

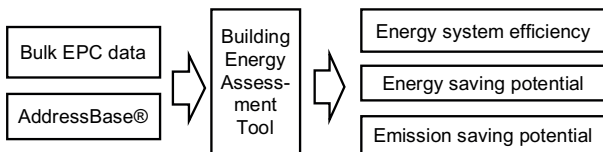


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This tool estimates the overall energy efficiency of a building as well as the impact of various refurbishment interventions options that can be conducted within the building. This tool is applicable at city scale. It can be used with economic evaluation and assesses how these interventions impact on carbon emissions. The output provides an indication of the energy saving potential of such interventions and its contribution to emission reductions across the whole city allowing informed investment decision to be made.

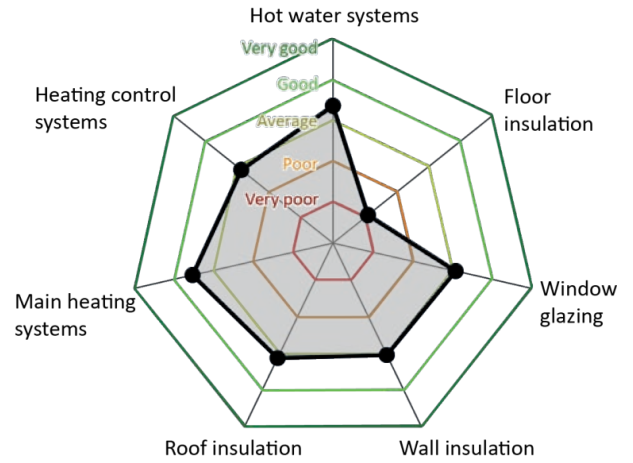
Tool Contents

This tool uses computer programs included under the ArcGIS® suite and requires AddressBase® data from Ordnance Survey and bulk Energy Performance Certificate data from LandMark. It produces an interactive map to illustrate the energy performance of all buildings in a city and gives estimate of the overall energy saving and emission reduction of the city from building refurbishment interventions.



How has it been delivered?

An online application containing results from this tool has been made available from 25th October 2017 on: www.energyandcities.org/building-epc.



Average efficiency rating of energy system elements in Southampton buildings

Where has it been published?

Methodology, validation and results of this tool were presented in the 16th International Conference on Sustainable Energy Technologies, 17–20 July 2017, Bologna, Italy, and published in the conference preceding Wu Y., Blunden L.S. and Bahaj A.S. (2017) City-wide building energy efficiency assessment using EPC data.

Who participated?

University of Southampton; Southampton City Council; Engineering and Physical Sciences Research Council (grant ref: EP/J017698/1, EP/N010779/1, and EP/K012347/1). Data provided by Environment Agency, Digimap, and OS.

Levels of Usability/Testability

This tool is directly applicable in cities in the UK as well as other regions. Validation results can be found in the Ph.D thesis of Yue Wu (2017), available from ePrints, University of Southampton.