Guest Editorial

The potential of renewable energy as a risk-mitigating factor

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The built environment has an immeasurable influence on our daily lives and well-being. The support that buildings give to businesses is vital, and there is much focus on developing the built environment to enhance its support for core business operations. This will include mitigating the risk of energy supply and energy costs. Linking the built environment to the natural world and reducing its impact will only develop the connection between the built environment and health and well-being. This Journal edition features articles on a wide range of topics, including measuring sales performance, the growth trend in demand for malls in India, and risk assessment techniques through the use of the STEEP analysis format. Climate change and the contribution of the built environment to this phenomenon are very real risks. Andrew Simms (the New Economics Foundation) predicted that we have 100 months left to save the world, thus showing the need to incorporate energy use and supply into corporate and property assessment of risk.

The built environment in the United Kingdom is responsible for 40 per cent of the United Kingdom's carbon emissions and 40 per cent of energy used. With the Royal Institution of Chartered Surveyors (RICS) arguing that retail and leisure properties possibly have the highest energy demands in the property portfolio, there is a real need to fully appreciate the risks of energy supply and carbon emissions to the built environment and to take advantage of the potential to link property values to green credentials. Keeping with the theme of risk, climate change and security of energy supply are the two real threats of the twenty-first century. The United Kingdom is a net importer of oil, gas and coal. Gas imports increased by 41 per cent in 2006, imports of coal have been rising by 15 per cent a year since 2002 and the net import of oil stands at £2.2 billion (BERR, 2007). There is a threat that the price of energy will rise, affecting the cost of all property. Currently the United Kingdom only generates 6.8 per cent of its electricity from renewable sources, compared to 51.6 per cent from gas and 19.5 per cent from coal.

Linking green credentials to the value of property has already begun through the medium of Display Energy Certificates and the Carbon Reduction Commitment. Buildings that have an energy bill of over £500 000 or consume 6000 MWh or over of electricity (through a half-hourly meter) will need to participate in the Carbon Reduction Commitment. The result is that organisations who meet these criteria will need to purchase carbon credits from the Government from

April 2011, which can cost thousands of pounds depending on usage. One way to offset this is to reduce energy demand and turn to nature to generate energy through renewable technology. Smaller organisations that are not covered by this scheme should follow suit to reduce the risk of rising energy prices. The sooner the property sector, including retail and leisure property, truly addresses this problem, the sooner they will reap the economic benefits. One key way to do this is by harnessing the potential of solar power, which provides the earth with enough energy every hour to power the world for a year.

Advocates of sustainable design promote the use of environmentally friendly technologies and design strategies to enhance the quality of an internal environment, using features such as increased natural daylight. The Heschong Mahone Group found that adding a skylight to the average non-sky-lit retail store is likely to improve its performance by 40 per cent. However, standard building structures and layouts can be detrimental to productivity levels. This can be because of popular deep plan floor layouts (where the distance from the external walls is many times greater than the floor to floor height), leading to increased internal noise levels, difficulty in managing thermal comfort and often reduced daylight intake. However, less energy-intensive building services can produce cost savings while still complying with regulations on internal environments. Natural ventilation systems consume less energy than mechanical ventilation systems owing to more effective use of natural light and fewer required components. Natural ventilation systems utilising the buoyancy-driven stack effect consume 51 per cent less energy than a typical air-conditioned building and less energy than a typical naturally ventilated open plan building.

Fears have existed in the domestic and commercial property sectors that renewable technologies such as wind farms and wind turbines will detrimentally affect property values. Owing to increased levels of publicity surrounding the energy debate, and the increasing use of Display Energy Certificates, renewable energy solutions are now being seen as having a positive effect on property prices. The RICS has found that there is a strong link between the market value of a building and its environmental credentials. Energy savings are often only minimal; however, there is scope to improve this. Additional indirect savings have been found owing to the positive effect green construction and green operating systems can have on the internal environment. Staff costs can account for 85 per cent of business costs; green design is linked to higher rates of satisfaction in the workplace and higher productivity rates. This shows the potential for great savings on staff costs by increasing productivity and reducing staff absenteeism. In retail properties this could result in increased sales through the establishment of a pleasant and natural environment for customers. There is also the possibility of tax savings through the use of renewable energy, and the opportunity to sell excess energy back to the grid.

Technology exists for large-scale renewable projects to generate electricity, such as onshore and offshore wind farms and hydroelectric plants. However, difficulty exists in transporting the electricity throughout the United Kingdom to the sites where the demand exists, and

the level of efficiency of the current infrastructure needs to be improved. Currently the majority of large-scale renewable projects, such as offshore and onshore wind farms, are located in the North and West of the United Kingdom. However, demand is highest in the South and the East of the United Kingdom. Renewable energy alone is unlikely to be able to be the sole supplier of energy to retail properties. The first step needs to be a reduction in demand, which ultimately means an increase in efficiency through a reduction in waste. The installation energy-monitoring meters will enable a greater understanding of the energy use of a property, and will be the first step in identifying areas where usage can be reduced. Depending on the size of the retail property multiple meters may be needed, to monitor areas or floors for example.

This short review not only shows that green building reduces the commercial risks of property associated with the risks of energy supply and future energy costs, but also demonstrates that other commercial and non-commercial advantages are achievable through green building design. Green buildings provide a healthier environment, are linked to productivity increases, and can reduce operating and maintenance costs. There is a need to dispose of short-term thinking, whereby property and possessions are treated as highly replaceable. Green valuation needs to be fully incorporated into commercial decision making, so that sustainable and environmental aspects of decisions are given the same platform as commercial and health and safety implications. There is great opportunity to develop green buildings that not only reduce the impact on the environment, but begin to add value to property, including retail and leisure property. This is as an opportunity too good to be missed.

REFERENCE

Department for Business, Enterprise and Regulatory Reform (BERR). (2007) A national statistics publication. UK energy in brief (Pub 8573/4.5k/07/07/NP.URN 07/220).

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