

Environmental Audit Committee Inquiry: Adapting to Climate Change

Response of the Landscape Institute

October 2009

Introduction

The Landscape Institute is an educational charity and chartered body responsible for protecting, conserving and enhancing the natural and built environment for the benefit of the public. It champions sustainable, well-designed and well-managed urban and rural environments. The Institute's university accreditation and professional procedures ensure that the designers, managers and scientists who make up the landscape profession work to the highest standards. There are 6000 professional members working across both the public and private sectors, both within the UK and elsewhere across the world. Our advocacy and education programme promotes the landscape profession as one which focuses on design, environment and community in order to inspire great places where people want to live, work and visit.

Summary

Our response to the EAC inquiry centres on the significant role of **green infrastructure**, its vital contributions to the environment, society and the economy and its potential to deliver climate change resilience whilst at the same time being vulnerable to climate change itself. Our main points are summarised as follows:

- 1. Whether short-term priorities for action, including identifying and protecting infrastructure and systems (for example, power, food, water, transport, defence and security) have been identified and how these are, or might be, addressed.**
 - The Government has failed to recognise the vital importance of green infrastructure in the delivery of essential services upon which daily life in the UK depends.
 - This view is based on our assessment of the recent Defra draft strategy outlining the implementation and use of Government's Adaptation Reporting Power.

- 2. The funding, support, training and other resources available, including at a local and regional level, for:**
 - **Building capacity to adapt to climate change**
 - **Specific actions to adapt to climate change, such as investment in flood risk management or the resilience of critical national infrastructure**
 - **Helping individuals and organisations conduct their own climate change risk assessments and judge what actions they need to take.**
 - At present there is a lack of integration in strategic and mainstream planning which inhibits the creation of climate resilient development and adaptation generally.
 - Previous Government initiatives which could have demonstrated how to overcome this, such as the Ecotowns Planning Policy Statement, have failed to grasp the complexity of green infrastructure and its broad range of climate change related functions.
 - In order to maximise the adaptation potential of green infrastructure, it needs to be planned early in the development process and in a way which takes account of the various characteristics which contribute to making a place unique.
 - Legislative boundaries must not become constraining factors in the delivery of green infrastructure.
 - The ongoing maintenance and management of green infrastructure, and thereby its continued integrity is critical in ensuring it delivers against climate change objectives, in addition to a wide range of other benefits.

The Landscape Institute's detailed responses to these issues follow. We would be delighted to assist further in this inquiry, by either giving oral evidence or any other means requested by the EAC.

1 Whether short-term priorities for action, including identifying and protecting infrastructure and systems (for example, power, food, water, transport, defence and security) have been identified and how these are, or might be, addressed.

1.1 The Landscape Institute's publication *Green Infrastructure: connected and multifunctional landscapes (2009)* defines GI as

'...the network of green spaces and other natural elements, such as soils, rivers and lakes, which are found within and between our villages, towns and cities. These elements are individually known as GI assets and, when planned, designed and managed appropriately, can perform a vast array of vital functions which are critical to our quality of life'.

1.2 The Landscape Institute considers green infrastructure should be included and specifically mentioned in the definition of infrastructure systems for the reasons set out below.

1.3 The Landscape Institute is deeply concerned by the current failure of Government to appreciate fully the importance of taking action which identifies, protects and enhances the nation's GI. This failure became apparent in Defra's recent consultation, *Adapting to climate change: ensuring progress in key sectors (2009)*. The consultation document set out the Government's intended use and application of the Reporting Power, one of the key components of its Adapting to Climate Change Programme. Fundamental to this strategy is the way in which priority reporting authorities have been selected.

1.4 Defra has stated in the consultation document that the Centre for the Protection of National Infrastructure definition of National Infrastructure is the starting point in the identification of those authorities it will be directing to report as a matter of priority. This definition describes National Infrastructure as:

'...those facilities, systems, sites and networks necessary for the functioning of the country and the delivery of the essential services upon which daily life in the UK depends. There are eight categories of National Infrastructure: emergency, energy, finance, food, government, electronic communications, transport and water'.

Using this definition, Defra has then ascertained which organisations are responsible for the investment in, and maintenance/management of, key infrastructure.

1.5 It is this definition, and its application, which is of fundamental concern. This is because it fails to recognise the vital role of GI in the delivery of a vast array of services essential to daily life, such as:

- Biodiversity enhancement, corridors, linkages and stable ecosystems
- Formal and informal recreation
- Research and experiential educational
- Healthy living opportunities
- Economic development, innovation and entrepreneurship required to meet the challenges of sustainability, including enhanced economic values
- Sustainable and low carbon food production systems
- Renewable energy sources
- Water management, clean drinking water and water storage
- Provision of oxygen and the capture and storage of carbon
- Reconnecting people to the natural environment
- Food production

The combination of increases in global population, changes in climate and declining availability of fossil fuels will soon place a special emphasis on harnessing the power of the sun through natural systems. Intensive systems, dependent on unsustainable use of non-renewable resources, must give way to extensive systems. However, the combination of this change and pressures on levels of production will require the declining land area to become multifunctional, where vegetated soil becomes priceless.

1.6 The multifunctional nature of GI is underpinned by **ecosystem services**, a concept which can be broadly broken down as follows:

- Support – necessary for all other ecosystem services, such as soil formation and photosynthesis
- Provision – providing goods, such as food, fibre and fuel
- Regulation – examples include air quality, climate and erosion control
- Culture – including non-material benefits, such as aesthetic qualities and recreational opportunities

1.7 These ecosystem services, which are fundamental to GI, actually assist in both adapting to climate change and manipulating micro-climate, including:

- Improving air quality, which has been shown to deteriorate as temperatures increase
- Reducing the impact on health and wellbeing in the face of higher temperatures
- Reducing surface run-off in the face of more intense rainfall, thereby relieving pressure on drainage systems
- Providing temporary flood storage and aiding response to sea-level rises
- Protecting building integrity
- Providing 'green' transport routes
- Reducing the severity of the urban heat island (UHI) effect

1.8 Defra itself has previously recognised the vital importance of ecosystem services in its own publication, *An introductory guide to ecosystem services (2007)*, which states that:

'Environmental assets – like other assets – provide benefits that enhance economic performance, offer new opportunities for investment and employment, and improve living standards and quality of life'.

Furthermore, this publication goes on to say that one of the central themes of Defra's work on the subject is:

'...to ensure that the true value of ecosystem services and the services provided are taken into account in policy decision-making'.

In addition to this, *Defra's Adapting to Climate Change in England – A Framework for Action (2008)*, states that:

'...the natural environment too needs our particular attention, to enable our wildlife and countryside to adapt and because innovative approaches to managing our natural environment can be part of our adaptation'.

1.9 It can be seen that Defra has made previous commitments to ensure that ecosystem services are taken into account appropriately in the policy making process, and that the Department recognises the importance not only of ensuring that the natural environment is resilient to climate change, but also of incorporating it into approaches to adaptation. It is unfortunate, and of great concern to the Landscape Institute, that these commitments have not been reflected adequately in the Government's current adaptation plans.

1.10 The Landscape Institute argues that GI must be considered as important a priority alongside other infrastructure, not only for its contributions towards our quality of life via ecosystem services but also in recognition of its role in adaptation to 'locked-in' climate change itself. It is also important to note the potential of GI to assist in mitigating future climate change through such mechanisms as carbon sequestration. Such is the importance of GI that ensuring its resilience to climate change is essential. Furthermore, the resilience of property, food and timber suppliers, transport and power infrastructure and the human need for recreation and reflection in the outdoor environment all depend on maintaining resilient natural environment systems. Defra is rightly promoting soil conservation strategies, catchment water management plans and water/air quality management planning. These all inter-relate and we suggest that these could be brigaded together in a national resilience strategy for the protection and management of GI.

1.11 GI helps us live within environmental limits, especially in respect of climate-proofing. A healthy GI is able to buffer against climatic extremes; healthy and well-vegetated soils can absorb carbon and slow the

rate of storm water infiltration. Locally-produced food and energy can reduce carbon footprints and 'food-miles'. Shady streets and buildings can provide refuge from the urban heat-island effect. Robust, diverse and large green spaces can allow niches for the survival and dispersal of flora and fauna, which might otherwise be pushed to localised extinction if exposed to climatic extremes. Contact with the environment stimulates a necessary sense of responsibility towards its long-term protection.

1.12 The Landscape Institute strongly believes that the omission of GI as 'critical National Infrastructure' means that Government has failed to identify short-term priorities for action as set out in its proposed strategy for use of the Adaptation Reporting Power. The Landscape Institute recommends that Government revisit its process for identifying 'National Infrastructure' and that GI is included in a revised definition. This will then allow Government to identify those organisations responsible for investment in, and management and maintenance of, GI and subsequently help ensure its resilience in the face of future climate change, safeguarding the range of vital ecosystem services it provides.

2 The funding, support, training and other resources available, including at a local and regional level, for:

- **Building capacity to adapt to climate change**
- **Specific actions to adapt to climate change, such as investment in flood risk management or the resilience of critical national infrastructure**
- **Helping individuals and organisations conduct their own climate change risk assessments and judge what actions they need to take.**

2.1 At present there is a lack of integration in strategic and mainstream planning's approach to creating climate resilient development and to adaptation generally. A multi-disciplinary approach is essential, as is awareness-raising and capacity-building based on international experience.

2.2 An approach to land use planning which views the environment more strategically is essential in supporting adaptation at national, regional and local levels. The Landscape Institute is aware that the Department for Communities and Local Government (DCLG) is currently drafting a Planning Policy Statement (PPS) on the subject of GI. This commitment was announced in May this year at the launch of World Class Places, a joint DCLG and Department for Culture, Media and Sport (DCMS) strategy for improving quality of place. The Landscape Institute wholeheartedly supports this commitment, as a PPS is an essential resource providing guidance to local authorities on a range of issues and their relation to the planning system. A GI PPS, if executed properly, would enable local authorities to build their capacity to adapt to climate change, given the inherent adaptation quality of GI itself.

2.3 However, while the draft GI PPS is yet to be released for consultation, the Landscape Institute is concerned at the Government's apparent misunderstanding of the concept to date, as was demonstrated in its July 2009 Ecotowns PPS. The Landscape Institute was encouraged by DCLG's inclusion of GI within the PPS, and its commitment that at least 40 per cent of an ecotown's area should be dedicated to green space. However, **GI is more than green space** – the PPS fails to recognise the importance of planning and designing GI at the earliest stage in the development process in order to make optimum use of the land. It failed to recognise that **GI is an overarching approach to land use planning which can enable other standards, such as biodiversity, flood risk management and food production, to be realised**. GI is not an 'add-on', as it is presented in the Ecotowns PPS. GI should provide the context within which other infrastructure and land use takes place.

2.4 It is only through early GI planning that local characteristics such as climate, geology, topography, biodiversity and drainage can be considered sufficiently to ensure that truly multifunctional use of limited land supply can be realised. The Landscape Institute believes that any future PPS on GI must fully acknowledge the critical role of planning for GI early, alongside more conventional infrastructure components such as highways, telecommunications and drainage systems. This will provide a critical resource for local authorities to develop and implement GI strategies, thereby maintaining and enhancing the ecosystem services it provides in addition to ensuring resilience to 'locked-in' climate change.

- 2.5 The scale at which GI planning takes place is important. A hierarchy of associated approaches is essential. In general, the sub-regional scale is appropriate for a GI strategy. This should be underpinned by a regional approach which establishes climate-proofing principles. In planning GI's potential for providing resilience and adaptation to climate change, legislative boundaries should not become constraining factors. Local planning authorities and regional agencies will need to discuss these matters with their neighbours. The potential for, for example, regional parks and community forests to transcend authority boundaries gives them an important role in delivering climate change adaptation.
- 2.6 It is essential that new development and regeneration is considered in a holistic way with its environs. The Landscape Institute views this as a 'landscape renaissance' where the necessary consideration of energy production and use, water use/re-use, waste disposal and management, transport connections, open space provision and use are all essential components of any development. As such, the links to, and design and management of, a development's hinterland is as crucial as the building component. At the 'building footprint' level, there is much research and evidence of how choice of materials, aspect, energy-saving measures will cut greenhouse gas emissions. However, at the neighbourhood and district level there are less obvious means to plan and ensure existing and proposed developments are climate-proofed and there is a greater need to consider environs and their functions. This is where a functional approach to GI can play a significant part in planning for developments to reduce human discomfort and energy demands, to make provision for flood management whilst also considering local distinctiveness, biodiversity, linkages and corridors, recreation and health and community needs.
- 2.7 With increasing pressures on land, our survival depends both on understanding and making optimum use of this finite resource. Land should be multifunctional unless there are powerful reasons for it not being so. Therefore, whilst allocating land for a limited number of 'uses' may be necessary for the efficient functioning of a planning system, a broader analytical approach, with an understanding of the functions an area should provide, needs to be at the heart of any GI plan.
- 2.8 The management and maintenance of GI is a significant issue; inadequate long-term investment means that the critical ecosystem services delivered though GI are less likely to be realised and/or deteriorate over time. This in turn leads to a lack of appreciation of the vast potential that these assets have to offer, with a subsequent lack of investment in the future. To overcome this requires a planning system which is more realistic in its assessment of long-term management and maintenance needs based upon original strategies.

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