Investigating the energy efficiency of a Victorian terraced house

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Overview | *Due to the European Union commitment to achieve a 20% reduction in carbon emissions by 2020, coupled with the low turnover of housing stock in the UK, it is imperative that more attention be paid to increasing the energy efficiency of existing UK housing stock. In light of this energy consumption was monitored over the course of half a year in a Victorian terraced house in Cambridge. The house already contained a number of energy saving features such as an efficient combi-boiler, thick loft insulation, as well as energy efficient light bulbs and double glazing throughout. Energy usage was divided into 5 categories; heating, hot water, cooking, lighting and miscellaneous appliance usage. IESVE building simulation software was used in parallel to experimentally derived data to estimate the effects of the changes already carried out on the building fabric and how useful further improvements might be. The figures attained were then compared with data on the energy performance of the average UK home.*

Main Outcomes | *It was found that the energy saving features already in place were hugely successful; the house was in the top 10% of UK housing in terms of energy efficiency, and the top 2% of pre-1919 housing. The house as it stands uses 60% less energy than it would without these features, while further work could halve energy consumption again*

Future Work | *The results of the investigation were highly promising, but at the same time limited, since they were derived from only one house. Further work to see how easily replicable such savings are among different types of housing and subject to different types of occupant behaviour would contribute hugely to the debate on energy efficiency in the UK housing sector.*