

Region:	Aosta Valley						Archetype code:		
Building category:	Residential buildings - Single family houses						RES_SINGLE_2006- E-F_VAL		
Period of construction:	> 2005								
Climatic zone:	E-F	<b>Number of records:</b>				319			
Description (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014):							Data sources:		
<p><u>External walls</u>: hollow brick masonry with thermal insulation (cod. MCV02).</p> <p><u>Roof slabs</u>: insulated reinforced concrete floor slab for walkable flat roof (cod. COP03), for pitched roof (cod. CIN03) or insulated wooden floor slab for pitched roof (cod. CIN02).</p>							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>	122.5	64.8	82.4	113.2	146.5	
	Heated gross volume	$V_{H;g}$	m <sup>3</sup>	504.3	254.1	348.8	458.7	616.6	
	Heated net volume	$V_{H;n}$	m <sup>3</sup>	337.3	142.4	245.9	317.2	406.1	
	Compactness ratio	$A_{\text{env}}/V_{H;g}$	m <sup>-1</sup>	0.81	0.18	0.72	0.80	0.91	
	WWR – North orientation	$WWR_N$	-	0.10	0.04	0.07	0.10	0.12	
	WWR – South orientation	$WWR_S$	-	0.10	0.04	0.07	0.10	0.12	
	WWR – East orientation	$WWR_E$	-	0.10	0.04	0.07	0.10	0.12	
	WWR – West orientation	$WWR_W$	-	0.10	0.04	0.07	0.10	0.12	
	Window to useful floor area ratio	$A_{wi}/A_{\text{use}}$	-	0.19	0.08	0.15	0.18	0.22	
ENVELOPE	Roof type	-							
	U-value of the roof **	$U_{fi;up}$	W/(m <sup>2</sup> ·K)	0.26	0.16	0.19	0.23	0.29	
	External walls type	Hollow brick masonry: 47%; Solid Brick masonry: 27%; Unknown: 20%; Concrete wall: 5%; Masonry with local stones: 1%							
	U-value of the wall	$U_{wi}$	W/(m <sup>2</sup> ·K)	0.29	0.15	0.20	0.25	0.33	
	Slab on ground floor type	-							
	U-value of the floor **	$U_{fi;lw}$	W/(m <sup>2</sup> ·K)	0.65	0.43	0.39	0.45	0.66	
	Windows type	Double glazing, wooden frame: 84%; Triple glazing, wooden frame: 10%; Double glazing, PVC frame: 4%; Triple glazing, PVC frame: 2%							
U-value of the windows	$U_W$	W/(m <sup>2</sup> ·K)	1.59	0.58	1.29	1.42	1.75		
Shading system type	-								
GAINS and VENTILATION	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%; Condensing Boiler: 15%; Unknown: 12%; Fireplace: 9%; Traditional Boiler: 9%; Air-source heat pump: 8%							
	Daily operating time of the heating system *	$t_H$	h	-					
	Energy carrier	LPG: 50%; Solid biomass: 24%; Natural Gas: 21%; Gas Oil: 5%							
	Heating emission sub-system	-							
	Cooling system type	Absent: 97%; Air-cooled chiller: 3%							
	Daily operating time of the cooling system *	$t_C$	h	-	-	-	-	-	
	Cooling emission sub-system	-							
	DHW system type	Autonomous, coupled with heating: 79%; Autonomous, detached from heating: 15%; Centralized, coupled with heating: 6%							
	DHW generator	Unknown: 66%; Natural gas boiler: 21%; Electric Heat Pump: 10%; Electric boiler: 2%; Solar thermal: 1%							

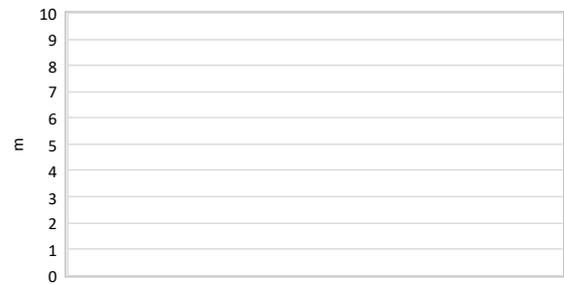
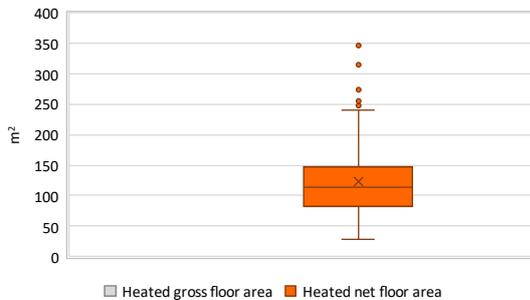
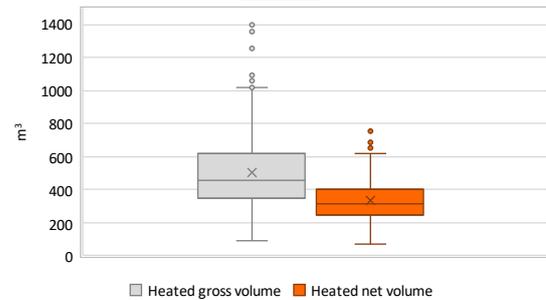
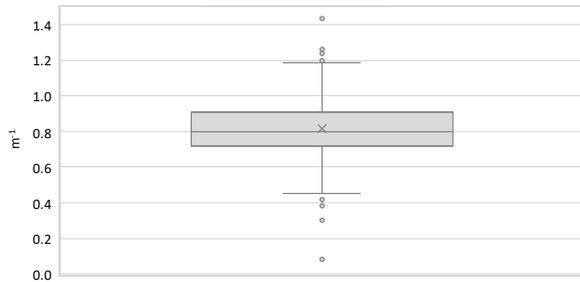
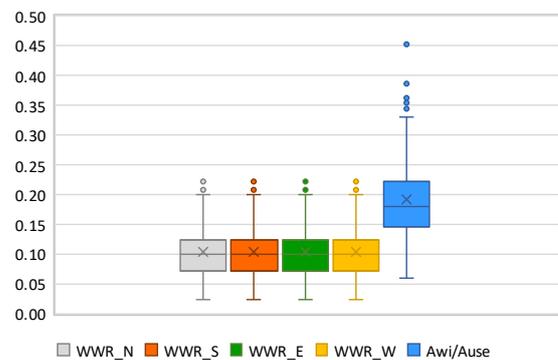
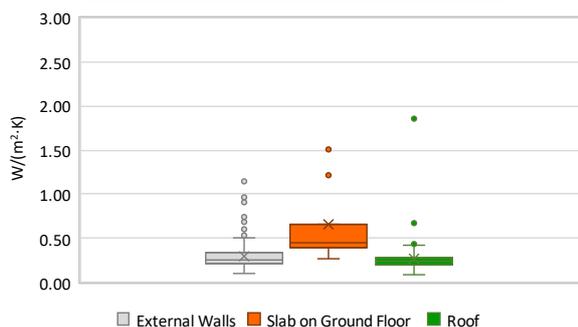
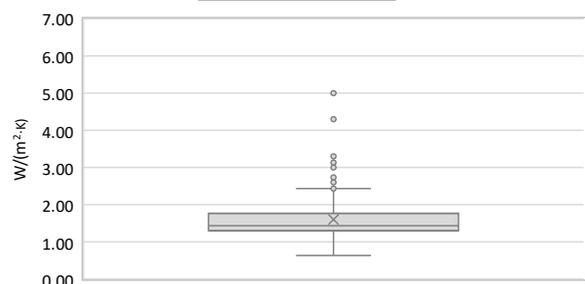
\* These values are derived from UNI EN ISO Standards; \*\* U-values of the upper slab face the external environment, and the lower slab is in contact with the ground



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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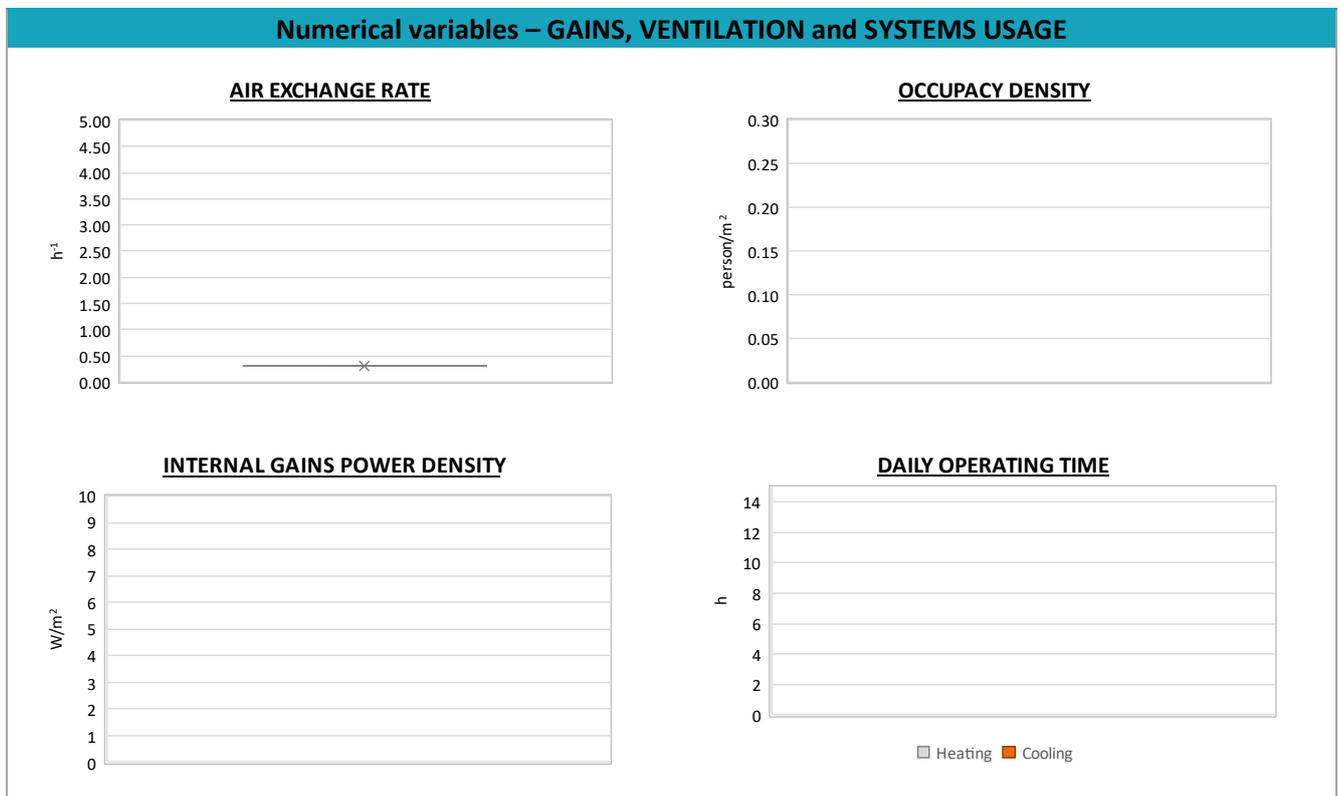
**Numerical variables – GEOMETRY**
**NUMBER OF FLOORS**

**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)
<b>THERMAL SYSTEMS</b>	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	26.4	47.0	15.6	24.0	29.0
	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	11.1	9.0	5.7	10.3	11.9
	Temperature of DHW	$\vartheta_w$	°C	40.0	0.0	40.0	40.0	40.0
	DHW system power	$P_{W;gen}$	kW	24.8	47.1	14.8	24.0	28.0
* This value refers to the building scale								



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