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THE MORAL ECONOMY

ANITA RODDICK'S LAST TESTAMENT:
CURRENCY OF IMAGINATION

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LOWER CARBON, ENERGY HIGHER QUALITY

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Eco-towns and zero-carbon homes will work only within the context of a low-carbon lifestyle.

THE UK GOVERNMENT NOW does seem to be serious about promoting environmentally friendly homes – in particular zero-carbon homes. However, this raises a number of questions. How should we define a zero-carbon home? Should we try to generate all our heat and power from renewable energy on-site? What policy measures should we be supporting? And with space heating now only about 3% of the carbon emissions of a person living in a new home, all the evidence suggests we should be thinking about low- and zero-carbon lifestyles, not just zero-carbon homes. When we take lifestyles as our starting point, we are led to a fundamentally more holistic, coherent, people-centred and economically rational approach.

As I write this article, the construction industry is absorbing the implications of two new documents from the government department Communities and Local Government (CLG). The first is *Building a Greener Future* which proposes that the UK achieve zero carbon for all new homes by 2016 – meaning that, over a year, the net carbon emission from all energy use in the home (heating, hot water and appliances) will be zero. The rate of house building is such that by 2050 as many as a third of houses in existence in the UK will have been built between now and then.

The second document is CLG's *Eco-towns prospectus*. The ambition of the current Minister for Housing, Yvette Cooper, is for new towns of at least 5,000 to 20,000 homes to be zero carbon. Two eco-towns have been identified already: Northstowe, north-west of Cambridge, and Cranbrook, in Devon. The government is prepared to use the far-reaching powers of the New Towns Act 1981 to ensure that eco-towns can go ahead even against local opposition.

The two documents from CLG build on increasing government activity to improve environmental standards in our homes. Over the past five years the government has promoted the Building Research Establishment's EcoHomes system which this year has been replaced by the government's own Code for Sustainable Homes. Energy Performance Certificates are becoming mandatory as part of the Home Information Pack on sales of all homes, new and old. This sits in the context of Treasury policy that, for a limited period, sales of new zero-carbon homes will be exempt from stamp duty.

Does this mean we can now leave it all to government? Unfortunately not. These initiatives are not yet part of a holistic and coherent framework to create a truly sustainable future, nor do they address how different aspects of our lives contribute to total greenhouse-house gas emissions.

THE AVERAGE PERSON in the UK is responsible for about twelve tonnes of CO₂ emissions; the majority is released by burning fossil fuels in the UK, but an increasing amount is embodied in food, goods and services imported from overseas. For a person living in a home built to current building regulations, heating now accounts for only about 3% of carbon emissions, whereas electrical appliances, hot water, waste and personal transport account for 3%, 4%, 13% and 18% respectively.

If we consider other greenhouse gases such as nitrous oxide and methane, and not just carbon dioxide, as much as a third of our impact comes from the production, processing and distribution of our food.

Therefore, although it is worth going beyond current building regulations with the thermal performance of our homes, the carbon savings will be relatively small, and even smaller as our winters become warmer. (More signif-

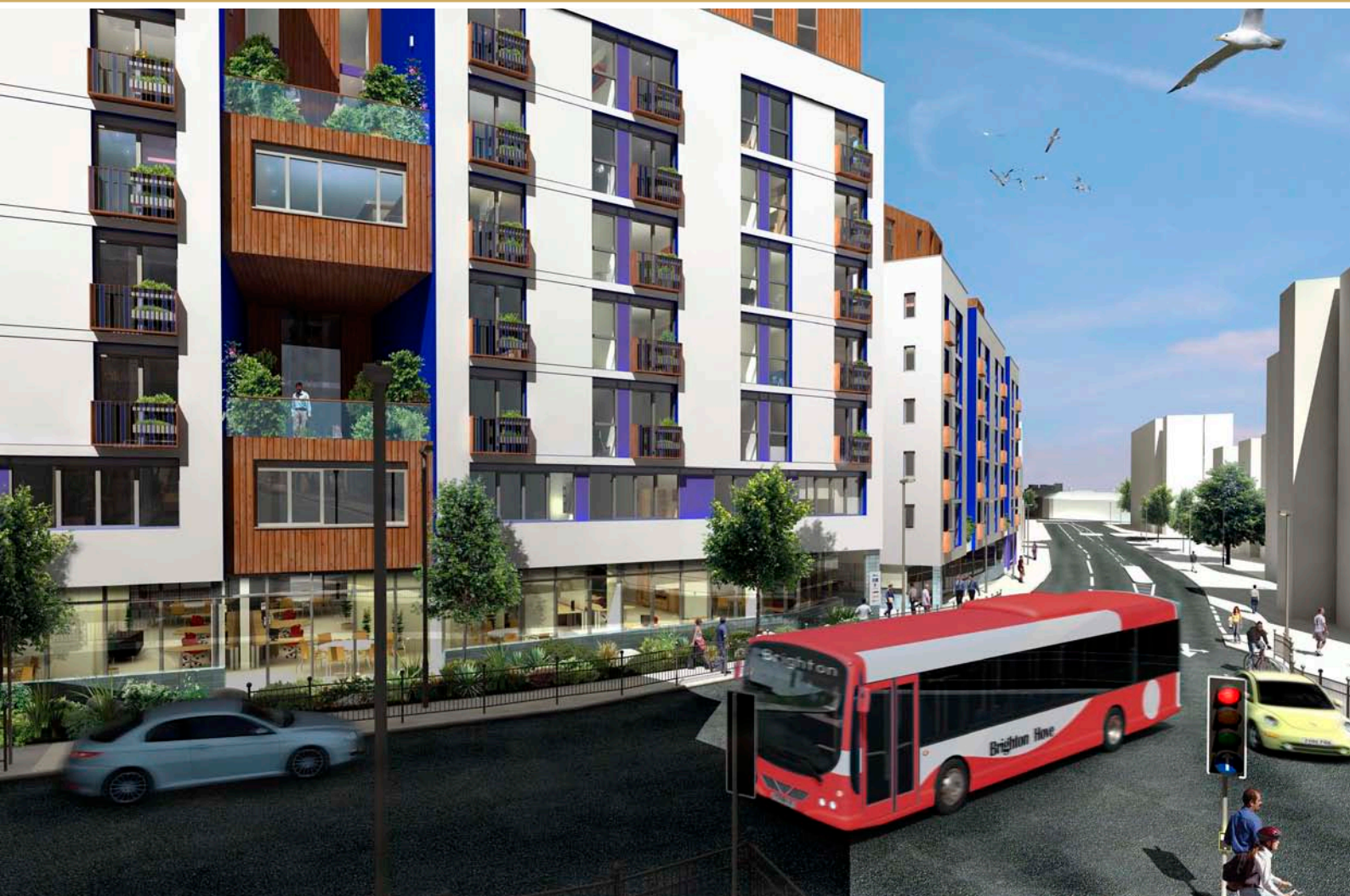
icant in terms of space heating is what we do with our older housing stock, where, for example, simple insulation will save considerable carbon.)

We cannot think simply in terms of building new eco-homes. It won't in itself save much carbon. Instead we must build places where it is easy to lead an eco-friendly lifestyle: places where it is easy to walk and cycle; places that are far less car dependent, where it is easy to recycle and where we have ready access to local, seasonal, organic produce. All these lifestyle issues must be integral if we are going to make a real difference, and fortunately it also means we can create places that are more humane and offer a higher quality of life.

There are other more mundane issues. CLG, the Treasury and the Greater London Authority, for example, are all currently using different definitions of zero carbon – so confusion currently reigns. Preceding these organisations' use of the term, BioRegional coined zero carbon in the context of a 'Z-squared Zero Carbon Zero Waste community' concept. BioRegional defined zero carbon as buildings run on a combination of on-site and new installed renewable capacity off-site, using fossil fuels only for back-up.

The announcement in autumn 2006 of a stamp duty exemption on zero-carbon homes was unexpected but received a lot of attention with the claim from the government that no other country was doing this. There may, however, be very good reasons why no other country was doing this! For example, will stamp duty need to be paid if the renewable energy technology is installed but doesn't work or is not maintained? It is also an economically regressive measure, in that purchasers of 'affordable' homes will not benefit, since no stamp duty is paid on homes under £125,000, whereas buyers of expensive homes will reap the greatest benefit (a £15,000 saving on a £500,000 home). Rumour has it that the Treasury did not want many homes to be stamp duty exempt, so as not to affect government revenue streams.

A more coherent approach might



Computer graphic of 'One Planet Living' community due to start construction in Brighton shortly

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have been to introduce measures to promote energy efficiency and renewables in a way that would apply to both new and existing housing. A coherent set of measures could include removing VAT on energy efficiency and renewable products whilst increasing VAT on inefficient products and non-renewables; requiring energy supply companies to generate more from renewables; and ensuring that home owners who are generating renewable energy can feed it into the grid at decent prices.

The Treasury definition of zero carbon currently requires the home to generate all heat and power from renewables on-site. Personally I am very far from being convinced of its value as a general policy – even though it retains its place in green aspiration and ideology. There is a role for on-site renewable energy generation, particularly for heating and hot water (for example, using solar thermal panels and wood-heating systems). However, when it comes to electricity generation there remain major issues with initial cost, long-term maintenance and operation.

Photovoltaic panels generate electricity reliably and with low maintenance, yet remain (and, for the medium term, are likely to remain) expensive for the amount of energy they generate. There are as yet no tried and tested small-scale biomass heat-and-power plants.

Building-mounted wind turbines may end up generating £60 of electricity per year, but if you follow recommended servicing with a yearly call-out charge at an optimistic £100 per time, wide uptake is unlikely even if capital cost is written off completely. If we want wind energy, we probably need to erect big turbines in windy locations. Wind energy generated is proportional to the square of the diameter of the blades and the cube of wind speed: a turbine with twice the diameter in a location with twice the average wind speed will generate sixty-four times as much energy.

Even though we will lose some energy in transmitting the electricity through our high-voltage grid, pure losses from transmission are only 7.5–9%. (The main inefficiencies in our

energy supply arise from wasting the by-product heat from electricity production in conventional coal, oil, gas and nuclear plants.)

IN A SUSTAINABLE future we will see more local energy production (so-called embedded generation), but there will still be a fundamental role for larger-scale power generation which itself must be low-carbon.

A move to a future basically free from dependence on fossil fuels will require us to live in zero-carbon homes. We, and our government, must take a considered and rational approach, rather than an ideological one, to zero carbon, which means supplying renewable energy through a balanced combination of on-site and off-site renewables. We must also recognise that zero-carbon homes will have limited impact on our emissions of greenhouse gases unless we take a holistic approach based on our lifestyles as a whole. ☺

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