On the path to a lower carbon Britain are untold opportunities for greener living, many of which we are currently failing to embrace. We often lack the imagination, the foresight and the dedication to apply blue-sky thinking to environmental problems; as a result we fail to see how we can make the most of our everyday resources to help tackle challenges such as climate change.

Where we've missed out on opportunities we often see other countries forging ahead – on use of renewables for example – showing how those countries where governments have taken the environmental agenda seriously are leaving the UK sadly lagging behind.

One example is in the use of green roofing. Simply put, green roofs – also known as eco-gardens, living roofs or sky gardens – are roofs covered with vegetation and soil, or a growing medium, planted over a waterproofing membrane. The results are green, living rooftop areas which can be used as gardens and which have a variety of environmental and other benefits.

In climate change terms, green roofs can improve the insulation value of the roof by up to 10%, resulting in a significant reduction in energy use and carbon emissions – with the added bonus of lower bills for the inhabitants. They are also of intrinsically greater benefit for biodiversity, attracting urban wildlife such as birds and butterflies.

By absorbing heat, plants and grasses on roofs can help reduce temperatures and keep air pollution and smog at lower levels. Research at Nottingham Trent University has found that, on a typical day with a temperature of 18.4C, a normal roof surface temperature was 32C while that of a green roof was 15C. Other than the environmental benefits, green roofs can provide leisure space for the building's users and enable city-dwellers to tap in to the health and wellbeing benefits of green space which they may not otherwise be able to enjoy.

With so many benefits, why are we not seeing roofs being planted at a much quicker rate? Germany, where green roofs first developed, has streaked ahead with 10-12% of all flat roofs having been greened. In many large German cities it is a legal requirement to include green roofs on all new flat-roofed buildings, and a system of grants from local authorities pays up to half of the additional cost of green roof installation.

In the US a number of city authorities have pioneered green roof development, a notable example being in Chicago where the top of City Hall is one of the most well-know green roof projects in the country. The publicity surrounding the greening of Chicago's roofs is aimed at altering its historically industrial image to a high-tech one, where quality of life and the environment are attractive characteristics for investment.

In Toronto green roofing is being developed and installed primarily as a means of combating the city's heat island effect, which makes summer in the city characteristically hot and uncomfortable. In Japan green roofs are being encouraged as a major way to reduce the energy use of buildings, delivering financial benefits to building operators and helping reduce greenhouse gas emissions.

All these initiatives are supported by government policy and operate at a regional and city level, suitable to local needs. That is what is sadly lacking in our urban centres in the UK, where green roofs are relatively few and often restricted to new showcase buildings and environmental centres rather than as part of wholesale strategies. One reason is that the benefits and types of green roofing are not widely understood within the construction industry. There are no specific standards for green roofing in the UK, so architects and housebuilders who wish to provide green roofs often have to start from scratch, thereby increasing short-term costs.

Despite those barriers, there are some projects which are leading the way in green roof implementation in the UK – for example, the green roof at Canary Wharf station, landscaped to extend the existing green space and the large accessible green space above Cannon Street station.

The roof on Barclays Bank headquarters on the Isle of Dogs has been specifically designed as a nesting and breeding area for the black redstart, a bird species which has adapted to survive in urban and industrial centres.

In my own neck of the woods, Sheffield, a partnership between Groundwork Sheffield, South Yorkshire Passenger Transport Executive and Sheffield City Council has green roofed three bus shelters. They look attractive, filter pollution from exhausts and offer shade cover while highlighting the value of integrating sustainable design and green travel.

There are also a growing number of schools with green roofs being included as part of eco-friendly futuristic designs, setting a wonderful example to young people on the importance of sustainable living.

Greening our roofs in urban centres across the UK will take real leadership to provide incentives for businesses, the public sector and individuals while ensuring that standards are in place to assist the construction industry to install and maintain green roofing. Also necessary is improved awareness of the benefits of green roofing for companies in terms of employee wellbeing, money saving and for boosting their environmental credentials. Green roofs and other innovative ideas need real and serious attention if we are to respond to climate change to the best of our capacity.

However, until this government starts proving real leadership on the urgency of climate change we will continue to miss valuable opportunities to protect our planet for future generations.