Region:	Piedmont	Archetype code:
Building category:	Non-residential buildings - Educational buildings	EDUC_1951-1980_F_PIE
Period of construction:	1951-1980	
Climatic zone:	F	Number of records:	30	

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 for non-walkable flat roof (cod. COP01) or for pitched roof (cod. CIN04).

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	2065.9	2570.9	400.0	1174.3	2809.0
	Heated gross volume	$V_{H;g}$	m³	9350.3	11871.6	1799.1	5145.4	12498.7
	Heated net volume	$V_{H;n}$	m³	-	-	-	-	-
	Compactness ratio	$A_{env}/V_{H;g}$	m⁻¹	0.50	0.15	0.39	0.45	0.58
	WWR – North orientation	WWR_N	-	-	-	-	-	-
	WWR – South orientation	WWR_S	-	-	-	-	-	-
	WWR – East orientation	WWR_E	-	-	-	-	-	-
	WWR – West orientation	WWR_W	-	-	-	-	-	-
	Window to useful floor area ratio	A_{wi}/A_{use}	-	0.18	0.05	0.14	0.18	0.22
ENVELOPE	Roof type		-					
	U-value of the roof	$U_{fl;up}$	W/(m²·K)	-	-	-	-	-
	External walls type		Hollow brick masonry: 77%; Solid Brick masonry: 10%; Unknown: 10%; Prefabricated panels: 3%					
	U-value of the wall	U_{wl}	W/(m²·K)	-	-	-	-	-
	Slab on ground floor type		-					
	U-value of the floor	$U_{fl;lw}$	W/(m²·K)	-	-	-	-	-
	Windows type		-					
	U-value of the windows	U_W	W/(m²·K)	2.61	1.07	1.73	2.82	3.15
	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		-					
	Daily operating time of the heating system *	t_H	h	No limitation				
	Energy carrier		Natural Gas: 83%; District heating: 13%; Gas Oil: 4%					
	Heating emission sub-system		-					
	Cooling system type		-					
	Daily operating time of the cooling system *	t_C	h	-	-	-	-	-
	Cooling emission sub-system		-					
	DHW system type		Autonomous, detached from heating: 57%; Centralized, coupled with heating: 37%; Autonomous, coupled with heating: 3%; Autonomous, detached from heating: 3%					
	DHW generator		-					
	* These values are derived from UNI EN ISO Standards							

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Numerical variables – GEOMETRY

NUMBER OF FLOORS

GROSS HEIGHT

AREA

□ Heated gross floor area ■ Heated net floor area

VOLUME
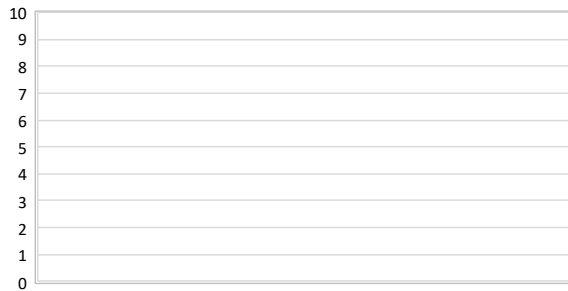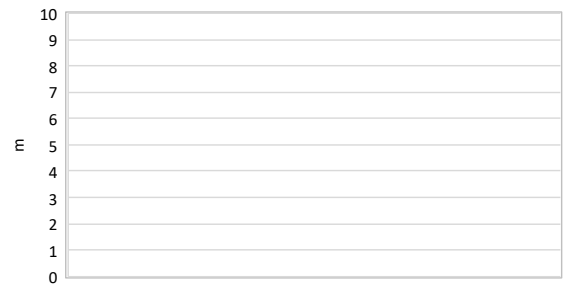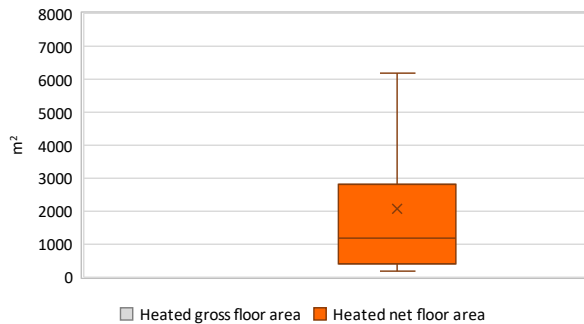
□ Heated gross volume ■ Heated net volume
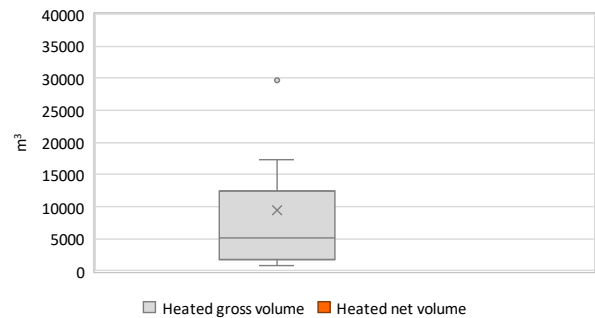
COMPACTNESS RATIO

WINDOWS TO WALL RATIO

□ WWR_N ■ WWR_S ■ WWR_E ■ WWR_W ■ Awi/Ause
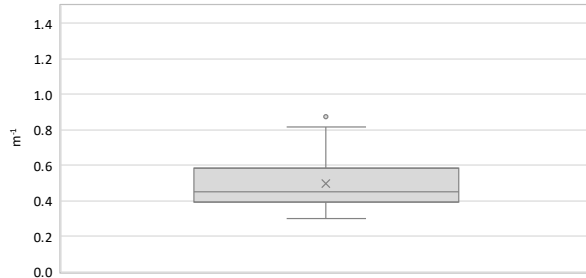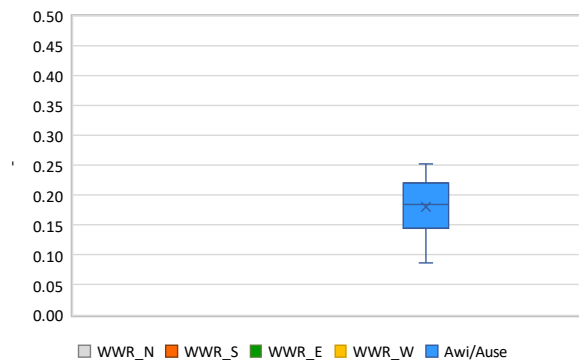
Numerical variables – ENVELOPE

OPAQUE BUILDING COMPONENTS U-VALUE

□ External Walls ■ Slab on Ground Floor ■ Roof

WINDOWS U-VALUE

Region:	Piedmont		Archetype code:
Building category:	Non-residential buildings - Educational buildings		EDUC_1951-1980_F_PIE
Period of construction:	1951-1980		
Climatic zone:	F	Number of records: 30	

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	578.4	1819.9	110.1	275.0	372.0
	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	37.2	22.1	30.9	50.0	50.0
	Temperature of DHW	ϑ_W	°C	40.0	0.0	40.0	40.0	40.0
	DHW system power	$P_{W;gen}$	kW	80.7	119.1	3.9	22.2	119.7

Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE

AIR CHANGE RATE

OCCUPACY DENSITY

INTERNAL GAINS POWER DENSITY

DAILY OPERATING TIME

☐ Heating ☐ Cooling

Non-residential buildings – Educational buildings –1951-1980 – Zone F – Piedmont

Region:	Piedmont		Archetype code:
Building category:	Non-residential buildings - Educational buildings		EDUC_1951-1980_F_PIE
Period of construction:	1951-1980		
Climatic zone:	F	Number of records:	30

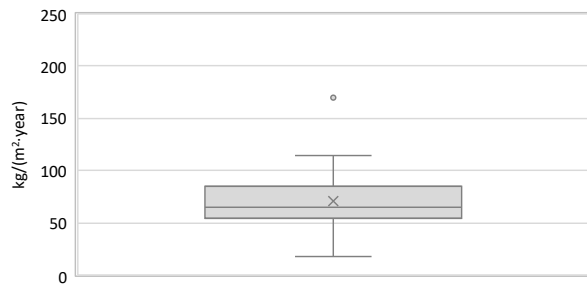## Additional data: other numerical variables that are not included in the archetype

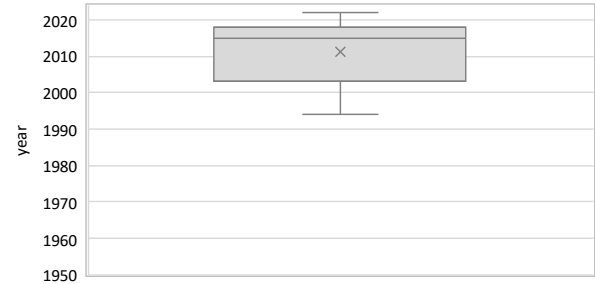### DHW SUPPLY TEMPERATURE

SYSTEM POWER
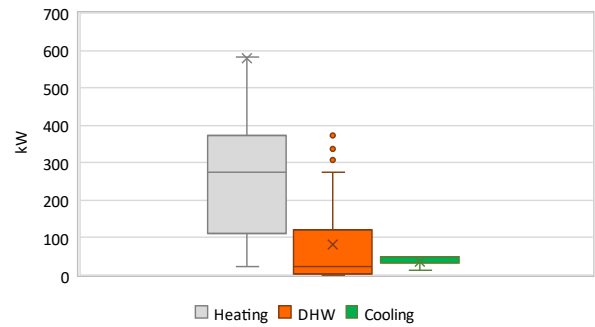
CO₂ EMISSION

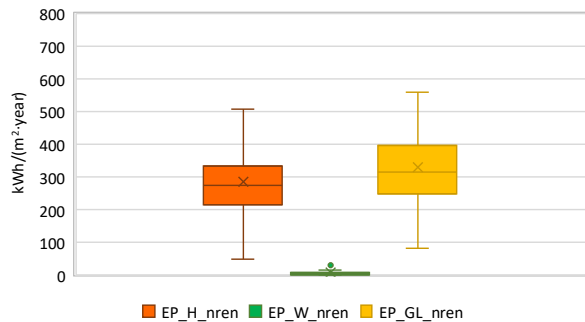### HEATING SYSTEM INSTALLATION YEAR

NON-RENEWABLE PRIMARY ENERGY USE

RENEWABLE PRIMARY ENERGY USE