

South East



Dartmouth Avenue,
Woking, Surrey
(courtesy of Greenoak
Housing Association)



**SOUTH EAST CENTRE
FOR THE BUILT
ENVIRONMENT (SECBE)**

Delivering low carbon homes

If you are a small or medium size house builder, you might feel you are being enveloped in a cloud of eco initiatives as the drive to low carbon intensifies. So how do you find out what's going on?

THE ANSWER can be found on your desktop now at: www.secbe.co.uk/low_carbon_homes; the Low Carbon Homes (LCH) *How to Guide* is compiled by the South East Centre for the Built Environment (SECBE). SECBE works with sector companies and suppliers to improve their individual and collective performance. Providing the ultimate resource, to accelerate the delivery of low carbon homes in the region, is just one example of their work to inform, innovate, co-ordinate support and showcase best practice.

LCH is funded by the Energy Saving Trust and supported by the South East England Development Agency, the South East England Regional Assembly and the Government of the Office of the South East. It will be the first comprehensive guide to policies, standards and likely future regulations, as well as providing online signposting to every aspect of low carbon design and build. It also features case studies to show just how people are meeting these escalating challenges.

“ The LCH website explains the standards set out in the Code for Sustainable Homes (CfSH) which deliver the targets in the policy statement. ”

There are five sections; *Drivers and Standards* – the policy background; *Guidance* – the best way to do it; *Tools and Specialist Advice* – practical help; *Case Studies* and a wide range of Links to secondary sources.

Drivers and Standards explains how the Government has led the world by setting 2016 as the date for new housing developments to achieve zero carbon; i.e.

net carbon emissions from any new housing development should be zero over a year. The overarching policy statement is set out in *Building a Greener Future*. The key datelines are set out for moving from the present national minimum standards in Building Regulations Part L – to be exceeded by 25% by 2010, by 44% by 2013 before achieving zero carbon in 2016. The LCH website explains the standards set out in the Code for Sustainable Homes (CfSH) which deliver the targets in the policy statement. The new Energy Performance Certificates are also explained.

Each standard or code is available for download. There is also an explanation of the relevant Planning Policy Statements dealing with climate change, its relationship to planning and how zero carbon thinking will impact on Local Development Frameworks which set out each planning authority's long term spatial strategy, and which governs decisions on planning applications.

► page 59



Left: Low Carbon Homes website: www.secbe.org.uk/lch

◀ page 55

Future policy implications are discussed. Consultation is already taking place about the development of Building Regulations Part L to enforce the targets set out on *Building a Greener Future*, while consultation on making the Code for Sustainable Homes mandatory has already been completed – responses to which can be found at: www.secbe.org.uk.

There are links to detailed technical explanations of key regulations – such as the Technical Guidance Manual to the Code of Sustainable Construction plus guidance on the required standards set for Social Landlords by the Housing Corporation and for land released by English Partnerships. The application of

planning standards by local authorities is reviewed, explaining how these could vary between different authorities as they can individually decide how far and how fast to go.

Building companies will work towards zero carbon design and construction in their own ways and in line with their commercial strategies. The Low Carbon Homes 'How to Guide' will provide a simple summary of the different benchmarks they can adopt to measure their performance and use for marketing purposes.

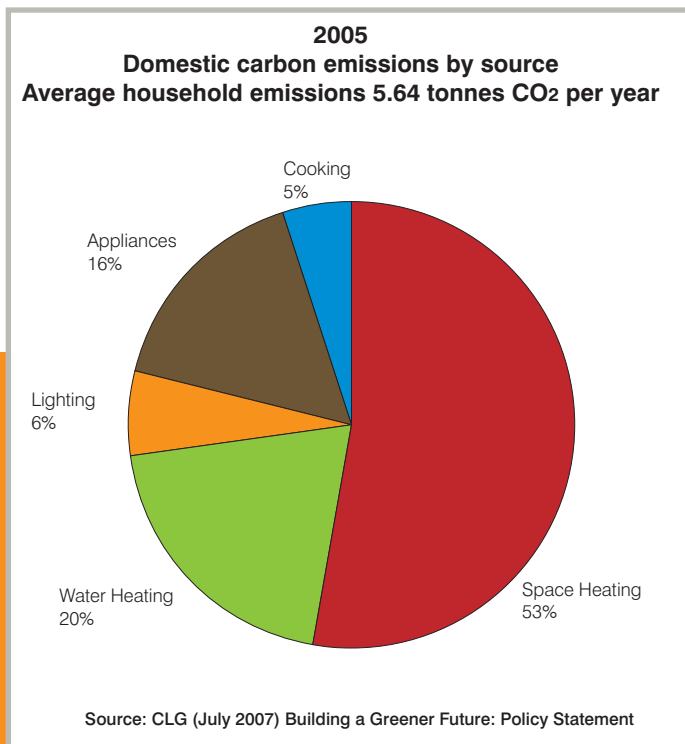
Understanding the latest state of play on policy and regulation, and knowing how to deliver, are very different issues. The Guidance will show you 'how to' tackle every aspect of design and delivery of low

carbon homes. There is a comprehensive section on energy efficient design which includes explanations of Dwelling Efficiency Rates, Standard Assessment Procedure Ratings – those defined by government to measure energy efficiency – and Heat Loss Parameter. There's an explanation of the Passive Design principles to maximise comfort in winter and summer with minimum waste as well as a guide to thermal insulation materials and even to specifying built-in white goods.

The selection of materials to minimise environmental impact is vital. BRE's *Green Guide* which explains re-usable and recyclable materials, and how to source them, is referenced in this section, as well as advice on specifying to meet low carbon requirements. With renewable energy provision likely to become mandatory for developments of 10 houses or more to provide anything between 10-20% of the overall energy requirement, the website summarises and evaluates the main types of renewables.

In the world of low carbon, it is essential to reduce water consumption especially in South East England where demand is likely to be highest. Each litre delivered also contributes to the carbon emissions of a development and so the less required, the better. Use of water reduction equipment is discussed in this section as are the recycling of rain and grey water.

Minimising waste in the construction phase and during the life of the building is essential. Implementing Site Waste Management plans, reusing demolition waste, cutting transport movements and minimising material waste during building are all explained. There is increasing pressure to help future householders to avoid rubbish of all sorts, so a guide to sink waste tools, composting bins and other recycling options is provided. Modern construction management and methods which are designed to control waste are also covered here.



▶ page 60

The Tools & Specialist Advice section provides comprehensive signposting to tools, guides and approaches to assist in the mainstreaming of sustainable construction projects such as quality indicators and low carbon calculators. Many of these tools need specialist application so there is a list of specialist suppliers and consultants. There should be no low carbon task which can't be solved by accessing this section of the website.

Best practice is fine in theory but we learn as much from what others have done, or have not been able to achieve. The momentum towards sustainable housing probably started about 10 years ago and quite a number of projects have been completed in that time. In the *Low Carbon Casebook*, examples of design and build of a range of projects helps provide the dos and don'ts. Studies of new build public and private building projects as well as eco retrofit for both sectors are included.

Typical is the Greenoak Housing story: Greenoak is a small housing association with some 400 homes in Surrey and Sussex. Adopting its first sustainability strategy in 2000, the Association is currently part-way through its first ten-year Sustainability Action Plan and was recently awarded a Housing Corporation Gold Award for Environmental Sustainability.

The Association has focused on a few key areas to attain tangible results with very limited resources, maximising opportunities for environmental improvements in existing stock, whilst

“ Best practice is fine in theory but we learn as much from what others have done. ”

developing an ongoing programme of low carbon new homes. A guiding principle has been to 'keep it simple' to build, operate and maintain.

Initially, Greenoak integrated sustainable thinking into its stock improvement programme. An early scheme involved the upgrade of a 1970s estate of four blocks of flats including the replacement of failing communal boilers and underground heating mains. An appraisal revealed that keeping a centralised heating model with high efficiency design and advanced controls, combined with upgraded insulation and new building windows was the best solution at that time. Looking ahead, there will be no like-for-like replacement of boilers. The energy source to a centralised system can easily be changed and the Association intends to upgrade to renewable technologies such as solar in the future.

Greenoak's new development programme aims to create an innovative and desirable homes model that provides low-carbon housing whilst being appropriate to a small developer with restricted and awkward sites. The first two developments of 26 homes were

completed in 2005/6 and are currently subject to evaluation through an Innovation and Good Practice Project supported by the Housing Corporation.

The homes, which exceed EcoHomes Excellent and full Lifetime Homes standards, were designed by Jon Broome Architects. They feature closed panel timber-frames with high levels of insulation and triple-glazed timber windows, PVC-free specification throughout and improved air quality provided by whole house/heat recovery ventilation systems. During construction, potentially hazardous products were avoided and waste production was minimised.

On-site renewable energy sources were not economically viable at the time of construction, so the homes have been future-proofed to allow for installation in the years to come. For example 'Passive' energy efficiency - conserving heat and energy rather than generating energy from renewable sources - is a core objective. In future developments, the Association aims to make greater use of recycled materials, and will improve its supply chain with less reliance on imported products. The core objective has been to provide desirable and flexible homes which reduce carbon emissions without the occupiers noticing. Current evaluation work will show how actual usage patterns have emerged and provide pointers for further improvements.

For more details please visit:

www.greenoakha.org

To visit LCH go to:

www.secbe.org.uk/low_carbon_homes



Dartmouth Avenue, Woking, Surrey (courtesy of Greenoak Housing Association)