

# **Evidence to the All Party Parliamentary Group for Excellence in the Built Environment**

## **Executive Summary**

The evidence below is derived directly from my experience of development in the Exeter area over the last 15 years. There is an exemplar low carbon development in a new community to the East of the City which is now under construction. The scheme illustrates that, with determination and modest grant funding, we can deliver low carbon infrastructure. With a further tightening of Part L of the Building Regulations, we can replicate this on other development sites in Exeter, without grant funding. This can be repeated across the country. There are no technical barriers to enhanced sustainable construction. There are strong arguments for speeding up the delivery of more sustainable homes – a judgement made by the Confederation of British Industry, in their recent publication 'The Colour of Growth'.

## **Introduction**

1. I am John Rigby and I chair the Exeter and East Devon Low Carbon Task Force (1). The Task Force is a public/private partnership body set up in 2011. Its function is to deliver low carbon projects in the Exeter and East Devon area, following the success of establishing a new community at Cranbrook (2). This community is powered by a Combined Heat and Power (CHP) scheme which feeds heat to residential and commercial premises in the vicinity. I have thirty five years experience in town/transport planning, the last 15 years as Director (3). I am now retired and my current role is voluntary. I set out below the relevant evidence on green construction, based on my professional experience. Whilst the evidence is my own, it has been endorsed by the Task Force members. I am happy to provide oral evidence, should the Committee so wish. The evidence is focused entirely on residential development. All references in brackets are amplified in the Annex.

## **Evidence of best practice in sustainable construction – and how this could be repeated**

2. The Code for Sustainable Homes and the complementary tightening of Building Regulations in 2006 and 2010 have been the essential drivers of enhanced sustainable construction standards in new homes. Without the pressure of these changes, it is unlikely that there would have been any improvement in sustainable construction standards. At Cranbrook, 6000 dwellings will be built over a 15 year period. A long term perspective on low carbon design was essential, if this development were to reflect the national targets of reducing carbon emissions by 80% by 2050. Despite industry reluctance at the outset of negotiations some 8 years ago, the scheme which was eventually agreed

ensures that all dwellings in the first phase of 2900 dwellings will hit Sustainable Homes Code Level 3. This has been achieved by a combination of fabric improvements and the provision of a CHP plant on the neighbouring Skypark site (on the north side of Exeter Airport), with a 75 km heat pipe network delivering heat to every home. No dwelling will have its own gas supply or individual boiler. Instead, each dwelling is fitted with a heat interface unit which provides heat to the radiator system.

*How has this been achieved and what were the obstacles?*

3. Officers and Members of East Devon District Council were determined that the new community would have a substantially lower carbon footprint than a conventional urban extension. That determination was reflected in countless meetings with the New Community Partners (the consortium promoting the development) where, despite considerable scepticism from the developers about what was seen as a high risk concept (new dwellings without gas cooking or gas central heating), they eventually signed up to the Council's aspirations. Considerable work was undertaken prior to finalising an agreement by : commissioning technical research to establish the feasibility and cost of this approach(2); negotiating with a range of potential energy service companies ; and submitting bids for grant funding to support this innovative approach.
4. The keys to delivering this low carbon development were effective negotiation and a small element of grant funding. The Homes and Communities Agency gave a grant of £4.1 million towards the £30 million total scheme cost, funded by EoN. Crucially, the South West RDA were also assisting with forward funding of critical infrastructure to unlock the scheme and that funding was conditional on delivering a biomass fuelled combined heat and power solution. The fiftieth house was expected to be occupied by Christmas 2012 and there is no sign of consumer resistance to the lack of gas within each property. The scheme also boasts a new primary school which is BREEAM Very Good and a new community building which is BREEAM Excellent. There is also a new business park, powered by the local CHP plant and thus this too has excellent low carbon credentials.

*How could this be repeated?*

5. One of the prime purposes of establishing the LCTF is to repeat this experience on all major development sites around the City and to see if District Heating (DH) could serve existing developments in the City. The context is now somewhat different than five years ago with capital grants for low carbon development no longer available. We are however working on a connection fee model, whereby an Energy Service Company provides a DH scheme, once developers agree to connect their new dwellings to the DH system for a specified fee. For smaller scale developments of 1000-2000 dwellings, the connection fee is likely to be between £4,000 and £6,000 per dwelling. Based

on long established surveying practice in dealing with Planning Gain, this cost should come off the land price, rather than passing to the purchaser. The householder will in any event benefit, as energy prices rise. At present, the average household energy bill is nearly £1300 per annum and that is forecast to rise to a minimum of £2000 in 2020 – some forecasts are double this level. Thus, better insulated houses, with low carbon heat sources will, in the long run, be a more cost effective option, as well as helping Britain to meet its carbon reduction targets. The CBI have argued that the Green economy and growth can go hand in hand.

6. Whilst there is a long term financial and energy efficiency logic to this approach, for the immediate future it needs to be driven by changes to Part L of the Building Regulations. The previous Government set out its intentions to tighten Part L progressively in 2010, 2013 and 2016, at which point, only zero carbon new homes would be built. The Coalition has been reviewing this policy and the outcome of that review is awaited. Representations have been made by the house builders and developers that this progressive tightening is unaffordable at a time when the housing market is struggling. Based on my own experience of delivering development, I believe it is essential that the tightening of Part L must continue, if we are to see the roll out of more sustainable house building. If the 2010 standard remains in force, the industry will build only to that standard. I set out below, why I believe that industry representations on this matter should be set to one side. In Exeter, we are poised to secure developer agreement to a new 2000 dwelling development in the City. This would deliver a DH scheme for the Monkerton area and serve adjacent areas containing planned developments of a further 1200 plus homes as well as Exeter's new Science Park. If the planned tightening of Part L does not materialise, it is likely that the DH scheme will be abandoned and thereby leave a whole new area of the City to be served by inefficient, centralised energy production. Given the lifespan of new development of well over 100 years and, given national carbon reduction imperatives, this is a major missed opportunity.

### **Barriers to Sustainable Construction**

7. There are no technical barriers to sustainable construction. The industry has the ability and access to the materials and technologies which can deliver highly sustainable construction. The Passivhaus Trust (4) has demonstrated that properties can be built at a price premium of just over 10% which deliver dwellings whose average annual heating bills are in the range £80-120. In Freiburg, construction volumes are such that there is almost no price premium. The issue is solely an economic one – what price premium should be imposed on new construction to deliver a specific level of carbon reduction? The industry is only 'held back' by a perception that higher standards are unnecessary.

8. The issue can be addressed either by grant aid or by tighter regulation. It is probably unrealistic to expect grant aid currently and so tighter regulation is the only way forward – with the cost being met by the landowner (with a reduced receipt) or possibly by the consumer, who would re-coup this through lower energy bills. There is an instinctive reaction against tighter regulation but in my experience developers are not opposed to regulation per se, their concern is a level playing field where all ‘players’ must abide by the same rules. Interest groups affected by possible new regulations often over-state the cost of meeting new standards - thus legislators are reluctant to impose new burdens. The costs of meeting the tighter carbon standards have turned out to be lower when the industry has had to face implementation – the industry will perform well when pressed. The previous government set out the long term intentions for tightening Part L three years ago. The industry will therefore have made land deals since that date on the basis of meeting these requirements and landowners will have received a price for their land which is net of the Planning Gain requirements. If the planned tightening is now abandoned, the house-builders will simply gain a windfall profit equivalent to the cost saving on meeting the new standard.
9. There is one barrier which the Government can remove. The concept of Allowable Solutions has been widely welcomed - this is the mechanism whereby any developer which cannot meet its carbon reduction on site is then permitted to make a financial contribution for an off-site solution. This mechanism is essential but depends on Government setting a price for carbon. Proposals were put to Government by the Zero Carbon Hub in mid 2011 but no decision has been forthcoming. This mechanism needs urgent approval so that sites can be developed quickly and local authorities can use the funding stream to build low carbon infrastructure.

### **Progress on sustainable homes – too much too fast?**

10. This is a statement which I do not support. The national carbon reduction targets, the need to improve energy security, the need to improve energy efficiency and the likely dramatic rise in household energy bills over the next decade all point to the urgency of making faster progress, rather than taking our foot off the pedal. Moreover, with the likely lives of new dwellings in the range of 100-200 years and the disproportionate cost of retrofitting energy/carbon saving measures, it is a hugely wasted opportunity to build to the present inadequate standard when we have the ability to build to a higher standard at comparatively low cost. We should also bear in mind that we have, compared with other European countries, high domestic energy use and poorly insulated dwellings (5).
11. In conclusion, further improvement in sustainable construction standards is essential so that we can use energy more wisely and reduce household energy

bills. The previously proposed changes to Part L need to be implemented from October 2013. There should be no transitional provisions – to overcome the situation that obtained in 2010 when developers pre-registered over 400 dwellings in Exeter so that they could be built to the 2006 standard at any time into the future, provided they had made a start on one house on the relevant site within a year of the registration date.

### **The Green Deal**

12. I offer no evidence on this.

John Rigby  
Chair, Exeter and East Devon Low Carbon Task Force

Final. 4 January 2013

## **Annex A Background to Evidence from John Rigby**

### **(1) Exeter and East Devon Low Carbon Task Force**

#### ***Membership:***

- o Exeter City Council
- o East Devon District Council
- o Teignbridge District Council
- o Devon County Council
- o Met Office
- o Energy Savings Trust
- o Exeter Chamber of Commerce
- o EON
- o Royal Devon and Exeter NHS Trust
- o University of Exeter
- o Bicton College

#### ***Principal Objectives of LCTF:***

The Low Carbon Task Force was established in May 2011 as a partnership between a number of public and private sector bodies, whose principal objectives are to:

- o reduce energy consumption/carbon footprint/energy costs within the area
- o increase energy efficiency through smart initiatives and technologies
- o seek continuous improvement through regular communications and a partnership working programme
- o deliver additional benefits to the community through education, training, job creation and community engagement
- o deliver services to the highest standards of quality

## **(2) Cranbrook New Community: brief background and current issues**

Cranbrook is a new community located close to the Exeter's eastern boundary. The concept of a free standing new community which is functionally related to, but not part of Exeter was originally conceived in 1991. The vision for Cranbrook is for it to be a sustainable, town which combines the rich urban fabric of a historic Devon market town whilst meeting the needs of 21<sup>st</sup> Century lifestyles.

Outline Planning permission was granted for 2,900 homes in October 2010. This was followed by detailed planning permission for 1,100 homes in March 2011 and a start on site in July 2011. The section 106 Agreement requires that all homes are to achieve at least Code for Sustainable Homes Star Rating Three. It is anticipated that Cranbrook will accommodate 6,000 homes by 2026 with potential for further expansion beyond this.

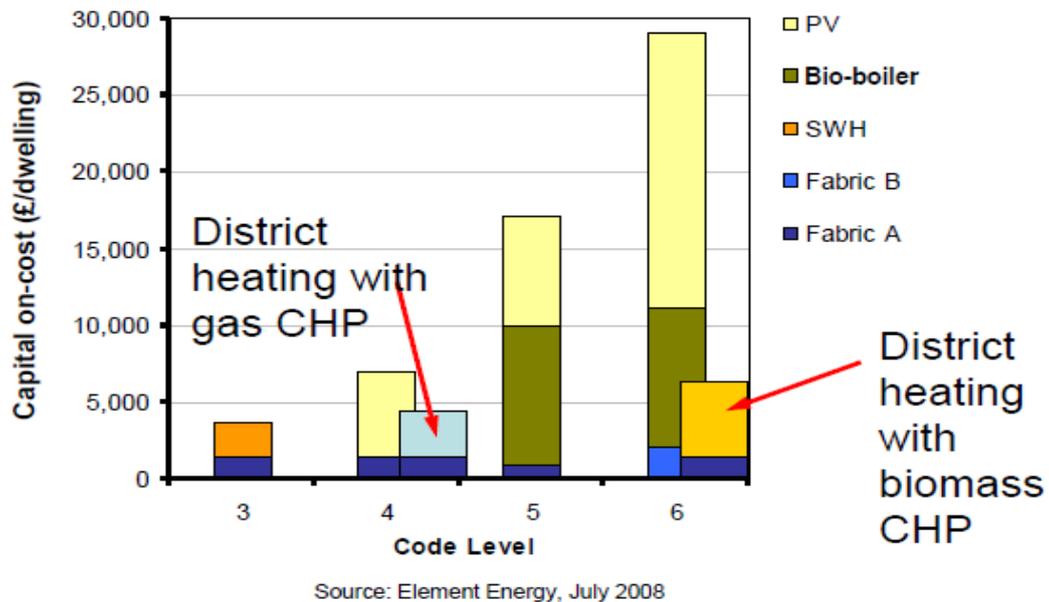
A critical ingredient of the Cranbrook development is that heat and hot water to all the homes is provided via a district heating network, powered by an off site energy centre. There are now over 10km of heat pipe in situ. Eventually the network will expand out to 75kms including serving the Skypark employment site. The energy centre will initially be gas fired and will evolve to become a biomass fuelled Combined Heat and Power system. It is estimated that this system will save circa 13,000 tonnes of CO<sub>2</sub> per year for the first 2,900 homes. This is part of a £30 million investment from energy company E.ON.

It is important to consider how this investment has been secured. When this was being negotiated in 2007 work was undertaken to consider a variety of ways of meeting the anticipated higher code levels over time. A study in 2008 by consultants, Element Energy, concluded that site-wide energy systems – CHP and district heating as opposed to house by house solutions – provided the more cost-effective means of achieving Code Level 4 and significantly the lowest cost means of achieving Level 5 (see below). It also concluded that the overall cost of compliance would be reduced by implementing a site-wide system from the first phase.

The implication of this is unambiguous – a clear and certain timetable for meeting higher standards allows strategic investment decisions to be made. The statement contained in the speech from the Deputy Prime Minister to the National House Building Council on 22 November 2012 that the Government remains committed to the target for all new homes to be zero carbon from 2016 was therefore very welcome. However the general feeling amongst the house-building industry appears to be that the Government is poised to either dilute or delay pending increases in code levels.

This is impacting on live negotiations. In Exeter there is an ambition to roll out three further district heating networks. The expectation from housebuilders and

developers that the current Code for Sustainable Homes schedule will be relaxed, for example, through lengthy transitional arrangements to more stringent Building Regulation standards, has the potential to frustrate what would otherwise be eminently deliverable. This will result in higher carbon solutions which ultimately will also lead to higher household energy bills.



### (3) Professional Experience of John Rigby

1998-2010 – Director of Development, Exeter City Council

1987-1998 – Various posts with York City Council, the last of which was Director, Environment and Development, York City Council

1981-1987 – Various posts with LT, the last of which was Policy and Local Plans Manager, London Transport

1979-1981 – Assistant Engineer, Berkshire County Council

1977-1979 – Taking an MSc in Town Planning at Oxford Brookes University

1973-1977 – Scientific Officer, Transport Research Laboratory

I have a BA in Geography and a Diploma and an MSc in Town Planning. For 25 years, I was a member of the Royal Town Planning Institute, Institution of Highways and Transportation and Chartered Institute of Logistics and Transport.

**(4) Passivhaus Trust**

The Passivhaus Trust is a charitable body which has been established to lead the expansion of low carbon construction in Britain, using the considerable experience of German architects and builders to help develop this sector in Britain. The evidence on construction costs comes from research by Mark Siddall (of the Low Energy Architectural Practice) contained in 'Passivhaus in the UK'.

**(5) Insulation Standards in British domestic properties.**

The poor insulation and high energy use of domestic properties in Britain comes from 'Europe's Buildings under the microscope' published by Buildings Performance Institute Europe.

John Rigby

4/1/13

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