



Press Information

[Opinion piece written for 'Daylight & Architecture' magazine, October 2008]

THE UK APPROACH TO SUSTAINABLE REFURBISHMENT - by Dr David Strong, Chief Executive, Inbuilt

In 2006 the UK Government declared an ambitious plan to ensure all new homes are zero carbon by 2016. New non-domestic buildings will have to be zero carbon by 2019.

The impact of this plan has been felt throughout the property and construction industry, and the drive towards zero carbon has already had a powerful effect in galvanising the housebuilding and property development community, and in stimulating innovation. I am not sure that would have happened without such a strong legislative and policy initiative.

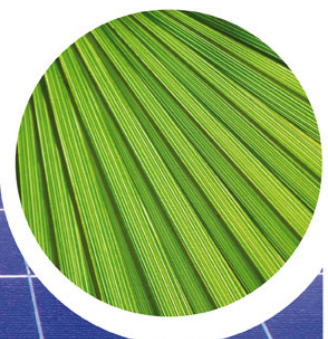
Of course the huge surge in interest in sustainable building is good news. It is highly gratifying to see sustainability finally reaching the top of the political agenda. The emphasis being put by the UK Government on more energy-efficient buildings, and greener communities, is a truly welcome and encouraging sign.

However, those of us who are passionate about delivering a genuinely sustainable built environment currently face a real dilemma.

Here's our problem: there is so much more to delivering exemplary built environments than zero carbon. In fact, there is even a danger that a fixation on zero carbon may result in highly perverse outcomes and deliver seriously damaging and unintended consequences in terms of sustainability – with the pursuit of the 'best' becoming the enemy of the good.

The UK Government wants to see all new homes built to the highest level (Level 6) of the Code for Sustainable Homes by 2016. Allowing for the time required to design, specify and fund a development of Code Level 6 new homes by 2016 means housebuilders and designers having all the answers to the zero carbon challenge by about 2012 – just four years from now. Housebuilders working in the social housing sector are having to move even faster, producing Code Level 3 or 4 homes already.

The risk that is now being recognised is that the single-minded scramble to design and build Level 6 homes gives out the message that this is the highest ambition and most worthy outcome we should aim for. It's not.



If we end up with 'zero carbon' Level 6 homes that rely on unproven or risky technologies, are uneconomic to maintain, are built on flood plains, overheat in summer, have poor acoustic performance, poor indoor air quality or other unintended consequences, then we have created a generation of homes unfit for people. This cannot be called 'genuine sustainability'.

When it comes to cutting carbon emissions from the building stock, a three-pronged approach is necessary. The first priority is de-carbonising the electricity supply grid. The second is all about promoting low and zero carbon new build. And the third requires a coordinated national strategy to radically improve the performance of our existing buildings.

The Renewable Energy Strategy announced by the British Government this summer is great news for the first priority – it takes us an exciting next step towards a truly low-carbon UK. Initiatives such as the Code for Sustainable Homes and targets for zero carbon new buildings are already going some way towards addressing the second priority.

But what about the third part of the package? Sadly, we still do not have a coherent and effective strategy to deal with the huge energy wastage in the existing building stock.

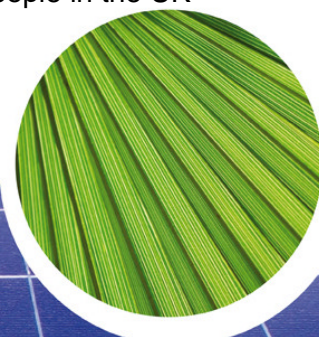
Why does this matter so much? Well, consider that over 70% of the UK's 2050 building stock has already been built. The vast majority of the buildings we will still be using in 20 years' time lack sufficient insulation, heating controls or other measures to save energy - and that puts us among the worst performing countries in Europe.

This issue has been identified time and again as the single most important and potentially effective area where UK carbon emissions could be slashed. All experts and informed commentators are united –improving the energy efficiency of our existing building stock is the cheapest, cleanest and safest way to deliver CO₂ savings. To paraphrase Bill Clinton, "It's the existing stock, stupid."

The problem with existing buildings is simple; they underperform in relation to current building standards because they were designed and built at a time when sustainability and energy efficiency were not the imperatives that they are today.

And while global warming is a key driver, we must also not forget the more immediate benefits of improved energy efficiency in the existing housing stock – particularly the way it can help us tackle fuel poverty, a longstanding problem for vulnerable groups in our society, especially the elderly.

Fuel poverty is not easily dealt with because it can be caused by a complex mix of economic and social factors. However, one of the most important contributing factors to fuel poverty is the energy inefficiency of the housing stock. Too many people still have to spend considerably more than 10% of their disposable income on heat - and some have to decide between heating and eating. Following recent energy price increases it has been estimated that up to 6 million people in the UK may be in fuel poverty.



A significant and long term programme of improvements to the energy efficiency of the existing stock (supplemented by a programme of appropriate renewable energy installations) will, therefore, deliver considerable social benefits as well as contributing to the Government's carbon emissions reduction target.

There is considerable consensus on what needs to be done, especially now, as a consequence of the EU Energy Performance of Building Directive, we have a fully operational energy rating and certification scheme in place that includes identification of cost-effective energy efficiency measures for all UK buildings.

At the technical level for example, the best improvements for energy inefficient buildings are generally very simple and risk free and are judged on their cost effectiveness and accessibility. These include better insulation (loft, walls, floors, tanks and pipes), draught proofing, secondary and double glazing, A-rated boilers and appliances, improved heating systems, enhanced control systems and efficient lighting. Some technologies such as solar hot water systems and ground source heat pumps can also help in the right places, and community-wide CHP systems offer the opportunity for highly cost effective improvements on a larger scale.

Similarly, the favoured ways to encourage a green refurbishment and retrofit of existing buildings are already well known. We're talking about a package of measures, mainly regulatory and financial, coupled with effective information campaigns, to act as an incentive to action.

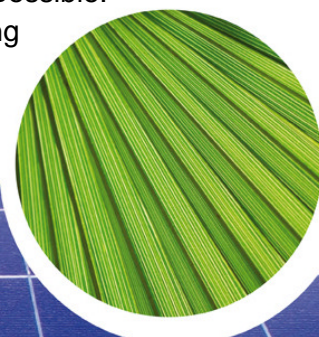
The options include tax changes to encourage more refurbishment, more capital allowances and various tax-neutral rebates associated with stamp duty, council tax, business rates or corporation tax to reward the implementation of improvement measures recommended in an Energy Performance Certificate (EPC) or Display Energy Certificate (DEC).

It's recommended that the next revision of the EU Energy Performance of Buildings Directive should require DECs to be displayed in all commercial buildings such as large supermarkets and hotels, since this will help to stimulate energy efficiency improvements in the service sector.

What is also needed are Building Regulations which ensure that whenever a building is being extended, or undergoing major refurbishment, the developer should have a mandatory obligation to upgrade the energy efficiency of the existing building.

In the meantime, at Inbuilt we work together with our clients to find natural solutions to reduce our dependence on energy-intensive systems. There are so many opportunities offered by nature to ventilate, heat, cool and illuminate our buildings, and cost savings to be made by designing out unnecessary technical complexity in both newbuild and refurbishment projects.

We focus on keeping the specification of energy plant and equipment as simple as possible. Designing-out technical complexity is a real challenge, but in our experience avoiding unmanageable complexity is often the key to achieving comfort conditions, coupled with economic operating costs and low carbon emissions.



Similarly, we find that the 'real world' performance of buildings often differs greatly to modelled predications due to the way people act. Clear and conspicuous real-time information within the building on both carbon emissions and running costs is crucial to make people take action to reduce their consumption.

Whatever the challenges, we must not be distracted from the urgency of reducing carbon emissions from the existing building stock, and of securing investment and planning consents for large scale renewable energy systems. In terms of money invested per tonne of carbon saved, both of these objectives will provide a much greater and faster return than making all new buildings 'zero carbon'.

Our Government has shown strong leadership in its development of policies for new homes, schools and commercial buildings. Now is the time to get moving on implementing a bold strategy for the existing stock.

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