

 Region:
 Trentino Alto Adige
 Archetype code:

 Building category:
 Educational buildings
 EDUC\_1991-2000\_E\_TN

 Period of construction:
 1991-2000

 Climatic zone:
 E
 Number of records:
 35

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

External walls: no data available Roof slabs: no data available

Data sources: APE (100%)

|                       | Data  | Symbol   | Unit of                          | Mean                   | Standard       | Q1 (first      | Median       | Q3 (third |  |  |
|-----------------------|---|--|----------------------------------|------------------------|----------------|----------------|--------------|-----------|--|--|
| BUILDING GEOMETRY     | Number of floors  | n <sub>f</sub>   | measure                          | value                  | deviation<br>- | quartile)      | value<br>-   | quartile) |  |  |
|                       | Gross height  | Hg   | m                                | _                      | _              | _              | _            | _         |  |  |
|                       | Footprint area  | A <sub>footprint</sub>   | m <sup>2</sup>                   | _                      | _              | -              | -            | _         |  |  |
|                       | Heated gross floor area   | A <sub>H;g</sub>   | m <sup>2</sup>                   | _                      | -              | -              | -            | _         |  |  |
|                       | Heated net floor area   | A <sub>H;n</sub>   | m <sup>2</sup>                   | 1412                   | 1108           | 472            | 1148         | 1847      |  |  |
|                       | Heated gross volume   | V <sub>H;g</sub>   | m³                               | -                      | -              | -              | -            | -         |  |  |
|                       | Heated net volume   | V <sub>H;n</sub>   | m <sup>3</sup>                   | 6676                   | 5638           | 2079           | 4632         | 8872      |  |  |
|                       | Compactness ratio   | A <sub>env</sub> /V <sub>H;g</sub>   | m <sup>-1</sup>                  | 0.55                   | 0.16           | 0.40           | 0.57         | 0.67      |  |  |
|                       | WWR – North orientation   | WWR <sub>N</sub>   | -                                | -                      | -              | -              | -            | -         |  |  |
| 뒴                     | WWR – South orientation   | WWR <sub>S</sub>   | _                                | -                      | -              | -              | _            | _         |  |  |
| Φ.                    | WWR – East orientation  | WWR <sub>E</sub>   | -                                | _                      | _              | -              | -            | _         |  |  |
|                       | WWR – West orientation  | WWR <sub>w</sub>   | -                                | _                      | _              | -              | -            | _         |  |  |
|                       | Window to useful floor area ratio   | A <sub>wi</sub> /A <sub>use</sub>  | -                                | -                      | -              | -              | -            | -         |  |  |
|                       | Roof type   |  |                                  |                        | -              |                |              |           |  |  |
|                       | <i>U</i> -value of the roof   | U <sub>fl;up</sub>   | W/(m²⋅K)                         | -                      | -              | -              | -            | -         |  |  |
|                       | External walls type   |  |                                  |                        | -              |                |              |           |  |  |
| ) PE                  | <i>U</i> -value of the wall   | $U_{wl}$   | W/(m <sup>2</sup> ·K)            | -                      | -              | -              | -            | -         |  |  |
| ĒĽC                   | Slab on ground floor type   |  |                                  |                        | -              |                |              |           |  |  |
| ENVELOPE              | <i>U</i> -value of the floor  | $U_{fl;lw}$  | W/(m <sup>2</sup> ·K)            | -                      | -              | -              | -            | -         |  |  |
| _                     | Windows type  | -  |                                  |                        |                |                |              |           |  |  |
|                       | <i>U</i> -value of the windows  | $U_{W}$  | W/(m <sup>2</sup> ·K)            | -                      | -              | -              | -            | -         |  |  |
|                       | Shading system type   |  | -                                |                        |                |                |              |           |  |  |
| _ z                   | Occupancy density *   | <i>O</i> <sub>C</sub>  | person/m²                        |                        | L              | INI EN 16798-1 | - Table A.19 |           |  |  |
| and<br>TO             | Lighting power density *  | $W_{L}$  | W/m <sup>2</sup>                 | UNI EN 16798-1 - A.8.3 |                |                |              |           |  |  |
| NS<br>FI              | Equipment power density *   | $W_{A}$  | W/m <sup>2</sup>                 | UNI EN 16798-1 - A.8.3 |                |                |              |           |  |  |
| GAINS and VENTILATION | Type of ventilation   |  | Natural: 100%                    |                        |                |                |              |           |  |  |
| >                     | Air exchange rate *   | n  | n h <sup>-1</sup> UNI EN 16798-1 |                        |                |                |              |           |  |  |
|                       | Heating system type   | Autonomous: 14%, Centralized: 43%, , Unknown: 43%  |                                  |                        |                |                |              |           |  |  |
|                       | Heating generator   | Traditional boiler: 14%, Condensing boiler: 17%, Boiler (Unknown type): 57%, DHC: 9%, Unknown: 3%  |                                  |                        |                |                |              |           |  |  |
|                       | Daily operating time of the heating system *  | t <sub>H</sub>   | h                                | 14                     | 0              | 14             | 14           | 14        |  |  |
| TEMS                  | Energy carrier  |  |                                  |                        | Natural ga     | s: 100%        |              |           |  |  |
| THERMAL SYSTE         | Heating emission sub-system   | -  |                                  |                        |                |                |              |           |  |  |
|                       | Cooling system type   | Air-cooled chiller: 9%, Unknown:91%  |                                  |                        |                |                |              |           |  |  |
|                       | Daily operating time of the cooling system *  | t <sub>C</sub>   | h                                | 0                      | 0              | 0              | 0            | 0         |  |  |
|                       | Cooling emission sub-system   | -  |                                  |                        |                |                |              |           |  |  |
|                       | DHW system type   | Autonomous – coupled with heating: 26%, Autonomous - detached from heating: 17%, Centralized – coupled with heating: 34%, District heating: 3%, Unknown: 20% |                                  |                        |                |                |              |           |  |  |
|                       | DHW generator   | Natural gas boiler: 65%, Electric heat pump: 9%, Unknown: 29%  |                                  |                        |                |                |              |           |  |  |
|                       | * These values were not available in the considered sources, and are thus derived from UNI EN Standards |  |                                  |                        |                |                |              |           |  |  |



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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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| ADDITIONAL DATA |                           |  |                 |   |                    |                     |                 |                     |  |
|-----------------|---------------------------|--|-----------------|---|--------------------|---------------------|-----------------|---------------------|--|
|                 | Data                      | Symbol   | Unit of measure | Mean<br>value   | Standard deviation | Q1 (first quartile) | Median<br>value | Q3 (third quartile) |  |
| THERMAL SYSTEMS | Heating efficiency or COP | η <sub>H;gen</sub> or<br><i>COP</i> H;gen                        | -               | This value has to be retrieved from suitable datasheets |                    |                     |                 |                     |  |
|                 | Total heating power       | P <sub>H;gen</sub>   | kW              | 195   | 191                | 43                  | 113             | 300                 |  |
|                 | Cooling efficiency or EER | $\eta_{	extsf{C};gen}$ or $	extsf{\textit{EER}}_{	extsf{C};gen}$ | -               | This value has to be retrieved from suitable datasheets |                    |                     |                 |                     |  |
|                 | Total cooling power       | P <sub>C;gen</sub>   | kW              | 43  | 40                 | 8                   | 37              | 57                  |  |
|                 | Temperature of DHW        | $\vartheta_{W}$  | °C              | 40  | -                  | 40                  | 40              | 40                  |  |
|                 | DHW system power          | P <sub>W;gen</sub>   | kW              | 195   | 191                | 43                  | 113             | 300                 |  |





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