

planning for a healthy  
environment –  
**good practice  
guidance for  
green infrastructure  
and biodiversity**

**Town & Country Planning Association  
The Wildlife Trusts**

July 2012

This guidance has been prepared following feedback from statutory and non-statutory organisations. It is supported (see the list on the back cover) by:



\* The Wildlife and Countryside Link members who support this guide are those who are represented on this page

# planning for a healthy environment – **good practice guidance for green infrastructure and biodiversity**

Town & Country Planning Association  
The Wildlife Trusts

## Contents

	<b>Summary</b>	<b>2</b>
<b>Section 1</b>	<b>Introduction</b>	<b>3</b>
	1.1 The aim of this guidance	4
	1.2 The natural environment – its vital role in our future	4
	1.3 Climate change – the role of GI	5
<b>Section 2</b>	<b>Policy and legislative context</b>	<b>6</b>
	2.1 The Natural Environment White Paper	6
	2.2 The Biodiversity Strategy for England	7
	2.3 The Localism Act 2011	7
	2.4 The National Planning Policy Framework	8
<b>Section 3</b>	<b>Principles of planning for green infrastructure and biodiversity</b>	<b>10</b>
<b>Section 4</b>	<b>Developing the planning approach</b>	<b>12</b>
	4.1 Strategic planning and the duty to co-operate	12
	4.2 Local Plans	13
	4.3 Neighbourhood planning	21
	4.4 Masterplanning and development briefs	22
<b>Section 5</b>	<b>Development management</b>	<b>23</b>
<b>Section 6</b>	<b>Implementation and management of green infrastructure</b>	<b>24</b>
	6.1 Securing GI funding and long-term management	24
	6.2 Governance and community involvement	26
<b>Section 7</b>	<b>Signposts to further information</b>	<b>28</b>
<b>Annex A</b>	<b>Established European and national legislation</b>	<b>29</b>
<b>Annex B</b>	<b>Options to consider for GI design and implementation</b>	<b>32</b>

An Online Annex, 'Model policies and approaches' ('Annex C') is hosted on the TCPA website,  
at <http://tcpa.org.uk>

# summary



Matthew Roberts

Maintaining and restoring the natural environment will play a fundamental role in sustaining our collective future. People's connection with nature can increase their health and well-being, one of the range of social, economic and environmental services provided by the natural environment without which society could not function. Planning for new and existing communities provides real opportunities to protect and enhance the intrinsic and practical value of the natural environment while responding to specific challenges posed by climate change. Thinking about nature should be the starting point of good planning, and is an essential component of delivering sustainable development.

The planning system in England has undergone fundamental change through the Localism Act and the National Planning Policy Framework, which have shifted power to the local and neighbourhood levels while continuing to emphasise the importance of sustainable development and

supporting the objectives of the Natural Environment White Paper. The Government no longer sees it as its role to provide detailed policy guidance but wishes local authorities and communities to be active and innovative in shaping their own future. The main objective of this guidance is to help local practitioners to deliver positive and practical solutions when planning for the future.

This guidance is designed to offer advice to planning practitioners on how green infrastructure and biodiversity can be enhanced and protected through the planning system. It summarises the latest policy drivers and distils the best of our current policy responses. It also sets out practical examples of successful projects and sources of further detailed information. It has been prepared with the support of a wide range of organisations who have specific expertise in the field of planning for green infrastructure and biodiversity.

# section 1

# introduction

This guidance has been prepared by a wide range of organisations that recognise the importance of the planning system in delivering sustainable development, protecting and enhancing biodiversity, and delivering well-planned green infrastructure (GI). The guidance is designed to provide resources to maintain, enhance, restore and connect the natural environment through the provision of GI. It aims to bring together and update the wealth of information on GI in the specific context of the Localism Act 2011 and the National Planning Policy Framework, published in April 2012.

GI provides opportunities to protect and enhance the natural environment and is fundamental to strategic planning to safeguard the natural environment for future generations. GI adds tangible value to communities in economic, social and environmental terms. It creates places that are more resilient to climate change, that have distinct local character, and in which people want to live, work, and visit; places that promote well-being, productivity, educational benefits and crime reduction; and places where communities can actively engage with their local environment.

## Box 1

### Definitions

- **Green Infrastructure** is 'a network of multi-functional green space, urban and rural, which is capable of delivering a wide range of environmental and quality of life benefits for local communities' (Department for Communities and Local Government (2012) *National Planning Policy Framework*. <http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf>). Green space is taken to include rivers, standing waters, coastal waters and estuaries.
- **Biodiversity** describes 'the variety of life on Earth [encompassing] the whole of the natural world and all living things with which we share the planet' (Natural England, Biodiversity webpage, <http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/default.aspx>).
- **Ecosystem services** are the 'benefits people obtain from ecosystems, such as food, water, flood and disease control and recreation' (Department for Communities and Local Government (2012) *National Planning Policy Framework*. <http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf>).
- **An ecosystem approach** is defined as 'a strategy for the integrated management of land, water and living resources that promotes conservation and sustainable use in an equitable way [and which] recognizes that humans, with their cultural diversity, are an integral component of many ecosystems' (UNEP (200) *Convention on Biological Diversity*. <http://biodiv.org/decisions/default.asp?lg=0&m=cop-05&d=06>).
- **Multi-functionality** is 'central to the green infrastructure concept and approach. It refers to the potential for green infrastructure to have a range of functions, to deliver a broad range of ecosystem services. Multi-functionality can apply to individual sites and routes, but it is when the sites and links are taken together that we achieve a fully multi-functional GI network' (Natural England (2009) *Green Infrastructure Guidance*. <http://publications.naturalengland.org.uk/file/94026>).

## Box 2

### Examples of GI assets

- Natural and semi-natural rural and urban green spaces – including woodland and scrub, grassland (for example downland and meadow), heath and moor, wetlands, open and running water, brownfield sites, bare rock habitats (for example cliffs and quarries), coasts, beaches, and community forests.
- Parks and gardens – urban parks, country and regional parks, formal and private gardens, and institutional grounds (for example at schools and hospitals).
- Amenity green space – informal recreation spaces, play areas, outdoor sports facilities, housing green spaces, domestic gardens, community gardens, roof gardens, village greens, commons, living roofs and walls, hedges, civic spaces, and highway trees and verges.
- Allotments, city farms, orchards, and suburban and rural farmland.
- Cemeteries and churchyards.
- Green corridors – rivers and canals (including their banks), road verges and rail embankments, cycling routes, and rights of way.
- Sites selected for their substantive nature conservation value – Sites of Special Scientific Interest and Local Sites (Local Wildlife Sites and Local Geological Sites).
- Nature Reserves (statutory and non-statutory).
- Green space designations (selected for historic significance, beauty, recreation, wildlife, or tranquillity).
- Archaeological and historic sites.
- Functional green space such as sustainable drainage schemes (SuDS) and flood storage areas.
- Built structures – living roofs and walls, bird and bat boxes, and roost sites within existing and new-build developments.

## 1.1 The aim of this guidance

The aim of this guidance is to demonstrate how planners and practitioners in England, from both the public and private sectors, can use GI as a multi-functional resource capable of protecting and enhancing the natural environment and providing the landscape,<sup>1</sup> ecosystem services and quality of life benefits required to underpin sustainability.

The guidance is primarily intended to inform local plans, but also includes reference to neighbourhood planning and development management. It sets out for planners, practitioners and others:

- the key principles by which the provision of GI should be guided;
- guidance on developing local plan policy which ensures that the planning, design and long-term management of development results in a sustained positive outcome for GI and biodiversity; and
- the essential elements of how to deliver effective planning policy on GI and biodiversity

through funding mechanisms and community involvement.

## 1.2 The natural environment – its vital role in our future

It is important to recognise the value of the natural environment in planning for our future, not least because of the crucial role it plays in sustaining human life. The natural environment delivers essential ‘ecosystem services’ (life-support systems) such as the recycling of air and water; capturing and storing carbon in peat, woodland and soil; flood protection; and waste purification – along with many others.

The natural environment underpins our economy, providing an enormous range of products and services worth many billions of pounds to local, regional and national economies.<sup>2</sup> In addition, a well-planned and managed natural environment is

1 ‘Landscape’ is used here as defined by the European Landscape Convention: ‘an area, as perceived by people, whose character is the result of the action and interaction of natural and/or human factors’

2 T. Sunderland (2012) *Microeconomic Evidence for the Benefits of Investment in the Environment – Review*. Natural England Research Report 033. Sheffield: Natural England. <http://publications.naturalengland.org.uk/publication/32031>



key in shaping the character and quality of places in which people live and work.

Finally, the natural environment is fundamental to human well-being. Contact with nature and active recreational use of natural green spaces contributes to people's psychological well-being and physical health – and so helps to reduce sick days, increasing business productivity and staff retention.<sup>3</sup> Nature is a valuable resource for the whole community, providing opportunities for learning, artistic expression, spiritual refreshment, research, outdoor education, exploration, recreation, exercise, and play.

### 1.3 Climate change – the role of GI

GI is vital to enable people and wildlife to adapt to the rising temperatures and extreme weather events associated with climate change. GI helps to mitigate climate change by reducing greenhouse

gas emissions (for example through carbon storage and sequestration and by reducing car use through facilitating walking and cycling).

Climate is an important factor in influencing the behaviour, abundance and distribution of species and the ecology of habitats and ecosystems.<sup>4</sup> As our environment alters as a result of climate change, many species will be unable to adapt and will need to move to find more suitable habitats.<sup>5</sup> Changes in the behaviour and a decline in the abundance and distribution of species are already being observed. Over time these and other changes are likely to become increasingly profound. Maintaining the resilience and capacity of the natural environment to cope with climate change is therefore vital to ensure a sustainable environment for future generations and to protect and increase species and habitat richness. A well-planned network of GI reduces fragmentation of the landscape and facilitates migration of species to new and more favourable habitats. The document *Planning for Climate Change – Guidance for Local Authorities* provides more information about planning for climate change.<sup>6</sup>

3 Sustrans (2008) *Active Travel and Healthy Workplaces*. Sustrans Active Travel Information Sheet FH06. Bristol: Sustrans. [http://www.sustrans.org.uk/assets/files/AT/Publications/PDFs/FH06\\_Active%20travel%20and%20healthy%20workplaces\\_final.pdf](http://www.sustrans.org.uk/assets/files/AT/Publications/PDFs/FH06_Active%20travel%20and%20healthy%20workplaces_final.pdf)

4 Natural England 'Development of national scale biodiversity climate change vulnerability assessment'. Webpage. Sheffield: Natural England. <http://www.naturalengland.org.uk/ourwork/climateandenergy/climatechange/vulnerability/nationalvulnerabilityassessment.aspx>; Natural England (2012) *Natural England's Climate Change Risk Assessment and Adaptation Plan*. Sheffield: Natural England. <http://publications.naturalengland.org.uk/publication/216300?category=10003>; and Natural England's Character Area Climate Change Project reports, available from <http://www.naturalengland.org.uk/ourwork/climateandenergy/climatechange/adaptation/naturalengland.aspx>

5 Defra, for the UK Biodiversity Partnership (2007) *Conserving Biodiversity in a Changing Climate: Guidance on Building Capacity to Adapt*. London: Department for Environment, Food and Rural Affairs. <http://www.ukbap.org.uk/Library/BRIG/CBCCGuidance.pdf>

6 Planning and Climate Change Coalition (2012) *Planning for Climate Change – Guidance for Local Authorities*. London: TCPA/Friends of the Earth. <http://www.tcpa.org.uk/pages/planning-for-climate-change-guidance-for-local-authorities-2012.html>

# section 2

# policy and legislative context

There is a range of established European and national legislation relating to GI and biodiversity (see Annex A). However, this guidance focuses on the changes brought about by the Localism Act 2011, the 2011 Natural Environment White Paper<sup>7</sup> and the National Planning Policy Framework (NPPF), published in March 2012.<sup>8</sup>

## 2.1 The Natural Environment White Paper

The Government's Natural Environment White Paper, *The Natural Choice: Securing the Value of Nature*, refers to the role of planning in protecting and improving the natural environment and facilitating coherent and resilient ecological networks that reflect the value of natural systems. Planning is therefore a key element of the institutional framework that will achieve the objectives set out in the White Paper. The aims of the White Paper include halting biodiversity loss by 2020, supporting 'healthy functioning ecosystems', and establishing 'coherent ecological networks'. The White Paper is informed by the findings of the National Ecosystem Assessment,<sup>9</sup> which showed that over 30% of the services provided by the natural environment are in decline, and by the 'Lawton Review' report, *Making Space for Nature*,<sup>10</sup> which concluded that '*England's collection of wildlife sites, diverse as it is, does not comprise a coherent and resilient ecological network even*

*today, let alone one that is capable of coping with the challenge of climate change and other pressures.*'

The White Paper refers to the role of urban GI as completing '*the links in our national ecological network*' and '*one of the most effective tools available to us in managing environmental risks such as flooding and heat waves*'. It advocates that green spaces should be factored into the development of all communities. The White Paper also introduced a number of policies and initiatives, including:

- **Local Nature Partnerships:** Local Nature Partnerships (LNPs) work at a strategic scale for a better natural environment. The LNPs are encouraged to work closely with Local Enterprise Partnerships (LEPs) and Health and Wellbeing Boards to, among other things, contribute to local plan- and decision-making. The NPPF emphasises (in para. 180) the importance of this collaborative working on strategic planning priorities in achieving sustainable development. The Government has also committed (after summer 2012) to amend the Town and Country Planning (Local Planning) (England) Regulations 2012 to require bodies bound by the duty to co-operate to have regard to the views of LNPs on strategic planning matters (as well as the views of LEPs).<sup>11</sup>
- **Nature Improvement Areas:** Nature Improvement Areas (NIAs) are intended to enhance and reconnect nature on a significant scale, where the opportunities and benefits

7 HM Government (2011) *The Natural Choice: Securing the Value of Nature*. Cm 8082. Norwich: The Stationery Office. <http://www.official-documents.gov.uk/document/cm80/8082/8082.pdf>

8 DCLG (2012) *National Planning Policy Framework*. London: Department for Communities and Local Government. <http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf>

9 UK-NEA (2011) *The UK National Ecosystem Assessment: Synthesis of the Key Findings*. Cambridge: UK National Ecosystem Assessment. <http://uknea.unep-wcmc.org/Resources/tabid/82/Default.aspx>

10 J. Lawton et al. (2010) *Making Space for Nature: a Review of England's Wildlife Sites and Ecological Network*. Report to Defra. London: Department for Environment, Food and Rural Affairs. <http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>

11 G. Clark, Minister of State, DCLG (2012) 'Local Planning Regulations'. *Hansard*, 15 Mar. 2012. Columns 34WS & 35WS. <http://www.publications.parliament.uk/pa/cm201212/cmhansrd/cm120315/wmstext/120315m0001.htm#12031546000429>





Elliott Fairs

justify such action. NIAs will be established through partnerships of local authorities, local communities, landowners, the private sector, and conservation organisations, based on a local assessment of opportunities for restoring and connecting nature on a significant scale. The White Paper states that '*local authorities will be able to use local planning to support Nature Improvement Areas, including identifying them in their local plans where they choose, while not deterring sustainable development*'. The NPPF states (in para. 117) that where NIAs are identified in local plans, planning policies should '*consider specifying the types of development that may be appropriate in these Areas*'.

- **Biodiversity offsets:** Biodiversity offsets are conservation activities designed to deliver biodiversity benefits in compensation for losses in a measurable way. They provide one approach to compensating for biodiversity loss from a development, through compensatory habitat expansion or restoration elsewhere. The Natural Environment White Paper committed to a new voluntary approach to biodiversity offsetting – tested through a pilot scheme running from April 2012 to 2014.<sup>12</sup>
- **The Green Infrastructure Partnership:** The Green Infrastructure Partnership was launched in October 2011 following a commitment in the Natural Environment White Paper to support the development of GI in England. It considers how GI can be enhanced to strengthen ecological networks and improve communities' health, quality of life, and resilience to climate change.

## 2.2 The Biodiversity Strategy for England

The Biodiversity Strategy for England, *Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services*, published by the Government in August 2011,<sup>13</sup> builds on the Natural Environment White Paper and sets out how international and European Union (EU) commitments are to be implemented and achieved. The reform of the planning system is identified as key to reducing environmental pressure from planning and development, by taking '*a strategic approach to planning for nature*' and by retaining '*the protection and improvement of the natural environment as core objectives of the planning system*'. Priority action 3.4 of the Biodiversity Strategy sets out how the approach of the planning system will guide development to the best location, encourage greener design, and enhance natural networks.

## 2.3 The Localism Act 2011

The Localism Act 2011 represents one of the most far-reaching reforms of the planning system since 1947, effected by '*taking power away from officials and putting it into the hands of those who know most about their neighbourhood – local people themselves*'.<sup>14</sup> The reform brought about changes at all levels of planning:

- **Strategic level:** The Localism Act introduced the duty to co-operate, which requires local planning authorities to co-operate strategically on plan-making issues that cross administrative

12 See the Department for Environment, Food and Rural Affairs' 'Biodiversity offsetting' webpage, at <http://www.defra.gov.uk/environment/natural/biodiversity/uk/offsetting/>

13 Defra (2011) *Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services*. London: Department for Environment, Food and Rural Affairs. <http://www.defra.gov.uk/publications/files/pb13583-biodiversity-strategy-2020-111111.pdf>

14 Planning and Decentralisation Minister Greg Clark, quoted in DCLG (2010) 'Planning power from Town Hall and Whitehall to local people'. Press Notice, 6 Dec. 2010. London: Department for Communities and Local Government. <http://www.communities.gov.uk/news/newsroom/1788714>

boundaries. In addition to the duty to co-operate, strategic planning issues can also be addressed through joint planning boards using existing powers under the Town and Country Planning Act 1990 whereby local planning authorities can agree to prepare joint Development Plan Documents.

- **Local level:** The basic structure of local planning remains unchanged, but the content of Local Plans will be shaped by the content of the NPPF.
- **Neighbourhood level:** The Localism Act introduced a new voluntary neighbourhood planning process, including Neighbourhood Development Plans (NDPs) and Neighbourhood Development Orders (NDOs). Such Plans and Orders have to be initiated by a Parish Council or a Neighbourhood Forum; and once approved by the neighbourhood, by means of a referendum, NDPs and NDOs are adopted as part of the Local Plan. The Plan or Order should be in general conformity with strategic policies in the Local Plan and should have regard to national policy, as well as EU obligations and human rights requirements. A Local Green Space designation, a Community Right to Build Order, and a Community Right to Bid Order were also introduced.

## 2.4 The National Planning Policy Framework

The NPPF consolidates and streamlines previous national planning guidance, which allows local authorities to be much more in control of the planning of their area within the parameters of the NPPF. Planning Policy Statements have therefore been revoked (see Annex 3 of the NPPF). However, supporting best practice and companion guides published by Government not listed in Annex 3 of the NPPF are still extant.

### 2.4.1 The plan-led system

The NPPF strongly reinforces the plan-led system as the key way to deliver sustainable development over the long term, allowing for proper engagement with communities. The Local Plan and the Neighbourhood Plan allow for expression of the statutory purpose of planning to contribute to the achievement of sustainable development.

### 2.4.2 The presumption in favour of sustainable development

The presumption in favour of sustainable development is an operational principle for plan-making and development management. This golden thread reinforces the need for positive evidence-based plans which objectively meet the development needs of their communities, unless to do so would result in significant and demonstrable harm or conflict with the objectives of the NPPF. To be in conformity with the NPPF, both plans and other development proposals which come forward where plans are out of date, absent or silent must fully consider their obligations to protect and enhance the natural environment.

### 2.4.3 Viability testing

The NPPF makes clear that viability and deliverability are key tests of all aspects of decision-making, and requires local authorities to assess the cumulative burden of local requirements and plan policy. The NPPF states (in para. 173) that these burdens should not be such as to deny *'competitive returns to a willing land owner and willing developer'*. However, the NPPF states (in para. 176) that *'Where safeguards are necessary to make a particular development acceptable in planning terms (such as environmental mitigation or compensation), the development should not be approved if the measures required cannot be secured through appropriate conditions or agreements. The need for such safeguards should be clearly justified through discussions with the applicant, and the options for keeping such costs to*

## Policies and decisions should encourage multiple benefits from land use

*a minimum fully explored, so that development is not inhibited unnecessarily.'*

It is important that measures to enhance the natural environment are seen as core planning objectives and are embedded in the decision-making process. Where local requirements for contributions to GI or other measures are set in Local Plans, it is good practice for the long-term benefits of these measures to be considered in determining viability.

### 2.4.4 Natural environment objectives in the NPPF

The NPPF identifies (in paras 6 and 17) sustainable development as the purpose of the planning system and conserving and enhancing the natural environment as a 'core planning principle'. While specific policies on conserving and enhancing the natural environment are addressed in Section 11 of the NPPF, these should not be considered in isolation, as other natural environment related policies, and their consideration in plan- and decision-making, can be found throughout the document, specifically in relation to GI (para. 99) and evidence-gathering (paras 165-168).

The objectives for the natural environment within the planning system are set out in the NPPF (in para. 109) and state that the '*planning system should contribute to and enhance the natural and local environment by:*

- *protecting and enhancing valued landscapes, geological conservation interests and soils;*
- *recognising the wider benefits of ecosystem services;*
- *minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- *preventing both new and existing development from contributing to or being put at unacceptable risk from, or being adversely*

*affected by unacceptable levels of soil, air, water or noise pollution or land instability; and*

- *remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.'*

The NPPF clearly supports the objectives set out in the Natural Environment White Paper by stressing a proactive and strategic approach to planning for the natural environment. The ambition of the NPPF is not just to retain protection for existing designations, but to plan ahead for re-creation of habitat where possible. The NPPF states (in para. 114) that local planning authorities should '*set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure*'. Furthermore, the NPPF requires local authorities to '*plan for biodiversity at a landscape-scale across local authority boundaries*' and '*identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation*' (para. 117).

The NPPF makes it clear (in para. 110) that '*Plans should allocate land with the least environmental or amenity value*', when practical and while having regard to other policies in the NPPF. The NPPF also states (in para. 113) that local planning authorities should develop criteria-based policies setting out how developments on, or affecting, protected wildlife sites should be judged, making distinctions between the hierarchy of international, national and locally designated sites.

Planning policies and decision-making should seek to protect and enhance natural and heritage assets appropriate to their significance. Policies and decisions should also encourage multiple benefits from land use, recognising benefits such as wildlife, recreation, flood risk mitigation, carbon storage, and food production.

## section 3

# principles of planning for green infrastructure and biodiversity

GI provision is as important as the provision of grey infrastructure,<sup>15</sup> such as transport, food and energy supplies, water, and waste management systems; and it can help to deliver and complement some of the services currently provided by hard engineering techniques. For example, GI can play a central role in flood attenuation and building design through provision of sustainable drainage schemes and green (living) roofs. To do so successfully, GI will need to reach into every neighbourhood and be designed to complement the natural hydrology and drainage of the location and the wider region, incorporating flood plains and river corridors. This Section sets out the key guiding principles to follow when planning and creating climate-resilient GI for biodiversity and people.

- **Principle 1 – GI needs to be strategically planned to provide a comprehensive and integrated network:** GI needs to be planned and integrated at every geographical scale, from a cross-boundary local authority scale to a single development. Local authorities should identify strategic GI within Local Plans which are informed by cross-boundary strategies and co-operation. The duty to co-operate should help to achieve this.
- **Principle 2 – GI requires wide partnership buy-in:** The strategic planning and implementation of GI requires a co-ordinated approach from a multi-disciplinary, cross-organisational, cross-boundary team of partners. Local authorities are advised to work in consultation with Local Nature Partnerships and communities to achieve this.
- **Principle 3 – GI needs to be planned using sound evidence:** The planning and implementation of GI should be based on up-to-date ecological evidence on and information about GI assets.
- **Principle 4 – GI needs to demonstrate ‘multi-functionality’:** The integration and interaction of different functions within a single site is sought where appropriate – and across a GI network as a whole. Within the network some spaces will have primary functions, such as biodiversity within nature reserves or amenity within local parks, but this does not necessarily exclude other functions. Multi-functional GI can also be viewed as the application of an ‘ecosystem approach’.
- **Principle 5 – GI creation and maintenance need to be properly resourced:** Planning for resource needs should be undertaken from the outset and should consider costs for purchase, design, implementation, monitoring and management of GI. As part of its maintenance, consideration should be given to the aspects of GI that can generate income, productivity and employment.
- **Principle 6 – GI needs to be central to the development’s design and must reflect and enhance the area’s locally distinctive character:** The GI network should be fully integrated within the design of a development, reaching into the built environment and incorporating gardens, open space, extensive corridors, and improvements that connect with

---

<sup>15</sup> At the launch of the GI Partnership in October 2011, Environment Minister Richard Benyon said, in relation to grey infrastructure: ‘It is now time to place the same level of emphasis on our green infrastructure.’ <http://www.defra.gov.uk/news/2011/10/11/more-green-spaces/>

## Green infrastructure should be developed in a way that maximises the opportunities provided by other policy drivers and initiatives

the wider countryside and reflect and enhance local distinctiveness and landscape character. Detailed planning for GI at the initial stages of the development proposal will help to make both the GI and the development as a whole more successful and will contribute most significantly to a sense of place.

- **Principle 7 – GI should contribute to biodiversity gain by safeguarding, enhancing, restoring, and creating wildlife habitat and by integrating biodiversity into the built environment:** Existing designated sites and irreplaceable habitats of international, national and local importance should be protected from development. In addition, habitats and features can be created, restored, connected and managed for biodiversity. Sites can include appropriate areas of habitat beyond the development which require protection and buffering, along with a wide range of more formal green spaces enhanced for wildlife, even where nature conservation may not be the primary objective. The built environment should aim to be permeable to wildlife, incorporating design features aimed at sustaining and increasing the population of particular species and facilitating climate change adaptation.
- **Principle 8 – GI should achieve physical and functional connectivity between sites at strategic and local levels:** Although a physically joined-up network is desirable, simple proximity can be enough to functionally integrate an individual green space such as a private garden into a wider network, enabling species to move and helping to reduce the effects of climate change.<sup>16</sup> Landscape-scale connections will also be necessary to reduce

fragmentation, improve connectivity, and secure functioning ecosystems. Habitats reflecting those found within the ecologically relevant surrounding area should be created off-site, around and within the development, with connections from the countryside into and through the built environment.

- **Principle 9 – GI needs to include accessible spaces and facilitate physically active travel:** GI within a development should include attractive, engaging and safe outdoor spaces which meet a variety of social, health and well-being needs for local people, including contact with nature, recreation, education, active travel (including walking and cycling), water management, landscape amenity, and ‘climate cooling’. Such spaces include parks, play areas, community gardens, housing estate landscapes, playing fields, off-road walking and cycling routes, rivers, canals, road verges and structural landscaping, Local Green Space designations, Local Nature Reserves, and private gardens. Accessibility need not always be direct and physical – it can be visual and auditory.
- **Principle 10 – GI needs to be integrated with other policy initiatives:** GI should be developed in a way that maximises the opportunities provided by other policy drivers and initiatives – such as the catchment approach to deliver the requirements of the Water Framework Directive in River Basin Districts; Water Company Catchment Management Schemes and Environment Agency Flood and Coastal Erosion Risk Management Schemes; and initiatives stemming from the Natural Environment White Paper, such as Nature Improvement Areas.

<sup>16</sup> ‘Gardeners must unite to save Britain’s wildlife’. *University of Leeds Sustainable Environment News*, 19 Jan. 2010. [http://www.leeds.ac.uk/news/article/695/gardeners\\_must\\_unite\\_to\\_save\\_britains\\_wildlife](http://www.leeds.ac.uk/news/article/695/gardeners_must_unite_to_save_britains_wildlife); and Z.G. Davies *et al.* (2009) ‘A national scale inventory of resource provision for biodiversity gardens’. *Biological Conservation*, Vol. 142, 761-71

# section 4

# developing the planning approach

## 4.1 Strategic planning and the duty to co-operate

Local authorities and other public bodies have a ‘duty to co-operate’ on cross-boundary strategic matters relating to sustainable development. According to the NPPF (para. 9), pursuing sustainable development should mean achieving net gains for nature. As such, the conservation and enhancement of the natural environment is considered a strategic priority, and local authorities will need to show that they have effectively worked together in this regard in order for their Local Plans to be considered sound (as set out in para. 182 of the NPPF). The NPPF further addresses the issue of strategic planning by outlining (in para. 156) a number of other priorities that should be included in the Local Plan and to which the duty to co-operate particularly applies. These strategic priorities should be set out in the Local Plan, together with policies for their delivery.

In planning positively for the creation, protection, enhancement and management of networks of GI and biodiversity, the NPPF requires (in para. 114) local planning authorities to set out a strategic approach in the Local Plan. It would be good practice and cost effective for such an approach to take account of strategies for delivery of the requirements of the Water Framework Directive at river basin and catchment level.

Local Plans should also include policies which plan for biodiversity at a landscape scale across local authority boundaries, and should identify and map components of local ecological networks (as set out in para. 117 of the NPPF) – see Box 3, on pages 14 and 15.

In identifying strategic priorities, local authorities are guided by the NPPF (in para. 180) to work collaboratively with LEPs and LNPs. Local authorities may also wish to consult NIA partnerships where they exist. This will help to ensure that cross-boundary priorities are properly co-ordinated and sustainable. LNPs will enable local leadership and will usually operate across administrative boundaries to raise awareness about the services and benefits of a healthy natural environment.

When planning for biodiversity at a landscape scale, local planning authorities may wish to develop joint approaches or prepare joint local development documents (under Section 28 of the Town and Country Planning Act 1990). Cross-sectoral integration with other plans and strategies<sup>17</sup> can also play an important role in delivering landscape-scale conservation. Local authorities should try to ensure that other plans and strategies consider and support the creation of ecological networks and where possible exploit win-win opportunities (such as aiding flood management by creating wetlands, or requiring green roofs on new housing to support connectivity). Lead Local Flood Authorities could promote GI in the development of Local Flood Risk Management Strategies – for example by adopting approaches that work with natural processes. Working with natural processes means taking action to manage flood and coastal erosion risk by protecting, restoring and emulating the natural regulating function of catchments, rivers, floodplains and coasts. This approach enables space to be made for water in the environment, through, for example, multi-functional wetlands that provide wildlife and recreational resources or through saltmarsh and mudflats that enhance coastal defences.<sup>18</sup>

17 Local Transport plans, River Basin Management Plans, National Park Management Plans, Catchment Flood Management Plans, Adaptation Strategies and Biodiversity Strategies, LEP Strategies

18 Environment Agency (2010) *Working with Natural Processes to Manage Flood and Coastal Erosion Risk*. <http://www.environment-agency.gov.uk/research/planning/136425.aspx>



Forestry Commission

The NPPF emphasises the importance of a robust evidence base to inform successful Local Plan policies on the natural environment. Working with LNPs where appropriate, evidence-gathering should include an assessment of existing and potential components of ecological networks. Local Plans could also draw on the extensive evidence base prepared for Regional Strategies to deal with cross-border GI issues – see Box 3, on pages 14 and 15.

## 4.2 Local Plans

GI and biodiversity should be core considerations in the preparation of Local Plans. The Localism Act reinforces the role of the Local Plan and the plan-led system, stressing the need for a strong and proportionate evidence base. Local Plans also need to meet the soundness test which requires policy to be viable and deliverable and in line with national and international obligations.

In producing a Local Plan, local authorities should set out a strategic approach to planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure (as required in para. 114 of the NPPF). There are a range of strategic issues and documents

that also need to be taken into account in the Local Plan. Such issues include climate change, which over the long-term could impact factors such as flood risk, coastal change, water supply, and changes to biodiversity and landscape. The NPPF stipulates (in para. 99) that *'when new development is brought forward in areas which are vulnerable, care should be taken to ensure that risks can be managed through suitable adaptation measures, including through the planning of green infrastructure'*.

The Local Plan should integrate and make links to other strategies, plans and studies. These could include Green Infrastructure Strategies, Local Transport Plans, Rights of Way Improvement Plans, River Basin Management Plans, Open Space Strategies, Water Cycle Studies, Landscape Character Assessments, Community Forest Plans, Community Strategies, Play Strategies, National Park Management Plans, Catchment Flood Management Plans, Biodiversity Strategies, Trees and Woodland Strategies and Local Biodiversity Action Plans where they exist.

It is good practice for a Local Plan to include specific measurable targets that can be monitored – for example net biodiversity gain targets reflecting local priorities for biodiversity (contributing to national targets as appropriate).<sup>19</sup>

---

<sup>19</sup> In setting targets for biodiversity gain, it is important to ensure that the habitats and species selected are locally appropriate, and include those of local significance or national importance, and not just those that are more tolerant of urban development

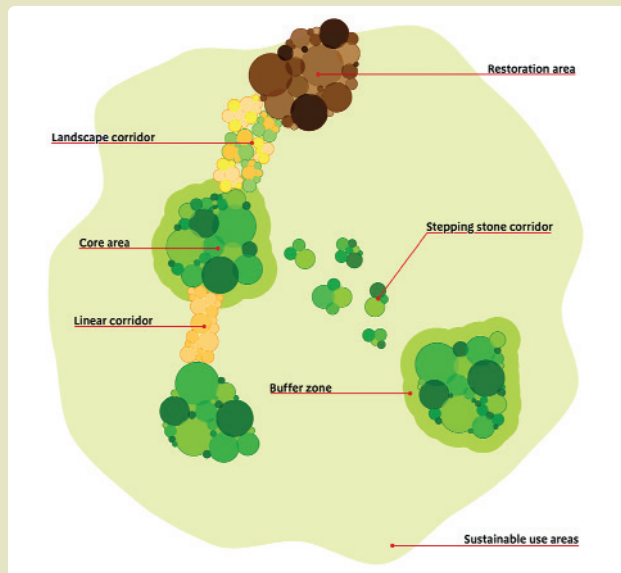
### Box 3

## Examples of strategic approaches to planning for GI

### Strategic planning for nature conservation through the restoration of ecological networks

*Making Space for Nature*<sup>i</sup> highlighted the importance of working at a landscape scale to improve ecological connectivity and reverse species and habitat decline. The Natural Environment White Paper subsequently emphasised the role that the planning system can play in establishing more coherent and resilient ecological networks. An ecological network should comprise a suite of high-quality sites which collectively contain the diversity and area of habitat needed to support species and which have ecological connections between them to enable species, or at least their genes, to move.<sup>ii</sup>

*Making Space for Nature* sets out an approach for restoring ecological networks across the country, based on five components to be implemented at a landscape scale and working with existing land uses and economic activities. These components are: core areas; corridors and stepping stones; restoration areas; buffer zones; and sustainable use areas (softening the wider countryside) (see the diagram above).<sup>iii</sup>



*The components of ecological networks*

Natural England

### Opportunity mapping

Biodiversity and green infrastructure opportunity mapping could feature as part of the Local Plan. Opportunity mapping uses data on existing biodiversity interests, coupled with information about land use, topology, soils, hydrology and other physical parameters to identify areas where appropriate management can lead to the restoration or creation of new wildlife-rich areas, as well as enhancing land or townscape character.

### *The Wetland Vision for England*<sup>iv</sup>

The *Wetland Vision* document sets out a 50-year vision for England's freshwater wetlands, showing where new wetlands could be created and current wetlands restored, providing multiple environmental, economic and social benefits.

i J. Lawton *et al.* (2010) *Making Space for Nature: a Review of England's Wildlife Sites and Ecological Network*. Report to Defra. London: Department for Environment, Food and Rural Affairs. <http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>

ii *ibid.*

iii For further information, see page 18 of HM Government (2011) *The Natural Choice: Securing the Value of Nature*. Cm 8082. Norwich: The Stationery Office. <http://www.official-documents.gov.uk/document/cm80/8082/8082.pdf>

iv See the Wetland Vision Project website, at <http://www.wetlandvision.org.uk>

### 4.2.1 Wider partnership engagement

The NPPF makes clear the importance of community participation in the preparation of Local Plans. Every effort should be made to ensure that all sections of the community have the opportunity to participate in the planning process. Other organisations can also provide useful information and advice in preparing local

biodiversity and GI policy – for example Biodiversity Partnerships, Local Wildlife Site Partnerships, Local Record Centre steering groups, resident groups, local heritage organisations, allotment/garden societies, and Local Access Forums.

Engagement could also include sectors not usually involved, such as tourism and local businesses. The



### Regional opportunity maps <sup>v</sup>

Examples of regional opportunity maps include the South West Nature Map<sup>vi</sup> and the South East Biodiversity Opportunity Areas (BOAs) map.<sup>vii</sup> Much good work has been achieved through regional opportunity mapping, and both the content of existing maps and the methodology used to develop them remain relevant and applicable. For example, the BOAs map for the South East spatially depicts the regional priority areas of opportunity to enhance, restore and create significant habitats at a larger than local authority scale.

### Community Forests

Community Forests were conceived to create a new landscape framework to blend urban areas and surrounding (degraded) landscapes, and have pioneered urban fringe environmental regeneration. The Newlands Project in the North West is a good example of a community woodland which shows the potential of woodland and GI as a tool for regeneration.<sup>viii</sup>

### GI design in new settlements

Cambourne is a new settlement nine miles west of Cambridge. It was conceived in the 1990s as a series of three interlinked villages and comprises 4,200 dwellings, a local village centre, a business park, leisure facilities, and significant areas of multi-functional green space. It is the green spaces that mark Cambourne out, with 60% of the new settlement area set aside as various types of green space, including pre-existing woodlands as well as a variety of new areas, such as woodland planting, meadows, lakes, amenity grassland, playing fields, allotments, and formal play areas. In addition, there are 12 miles of new footpaths, cycleways and bridleways and 10 miles of new hedgerows.

However, it is not just the area and variety of green space that set Cambourne apart; it is the manner in which they were designed. The settlement's design respected the existing landscape character, identifying existing habitat features and using them as the building blocks for the network of green spaces and as the framework within which the settlement would grow. In effect, the areas of green space were designed before the built environment. The green spaces network does not just frame each of the three individual villages, but also joins them together and permeates each of them, giving residents easy access to the whole network.

Management of the green spaces is undertaken by the new Cambourne Parish Council and the local Wildlife Trust (see <http://www.wildlifebcn.org>). The land will eventually be transferred to each of these organisations.

---

v While the maps are still accessible, they are not being updated

vi Available from the Biodiversity South West website, at [http://www.biodiversitysouthwest.org.uk/nm\\_chan.html](http://www.biodiversitysouthwest.org.uk/nm_chan.html)

vii Available from the South East England Biodiversity Forum website, at <http://strategy.sebiodiversity.org.uk/index.php>

viii Newlands Project (2009) *Newlands Executive Briefing*. Northwich: Forestry Commission Delamere Area Office.  
<http://www.newlandsproject.co.uk/a/Newlands%20Executive%20Briefing.pdf>

importance of cross-boundary co-operation in identifying and planning strategic priorities is discussed in Section 4.1 of this guidance.

#### 4.2.2 Getting the right local evidence

At a strategic level, effective local planning for GI requires a strong evidence base to understand both the risks to GI assets and opportunities for

enhancement to enable resilient plans to be developed.

Evidence-gathering should be informed by local knowledge and expertise and should identify the functions provided by existing and future GI. The gathering of such data, which should include a clear assessment of baseline data, should be embedded in the Strategic Environmental Assessment (SEA)



Environmental Report, which requires a holistic assessment of the environmental impacts of plan policies and possible alternatives.<sup>20</sup>

Comprehensive evidence-gathering will help to inform decisions on the type and location of green space required to complement existing GI, fill gaps, mitigate adverse impacts, and provide additional compensatory measures to ensure a net gain in biodiversity assets and GI. It is good practice to carry out context studies to establish where existing or potential GI exists, as well as to gain an understanding of specific local distinctiveness and landscape character, to assist in the design of new relevant habitat. Further assistance on how to carry out context studies is given in *Biodiversity by Design*.<sup>21</sup>

Mapping existing resources and identifying areas of opportunity is an important strategic tool to secure physical and functional connectivity through the restoration and re-creation of habitats and landscapes that have become fragmented. Much mapping work has already been achieved through regional planning (see Box 3). Local authorities are advised to draw on this existing good practice in identifying and mapping components of local ecological networks (including Nature Improvement Areas) to ensure that existing and potential components of the local ecological network are integrated at every geographical scale.

It will be important for local authorities to have access to baseline figures for biodiversity in their area. This information can then be broken down to a more local level to inform developers about site-specific biodiversity issues within a development. Local Records Centres and Biodiversity Action Plans where they exist can be a key source of evidence. It is good practice that any data recorded during the implementation and management of GI is fed back to relevant data managers.

### **4.2.3 Policy development and the role of measurable standards**

While approaches will vary, Local Plan policy should reflect the evidence base and the aspirations of the local community. The Town and Country Planning Association website<sup>22</sup> hosts a list of example policies from published and adopted development plans (forming an online 'Annex C' to this guidance).

Measurable standards for GI can play a useful role in policy development by providing both a starting point for the outcomes of plan policy and a clear framework to measure progress over time. There are many examples of these standards, including Natural England's Accessible Natural Greenspace Standards (ANGSt) (which are under review<sup>23</sup>) and the allied Woodland Trust Woodland Access Standards (see Box 4). Others include *Design for*

20 HM Government (2004) *Environmental Assessment of Plans and Programmes Regulations 2004*. SI 2004 No. 1633. Norwich: The Stationery Office. <http://www.legislation.gov.uk/ukSI/2004/1633/introduction/made>

21 TCPA (2004) *Biodiversity by Design: A Guide for Sustainable Communities*. London: Town and Country Planning Association. [www.tcpa.org.uk/pages/biodiversity-by-design.html](http://www.tcpa.org.uk/pages/biodiversity-by-design.html)

22 See <http://www.tcpa.org.uk>

23 Natural England (2010) *'Nature Nearby': Accessible Natural Greenspace Guidance*. Sheffield: Natural England. <http://publications.naturalengland.org.uk/publication/40004?category=47004>. At the time of writing, the timescale for the review has not been set

## Box 4

### Examples of measurable standards

#### The Natural England Accessible Natural Greenspace Standards (ANGSt)

- No person should live more than 300 metres from their nearest area of natural green space of at least 2 hectares in size.
- At least 1 hectare of Local Nature Reserve should be provided per 1,000 population.
- There should be at least one accessible 20 hectare green space site within 2 kilometres from home.
- There should be one accessible 100 hectare green space site within 5 kilometres.
- There should be one accessible 500 hectare green space site within 10 kilometres.

#### The Woodland Trust Woodland Access Standards

- No person should live more than 500 metres from at least one area of accessible woodland of no less than 2 hectares in size.
- There should also be at least one area of accessible woodland of no less than 20 hectares within 4 kilometres (8 kilometres round-trip) of people's homes.

This standard was based on data collected and analysed annually since 2004 and is supported by the Forestry Commission.

*Play*,<sup>24</sup> which explains how good play spaces can give children and young people the freedom to play creatively, while allowing them to experience risk, challenge and excitement.

In respect of public rights of way, para. 7.2 of Defra Circular 1/09<sup>25</sup> makes it clear that the effect of development on public rights of way is a material consideration in the determination of applications for planning permission. The Circular advises (in para. 7.8) that alternative alignments for public rights of way within new developments should avoid use of estate roads and wherever possible give preference to the use of made-up estate paths through landscaped or open space areas away from vehicular traffic.

#### **Green infrastructure design standards**

The amount of GI that should be provided, along with its character and distribution, ultimately depends on the individual nature of the location and its specific circumstances, the type of development, and the contribution it can make to improving ecological connectivity. As GI can have a wide range of functions, there must be a sufficiently large area of land and water provided so that, in aggregate, these functions can be

fulfilled. A principle of no net loss of GI could be used, with a general aim that a minimum of 40% of the total land should constitute GI (including private gardens and living roofs, as well as any individual site).<sup>26</sup> Where there are policies or designations that require greater green space provision (for example in Community Forests, where 30% woodland cover is required), these requirements should be provided as a minimum, as part of the GI plan.

The design of a development should aim to reflect and enhance the area's locally distinctive character. In achieving this, existing biodiversity features of environmental, historical or cultural interest, such as habitats of principal importance, ancient woodland and hedgerows, the remains of previous settlements, open spaces, and routes long used by local communities, should all be conserved and integrated into the design. Private gardens can also be a key determinant of local distinctiveness. GI can be harnessed as a positive 'place-shaping' tool, and where appropriate can be used to positively transform local character.

Annex B of this guidance provides options to guide the planning, delivery, and operation of development.

24 Play England (2008) *Design for Play: A Guide to Creating Successful Play Spaces*. London: Play England.

[http://www.playengland.org.uk/resources/design-for-play?originx\\_2757hp\\_70994779705616h30y\\_2008630728a](http://www.playengland.org.uk/resources/design-for-play?originx_2757hp_70994779705616h30y_2008630728a)

25 Defra (2009) *Rights of Way Circular 1/09: Guidance for Local Authorities*. Version 2. London: Department for Environment, Food and Rural Affairs. <http://www.defra.gov.uk/publications/files/pb13553-rowcircular1-09-091103.pdf>

26 DCLG (2009) *Planning Policy Statement: Eco-towns. A Supplement to Planning Policy Statement 1*. Section ET14. London: Department for Communities and Local Government. <http://www.communities.gov.uk/publications/planningandbuilding/pps-ecotowns>



TCPA

#### **4.2.4 Achieving net gains for biodiversity**

Strategically planned GI is important for biodiversity and landscape conservation. Over the last hundred years there has been an unprecedented change in the UK countryside, resulting in habitat loss and dramatic adverse impacts on the populations of many species. In securing sustainable development, the planning system aims to achieve a net gain for biodiversity through the protection, restoration, creation, and recovery of habitats and species (as set out in paras 9 and 117 of the NPPF). A net gain for biodiversity means a sustained increase in abundance, quality and extent of all species and habitats that support healthy ecosystems. Any development should seek to increase an area's biodiversity assets and (in rural areas) countryside character, while guarding against the loss of irreplaceable habitats. This involves safeguarding and enhancing biodiversity already present and/or providing new areas of habitat and features for wildlife appropriate to the landscape and the ecology of that neighbourhood, while providing as many other ecosystem functions as possible. This approach would involve protecting irreplaceable habitat and existing sites of international, national or local importance and

landscape character and putting measures in place to optimise their condition and connectivity.

Most of England's countryside is in agricultural use, which is not within the scope of planning control. The management of agricultural land is, however, crucial to achieving the wider ecological network necessary to deliver a net gain in biodiversity, and many agri-environment schemes are designed specifically to deliver nature conservation (points recognised in *Making Space for Nature*<sup>27</sup>). There may be some scope for local planning policies to influence the implementation of agri-environment schemes, particularly when there is a clear commitment in local planning policy to promote areas for ecological restoration and/or where individual schemes are on publicly owned land.<sup>28</sup>

Other green space where nature conservation may not be the primary objective (for example private gardens, parks, public rights of way, and cycle routes) can, if managed sensitively for wildlife, help to sustain and increase particular species and contribute to achieving net gains for biodiversity by serving as stepping stones and corridors. The ultimate aim is the formation of an extensive network of linked GI

27 J. Lawton et al. (2010) *Making Space for Nature: a Review of England's Wildlife Sites and Ecological Network*. Report to Defra. London: Department for Environment, Food and Rural Affairs. <http://archive.defra.gov.uk/environment/biodiversity/documents/201009space-for-nature.pdf>

28 The South East Regional Strategy (Policy 7b, para. vi) provides an example of this type of policy (see the sample policies in the online 'Annex C' to this guidance hosted on TCPA website, at <http://www.tcpa.org.uk>)

which provides additional, complementary wildlife habitat, landscape quality and public access, and which buffers key habitats from adverse impacts of developed areas and their associated activities.

#### **4.2.5 Protecting and enhancing important habitats, landscapes and species**

Government policy recognises the importance of protecting and enhancing areas designated for their special landscape and/or biodiversity importance – including National Parks, Areas of Outstanding Natural Beauty, Special Areas of Conservation, Special Protection Areas, Ramsar Sites, Sites of Special Scientific Interest, Ancient Semi-Natural/ Natural Woodland, Local Nature Reserves, Local Sites,<sup>29</sup> and Local Green Spaces. Priority should be given to the protection, enhancement and management of these areas, ensuring their integrity and increasing their ecological resilience in order to enhance landscape character, protect and increase biodiversity, and establish a coherent ecological network resilient to current and future pressures. Local Plans should identify these areas with clear policy and guidance on what will or will not be permitted and where. Protection of existing high-quality habitat such as unimproved grassland and irreplaceable habitats<sup>30</sup> such as ancient woodlands should be prioritised over creating new habitats. Mechanisms and resources for long-term protection and management need to be addressed and incorporated into an agreed plan using relevant up-to-date information and ecological expertise.

Any adverse impact to designated sites should only occur as a last resort, and should be fully

compensated by replacement with a feature of comparable or higher ecological value. Guidance is required on when off-site mitigation/off-setting is appropriate. Where, very exceptionally, a species population needs to be moved to make way for development, work should be undertaken to an appropriate professional standard with the aim of improving the local status and security of that population. All off-site work necessary to ensure the survival of the translocated species or habitat should be undertaken prior to the start of the development. The onus should be on the developer to provide evidence that any proposed off-site mitigation through translocation has a proven record of success in comparable situations, and there should be a fund allocation to ensure that the translocation sites are properly managed for as long as is necessary.

Targets can be set to link fragmented habitats and landscape features to increase species viability, by restoring degraded sites and habitats and by providing new spaces for recreation to reduce human impact on sensitive sites. Mapping the existing resource will help to identify areas of fragmented habitat where connections can be made. Through the provision of bigger, better and more joined-up sites and green space, GI networks can support the dispersal and migration of individual species, either as part of a regular movement pattern or through migrations in response to climate change.

#### **Reducing recreational disturbance**

Some elements of GI resource will be sensitive to too much human activity and recreational disturbance. Recreational disturbance of vulnerable habitats can lead to a loss of vegetation,

---

<sup>29</sup> Local Wildlife Sites are included as locally designated sites within the NPPF. Along with Local Geological Sites they are defined areas, identified and selected locally for their substantive nature conservation value, based on important, distinctive and threatened habitats and species and geological and geomorphological features with a national, regional and (importantly) a local context. Together with SSSIs, they form the essential building blocks of an ecological network. Local Sites are selected according to robust, scientifically determined criteria within a framework of common national standards (see Defra (2006) *Local Sites: Guidance on their Identification, Selection and Management*. London: Department for Environment, Food and Rural Affairs. <http://archive.defra.gov.uk/rural/documents/protected/localsites.pdf>)

<sup>30</sup> 'Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss' (NPPF, para. 118)

## The built environment should aim to incorporate design which helps to sustain and increase particular species

disturbance of ground-nesting birds (affecting their breeding and survival), and increased predation of birds and wild mammals by domestic cats. In 2011, as much as 3.47% of SSSIs were considered to be in an unfavourable condition owing to recreational disturbance.<sup>31</sup>

By providing additional 'suitable accessible natural green space' (SANGS), local authorities can help to divert visitors away from sites that are sensitive to recreational disturbance. Natural England has produced useful guidance and a checklist for the creation of SANGS in the Thames Basin Heaths Planning Zone,<sup>32</sup> and many of the principles will apply to the creation of SANGS elsewhere (although they may not be suitable for all locations and habitats).

### **Protecting Green Belt land**

Green Belts are designated primarily as a spatial planning tool to direct development to large urban areas or other locations where it is particularly necessary. However, the effect of protecting Green Belt land from most forms of development over time and its close proximity to urban areas has been such that Green Belt land now contains many of our key GI assets, particularly Community Forests, Country Parks, biodiverse brownfields and Local Wildlife Sites.<sup>33</sup> The NPPF gives a clear steer (in para. 81) that Green Belt land should be a priority for new GI.

### **Restoring minerals sites for nature**

The NPPF (in para. 143) requires local authorities to put in place policies to ensure that worked land is reclaimed at the earliest opportunity, and that high-quality restoration and aftercare of mineral sites

takes place, including for biodiversity, native woodland and recreation.

Restored minerals sites offer enormous potential for the creation of priority habitat types. Restoration will depend on geological, soil and hydrological conditions, and the proximity of the site to existing fragments of the same habitat. Restoring sites adjacent to existing fragments of semi-natural habitats can be particularly beneficial, as this offers the potential to expand and buffer the existing fragment, and potentially link more than one fragment together. This restoration can play an important role in improving the wider ecological network and its connectivity, while providing valuable places for engaging with nature and for recreation. As such, local planning authorities and mineral planning authorities may want to consider working together to explore strategic opportunities for the integration of minerals sites and the wider ecological network. Information on restoring minerals sites for biodiversity, including advice on restoring and managing different habitats, can be found on the Nature After Minerals (NAM) website.<sup>34</sup>

### **4.2.6 Designing for biodiversity in the built environment**

The built environment should aim to be permeable to wildlife and to incorporate design which helps to sustain and increase particular species. Such measures will also play a significant role in helping people and wildlife to adapt to climate change. There are many approaches that can be included in the detailed design of development, whether residential or business, to help achieve permeability – for example sustainable drainage

31 See the Natural England 'Biodiversity Action Reporting System' webpage, at <http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/bars.aspx>

32 Bracknell Forest Council (2008) *Guidelines for the Creation of Suitable Accessible Natural Green Space (SANGS)*. Bracknell: Bracknell Forest Council. <http://www.bracknell-forest.gov.uk/sangs-guidelines-and-checklist-12-06-08.pdf>

33 See Table 6 in CPRE/Natural England (2010) *Green Belts: A Greener Future*. London: Campaign to Protect Rural England/Sheffield: Natural England. <http://www.cpre.org.uk/resources/housing-and-planning/green-belts/item/1956-green-belts-a-greener-future>

34 The NAM Programme is a partnership between Natural England and the RSPB, with support from the Minerals Products Association, in which the organisations work with minerals planners and industry to help nature following minerals extraction – see <http://www.afterminerals.com>



Tom Hackett

schemes (SuDS)<sup>35</sup> and living roofs and walls. While small and often low-cost design changes can make buildings suitable for bats, birds and invertebrates, some design features (for example living roofs or rooftop permaculture farms) will require early consideration of building form and structure (especially roof loadings) so that habitat requirements can be accommodated from the outset.<sup>36</sup>

Design options for biodiversity are included for consideration in Annex B of this guidance. Information on how the detailed design of buildings and structures can maximise the ecological value of a site is available in *Biodiversity and the Built Environment*,<sup>37</sup> and further details on how to incorporate biodiversity into low- and zero-carbon buildings are given in *Biodiversity for Low and Zero Carbon Buildings: A Technical Guide for New Build*.<sup>38</sup>

Owing to habitat loss, some species are almost solely dependent on our built structures to roost or nest. Of particular note are bats, barn owls, house martins, house sparrows, starlings, swallows and swifts<sup>39</sup> (whose numbers have experienced startling declines in recent years). All UK species of bat have been recorded in buildings, and the built environment provides essential roost places for several species. In

order to ensure that development integrates and enhances biodiversity within urban environments, planning conditions could require both extensions to existing properties and all new developments to provide sites for species that nest or roost in the built environment. It is important to note that provision for species should be guided by what is locally appropriate, and ecological advice should be sought regarding the amount, location and siting of nest boxes and bat roosts. Further sources of guidance are signposted in Section 7.

### 4.3 Neighbourhood planning

Neighbourhood Plans offer potential to engage communities in the development of GI in a way most relevant to their needs – providing scope and opportunities for communities to shape and direct sustainable development in their area through neighbourhood policies which enhance GI and biodiversity. Local authorities can support the neighbourhood planning process by ensuring that clear strategic policies on GI and biodiversity are included in an up-to-date Local Plan and that relevant information on GI and biodiversity is readily accessible (see para. 184 of the NPPF).

35 Wildfowl and Wetlands Trust/RSPB (2012) *SuDs – Maximising the Potential for Wildlife and People: A Guide for SABs, Developers and Local Authorities*. Slimbridge: Wildfowl and Wetlands Trust/Sandy: RSPB (available on the WWT website from August 2012, at <http://www.wwt.org.uk>)

36 The Environment Agency's Green Roof Toolkit can be found at <http://www.environment-agency.gov.uk/business/sectors/91967.aspx>; and details of CIRIA's Building Greener Project can be found at <http://www.ciria.com/buildinggreener>

37 UK-GBC Biodiversity Task Group (2009) *Biodiversity and the Built Environment*. London: UK Green Building Council. <http://www.ukgbc.org/resources/publication/uk-gbc-task-group-report-biodiversity-and-built-environment>

38 C. Williams (2010) *Biodiversity for Low and Zero Carbon Buildings: A Technical Guide for New Build*. London: RIBA Publishing

39 See London's Swifts website, at <http://www.londons-swifts.org.uk>

The Local Green Space designation,<sup>40</sup> introduced by the Localism Act 2011, offers further potential for enhancing GI. The NPPF states (in para. 76): *‘Local communities through local and neighbourhood plans should be able to identify for special protection green areas of particular importance to them. By designating land as Local Green Space local communities will be able to rule out new development other than in very special circumstances.’* Local Green Space must be consistent with the local planning of sustainable development and must complement investment in sufficient homes, jobs and other essential services. It can only be designated when a plan is prepared or reviewed, and must be capable of enduring beyond the end of the plan period.

## 4.4 Masterplanning and development briefs

As an integral part of a successful development, the natural environment needs to be a key theme within the masterplan for any new development. The early planning of resilient GI will contribute to the creation of a sense of place, the provision of ecosystem services, access, the conservation of existing habitats, and the creation of new habitats – providing the ‘armature’ around which the remainder of a development is designed.

Masterplans are the means by which GI aspirations set out in policy can be translated into detailed proposals and spatial plans. How these aspirations can be applied to a particular site will be guided by the plan, but will also be shaped by:

- the character of the site itself, including existing environmental assets and constraints;
- its relationship with adjacent sites, land uses and the new development as a whole, given the

need to ensure that individual elements form part of a coherent and strategic settlement-wide network; and

- the design objectives of each component of the GI, which could be multi-functional (see Annex B of this guidance).

Masterplans should characterise the local habitats and key fauna and flora populations, and should include provision for additional areas of habitat, which reflect locally agreed spatial habitat targets and contribute to national and local biodiversity targets. The masterplanning process should also increase biodiversity generally. Masterplans should identify:

- the existing key habitat areas to be protected, restored, enhanced and expanded;
- transitional and supplementary habitats as part of the wider green space resource, sustaining more widespread habitats and species;
- measures for maximising the contribution of the built and historic environment to biodiversity;<sup>41</sup> and
- existing access and rights of way provisions that are to be protected, enhanced and expanded without compromising the preceding measures.

---

<sup>40</sup> To be designated a Local Green Space, the area must be close to the community it serves, local in character, not an extensive tract of land, demonstrably special to the local community, and have local significance (for example for its beauty, history, recreation, tranquillity or wildlife)

<sup>41</sup> Note that in this regard there need not necessarily be an artificial divide between habitats at ground level and on buildings. Biodiverse meadows and even woodlands can be established on earth sheltered by buildings, free-standing roofs and terraced facades if accommodated early enough within development parameters



# section 5

# development management

Development management is the key tool through which the plan policy is delivered and unsustainable cumulative impacts are prevented. The NPPF stresses the importance of the development management process in the delivery of sustainable development. It also introduces the presumption in favour of sustainable development where plans are 'out of date' and emphasises the need for a positive and proactive approach to decision-making. Where authorities have an up-to-date Local Plan with a robust GI policy, decisions should be made in accordance with that plan. Where no up-to-date plan is in place or where the status of the plan is disputed, local authorities should apply the NPPF, and can also consider the principles set out in Section 3 of this guidance.

Local authorities can engage constructively with developers to deliver well-designed, sustainable buildings and high-quality local environments suitable for low-carbon living in a changing climate. In determining planning applications, local planning authorities can reasonably expect proposed new development to:

- use landform, layout, building orientation, massing, and landscaping to ensure a net gain for GI and biodiversity;
- provide public or private GI as appropriate so that an accessible choice of shade and shelter is offered, recognising the opportunities for people, biodiversity, flood storage and carbon management that multi-functional GI can provide; and
- reflect the priorities of the Natural Environment White Paper in relation to the value of GI in supporting ecosystem services.

In determining large applications which engage the Environmental Impact Assessment (EIA)



Kieron Huston

Regulations,<sup>42</sup> local authorities should require the Environmental Statement and any proposed mitigation strategies to fully explore the opportunities to conserve, restore and enhance GI assets.

When preparing their development proposals, developers and their landscape architects should consult the relevant local authority ecologists, planners, park managers, engineers (water management), transport planners, landowners, the local Wildlife Trust, and others with relevant technical expertise – for example in ecology, archeology, landscape, rights of way and access issues. In addition, 'translators' such as artists and community development workers can help to articulate and promote the opportunities presented by GI.

42 HM Government (2011) *The Town and Country Planning (Environmental Impact Assessment) Regulations 2011*. SI 2011 No. 1824. Norwich: The Stationery Office. <http://www.legislation.gov.uk/uksi/2011/1824/schedule/6/made>

# section 6

# implementation and management of green infrastructure



Mathew Frith

This Section sets out the essential elements for the delivery of Local Plan strategies to ensure long-term provision of GI and biodiversity measures and some of the potential mechanisms to secure funding and community involvement. Securing long-term revenue for green space is a real challenge and one that the public, private and community sectors need to tackle head on.

It is best practice for GI to be implemented through co-ordinated planning, delivery and management across local authority departments and boundaries. Sustainable and effective GI will be implemented, valued and protected only if there is close collaboration between developers, planners and the local community. Such collaboration could encompass officers and organisations responsible for managing green space<sup>43</sup> and officers concerned with a local authority's statutory duties on biodiversity, public rights of way and access. Where a development straddles administrative boundaries,

all the local authorities concerned are advised to work collaboratively with other bodies to develop a unified approach with a common vision for GI.

Before embarking on a particular approach to funding and management of GI, it is advisable to seek technical and legal advice on the model that best suits individual development requirements. Box 5 provides examples of different funding and management models in practice.

## 6.1 Securing GI funding and long-term management

Funding is essential to the delivery of GI and can be secured through a variety of local and national mechanisms and sources. It would be good practice to clearly identify funding sources for creating, managing and monitoring GI within the Local Plan and any Community Infrastructure Levy (CIL) charging scheme. In addition, as part of a development's core infrastructure, GI needs to be properly funded at the outset, with provision made for long-term monitoring and management. Funding should include provision for contingencies where monitoring shows that remedial action is needed to achieve the required outcomes for biodiversity.

### 6.1.1 Developer contributions

In new developments, new GI assets can be secured from the landowners' 'land value uplift' and as part of development agreements. A GI strategy

<sup>43</sup> This includes habitats of nature conservation interest and other green spaces, where nature conservation may not be the primary management objective

## Box 5

### Case studies on independent trusts

#### Nene Park Trust

Nene Park was conceived by Peterborough Development Corporation, Peterborough City Council and Cambridgeshire County Council as part of the 1960s masterplan for the expansion of Peterborough. The park was created in 1978 to provide visitors with a variety of recreation experiences in an accessible network of open space and waterways, and as a gateway to the open countryside for the people of Peterborough. Nene Park Trust, a registered charity, was established ten years later to ensure that the 697 hectare Country Park would be managed and protected for the future. Along with a 999-year lease on the park, the Trust was endowed with commercial properties and other assets which now generate funds to maintain the park through rental income.

See <http://www.neneparktrust.org.uk>

#### Marston Vale Trust

The Marston Vale Trust created and now manages around 607 hectares of multi-functional green space, including a thriving visitor centre and conferencing facility. By adopting a social enterprise model, profits generated from the operation of the Forest Centre and other business activities fund the ongoing management and development of the green space portfolio.

See <http://www.marstonvale.org/index.html> and <http://www.socialenterprise.org.uk/about>

#### The Wildlife Trusts

Many local Wildlife Trusts are responsible for advising on and managing green space in and around developments.

The *Portbury Wharf Nature Reserve* comprises 47 hectares of wetland, open water and hay meadows, and was created as a result of a unique partnership arrangement between North Somerset Council, Avon Wildlife Trust, the developers (Persimmon), and residents of the Port Marine 'urban village'. Planning consent for Port Marine was given on condition that a nature reserve would be created on land adjoining the development – the ongoing costs of which would be met by the property owners of the 2,650 new houses. Avon Wildlife Trust took responsibility for the management of the newly created reserve in October 2010 and will, once the development is complete, take on full ownership. The annual charge to residents is fixed each autumn by an intermediary management company. The revenue funding received by the Trust pays for reserve management and community engagement. In return, residents qualify for free membership of the Trust, a regular newsletter, and access to nature on their doorstep.

See <http://www.avonwildlifetrust.org.uk>

The *Braeburn Park Nature Reserve* in Crayford, South East London, is the result of a Section 106 agreement with the London Borough of Bexley and the current landowner, Taylor-Wimpey, following the development of the Braeburn Park residential neighbourhood in the early 2000s. Given the site's complexities (it was once an old orchard, Victorian landfill and shooting club, as well as partly a gravel extraction site and geological SSSI), coupled with concerns over contamination and the management of the geological assets, partnership with the Land Trust and Natural England has been essential. The 20 hectare site will be managed from 2012 by the London Wildlife Trust as a fully accessible nature reserve, with a strong invertebrate interest.

See <http://www.wildlondon.org.uk> and <http://www.thelandtrust.org.uk>

#### The Trust for Urban Ecology

The Trust for Urban Ecology (TRUE) in London is a good example of pocket park management, providing a strong focus for community involvement and action as well as having an educational role. For example, the Greenwich Peninsula Ecology Park (managed by TRUE), at just over 2 hectares, attracts, educates and delights over 10,000 inner-city schoolchildren per year.

See <http://www.urbanecology.org.uk>

## **Box 6**

### **Company Limited by Guarantee**

The Company Limited by Guarantee structure is now commonly used across the public sector as a mechanism for the transfer of services and operational activity to a third-party organisation. The public sector can choose either to keep control of the company or to share ownership with other guarantee providers (if others are brought in, this may have implications under the EU procurement regime). Such organisations are companies with members, not shareholders. Members guarantee to pay only a fixed sum – usually £1 – to cover any debts of the Company Limited by Guarantee, which is effectively the limit of their overall liability.

The company would be controlled by an appropriate public sector body, such as a local authority; i.e. there would be no equity share for a third party. It would be external to the authority, so there would need to be an internal commissioning function – Companies Limited by Guarantee are corporate bodies with their own Memorandum and Articles of Association. These documents define their objectives and Constitution (i.e. voting rights) and eligibility for membership. They may need to have a Members' Agreement to back up the Constitution, regulate deadlock, and prevent the company from acting without council consent.

will inform these decisions and lower landowners' expectations of land value. Section 106 agreements, the CIL and other developer contributions will play a central role. These funding streams can provide for GI creation and/or support their long-term maintenance. The local planning authority could include capital for GI purchase, design, planning, maintenance and management within its CIL schedule. If Section 106 agreements or the CIL are to secure the most appropriate GI, then green space managers should be consulted, along with other relevant stakeholders such as Local Nature Partnerships, Nature Improvement Area Partnerships, Access Forums, non-government organisations, landowners, residents, and voluntary groups representing broad interests. Representatives should include individuals with negotiation and decision-making powers.

While development can contribute to landscape-scale GI, other funding mechanisms will need to be sought to establish significant corridors and large-scale features.<sup>44</sup>

#### **6.1.2 Income generated from GI**

Some GI assets can provide income to support management costs – for example woodlands managed for fuel, renewable energy resources, and sustainable local food production and consumption systems. Providing space to grow food using

sustainable methods, such as organic cultivation, can not only contribute to healthy diets for local communities but also enhance biodiversity, provide jobs, and offer educational opportunities for all ages (see the *Good Planning for Good Food* report<sup>45</sup>).

#### **6.1.3 Contractual arrangements**

There is an important relationship between GI and local authority Infrastructure Delivery Plans, and in many cases green space creation or enhancement may be provided as a result of grey infrastructure such as transport, energy production or water management services. As with any other public service, it is vital to secure long-term funding for the ongoing management of GI so that it continues to meet its multi-functional goals.

### **6.2 Governance and community involvement**

#### **6.2.1 Independent trusts and not-for-profit companies**

Local authorities do not have a statutory duty to manage green space, and consequently budget pressures mean that GI can lose out in terms of revenue support. Opportunities to establish innovative funding and management arrangements

44 Examples include the Heritage Lottery Fund, Higher Level Stewardship, and INTERREG European funding. The potential scope for biodiversity offsets is also being explored by Defra through a two-year pilot study, which will report following completion of the pilot in April 2014

45 Sustain (2011) *Good Planning for Good Food*. London: Sustain. <http://www.sustainweb.org/publications/?id=192>



should be explored to ensure maximum multi-functional benefit from GI. One option is to vest the GI assets in a trust or not-for-profit company, endowed with funds for long-term management and empowered to seek additional income from GI assets and other funding sources. An independent trust is able to focus on the needs of a GI network without the distraction of other duties. Local authorities do have a statutory duty to map and maintain public rights of way and keep them free from obstruction, so ensuring new paths created within developments are adopted is key to securing their long-term protection. Similar in many ways to the independent trust model, a Company Limited by Guarantee may be more appropriate for some new developments – see Box 6.

## 6.2.2 Community engagement

Community participation in the development and maintenance of GI will ideally start in the planning stages of a development. This can deliver considerable long-term benefits through increased involvement in environmental stewardship and can provide opportunities to engage hard-to-reach groups. This could provide community groups with a leadership, ownership or participatory role in the management and shaping of green spaces, especially for smaller neighbourhood sites. In taking on this role, they may require expert ecological guidance to ensure that management of the GI is appropriate for biodiversity protection and enhancement. Funding to enable training and

support can be factored into development costs and grant applications.

Community activity is recognised as fundamental to promoting well-functioning and sustainable communities. For example, city farms and community-managed gardens and parks are increasingly seen as examples of how local people can make a real difference. Allotments, which are required by statute, also have a strong element of direct community ownership and management. A minimum provision of 20 standard plots of 250 square metres per 1,000 households is recommended.<sup>46</sup>

There are many other examples of how residents and community groups can support or manage their local GI, including seeding community meadows with locally appropriate seed, managing private and community gardens sensitively for wildlife,<sup>47</sup> and managing areas where the habitat will develop and change through natural processes over time (for example networks of private gardens or areas of woodland).

It is good practice to inform residents about the availability of GI through publicity materials promoting what it is, where it is, the role it can play, and which parts of it can be used for recreational enjoyment and health. Free online resources are available, including the Royal Horticultural Society, The Wildlife Trusts, and the jointly-owned Wild About Gardens and Big Wildlife Gardening websites.

<sup>46</sup> See the Federation of City Farms and Community Gardens website, at <http://www.farmgarden.org.uk>

<sup>47</sup> An estimated 87% of homes have access to a garden. Gardens cover up to a quarter of the land surface in our towns and cities (432,924 hectares) and contain about 3 million ponds and 28.7 million trees. They support a wide range of plants, animals, and also ecosystem processes such as pollination and organic matter recycling in soils

# section 7

## signposts to further information

A wealth of information on green infrastructure and biodiversity is available from a wide range of institutions and organisations. Some of the key websites offering such information include the following:

- Association of Local Government Ecologists <http://www.alge.org.uk>
- Barn Owl Trust <http://www.barnowltrust.org.uk>
- Bat Conservation Trust <http://www.bats.org.uk>
- Biodiversity Planning Toolkit <http://biodiversityplanningtoolkit.com>
- British Trust for Ornithology 'Garden BirdWatch' surveys <http://www.bto.org/gbw>
- Buglife <http://www.buglife.org.uk>
- Campaign to Protect Rural England (CPRE) <http://www.cpre.org.uk>
- CIRIA <http://www.ciria.org>
- Department for Environment, Food and Rural Affairs (Defra) <http://www.defra.gov.uk>
- Environment Agency <http://www.environment-agency.gov.uk>
- Federation of City Farms and Community Gardens <http://www.farmgarden.org.uk>
- Fields in Trust <http://www.fieldsintrust.org>
- Forestry Commission <http://www.forestry.gov.uk>
- Green Infrastructure North West <http://www.greeninfrastructurenw.co.uk>
- Green Infrastructure Partnership <http://www.defra.gov.uk/environment/natural/green-infrastructure>
- Institution of Lighting Professionals <http://www.theilp.org.uk>
- Living Roofs <http://livingroofs.org>
- London's Swifts <http://www.londons-swifts.org.uk>
- Play England <http://www.playengland.org.uk>
- Ramblers <http://www.ramblers.org.uk>
- Royal Horticultural Society (RHS) <http://www.rhs.org.uk>
- Royal Society for the Protection of Birds (RSPB) <http://www.rspb.org.uk>
- Sustain <http://www.sustainweb.org>
- Town and Country Planning Association (TCPA) <http://www.tcpa.org.uk>
- Trees and Design Action Group <http://www.forestry.gov.uk/tdag>
- UK Green Building Council Biodiversity Task Group <http://www.ukgbc.org/content/biodiversity-task-group>
- Wild About Gardens (RHS and TWT) <http://www.wildaboutgardens.org.uk>
- Big Wildlife Garden (RHS and TWT) <http://www.bigwildlifegarden.org.uk>
- Wildfowl and Wetlands Trust <http://www.wwt.org.uk>
- Wildlife Gardening Forum <http://www.naturalengland.org.uk/advice/wildlifegardening/forum.aspx>
- The Wildlife Trusts (TWT) <http://www.wildlifetrusts.org>
- Woodland Trust <http://www.woodlandtrust.org.uk>

# annex A

## established european and national legislation

This Annex outlines other relevant European and national legislation and policy not included in Section 2. Consideration of legislation early in the plan-making process will ensure that plans and decisions are in accordance with legal obligations and wider policy considerations.

### A.1 European legislation

#### A.1.1 Birds and Habitats Directives and the Ramsar Convention

The Birds<sup>A1</sup> and Habitats<sup>A2</sup> Directives and the Ramsar Convention<sup>A3</sup> are now reflected in national legislation by the Conservation of Habitats and Species Regulations 2010.<sup>A4</sup> Some of the measures required include designating 'Special Areas of Conservation' (SAC) (Habitats Directive) and 'Special Protection Areas' (SPAs) (Birds Directive), which together make up the Natura 2000 network. Ramsar Sites or Wetlands of International Importance are designated under the Ramsar Convention. Plans and projects likely to have significant effect on a SAC, SPA or Ramsar Site will need to be preceded by a Habitats Regulations Assessment (HRA), also known as an 'Appropriate Assessment' of the impacts and alternatives.

According to the NPPF (para. 119), *'The presumption in favour of sustainable development... does not apply where development requiring appropriate*

*assessment under the Birds or Habitats Directives is being considered, planned or determined.'*

It is also important to recognise that where an area supports either migratory birds or bird species listed in Annex 1 of the Birds Directive, there is a legal obligation to ensure the protection of that habitat. This is due to Article 4(4) of the Birds Directive, which states that *'Member States shall strive to avoid pollution or deterioration of habitats'* for migratory and Annex 1 birds. A judgment of the European Court of Justice (*C-418/04 Commission vs Ireland*) states in respect of this that Member States must make serious attempts to implement this provision: this requires the taking of all reasonable measures to avoid deterioration of the species' habitats (paras 179 and 190 of the NPPF).

#### A.1.2 Water Framework Directive

The EU Water Framework Directive (WFD)<sup>A5</sup> came into force in 2000 and was transposed into UK legislation in 2003. The overarching target of the WFD is for all inland and coastal waters to meet 'good ecological status' (or good ecological potential in the case of heavily modified water bodies) at the latest by 2027. In addition to this, no water bodies should deteriorate in status.

River Basin Management Plans have been developed for all 11 River Basin Districts in England

---

A1 European Union (2009) Directive 2009/147/EC of the European Parliament and of the Council of 30 November 2009 on the conservation of wild birds (codified version of Directive 79/409/EEC as amended). (Birds Directive) [http://ec.europa.eu/environment/nature/legislation/birdsdirective/index\\_en.htm](http://ec.europa.eu/environment/nature/legislation/birdsdirective/index_en.htm)

A2 European Community (1992) Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora. (Habitats Directive) [http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index\\_en.htm](http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm)

A3 UN (1971) Convention on Wetlands of International Importance especially as Waterfowl Habitat. Ramsar (Iran), 2 February 1971. UN Treaty Series No. 14583. (Ramsar Convention) [http://www.ramsar.org/cda/en/ramsar-home/main/ramsar/1\\_4000\\_0\\_\\_](http://www.ramsar.org/cda/en/ramsar-home/main/ramsar/1_4000_0__)

A4 HM Government (2010) *The Conservation of Habitats and Species Regulations 2010*. SI 2010 No. 490. Norwich: The Stationery Office. <http://www.legislation.gov.uk/uk/si/2010/490/contents/made>

A5 European Union (2000) Directive 2000/60/EC of the European Parliament and of the Council of 23 October 2000 establishing a framework for Community action in the field of water policy. (EU Water Framework Directive) [http://ec.europa.eu/environment/water/water-framework/index\\_en.html](http://ec.europa.eu/environment/water/water-framework/index_en.html)

and Wales. These plans set out the status of water bodies and the actions that are needed to meet European obligations. Planning has an important role to play in helping to meet these challenges.

Advice on the WFD initially provided to local planning authorities by the Environment Agency is still relevant under the NPPF and is accessible at <http://www.environment-agency.gov.uk/research/planning/33102.aspx>.

## **A.2 National legislation and policy**

### **A.2.1 Wildlife and Countryside Act 1981 (as amended)**

Part I of the Wildlife and Countryside Act 1981<sup>A6</sup> (as amended) provides for the protection of all wild birds and a number of other wild animals and plants in England and Wales. Under Section 25 of the Act, local authorities have a duty to bring the protected species provisions of the Act to the attention of the public. They are also empowered to take action against any person committing an offence under Part I of the Act within their area. Details of the wild animals and plants covered by the various schedules of the Acts, and the impact they can have on the planning process, are set out in ODPM Circular 06/05: *Biodiversity and Geological Conservation – Statutory Obligations and Their Impact within the Planning System*.<sup>A7</sup> Section 28G of the Act also places a duty on local authorities to

further the conservation and enhancement of the flora, fauna or geological or physiographical features for which a Site of Special Scientific Interest is selected.

### **A.2.2 Countryside and Rights of Way (CRoW) Act 2000**

The CRoW Act 2000<sup>A8</sup> provides for public access on foot to certain types of land, amends the law relating to public rights of way, increases measures for the management and protection for Sites of Special Scientific Interest and strengthens wildlife enforcement legislation, and provides for better management of Areas of Outstanding Natural Beauty. It also provided for the establishment of Local Access Forums.

### **A.2.3 Natural Environment and Rural Communities Act 2006**

Under Section 40 of the Natural Environment and Rural Communities Act 2006,<sup>A9</sup> 'every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity'. For further information on applying the duty, see *Guidance for Local Authorities on Implementing the Biodiversity Duty*.<sup>A10</sup> Under Section 41 of the Act, the Secretary of State is required to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The latest version of the list was published in August 2010.<sup>A11</sup>

---

A6 HM Government (1981) The Wildlife and Countryside Act 1981. Norwich: The Stationery Office. <http://www.legislation.gov.uk/ukpga/1981/69>

A7 ODPM (2005) Circular 06/05: *Biodiversity and Geological Conservation – Statutory Obligations and Their Impact Within the Planning System*. Office of the Deputy Prime Minister. Norwich: The Stationery Office. <http://www.communities.gov.uk/publications/planningandbuilding/circularbiodiversity>

A8 HM Government (2000) Countryside and Rights of Way Act 2000. Norwich: The Stationery Office. <http://www.legislation.gov.uk/ukpga/2000/37/contents>

A9 HM Government (2006) Natural Environment and Rural Communities Act 2006. Norwich: The Stationery Office. <http://www.legislation.gov.uk/ukpga/2006/16/contents>

A10 Defra (2007) *Guidance for Local Authorities on Implementing the Biodiversity Duty*. London: Department for Environment, Food and Rural Affairs. <http://www.defra.gov.uk/publications/2011/03/30/pb12584-biodiversity-duty/>

A11 See Natural England's 'Habitats and species of principal importance in England' webpage, at <http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx>



#### **A.2.4 Climate Change Act 2008**

The Climate Change Act 2008<sup>A12</sup> introduced a statutory target of reducing carbon dioxide emissions by at least 80% below 1990 levels by 2050, with an interim target of 34% by 2020. Government departments have prepared carbon budgets to indicate how greenhouse gas emissions will be reduced across the Government estate and in sectors where departments take a policy lead. The Act also created a framework for climate change adaptation. The UK Climate Change Risk Assessment was published in January 2012, and the development of a National Adaptation Programme (NAP) is under way, with planning and the built environment as one of its key sectors or themes. The Climate Change Act also sets out a reporting power requiring compulsory reporting of climate change impacts and adaptation plans for certain public bodies and organisations.

#### **A.2.5 The Conservation of Habitats and Species Regulations 2010**

See Section A.1.1, on the Birds and Habitats Directives and the Ramsar Convention.

#### **A.2.6 Flood and Water Management Act 2010**

Schedule 3 of the Flood and Water Management Act 2010<sup>A13</sup> requires all new developments of over one dwelling to incorporate SuDS into their development plans. These need to be approved by a SuDS Approving Body (SAB) (within local government jurisdiction) before construction begins. Sewerage Undertakers, the Environment Agency, Internal Drainage Boards, British Waterways, and Highway Authorities are to be

statutory consultees to the SAB. The Secretary of State has published National Standards for the design, construction, operation and maintenance of SuDS, and all SuDS must, at a minimum, comply with these standards. Local planning authorities can develop these standards further by taking other legislation and policy into account (for example the Natural Environment and Rural Communities Act and species of principal importance), thereby using SuDS for multi-disciplinary functions. Local developers will have to comply with the local standards produced by their local planning authority.

#### **A.2.7 Water White Paper 2011**

Published in December 2011, the Water White Paper, *Water for Life*,<sup>A14</sup> sets out the Government's vision for securing sustainable and resilient water supplies to 2050. It outlines plans to consult on abstraction reform proposals in 2013, with a view to introducing subsequent legislation and implementing a new abstraction regime fully by the mid-late 2020s. It also highlights the value of the catchment approach to addressing water quality issues, outlines a package of deregulatory reforms to introduce more competition in the water industry, and commits to publishing a draft Water Bill in 2012. The Queen's speech on 9 May 2012 announced that the Water Bill will be published for pre-legislative scrutiny before the summer recess 2012.

---

A12 HM Government (2006) Climate Change Act 2008. Norwich: The Stationery Office.  
[http://www.decc.gov.uk/en/content/cms/legislation/cc\\_act\\_08/cc\\_act\\_08.aspx](http://www.decc.gov.uk/en/content/cms/legislation/cc_act_08/cc_act_08.aspx)

A13 HM Government (2010) Flood and Water Management Act 2010. Norwich: The Stationery Office.  
<http://www.legislation.gov.uk/ukpga/2010/29/contents>

A14 HM Government (2011) *Water for Life*. Cm 8230. (Water White Paper) Department for Environment, Food and Rural Affairs. Norwich: The Stationery Office. <http://www.defra.gov.uk/environment/quality/water/legislation/whitepaper/>

## annex B

# options to consider for GI design and implementation

Consider opportunities to:

- Create multi-functional habitat on buildings (roofs, terraces, facades, etc.) to provide high-quality wildlife habitat equal in quality and function to local priority habitats. Where feasible, residents/users should be able to access these assets or roof-level areas immediately adjacent. Other options include food roofs which can be developed as permaculture facilities (see examples from New York City given at <http://rooftopfarms.org> and <http://www.brooklyngrangefarm.com>).
- Include bat boxes, bricks or lofts and bird boxes on all housing, to reflect the species within the area.
- Ensure that where possible streets and roads are tree-lined or contain hedgerows appropriate to local character, habitats and species.<sup>B1</sup> Allowance can be made for installation of large trees in urban regeneration schemes, and, where appropriate and feasible, any street trees that are lost could be replaced by at least two trees which will reach the same stature and provide similar ecosystem services in the long term.
- Incorporate insect-attracting plants, hedgerows, log piles, loggaries and other places of shelter for wildlife refuge/hibernation within structural landscaping and open spaces.
- Avoid impermeable surfaces unless there are sound technical arguments overriding this requirement. SuDS can be focal to every scheme and enhanced for biodiversity by incorporating ditch habitat and pond networks. Where vertical permeability is not permitted (for example owing to a clay-capped site or contaminated aquifer), lateral-flow SuDS are still possible and viable.
- Harvest, store and re-use rainwater in low-carbon systems and incorporate such systems into all strategies for GI to ensure that ecosystem services (such as urban cooling) can be maximised and maintained – thus increasing resilience to climate change.
- Make space for renewable energy resources, such as ground source heat pump installations for use in local combined heat and power plants.
- Create high-quality town parks which offer habitat provision for biodiversity and a variety of facilities, services, experiences and community events for all age groups. They could include landmark structures and spaces that foster the town's identity and sense of place. Parks should be easily accessible by public transport and by cycleways and footpaths forming part of the wider GI.
- Create natural green spaces and wild or free play areas in the urban setting. If managed correctly, these can be relatively low maintenance.
- Create a range of sports facilities and pitches designed and maintained for use by the whole community, not just schools and other institutions. The boundaries of sports pitches can be designed and managed for biodiversity.
- Create larger-scale natural habitat within informal open spaces, country parks and play areas. For example, consider setting play equipment and kick-about areas within wildflower habitat or rough grassland.
- Ensure that semi-natural spaces, including designated nature reserves, combine passive

---

B1 See guidance from the Trees and Design Action Group, at <http://www.forestry.gov.uk/tdag>

recreational access and activities with biodiversity value and a variety of habitats. Wherever possible, consider incorporation of appropriate educational facilities or features to encourage use by school groups.

- Create an extensive viable network of green and blue corridors and natural habitat throughout the development which connects larger or more expansive open spaces for both people and wildlife (including dark corridors for bats). Wherever possible and appropriate, habitat creation and enhancement should be designed around existing assets. For example, providing SuDS in a natural channel can also improve biodiversity and enhance green spaces for leisure use.
- Protect, enhance and buffer waterways both in-channel and along the banks.
- Create a network of streets, open spaces and parks, with safe routes linking them to homes and schools, allowing children to both play in their own neighbourhoods and move around without traffic danger by facilitating walking and cycling for utility, recreation and health promotion.
- Provide pleasant, safe and linear routes for non-motorised transport such as walking and cycling and links to public transport.
- Enhance the transport system and help further reduce the effects of air pollution through the provision of verges of priority habitat, hedgerow, wildflower-rich or rough grassland along railway lines, roads, streets, and pedestrian and cycle networks. Use species mixes for grass verges designed carefully to attract insects, and incorporate small areas of rough grassland or taller herbs to benefit other wildlife.
- Provide private garden space wherever possible. Consideration can be given to including provision of hedgerow habitat on at least one side of the garden. Other

considerations include removing (or creating gaps in) fences to ensure connectivity between gardens, and designing garden walls to incorporate shelter for overwintering insects.

- Provide wildlife-friendly allotments, community meadows, orchards and woodlands, a series of community gardens offering social and amenity space, and attractive, cool and shaded outdoor areas readily accessible from people's homes.
- Provide public access to GI, except where there are sound reasons to restrict this (for example sites of a sensitive nature conservation value/purpose, private gardens, railway line sides). It may be appropriate to provide zoning guidance where some GI has only a visual and auditory function in order to maximise overall ecosystem services.
- Provide facilities and services to enable full use of the GI by all sections of the community. Such facilities include toilets, shelters, waste disposal arrangements, seating, public art, public transport access and secure bicycle parking, and signage for interpretation and way-marking – except where these would detract from otherwise wild or natural qualities. In more intensively used spaces, buildings such as pavilions, refreshment facilities, event arenas/staging and community halls might be compatible within GI areas (but should be excluded from GI area calculations).

In addition to the above list, Exeter City Council's award-winning<sup>B2</sup> Residential Design Supplementary Planning Document (SPD) details good practice approaches to protecting and enhancing biodiversity value within the built fabric and wider landscape of a residential development. See in particular tables from Appendix 2 of the SPD.<sup>B3</sup>

B2 Public Sector Category at the 2012 Urban Design Awards. Urban Design Group. <http://www.udg.org.uk/events/urban-design-awards-2012>

B3 Exeter City Council (2010) *Residential Design Supplementary Planning Document*. Exeter: Exeter City Council. <http://www.exeter.gov.uk/index.aspx?articleid-12730>

## acknowledgements

The production of this guidance has been made possible by financial support provided by:

- Climate UK
- Royal Society for the Protection of Birds
- The Wildlife Trusts
- Ramblers
- Royal Horticultural Society
- Woodland Trust
- Wildlife Gardening Forum
- Sustain

This guidance is supported by:

- Aggregate Industries
- Association of Local Government Ecologists
- Biodiversity by Design
- Buglife
- Butterfly Conservation
- Byerley Environmental Consultants
- Campaign for National Parks
- Campaign to Protect Rural England
- Central Bedfordshire Council
- Climate South East
- Climate UK
- Collingwood Environmental Planning
- Federation of City Farms
- Forest of Marston Vale
- Friends of the Earth
- Grasslands Trust
- GreenLINK
- GreenSpace
- Institute of Horticulture
- Ivison Consulting
- Landscape Institute
- National Trust
- Open Spaces Society
- Oxford Brookes University
- Play England
- Ramblers
- Royal Horticultural Society
- Royal Society for the Protection of Birds
- Sustain
- Torbay Coast & Countryside Trust
- Town and Country Planning Association
- Wildfowl & Wetlands Trust
- Wildlife and Countryside Link
- Wildlife Gardening Forum
- The Wildlife Trusts
- Woodland Trust

Thanks are due to the 60-plus organisations and individuals that have shared expertise and contributed content during the production of this guidance.

**Planning for a Healthy Environment – Good Practice Guidance for Green Infrastructure and Biodiversity**  
Published by the Town and Country Planning Association and The Wildlife Trusts  
July 2012

Printed with vegetable-based inks on chlorine-free paper from sustainably managed sources by RAPSiderweb Ltd, Oldham



**tcpa**

**Town and Country Planning Association**  
17 Carlton House Terrace, London SW1Y 5AS  
Registered Charity Number 214348

+44 (0)20 7930 8903    [tcpa@tcpa.org.uk](mailto:tcpa@tcpa.org.uk)    [www.tcpa.org.uk](http://www.tcpa.org.uk)



**The Wildlife Trusts**  
The Kiln, Waterside, Mather Road, Newark, Nottinghamshire NG24 1WT  
Registered Charity Number 207238

+44 (0)1636 677711    [enquiry@wildlifetrusts.org](mailto:enquiry@wildlifetrusts.org)    [www.wildlifetrusts.org](http://www.wildlifetrusts.org)