My organisation hopes in the coming years to be able to provide a directory of small and medium-sized companies that can not only help meet the demand but also help to make a difference to the built environment in the UK. And we want to encourage people to build their own green roofs on their sheds, outhouses and flat roof extensions – and their whole house if they can.

Green roofs are not new: there have been roof gardens in London since Victorian times. What is relatively new in the UK is the idea of whole-scale greening of major urban developments, using technologies and systems developed in Germany in the late 20th century. This is not down to the whim of an individual houseowner but is being driven by local authorities and city governments. And the reason is simple: climate change – whether the reason is for storing rainwater, encouraging wildlife, improving the wider environment in terms of cooling and the reduction of air particles or increasing access to green space in dense urban developments.

In the 10 years that I have been involved with green roofs I have seen demand increasing, and more and more local governments are pushing to ensure that new developments include the provision of vegetation and soil at roof level.

A brief history of green roofs Putting vegetation on buildings is as old as the first buildings. Stone Age encampments were built into hillsides and covered with soil and vegetation to provide protection from the elements.

The sod/turf roofs of north western Europe, in Ireland, Scotland and Norway, are a classic use of a local material that was readily available, useful and easy to install.

After the Second World War ecologists in West Berlin noticed that old tenement blocks built in the late 1800s, which had been covered with sand to protect the waterproofing, were covered in plants. Sedums and mosses, wild flowers and grasses flourished amidst the dense social housing of yesterday. By the 1980s green roofs were enshrined in law in West Germany. In 1983 the city of Linz in Austria made green roofs mandatory on new buildings, followed in the late 1990s by Switzerland.

In the UK we now have a distinct policy in London, and other cities are also considering policies or mechanisms to encourage green roofs.

Meadows, gardens and parks in the sky

There are three recognisable ‘types’ of green roofs:

• Intensive – these have deep substrates over 300mm in depth and are often referred to as roof gardens. They can be planted with trees, shrubs and lawns and require intensive maintenance.

• Semi-intensive green roofs – these have shallower soils but can hold plants such as heather, lavender and low-growing shrubs/bushes such as hazel, hawthorn and the like.

• Extensive green roofs – these have very shallow soils and consist of drought- and wind-tolerant plants.

They can vary in depth from 150- 100mm dry meadows to 80-40mm sedum-based systems.

To green or not to green

New buildings can be designed to take the load of any given system: weight is the governing factor. Other factors include the need for specialist waterproofing with root protection, the ability for excess rainfall to drain from the roof and consideration of function. The planting system depends on what the green roof is for: whether for wildlife or people or for both, and whether it needs to store rainwater or cool the building and the city.

There is also a growing interest in retrofitting green roofs onto existing buildings: again, weight is the limiting factor. But many buildings can have extensive green roofs installed, depending on

the state of the waterproofing.

So, although much of the focus has been on new developments, there is great scope within urban areas to retrofit extensive green roofs on existing buildings.

Green roofs – at home

My good friend John Little of www.thegrassroofcompany.co.uk has been building small-scale green roofs for over 10 years in the south-west Essex area. His simple design-and-build systems aim to be as cheap and as sustainable as possible. He'll use soil from the site or rubble from a local demolition company.

Local soils and local plants are at the core of John's and my work, and to encourage people to do their own thing we are currently writing A Guide to Building Small Scale Green Roofs, which will be available online at both www.livingroofs.org and www.thegrassroofcompany.co.uk.

Green roofs can be whatever one wants them to be. Local soils, rubble, stones and local plants will ensure that any green roof is 'appropriate' to where it is – and will be appropriate for the widest range of wildlife in any given area.

• Dusty Gedge is co-founder of Livingroofs.org, an independent green roof organisation in the UK. He is currently president of the European Federation of Green Roof Associations (www.efb-greenroof.eu). He has written a number of papers and books on green roofs, including Building Greener, published by CIRIA, and Living Roofs, a technical report published by the GLA which was commissioned to support the New London Plan published in March this year.

He is a nature conservationist and ecologist and winner of the British Environment and Media Awards, Andrew Lees Memorial Award in 2004 for his work on green roofs and urban biodiversity.