the essential role of green infrastructure:
eco-towns green infrastructure worksheet

summary points

This Worksheet has been produced because it is recognised by the Government and a very wide range of bodies that green infrastructure is essential to both the environmental sustainability and the long-term social and economic success of eco-towns.

The Worksheet is designed to provide clear guidance on how to design, incorporate and operate green infrastructure that is fully ‘fit for purpose’. This guidance is intended not just for eco-town developers and planners but also for those who will manage the new settlements and work with the new communities. It is also intended to support the emergence of green infrastructure networks that, in terms of their quality, extent and capacity to deliver the widest range of environmental, social and economic benefits, can exceed the targets and standards for green spaces pursued by the champions of new settlements in previous generations.

The Worksheet sets out the principles that should characterise an eco-town’s green infrastructure and the process that needs to be gone through from inception to delivery and beyond. It places great emphasis on integrating green infrastructure completely within the detailed planning of the eco-town and on drawing a community of green infrastructure and related expertise into the planning and decision-making process. The Worksheet also gives guidance on issues such as management and funding, including long-term arrangements.

The main part of the Worksheet deals primarily with the practical aspects of green infrastructure provision and the standards to be achieved. This is complemented by Annexes which provide greater detail on individual components of green infrastructure networks and on the potential for green infrastructure to significantly underpin...
The Essential Role of Green Infrastructure: Eco-towns Green Infrastructure Worksheet
Advice to Promoters and Planners
September 2008

the sustainability of eco-towns. The Annexes also include case studies and signposts to other sources of useful information.

Key recommendations

Green infrastructure should:

• Be a primary consideration in planning, developing and maintaining an eco-town.

• Be provided as a varied, widely distributed, strategically planned and interconnected network.

• Be factored into land values and decisions on housing densities and urban structure.

• Be accessible to local people and provide alternative means of transport.

• Be designed to reflect and enhance the area’s locally distinctive character, including local landscapes and habitats.

• Be supported by a green infrastructure strategy.

• Be multi-functional, seeking the integration and interaction of different functions on the same site and across a green infrastructure network as a whole.

• Be implemented through co-ordinated planning, delivery and management that cuts across local authority departments and boundaries and across different sectors.

• Be able to achieve physical and functional connectivity between sites at all levels and right across a town, city or sub-region.

• Be implemented primarily through focused green infrastructure strategies and the spatial planning system of Regional Spatial Strategies and Local Development Frameworks, and it should be formally adopted within these planning policy documents.

• Be established permanently, with financial support for continued maintenance and adaptation.
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introduction

Green infrastructure (GI) refers to a strategically planned and managed network of green spaces and other environmental features vital to the sustainability of any urban area. An eco-town provides an opportunity to demonstrate how well designed GI adds tangible value to a settlement in economic as well as social and environmental terms. By firmly establishing a high-quality natural environment in and around the eco-town, GI can significantly reduce costs for individuals, businesses and public bodies while enhancing the quality of life and health of residents, workers and visitors. Eco-towns have the advantage of being new settlements surrounded by open countryside that can contribute to GI provision and so help to integrate the new settlement into the environment, life and economy of its wider rural setting and region.

GI should be designed and managed as a multi-functional resource\textsuperscript{1} capable of providing the landscape,\textsuperscript{2} ecological services\textsuperscript{3} and quality of life benefits that are required by the communities it serves and needed to underpin sustainability. Its design and management should also protect and enhance the character and distinctiveness of an area with regard to habitats and landscape types.

Box 1 Green infrastructure and PPS12

Planning Policy Statement 12 defines green infrastructure as ‘a network of multi-functional green space, both new and existing, both rural and urban, which supports the natural and ecological processes and is integral to the health and quality of life of sustainable communities’. It goes on to state that the local planning authority ‘core strategy should be supported by evidence of what physical, social and green infrastructure is needed to enable the amount of development proposed for the area, taking account of its type and distribution. This evidence should cover who will provide the infrastructure and when it will be provided. The core strategy should draw on and in parallel influence any strategies and investment plans of the local authority and other organisations.’

GI includes new and established green spaces, which should thread through and surround the built environment, connecting the urban area to its wider rural hinterland. It should be delivered at all spatial scales – regional, sub-regional, local and neighbourhood levels – and should accommodate both accessible natural green spaces within local communities and much larger sites in the urban fringe and wider countryside.

This Worksheet sets out for individual eco-town developers, planners and others:
\begin{itemize}
  \item What constitutes exceptional GI in terms of its character, quality and extent.
  \item Guidance on the application of GI to eco-town planning and development.
\end{itemize}

Annexes provide further descriptions, case studies and other information in support of this guidance.

The broad range of disciplines and skills needed to create and manage individual green spaces and whole GI networks are to be found in local authorities, statutory agencies

\textsuperscript{1} Multi-functional is used here to include, but not exclusively, the provision of such diverse products and services as agriculture, forestry and horticulture, renewable energy installations and fuel sources, climate change adaptation and mitigation, transportation routes, water management, recreational and sporting activity space, biodiversity, and aesthetics.

\textsuperscript{2} 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’.

\textsuperscript{3} Ecological is taken here to mean ‘relating to the inter-relationship between organisms (including human) and the environment’.
and NGOs, plus the voluntary, community and private sectors. Developers and planners should combine a multi-disciplinary approach with over-arching project planning to ensure that the provision of GI is co-ordinated, protected and continues to thrive in the future.

**Box 2 A typology of green infrastructure assets**

- 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 sport facilities, housing green spaces, domestic gardens, village greens, urban commons, other incidental space, green roofs, hedges, civic squares and spaces, and highway trees and verges.
- Allotments, community gardens, city farms, orchards, roof gardens, and urban edge farmland.
- Cemeteries and churchyards.
- Natural and semi-natural rural, peri-urban 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), coast, beaches, and Community Forests.
- Green corridors – rivers and canals including their banks, road and rail corridors, cycling routes, and rights of way.
- Existing national and local nature reserves and locally designated sites for nature conservation (for example Sites of Importance for Nature Conservation (SINCs) etc.).
- Archaeological and historic sites.
- Functional green space such as sustainable urban drainage schemes and flood storage areas.

### 1.1 Green infrastructure and climate change

An ability to mitigate and adapt to the rising temperatures and extreme weather events associated with climate change is essential to the success of an eco-town. GI has a vital role to play by:

- Providing a natural cooling effect to mitigate the urban ‘heat island’. This should reduce the need for energy-hungry cooling systems and increase comfort levels in outdoor spaces.

- Providing space for sustainable urban drainage to absorb excess rainfall. Green spaces can provide an efficient and cost-effective ‘soakaway’ for rain water and a reservoir for grey water storage.

- Providing space to grow food using sustainable methods, such as organic cultivation. This can not only contribute to healthy diets for local communities but also enhance biodiversity, provide jobs, and offer educational opportunities for all ages.

- Providing space for renewable energy resources, such as ground source heat pump installations and biofuel production for use in local combined heat and power plants.

- Allowing species to migrate and adapt to the effects of climate change.

- Providing vegetation to reduce the effects of air pollution and to store carbon.

- Encouraging alternative modes of transport such as walking and cycling, by providing pleasant environments – thus helping to reduce carbon emissions.

- Providing attractive, cooler and shaded outdoor areas in hotter summers, readily accessible from people’s homes.

CABE Space’s *Public Space Lessons: Adapting Public Space to Climate Change* sets out lessons learned both in the UK and around the world from using public spaces to help adapt to the climate crisis – see [http://www.cabe.org.uk/publicspaceadaptation](http://www.cabe.org.uk/publicspaceadaptation)

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the green infrastructure principles that eco-town developers, planners and managers should adhere to

Green infrastructure provision should be put on a par with the provision of other infrastructure, such as transport, food and energy supplies, and water and waste management systems. GI can contribute significantly to the delivery of other forms of infrastructure and services. **Indeed, eco-towns should maximise the GI contribution to resource management, leaving hard engineering solutions to make up any shortfall.** As part of an eco-town’s core infrastructure, GI needs to be properly funded at the outset, and provision must be made for long-term maintenance and management.

The provision of green infrastructure should be guided by the following principles:

- **Principle 1:** Green infrastructure should be a *primary consideration in planning, developing and maintaining an eco-town.* GI should be central to eco-town design and detailed planning and should be laid out as part of the first phase of eco-town construction. Sustainable GI cannot be retrofitted once detailed plans have been approved and construction is under way. A GI strategy is an essential part of the eco-town planning process. Guidance on strategy preparation is given in Section 5 of this Worksheet.
Principle 2: Green infrastructure should be provided as a varied, widely distributed, strategically planned and interconnected network. Eco-towns should offer much more than ‘amenity’ or easy-maintenance green spaces. The GI network must provide a wide variety of spaces, habitats and connections, supplying a broad range of ecosystem services. See Annex 4 of this Worksheet for further guidance.

GI cannot simply be assembled from parcels of marginal land not needed or wanted for housing. Nor can it be provided via just one or two large land parcels on the edge of the development. It must be fully integrated.

The strategic planning of GI requires a co-ordinated approach from a multi-disciplinary and cross-organisational team. Engineers, landscape architects, ecologists, park managers and planners are some of the key technical contributors to a successful GI strategy. Local authorities, national agencies and major landowners will also need to work with major developers to implement the strategy.

Principle 3: Green infrastructure should be factored into land values and decisions on housing densities and urban structure. This should ideally be done before land or development options are agreed, and certainly before masterplanning begins. If sufficient land value is to be translated into GI, developers need to know what their GI obligations are prior to completing land purchases so that they can factor these into the price they offer the landowner. A GI strategy will inform these decisions. Section 3 of this Worksheet provides further guidance on issues of quality and, especially, quantity.

Principle 4: Green infrastructure should be accessible to local people and provide alternative means of transport. GI within an eco-town must provide outdoor spaces that are attractive, welcoming and engaging to local people, and which feel safe, are attractive and meet a variety of human needs. Such needs include the need for contact with nature, the need for young people to play and spend time with friends in their local neighbourhood, as well as the need for other groups of people to be able to walk or cycle safely in the area where they live for all short journeys.

GI should provide excellent walking and cycling opportunities for recreation and as a means of transport, offering a quick route from homes to services – and so helping to discourage the use private cars. More information on sustainable transport can be found in the Eco-towns Transport Worksheet: Design to Delivery.

Inclusive design elements must be employed to ensure that GI is accessible to all – for example the use of clear signage and the provision of separate cycling and
pedestrian lanes, which are integral to the needs of many disabled, blind and older people. Street furniture such as benches should be dementia-friendly.

- **Principle 5: Green infrastructure should be designed to reflect and enhance the area's locally distinctive character, including local landscapes and habitats.** It should also support specific local priorities and strategies for environmental management – for example energy efficiency, food production and sustainable urban drainage. Eco-towns will be new settlements usually focused on brownfield sites or areas without statutory nature conservation or landscape designations. However, nowhere in England lacks features of environmental, historical or cultural interest. Such features can include ancient hedgerows, the remains of previous settlements, and open spaces long used by the local community. Some brownfield sites host unique communities of flora and fauna. Each eco-town should have its own Biodiversity Action Plan (BAP), which incorporates the new UK BAP priority habitat – ‘Open mosaic habitats on previously developed land’. Local landscape character assessments should also be used.

Conserving these features within a GI framework will endow the eco-town with elements of a mature GI, rich in diversity and distinctiveness, and will help foster a ‘sense of place’. The retention of existing sites and habitats also provides a ‘seed-bed’ of animal and plant communities to colonise new green spaces, thus contributing to the protection of local genetic resources – a key element of biodiversity.

Eco-towns will demonstrate the best in energy-efficient design and operation. A GI network can support micro and local energy generation schemes, such as biomass heating systems, as well as sustainable local food production and consumption systems. GI must also play a central part in surface water management and building design – for example sustainable drainage systems and green roofs. To do this effectively, 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, with flood plains and river corridors also being factored into GI planning – see the Eco-towns Water Cycle Worksheet: Sustainable Water Management for further information.

- **Principle 6: Green infrastructure should be supported by a GI strategy.** This is essential and is explained in more detail in Section 5 of this Worksheet.

- **Principle 7: Green infrastructure should be multi-functional.** A GI network should fully demonstrate ‘multi-functionality’. This is a simple but powerful concept which seeks the integration and interaction of different functions on the same site and across a GI network as a whole. It is key to realising the full sustainable benefits from available land in and around an eco-town. Multi-functionality is a reversal of the...
traditional approach to land use planning that seeks to spatially separate land uses and functions. A further description of multi-functionality is set out in Annex 2.

Multi-functional GI in an eco-town context can also be viewed as the application of an ‘ecosystem approach’ to a new urban environment. An ecosystem approach has been 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] recognises that humans, with their cultural diversity, are an integral component of many ecosystems.’

Annex 4 provides a check-list of ecosystem services appropriate to an eco-town.

* Principle 8: Green infrastructure should be implemented through co-ordinated planning, delivery and management that cuts across local authority departments and boundaries and across different sectors. GI will emerge from a close collaboration between developers and local planners. But GI partnerships should encompass all those responsible for managing green space, those concerned with a local authority’s statutory duties on biodiversity, those dealing with rights of way etc. If, for example, section 106 agreements (see Section 6 of this Worksheet, which deals with funding issues) are to be used to secure the most appropriate GI, then green space managers and other experts must be consulted, along with other relevant individuals, teams and organisations. The latter should include agencies, NGOs and voluntary groups representing interests as diverse as transport, water and waste management, biodiversity, food, health, and community development. It is therefore essential to establish multi-disciplinary project groups to develop and implement GI strategies. They should include senior representatives with negotiation and decision-making powers.

Where an eco-town straddles administrative boundaries, all the local authorities concerned need to have a unified approach to the development, holding a common vision and operating the same GI strategy.

* Principle 9: Green infrastructure should be able to achieve physical and functional connectivity between sites at all levels and right across a town, city or sub-region. It is vital that each individual green space functions as part of a larger network and that a GI network incorporates all the green spaces of a town or city, both public and private. Annex 3 of this Worksheet explains how private spaces contribute to a successful GI network.

Connectivity may not always mean a direct physical connection between sites, although a physically joined-up network should dominate. Simple proximity can be enough to functionally integrate an individual green space into a wider network. For example, some species can move between unconnected sites if the distances involved are not great. Private gardens can also be useful ‘stepping stones’ or informal wildlife corridors between sites. Separate but closely co-located green spaces can still operate collectively in mitigating the effects of climate change.

* Principle 10: Green infrastructure should be implemented primarily through focused GI strategies and the spatial planning system of Regional Spatial Strategies and Local Development Frameworks (LDFs), and should be formally adopted within these planning policy documents.

* Principle 11: Green infrastructure should be established permanently, with financial support for continued maintenance and adaptation.

Principles 10 and 11 are expanded upon in Sections 5 and 6 of this Worksheet.

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3 green infrastructure standards, targets and performance indicators

3.1 How much green infrastructure?

The eco-towns, as exemplar settlements, must not only draw on demonstrated good practice in the design and deployment of green infrastructure elsewhere in the UK (and abroad), but must seek to exceed the standards set by those towns and cities.

The amount of GI that an eco-town should provide, along with its character and distribution, ultimately depends on the individual nature of the location and its specific circumstances and needs. As GI is intended to have a wide range of functions, and is a key component in defining an ‘eco-town’, there must be a sufficiently large area of land and water provided so that these functions can be fulfilled. As a general rule – and including private gardens – 40 per cent of the total land in an eco-town, and the same percentage of any individual development site, should be earmarked for GI.

Box 3 Green infrastructure standards – examples from Europe

**Amersfoort, the Netherlands**
The use of water in the new development of Vathorst in Amersfoort creates an attractive setting. The intention is for 65 per cent of all housing to have views over water. Existing landscape features such as trees, water and old buildings are exploited to give each new suburb a unique character.

**Freiburg, Germany**
A high proportion of the development area is given over to nature. In the city’s new district of Rieselfeld only 70 hectares out of a total of 320 hectares are used for housing, the rest being designated a nature reserve in compensation for building the district’s new estates.

**Zaragoza, Spain**
Owing to the scarcity of water and limited annual waterfall, green spaces have been created by planting native deciduous trees in strategic ‘ecological corridors’ alongside buildings. This has a dual impact: first, it provides a cooling effect through emerging local micro-climates during the summer (during the winter the trees do not limit the sunlight absorption of buildings); and, secondly, it saves on the amount of water used for irrigation, as most of the native plant species require little watering and are adapted to the local climatic conditions. This concept is also referred to as ‘xeroscaping’.

See the Academy for Sustainable Communities ‘Showcase’ website at [http://showcase.ascskills.org.uk](http://showcase.ascskills.org.uk) for further information.

Where there are policies or designations that require greater green space provision (for example in Community Forests, where 30 per cent woodland cover is required), these requirements should be provided as a minimum, as a part of the GI package.

3.2 Variety and distribution

To foster individual and collective health and well-being, a town’s GI network must bring the natural world and recreational spaces into the heart of every neighbourhood. This must be achieved in the context of providing a variety of different ‘accessible natural green spaces’, ranging from small neighbourhood spaces through to extensive parklands and nature reserves. These should appropriately reflect the natural character of an area.
Henrietta Barnett founded Hampstead Garden Suburb (HGS) in 1907. It was to be a model community, with people of all classes living together in beautiful houses set in a verdant landscape. Laid out by Raymond Unwin, with Edwin Lutyens, the houses and flats represent the best of English domestic architecture of the early twentieth century.

Barnett aimed to produce a community in which the richer residents subsidised the rents of the poorer, and all lived in well designed houses, attractively grouped at low density and surrounded by gardens with hedged boundaries. There would be access to a variety of open spaces, and the housing would be enhanced by the retention of significant areas of indigenous woodland, ancient hedgerows and mature oak trees. Allotment gardens would be included in the layout to enable residents to grow their own food.6

Henrietta Barnett felt strongly ‘that the estate [should] be planned not piecemeal, but as a whole’. Today, 62 per cent of the total land area of Hampstead Garden Suburb comprises green space. It provides an excellent example of how green space can be incorporated into new developments. See the Hampstead Garden Suburb Trust website at http://www.hgstrust.org/ for further information.

6 Drawn from the Hamsptead Garden Suburb Trust website
It is recommended that developers and planners be guided by Natural England’s Accessible Natural Greenspace Standards (ANGSt) and the allied Woodland Trust Woodland Access Standards as a minimum. These standards are set out in Box 5.

**Box 5 Green space standards**

**The Natural England Accessible Natural Greenspace Standards:**
- 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 kilometre round-trip) of people’s homes.

The Fields in Trust guidance on planning and design for outdoor sport and play offers benchmark standards for the location, quantity and quality of outdoor space in residential areas – see http://www.npfa.co.uk/index.php and the Eco-towns Community Worksheet: Towards Sustainable Communities for further information.

### 3.3 Protecting important habitats, landscapes and species

Government policy favours the protection of areas designated for their special landscape and/or biodiversity importance – National Parks, Areas of Outstanding Natural Beauty, Country Parks, Special Areas of Conservation, Special Protection Areas, Sites of Special Scientific Interests, Ancient Semi-Natural Woodland etc. **Eco-town development must give priority to the protection of these areas as well as local wildlife sites, and must provide every opportunity to improve their integrity in order to enhance landscape character and protect and increase biodiversity.**

Carefully planned green ‘buffers’, along with other mitigation measures, will often be required to physically and functionally distance new development from sensitive sites, protecting them not only from disturbance but also from physical changes produced by changes to water quality or hydrological patterns.

There will be opportunities to link fragmented habitats and landscape features to make them more viable, restore degraded sites and habitats, create new wildlife havens, and provide new spaces for recreation to reduce human impact on sensitive sites. GI networks can support the dispersal and migration of individual species and whole habitats, either as part of a regular movement pattern or through migrations in response to climate change.

An eco-town’s GI should be characterised by native species of flora and fauna, and particularly by habitats and species that are characteristic of the area. Eco-town developers and their landscape architects will need to consult the County Wildlife Trust and others with appropriate ecological expertise. In an eco-town the standards for enhancement of wildlife should exceed those adopted for other developments. Protection of existing habitat such as unimproved grassland must always be a higher priority than creating new habitats. Where, very exceptionally, a species population
Box 6 Minimum biodiversity standards for all eco-towns

All eco-town developments should:

- Fully protect internationally and nationally important sites (for example Natura 2000 sites, Ramsar sites, Sites of Special Scientific Interests) as well as Local Wildlife Sites.
- Ensure there is no net loss of UK BAP priority habitats and species.
- Be supported by a Biodiversity Action Plan based on local BAP targets and a Biodiversity Management Plan.
- Comply with the principles in PPS9: *Biodiversity and Geological Conservation*.

More information on biodiversity standards can be found in the forthcoming Eco-towns Biodiversity Worksheet. Biodiversity is a complex and important issue which warrants special attention. Eco-towns should not only protect existing biodiversity but enhance and add to it by creating new habitats for wildlife.

needs to be moved to make way for development, work must be undertaken to the highest standard and should improve the local status and security of that population.

### 3.4 Other green infrastructure design standards for eco-towns

The following standards should also guide the planning, development and operation of eco-towns:

- All streets and roads should be tree lined unless there are sound technical reasons preventing this. The full contribution of verges to GI should be realised, and land allocations should both allow for this and accommodate underground services and all necessary sight lines.
- All buildings, structures and underground services should be constructed to standards that minimise the risk of structural damage from subsoil ground movements caused by tree roots, drought or waterlogging.
- All hard surfaces should be permeable unless there are sound technical arguments overriding this requirement.
In addition every eco-town should have:

- At least one major, well equipped and very high-quality town park, offering a variety of facilities, services and experiences for all age groups and able to accommodate a wide range of community events. It should include landmark structures and spaces that foster the town’s identity and sense of place. This park should be associated with the town centre and should be easily accessible from other parts of the town by public transport and by those cycleways and footpaths forming part of the wider GI.
- A range of gardensque spaces providing social and amenity space (which is especially attractive to older people), possibly associated with toddler play areas at a neighbourhood scale.
- Semi-natural spaces, including designated nature reserves, that will combine passive recreational access and activities with biodiversity value and a variety of habitats. Wherever possible they should incorporate appropriate educational facilities or features to encourage use by school groups.
- A range of sports facilities and pitches designed and maintained for use by the whole community, not just schools and other institutions.
- A network of greenways to connect larger or more expansive open spaces.
- A presumption of public access to all GI (with the exception of private gardens) unless there are sound reasons to restrict this.
- Basic GI facilities and services needed to enable full use of the GI by all sections of the community. Such facilities include toilets, shelters, waste disposal arrangements, seating, public art, transport access and secure bicycle parking, and signage for interpretation and waymarking, 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 may be compatible inclusions within GI areas (but should be excluded from GI area calculations).
- 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.
- Natural green spaces and wild or free play areas in the urban setting – providing a very cost-effective land use, as much of the required infrastructure is already in place, and if managed correctly will look after itself to some degree. The principle is to build on existing assets rather creating new ones unless there is a need. For example, providing sustainable urban drainage in a natural channel can also improve biodiversity and enhance green spaces for leisure use.

4 the social and economic contribution of green infrastructure

4.1 Community and health benefits of green infrastructure

Potential and newly arriving residents should be informed about what green infrastructure is available to them. Publicity and promotion should cover where it is, the role it can play in their daily lives, and which parts of it they can use for their recreational enjoyment and health (See Sections 3.9.1 and 3.9.2 of the Eco-towns Community Worksheet: Towards Sustainable Communities). Community participation in the development and maintenance of GI should ideally start at the planning stage onwards, and should include the young, disabled, and those most likely to be excluded. Residents should be encouraged to become engaged in supporting or managing their local GI – for example, seeding community meadows with locally collected seed or green hay, or growing food on allotments.

Newly arriving residents can also be involved in the final creation of GI assets and the evolution of the network. The Eco-towns Community Worksheet provides guidance (in Section 3.2) on how to engage communities in local decision-making processes and ensure the fullest possible participation by all social groups.
There should be an opportunity to give community groups a leadership/ownership/participatory role in the management and shaping of green spaces, especially smaller neighbourhood sites. Areas given to allotments (which are required by statute) will automatically 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.

Community development workers could help to establish community-based ‘friends’ groups associated with the network as a whole or with major individual sites such as Country Parks. These groups can apply for charitable status, make use of charitable funds, and so help to provide the additional income needed to manage the GI network or improve/add to the existing stock of green spaces.

The provision of leisure gardens has been very successful in Germany (Kleingartenvereine, Schrebergartenvereine\(^7\)), and the model could usefully be copied in eco-towns, especially for flat-dwellers who would otherwise have no private outdoor space. Based on the allotment principle, these may be used for food production, but may also be designed and managed by lease- or licence-holders as gardens for quiet recreation, amenity and horticultural production, subject to predefined maintenance standards.

City farms and community-managed gardens, allotments and parks are increasingly recognised as examples of how local people can make a real difference. Community activity – a characteristic of all city farming and community gardening groups – is fundamental to promoting well functioning and sustainable communities. For further information see the Federation of City Farms and Community Gardens website at http://www.farmgarden.org.uk/

GI provides plays an important role in the health of residents and visitors. Mental and physical benefits accrue from exposure to green places and engaging in physical and recreational activities – for example walking, cycling, fishing and horse-riding.\(^8\)

It will, however, be important that the spatial elements that contribute to GI benefit from clearly documented and accessible management plans which provide a set of design parameters and objectives and maintenance procedures to guide the management of such spaces in the future, regardless of ownership.

### 4.2 The contribution of green infrastructure to the eco-town economy

A multi-functional GI network should be used to promote an eco-town to potential investors as a good place in which to do business – one able to attract and retain a skilled workforce and providing a company with a positive and dynamic image.

A high-quality public environment can have a significant impact on the economic life of urban centres big or small, and is therefore an essential part of any successful regeneration strategy. As towns increasingly compete with one another to attract investment, the presence of good parks, squares, gardens and other public spaces becomes a vital business and marketing tool. Companies are attracted to locations that offer well designed, well managed public places, and these in turn attract customers, employees and services. In town centres, a pleasant and well maintained environment increases the number of people visiting retail areas.

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\(^7\) For further details, see http://translate.google.co.uk/translate?hl=en&sl=de&u=http://www.allesklar.de/l.php%3Fcat_path%3D100-754-774-144784-111389-57319&sa=X&oi=translate&resnum=1&ct=result&prev=/search%3Fq%3DKleingartenverein,%2BSchrebergartenvereine%26hl%3Den%26sa%3DX

\(^8\) Green Spaces – Measuring the Benefits. University of Essex, for the National Trust, 2008
4.3 The value of public space – how high-quality parks and public spaces create economic, social and environmental value

A multi-functional GI providing the widest range of ecosystems is good for business in many ways:

- By providing businesses and communities with a range of benefits in respect of energy efficiency, water management, and adaptation to and mitigation of the effects of climate change, which will reduce running costs and provide security from extreme weather events.
- By providing an attractive setting for both workers and customers, and by contributing to the social, environmental and economic well-being of the wider local community.
- By raising land and property values.
- By supporting a skilled, healthy and happy workforce, with benefits for productivity.
- By providing a high-quality environmental setting that will attract new businesses and which will directly serve the tourism, recreation, leisure and health sectors.
- By providing a basis for economic activity and innovation – for example renewable energy based on biomass fuels derived from woodland that is part of the GI (see the forthcoming Eco-towns Energy Worksheet for further information), and the processing and distribution of locally and sustainably produced food.

4.4 Green infrastructure and sustainable food production

Food has the potential to play a pivotal role in the creation of communities and their long-term sustainability. Eco-towns provide an opportunity to showcase the ‘re-localisation’ of sustainable food production and consumption.

Eco-towns can forge supply chain links between residents, local food producers, processors and distributors; and they can ensure that everyone living in an eco-town has access to a garden, allotment, city or school farm, Community Supported
Agriculture (CSA) or other community space to grow some of their own food. Businesses such as local farmers’ markets, community garden centres and food producing co-operatives should also be encouraged. As well as horticulture and cereals, local animal production will also be important in integrating GI management (for example grazing with sheep and cattle) with local food production.

A focus on local food production can foster a healthy, cohesive community by helping to supply residents with their ‘five a day’ requirement of fruit and vegetables. It can support local retailers, growers and producers, and so help to strengthen the local economy and provide a rich and vibrant food culture that promotes community cohesion.

Hartcliffe Health and Environment Action Group (see http://www.hheag.org.uk) is a good example of a local action group improving people’s lives by involving them in growing their own food.

Working with surrounding local authorities is essential if agricultural practice and land use management is to re-vitalise the links between town and country and help nurture sustainable communities.

Opportunities also exist in non-food production – for example, community woodlands can supply locally sourced coppice products in addition to firewood while providing another means of engaging the community.

Mapping local food webs will help to ensure that food is contributing positively to the health, well-being and sustainability of the community, its local economy and its environment. The case study in Box 7 highlights how such mapping can sit at the heart of strategic sustainable food planning.

**Box 7  Case study of the East Suffolk local food web**

Surveys undertaken in East Suffolk in 1998 and 2004 revealed the value of a local food web to the area’s economic, social and environmental well-being – i.e. an intricate network of local retailers, wholesalers, processors and producers. The food web has survived and thrived since an application to develop a superstore in one of the market towns was refused by Suffolk Coastal District Council in 1998.

Against national trends the area has retained its local food shops and post offices in seven market towns and 19 villages. The food web provides local jobs, sustains other local businesses and traders, and is a seed-bed for new small food producers to test new lines and build their business. Local outlets also allow people to walk to do their food shopping.

As important social hubs, local food webs sustain and build the community, and offer informal support systems for the elderly. They are also an essential market for the local livestock farming that provides sensitive management of the land and landscape. Animals graze traditional pastures, meadows and heaths, including nature reserves and Sites of Special Scientific Interest. Their distinctive meat is, in turn, a factor in the success of local outlets.

The East Suffolk example highlights the potential for eco-towns to harness local food systems to develop their local food economy and foster strong links with the land and landscapes which will form their wider setting. Information-gathering at an early stage by mapping the existing local food web is vital.

For further information see ‘Mapping Local Food Webs’ on the Campaign to Protect Rural England website at http://www.cpre.org.uk
putting it into practice

The steps to providing an exemplary green infrastructure are bound up with the preparation and implementation of a GI strategy.

A GI network requires a dedicated strategy, prepared in advance to shape the initial phases of eco-town planning and construction. GI strategy preparation could be coordinated by a consultant, a statutory body or an NGO, supported by a fairly small steering group representing the developers, planning authorities and key regional and national bodies. However, in developing and finalising the strategy, that core group will need to consult a wider stakeholder group of relevant organisations.

GI strategies should not be too theoretical or conceptual. Instead, the focus should be on producing a practical vision and framework to guide eco-town planners and developers in providing GI that fully meets the specific needs of their eco-town.
Importantly, GI strategies must be usable at various planning scales, from the whole of the eco-town and its surrounding area to the planning of individual neighbourhoods and sites.

Below is a check-list of issues and items that every eco-town GI strategy must cover.

A GI strategy must:

- **Set out a guiding vision for GI across an eco-town and secure wide stakeholder buy-in.** It is around an imaginative and inspiring vision that a strong partnership or coalition will come together. This can be aided by face-to-face stakeholder consultation events to elicit information and data, test ideas, and expose the emerging strategy to constructive criticism.

- **Identify those existing green space and environmental assets that need to be protected and enhanced.** The strategy must provide a framework for identifying and protecting key habitats and very valuable social spaces. This requires a comprehensive ecological, landscape, historical and social stocktake. Only a full and all-inclusive survey of existing assets will provide a sufficiently accurate and up-to-date baseline of data to allow a decent GI plan to be developed.

- **Identify the services provided by existing GI and those that need to be provided by future GI.** This will help to inform decisions on the type and location of green space required.

- **Identify the range of new green space assets to be created in and around the eco-town to complement existing GI and fill gaps.**

- **Include an implementation plan, including a funding and management strategy identifying how both initial set-up costs and long-term revenue funding and other management can be secured.** This is explored further in Section 6 of this Worksheet.

- **Forge links with other relevant strategies and plans, such as Biodiversity Action Plans, Local Biodiversity Action Plans, Local Transport Plans, water cycle studies and flood management plans.** A range of research and assessment studies will be needed to support the design and construction of an eco-town, including Environmental Impact Assessments, water management studies etc. There will also be existing strategies and plans for the area, such as Biodiversity Action Plans and Landscape Character Assessments. An eco-town should develop its own BAP on which to base the creation of new biodiversity elements. A GI strategy should link to and utilise all of these plans and studies. They will provide invaluable information on what sort of GI is required and how it should be distributed and linked across the eco-town.

- **Be adopted as part of the Local Development Framework.** A GI strategy will be a key document, produced as part of the detailed planning for an eco-town, and will be used to inform the layout as a whole through development-wide and individual site masterplans. It should be the basis for negotiations and joint decisions involving developers, the planning authority and the community. If it is to perform this role fully and effectively, the planning status of the strategy – and the GI that is to be created through such strategy – must be confirmed at the earliest opportunity. Ideally it should be adopted by the local planning authority as a Local Development Framework Document (for example a Supplementary Planning Document) and included in Local Development Framework core strategies and site-specific allocations.

- **Be applied through masterplanning.** Masterplans are the means by which the GI aspirations set out in a strategy document can be translated into detailed proposals and spatial plans. How GI can be applied to a particular site within an eco-town will be guided by the strategy, 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 eco-town as a whole, given the need to ensure that individual GI elements form part of a coherent and strategic settlement-wide network.
  - The design objectives of each component of the GI, which may/should be multi-functional and which should be clearly established in the masterplan.
funding and long-term management of green infrastructure – upfront and continuing

6.1 Securing the green infrastructure itself

Green infrastructure assets should be primarily secured from the landowners’ ‘land value uplift’ and as part of development agreements. Section 106 agreements and other developer contributions will therefore play a central role. These can provide GI elements and/or a financial endowment to support their long-term maintenance. When the Community Infrastructure Levy (CIL) becomes operational, the local planning authority should include capital for GI purchase as one of the items to be funded by CIL.

6.2 The long-term management, maintenance and improvement of green infrastructure

The capital costs of creating green spaces and a GI network can usually be met from a variety of sources, local, regional and national. In some cases green space creation or enhancement may be an incidental additional expenditure arising from another engineering-related use of the space to provide transport, energy production or water management services. However, it is vital to secure the long-term management of green spaces so that they meet their design objectives and remain in good condition and continue to serve the community in the future. Consequently, the funding for long-term GI management needs to be available and supported as it would for any other any other public service, rather than relying on irregular and very uncertain funds. Securing long-term revenue funding is a particular challenge, but there are examples of good practice that can be emulated or improved on by the eco-towns.

As eco-towns are new settlements at the leading edge of new development, there ought to be scope to establish innovative funding and management arrangements. One option is to vest the GI assets in a Trust or not-for-profit company endowed with funds and empowered to seek a continuing and additional income from those assets and other sources. The models and case studies briefly outlined below are intended as a general introduction to the approaches available. Eco-towns will need to take further technical and legal advice on the model that best suits their individual requirements.

6.3 An Independent Trust

An Independent Trust is able to focus on the needs of a GI network without the distraction of other duties. Local authorities do not have a statutory duty to manage green space, and consequently budget pressures mean that this function can lose out in terms of revenue support.

Box 8 Case studies of Independent Trusts

Peterborough Environment City Trust (PECT) is an example of the Trust model – see http://www.pect.net. PECT not only looks after the natural environment in Peterborough, but also offers a range of support, education and advice services, as well as engaging with the local community. The Milton Keynes Parks Trust is another good example – see http://www.theparkstrust.com/parks-trust
6.4 **Company Limited by Guarantee**

Similar in many ways to the Trust model, a Company Limited by Guarantee may be more appropriate to some eco-towns – see Box 9.

**Box 9 Company Limited by Guarantee**

The Company Limited by Guarantee (CLG) structure is now commonly used across the public sector as a favoured entity 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 CLG, 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 – CLGs are corporate bodies. CLGs have their own Memorandum and Articles of Association which 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 acting without council consent in some circumstances.

6.5 **Further funding models**

Further funding models are identified in the CABE Space document *Paying for Parks: Eight Models for Funding Green Space* – see [http://www.cabe.org.uk/default.aspx?contentitemid=1525](http://www.cabe.org.uk/default.aspx?contentitemid=1525). The Land Restoration Trust model can also be used – further information can be found at [http://www.landrestorationtrust.org.uk/](http://www.landrestorationtrust.org.uk/)

Working with the private sector to build new places must provide opportunities to explore new and more creative solutions to manage and maintain green spaces. 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.
annex 1
trees, woodlands and grasslands

A focus on trees, woodlands and grasslands within and around the towns should be an essential feature of eco-town development.

A successful green infrastructure network will feature a very wide variety of habitats, informed by the nature of existing habitats, local landscape character, and the need to provide the community with a rich and diverse environment. It is also very important to protect existing species (such as great crested newts or BAP priority butterflies), so new GI should be designed to incorporate features to meet their needs. It cannot be assumed that one form of habitat or vegetative cover will predominate. The following guidance on woodlands and grasslands needs to be taken in this context. However, given that these types of green space are important and have very significant multi-functional potential, it is appropriate to outline their role further here. Both established and new trees and woodlands can provide eco-towns with robust, long-lasting and cost-effective benefits, including:

- Attractive settings for new residential and business developments and enhancing a ‘sense of place’ and quality of life.
- Screening for transport corridors and other intrusive development.
- Enhanced walking and cycling routes to encourage sustainable travel.
- An effective means of regenerating some brownfield land.
- ‘Three-dimensional’ GI (provided by height) which can be used to either separate or link areas.
- Help in maximising an eco-town’s ‘carrying capacity’ in terms of people and activities.
- Help in framing and connecting an eco-town to its rural hinterland and in blending it into its wider landscape setting.
- Huge multi-functional potential – for example combining biodiversity, climate moderation, and air quality benefits.
- A renewable, zero-carbon local source of energy from coppicing and cropping.
- Fruit or nuts – and also a link to local heritage if the types grown in orchards are local varieties.

Altogether, the provision of woodland can be a powerful mechanism for ensuring the local environmental quality and sustainability of eco-towns.

Eco-town GI networks must include a wide variety of green spaces. However, some types of green space themselves represent broad categories. This is especially true of grasslands, which can include:

- Lowland meadows, notably unimproved neutral grasslands and similarly rare and sensitive habitats. An eco-town with such a habitat close by must call on expert advice and give its protection the highest priority.
- Areas of semi-improved or neglected grassland. These need to be assessed to determine their current biodiversity value, the potential to restore their degraded habitats, and their combined sustainable value for wildlife, food production and public recreation.
- Semi-natural and amenity grassland sites. There will always be an opportunity to boost the biodiversity and amenity value of such sites. New amenity grasslands should be created using a locally appropriate natural seed mixture and should be subjected to a management and cutting regime that both maintains areas for wildlife and maximises the natural interest of the site for the people who use it. Some of these sites could even be specifically designed and managed as ‘community meadows’.

What must not characterise eco-towns are monotonous grasslands mown to give a uniform sward across the entire site and designed for easy maintenance rather than to promote wildlife and amenity interest.
annex 2
explaining multi-functionality

Achieving multiple benefits from green infrastructure underlines its importance to the community and generally boosts the environmental capacity of the area to support a thriving eco-town. Many, if not most sites will naturally provide multi-functionality. For example, an urban-edge Country Park will act as a nature reserve as well as a recreational facility; or a wet woodland can serve to ameliorate flooding and secure habitat value. Good planning and management can maximise the multi-functionality of a site and the ecosystem services that the land can provide. Of course, this must be done appropriately and certainly not to the detriment of an overriding management priority, such as the need to protect a sensitive habitat.

Box A1  A simple example of how multi-functionality can work

A functional flood plain within or adjacent to an eco-town should be managed to protect the new settlement from flooding. However, it can also:
- Provide an extensive recreational space for local people.
- Provide a valuable habitat which could also be managed as a nature reserve.
- Be agriculturally productive, with a grazing or cropping regime that maintains the capacity of the site to perform its other functions effectively.
- Provide a cleaning function for water run-off from new development, helping to protect and improve water quality.

Box A2  Multi-functionality and linking green infrastructure to ‘grey infrastructure’

Multi-functionality can be expressed through combining green infrastructure with other forms of infrastructure. For example, green corridors can serve both people and wildlife by carrying footpaths, cycleways, and tram and light railway routes alongside linear grassland habitats, wooded belts, streams and ponds. In this way GI becomes integral to an important part of the transport infrastructure of an eco-town.

Eco-towns require an imaginative approach by architects, who should seek to blur the sharp divisions between buildings and GI. Green roofs are a well established approach, but green walls and careful design of outdoor space, i.e. gardens, will help to integrate a building within its environment both aesthetically and functionally, and will also offer opportunities for growing food.

Further information on design approaches is available from CABE Space – see http://www.cabe.org.uk/default.aspx?contentitemid=41
annex 3
a focus on private spaces

The focus of any green infrastructure will be on a network of publicly owned spaces. However, planning for a fully functional GI must factor in the role of private spaces, notably private gardens. In most existing towns and cities, gardens collectively account for a sizeable percentage of the total urban area and are an important contributor to local environmental quality.

Even where an eco-town produces relatively high housing densities with smaller private gardens, those spaces will still be an important GI component, and residents should be encouraged and helped to manage them in ways that are sympathetic to wildlife as well as other GI functions – notably sustainable urban drainage and food production. This means providing advice to householders both on how to attract wildlife and on the importance and use of porous surfaces.

Guidance should be made available to the public and, in particular, householders on the tangible benefits that can be gained from careful consideration of the technical landscape design of open space and gardens. This should be distributed not only by government agencies and by public authorities but also through DIY retailers and garden centres.

Further details on the measures that householders can take to improve the environmental quality of their gardens are available from the Royal Society for the Protection of Birds (see http://www.rspb.org.uk/hfw) and from Garden Organic (see http://www.gardenorganic.org.uk).
Ecosystem services are the wide range of valuable benefits that a healthy natural environment provides for people, either directly or indirectly. These benefits include basic necessities such as clean air, water and food, natural processes such as climate and flood regulation, and benefits that improve quality of life, such as recreational opportunities and visual beauty.

Green infrastructure can deliver the broadest range of ecosystem services and environmentally based social benefits via a co-ordinated network. Below is a ‘checklist’ of the functions and services that a GI network can provide for an eco-town:

- **Economically valuable outcomes:**
  - Sustainable water and flood risk management – together with the protection of local water quality and supply and functioning hydrology.
  - Sustainable energy use and production – saving energy and cost.
  - Sustainable waste management.
  - Sustainable food production.
  - Micro-climate adjustment and adaptation to climate change.
  - A high-quality environment to attract and retain a quality workforce.
  - Rising property values.
  - Boosts to the local economy.
  - Links between town and country.

- **Quality of life outcomes:**
  - Recreation, quiet enjoyment and health benefits (physical, mental and spiritual).
  - Community development and cohesion – civic pride, sense of place, social venues, and provision of space for public art.
  - Non-motorised transport systems – cycleways, footpaths, and combined routes.
  - Regular exposure to nature and boosts to awareness of environmental issues.
  - Education and training – an ‘outdoor classroom’ relevant to both the National Curriculum and lifelong learning.
  - Heritage preservation and cultural expression.
  - Wider landscape and townscape benefits – including helping the town to fit functionally and aesthetically into its wider landscape setting.
  - Biodiversity protection and enhancement – both habitats and species.
  - Improved air quality.
  - Visual screening of unsightly buildings or infrastructure.
  - Landscape restoration and the regeneration of degraded sites to create the setting for new high-quality development.
  - Protection for sites of geological importance.
  - Reductions in the ecological footprint of an eco-town – i.e. the area of productive land beyond the settlement needed to meet its resource requirements and deal with its waste.
  - Carbon sequestration.
  - Opportunities for children to play freely and free of charge in their own neighbourhood and on routes to schools and other play areas. Also opportunities for young people to spend time in public space with their friends, with no particular agenda.

Most of these functions can complement one another, can be mutually supportive, or can even be physically combined through the multi-functional use of green space.
Green infrastructure strategies already exist, especially at a regional level. Draft Regional Spatial Strategies contain policies that require local planning authorities to incorporate GI into their own policies and plans. A GI strategy for an eco-town will therefore need to be informed and shaped by that regional dimension.

Box A3  Example of green infrastructure policy in an RSS:  
East of England Plan Policy ENV1

Policy ENV1: environmental infrastructure

Environmental infrastructure will be identified, developed and implemented in the region to ensure that a healthy and enhanced environment is provided for the benefit of present and future communities and to contribute to economic objectives. This will be particularly important in the implementation of the Government’s Sustainable Communities Plan growth areas. Local development documents will:

- provide connected and substantial networks of accessible multi-functional green space, in urban, urban fringe and adjacent countryside areas to service the new communities in the sub-region by 2021
- have a multiple hierarchy of provision of green infrastructure, in terms of location, function, size and levels of use, at every spatial scale and all geographical areas of the region
- provide and safeguard green infrastructure based on the analysis of existing natural, historic, cultural and landscape assets, provided by characterisation assessments, and the identification of new assets required to deliver green infrastructure
- identify biodiversity conservation areas and biodiversity enhancement areas, to deliver large-scale habitat enhancement for the benefit of wildlife and people
- set targets for the provision of natural green space within development areas

A GI strategy can also benefit from, and will need to pay attention to, other regional and local government processes, notably Regional Economic Strategies, Community Strategies, Local Area Agreements, and Multi-Area Agreements.

Green infrastructure in policy

- Planning Policy Guidance 17: Planning for Open Space, Sport and Recreation
- Planning Policy Statement 12: Local Spatial Planning
- Regional Spatial Strategies, Local Development Frameworks
- Green Infrastructure: Report to the Royal Commission on Environmental Pollution
- Place-Shaping: A Shared Ambition for the Future of Local Government (Lyons Inquiry Report)
- Thames Gateway Green Infrastructure Guidance
Green infrastructure in practice

Although GI is widely viewed as a new concept, there are good examples of where the approach, or elements of it, is already being applied to spatial planning and landscape regeneration:

- **Country Parks.** The establishment of Country Parks is provided for by the Countryside Act 1968. The great majority of these parks are either located in the urban fringe or immediately abut the built-up urban edge. They are a hugely successful example of extensive green spaces serving the needs of an urban community and collectively accommodating millions of individual visits per year. They are a key resource for recreation, and many have a nature conservation value. Some occupy historic ‘designed’ parkland landscapes and so have an important heritage value. Countryside management services based within Country Parks and visitor centres host educational visits. A fully multi-functional Country Park could provide a ‘flagship’ green space for an eco-town.

- **Community Forests.** The Community Forests pre-date the introduction of the term ‘green infrastructure’ into the UK. However, they are excellent examples of a wide strategic approach to the ‘greening’ of whole landscapes – linking towns and country, pursuing the multi-functional use of space, and creating a regenerated environmental framework that is better able to accommodate new development. The Community Forests, individually and collectively, are keen to share their experience and good practice.

- **The Growth Areas.** The four major Sustainable Communities Plan Growth Areas are the Thames Gateway, London-Stansted-Cambridge-Peterborough (M11 corridor), Milton Keynes-South Midlands, and Ashford. These areas will see significant change, particularly in housing, education, transport, the environment and public space. The Government promises high-quality development that will make them attractive places in which to live. All the Growth Areas give GI a high priority. The Thames Gateway Green Infrastructure Guidance document provides guidance on the provision of GI in the area and is based on the Government’s Greening the Gateway strategy. It also builds on other green infrastructure planning initiatives across the Thames Gateway, notably the Green Grid strategies which inform the emerging Thames Gateway Parklands Programme and Thames Gateway’s aspiration to become the UK’s first eco-region. The guidance was produced by Land Use Consultants on behalf of a wide national and regional consortium that makes up the Greening the Gateway Partnership.
annex 6

green infrastructure case studies

Case Study: Darlington West Park

West Park covers 49 hectares of land between the Cockerton and Faverdale areas of Darlington, bounded by the A68 and adjacent to the A1(M). Half of the area was the site of the former Darlington Chemical and Insulating (Darchem) works and tip. The remainder was farmland. Before work commenced, this area was Darlington’s only significant remaining area of industrial dereliction.

Through detailed discussions with the key partners – Bussey & Armstrong Projects, Darlington Borough Council, County Durham & Darlington Priority Services NHS Trust, Northern Arts, Bellway, and Tees Forest – a ten-year plan for a sustainable new community has been established.

The site now features a new hill-top parkland covering 12 hectares (30 acres), and work has already begun on a new hospital and school. Further developments on West Park include new housing, a rugby club and a retail outlet. The development has won a Royal Institution of Chartered Surveyors Award.

For further information, see http://www.darlington.gov.uk/Living/Planning+and+Building+Control/Planning+Services/Projects+and+Schemes/WestPark.htm

Case Study: Peterborough

Land and Property development company O&H Hampton is showing how commercial developers can put green space at the heart of development schemes. The site in question includes 2,500 acres of brownfield land. Fifty per cent of the area is being developed as open space, to include parks, lakes, woodland and nature reserves. This will provide the framework for 7,000 new homes plus retail, commercial and industrial areas eventually providing 12,000 jobs.

For further information, see http://www.ohhampton.co.uk/

Case Study: Bedford River Valley Park

By 2021 Bedford, Kempston and the northern Marston Vale area will have gained an additional 19,500 dwellings. Green open space, close to where people live and work, is vital to provide the many social, environmental and economic benefits expected of sustainable, modern communities. The Bedford River Valley Park is an ambitious regeneration project to create a vast new Country Park for Bedfordshire. Situated across the flood plain of the River Great Ouse, the project will unlock more than 3.5 square miles of land to establish new expanses of riverside landscape for the enjoyment of all.

The park will roll out over the next 15 years as the process of current and future sand and gravel extraction moves towards restoration and the creation of new areas of quality green space. Bedford River Valley Park will cover 868 hectares (2,145 acres) to form a natural link between Bedford and the wider countryside around the village of Willington. It will become a mosaic of inspiring landscapes, where the people of Bedfordshire and visitors of all ages, abilities and backgrounds can exercise, relax, play,
compete, learn and work in a variety of natural settings in which wildlife and culture can flourish.

At its heart will lie almost 240 hectares (600 acres) of flood-plain forest, which will become one of England’s largest complexes of woodland, marsh, pools and channels. This rare and valuable habitat will bring far-reaching opportunities for wildlife, flood alleviation and the production of renewable energy.

For further information, see http://www.marstonvale.org/brvp/

Case Study: Newlands, North West England

Newlands (New Economic Environments through Woodlands) is a unique £23 million scheme transforming derelict land into thriving, durable community woodlands. Funded by the Northwest Development Agency (NWDA), this is the twenty-first century face of land regeneration: carefully planned, intelligence-led, partnership-driven, delivering widespread public benefits, and enhancing the environment. Newlands will improve the quality of life for millions of people, delivering open and natural areas for community enjoyment and recreation, and bringing benefits for business and tourism.

For further information, see http://www.forestry.gov.uk/website/oldsite.nsf/ByUnique/infd-5kyfar!OpenDocument&Click=
annex 7
signposts to further information

Green Spaces – Measuring the Benefits. University of Essex, for the National Trust, 2008

Green Infrastructure: Report to the Royal Commission on Environmental Pollution. David Goode, for the Royal Commission on Environmental Pollution, 2006

Green Space Strategies: A Good Practice Guide. CABE Space, 2004


Start with the Park: Creating Sustainable Urban Green Spaces in Areas of Housing Growth and Renewal. CABE Space, 2005


Public Space Lessons: Adapting Public Space to Climate Change. CABE Space, 2008


Green Infrastructure for the Liverpool and Manchester City-Regions. TEP, for the Countryside Agency and Community Forests Northwest, 2005

Peterborough’s Green Grid Strategy. The Landscape Partnership, for Peterborough City Council, 2006

North West Green Infrastructure Guide. North West Green Infrastructure Think Tank, 2008
**Green Infrastructure Strategy.** The Landscape Partnership, for Cambridgeshire Horizons, 2006

**Bedfordshire and Luton Strategic Green Infrastructure Plan.** Bedfordshire and Luton Green Infrastructure Consortium, 2007

**East Midlands Green Infrastructure Scoping Study: Final Report.** TEP, IBIS Environmental & Design Consultants and Alison Millward Associates, for the East Midlands Regional Assembly and partners, 2005

**Thetford Green Infrastructure Study.** LDA Design, for Breckland District Council, 2008


**Northamptonshire Environmental Character and Green Infrastructure Suite.** River Nene Regional Park. See [http://www.mrpenvironmentalcharacter.org.uk](http://www.mrpenvironmentalcharacter.org.uk)

**The Children’s Plan: Building Brighter Futures.** Department for Children, Schools and Families, 2007; and **Fair Play: A Consultation on the Play Strategy.** Department for Culture Media and Sport, 2008 (These documents both focus on children’s health and well-being and should inform GI documents)

**Design for Play: A Guide to Creating Successful Play Spaces.** Free Play Network, for Play England and the Department for Culture, Media and Sport, 2008

**Planning and Design for Outdoor Sport and Play.** Fields in Trust, 2008

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