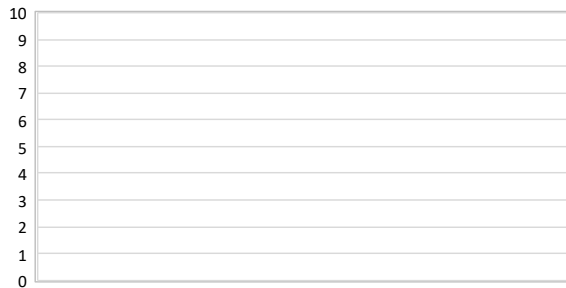


|   |  |  |                       |                             |                    |                     |                                       |                     |
|---|--|--|-----------------------|-----------------------------|--------------------|---------------------|---------------------------------------|---------------------|
| Region:   | Piedmont                                     |  |                       |                             |                    |                     | Archetype code:<br>OFF_2011-_E_PIE    |                     |
| Building category:  | Non-residential buildings - Offices          |  |                       |                             |                    |                     |                                       |                     |
| Period of construction:   | > 2010                                       |  |                       |                             |                    |                     |                                       |                     |
| Climatic zone:  | E  | Number of records:   |                       |                             |                    | 159                 |                                       |                     |
| Description (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014):<br>External walls: prefabricated insulated concrete wall (cod. MPF03).<br>Roof slabs: 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). |  |  |                       |                             |                    |                     | 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                               | $A_{\text{footprint}}$   | 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>        | 910.6                       | 2043.5             | 89.6                | 226.6                                 | 650.7               |
|   | Heated gross volume                          | $V_{H,g}$  | m <sup>3</sup>        | 4688.0                      | 10661.6            | 403.5               | 944.7                                 | 2734.0              |
|   | Heated net volume                            | $V_{H,n}$  | m <sup>3</sup>        | -                           | -                  | -                   | -                                     | -                   |
|   | Compactness ratio                            | $A_{\text{env}}/V_{H,g}$   | m <sup>-1</sup>       | 0.75                        | 0.36               | 0.48                | 0.69                                  | 0.94                |
|   | 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            | $A_{wi}/A_{\text{use}}$  | -                     | 0.24                        | 0.14               | 0.15                | 0.21                                  | 0.30                |
| ENVELOPE  | Roof type                                    | -  |                       |                             |                    |                     |                                       |                     |
|   | U-value of the roof                          | $U_{fi,up}$  | W/(m <sup>2</sup> ·K) | -                           | -                  | -                   | -                                     | -                   |
|   | External walls type                          | Prefabricated panels: 50%; Hollow brick masonry: 24%; Unknown: 13%; Solid Brick masonry: 11%; Concrete wall: 2%  |                       |                             |                    |                     |                                       |                     |
|   | U-value of the wall                          | $U_{wl}$   | W/(m <sup>2</sup> ·K) | -                           | -                  | -                   | -                                     | -                   |
|   | Slab on ground floor type                    | -  |                       |                             |                    |                     |                                       |                     |
|   | U-value of the floor                         | $U_{fi,lw}$  | W/(m <sup>2</sup> ·K) | -                           | -                  | -                   | -                                     | -                   |
|   | Windows type                                 | -  |                       |                             |                    |                     |                                       |                     |
|   | U-value of the windows                       | $U_W$  | W/(m <sup>2</sup> ·K) | 1.78                        | 0.81               | 1.35                | 1.57                                  | 1.91                |
| 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                          | -  |                       |                             |                    |                     |                                       |                     |
|   | Air exchange rate *                          | $n$  | h <sup>-1</sup>       | -                           | -                  | -                   | -                                     | -                   |
| THERMAL SYSTEMS   | Heating system type                          | Autonomous: 100%   |                       |                             |                    |                     |                                       |                     |
|   | Heating generator                            | -  |                       |                             |                    |                     |                                       |                     |
|   | Daily operating time of the heating system * | $t_H$  | h                     | 14.00                       | 0.00               | 14.00               | 14.00                                 | 14.00               |
|   | Energy carrier                               | Natural Gas: 85%; Electricity: 7%; Solid biomass: 4%; LPG: 2%; Gas Oil: 1%; District heating: 1%   |                       |                             |                    |                     |                                       |                     |
|   | 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: 63%; Autonomous, coupled with heating: 16%; Centralized, detached from heating: 11%; Centralized, coupled with heating: 10% |                       |                             |                    |                     |                                       |                     |
|   | DHW generator                                | -  |                       |                             |                    |                     |                                       |                     |
| * These values are derived from UNI EN ISO Standards  |  |  |                       |                             |                    |                     |                                       |                     |

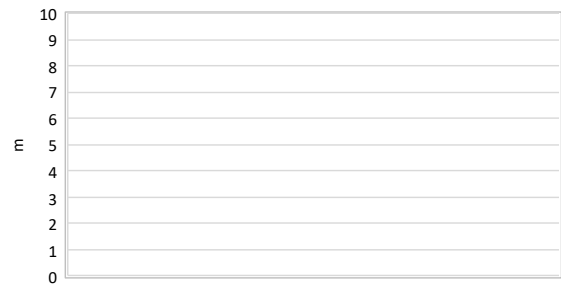
|                         |                                     |                                    |
|-------------------------|-------------------------------------|------------------------------------|
| Region:                 | Piedmont                            | Archetype code:<br>OFF_2011- E_PIE |
| Building category:      | Non-residential buildings - Offices |                                    |
| Period of construction: | > 2010                              |                                    |
| Climatic zone:          | E                                   |                                    |
| Number of records:      |                                     | 159                                |

### Numerical variables – GEOMETRY

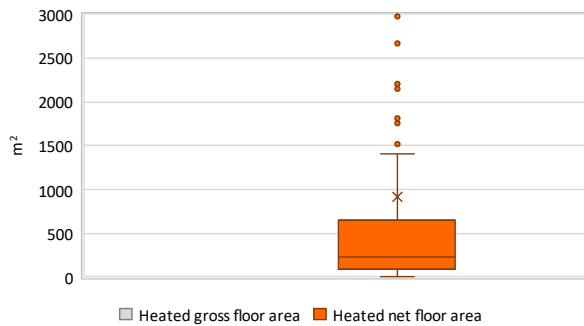
**NUMBER OF FLOORS**



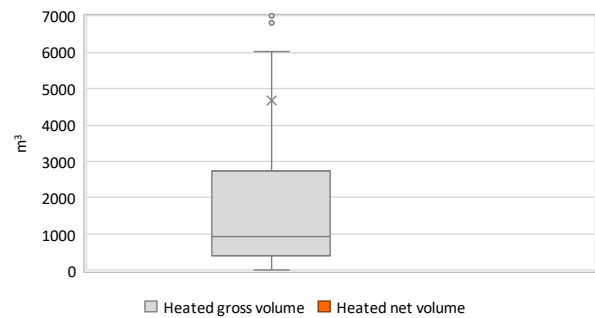
**GROSS HEIGHT**



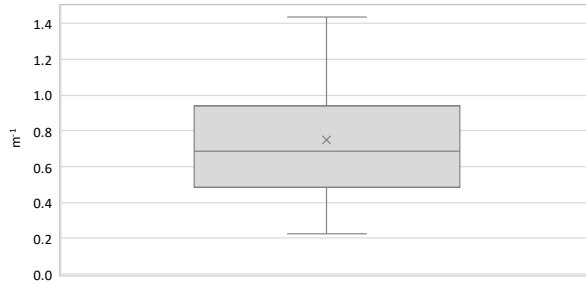
**AREA**



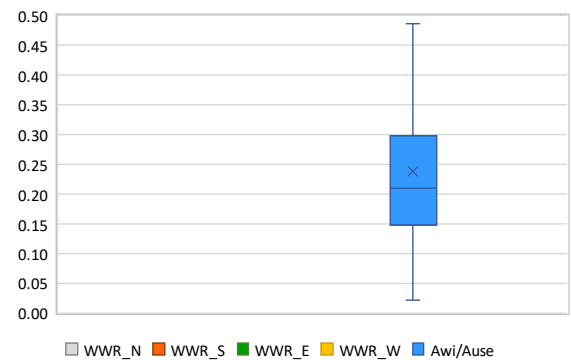
**VOLUME**



**COMPACTNESS RATIO**



**WINDOWS TO WALL RATIO**

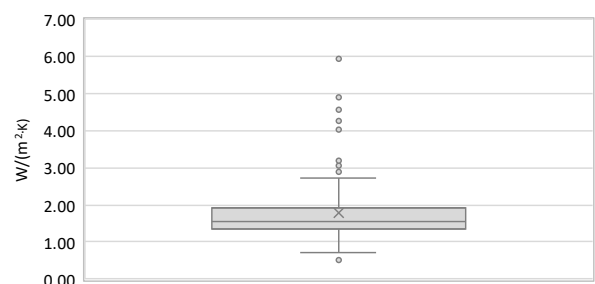


### Numerical variables – ENVELOPE

**OPAQUE BUILDING COMPONENTS U-VALUE**

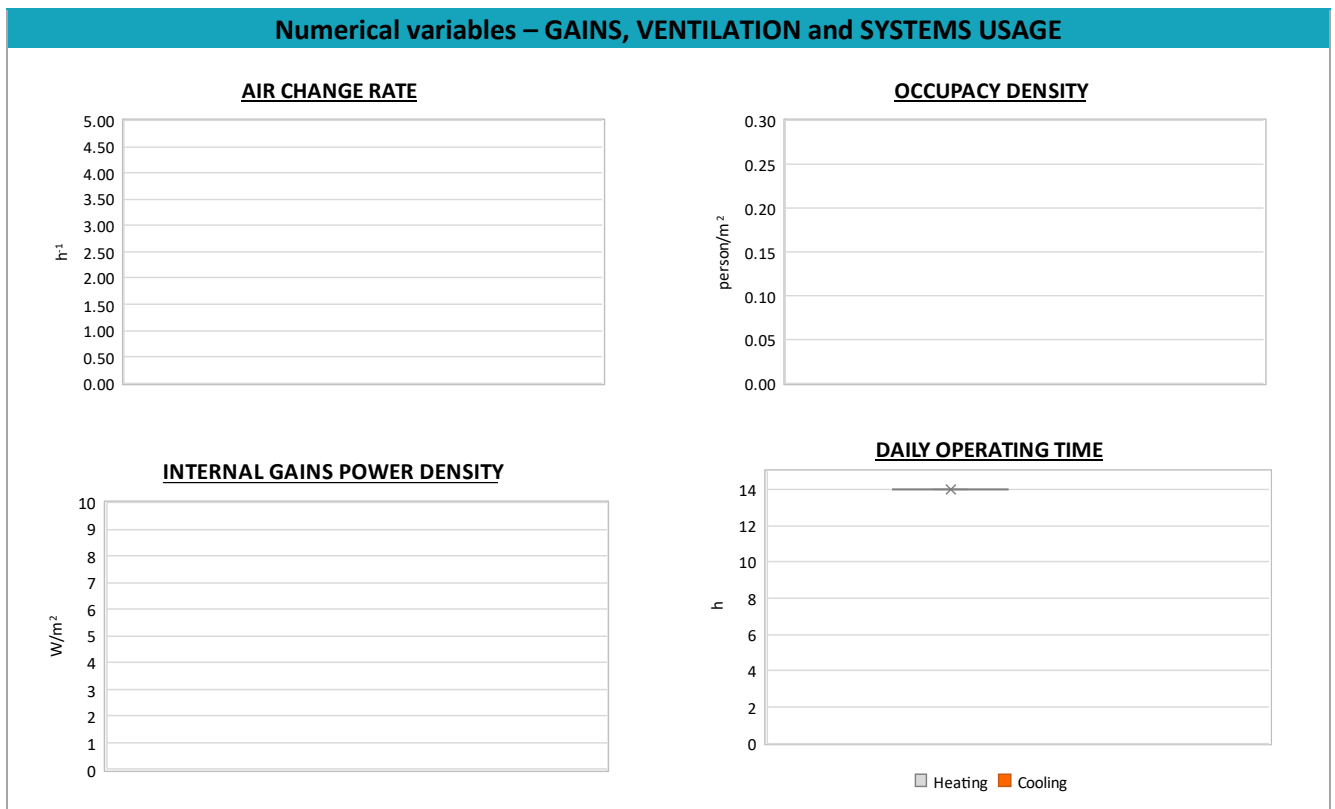


**WINDOWS U-VALUE**



|                         |                                     |                                     |
|-------------------------|-------------------------------------|-------------------------------------|
| Region:                 | Piedmont                            | Archetype code:<br>OFF_2011- _E_PIE |
| Building category:      | Non-residential buildings - Offices |                                     |
| Period of construction: | > 2010                              |                                     |
| Climatic zone:          | E                                   |                                     |
| Number of records:      |                                     | 159                                 |

| ADDITIONAL DATA |                                  |                                 |                 |   |                    |                     |              |                     |
|-----------------|----------------------------------|---------------------------------|-----------------|---|--------------------|---------------------|--------------|---------------------|
|                 | Data                             | Symbol                          | Unit of measure | Mean value  | Standard deviation | Q1 (first quartile) | Median value | Q3 (third quartile) |
| THERMAL SYSTEMS | 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              | 85.3  | 169.8              | 12.0                | 27.9         | 66.2                |
|                 | 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              | 171.3   | 763.4              | 10.2                | 27.8         | 94.6                |
|                 | Temperature of DHW               | $\vartheta_W$                   | °C              | 40.0  | 0.0                | 40.0                | 40.0         | 40.0                |
|                 | DHW system power                 | $P_{W,gen}$                     | kW              | 44.2  | 136.7              | 1.2                 | 2.4          | 26.0                |



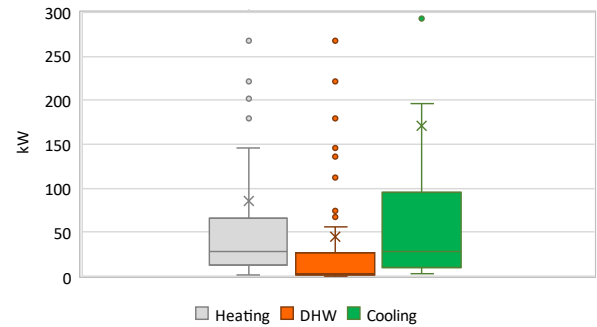
|                         |                                     |                                    |
|-------------------------|-------------------------------------|------------------------------------|
| Region:                 | Piedmont                            | Archetype code:<br>OFF_2011- E_PIE |
| Building category:      | Non-residential buildings - Offices |                                    |
| Period of construction: | > 2010                              |                                    |
| Climatic zone:          | E                                   |                                    |
| Number of records:      |                                     | 159                                |

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

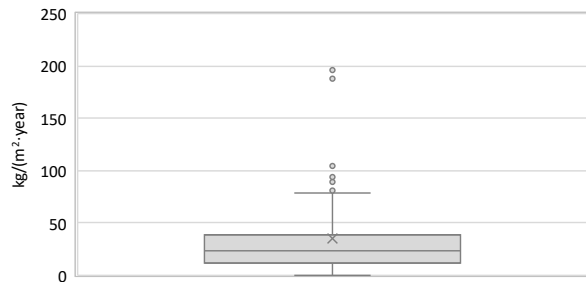
**DHW SUPPLY TEMPERATURE**



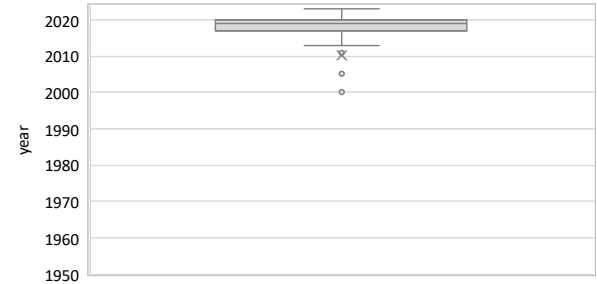
**SYSTEM POWER**



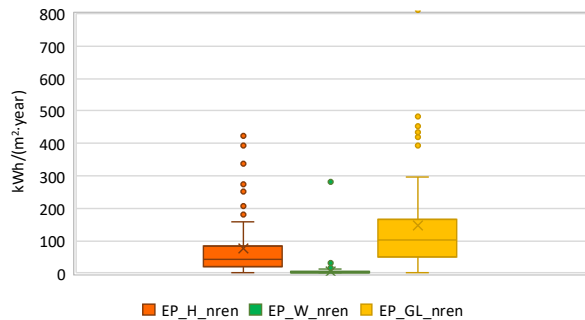
**CO<sub>2</sub> EMISSION**



**HEATING SYSTEM INSTALLATION YEAR**



**NON-RENEWABLE PRIMARY ENERGY USE**



**RENEWABLE PRIMARY ENERGY USE**

