

Building performance evaluation and certification in the UK: a critical review of SAP?

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Abstract

Improving the efficiency and performance of the residential building stock is necessary for meeting future energy and climate change targets. Building Performance Evaluation and Certification (BPEC) tools are vital for estimating and recommending cost effective improvements to building energy efficiency. In the UK, building performance is estimated using the Standard Assessment Procedure (SAP) for new dwellings and Reduced SAP (RdSAP) for existing dwellings. Using a systems based approach we show there are many opportunities for improving the effectiveness of BPEC tools. Building performance standards across Europe are compared and successful strategies highlighted. It is shown that the large variance between estimated and actual energy performance from dwellings may be preventing the broader adoption of bottom-up energy efficiency measures. It is shown that despite popular belief, SAP and RdSAP do not estimate building energy efficiency but instead attempt to estimate the cost-effective performance of a building and thus create perverse incentives that may lead to additional CO₂ emissions. In this regard, the SAP standard confounds cost-effectiveness, energy efficiency and environmental performance giving an inadequate estimate of all three policy objectives. Important contributions for improving measurement, analysis, synthesis and certification criteria for buildings is offered.

Keywords

UK, Dwellings; Building Stock; Buildings; SAP; EPC



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