



A tale of codes, carbon & community



The road to sustainability is long and bumpy, but exciting and full of opportunities for housebuilders and suppliers. ROGER HUNT, sustainability editor of Showhouse magazine, takes the Eco temperature.

Sustainability is non-negotiable. It concerns dwindling resources and, to use the key statement on sustainable development coined by the Brundtland Commission back in 1987, is about “development that meets the needs of the present without compromising the ability of future generations to meet their own needs”.

There are few such glimpses of clarity in the housebuilding industry - or other industries - where words like 'sustainable', 'eco' and 'green' are bandied about freely and their meaning is in danger of being negated; lost to hyperbole and greenwash.

Policies, standards and regulations, including EPCs and the Code for Sustainable

Homes, have come thick and fast. How we deliver zero carbon sometimes appears to be a conundrum of unfathomable proportions. In the rush to embrace the Government's flagship 2016 zero carbon homes target we are still not entirely sure what a zero carbon home should look like and the industry lacks the clarity it craves. For those outside it must sometimes seem as if we are on a charabanc juddering along a rutted track.

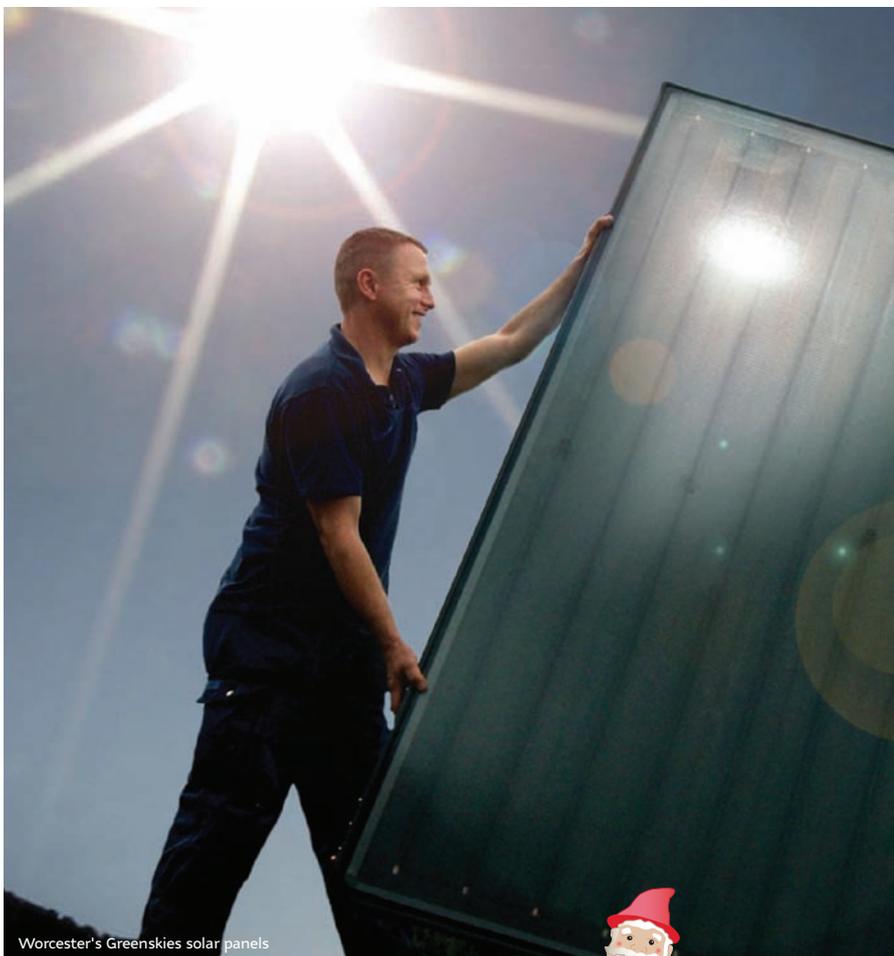
The recession has created further complications. Significantly reduced levels of activity in the industry have hampered housebuilders and the supply chain in undertaking the development work needed to achieve zero carbon homes. One of the problems long besetting the industry is the lack of research and development compared with other areas of manufacturing such as the car industry.

Consequently it is vital to share resources, ideas and problems. Specialist consultants have never been more in demand but, particularly for smaller housebuilders, the increasing diversity of expertise required to build a house is a considerable burden.

Of some cheer to housebuilders is the discovery that reaching Code level 3 has not been as challenging as many had expected. Indeed, it now seems that Code 4 solutions may be achievable without renewables and embracing Passivhaus standards could further help efficiencies.

This shift from renewables and other technologies means there is a trend away from building homes that flaunt their 'greenness'. Much of the performance is being achieved instead through the materials used to create a thermally efficient, airtight and low carbon building envelope.

Unsurprisingly, the social housing sector frequently leads the way in the use of innovative construction methods and renewable technologies. Amongst housebuilders, the most enlightened are those where change has been led from the boardroom. Sadly others take the narrow



Worcester's Greenskies solar panels



view, simply regarding 'being green' as a matter of keeping up with Part L of the Building Regulations.

Easily forgotten in chasing Code levels and targets is the consumer. Understanding and educating the consumer is a vital but much overlooked aspect of making homes sustainable and one that the Government and housebuilders must address.

As levels of airtightness and technology increase it becomes critical to explain how to live in such homes. The other education related question is whether the person in the street really grasps terms like zero carbon and carbon footprint; surely highlighting the simple fact that saving energy will save them money is far more effective?

After thermal efficiency, energy is a key issue in all homes. The Feed-in Tariff or 'Clean Energy Cashback Scheme' is dramatically altering the renewables dynamic for electricity generation in both new build and renovation projects. The Renewable Heat Incentive is set to do the same for heat from April 2011. For housebuilders, these initiatives open up new opportunities and will boost the take up of renewables in a way that has already been seen in other parts of Europe.

One heating solution exploited widely overseas but relatively rarely in the UK is



Solar panels incorporated into the roof of a development

district heating. Particularly on larger mixed-use sites, district heating in conjunction with combined heat and power (CHP) has the potential to deliver significant carbon savings and lower energy bills. Moreover, it is a clear example of the benefits of local partnerships and communal infrastructure.

Community is a large part of sustainability but all too often housebuilders, planners and government forget, or somehow fail to grasp, this crucial dimension of a scheme. Houses cannot be built in isolation, nor can towns. This was the flaw with so many of the 'eco towns'

where they were not true communities but satellite settlements for commuters relying, unsustainably, on the car as a link to the outside world.

Some of the lessons have been learnt but, if we are going to create good places for people to live, architecture and infrastructure must be backed by good design. In the public realm, people need to be able to share spaces, gather and communicate; be it in their neighbour's front porch, over the garden hedge, in the community hall or at the bus stop or corner shop. This is what makes a development a safe, happy and therefore sustainable place to live.

Good design and sustainable design are mutually reinforcing but, to work effectively as a tool, design has to be an integral part of the proposition from the outset. Importantly, if value is to be delivered over the whole life of a scheme, design integrity cannot be compromised by cost cutting and policy changes which would render the scheme unsustainable.

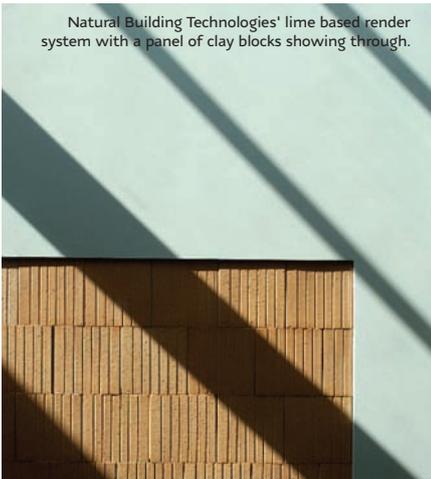
Planning, as the other critical factor in shaping places, is at the heart of creating sustainable communities and the recently announced Planning Policy Statement consultation 'Planning for a Low Carbon Future in a Changing Climate' looks to recognise this role. The question is whether, especially in these cash-strapped times, local authorities have the resources and expertise to cope with the planning and regulatory burden.

Inevitably, mention of climate change now conjures questions of integrity. It must not. Climate and resources are linked inextricably; globally we have to conserve water and food and be aware of the consequences of mass migration. The



Installation of Sandtoft's photovoltaic roof tiles





Natural Building Technologies' lime based render system with a panel of clay blocks showing through.



Roger Bullivant's SystemFirst is installed on site. The polystyrene insulation for the floor fits into the galvanised steel frame



Velfac windows which have a slim frame to let in significantly more daylight than traditional alternatives.

housebuilding industry must respond to the possible scenarios. The issue of overheating within buildings has huge consequences for the way homes are constructed and the materials used. Changing weather patterns and more dramatic weather events will potentially affect not only site practices and build schedules but materials and finishes.

Building sustainable, low or zero carbon homes is still very far from being a science and there must always be the nagging doubt that there could be a future price to pay. What happens if the materials, construction methods or technologies do

not perform in the way predicted?

This is nowhere more true than in the refurbishment sector. Addressing problems and ensuring the right solutions are found is crucial where, in just one street, every home may be different. Refurbishment is going to be big business in the coming years as attempts are made to address the millions of energy sapping, poorly insulated and far from airtight homes that are in the majority. For housebuilders or RSLs involved in this work the challenges are immense.

Indeed, the enormity of the task for all sectors of the industry is daunting but

surely not unachievable. Pursuing and achieving the goal of sustainability will undoubtedly require a great deal more joined up thinking between government, housebuilders and the supply chain. What is worth recognizing and remembering is the astonishing speed of change we have seen and how the road to sustainable, low and zero carbon homes has made the housebuilding industry an incredibly exciting community of which to be a part.

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VELLUX has unveiled the design for its ModelHome 2020 properties, which it believes are the first homes designed to what is expected to be the official definition of zero carbon under the new carbon compliance levels. Image: HTA Architecture

