Region:	Aosta Valley (Aosta, Quart, Saint-Christophe, and Sarre)		**Archetype code:** EDUC_1945-_E_VAL
Building category:	Non-residential buildings – Educational buildings		
Period of construction:	< 1945		
Climatic zone:	E	**Number of records:** 5	

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

External walls: 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	$A_{footprint}$	m²	-	-	-	-	-
	Heated gross floor area	$A_{H;g}$	m²	-	-	-	-	-
	Heated net floor area	$A_{H;n}$	m²	3035.9	1780.5	1621.5	2514.9	3891.8
	Heated gross volume	$V_{H;g}$	m³	17480.2	10034.3	9501.1	14854.7	22833.2
	Heated net volume	$V_{H;n}$	m³	11811.8	8014.3	4677.9	10803.1	16031.7
	Compactness ratio	$A_{env}/V_{H;g}$	m⁻¹	0.36	0.08	0.31	0.35	0.43
	WWR – North orientation	WWR_N	-	0.18	0.08	0.19	0.20	0.23
	WWR – South orientation	WWR_S	-	0.18	0.08	0.19	0.20	0.23
	WWR – East orientation	WWR_E	-	0.18	0.08	0.19	0.20	0.23
	WWR – West orientation	WWR_W	-	0.18	0.08	0.19	0.20	0.23
	Window to useful floor area ratio	A_{wi}/A_{use}	-	0.18	0.08	0.17	0.18	0.24
ENVELOPE	Roof type	-						
	U-value of the roof **	$U_{fl;up}$	W/(m²·K)	1.26	0.83	0.53	1.64	1.77
	External walls type	Solid Brick masonry: 80%; Masonry with local stones: 20%						
	U-value of the wall	U_{wl}	W/(m²·K)	1.20	0.34	0.97	1.02	1.29
	Slab on ground floor type	-						
	U-value of the floor **	$U_{fl;lw}$	W/(m²·K)	1.30	0.72	1.20	1.60	1.71
	Windows type	Double glazing, wooden frame: 80%; Double glazing, PVC frame: 20%						
	U-value of the windows	U_W	W/(m²·K)	3.29	0.39	3.01	3.18	3.34
	Shading system type	-						
GAINS and VENTILATION	Occupancy density *	O_C	person/m²	UNI EN 16798-1 - Table A.19				
	Lighting power density *	W_L	W/m²	UNI EN 16798-1 - A.8.3				
	Equipment power density *	W_A	W/m²	UNI EN 16798-1 - A.8.3				
	Type of ventilation	-						
	Air exchange rate *	n	h⁻¹	-	-	-	-	-
THERMAL SYSTEMS	Heating system type	Autonomous: 100%						
	Heating generator	Boiler (unknown type): 60%; Heat exchanger of district heating/cooling: 40%						
	Daily operating time of the heating system *	t_H	h	14.0	0.0	14.0	14.0	14.0
	Energy carrier	Natural Gas: 80%; Gas Oil: 20%						
	Heating emission sub-system	-						
	Cooling system type	Absent: 80%; Water-cooled chiller: 20%						
	Daily operating time of the cooling system *	t_C	h	-	-	-	-	-
	Cooling emission sub-system	-						
	DHW system type	Autonomous, detached from heating: 80%; Centralized, coupled with heating: 20%						
	DHW generator	Unknown: 100%						

* 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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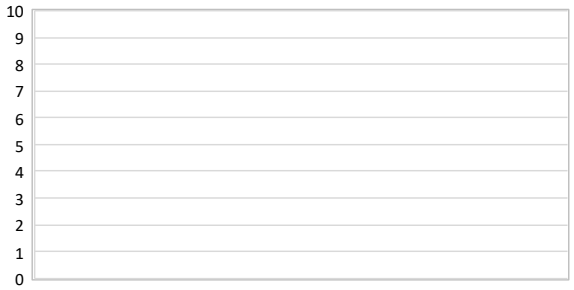
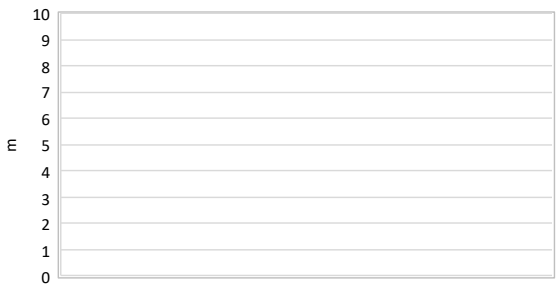
Climatic zone:	E	**Number of records:**	5	

Numerical variables – GEOMETRY

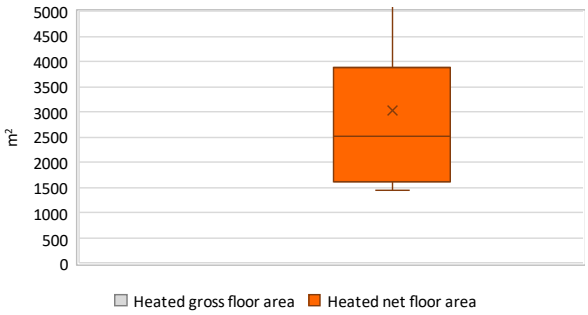
NUMBER OF FLOORS



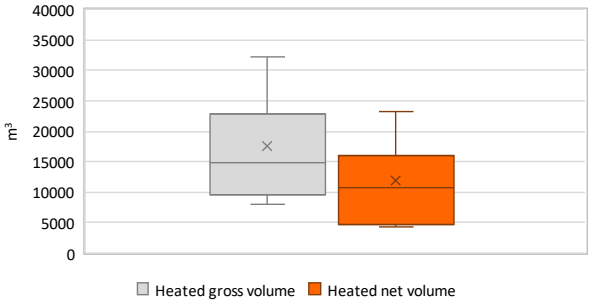
GROSS HEIGHT



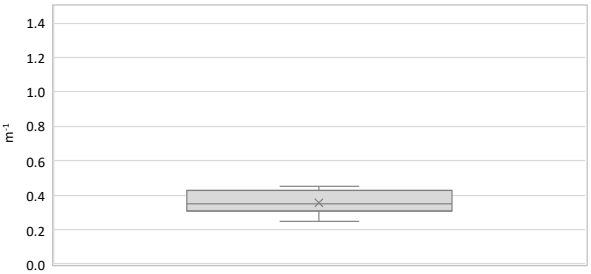
AREA



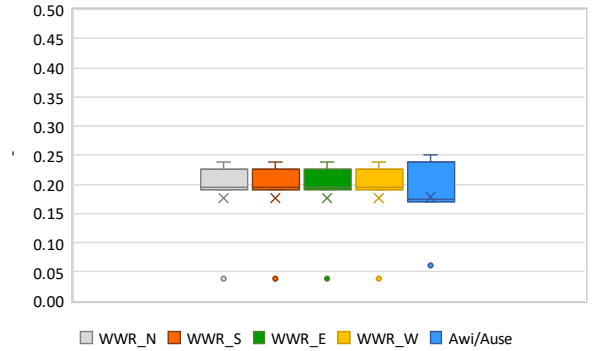
VOLUME



COMPACTNESS RATIO



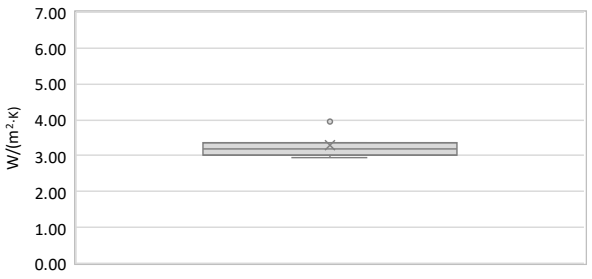
WINDOWS TO WALL RATIO



Numerical variables – ENVELOPE

OPAQUE BUILDING COMPONENTS UVALUE

WINDOWS U-VALUE



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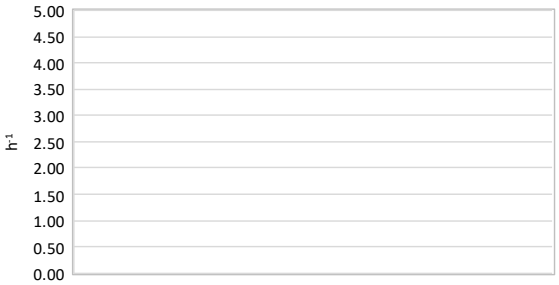
Climatic zone:	E	**Number of records:**	5	

ADDITIONAL DATA

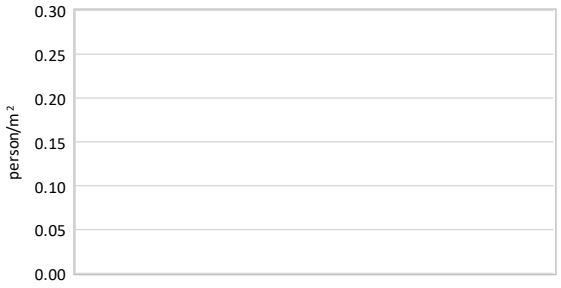
	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
THERMAL SYSTEMS	Heating efficiency or *COP*	$\eta_{H;gen}$ or $COP_{H;gen}$	-	This value has to be retrieved from suitable datasheets				
	Total heating power	$P_{H;gen}$	kW	-	-	-	-	-
	Cooling 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	-	-	-	-	-
	Temperature of DHW	ϑ_W	°C	40.0	0.0	40.0	40.0	40.0
	DHW system power	$P_{W;gen}$	kW	9.1	5.2	5.3	7.8	11.5
	* This value refers to the building scale							

Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE

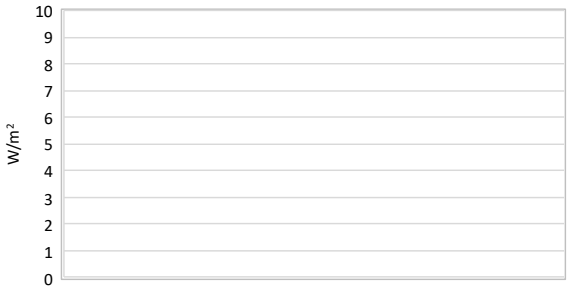
AIR CHANGE RATE



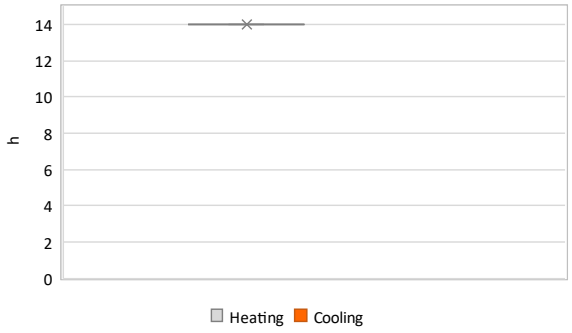
OCCUPACY DENSITY



INTERNAL GAINS POWER DENSITY



DAILY OPERATING TIME



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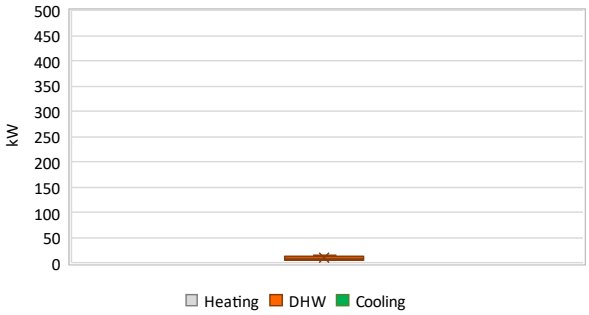
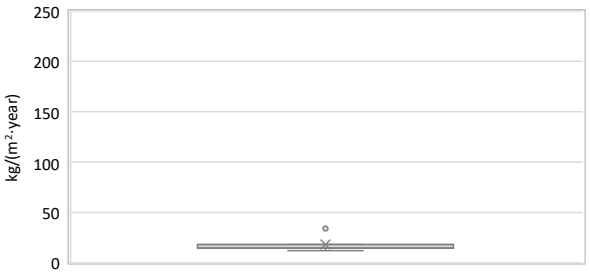
Additional data: other numerical variables that are not included in the archetype

DHW SUPPLY TEMPERATURE

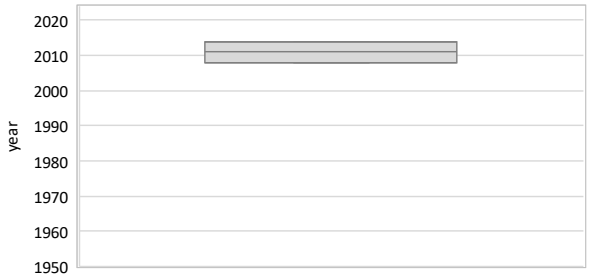
SYSTEM POWER



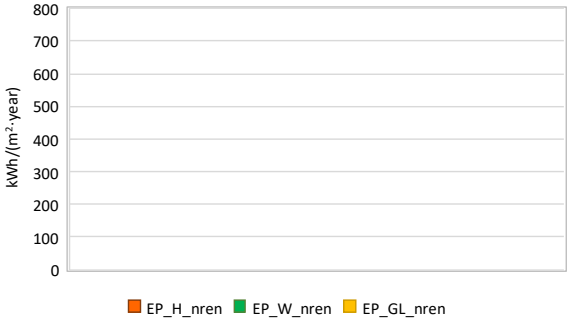
CO_2 EMISSION



HEATING SYSTEM INSTALLATION YEAR



NON-RENEWABLE PRIMARY ENERGY USE



RENEWABLE PRIMARY ENERGY USE