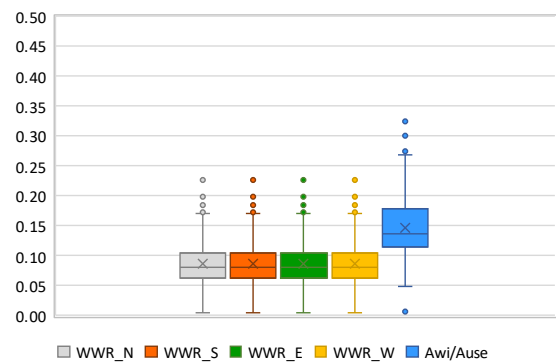
**VOLUME**



**COMPACTNESS RATIO**

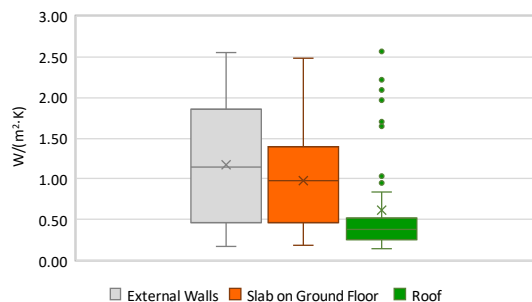


**WINDOWS TO WALL RATIO**

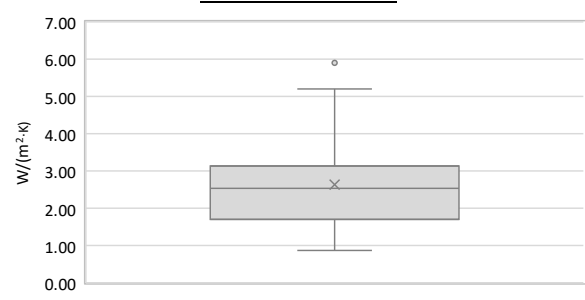


### Numerical variables – ENVELOPE

**OPAQUE BUILDING COMPONENTS U-VALUE**



**WINDOWS U-VALUE**

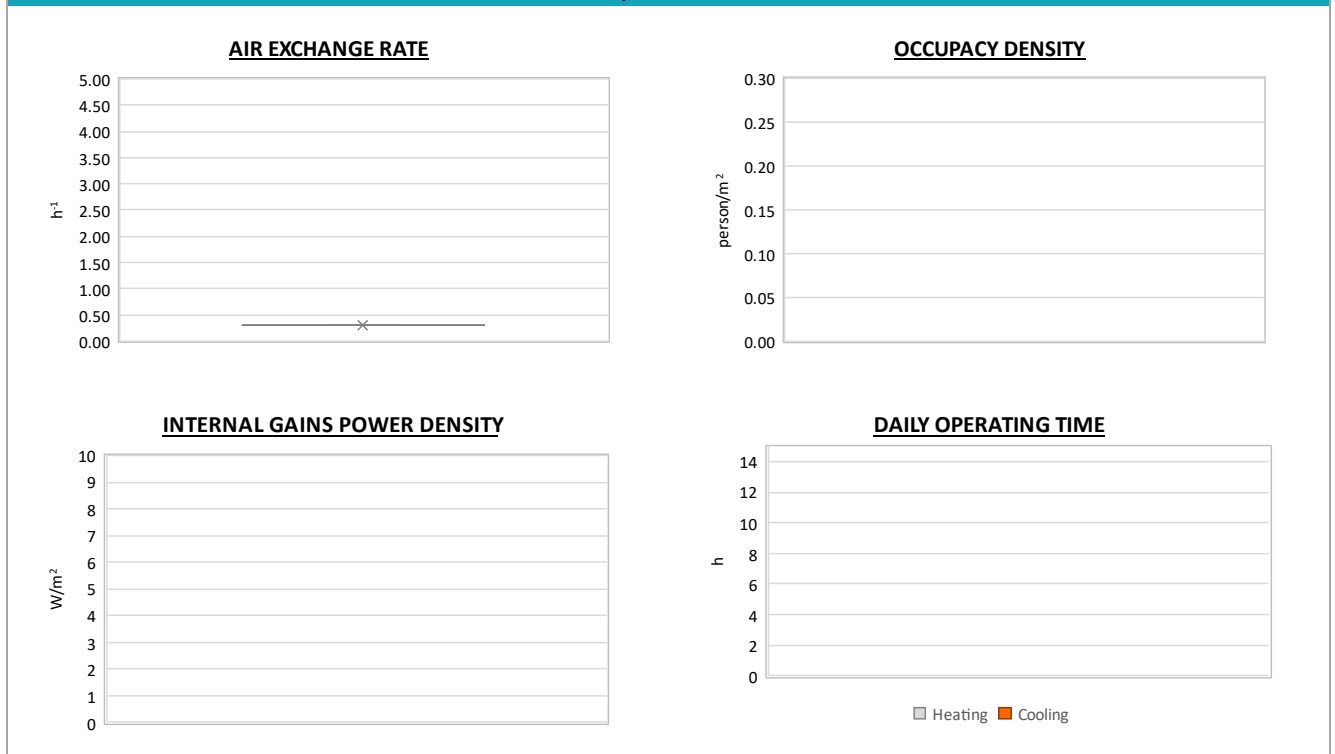


The data can be used for analysis, modeling, and research purposes, as long as it remains unaltered in its original form. Users are free to publish results based on the data, provided they credit the original source.

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ADDITIONAL DATA								
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
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	10.5	11.3	24.0	27.4
	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	-	-	-	-	-
	Temperature of DHW	$\vartheta_w$	°C	40.0	0.0	40.0	40.0	40.0
	DHW system power	$P_{W,gen}$	kW	17.5	12.9	1.5	23.6	26.1
* This value refers to the building scale								

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



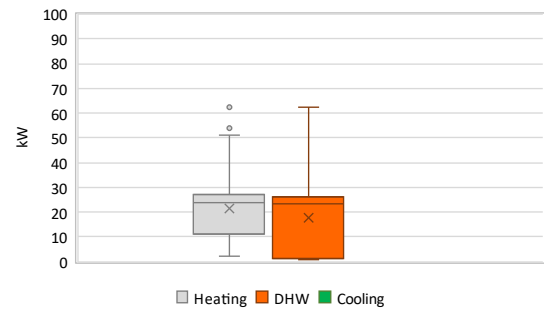
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### Additional data: other numerical variables that are not included in the archetype

**DHW SUPPLY TEMPERATURE**



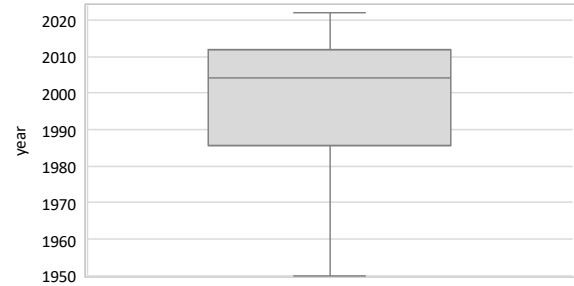
**SYSTEM POWER**



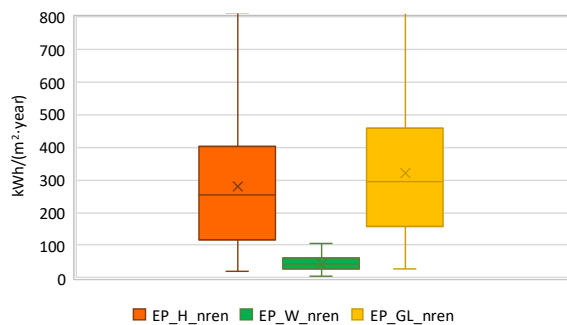
**CO<sub>2</sub> EMISSION**



**HEATING SYSTEM INSTALLATION YEAR**



**NON-RENEWABLE PRIMARY ENERGY USE**



**RENEWABLE PRIMARY ENERGY USE**

