

What's your home's MPG?

Improve your performance

Liz Reason, Director (Green Gauge Trust)



Ask someone how many miles per gallon their car uses, and 9 out of 10 people can give you an approximate answer. What is more, they know that if the answer is 12mpg, then that is a bit embarrassing. And if it is

70mpg, it is something to be quite proud about. But ask the same question about the buildings people spend their time in – their office, school or home – and they probably do not have a clue.

But in a time of escalating fuel prices, the size of fuel bills is beginning to matter. With further 80 per cent rises predicted by 2020, there must be a focus on how to deal with the growing levels of fuel poverty. Housing associations need to get to grips with how they are going to improve the energy performance of their buildings cost effectively.

The regulatory focus on carbon requires a balance between finding low cost ways to make buildings warm in winter, cool in summer and with excellent indoor air quality and low running costs, with reducing carbon emissions. Invest in low or zero carbon technologies and you risk using high-cost solutions to deliver low carbon homes that residents do not know how to use and which pose future maintenance problems.

Work undertaken by Leeds Metropolitan University over the first decade of this century has demonstrated for the first time just how variable the energy performance of new homes can be, even though they are built to the same fabric standard. Figure 1 shows first, that none of sixteen homes tested complied with the energy requirements of the Building Regulations and the heat loss of some homes was double what it should have been.

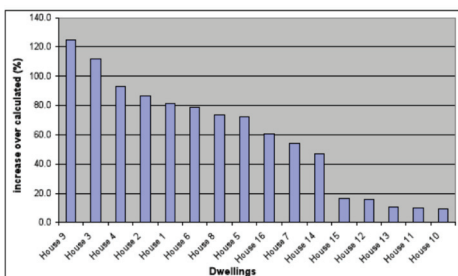
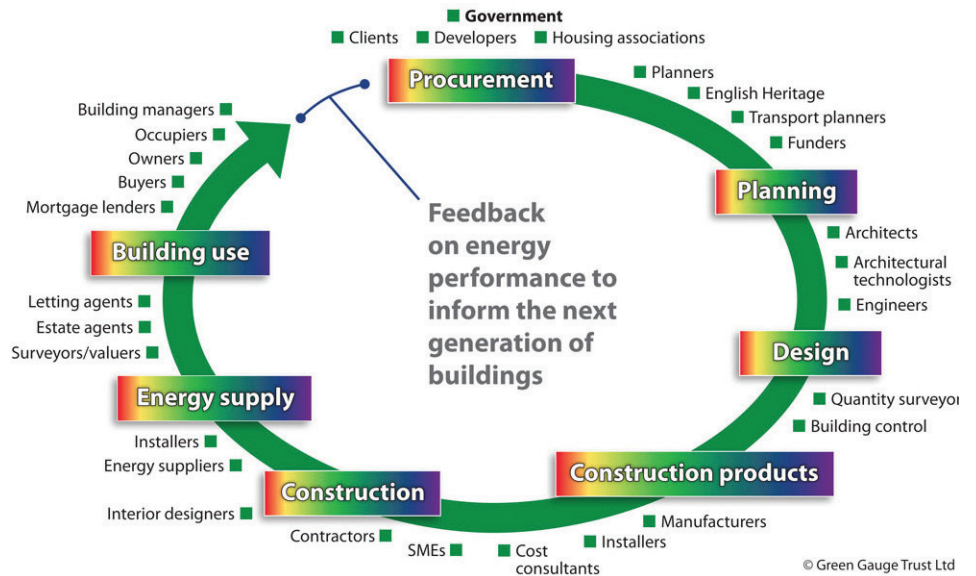


Figure 1



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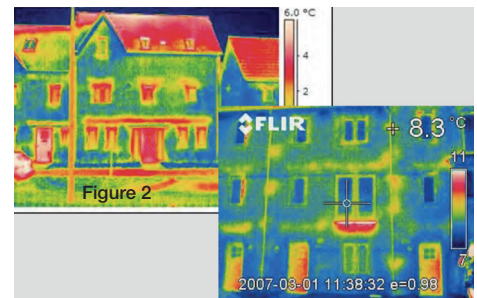
So why do people know the energy efficiency of their car, but not their house?

Perhaps building energy has not featured in people's list of expenditure priorities. Some will know how much they are paying by direct debit per month, most will not. A very small number could report their energy use in kWh/m²/yr - the language of the Energy Performance Certificate and Display Energy Certificate for non-domestic buildings. But then maybe the problem is confusion - home appliances are rated A to G, and there are point scores attached to those bands. New buildings have a code level or a BREEAM rating, or a percentage reduction in emissions compared to a building built to a given set of building regulations.

The many stakeholders involved in any building need to have a common language to describe what they have or what they would like. All contributors to new carbon efficient homes need to understand how buildings work as complete energy systems – the building fabric must be right and the right kit installed. The thermal images show reasons for the heat loss very graphically – cold bridges, poorly installed insulation and air leakage. Figure 2

All in all, this is recipe for confusion, and if we do not know the energy outcomes we want, we are unlikely to achieve them.

The challenge is for people to ask themselves the question: "How many miles per gallon does your building do?" and to learn to be able to give a reasonably accurate answer.



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