



Building a green economy? Sustainability transitions in the UK building sector



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ABSTRACT

This paper explores the interest by policy makers to encourage and develop a green economy, with a particular focus on UK government attempts to engender a shift in the mainstream building and construction sector towards adopting green building methods and techniques. The building sector has been the focus of endeavours to engender a shift towards greener ways of working and building, due to its high contribution to greenhouse gas emissions and associated concerns over enhanced global warming and climate change. The paper outlines the recent development of national UK policy on green building as exemplified in legislation for the Code for Sustainable Homes and in Building Regulations. These have given rise to a particular set of responses to green building requirements that favour technological solutions that can readily be accommodated by the existing system. In critiquing these developments we draw upon socio-technical sustainability transitions research, one strand of which has focused on the ways in which niche developments can challenge and disrupt existing regimes of practice. We do this empirically through our research into the green building sector which has involved in-depth interviews with a range of actors from the UK green building sector, including architects, building companies, materials suppliers and policy makers. Respondents from within the green building niche are critical of current UK legislation, and argue that its narrow conceptualisation fails to adequately encourage, or recognise, what they would consider to be green building forms that will contribute to substantial reductions in carbon emissions, nor does it respect locally appropriate building methods.

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Introduction

This paper explores the recent shift in interest by policy makers to encourage and develop a green economy, with a particular focus on UK government attempts to engender a paradigm shift in the building and construction sector through mainstreaming green building methods and techniques (Greenwood, 2012). The building sector has been the focus of endeavours to engender a shift towards greener ways of working and building, due to its high contribution to greenhouse gas (GHG) emissions and associated concerns over enhanced global warming and climate change. The paper outlines the recent development of UK policy on green building as exemplified in legislation for the Code for Sustainable Homes and in Building Regulations. These have given rise to a set of responses to green building requirements favouring technological solutions that are readily accommodated by the existing building regime. In critiquing these developments we draw upon socio-technical sustainability transitions research, one strand of which

has focused on the ways in which niche developments can challenge and disrupt existing regimes of practice. Our empirical focus is upon the niche green building sector outside the dominant building regime, involving in-depth interviews with a range of actors, including architects, building companies, materials suppliers and policy makers. Respondents from within this green building niche are critical of current UK legislation, and argue that its narrow conceptualisation fails to adequately encourage the mainstreaming of what they consider to be green building. From this case study evidence, we argue that despite attempts by government to engender a paradigm shift in the mainstream building regime, the relevant legislation is framed in ways that will not engender any substantial changes to that regime. Beyond a critique of UK policy, we contribute to debates within the sustainability transitions literature regarding how niche innovations interact with, and influence, the wider regime (Smith and Raven, 2012). We question the extent to which the process of diffusion from niche to mainstream in socio-technical transitions occurs in a linear and unproblematic fashion and the assumption that niche actors aim to change the regime (Hielscher et al., 2011). In addition, we explore a related question regarding the internal

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cohesiveness of niches. Thus despite general agreement on the shortcomings of policy, respondents had conflicting views on how green buildings should be defined, and on the best ways to implement these, indicating that socio-technical niches are less homogeneous than has previously been conceptualised and that these might be better conceived of as a set of nested sub-niches (Hodson and Marvin, 2010; Seyfang and Longhurst, 2012). The structure of the paper is as follows. In the next section we outline the growing interest in the green economy and its adoption in the form of a 'low carbon transition' in the UK. The following section examines the green building agenda in the UK and maps out the main legislative framework. We then present the theoretical framework by which we seek to understand the potential for a green building transition in the UK, drawing on the sustainability transitions literature. A subsequent section outlines the methods used for our empirical study and in the final two sections and our conclusions we draw on this evidence to critique government policy and to develop our theoretical arguments.

The green economy

Although a concern for integrating economic development with environmental protection stretches back to the Brundtland Report (World Commission on Environment and Development, 1987) and the Earth Summit in 1992 (and beyond), in practical terms the two have largely remained separate. It is only recently that Brundtland's call for integration between the two has given rise to the idea that a 'green economy' can be developed and become a mainstream economic development policy. For example, UNEP (2011: 16) defines the green economy as "low carbon, resource efficient, and socially inclusive [where] growth in income and employment should be driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services." For many policy makers, the idea of developing such a green economy has become an attractive one. Although this is rarely made explicit, such views draw upon ideas from ecological modernisation – the concept that we can combine environmental improvements with forms of economic development that do not differ radically from the current mainstream. For the most part, more radical conceptualisations of what might constitute a 'green economy' remain marginal (Bina, 2013). Indeed, for many politicians and policy makers, new environmental technologies, new ways of working and 'greener' consumption offer the opportunity for a renewed round of capitalist accumulation (Stern, 2006). However, this is not to claim that these motivations for the green economy are purely economic. Developing a green economy is also seen as a means to address concerns over enhanced global warming, climatic change and sea level rise. In the process, however, the green economy has often become transformed into the narrower conceptualisation of a *low carbon* economy – where the aim is to reduce carbon emissions as part of attempts to stabilise carbon levels in the atmosphere (While et al., 2010). Thus national governments have promoted the development of a low carbon economy linked to targets for cutting national carbon emissions. For example, the Climate Change Act (2008) committed the UK to an 80% reduction in GHG emissions by 2050 over 1990 levels. In order to achieve this, the then Labour Government produced a Low Carbon Transition Plan, setting out a 'road map' by which different sectors would contribute to this reduction target (HM Government, 2009a). For homes and communities (i.e. domestic buildings) the Plan aimed to cut emissions by 29% over 2008 levels by 2050 (ibid). The government also produced a Low Carbon Industrial Strategy (HM Government, 2009b) outlining how the UK economy could shift towards low carbon development, producing both economic

benefits and environmental improvement. One important sector that contributes substantially to the national emissions total, and where opportunities exist to reduce this contribution, is the building and construction sector, and governments have also sought to encourage a shift towards a green and low carbon building industry.

The green building agenda

The development and promotion of green building in the UK has a history that dates back to the 1970s, with early developments frequently driven by individuals and informal organisations motivated by deep green views and a perception of a need for radical social change¹ (Smith, 2007; Lovell, 2008). A key point is that these pioneers did not see green building as simply about low energy use and reduced environmental impact. Rather, these were part of a broader critique of society and its values at that time. Although many of the ideas and technologies developed by these pioneers have subsequently entered the mainstream, green building was largely confined to the margins for much of the 1970s and 1980s. From the late 1990s onwards, green building entered mainstream debates, albeit reframed as low energy, or low carbon building, through the UK Government's response to climate change and the need to reduce GHG emissions, as part of the Low Carbon Transition Plan. Green building became a focus of attention under the low carbon agenda because the built environment is a key source of carbon emissions – globally the UN estimates that the building sector is the single largest contributor to global GHG emissions (UNEP, 2011). In the UK, private domestic consumers are responsible for 30% of all final energy use in the UK (DTI, 2006) and buildings account for 40% of UK emissions (HM Government, 2009b). Any low carbon transition would therefore, of necessity, have to include a shift towards green building.

The UK policy response has come through the revision of national policies on domestic building standards. The previous UK Labour government argued that the construction sector needed to undergo a 'paradigm shift', rather than the incremental shifts that had so far been characteristic of the sector (HM Government, 2009b). As part of measures to achieve this, the then Labour government introduced the Code for Sustainable Homes in 2006, which was intended to provide a "single national standard to guide industry in the design and construction of sustainable homes. It is a means of driving continuous improvement, greater innovation and exemplary achievement in sustainable home building" (DCLG, 2006a: 4). This was intended to complement the system of Energy Performance Certificates subsequently introduced in 2007 under the European Union's Energy Performance of Buildings Directive (EPBD). The EPBD required that all new homes have an Energy Performance Certificate (EPC) providing information about the energy efficiency/carbon performance of the home. The Code for Sustainable Homes² took a new 'whole home' approach based around nine key design categories – energy/CO₂, pollution, water, health and well-being, materials, management, surface water run-off, ecology and waste. The Code used a rating system from 1–6 stars, where 1 is the lowest (or 'entry level') and 6 the highest, reflecting exemplary development, based on performance against these design categories. Under the Code, a Level 6 home is deemed a zero carbon home, defined as having "zero net emissions of carbon dioxide (CO₂) from all energy use in the home including heating,

¹ For example, Brenda and Robert Vale who published their seminal work 'The Autonomous House' in 1975.

² The Code for Sustainable Homes dealt with domestic properties, while BREEAM is a similar mechanism specifically for non-domestic properties. The Code was voluntary for the private sector, but local authorities were given powers to set mandatory Code targets for social housing.

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