

Summary

New simple Method to assess the electrical Consumption in non-residential Buildings

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The presented method is a new approach for assessing and benchmarking the electrical consumption in non-residential buildings. The time needed to apply this method is less than that for a calculation. Therefore it is particularly suited for analysing existing buildings. The existing state of art covers the assessment of lighting, ventilation and cooling.

The analysis maps the different use of non-residential buildings by defining user-zones. Further more the existing lighting and HVAC system is considered. The necessary input data can be collected directly in the building or can be taken from the documentation.

The energetic assessment is divided into three steps:

- Defining the different zones and determine the zone areas
- Calculation the specific energy values for lighting, ventilation and cooling on the base of the installed electrical power and the time of use
- Benchmarking of the specific values.

The benchmarking is done by comparing the specific values of the building with reference values. The reference values were calculated with the MEG-Calculation tools. Values are listed for

- lighting, ventilation and cooling
- 30 different standard uses (single office, multiple office, restaurant, kitchen ...)
- five different energy effort categories (very high, high, medium, low, very low).

For every zone one of the listed standard uses has to be assigned. Taking the standard use and the listed specific values into account a benchmark scale can be generated for the different situations of use. The benchmarking can be done on the level of a zone, of zonegroups or the whole building. Besides the benchmarking it is possible to outline an energy reduction potential.

Therefore the new method is an important supplement to the existing approaches. It is especially suited for the assessment of existing buildings. Besides showing and benchmarking the energy profile, energy saving measures for the investigated building can be determined.

