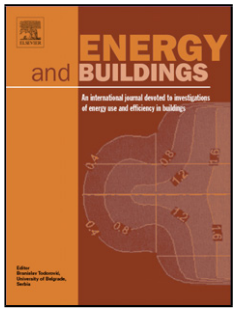

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Evaluating energy performance in non-domestic buildings: a review

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Abstract

Evaluation methods can be used to determine what constitutes good energy performance in a building. With an increasing focus on energy use of buildings worldwide, this evaluation assumes a fundamental importance. This paper provides a comprehensive review of the available methods for analysing, classifying, benchmarking, rating and evaluating energy performance in non-domestic buildings.

Methodologies are grouped in five categories: engineering calculations, simulation, statistical methods, machine learning and other methods. Techniques for evaluating buildings are described, their principal applications are shown and limitations are identified. The use of performance evaluation in energy efficiency programmes and standards is mapped.

There is a need to further develop interactions between the main modelling techniques to produce simple, robust and validated models. Also, evaluation techniques must be developed to consider comfort or service provision in the buildings as a factor in energy performance.