| | | | | |
|---|---|---|---|---|
| **Region:** | Piedmont | | | **Archetype code:** |
| **Building category:** | Non-residential buildings - Offices | | | OFF_-1950_F_PIE |
| **Period of construction:** | < 1950 | | | |
| **Climatic zone:** | F | **Number of records:** | 48 | |
| **Description** (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014):<br>External walls: solid brick masonry (cod. MLP01).<br>Roof slabs: pitched wooden roof (cod. CIN05). | | | | **Data sources:**<br>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 | 435.7 | 588.3 | 128.9 | 258.7 | 479.9 |
| | Heated gross volume | $V_{H;g}$ | m³ | 2055.2 | 3131.8 | 513.3 | 1133.6 | 2072.8 |
| | Heated net volume | $V_{H;n}$ | m³ | - | - | - | - | - |
| | Compactness ratio | $A_{env}/V_{H;g}$ | m⁻¹ | 0.65 | 0.24 | 0.47 | 0.65 | 0.77 |
| | *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 | $A_{wi}/A_{use}$ | - | 0.16 | 0.07 | 0.12 | 0.15 | 0.21 |
| ENVELOPE | Roof type | - | | | | | | |
| | *U*-value of the roof | $U_{fl;up}$ | W/(m²·K) | - | - | - | - | - |
| | External walls type | Solid Brick masonry: 85%; Hollow brick masonry: 13%; Unknown: 2% | | | | | | |
| | *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) | 2.73 | 1.07 | 1.97 | 2.74 | 3.60 |
| | 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: 64%; LPG: 14%; Electricity: 8%; Gas Oil: 6%; Solid biomass: 6%; District heating: 2% | | | | | | |
| | 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: 56%; Autonomous, coupled with heating: 25%; Centralized, coupled with heating: 17%; Centralized, detached from heating: 2% | | | | | | |
| | DHW generator | - | | | | | | |
| | * These values are derived from UNI EN ISO Standards | | | | | | | |

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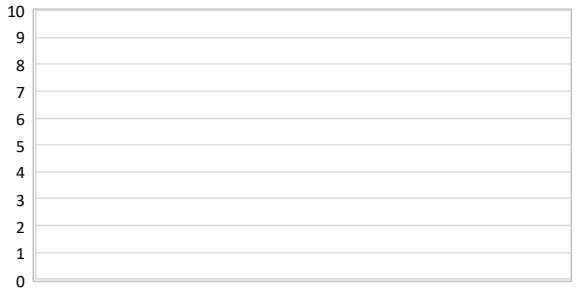
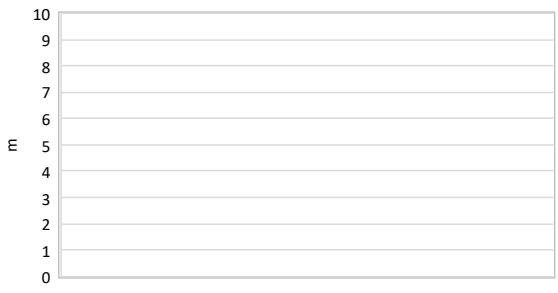
| **Building category:** | Non-residential buildings - Offices | | | OFF_-1950_F_PIE |
| **Period of construction:** | < 1950 | | | |
| **Climatic zone:** | F | **Number of records:** | 48 | |

## Numerical variables – GEOMETRY

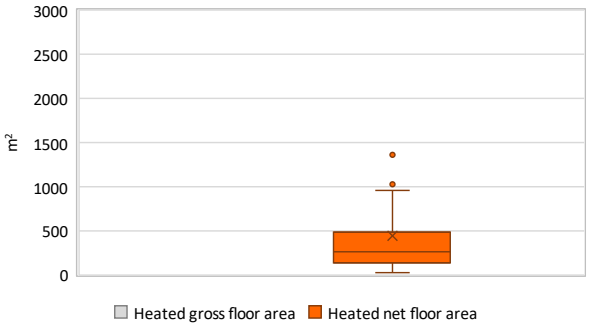
### NUMBER OF FLOORS



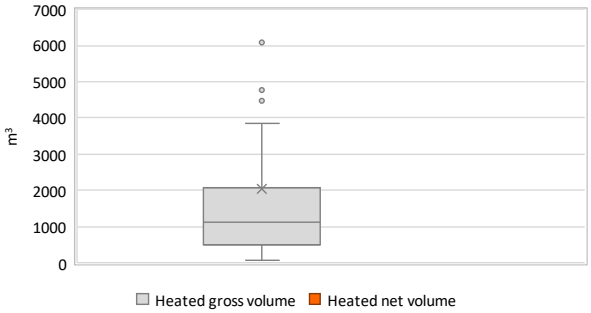

### GROSS HEIGHT



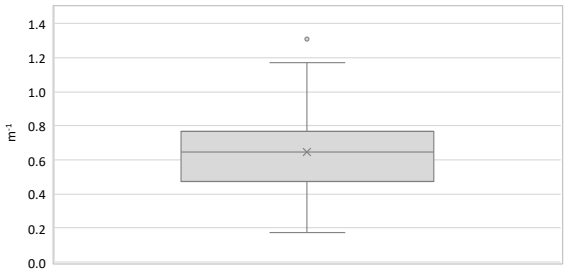

### AREA



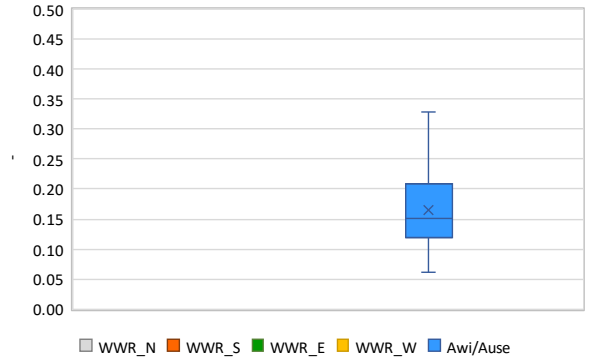

### VOLUME




### COMPACTNESS RATIO

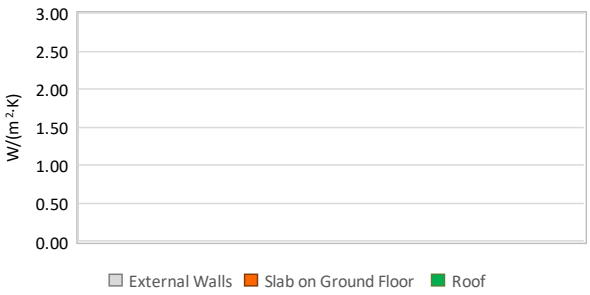



### WINDOWS TO WALL RATIO

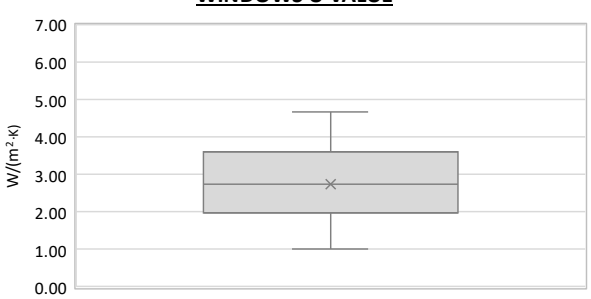



## Numerical variables – ENVELOPE

### OPAQUE BUILDING COMPONENTS U-VALUE




### WINDOWS U-VALUE

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|---|---|---|---|---|
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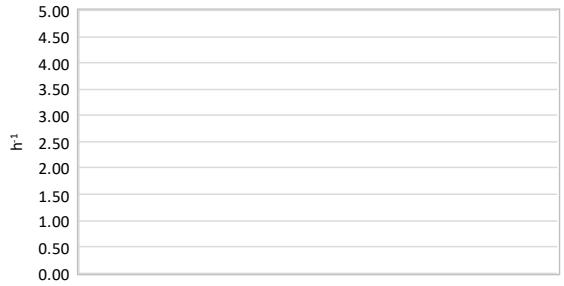
| **Period of construction:** | < 1950 | | | |
| **Climatic zone:** | F | **Number of records:** | 48 | |

## ADDITIONAL DATA

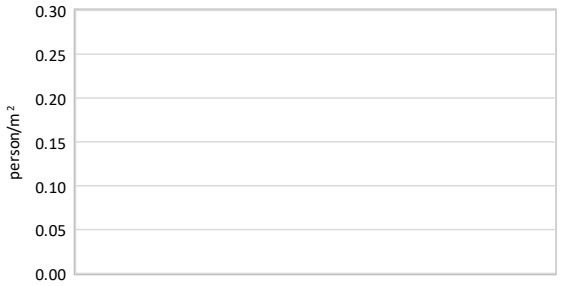
| | Data | Symbol | Unit of measure | Mean value | Standard deviation | Q1 (first quartile) | Median value | Q3 (third quartile) |
|---|---|---|---|---|---|---|---|---|
| THERMAL SYSTEMS | Heating efficiency or *COP* | $\eta_{H;gen}$ or $COP_{H;gen}$ | - | This value has to be retrieved from suitable datasheets | | | | |
| | Total heating power | $P_{H;gen}$ | kW | 102.3 | 161.0 | 27.7 | 34.3 | 89.0 |
| | 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 | 24.2 | 28.5 | 2.9 | 14.9 | 32.8 |
| | Temperature of DHW | $\vartheta_W$ | °C | 40.0 | 0.0 | 40.0 | 40.0 | 40.0 |
| | DHW system power | $P_{W;gen}$ | kW | 44.7 | 118.7 | 1.2 | 4.8 | 28.4 |

## Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE

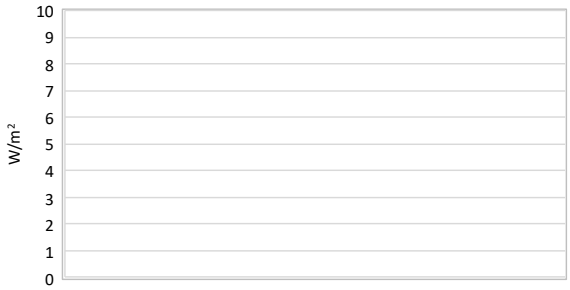
**AIR CHANGE RATE**



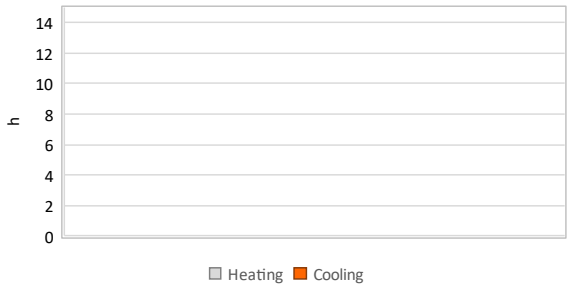

**OCCUPACY DENSITY**




**INTERNAL GAINS POWER DENSITY**




**DAILY OPERATING TIME**

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|---|---|---|---|---|
| **Region:** | Piedmont | | | **Archetype code:** |
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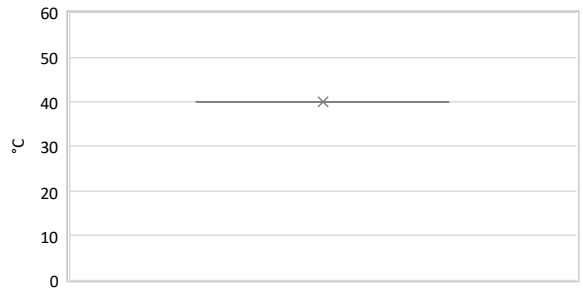
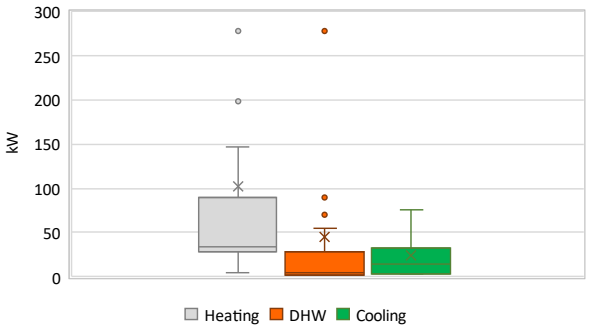
| **Period of construction:** | < 1950 | | | |
| **Climatic zone:** | F | **Number of records:** | 48 | |

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

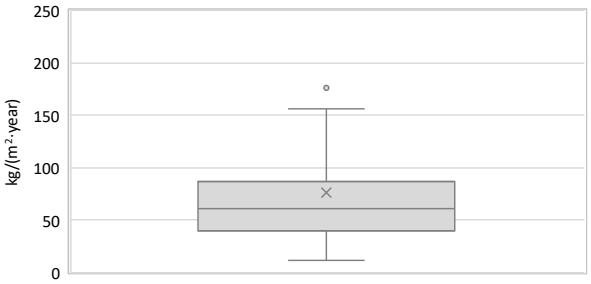
### DHW SUPPLY TEMPERATURE



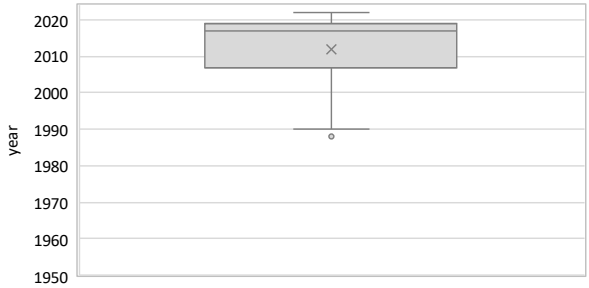

### SYSTEM POWER



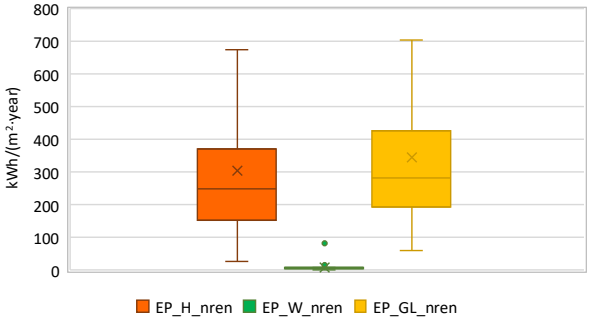

### $CO_2$ EMISSION



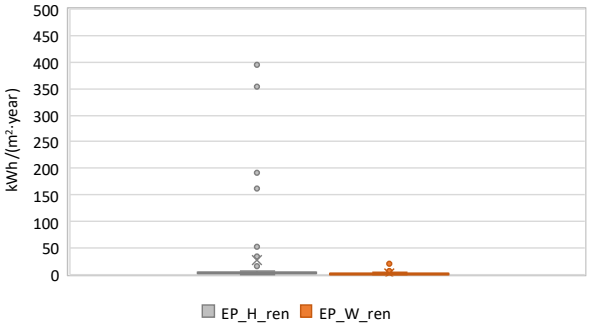

### HEATING SYSTEM INSTALLATION YEAR




### NON-RENEWABLE PRIMARY ENERGY USE




### RENEWABLE PRIMARY ENERGY USE

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