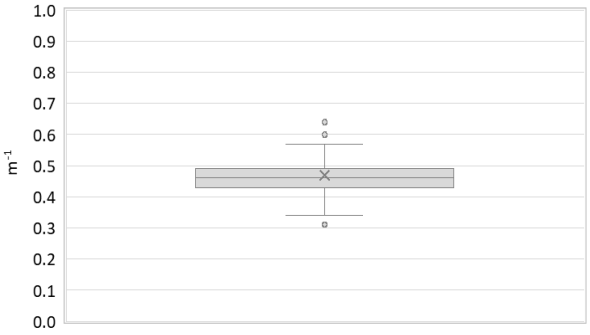
| | | | | |
|---|---|---|---|---|
| **Region:** | Lazio | | | **Archetype code:** RES_APPBLOCK_ 1991-2005_D_LAZ |
| **Building category:** | Residential buildings – Apartments (in multifamily blocks) | | | |
| **Period of construction:** | 1991-2005 | | | |
| **Climatic zone:** | D | **Number of records:** | 31 | |
| **Description** (the codes associated with walls and slabs refer to the structures described in UNI/TR 11552:2014):<br>External walls: double layer of hollow bricks with uninsulated air gap (cod. MCV01).<br>Roof slabs: reinforced brick-concrete slab plus uninsulated concrete screed (cod. SOL04) | | | | **Data sources:** Energy audits (100%) |

| | Data | Symbol | Unit of measure | Mean value | Standard deviation | Q1 (first quartile) | Median value | Q3 (third quartile) |
|---|---|---|---|---|---|---|---|---|
| BUILDING GEOMETRY | Number of floors | $n_f$ | - | 4.54 | 1.02 | 4.00 | 5 | 5 |
| | Gross height | $H_g$ | m | 18.51 | 3.49 | 16.23 | 19.08 | 20.79 |
| | Footprint area | $A_{footprint}$ | $m^2$ | - | - | - | - | - |
| | Heated gross floor area | $A_{H;g}$ | $m^2$ | - | - | - | - | - |
| | Heated net floor area | $A_{H;n}$ | $m^2$ | 2052.30 | 1132.77 | 1349.72 | 1924.44 | 2383.66 |
| | Heated gross volume | $V_{H;g}$ | $m^3$ | - | - | - | - | - |
| | Heated net volume | $V_{H;n}$ | $m^3$ | 4737.82 | 3394.16 | 3279.13 | 4052.44 | 4699.47 |
| | Compactness ratio | $A_{env}/V_{H;g}$ | $m^{-1}$ | 0.46 | 0.08 | 0.43 | 0.46 | 0.49 |
| | *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 | $A_{wi}/A_{use}$ | - | 0.13 | 0.04 | 0.10 | 0.13 | 0.15 |
| ENVELOPE | Roof type | - | | | | | | |
| | *U*-value of the roof | $U_{fl;up}$ | $W/(m^2 \cdot K)$ | 1.47 | 0.31 | 1.56 | 1.56 | 1.61 |
| | External walls type | Concrete wall: 100% | | | | | | |
| | *U*-value of the wall | $U_{wl}$ | $W/(m^2 \cdot K)$ | 1.12 | 0.17 | 0.98 | 1.04 | 1.27 |
| | Slab on ground floor type | Brick-concrete slab: 100% | | | | | | |
| | *U*-value of the floor | $U_{fl;lw}$ | $W/(m^2 \cdot K)$ | 1.29 | 0.40 | 1.19 | 1.48 | 1.58 |
| | Windows type | - | | | | | | |
| | *U*-value of the windows | $U_W$ | $W/(m^2 \cdot K)$ | 3.93 | 0.56 | 3.62 | 4.11 | 4.29 |
| | Shading system type | Unknown 100% | | | | | | |
| GAINS and VENTILATION | Occupancy density * | $O_C$ | $person/m^2$ | UNI EN 16798-1 – Table A.19 | | | | |
| | Lighting power density * | $W_L$ | $W/m^2$ | UNI EN 16798-1 – A.8.3 | | | | |
| | Equipment power density * | $W_A$ | $W/m^2$ | UNI EN 16798-1 – A.8.3 | | | | |
| | Type of ventilation | - | | | | | | |
| | Air exchange rate * | $n$ | $h^{-1}$ | 0.30 | 0.00 | 0.30 | 0.30 | 0.30 |
| THERMAL SYSTEMS | Heating system type | Centralized: 100% | | | | | | |
| | Heating generator | Traditional boiler: 71%; Condensing boiler: 29% | | | | | | |
| | Daily operating time of the heating system * | $t_H$ | h | 12.00 | 0.00 | 12.00 | 12.00 | 12.00 |
| | Energy carrier | Natural gas: 100% | | | | | | |
| | Heating emission sub-system | Radiators: 100% | | | | | | |
| | Cooling system type | Absent: 100% | | | | | | |
| | Daily operating time of the cooling system * | $t_C$ | h | - | - | - | - | - |
| | Cooling emission sub-system | - | | | | | | |
| | DHW system type | Autonomous – coupled from heating: 100% | | | | | | |
| | DHW generator | - | | | | | | |
| | * These values were not available in the considered sources, and are thus derived from UNI EN Standards | | | | | | | |

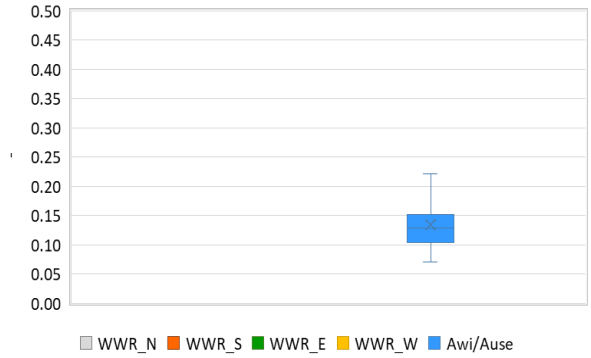
| | | | | |
|---|---|---|---|---|
| **Region:** | Lazio | | | **Archetype code:** |
| **Building category:** | Residential buildings – Apartments (in multifamily blocks) | | | RES_APPBLOCK_ 1991-2005_D_LAZ |
| **Period of construction:** | 1991-2005 | | | |
| **Climatic zone:** | D | **Number of records:** | 31 | |

## Numerical variables – GEOMETRY

### COMPACTNESS RATIO



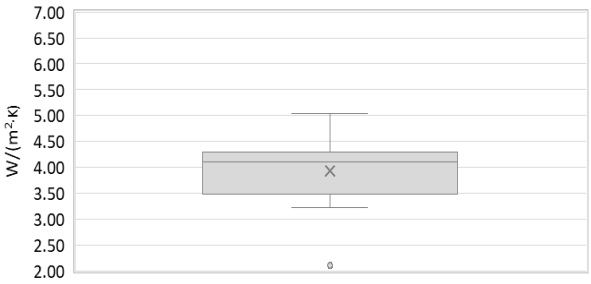

### WINDOWS TO WALL RATIO




## Numerical variables – ENVELOPE

### OPAQUE BUILDING COMPONENTS U-VALUE

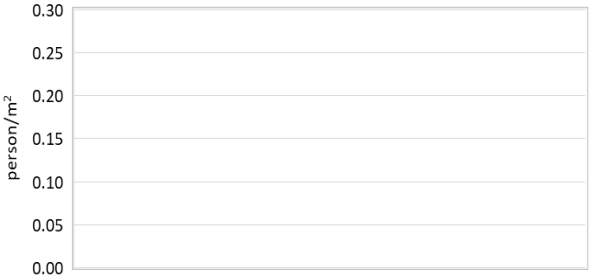

### WINDOWS U-VALUE



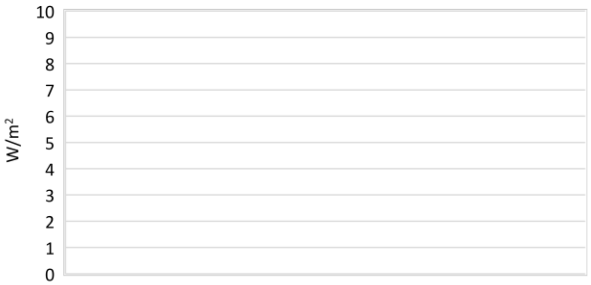

## Numerical variables – GAINS, VENTILATION and SYSTEMS USAGE

### AIR EXCHANGE RATE


### OCCUPANCY DENSITY




### INTERNAL GAINS POWER DENSITY



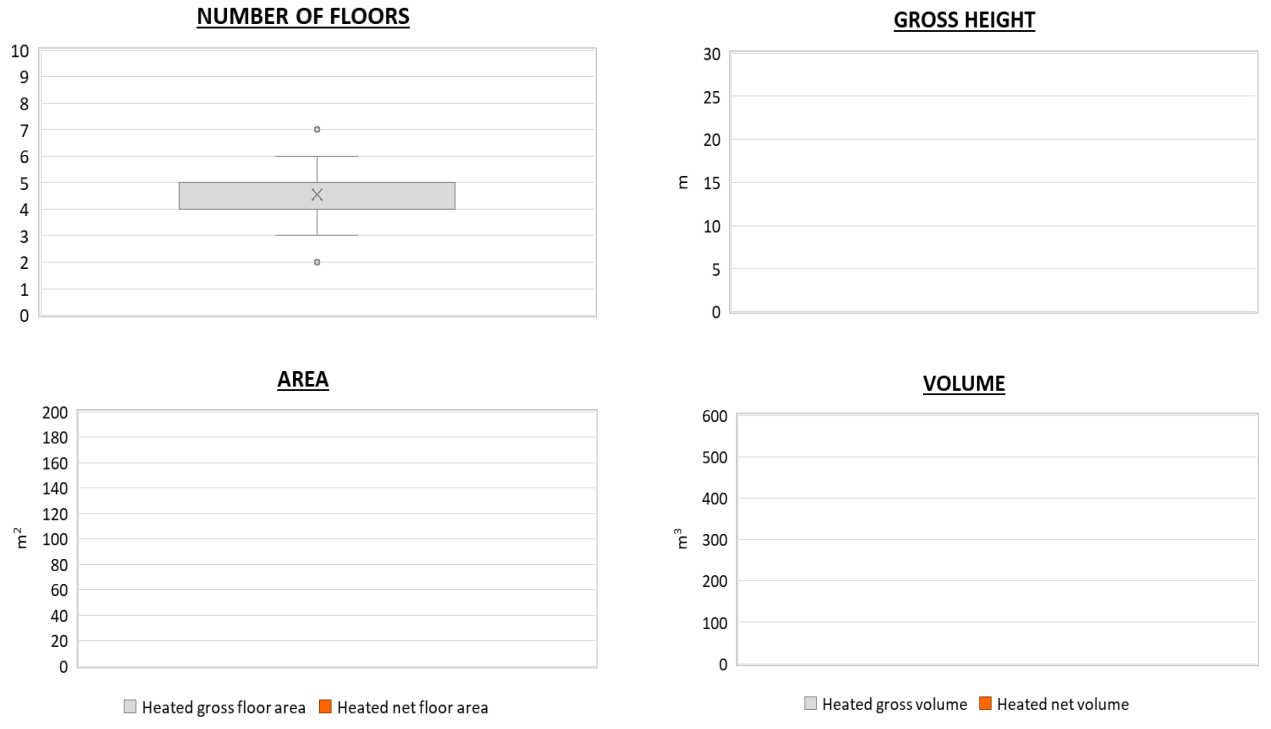

### DAILY OPERATING TIME

| | | | | |
|---|---|---|---|---|
| **Region:** | Lazio | | | **Archetype code:** |
| **Building category:** | Residential buildings – Apartments (in multifamily blocks) | | | RES_APPBLOCK_ 1991-2005_D_LAZ |
| **Period of construction:** | 1991-2005 | | | |
| **Climatic zone:** | D | **Number of records:** | 31 | |

## ADDITIONAL DATA

| | Data | Symbol | Unit of measure | Mean value | Standard deviation | Q1 (first quartile) | Median value | Q3 (third quartile) |
|---|---|---|---|---|---|---|---|---|
| GEOMETRY: apartments | Inter-storey height | $H_n$ | m | - | - | - | - | - |
| | Heated gross floor area | $A_{H;g}$ | $m^2$ | - | - | - | - | - |
| | Heated net floor area | $A_{H;n}$ | $m^2$ | - | - | - | - | - |
| | Heated gross volume | $V_{H;g}$ | $m^3$ | - | - | - | - | - |
| | Heated net volume | $V_{H;n}$ | $m^3$ | - | - | - | - | - |
| 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 | 163.95 | 114.92 | 77.30 | 114.00 | 238.00 |
| | 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 | $\theta_W$ | °C | 48.00 | 0.00 | 48.00 | 48.00 | 48.00 |
| | DHW system power | $P_{W;gen}$ | kW | 47.32 | 26.12 | 31.12 | 44.37 | 54.96 |
| | * These values refer to the apartment scale | | | | | | | |

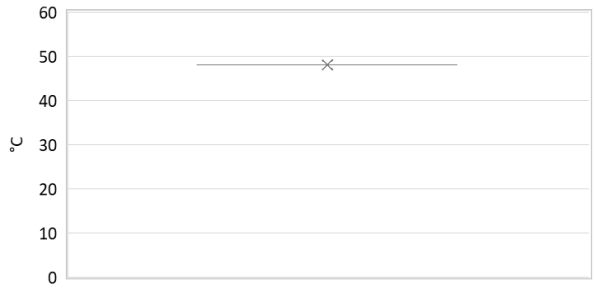
## Additional data: GEOMETRY (the plots refer to the apartment scale)



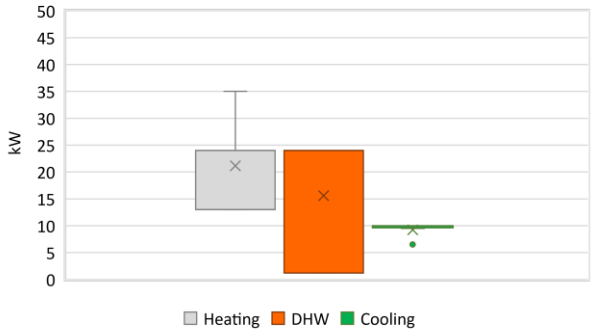
| | | | | |
|---|---|---|---|---|
| **Region:** | Lazio | | | **Archetype code:** |
| **Building category:** | Residential buildings – Apartments (in multifamily blocks) | | | RES_APPBLOCK_ 1991-2005_D_LAZ |
| **Period of construction:** | 1991-2005 | | | |
| **Climatic zone:** | D | **Number of records:** | 31 | |

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

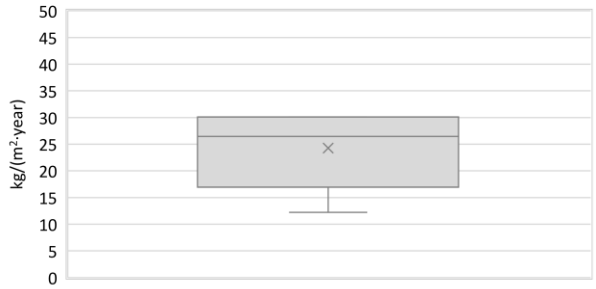
### DHW SUPPLY TEMPERATURE



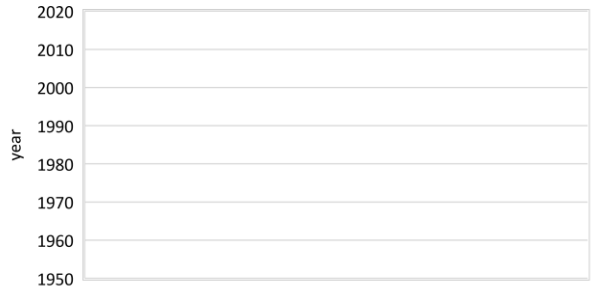

### SYSTEM POWER



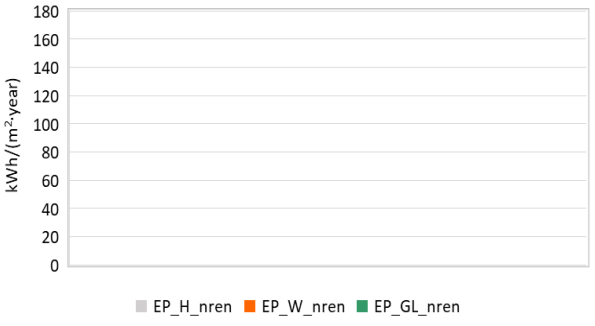

### $CO_2$ EMISSION




### HEATING SYSTEM INSTALLATION YEAR




### NON-RENEWABLE PRIMARY ENERGY USE




### RENEWABLE PRIMARY ENERGY USE