Region:	Sicily, Calabria			**Archetype code:** EDUC_ 1940-1980_BCDE_SIC_CAL
Building category:	Primary school short staying			
Period of construction:	1940-1980			
Climatic zone:	B-C-D-E	**Number of records:**	6	

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

External walls: stone masonry (cod. MPI02); Double layer of hollow bricks (8 cm + 12 cm) with low insulated air gap (cod. MCV02). Double layer of hollow bricks (8 cm + 12 cm) with uninsulated air gap (cod. MCV01).

Slabs: reinforced brick-concrete slab (22 cm) plus uninsulated concrete screed (4 cm) (cod. SOL04)

Data sources:
Project documentation (70%)
Standards (9%)
Expert assumption (9%)
Others (12%) #

	Data	Symbol	Unit of measure	Mean value	Standard deviation	Q1 (first quartile)	Median value	Q3 (third quartile)
BUILDING GEOMETRY	Number of floors	n_f	-	2.33	0.82	1.75	2.50	3.00
	Gross height	H_g	m	9.14	3.35	6.40	9.50	11.98
	Footprint area	$A_{footprint}$	m^2	1321.40	905.77	851.60	982.50	1662.75
	Heated gross floor area	$A_{H;g}$	m^2	2263.34	1289.95	1008.52	2205.50	3618.75
	Heated net floor area	$A_{H;n}$	m^2	1632.87	893.20	833.55	1417.11	2549.10
	Heated gross volume	$V_{H;g}$	m^3	8648.24	5101.36	3632.64	8333.82	13935.98
	Heated net volume	$V_{H;n}$	m^3	6569.67	3706.01	2938.27	6395.57	10178.43
	Compactness ratio	$A_{env}/V_{H;g}$	m^{-1}	0.46	0.18	0.32	0.42	0.56
	WWR – North orientation	WWR_N	-	0.14	0.04	0.09	0.14	0.17
	WWR – South orientation	WWR_S	-	0.16	0.05	0.11	0.16	0.20
	WWR – East orientation	WWR_E	-	0.16	0.07	0.10	0.18	0.23
	WWR – West orientation	WWR_W	-	0.14	0.04	0.10	0.14	0.18
	Window to useful floor area ratio	A_{wi}/A_{use}	-	0.15	0.05	0.12	0.13	0.17
ENVELOPE	Roof type	Reinforced brick-concrete slab: 50%, Reinforced brick-concrete slab, low insulation: 33%, Reinforced brick-concrete, high insulation: 17%						
	U-value of the roof	$U_{fl;up}$	W/(m²·K)	1.31	0.62	0.75	1.58	1.78
	External walls type	High density stone masonry: 50%, Hollow brick masonry, low insulation: 33%, Hollow brick masonry: 17%						
	U-value of the wall	U_{wl}	W/(m²·K)	1.12	0.46	0.63	1.10	1.61
	Slab on ground floor type	Concrete floor: 67%, Reinforced brick-concrete slab: 33%						
	U-value of the floor	$U_{fl;lw}$	W/(m²·K)	1.36	0.32	1.13	1.45	1.56
	Windows type	Single glazing, aluminum frame: 50%, Double glazing, aluminum frame, no thermal break: 17%, Double glazing aluminum frame, with thermal break, 17%, Double glazing, PVC frame: 16%						
	U-value of the windows	U_W	W/(m²·K)	3.44	1.68	1.35	4.26	4.62
	Shading system type	Shutter: 83%, No shading: 17%						
GAINS and VENTILATION	Occupancy density	O_C	person/m^2	0.35	0.23	0.13	0.37	0.55
	Lighting power density	W_L	W/m^2	7.12	2.73	4.75	6.13	10.00
	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}	UNI EN 16798-1 – A.3.1				
THERMAL SYSTEMS	Heating system type	Centralized: 100%						
	Heating generator	Traditional boiler: 83%, Condensing boiler: 17%						
	Daily operating time of the heating system *	t_H	h	10.00	2.13	7.75	10.00	12.00
	Energy carrier	Natural gas: 83%, Gas oil: 17%						
	Heating emission sub-system	Radiators: 87%, Convectors: 13%						
	Cooling system type	Air-cooled chiller: 67%, Absent: 33%						
	Daily operating time of the cooling system *	t_C	h	-	-	-	-	-
	Cooling emission sub-system	Fan coil: 100%						
	DHW system type	Autonomous - detached from heating: 83%, Centralized, coupled with heating: 17%						
	DHW generator	Electric boiler: 83%, Natural gas boiler: 17%						

#Visual inspection (5%), APE (3%), Measured data (2%), Energy audits (1%), Local database (1%)
* These values were not available in the considered sources, and are thus derived from UNI EN Standards

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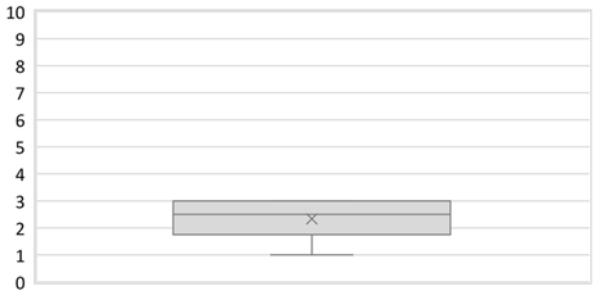
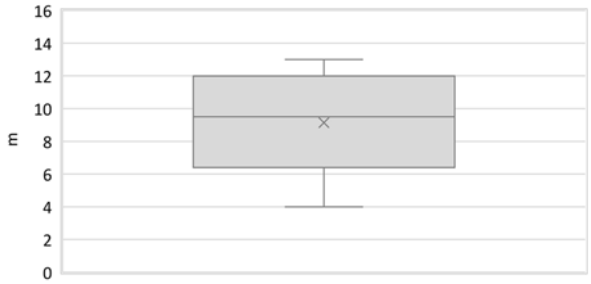
Numerical variables – GEOMETRY

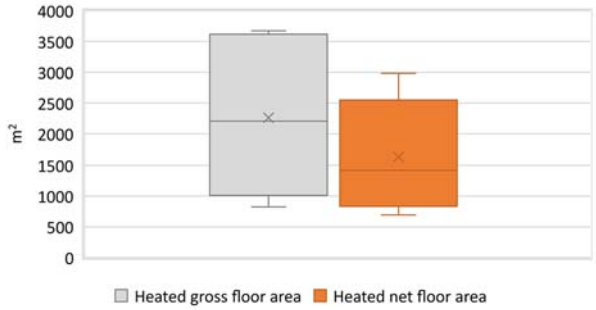
NUMBER OF FLOORS



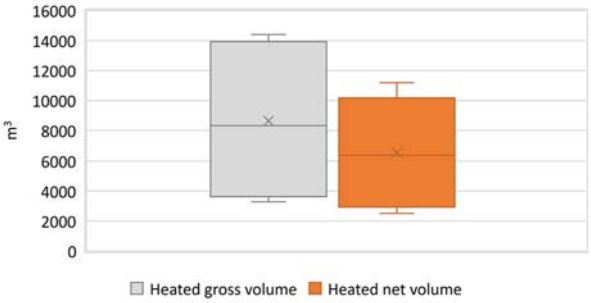
GROSS HEIGHT



AREA

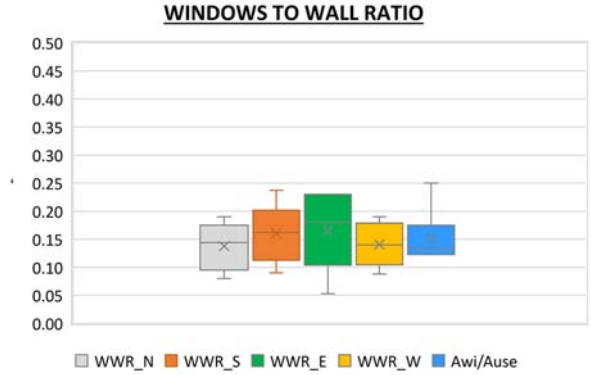


VOLUME



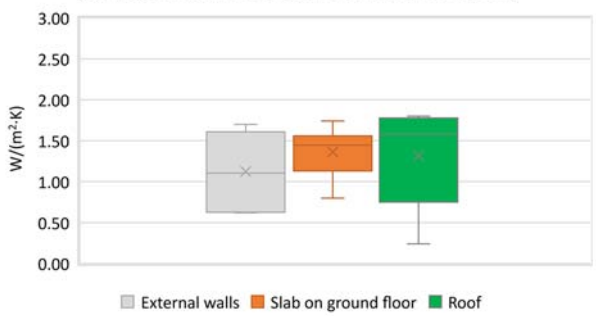
COMPACTNESS RATIO

WINDOWS TO WALL RATIO

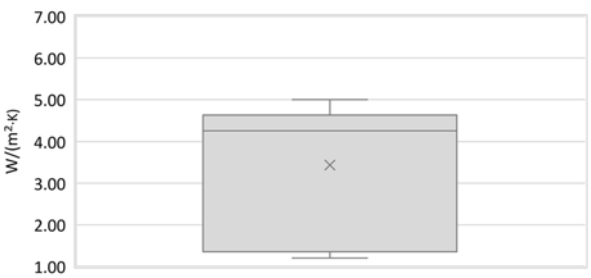


Numerical variables – ENVELOPE

OPAQUE BUILDING COMPONENTS U-VALUE



WINDOWS U-VALUE



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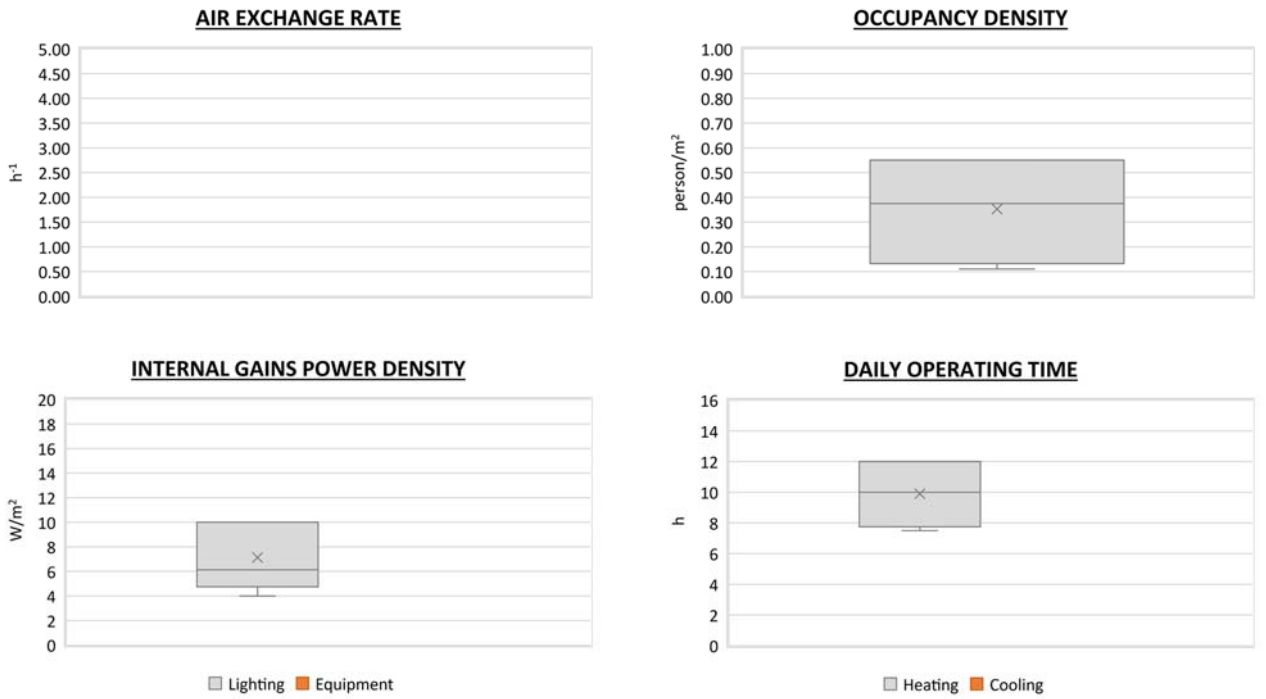
ADDITIONAL DATA								
	Data	**Symbol**	**Unit of measure**	**Mean value**	**Standard deviation**	**Q1 (first quartile)**	**Median value**	**Q3 (third quartile)**
THERMAL SYSTEMS	Heating efficiency or *COP*	$\eta_{H;gen}$ or $COP_{H;gen}$	-	This value has to be retrieved from suitable datasheets				
	Total heating power	$P_{H;gen}$	kW	149.23	69.54	95.57	135.50	205.07
	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	40.00	0.00	40.00	40.00	40.00
	DHW system power	$P_{W;gen}$	kW	45.11	106.25	1.20	1.35	68.20

Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE



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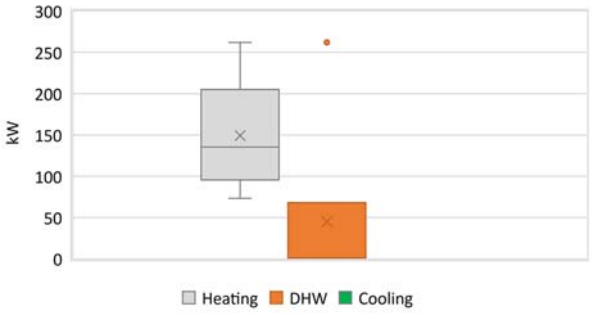
Additional data: other numerical variables that are not included in the archetype

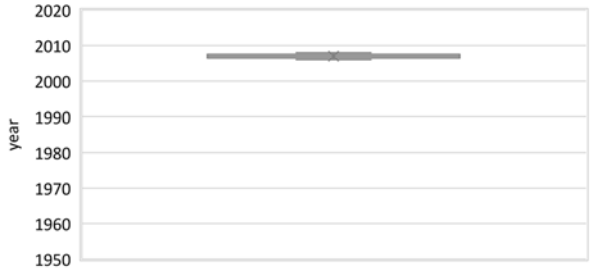
DHW SUPPLY TEMPERATURE

SYSTEM POWER

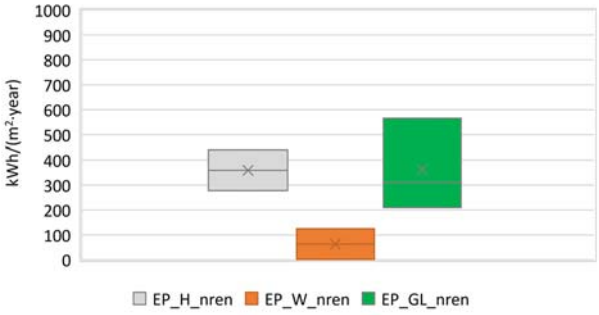


CO_2 EMISSION

HEATING SYSTEM INSTALLATION YEAR



NON-RENEWABLE PRIMARY ENERGY USE



RENEWABLE PRIMARY ENERGY USE

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