Region:	Aosta Valley (Aosta, Quart, Saint-Christophe, and Sarre)			**Archetype code:** RES_SINGLE_1946-1961_E_VAL
Building category:	Residential buildings - Single family houses			
Period of construction:	1946 - 1961			
Climatic zone:	E	**Number of records:**	39	

Description (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014):

External walls: hollow brick masonry with air gap (cod. MCV01) 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	$A_{footprint}$	m^2	-	-	-	-	-
	Heated gross floor area	$A_{H;g}$	m^2	-	-	-	-	-
	Heated net floor area	$A_{H;n}$	m^2	100.5	69.7	64.1	83.5	107.6
	Heated gross volume	$V_{H;g}$	m^3	388.7	248.1	246.2	327.0	460.5
	Heated net volume	$V_{H;n}$	m^3	277.1	178.5	181.9	230.2	348.5
	Compactness ratio	$A_{env}/V_{H;g}$	m^{-1}	0.71	0.30	0.45	0.77	0.95
	WWR – North orientation	WWR_N	-	0.12	0.05	0.08	0.11	0.16
	WWR – South orientation	WWR_S	-	0.12	0.05	0.08	0.11	0.16
	WWR – East orientation	WWR_E	-	0.12	0.05	0.08	0.11	0.16
	WWR – West orientation	WWR_W	-	0.12	0.05	0.08	0.11	0.16
	Window to useful floor area ratio	A_{wi}/A_{use}	-	0.16	0.05	0.12	0.17	0.18
ENVELOPE	Roof type	-						
	U-value of the roof **	$U_{fl;up}$	W/(m^2·K)	0.94	0.75	0.25	0.78	1.51
	External walls type	Hollow brick masonry: 41%; Solid Brick masonry: 36%; Masonry with local stones: 15%; Concrete wall: 5%; Unknown: 3%						
	U-value of the wall	U_{wl}	W/(m^2·K)	1.02	0.48	0.74	0.94	1.25
	Slab on ground floor type	-						
	U-value of the floor **	$U_{fl;lw}$	W/(m^2·K)	0.99	0.42	0.63	1.18	1.28
	Windows type	Double glazing, wooden frame: 50%; Double glazing, PVC frame: 38%; Single glazing, wooden frame: 13%						
	U-value of the windows	U_W	W/(m^2·K)	2.56	1.00	1.72	2.65	2.93
	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	Autonomous: 100%						
	Heating generator	Boiler (unknown type): 57%; Traditional Boiler: 19%; Fireplace: 11%; Unknown: 4%; Air-source heat pump: 3%; Condensing Boiler: 3%; Heat exchanger of district heating/cooling: 3%						
	Daily operating time of the heating system *	t_H	h	14.0	0.0	14.0	14.0	14.0
	Energy carrier	Natural Gas: 46%; Gas Oil: 26%; LPG: 17%; Solid biomass: 11%						
	Heating emission sub-system	-						
	Cooling system type	Absent: 95%; Air-cooled chiller: 5%						
	Daily operating time of the cooling system *	t_C	h	-	-	-	-	-
	Cooling emission sub-system	-						
	DHW system type	Autonomous, detached from heating: 49%; Autonomous, coupled with heating: 46%; Centralized, coupled with heating: 5%						
	DHW generator	Unknown: 67%; Natural gas boiler: 18%; Electric boiler: 13%; Electric Heat Pump: 3%						

* 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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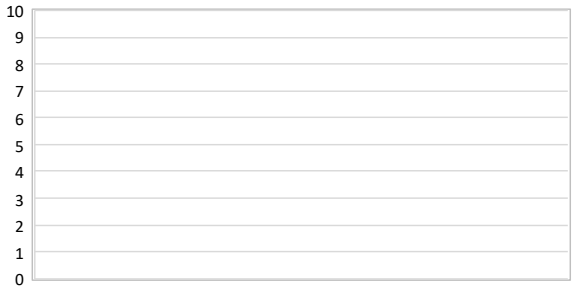
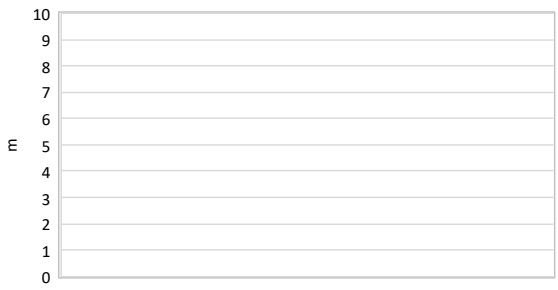
Climatic zone:	E	**Number of records:**	39	

Numerical variables – GEOMETRY

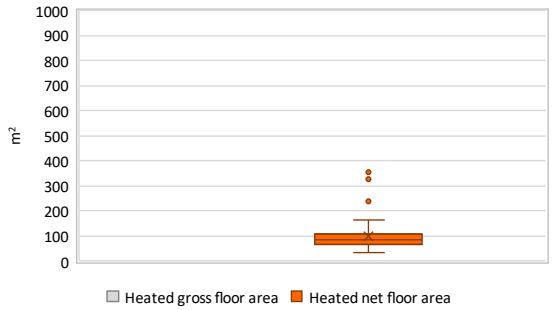
NUMBER OF FLOORS



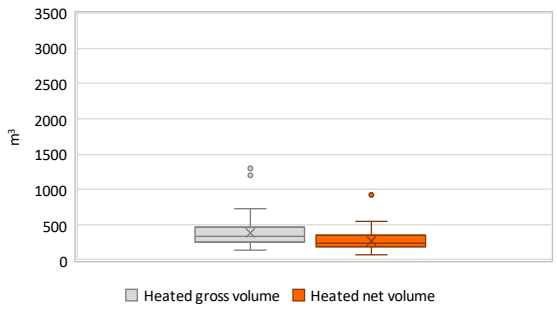
GROSS HEIGHT



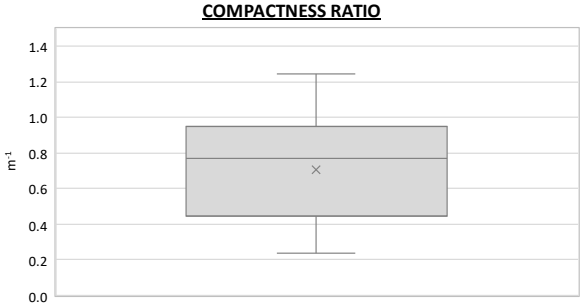
AREA



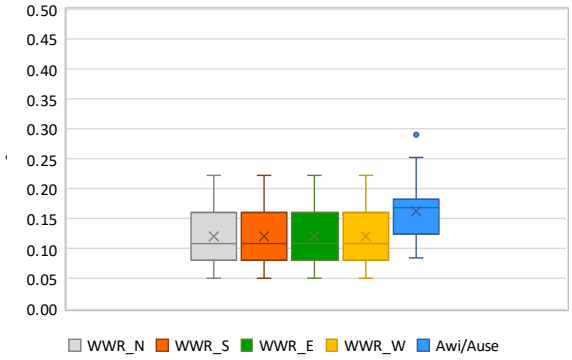
VOLUME



COMPACTNESS RATIO

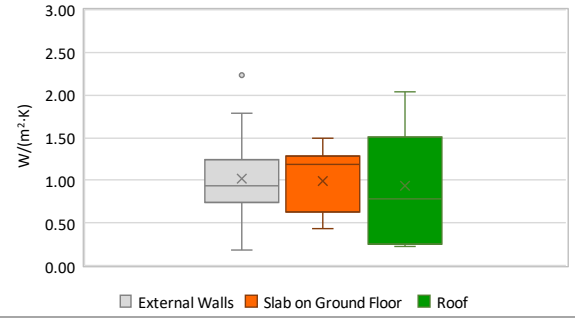


WINDOWS TO WALL RATIO

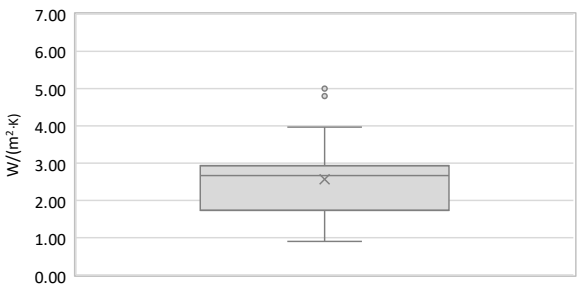


Numerical variables – ENVELOPE

OPAQUE BUILDING COMPONENTS U-VALUE



WINDOWS U-VALUE



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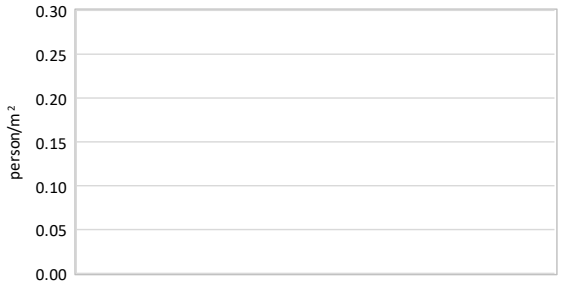
ADDITIONAL DATA

	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
THERMAL SYSTEMS	Heating efficiency or *COP*	$\eta_{H;gen}$ or $COP_{H;gen}$	-	This value has to be retrieved from suitable datasheets				
	Total heating power	$P_{H;gen}$	kW	87.7	112.0	23.5	32.0	144.0
	Cooling efficiency or *EER*	$\eta_{C;gen}$ or $EER_{C;gen}$	-	This value has to be retrieved from suitable datasheets				
	Total cooling power	$P_{C;gen}$	kW	4.0	2.1	3.2	4.0	4.7
	Temperature of DHW	ϑ_W	°C	40.0	0.0	40.0	40.0	40.0
	DHW system power	$P_{W;gen}$	kW	16.1	14.5	1.5	14.0	28.0
	* This value refers to the building scale							

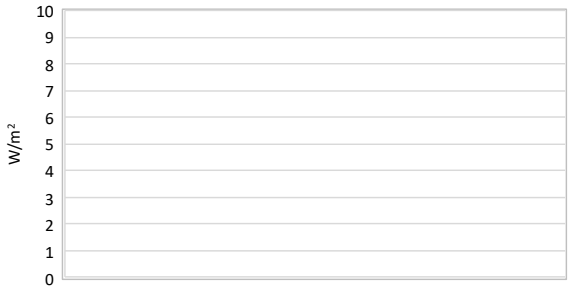
Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE

AIR EXCHANGE RATE

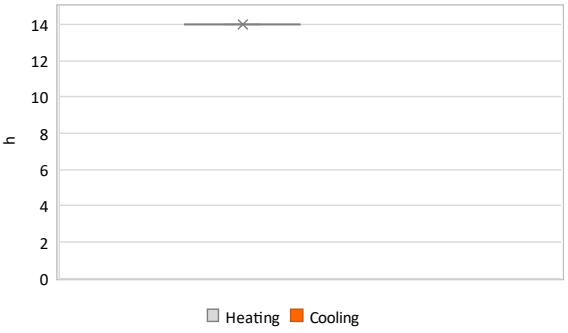
OCCUPACY DENSITY



INTERNAL GAINS POWER DENSITY



DAILY OPERATING TIME



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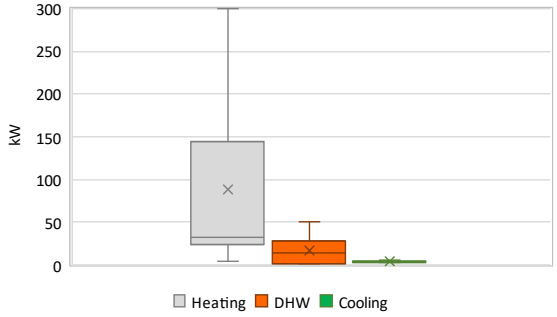
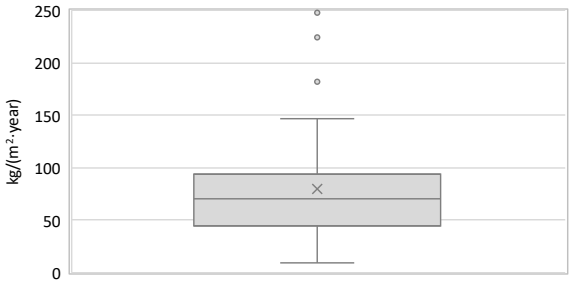
Additional data: other numerical variables that are not included in the archetype

DHW SUPPLY TEMPERATURE

SYSTEM POWER

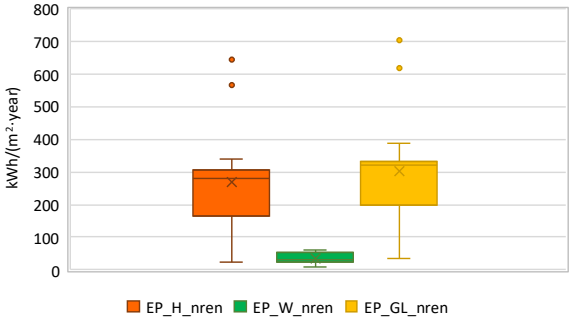


CO_2 EMISSION



HEATING SYSTEM INSTALLATION YEAR

NON-RENEWABLE PRIMARY ENERGY USE



RENEWABLE PRIMARY ENERGY USE