The Harlow Green Spaces Project

A GREEN INFRASTRUCTURE PLAN FOR THE HARLOW AREA

Volume 1 : The Green Infrastructure Network

November 2005

CHRIS BLANDFORD ASSOCIATES

Environment Landscape Planning

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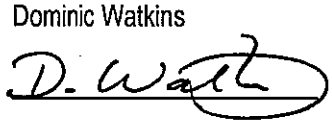
Signed:	
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FOREWORD

This plan for Green Infrastructure in the Harlow Area is an independent study by Chris Blandford Associates, working under the close supervision of a Steering Group consisting of representatives from national, regional and local organisations. Together, over the past year, we have striven to produce a document which is evidence-based, credible and usable. The approach and process have been innovative, and we believe the Green Infrastructure Plan and its supporting documents provide an exciting vision, backed up by data and analysis, for integrated environmental planning across 310km^2 centred on Harlow. The Green Infrastructure Plan would be as relevant and usable even without proposed development, as amongst other things, it identifies gaps and opportunities in the ecological and recreational networks, within a landscape setting, and importantly it recognises the multifunctional value of the land resource.

The Green Infrastructure Plan provides illustrative guidance on how the network should be protected, enhanced and where appropriate extended. The Green Infrastructure Plan has no formal status at present, as it has been prepared ahead of the finalisation of the East of England Plan (due to be complete by late 2006). The East of England Plan will provide the long-term integrated spatial strategy for the region, including the broad strategy for the Harlow Area. Once the regional planning process has been completed, Local Development Frameworks will be prepared, and can utilise this plan as a guide to informing the location and pattern of development in the Harlow Area. In the fullness of time, the Green Infrastructure Plan may become a Supplementary Planning Document, and has already been through a partial Sustainability Appraisal/Strategic Environmental Assessment process in preparation for this.

The Green Infrastructure Plan, comprising the Green Infrastructure Network (Volume 1), the Guidelines (Volume 2) and its supporting datasets, are to be made available on the web. It is hoped they will become a valuable source of information and a tool to guide landowners, planners, developers and others in assessing the impacts of land use change, so as to maximise the environmental benefit with no net loss of value.

The Steering Group intends to prepare a business plan in 2006 to guide the implementation, through setting priorities and identifying delivery mechanisms. This will turn the Green Infrastructure Plan into reality.

Catherine Cairns (Countryside Agency), chair of the Steering Group, on behalf of representatives of English Nature, Government Office for the East of England, Essex County Council, Hertfordshire County Council, Epping Forest District Council, Harlow District Council, Hertfordshire Biological Records Centre and Groundwork Hertfordshire.

ACKNOWLEDGEMENTS

We would like to thank all the organisations represented on the Steering Group for their guidance and support throughout the preparation of this Green Infrastructure Plan, and in particular:

- Catherine Cairns, Senior Countryside Adviser for Growth Areas, The Countryside Agency (Chair)
- Dianne Cooper, Planning and Building Control Manager, Harlow District Council
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- Graham Goodall, Ecology Officer, Hertfordshire Biological Records Centre
- Dearbhla Lawson, Senior Planning Officer, Government Office for the East of England
- Antony Muller, Conservation Officer, English Nature
- Chris Neilan, Landscape Officer, Epping Forest District Council
- Simon Odell, Head of Landscape and Development, Hertfordshire County Council
- Gill Taylor, Operations Director, Groundwork Hertfordshire
- Martin Wakelin, Landscape and Ecology Manager, Essex County Council

On behalf of the Steering Group, we would like to thank those stakeholders who participated in the Workshop in June 2005, and also all those organisations that supplied data and background information for the project (see footnotes and Appendix A for acknowledgments of data sources).

The CBA Project Team comprised:

- Dominic Watkins
- Bill Wadsworth
- Alison MacDonald
- Huw James
- Sophie Miller
- Emma Clarke
- Marian Cameron
- Jonathan Webb

Chris Blandford Associates Ltd
November 2005
www.cba.uk.net

THE VISION FOR GREEN INFRASTRUCTURE IN THE HARLOW AREA

Epping Forest, Hatfield Forest, the Stort Valley and the Lee Valley lie at the heart of the vision for the Green Infrastructure Network. The biodiversity, heritage and recreational value of these key green spaces will be protected and enhanced, and they will be well-connected to each other and the wider countryside via a network of biodiverse and attractive green corridors providing links for people and wildlife. In particular, a series of multi-functional and connected green spaces managed for wildlife, heritage conservation and recreation will be created along the Stort Valley on Harlow's doorstep, providing a new and substantial green space resource accessible to local communities and visitors alike. As with Epping Forest, Hatfield Forest Country Park and the Lee Valley Regional Park, the proposed 'Stort Riverpark' should be an exemplar of best practice and innovation in green infrastructure planning, design and management.

The vision for green infrastructure in the Harlow Area is of an attractive, distinctive, accessible, diverse and multi-functional network of green spaces and links, landscapes, biodiversity and heritage assets in and around Harlow that seeks to meet the social, economic and environmental needs of all communities. It will do this by promoting:

- The protection and enhancement of key ecological habitats and species
- New high quality urban edge landscapes of distinction creating an improved image and sense of place for urban fringe landscapes, gateways, transport corridors and other approaches to Harlow and other key towns;
- Health and fitness through provision of opportunities for community involvement in exercise, sport and active recreation;
- Improvements in air, water and soil quality and more sustainable drainage and flood mitigation;
- The protection, re-creation and rehabilitation of landscapes and habitats damaged or lost by development or land management practices;
- The potential of archaeological, historical and cultural heritage features to contribute to local identity and sense of place;
- High quality places to live and visit, and providing an attractive environment to businesses and inward investment;
- Opportunities for farmers, foresters and other land managers to diversify into the production of energy crops, organic food produce and the management of woodlands, water meadows and grasslands as publicly accessible green spaces.

The Green Infrastructure Network will be protected, enhanced and, where appropriate, extended through public and private sector investment in new green infrastructure at all scales. It will be widely recognised and valued by local communities, and offer opportunities for education, skills development and learning. The Network will connect urban and rural settlements and the countryside, and provide a spatial planning framework to guide sustainable development in the Harlow Area. The Green Infrastructure Network will raise expectations of better designed, higher quality, more environmentally sustainable and distinctive new development that enhances and sustains local character in and around Harlow.

1.0 INTRODUCTION

1.0 INTRODUCTION

1.1 Background

1.1.1 The Harlow Area has been identified as a potential location for growth within the London - Stansted - Cambridge - Peterborough Growth Area identified by the Government[1]. Harlow was designed by Sir Frederick Gibberd in the late 1940s as one of England's first post-war 'new towns', and is now poised to undergo an urban renaissance to meet the social and economic needs of communities in the 21st century. The rural landscape surrounding Harlow is also experiencing change as farming practices adapt to new agricultural policies, and the demand for recreational and leisure facilities in the countryside continues to grow - not least from Londoners.

1.1.2 In addition to safeguarding existing environmental assets through sensitive planning, new and enhanced green infrastructure provision linking town and country will need to be planned for to ensure that local communities and visitors have access to high quality green spaces of all types. The need to include green infrastructure as an integral part of the planning process is now enshrined in adopted and emerging policy.

1.1.3 A range of national planning policy guidance identifies the need to incorporate certain green infrastructure assets into local development plan documents. For example, PPG17[2] requires polices to be developed based on standards for provision of open paces, including green spaces. Local authorities are also required by PPS9[3] to maintain networks of natural habitats by 'avoiding or repairing the fragmentation and isolation of habitat' undertaken 'as part of a wider strategy for the protection and extension of open space and access routes'. The draft East of England Plan (the Regional Spatial Strategy) requires local development documents to provide connected and substantial networks of multifunctional green space in urban, urban fringe and adjacent countryside to meet the needs of new communities within growth areas.

1.1.4 The provision of substantial areas of publicly accessible green space connected to the surrounding countryside is an integral element of Harlow's urban structure designed by Gibberd, and the long-term protection of such spaces and linkages remains a fundamental planning principle for the future. To provide a consistent strategic framework for the protection, enhancement and extension of green spaces in and around Harlow, the Harlow Green Spaces Project[4] commissioned Chris Blandford

[1] ODPM Sustainable Communities Plan
[2] PPG17 Open Space, Sport and Recreation (HMSO, 2002)
[3] PPS9 Biodiversity and Geological Conservation, para 12 (HMSO, 2005)
[4] The Harlow, Epping Forest, the River Stort and the Lea Valley Green Spaces Project (the Harlow Green Spaces Project) is funded by the ODPM Sustainable Communities Directorate's 'Green Spaces Fund'. The GIP is one of several outputs of the Project.

Associates (CBA) to develop this Green Infrastructure Plan for the Harlow Area. The Harlow Area Green Spaces Project aims to enhance the intrinsic character and nature of the green spaces within Harlow Area, acquire new green spaces for public access and to create links between these green spaces.

1.1.5 This Green Infrastructure Plan (GIP) provides an exciting opportunity to deliver a new and bold vision for multi-functional landscapes that meets the needs of urban and rural communities in the in the Harlow Area. Epping Forest, Hatfield Forest, the Stort Valley and the Lee Valley lie at the heart of this vision. In particular, the Stort Valley presents a major opportunity for developing a series of multi-functional and connected green spaces managed for wildlife, access and recreation on Harlow's doorstep, which is also readily accessible to other communities and visitors.

What is Green Infrastructure?

Green infrastructure is the network of multi-functional green spaces and linkages in the countryside in and around towns. Green infrastructure can include areas such as parks, gardens, woods, nature reserves and water-bodies with or without public access; linkages include linear features such as off-road paths, highways, rivers, streams or hedgerows, which can provide dispersal corridors for wildlife and connect people to open spaces.

The concept of green infrastructure planning is based on a strategic approach to ensuring that environmental assets of natural and cultural value are integrated with land development, growth management and built infrastructure planning at the earliest stage. This approach enables land management to be more proactive, less reactive, and better integrated with efforts to manage growth and development at all spatial planning levels. Green infrastructure planning is therefore a key mechanism for delivering sustainable communities and quality of life benefits within growth areas.

The Steering Group

1.1.6 The development of the GIP has been guided by a Steering Group, which includes representatives drawn from the Harlow Green Spaces Project partners:

- East Hertfordshire District Council (observers)
- English Nature
- Epping Forest District Council
- Essex County Council
- Government Office for the East of England

- Groundwork Hertfordshire
- Harlow District Council
- Hertfordshire County Council
- The Corporation of London (non-attending member)
- The Countryside Agency (chair)

1.1.7 Only relatively small parts of Broxbourne Borough and Uttlesford District are within the area covered by the GIP, therefore neither Council was represented on the Steering Group. However, the general approach and recommendations of the GIP are commended to both Councils.

1.2 Aims and Objectives of the Plan

1.2.1 The aim of the GIP is to develop a strategic framework for the implementation of a connected and multi-functional network of green spaces and links within the countryside in and around Harlow (the 'Harlow Area'[5]).

1.2.2 The key objectives of the GIP are to identify:

- The key physical, natural, ecological, landscape, historical, access and recreational assets that contribute to the functionality of the green infrastructure network;
- New and enhanced assets that are required to improve the functionality of the green infrastructure network - including opportunities for landscape and habitat enhancement, and the provision of new green spaces and green links;
- A green infrastructure network with a multiple hierarchy of green space provision, in terms of location, function, size and levels of accessibility / use, at every spatial scale and all geographic areas;
- Principles for the protection, enhancement and creation of a high quality green infrastructure network;
- Guidelines for developers and planners on the integration of green infrastructure provision into development schemes.

1.2.3 An overview of the Harlow Area in relation to other strategic green spaces and initiatives in the countryside around the north-east of London is shown on Figure 1 - The Harlow Area : An Overview.

[5] Approximately 310 km^2 around Harlow as defined by the Harlow Area Landscape and Environment Study (CBA, 2004)

1.2.4 The GIP comprises two volumes:

- Volume 1 : The Green Infrastructure Network (this document)
- Volume 2 : Guidelines (separate document)

1.2.5 The outputs also include a range of supporting digital mapping of the green infrastructure assets and the proposed Green Infrastructure Network, which are available as GIS datasets.

1.3 Relationship to Other Plans and Initiatives

1.3.1 The key plans, studies and initiatives of relevance to the GIP are identified in Box 1.

The ODPM Sustainable Communities Plan

1.3.2 The ODPM's Sustainable Communities Plan[6] promotes *inter alia*:

- Good quality public spaces
- High quality building design principles
- Attractive places in which to live and work
- Taking account of impact on existing communities
- Integrating economic progress with protection of the environment
- Reducing car dependency by early planning of walking and cycling routes
- Using new construction standards and techniques to achieve sustainable water supply and tackle climate change.

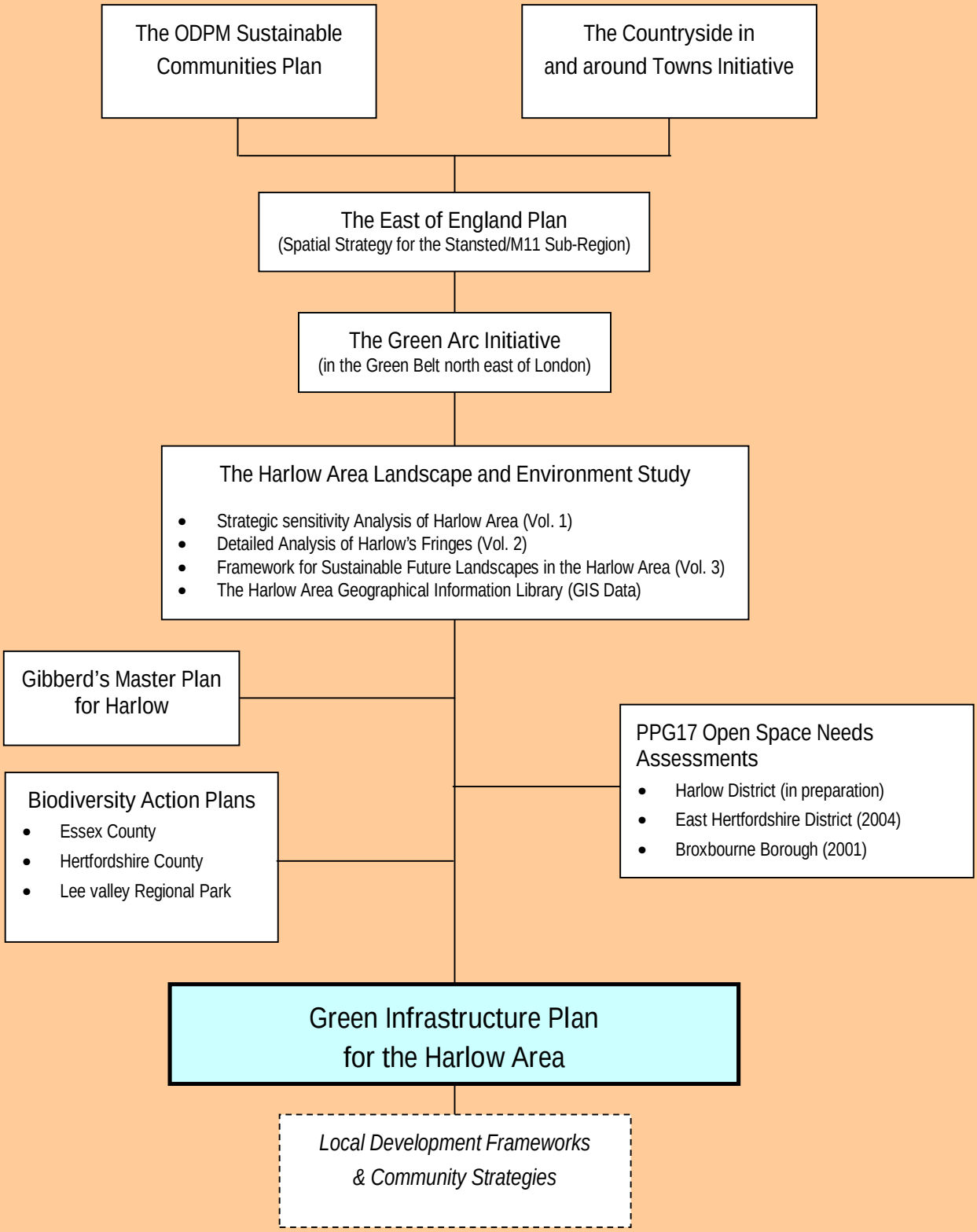
1.3.3 The GIP reflects the potential of sustainable new development integrated into new green infrastructure provision to act as a positive catalyst for delivering environmental enhancement benefits in the countryside in and around Harlow. This approach is consistent with the ODPM's Sustainable Communities Plan.

The Countryside in and Around Towns Initiative

1.3.4 The Countryside Agency and Groundwork have developed a new vision for connecting town and country[7], which proposes that the countryside in and around towns can:

[6] Sustainable Communities Plan (ODPM)
[7] The Countryside in and around Towns - a Vision for Connecting Town and Country in the pursuit of Sustainable Development (Countryside Agency / Groundwork, 2005)

Box 1 - Relationship of the GIP to Other Plans and Initiatives



- Be made readily accessible to most people;
- Contribute to the health, wealth and well-being of urban and rural communities;
- Underpin more sustainable living;
- Strengthen biodiversity in both town and country.

1.3.5 The vision presents ten key functions for the countryside in and around towns, which can be combined within 'multifunctional' landscapes - where a range of benefits are derived from the same area of land - as an important means of achieving sustainable development locally and regionally. They are:

- a bridge to the country
- a gateway to the town
- a health centre
- a classroom
- a recycling and renewable energy centre
- a productive landscape
- a cultural legacy
- a place for sustainable living
- an engine for regeneration
- a nature reserve.

1.3.6 The Harlow Area GIP's vision for a network of multi-functional green infrastructure within a high quality landscape setting focuses on realising the potential for delivering these functions in the countryside in and around Harlow.

The East of England Plan

1.3.7 Policies ENV1 (Environmental Infrastructure) and ST1 (Spatial Strategy for the Stansted / M11 Sub-Region) of the draft East of England Plan (the Regional Spatial Strategy) provide strong support for the development of a safeguarded, enhanced and extended network of multi-functional green spaces in the Harlow Area[8]. These draft polices, and the overall pattern and level of proposed strategic growth in the sub-region, are subject to an Examination in Public during late 2005.

[8] East of England Plan - Draft Regional Spatial Strategy (EERA, December 2004)

1.3.8 It should be noted that the proposed green infrastructure network set out in this GIP does not suggest any predisposition to a specific spatial distribution and/or level of future development. However, it is anticipated that the GIP's proposals and principles for a safeguarded, enhanced and extended green infrastructure network can be incorporated into the future planning of the Harlow Area at all spatial planning levels.

The Green Arc Initiative

1.3.9 The Green Arc initiative[9] is a strategic green space development project, which seeks to support the creation and protection of an extensive, attractive and valued landscape of well-connected and accessible countryside for people and wildlife in the green belt around the north and east of London and in the southern parts of Hertfordshire and Essex. The two strategically important designated green spaces at the core of the Green Arc initiative area - the Lee Valley Regional Park and Epping Forest - link the north London suburbs to the countryside around Harlow, Hoddesdon, Cheshunt and Epping within the Harlow Area (see Figure 1).

1.3.10 The proposed Green Infrastructure Network for the Harlow Area set out in this GIP have been designed to support the vision, strategic objectives and stakeholder aspirations for the wider Green Arc initiative.

The Harlow Area Landscape & Environment Study

1.3.11 In the context of Sir Frederick Gibberd's landscape-led approach in his original Master Plan for Harlow (see below), the *Harlow Area Landscape & Environment Study* sought to identify key landscape and environmental assets, and to assess their sensitivity to change, in order to inform strategic decisions on the location and shape of future growth in the Harlow Area.

1.3.12 The Study comprises a *Strategic Sensitivity Analysis of Harlow Area (Volume 1)* that provides a strategic understanding of the physical and historical influences that have shaped the landscape, to classify this area into areas of unique and distinctive character, and to evaluate the sensitivity of these areas to indicative scales of urban development. The analysis identified a number of key considerations related to landscape protection and enhancement needs, which provide an appraisal framework for evaluating development options and in establishing the overall direction of growth at a strategic level. A *Detailed Analysis of Harlow's Fringes (Volume 2)* provides a more detailed understanding of the landscape that is the immediate setting for the town in terms of its visual

[9] Bringing the Big Outdoors Closer to People - Improving the Countryside around London : The Green Arc Approach (LUC, 2004) and see www.greenarc.org

character, historic land use/settlement pattern and conservation values, and to identify sensitive attributes and/or features that are desirable to safeguard. This analysis is intended to help guide evaluation of the location and shape of future development options for urban expansion around Harlow, by highlighting the main landscape and environmental issues associated with conservation and development within the fringes that would need to be considered. The Study also prepared a *Framework for Sustainable Future Landscapes in the Harlow Area (Volume 3*) to inform possible urban extensions around Harlow. This drew on the analysis provided in Volumes 1 and 2, to set out a framework for an integrated approach to landscape protection, green infrastructure improvements and urban development within the Harlow Area. In recognising that expansion of the town is likely to be needed to meet future development needs, the Framework suggests a strategic vision and principles that reflect the potential of sustainable new development incorporating new green infrastructure provision to act as a positive catalyst for delivering environmental enhancement and access benefits in and around Harlow. The data produced and mapped by the Study is available on a spatially linked GIS database called *The Harlow Area Geographical Information Library*. The Geographical Information Library has been updated to include new data captured for the GIP project (see Appendix A for details).

1.3.13 The analysis and mapping of environmental assets and the landscape framework have all informed the development of the Green Infrastructure Network set out in Section 3.0 of this GIP.

Gibberd's Master Plan for Harlow

1.3.14 Harlow was designated as a New Town in March 1947. It was one of the first post-war New Towns, and its growth was the responsibility of the Harlow Development Corporation. The Corporation produced a Master Plan[10] for the town's future development, led by Sir Frederick Gibberd. Gibberd adopted a distinctive 'landscape-led' approach to the development of the Plan, which has strongly shaped the development of the town's urban form and was key to its relationship to the surrounding countryside. As Sections 2.0, 3.0 and 4.0 of this GIP demonstrate, this approach has been reflected where appropriate in the development of the Green Infrastructure Network.

PPG17 Open Space Needs Assessments

1.3.15 The Harlow Green Space Strategy[11] currently in preparation sets out a vision for the future of the green spaces in Harlow District. It is based on a comprehensive audit and assessment of open spaces, sport and recreation facilities within the town in accordance with the requirements of PPG17[12] and its

[10] Harlow Master Plan (Harlow Development Corporation, 1948)
[11] Draft Harlow Green Space Strategy (Harlow DC, in preparation)
[12] PPG17 Open Space, Sport and Recreation (HMSO, 2002)

companion guide[13]. The Strategy proposes new policies and local accessibility, provision and quality standards for all types of open space within Harlow to meet the requirements of PPG17. These include policies to improve the network of traffic-free routes, with a particular focus on promoting new/improved cycleways running north-south and east-west. The Strategy sets out proposals for each specific use of green space, and defines a set of overarching principles to guide local standards of provision and future management of green space within Harlow. The GIP is complementary to the vision, principles and proposals of the Harlow Green Spaces Strategy.

1.3.16 PPG17 Open Space Assessments have also been undertaken for Broxbourne Borough[14] and East Hertfordshire District[15]. The GIP is also complementary to these assessments, and the proposed Green Infrastructure Network provides a consistent framework within which district-level strategies, policies and proposals for creating and enhancing green space can be developed.

Biodiversity Action Plans

1.3.17 Biodiversity Action Plans[16] are in place for the entire Harlow Area, providing targets for the positive conservation of key habitats and species. As Section 2.0 demonstrates, the GIP has been developed to reflect the priorities for biodiversity conservation established in these Action Plans.

Local Development Frameworks

1.3.18 It is intended that the proposed Green Infrastructure Network set out in Section 3.0 will be reflected in the planning policies of the new Local Development Frameworks to be prepared by Harlow District Council, Epping Forest District Council, East Hertfordshire District Council and Broxbourne Borough Council. In anticipation of the potential adoption of the GIP as a Supplementary Planning Document by the relevant local planning authorities, a formal Sustainability Appraisal[17] (incorporating a Strategic Environmental Assessment) has been undertaken of the draft GIP in accordance with statutory requirements[18]. The findings of this appraisal have been incorporated into the final GIP.

[13] PPG17 Companion Guide (HMSO, 2002)
[14] Broxbourne Borough Open Space Assessment (Broxbourne Borough Council, 2001)
[15] East Hertfordshire District Open Space Assessment (East Hertfordshire Council, 2004)
[16] Essex Biodiversity Action Plan (Essex CC, Essex Wildlife Trust, 1999); A 50 Year Vision for the Wildlife and Natural Habitats of Hertfordshire (Hertfordshire CC/Hertfordshire & Middlesex Wildlife Trust, 1998); Lee Valley Regional Park Biodiversity Action Plan (Lee Valley Regional Park, 2002); A Biodiversity Audit and Objective Setting Exercise for the Green Arc (LUC, March 2005)
[17] Sustainability Appraisal of the Draft Green Infrastructure Plan for the Harlow Area (CBA, September 2005)
[18] Planning and Compulsory Purchase Act 2004 / Environmental Assessment of Plans and Programmes Regulations 2004

Community Strategies

1.3.19 It is also intended that the GIP will be reflected in Community Strategies prepared by Harlow District Council, Epping Forest District Council, Broxbourne Borough Council and East Hertfordshire District Council to ensure that it is promoted as a key initiative within local authority community development programmes.

1.4 The Plan Preparation Process

1.4.1 The preparation of the GIP involved four main stages as outlined in Box 2.

Stage 1 - Analysis of Existing Green Infrastructure Assets and Opportunities

1.4.2 The first stage in the preparation of the GIP involved an analysis of the various environmental assets that contribute to green infrastructure in the Harlow Area, and the identification of opportunities for creating new and enhanced assets to improve the functionality of green infrastructure. The analysis involved consideration of the following key components of green infrastructure:

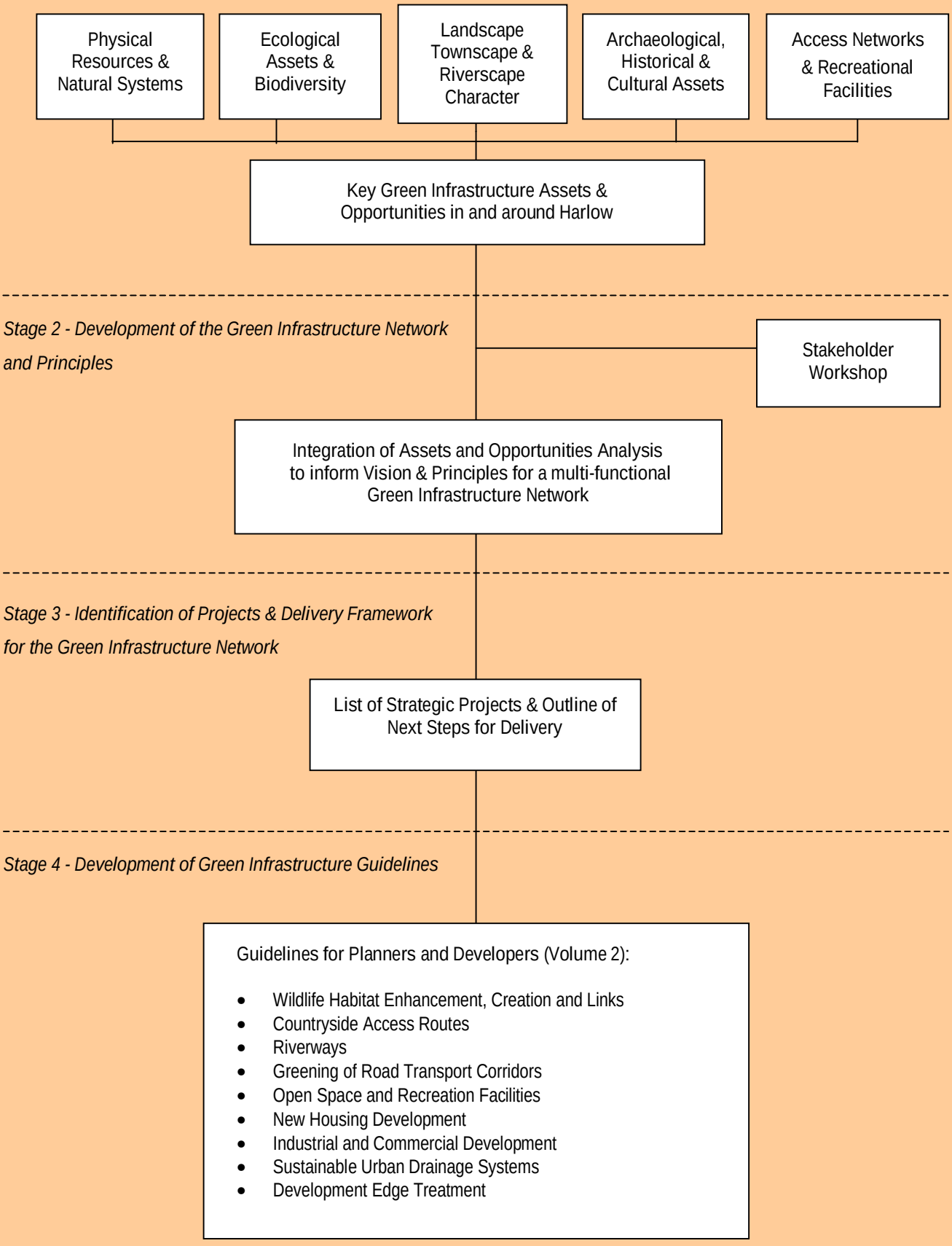
- Physical Resources and Natural Systems
- Ecological Assets and Biodiversity
- Landscape, Townscape and Riverscape Character
- Archaeological, Historical and Cultural Assets
- Access Networks and Recreational Facilities

1.4.3 The analysis of green infrastructure assets, and opportunities for their enhancement and/or extension, draws on existing data contained in Volumes 1[19] and 2[20] of the Harlow Area Landscape and Environment Study, supplemented by additional ecological survey work[21], other fieldwork and information gained through interpretation of new aerial photographs flown specifically for this project in late summer 2004. The data used in the mapping and analysis of individual components is recorded in Appendix A - Mapping and Analysis Data Sources.

1.4.4 The results of this analysis are presented in Section 2.0 of the GIP, and illustrated on Figures 2, 3, 3a, 3b, 3c, 4, 5, 5a, 6, 6a and 7.

[19] Volume 1 - Strategic Sensitivity Analysis of Harlow Area (CBA, 2004)
[20] Volume 2 - Detailed Analysis of Harlow's Fringes (CBA, 2004)
[21] Harlow Area Ecological Survey Report (CBA, September 2005) - see Appendix C

Box 2 - The GIP Preparation Process



Stage 2 - Development of the Green Infrastructure Network and Principles

1.4.5 The development of the Green Infrastructure Network involved the integration of the environmental assets mapping and opportunities analysis to identify a vision and proposals for multi-functional green infrastructure in the Harlow Area. This process was informed by the views and aspirations of local stakeholder groups gathered via a well-attended seminar and workshop held in June 2005. A record of the proposals for green infrastructure provision generated by stakeholders during the workshop sessions is available via the Groundwork Hertfordshire website[22].

1.4.6 The Green Infrastructure Network is presented in Section 3.0, illustrated in outline on Figure 8 and is also mapped in detail on the large-scale 1:10,000 plans available from the Steering Group Partners.

1.4.7 To assist in the implementation of the Network, principles for the protection, design and management of green infrastructure in the Harlow Area were also developed. These are presented in Section 4.0.

Stage 3 –Identification of Projects and Delivery Framework for the Green Infrastructure Network

1.4.8 This stage involved the identification of strategic projects (shown on Figure 9) for enhancing or extending green spaces and links required to deliver the vision for the proposed Green Infrastructure Network, and an outline of the next steps required to turn the GIP into reality. This is presented in Section 4.0.

Stage 4 - Development of Green Infrastructure Guidelines

1.4.9 The GIP also provides a supporting set of guidelines that help demonstrate to developers and planners how green infrastructure provision can be integrated into development schemes within the Harlow Area. These are set out in a separate document as Volume 2 : Guidelines.

[22] www.groundwork-herts.org.uk/index.asp?page=90

2.0 EXISTING GREEN INFRASTRUCTURE ASSETS AND OPPORTUNITIES

2.0 EXISTING GREEN INFRASTRUCTURE ASSETS AND OPPORTUNITIES

2.1 General

2.1.1 This section provides an analysis of the wide range of existing green infrastructure assets found within the Harlow Area. It also identifies gaps and opportunities for creation of a multi-functional network of new and enhanced green infrastructure assets that can provide green spaces and links of value for both people and wildlife. The opportunities reflect both the inherent nature of existing assets, and objectives of relevant plans and strategies for specific green infrastructure assets. The datasets used in the analyses (see Appendix A for full details of data sources) are available from the Harlow Green Spaces Project partner's websites.

2.1.2 The types of green infrastructure assets considered include:

- The underlying physical resources and natural systems - topography, rivers and floodplains, and mineral resources - that underpin all other environmental resources in the Harlow Area;
- The network of designated wildlife sites protected for their ecological and biodiversity value, the linear landscape features that act as dispersal corridors for wildlife between these sites and the diversity of aquatic, riparian and terrestrial habitats;
- The diversity of landscapes, townscapes and riverscapes and range of visual experiences in both rural and urban contexts;
- The protected sites of historic environment value, and other built and landscape features of archaeological, historical and cultural value, that contribute to urban and rural landscapes by providing a sense of place through a link with the past;
- The extensive access networks and wide range of existing recreational facilities that provide local communities easy access to and enjoyment of the countryside, in particular the major areas of public open space managed for recreation.

2.2 Physical Resources and Natural Systems

2.2.1 Figure 2 - Physical Resources and Natural Systems - identifies the key physical resources and natural systems that influence the nature of green infrastructure assets within the Harlow Area. These include topography, rivers and floodplains, and mineral resources.

Topography

Key Assets

2.2.2 The key topographic assets for the Harlow Area include:

- A generally low-lying, gently undulating landscape dissected by the major river valleys of the Lee and Stort;
- The low-lying, flat and wide floodplain of the River Lee;
- The low-lying, flat and narrower floodplain of the River Stort;
- The steep up to approximately +60m ODN river valley sides, except along the River Stort north of Harlow where the slopes are shallower;
- A number of smaller and narrower tributary valleys that divide the surrounding hills and ridges radiating out from major river valleys;
- The undulating / rolling ridges and slopes to the north of the River Stort;
- The series of undulating ridges and valleys between Harlow and Epping Forest;
- The pronounced ridge running along the southern edge of Harlow, which at +110-115m ODN is the highest land in the Harlow Area;
- The extensive areas of gently undulating plateaux rising to above +60m ODN throughout the Harlow Area.

Opportunities

2.2.3 The key opportunities afforded by the area's topographic features are considered to be:

- The influence over local and regional distinctiveness, land use, biodiversity, landscape and townscape character;
- Landmarks and sequences of views over the Harlow Area from high points, such as along the pronounced ridge landform south of Harlow;
- The influence on archaeological and historical resources;
- The influence on hydrological systems and flood risk management opportunities;
- The influence over microclimate, which in turn influences site planning, creating shelter for development and recreation.

Geology and Minerals

Key Assets

2.2.4 The key geological and mineral assets for the Harlow Area are:

- The surface geology composed of clays, silts and sands with scattered boulders known collectively as boulder clay;
- The river valleys lying on alluvium composed of clay, silt, sand and gravel; products of fluvial erosion of the Kesgrave formation and Lowestoft Till deposited along the river bed and its surrounding floodplain;
- Sand and gravel found adjacent to the alluvium along the outer extents of the valley floor;
- The two small areas of chalk underlying the upper reaches of the Lee and Stort river floodplains;
- The higher, smaller tributaries with exposed head and glacial-fluvial deposits;
- The steeper valley sides, especially to the east of the River Lee, is exposed to London Clay and the remains of a landslide south of the River Lee and Stort confluence;
- The history of mineral extraction in the major river floodplains as evidenced by the extensive areas of sand and gravel pits alongside the River Lee and to a lesser extent the River Stort.

Opportunities

2.2.5 The key geological and mineral opportunities for the Harlow Area are considered to be:

- The influence on local and regional distinctiveness including topography, soils, land use, biodiversity and landscape character;
- The exposure of different geological layers providing educational, cultural and recreational benefits through the interpretation of geological features, historic and cultural legacy;
- Economic and social benefits provided relating mainly to the sand and gravel extraction industry, and the sensitive planning and design of after-use schemes for mineral and landfill sites, which can both make a significant contribution to new green infrastructure provision.

Hydrology

Key Assets

2.2.6 The key hydrological assets for the Harlow Area are:

- The major rivers - the Lee and Stort - which converge to the west of Harlow and flow south to the River Thames;
- The extensive lakes and wetlands created by sand and gravel extraction within the Lee river valley floodplain;
- The minor stream tributaries which drain the surrounding higher land into the River Lee, including for example:
  * Cobbin's Brook
  * Nazeing Brook
  * Turnford Brook
  * Rags Brook
  * Spital's Brook
  * River Ash
- The minor stream tributaries which drain the surrounding higher land into the River Stort, including for example:
  * Hunsdon Brook
  * Canons Brook
  * Parndon Brook
  * Todd Brook
  * Fiddlers Brook
  * Pincey Brook
- The minor stream tributaries which drain the surrounding higher land into the catchment east of the Harlow Area:
  * Cripsey Brook
- The numerous field ponds scattered throughout the area;
- The River Lee Navigation;
- The River Stort Navigation;
- The two small chalk aquifers underlying the upper reaches of the Lee and Stort river floodplains, which are covered by groundwater protection zones.

Opportunities

2.2.7 The key hydrological opportunities for the Harlow Area are considered to be:

- The provision of physical links for water-craft, walkers, cyclists and for dispersal of wildlife along watercourses;

- The influence that rivers and tributaries have on local and regional distinctiveness and landscape character;
- The influence of the water resource on biodiversity;
- The influence of rivers and tributaries on archaeological, historic and cultural resources;
- The promotion of integrated flood alleviation and land management schemes based on sustainable urban drainage system principles in areas identified as at risk to flooding to deliver multiple benefits for people, landscapes and wildlife;
- The potential educational benefits of interpreting the historical and cultural uses of the watercourses;
- The potential for water-based tourism, recreation and leisure (fishing, sailing, boating, wildlife watching, etc) and waterscapes as attractive settings for shared-use paths and focal points in rural and urban contexts;
- The provision of sequences of views and landmarks along the major river corridors.

Climate Change

Key Issues

2.2.8 The key climate change issues for the Harlow Area include:

- The strategic need to adapt to the new opportunities and constraints posed by climate change in the short, medium and longer term;
- Summers becoming hotter and drier, and milder and wetter winters;
- More extreme climatic events such as very hot days and intense downpours of rain, leading to an increased risk of flooding in some areas;
- Higher temperatures leading to lower air quality and the resultant detrimental affects on respiratory conditions;
- Agricultural systems, landscapes and habitats are likely to need to adapt to reduced soil moisture in summer and autumn, higher annual and seasonal temperatures and potential deficiencies in water resources;
- Potential problems associated with the spread of pollution via flooding, the frequency of which is likely to increase due to continued climate change.

Opportunities

2.2.9 The key opportunities that arise from responding to the challenges of climate change for the Harlow Area are considered to include:

- The potential for flood risk management schemes to incorporate opportunities for existing and new aquatic and wetland habitats to be created to facilitate flood storage and deliver biodiversity, particularly as south-east England is already in water deficit;
- The potential for flood risk management, water supply, water use, sewage treatment and water quality to be addressed through co-ordinated sustainable planning and design of multi-functional green infrastructure;
- Amelioration of increasing temperatures through extensive and appropriate tree planting, which will also help enhance air quality by reducing carbon dioxide and other pollutant levels;
- The potential to adapt to changes in urban microclimates associated with longer, hotter summers through incorporation of measures to protect people and wildlife from increased UV, such as provision of natural shade by increased urban trees and vegetation on green roofs and in private urban spaces.

Summary - Physical Resources and Natural Systems

The physical resources and natural systems within the Harlow Area influence local and regional distinctiveness, land use, biodiversity, and landscape and townscape character. The main physical resource within the Harlow Area is the Rivers' Lee and Stort and their catchments. The river corridors, floodplains and tributary streams are considered to be critical green infrastructure components, as they supply key social, economic and environmental benefits for local communities and provide important habitats for wildlife. The GIP provides a significant opportunity to create a coordinated and creative approach for maximising the utilisation of the opportunities provided by these physical resources and natural systems, while overcoming the challenges of climate change.

2.3 Ecological Assets and Biodiversity

Key Assets

2.3.1 Figure 3 - Existing Ecological Assets and Biodiversity : Key Ecological Assets - shows the designated sites protected for their nature conservation importance in the Harlow Area.

2.3.2 The Key Ecological Assets for the Harlow Area include:

- Turnford and Cheshunt Pits, Rye Meads and Amwell Quarry in the Lee Valley are internationally important Ramsar wetland sites and are designated as a European Special Protection Areas for birds - these sites are also nationally important as Sites of Special Scientific Interest and are also identified as County Wildlife Sites for their local importance;
- Epping Forest and Broxbourne Woods, parts of which extend into the Harlow Area, are both designated as Special Areas of Conservation for their habitats and supporting species, which are rare in a European context;
- Thirteen Sites of Special Scientific Interest, predominantly concentrated around the Lee Valley within the Ramsar/SPA areas, with other sites located along the River Stort corridor, on the southwest fringe of Harlow and to the north east of Epping;
- Hatfield Forest designated as a National Nature Reserve;
- A large number of Ancient Woodlands that have had continuous woodland cover since at least 1600 AD, particularly to the north and north east of Epping;
- Approximately 100 County Wildlife Sites, with the larger sites located around the southern fringe of Harlow, to the east of Epping, and along the Lee River and Stort River valleys, and other smaller sites scattered throughout the remainder of the Harlow Area;
- Local Nature Reserves at Parndon Mead and Harlow Marsh within the River Stort corridor and Parndon Wood in Harlow District, the Nazeing Triangle, Roughtalley's Wood and Church Lane Flood Meadow in Epping Forest District;

2.3.3 Figure 3a - Existing Ecological Assets and Biodiversity : Land Cover provides an aerial photograph of the land cover and habitats found within the Harlow Area. This, together with targeted field surveys[23], informed the identification of the existing key habitats and dispersal corridors for wildlife shown on Figure 3b - Existing Ecological Assets and Biodiversity : Key Habitats and Links.

2.3.4 The Key Habitats within the Harlow Area include:

- The River Stort which is of key importance for a wide range of wildlife species, including BAP priority habitats and species related to its value as a key wetland habitat;
- The River Lee Valley, which is of particular value for its birdlife, bats and associated aquatic, wetland and riparian habitats such as gravel pits and lakes that provide a mosaic of habitats of considerable benefit for wildlife;

[23] Harlow Area Ecological Survey Report (CBA, September 2005) - see Appendix C

- Areas of value for their grassland and woodland habitats, floristic interest and associated wildlife, including protected species;
- Significant areas of ancient woodland including the margins of Epping Forest, and pockets of natural habitats such as species-rich grassland, marsh and reed beds;
- Green lanes and hedgerows in themselves, and as links between areas of semi-natural habitat set within the mixed agricultural landscape;
- The parkland areas and plantation woodland;
- Habitats associated with the numerous stream tributaries which drain the Harlow Area into the major river systems;
- The numerous field ponds scattered throughout the area.

2.3.5 The Key Ecological Assets and Key Habitats and Links support a wide range of Rare and Protected Species that are also key ecological assets within the Harlow Area. Examples of Rare and Protected Species recorded[24] in the Harlow Area include:

- Bat species (including Pipistrelle, Noctule, Brown long-eared, Leisler's, Natterer's, Serotine, Whiskered/Brandt's, Daubenton's)
- Water Vole, Badger and Otter
- Grass Snake, Slow-worm and Common Lizard
- Native Crayfish
- Great Crested Newts (potential - requires detailed survey to confirm presence)
- The significant numbers of native Black Poplars and veteran trees in the Roydon area;

Opportunities

2.3.6 Taking into account local Biodiversity Action Plan targets[25], the key generic opportunities for protection and enhancement of ecological assets and biodiversity within the Harlow Area are considered to be:

- Large-scale habitat enhancement and creation along the Stort and the Lee river valleys to support the creation of a continuous strategic wildlife corridor of linked sites running from Hatfield Forest and Ware, south to the River Thames at Stratford in London;
- The significant potential of the Stort valley, which offers opportunities to restore and create areas of biodiversity value related to aquatic and wetland habitats that would benefit a wide range of species. For example;

[24] Records supplied by the Hertfordshire Biological Records Centre and the Hertfordshire & Middlesex Bat Group (February 2005)
[25]Essex Biodiversity Action Plan (Essex CC, Essex Wildlife Trust, 1999); A 50 Year Vision for the Wildlife and Natural Habitats of Hertfordshire (Hertfordshire CC/Hertfordshire & Middlesex Wildlife Trust, 1998); Lee Valley Regional Park Biodiversity Action Plan (Lee Valley Regional Park, 2002); A Biodiversity Audit and Objective Setting Exercise for the Green Arc (LUC, March 2005)

  * Wet grassland; marsh plants, water vole, lapwing, snipe, redshank
  * Reedbed; plants, bittern, otter, water vole, reed warbler, invertebrates
  * Marsh/fen; plants, otter, water vole, bittern, snipe, redshank, grasshopper warbler, sedge warbler, invertebrates
  * Wet woodland; alder carr, otter, lesser-spotted woodpecker, lesser redpoll.
- Develop the biodiversity value of wildlife resources within set aside land, derelict nursery sites, quarry pits, large estates and parkland and miscellaneous land use such as golf courses, derelict land and cemeteries;
- Linking GIP proposals to local Biodiversity Action Plan targets for habitat restoration and enhancement and species targets, e.g:
  * Ancient / species-rich hedgerows
  * Arable field margins
  * Bats
  * Bittern
  * Dormouse
  * Early marsh orchid
  * Great crested newt
  * Heathland
  * Kingfisher
  * Lowland neutral / marshy grassland
  * Otter
  * River water dropwort
  * Urban habitats
  * Water vole
  * Water-bodies (rivers, streams, canals, lakes)
  * Wetland (wet woodland, reedbeds, floodplain grassland)
  * White-clawed crayfish
  * Woodland
- Creation of new habitats to enhance linkages between existing woodlands and open grassland areas outside of river valleys through the development of uninterrupted areas of open grassland, new woodland planting and / or the appropriate management of existing woodland;
- Creation of buffer margins along river corridors to protect and benefit the riparian and aquatic wildlife and habitats within the context of the Environment Agency's Flood Defence Strategy; and enhancement of wetland habitats and small water bodies by managing sites specifically for particular species such as waders, water vole and otter or invertebrates;
- Provision of strategically located new educational / visitor centre facilities for environmental interpretation and education for the local community and visitors;

- Enhance and maintain grass verges, hedgerows, footpaths and by-ways, arable field margins and brooks to bring the countryside to the urban fringe;
- New tree planting to address problems of elm dieback within woodland and hedgerows;
- Management of poisonous and invasive species that can pose a serious threat to biodiversity, particularly along the river corridors (in particular Japanese knotweed *Fallopia japonica,* Indian balsam *Impatiens glandulifera*, common ragwort *Senecio jacobaea* and creeping thistle *Cirsium arvense*);
- Provision of green roofs on commercial and industrial buildings to create new ecological habitats in urban areas, for a range of urban species such as for example:
  * Creation of bat roosting/breeding sites in new buildings using 'bat bricks' built into the brickwork of buildings that comply with Buildings Regulations.
  * Incorporation of nest boxes onto buildings and provision of innovative nest sites within built structures for breeding birds such as starlings, house sparrows and swifts.
- The opportunity to conserve orchards, such as the Rivers Nursery Orchard to the north of the County Wildlife Site at the Rivers Hospital site near Sawbridgeworth - the site, which has had a continuous history of horticultural cultivation stretching back to the seventeenth century, is currently being promoted as a community orchard by The Friends of Rivers Nursery Orchard who are working on improving the grasslands and developing the site as an educational resource for local people.

2.3.7 The mapping of key ecological assets, habitats and links, together with targeted field surveys[26], informed the identification of priority areas with specific opportunities for enhancing, creating and buffering ecologically functional green spaces and links. These priority areas and opportunities are identified below, and shown on Figure 3c - Priority Areas for Enhanced Green Spaces and Links for Wildlife. The opportunities identified fit well with the relevant strategic biodiversity enhancement proposals identified for the Green Arc Initiative within the Harlow Area[27].

2.3.8 Opportunities are identified within the context of the following Zones, which reflect areas with similar ecological characteristics within the Harlow Area:

- Zone A - West of Hoddesdon *(Hertfordshire)*
- Zone B - Stort River Corridor *(Essex/Hertfordshire)*
- Zone C - Lee River Corridor *(Essex/Hertfordshire)*
- Zone D - Gilston / Hunsdon Historic Landscapes *(/Hertfordshire)*
- Zone E - Roydon / Nazeing Plateau *(Essex)*
- Zone F - Western, Southern and Eastern Harlow Urban Fringes *(Essex)*

[26] Harlow Area Ecological Survey Report (CBA, September 2005) - see Appendix C
[27] A Biodiversity Audit and Objective Setting Exercise for the Green Arc (LUC, March 2005)

- Zone G - Epping Forest Northern Fringe *(Essex)*
- Zone H - East of M11 *(Essex)*
- Zone I - Major Urban Areas *(Essex/Hertfordshire)*

2.3.9 The 'TN' numbers refereed to in the text relate to the target notes contained in the ecological survey report[28].

Zone A –West of Hoddesdon

Context

2.3.10 This Zone lies west of the A10, near Hoddesdon and is for the most part comprised of arable and amenity land including Chestnut Park and Hoddesdon Park. There are pockets of biodiversity interest including woodland, semi-improved and set-aside grass fields, hedgerows, brooks and water bodies and there are a number of small county wildlife sites.

2.3.11 This Zone contributes to the Harlow GIP as an important buffer zone between the extensive woods to the west (outside the Harlow Area) and the urban component of the Lee Valley. However there is a lack of green linkage from this Zone towards the east with little across the A10 or extending to the River Lee. There is stronger green linkage to the west where rural lanes and woodland adjoin onto large blocks of woodland.

2.3.12 Overall this area has pockets of biodiversity that can be linked to reinforce the nature conservation value of the area and to provide links to the land to the west of the Study Area.

Habitat Enhancement Areas

A1. Cheshunt Park - Enhancement of hedgerows, verges and grassland

- Additional planting in hedgerows and woodlands especially where there is elm dieback within Cheshunt Park TN A8, A10 and A11.
- Review management of Reservoir TN A2 for wildlife.
- Strengthen the network of vegetation corridors by introducing wider arable margins, enhancing footpath vegetation and denoting specific road verges for wildflower interest where they can be left uncut until late summer - this would help extend the value of Cheshunt Park into the adjacent farmland.

[28] Harlow Area Ecological Survey Report (CBA, September 2005)

A2. Hoddesdon Park Wood Fringe - Enhancement of grassland and wet woodland

- Management of grassland as hay meadows to encourage floristic interest such as TN A39 adjacent to Hoddesdon Park Wood Nature Reserve.
- Enhance grassland and wet woodland along Spittal brook at Hoddesdon (TN A46).

Habitat Creation Areas

A3. Park Lane - Creation of woodland, hedgerows and grassland

- Planting of woodland/scrub along the field margins to link woodland blocks such as TN A13, A14 and A15 on the western boundary and further north up to TN 18 and A26.
- Plant species-rich hedgerows along the length of the lane.
- Create grassland such as at TN A23, Baas Hill picnic site to extend the area of improved grassland adjacent to the site.

Enhanced Habitat Linkages

A4. Broxbourne to the Lee valley - Enhancement of hedgerows and verges

- Enhance grassland verges and hedgerows to help link the Lee Valley through the urban area to the Broxbourne woodland complex to the west.

Zone B –Lee River Corridor

Context

2.3.13 Zone B comprises the River Lee and its floodplain and is dominated by the Lee Valley Regional Park and wildlife reserves. The Zone comprises semi-natural habitat including the river itself and associated water bodies, marshland, reed beds, wet grassland, willow carr and woodland, all of which offers a rich and diverse mosaic of habitats.

2.3.14 This Zone contributes to the Harlow GIP as an internationally important wildlife sanctuary in particular for birds (waterfowl, migratory and key species) and is made accessible from the Lee Valley Regional Park and the Lee Valley Walk which passes through the valley. However it has a lack of green links the east where it is bordered by nursery development and farmland and also to the west where it is bordered by the railway and urban areas of Cheshunt and Hoddesdon.

2.3.15 Overall this Zone has very good biodiversity but could be improved by the development of green links. Areas not currently included within the Regional Park, or other designated sites could be enhanced to extend the Regional Park and the coherent management of the river valley as a single entity.

Habitat Enhancement Areas

B1. East of River Lee - Enhancement of grassland, wetland and hedgerows

- Use set-aside and agricultural/nursery land to develop lowland wet grassland habitat for waders and overwintering birds, taking into account the practicalities of achieving the controlled flooding of the valley floor during the winter/early spring and appropriate management of the grass through extensive summer grazing by cattle.
- Review management regimes of wetland and grassland habitats within the Lee Valley Regional Park to control the encroachment of scrub adjacent to Nazeing Mead.
- Enhance hedgerows and widen arable field margins within the plateau areas above the valley.

B2. Great Amwell - Enhancement of wetland and grassland

- In the area between Hoddesdon and Ware there are opportunities to enhance the existing series of wetlands at Amwell (RAMSAR, SPA, SSSI), and the grassland habitats west of the River Lee Valley (TN B30).

Zone C –Stort River Corridor

Context

2.3.16 Zone C is comprised of the River Stort, associated tributaries and floodplain which runs across the northern parts of the Harlow Area, south from Bishop's Stortford and borders the northern edge of the Harlow urban area south-west to Roydon. It is dominated by the river itself, and a mosaic of grassland, marsh, reedbeds, willow carr, streams and woodland - a number of which are County Wildlife Sites. The Stort river valley has the potential to be retained as a vital corridor and enhanced as a rich resource for wildlife.

2.3.17 This area contributes to the Harlow GIP in providing an important wildlife corridor through the wider Harlow Area and provides a buffer between Harlow and the countryside to the north. It is made accessible by many footpaths that cut across the floodplain and run alongside the river, proving access to natural green space for local communities. It has some green links to the River Lee valley but few to the north where it is bordered by arable land. However, green links into Harlow are limited by the railway line, A414 and industrial development.

2.3.18 Overall the River Stort Valley could link to the River Lee Valley and any gaps of semi-natural habitat could be filled in to form an extended strategic green corridor from Hatfield Forest in the north to Stratford in the south outside of the Harlow Area. Streams, ponds, rivers and canals offer opportunity to connect habitats in the River Stort valley to the wider arable landscape.

Habitat Enhancement Areas

C1. River Stort - Enhancement of wetland

- Review management of grassland and wetland habitats along the river and its tributaries for example south of Sawbridgeworth TN C53 to C63 and consider alternative cutting/grazing/drainage to enhance natural habitats and restore flood meadows.
- Link habitats to reinforce biodiversity potential adjacent to the river along its entire length but especially in the areas bordering Harlow from TN C67 to C73 and C75 to C100 - this could be undertaken by creating a mosaic of wetland habitats along the river corridor including reed beds, wet woodland (willow carr and alder), marsh and wet grassland to encourage species diversity.
- The creation of a fully functioning wetland system on a landscape scale within the Stort Valley is in line with the Biodiversity Action Plan's vision for wetlands[29] of *'a necklace of high quality wetlands distributed along ecologically and hydrologically connected river corridors'*. Habitat enhancement on this scale presents a major challenge for key partners and landowners to work together to achieve co-ordinated action in relation to the controlled flooding of the valley floor during the winter/early spring, appropriate management of the grass through extensive summer grazing by cattle, and the creation and appropriate management of new aquatic and wetland habitats.

C2. Spellbrook - Enhancement of pools, swamp and wet grassland, hedgerows and woodland

- Enhance existing wetland habitats including pools, sedge swamps, reed beds and grassland habitats south of Bishop's Stortford TN C2- C8 to maintain contiguous semi-natural habitats along the river and along the railway from C16 to C27.
- South of Bishop's Stortford grassland north of Pig Lane, near the lock TN C3, offers good potential to be managed as a hay meadow (and also supports mature hedgerows).
- Enhance grassland, woodland and hedgerows between Sawbridgeworth and Little Hallingbury to reinforce habitats between the River Stort and the north-east of the Harlow Area towards Hatfield Forest.

[29] A 50 Year Vision for the Wildlife and Natural Habitats of Hertfordshire (Hertfordshire CC/Hertfordshire & Middlesex Wildlife Trust, 1998);

Enhanced Habitat Linkages

C3. Fiddlers Brook - Enhancement of grassland, wetland, reed beds and aquatic vegetation

- Enhance grassland and wetland habitats adjacent to Fiddlers Brook to link to the River Stort - reedbeds could be enlarged providing further habitat for water vole, waterfowl and invertebrates such as dragonflies.

New Habitat Linkages

C4. Hunsdon Lane/Brook - Creation of new habitats along road verges, brook, hedgerows, arable field margins

- Create wildflower road verges and species-rich hedgerows along Hunsdon Brook TND2 and field margins to link the River Stort to wider countryside.
- Enhance arable field margins, woodland and large water bodies near Gilston - such as linking Hollingson Meads Quarry to the River Stort.
- Enhance grassland and wetland habitats at Briggen's Park, in a manner that respects the historic parkland landscape designed by Charles Bridgeman, to link this area to the River Stort - the grounds of the golf course offer good potential for diverse grassland habitats within a parkland landscape.
- Revert the area of arable land surrounding Briggen's Park to grassland to strengthen the link between the Stort and Lee valleys.
- Create wet woodland (alder) to replace plantations adjacent to Eastwick Mead.

Zone D –Gilston / Hunsdon Historic Landscapes

Context

2.3.19 Zone D is comprised of farmland (dominantly arable) and woodland around Hunsdon, north of the A414. This Zone has small villages, winding narrow lanes and large parkland/estates. Scattered throughout are pockets of biodiversity and a few wildlife sites, contained within woodland and linear features such as hedgerows, lane verges and brooks that stand out within the arable landscape.

2.3.20 This Zone contributes to the Harlow GIP in providing an open area of farmland with biodiversity held in pockets such as brooks, waterbodies and woodland. It is made accessible by many footpaths that cut across the arable land but these do not often pass through woodland and linkage is weak within the Zone as a whole. This Zone includes scattered areas rich in biodiversity, with good local populations of hares and great crested newts being recorded across the whole Zone.

2.3.21 Biodiversity is limited here but there is a good potential to link those areas that are rich in biodiversity, especially along rural lanes and integrate a 'green network' within the arable landscape.

Habitat Enhancement Areas

D1. Hunsdonbury - Enhancement of grassland

- Large estates such as at Hunsdonbury TN 39 or farms such as Fillets Farm TN D48 offer opportunities to manage grassland areas as hay meadows with a single late summer cut.
- Create species-rich grassland using set aside land adjacent to land such as at TND83 on the Bonnington's Estate.

D3. Gilston Park - Enhancement of new verges, woodland, scrub

- There are two areas of woodland and moats, TN D3 and TN D23, which could be extended with additional tree planting on adjacent land.
- Create species-rich wildflower verges to link woodland to the north of Gilston such as Blackhut Wood TN D54 and Eastwich Wood TN D55.
- Link ponds with scrub habitat within managed estates to offer diverse habitat for amphibians such as at Channocks Farm.
- Opportunities for the enhancement of existing parkland, including grassland, veteran trees and ponds.

Habitat Creation Areas

D2. The Grove - Creation of arable field margins, grassland

- Arable field margins and beetle banks could be created to extend green links across the arable landscape.
- Long term grassland management within the hotel (TND15) could be developed into species-rich grassland as well as along road verges.

Enhanced Habitat Linkages

D4. Fiddlers Brook - Enhancement of verges, hedgerows and brook

- Manage road verges for wildflower north of Gilston to provide links between farms and woodland for wildlife such as invertebrates, for example at TND13 and TND14.

- Hedgerows and footpaths throughout the Zone could be enhanced and extended to link blocks of woodland such south of Widford at TN D15, 16, 17 and 18. Areas of elm dieback especially could be planted up with native local species;
- Undertake survey of Fiddler's Brook and apply management to enhance marginal and aquatic vegetation along the brook, such as buffering the riparian corridor with permanent grassland.

New Habitat Linkages

D5. Fiddlers Brook to River Stort - Creation of new hedgerows, field margins, ponds, grassland, woodland

- Create new habitat linkages by reinforcing the hedgerow network with new planting - the incorporation of wide field margins in association with field boundaries will further strengthen the links.
- Additional pond creation and woodland planting could also be incorporated into the landscape.

Zone E –Roydon / Nazeing Plateau

Context

2.3.22 This Zone comprises the Nazeing Plateau that lies between the north-west edge of Harlow and the River Lee. It is dominated by farmland, in particular arable, and garden nurseries with biodiversity potential best held within features such as a golf course, Nazeing brook, a few large estates and small pockets of grassland and woodland. There are also significant numbers of rare native Black Poplars and veteran trees in the Roydon area that should be protected for their nature conservation value.

2.3.23 This Zone currently offers a relatively low contribution to biodiversity of the Harlow Area, however the 'old' lanes provide potential as green corridors for wildlife.

2.3.24 Overall this area has good potential to link ecological green space within the arable landscape by enhancing hedgerows, footpaths, road verges and arable field margins. The whole Zone could be enhanced for biodiversity with a broad tree, hedgerow and grassland management strategy. From a wider view, new habitat links could provide links south to Epping Forest and Zone G, either with areas of grassland or lowland heath as well as hedgerows.

Habitat Enhancement Areas

E1. Kingsmead - Enhancement of grassland

- Enhance species-rich grassland adjacent to County Wildlife Sites (woodland) and species-rich hedgerows.

Habitat Creation Areas

E2. Lower Nazeing - Creation of new grassland, wetland

- Manage road verges and ditches for wildflowers for example at Laundry Lane TN E11 and link to the bridleway at TN E18.
- Re-create grassland habitats between the Lee Valley and Nazeing Long Green to link the plateau to the valley - linear wetland, scrub or woodland habitats could be created to link the wetland areas of Nazeing Marsh to the grassland;
- Create a good ditch and hedgerow network bordering the nurseries, for example at Clay Hill, and incorporate nursery activity into an overall ecological strategy for the area to enhance ecological diversity.

Enhanced Habitat Linkages

E3. Nazeing Brook - Enhancement of grassland, arable margins and hedgerows

- Create grassland buffers, such as extended headlands, along Nazeing Brook, widen arable field margins on land adjacent to the nurseries and create new hedgerows between the villages of Roydon Hamlet, Tylerscross and Broadley Common.
- Large-scale arable reversion between Nazeingwood Common and Epping Long Green.

E4. West Harlow - Enhancement of verges and hedgerows

- Widen hedgerows to link woodlands at TN 42, 43 and 44 and utilise the green space by creating flower rich verges into the urban areas.

New Habitat Linkages

E5. Nazeing to Cobbin's Brook - Creation of new hedgerows, ditches, verges and grassland

- Create linkages of species-rich hedgerows, ditches and flower rich verges and extend the width of arable field margins and headlands.

E6. Roydon Park - Creation of new hedgerows, ditches, verges and grassland

- Create linkages of species-rich hedgerows, ditches and flower rich verges and extend the width of arable field margins and headlands.

Zone F –Western, Southern and Eastern Harlow Urban Fringes

Context

2.3.25 Zone F borders the urban area of Harlow to the west and south. It lies between the M11 to the east and Nazeing Plateau to the west. It is dominantly comprised of arable and nursery developed land with a few more ecological diverse areas of woodland, common land, grassland and a few ponds. Overall it has moderate biodiversity mostly held in wooded habitats including hedgerows and scrub.

2.3.26 This Zone offers moderate benefits at present to the Harlow GIP in providing a sparse green buffer to the urban area, of woodland and common land to the south but there are few green links between them. To the east of Harlow this area has little space left for green habitat and to the west there is some biodiversity interest held within lanes and hedgerows.

2.3.27 Overall the 'green' areas could be linked together by creation of woodland or grassland habitats, and possibly could link to Epping Forest to create a larger area of semi-natural habitat. A replanting strategy of hedgerows, scrub and a grass verge management plan would help to reinforce the buffer zone in the wider area surrounding Harlow. These could be planted along footpaths and by-ways to enable easier access to the countryside.

Habitat Creation Areas

F1. South Harlow - Creation of new woodland, heathland, hedgerows and ditches

- Create woodland/scrub/heathland in the south of Harlow to link existing ancient woodland.
- Improve the diversity of grassland near the woodland SNCI's and the common at Latton Bush TN F26 and F16, by reviewing grazing regimes and controlling the encroachment of scrub.
- Initiate a general programme of ditch and hedgerow restoration.

New Habitat Linkages

F2. Rye Hill - Creation of new hedgerows and scrub

- Link woodland sites into the urban fringe of Harlow by planting up hedgerows and scrub along footpaths for example at TNF33 in the area of Rye Hill Common.

F3. East Harlow - Creation of new woodland and hedgerows

- Manage present woodland and continue to plant trees along the border of the M11.
- Provide links by strengthening the hedgerow network (either by 'gapping up' or creating new hedgerows) along lanes and across the farmland.

Zone G –Epping Forest Northern Fringe

Context

2.3.28 This Zone lies between the urban areas of Waltham Abbey and Epping and north of the M25, extending north up to the Nazeing Plateau and is dominantly comprised of farmland. There is good biodiversity interest held within woodland and grassland pockets, large estates, Cobbin's Brook and along footpaths and in hedgerows.

2.3.29 This Zone contributes to the Harlow GIP in providing a buffer between the M25 and London to the south and the rural village network to the north up to Harlow. It also has good areas of biodiversity, some of which is linked to Epping Forest.

2.3.30 Overall this Zone could be better linked with an enhanced hedgerow and road verge network. The area under nursery development could also be linked in to a wildlife strategy to include reversion of set aside land to heathland or grassland.

Habitat Enhancement Areas

G1. Upshire - Enhancement of grassland, stream channel, ponds and wetland

- Grassland within the large estates including Copped Hall TN G44 and Warlies Park TN G16 already offer some floristic interest but could be managed for wildlife by cutting the sward in late summer and replanting gaps in hedgerows and sensitive ditch clearance.
- Cobbins Brook flows adjacent to areas of woodland, e.g. TN G17, which could be enhanced to provide continuous riparian habitat. Specific measures could be incorporated into the entire channel's management for particular species such as, potentially, white-clawed crayfish, water vole and otter.
- Wetland and marshy grassland habitats could be created along side Cobbins Brook where there is already some willow carr, for example at TN G14 in Warlies Park
- Enhance verges and corridors where there is potential for a diverse flora for example at TNG21 near Upshire.

- Enhancement opportunities exist throughout the area to develop the network of grasslands, hedges and woodland blocks, which could incorporate the planting of new woodlands and tree lines.
- A programme of sensitive pond management across the entire zone would help enhance the landscape for amphibians and aquatic invertebrates.

Habitat Creation Areas

G2. Thornwood - Creation of new hedgerows, scrub

- Restore species-rich hedgerows and link together by planting tree/scrub corridors to extend woodland habitats south of Harlow and create links with Epping Forest in the south.

Enhanced Habitat Linkages

G3. Cobbins Brook - Enhancement of riparian corridor habitats

- Develop a programme of co-ordinated, sensitive riparian habitat management, including rotational dredging and vegetation cutting to enhance the Cobbins Brook as a continuous habitat corridor for the migration of wildlife throughout the zone.

New Habitat Linkages

G4. Coopersale Common - Creation of new green bridge

- Create green bridge across the M11 to aid the general migration of wildlife across the motorway.

Zone H –East of M11

Context

2.3.31 This zone is dominated by arable land interspersed with small copses and occasional water bodies, predominantly ponds. There is a network of rural lanes with linear villages, few hedgerows and a number of parkland estates that include woodland. The Pincey and Cripsy Brooks flow through this zone, and there is a large block of woodland in the south.

Habitat Creation Areas

H1. Matching - Creation of woodland and scrub

- Create woodland and scrub habitats to link ancient woodland areas.

H2. Grinstead Lane - Creation of wet grassland

- Create wet grassland habitats adjacent to River Stort Navigation (at present set-aside) and along Stort Valley Way.

H3. Little Hallingbury Park - Creation of scrub, woodland, wet woodland

- Plant scrub and woodland along Harcamlow Way south of Hatfield Forest and wet woodland along stream.

New Habitat Linkages

H4. Hatfield Heath - Creation of new woodland, verges and hedgerows

- Create species-rich hedgerows, woodland and wildflower verges to link the grassland at Hatfield Heath northwards to the Forest and south to sites of ancient woodland.

H5. Tilegate - Creation of verges and hedgerows

- Restore and/or create species-rich hedgerows south of Matching Tyre through small villages to the edges of Harlow.
- Create species-rich verges to link parkland, churchyards and village greens for example on New Way Lane and the Stort Valley Way.

H6. Lower Bobbingworth - Creation of grassland and scrub

- Create grassland and scrub habitats to link up areas of woodland and waterbodies. Create more water bodies in appropriate locations, to enhance the pondscape.

H7. Stortford Road - Creation of green bridge

- Construction of green bridge over M11 to link grassland to west with woodland habitat to east.

Zone I –Major Urban Areas

Context

2.3.32 Zone I is predominantly urban with areas of natural habitat associated with riparian corridors and open spaces such as small urban parks, playing fields, allotments and areas of redundant land.

Habitat Enhancement Areas

I1. Harlow Urban Area - Enhancement of Town Park

- Enhance ecological value of habitats as integral part of environmental improvements to the Town Park

Enhanced Habitat Linkages

I2. Harlow Urban Area - Enhancement of riparian habitats and verges within the Green Wedges

- Enhance riparian habitats to maximise botanical diversity for invertebrates
- Enhance grassland verges through reduced mowing frequency in appropriate locations

I3. Hoddesdon / Cheshunt Urban Area - Enhancement of species-rich grassland, scrub and aquatic habitats along the New River navigation canal

- Enhance linear margins of grassland beside New River (TNA3), a navigational canal running into the urban area, by creating species-rich grassland and native scrub borders to attract invertebrates, reptiles and birds.
- Undertake survey of aquatic vegetation within the canal and review its management and potential as a nature conservation asset.

Summary - Ecological Assets and Biodiversity

There is a wide range of ecological assets that contribute to the biodiversity of the Harlow Area. The Key Ecological Assets include the relatively large number of sites protected for their nature conservation importance, the diversity of Key Habitats (aquatic, riparian and terrestrial), and the numerous linear landscape features acting as Key Links providing dispersal corridors for wildlife between these sites and habitats, including for Rare and Protected Species. There is a major opportunity to create a fully functioning wetland system on a landscape scale within the Stort Valley, which would make a significant contribution to the achievement of important Biodiversity Action Plan targets. Other key opportunities include the general restoration, enhancement and improvement of features of ecological value such as woodlands, hedgerow field boundaries and ponds throughout the area to maintain the connectivity and viability of key ecological habitats. The protection of sites of nature conservation importance through the sensitive design, layout and location of new urban development, agricultural activities, flood alleviation and water storage, and the careful planning of recreational uses and facilities, is key to the GIP.

2.4 Landscape, Townscape and Riverscape Character

2.4.1 Figure 4 - Landscape Character Types and Areas - shows the 10 Landscape Character Types and 31 Landscape Character Areas that have been defined by previous landscape assessment work[30] for the Harlow Area. Each Landscape Character Area exhibits a unique pattern of landscape, townscape and riverscape characteristics and features that gives it its 'sense of place' and makes it distinctive from other areas. The need for protection, enhancement and restoration varies between Landscape Character Areas depending on landscape condition and their robustness to change - as described in the Harlow Area Landscape and Environment Study[31].

Key Assets

2.4.2 The Key Landscape Assets related to the Harlow Area's landscape, townscape and riverscape character include:

- The distinctive 'landscape-led' approach by Sir Frederick Gibberd to the development of the Harlow Master Plan[32], which has strongly shaped the development of the town's urban form and was key to its relationship to the surrounding countryside. Gibberd's approach to landscape can be summarised as:
  - Compact groups of buildings within discrete neighbourhoods separated by a network of broad areas of generally linear open spaces (now known as 'green wedges') providing playing fields, children's playgrounds, accessible natural spaces, allotments and other types of green spaces;
  - Physical and visual links from the centre of the town to the surrounding countryside on its edge formed by the green wedges, which encapsulate natural features such as valleys, woods, brooks;
  - A clear contrast between the town and the surrounding countryside provided by the Stort river corridor separating the town from the undulating/rolling landscapes to the north, and the pronounced north-facing ridge slope to the south which visually and physically contains the urban area from the open countryside to the south.
- The diversity of landscapes within the Harlow Area as reflected in the 10 Landscape Character Types and 31 Landscape Character Areas shown on Figure 4 - in particular:
  - The Urban Areas ranging from the varied townscapes related to the planned neighbourhoods and large green wedges of Harlow New Town, the linear conurbation comprising Hoddesdon, Cheshunt and Broxbourne, and the historic settlements of Waltham Cross and Epping
  - The Lee and Stort River Valley Floodplains characterised by wetland vegetation, a mixture of natural river corridors, canals and extensive waterbodies created by sand and gravel

[30] Volume 1 - Harlow Area Landscape and Environment Study (CBA, 2004)
[31] Appendix A of Volume 1 - Harlow Area Landscape and Environment Study (CBA, 2004)
[32] Harlow Master Plan (Harlow Development Corporation, 1948)

extraction, including in particular the distinctive waterscapes of the Lee Valley Marshes, characterised by open and expansive mosaic of marsh, scrub and wet woodland and large flocks of waterfowl

  * The undulating/rolling Ridges and Slopes and Uplands to the north of the River Stort characterised by pockets of woodland, isolated small settlements and farmsteads, and distinctive areas of historic parkland
  * The extensive gently undulating Plateaux, with medium to large-scale largely arable fields and winding lanes connecting scattered farmsteads
  * The series of undulating Ridges and Valleys between Harlow and Epping Forest with a mix of arable and pasture fields
  * The distinctive Wooded Ridges of Epping Forest with an enclosed character and dominated by semi-natural / ancient woodland.
- The distinctive glasshouse landscapes of the Roydon / Nazeing plateau;
- The elevated views over Harlow to the north from the pronounced ridge running along the southern edge of the town;
- The woodland blocks, hedgerows and hedgerow trees providing a green edge to many urban areas;
- The individual identity of generally dispersed small-scale nucleated rural settlements and their dispersed pattern within the landscape;
- The range of varied field patterns in the landscape reflecting different patterns of historic land-use and modern development;
- The range of local landscape elements and features, many of which are of historical and cultural value, that contribute to local distinctiveness and sense of place.

Opportunities

2.4.3 Informed by the relevant Landscape Character Assessments[33], the key opportunities for protection and enhancement of the Key Landscape Assets within the Harlow Area are considered to be:

- Protection and enhancement of remaining areas of traditional farmland character which contribute to the character and quality of the Harlow Area landscape;
- Improvement of urban fringe farmland, including restoration of characteristic landscape features and elements where appropriate;
- Integrated management and enhancement of the 'multi-functional landscapes' of the Lee Valley, the Stort Valley and their associated tributary river corridors;

[33] Essex Landscape Character Assessment (CBA, 2003); Hertfordshire Landscape Character Assessment (Hertfordshire CC, 2001 and on-going); Lee Valley Regional Park Landscape Appraisal (LDA, 2000); Appendix A of Volume 1 - Harlow Area Landscape and Environment Study (CBA, 2004).

- Promoting further uptake of agri-environmental funding support for targeted enhancement of key landscape features within intensively farmed areas under arable;
- Protection of the distinctive pattern of small, irregular pre-18th century field systems in the west and south of the Harlow Area;
- Softening the visual impact of the extensive areas of glasshouses that dominate the plateau landscape to the east of the Lee Valley;
- Protection of the ancient woodlands, parklands, commons and assarted fields that provide strong and visible links with the past;
- Protecting the rural settlement pattern of predominantly small-scale medieval and post-medieval settlements as key characteristic features of the Harlow Area landscape;
- Physically and visually linking the internal green spaces of major urban areas (Harlow, Hoddesdon, Cheshunt, Broxbourne and Waltham Cross) with the wider countryside;
- Improving the environmental quality of major highway and railway corridors, and greening of strategic gateways to urban areas;
- Integrating the grain and fabric of the historic landscape into modern land uses where appropriate;
- Protection and restoration of historic designed landscapes as key green infrastructure assets;
- Strengthening local character of urban fringe landscapes through promotion of high quality and distinctive places providing a strong framework for existing and new development.

Summary - Landscape, Townscape and Riverscape Character

The diversity of landscapes and visual experiences are a key contribution to the landscape, townscape and riverscape character of the Harlow Area. The Key Landscape Assets of the Harlow Area include the major physiographic and landscape features providing the structural framework for the landscape generally, and for Harlow in particular, (the river valleys, ridges, plateaux, open farmland and woodland blocks); the individual identity of rural settlements and their dispersed pattern within the landscape; areas of historic landscape; and the range of key views, landmarks and other landscape elements and features that contribute positively to local distinctiveness and sense of place. The main opportunities for strengthening the local character and distinctiveness of landscapes through the development of the Green Infrastructure Network within the Harlow Area primarily relate to the restoration, enhancement and improvement of landscape features of ecological value, historic designed landscapes and other landscape of cultural value through positive land management. There is also an important opportunity to ensure that Gibberd's 'landscape-led' approach to the planning and development of Harlow is continued in the design of new development in and around the town, and reflect in the GIP. New development needs to incorporate a strong landscape framework to ensure that its urban form and building design is shaped by, and responds to, the character of the surrounding countryside.

2.5 Archaeological, Historical and Cultural Assets

2.5.1 Figure 5 - Archaeological, Historical and Cultural Assets - identifies the wide range of archaeological, historical and cultural assets, in both public and private ownership, within the Harlow Area.

Key Assets

2.5.2 The Key Archaeological, Historical and Cultural Assets within the Harlow Area are:

- The wide variety of archaeological, historical and cultural assets, much of which can be documented from a range of historical periods, that contribute to the character of landscapes, townscapes and riverscapes throughout the Harlow Area;
- The important areas of 'ancient' landscape that include both man-made and semi-natural features that pre-date 1600 - such as the areas north of Copped Hall estate at Ongar Park, east of North Weald Bassett and near Mathans Wood;
- The Stort Valley historic landscape - with its relict enclosed meadow pasture and good survival of prehistoric monuments occupying the river gravel terraces along the river, and also as a major routeway, meeting place and boundary in prehistoric times;
- The visible late Saxon and medieval settlement pattern, and the underlying Roman and later prehistoric pattern, including some of the most important prehistoric and Roman ritual complexes and settlement sites in Southern England at Harlow, Sawbridgeworth and west of Hoddesdon.
- The River Lee - with its areas of relict enclosed meadow pasture that typify the Post- Medieval management of the river and its floodplain, and the high potential for the discovery of important Neolithic sites;
- The airfields of historic and cultural value - Allen's Green, Hunsdon and North Weald;
- The late 19th and 20th glasshouse industry - a significant historical and cultural component of the Roydon and Nazeing landscape;
- The tracts of agricultural landscapes that retain a high degree of surviving historic features such as relatively intact pre-18th century field boundary patterns found throughout the Harlow Area;
- The importance of alluvial peat in the Stort and Lee floodplains for Mesolithic remains and landscapes.
- The 70 Scheduled Monuments - with notable concentrations around Hunsdon and Matham Wood and at Waltham Abbey;
- The 34 urban Conservation Areas - predominantly located in the historical centres of the towns and villages;

- The two rural Conservation Areas - at Roydon / Nazeing and around Copped Hall;
- The concentrations of visible archaeological areas and features in the landscape;
- The numerous remnants of Ancient Woodland - particularly to the north and north east of Epping;
- The nationally and regionally important 20th century military remains - the airfields at Hunsdon, Allen's Green and North Weald Bassett, and the sites associated with the London Mobilisation Centres;
- The nine Registered Parks and Gardens of Special Historic Interest - including large parks at Copped Hall, Down Hall, Stanstead Bury, Pishiobury and Wormleybury, and smaller parks and gardens associated with Harlow Water Gardens, Gibberd's House and Garden in Harlow, Coppersale House, and Amwell Grove and Pool;
- The concentrations of 18th and 19th century parkland of varying condition not on the Register of Parks and Gardens of Special Historic Interest - particularly between Ware and Sawbridgeworth north of the River Stort, west of Hoddesdon and north of Epping Forest;
- The 15 isolated areas of Registered Common Land - in particular, the commons along the Epping Long Green ridge south of Harlow and alongside the River Stort near Parndon Mead, and other smaller commons at Housham Tye for example;

Opportunities

2.5.3 The key generic opportunities for the protection and enhancement of archaeological, historical and cultural assets within the Harlow Area are considered to be:

- The contribution that archaeological, historical and cultural assets makes to landscape, townscape and riverscape character by creating a strong sense of place, sense of time, and sense of community - especially with regard to publicly accessible assets in and around urban areas;
- Recognising the mutually beneficial inter-relationships between conservation of the historic environment and biodiversity conservation - particularly with regard to the protection, enhancement repair and restoration of hedgerows, ancient woodlands and historic buildings and structures (e.g. repair of military pillboxes to provide bat roosts);
- The enhanced presentation and interpretation of publicly accessible archaeological, historical and cultural assets linked to opportunities for increased research and education programmes (linked to the 'The Past on Your Doorstep, the Future in Your Hands' Groundwork projects which are introducing young people to industrial heritage);
- The potential to further maximise the contribution of the historic environment to landscape character and distinctiveness, especially in terms of the repair and restoration of historic parks and gardens, river valley water meadows and built historic features, ancient woodland and hedgerows;

- The potential for achieving 'Green Heritage Site' status to promote the value of historic public parks in the Harlow Area - for example, Epping Forest has been awarded a Green Heritage Site Award in recognition of its success in developing best practice in the care and upkeep of public parks;
- The linking of similar sites through connective networks to encourage further exploration of the Harlow Area - for example, historic mill sites along the river valleys;
- The potential to re-establish historic field patterns in key areas where future farming practices allow through Environmental Stewardship - particularly in the area surrounding the M11;
- The potential to secure appropriate protection for, and sympathetic ownership of, historic buildings, sites and structures as key green infrastructure assets;
- The potential to take archaeological sites out of arable / woodland cultivation, where future farming practices allow;
- The potential to create physical and intellectual access to currently neglected archaeological, historical and cultural assets;
- The potential for the discovery of undisturbed archaeological landscapes within Ancient Woodlands due to their continuous woodland cover since c.1600 AD.

2.5.4 Priority areas that can deliver many of the above opportunities for enhancing the management of Key Archaeological, Historical and Cultural Assets within the Harlow Area for the benefit of local communities and visitors, landscapes and in some cases, nature conservation, are shown on Figure 5a - Priority Areas for Enhanced Management of Archaeological, Historical and Cultural Assets. The priority areas relate to the following types of 'heritage landscapes' which reflect key historic themes that are characteristic/distinctive of the Harlow Area (numbers refer to Figure 5a):

- Ancient landscapes focused on the following broad areas
  1. Hatfield Forest
  2. Waltham Abbey and Environs
  3. Epping Forest Fringe
  4. Ongar Park and Woodlands
  5. Nazeing and Rye Hill

- Historic parklands focused on the following broad areas
  1. North of River Stort
  2. Down Hall
  3. West of Hoddesdon
  4. Epping Forest Fringe

- Historic airfields focused on the following broad areas
  1. Allen's Green
  2. Hunsdon
  3. North Weald

- Stort Valley historic landscapes

Summary - Archaeological, Historical and Cultural Assets

There are a wide range of sites and features of archaeological, historical and cultural value within the Harlow Area that contribute to sense of place through a link with the past. Key assets include historic parks and gardens, mills, medieval settlement sites, prehistoric sites, 20th century military sites and airfields, historic buildings and townscapes and monastic sites. Other surviving historic landscape features include ancient woodlands, common land, historic routeways, water meadows and historic field systems. Many of these assets are on private land and not accessible to the general public. However, there is a major opportunity through the GIP to develop a strategic approach to maximising the potential quality of life benefits of the historic environment through enhanced physical and intellectual access to, and improved presentation of, key archaeological, historical and cultural assets in the Harlow Area. Beyond the known sites and features, much of the wider landscape has potential for the discovery of archaeology[34] from a range of periods that can add further value to the GIP as an educational resource.

2.6 Access Networks and Recreational Facilities

2.6.1 Figure 6 - Existing Access Networks and Recreational Facilities - identifies the wide range of opportunities for local communities to access and enjoy the countryside in the Harlow Area. Participation in countryside recreational activities can bring significant benefits to society, by helping to promote public understanding of rural issues, and providing opportunities to improve health and quality of life.

Key Assets

2.6.2 The Key Access and Recreational Assets within the Harlow Area are:

[34] The London-Stansted-Cambridge Archaeological Character Project (English Heritage, Essex CC, Hertfordshire CC, in progress) is currently developing a predictive modelling method for assessing the archaeological potential for this growth area, which includes part of the GIP Harlow Area east of the Lee Valley and north of the Stort Valley.

- The dense network of public rights of way that connects town and country, including:
  * Footpaths
  * Bridleways
  * Roads used as public paths
  * Byways open to all traffic
- The extensive network of recreational paths / trails for walkers that provide good connections between the main centres of population and the main areas of public open space within the Harlow Area. These are mapped on Figure 6 and include:
  * Lee Valley Walk (1)
  * Harcamlow Way (2)
  * Three Forests Way (3)
  * The New River Path (4)
  * Stort Valley Way (5)
  * Essex Way (6)
  * Forest Way (7)
  * Hertfordshire Way (8)
- The off-road cycle route following the River Lee from Waltham Abbey north to Cheshunt Junction;
- The cycle route connecting north west Harlow to Roydon and the River Stort;
- The strategic road network, comprising the following motorways and A roads:
  * the M25 that severs the main part of Epping Forest from the Harlow Area
  * the M11 connecting the M25 with Stansted and Cambridge to the north
  * the A10 connecting the M25 to Ware
  * the A414 connecting the A10 near Ware to North Weald Bassett via Harlow / the M11
  * the A1184 connecting Harlow to Bishop Stortford
- The local road network, comprising often busy B roads connecting the smaller settlements within rural areas;
- The WAGN railway line connecting Liverpool Street Station in London to stations in the Harlow Area along the Lee Valley and Stort Valley;
- The London Underground Central Line connecting Epping to Liverpool Street Station in London;
- A concentration of car parks within the Lee Valley Regional Park associated with focal points for recreational facilities which are key destinations for countryside recreation activities - in contrast, the rest of the Harlow Area is relatively deficient in car parking provision;
- The River Lee Navigation and the River Stort Navigation used for recreational boating;
- A small area of Access Land secured under a Countryside Stewardship Agreement at Roydon Mead;

- A generally good level of accessible open space throughout the Harlow Area, mostly well-connected to the main areas of population by the public rights of way route network, the local highways network and, in some cases, by railway;
- Three main areas of 'strategic public open space' comprising sites managed for public access over 400 ha. These are:
  * Hatfield Forest Country Park (managed by the National Trust)
  * Lee Valley Regional Park (managed by the Lee Valley Regional Park Authority)
  * Epping Forest (managed by the Corporation of London)
- Other smaller areas of public open space comprising sites with public access of less than 400 ha within and on the edge of urban areas typically managed by public authorities (cemeteries, golf courses, nature reserves, common land, urban parks, sports grounds and allotments, etc);
- The focal points and gateways for access to major areas of public open space at key destinations throughout the Harlow Area that provide a range of visitor infrastructure and/or access to recreational facilities (see Destinations/Focal Points on Figure 6);
- Olympic canoeing facilities in the Lee Valley Regional Park.

Opportunities

2.6.3 The Harlow Area has a wide range of opportunities and facilities to enable local communities and visitors to gain access to and enjoy green spaces and the wider countryside. This includes an extensive and generally well-connected public footpath network, and key resources such as the Lee Valley Regional Park, Hatfield Forest Country Park and Epping Forest. However, there are key opportunities to further enhance the provision, connectivity and quality of the existing access and recreational resources in the Harlow Area.

2.6.4 The key generic opportunities for improving the access network and recreational facilities within the Harlow Area are considered to be:

- An increase in high quality connections from 'doorstep to countryside' to encourage inclusiveness and use of the environment for informal recreation contributing to healthy living and a sense of well-being;
- Transport corridors, which incorporate functional environmental infrastructure contributing to improved water management, and increased urban and rural biodiversity;
- Improved accessibility to the archaeological, historical and cultural resource to enhance sense of place and sense of community;

- Increased access providing opportunities for experiencing the variety of local cultural and environmental and educational destinations to encourage exploration;
- A connected network of footpaths, cycleways and bridleways that is safe, attractive and well publicised to create a significant leisure and recreational resource;
- Integration of Sustrans proposals for extending the national cycle network through the Harlow Area and promotion of this to local residents and wider audiences;
- Access and movement through the Harlow Area can exploit the potential for a sequence of views and landmarks;
- Improved access can raise the profile of the Harlow Area as a place to live, visit and work, thereby attracting investment and people;
- Alternative and safe routes to work, schools, sports facilities, retail areas, nature reserves, parks and other destinations can enhance liveability for local communities;
- Easy access to information about routes and integration of various types of transport can encourage better use of existing and future transport links;
- The potential of the Harlow Area to become an exemplar for demonstrating sustainable approaches to the management of conflicts between recreational uses and conservation of the natural environment;
- Maintaining access to and along riversides for walkers, cyclists and horse riders;
- The provision of high quality visitor facilities in strategic locations on the access network;
- Provision of adequate facilities and infrastructure along the navigations for watercraft.
- Promote improvements in environmental quality, planning and design of existing designated open spaces to encourage use and ensure that they meet their full potential;
- The contribution to and celebration of sense of place, sense of time, and sense of community should be recognised and exploited throughout the open space network;
- The value of the resource for improving biodiversity in urban, urban fringe and rural areas through habitat creation and landscape management should be recognised and exploited;
- The historic and cultural value of the resource should be recognised and exploited;
- The educational benefits of parks and open spaces as a setting for learning, improving skills, etc. should be recognised and exploited;
- Better designed and managed designated open space to reduce anti-social activities, decrease personal and property safety issues;
- The economic benefits of the resource through the perception and reality of the quality of the environment should be exploited;
- The creation of new high quality public open space in deficient areas and within new settlements and urban extensions;

- Promote the involvement of existing and new communities in the improvement and creation of green spaces to meet local expectations and needs;
- The potential for increased water-based recreational facilities in the Lee valley Regional Park within the Harlow Area associated with opportunities arising from the 2012 London Olympics.

2.6.5 The priority areas with many of the above opportunities for enhancing and extending green spaces and access links connecting urban areas with the countryside are shown on Figure 6a - Priority Areas for Enhanced Green Spaces and Access Links for People. The main opportunities relate to:

- Public Open Spaces
- Destinations and Focal Points
- Strategic Access Links

Public Open Spaces

2.6.6 The existing strategic and other local public open spaces shown on Figure 6a need to be safeguarded, and enhanced where necessary, to secure their role as core functional components of an integrated green infrastructure network.

2.6.7 In relation to levels of provision, the whole of the Harlow Area population is within 8km of a publicly accessible open space over 500ha (the Lee Valley Regional Park and Epping Forest), which is line with current advised standards of provision as part of a green infrastructure network[35]. With regards to more 'local' district-level public open space provision, there are no natural green space parks over 20ha with publicly accessible open space within 1.2km of local communities in North Harlow and Sawbridgeworth, which is below current standards[36]. There is an opportunity to address this deficiency through the acquisition of land along the Stort Valley to enable the creation of a new linear park (the 'Stort Riverpark') between the Lee Valley Regional Park and Bishop's Stortford. This could possibly be developed as a formal extension of the Lee Valley Regional Park, providing for a strategic co-ordinated approach to environmental and recreation management of the Lee and Stort river corridors as a key component of the green infrastructure network in the Harlow Area.

Destinations and Focal Points

2.6.8 There are a number of locations within the Harlow Area that are obvious destinations for the local community and visitors. These are often focal points of recreational activity and typically provide

[35] Biodiversity by Design - A Guide for Sustainable Communities, Page 18 (TACP, 2004)
[36] Ibid

important gateways for access to the Lee Valley, the River Stort and the wider countryside. As such, maintaining and enhancing environmental quality and visitor facilities at these destinations is vital to the provision of a functional, accessible and high quality network of green spaces, places and links for people in the countryside in and around Harlow Area.

2.6.9 Major Destinations with well-developed visitor infrastructure that are primary gateways to the countryside, and provide the main focal points for formal and informal recreational activities within the Harlow Area, need to be safeguarded as core functional components of the network linking urban areas with the countryside. Where necessary, some of these destinations would benefit from enhancement to improve access, appearance and interpretation. These Major Destinations include (numbers refer to Figure 6a):

1. Hatfield Forest Country Park
2. Parndon Wood Nature Reserve
3. Harlow Town Park
4. Clayton Hill Country Park
5. River Lee Country Park
6. Waltham Abbey

2.6.10 Other Key Destinations that currently provide a more limited range of visitor infrastructure and/or access to recreational facilities are mainly the focus of access routes along and across the Lee and Stort river corridors. These destinations also need to be safeguarded - and further enhanced to improve access, appearance and interpretation where necessary - as functional components of the network. The Key Destinations include (numbers refer to Figure 6a):

1. Gibberd's Garden
2. Eastwick Medieval Settlement Site
3. Epping Green / Rye Hill
4. Roydon Mill
5. Cheshunt Station
6. Broxbourne / Keysers Estate
7. Dobb's Weir / Nazeing Mead
8. Rye House
9. St. Margarets / Amwell Nature Reserve
10. Pishobury Park

2.6.11 To complement this network of existing Major and Other Key Destinations, there is an opportunity to develop a limited number of New Destinations with a range of visitor facilities appropriate to specific locations. Opportunities for establishing New Destinations at strategic locations within the Harlow Area to provide additional gateways for access to the wider countryside include (numbers refer to Figure 6a):

1. Gilston Park Area - gateway to countryside north of Harlow
2. Copped Hall Area - gateway to Epping Forest from the Harlow Area
3. Wintry Wood to Beachet Wood - gateway to the woodland complex between Epping and North Weald Bassett and the wider countryside east of the M11

2.6.12 These locations offer opportunities to promote wider access to and enjoyment of areas of the countryside that are currently less visited, yet provide (or have the potential to provide) a diverse range of landscape experiences that would be attractive to both local communities and visitors alike.

2.6.13 There are opportunities for safeguarding, enhancing and extending Strategic Access Links to connect key towns for commuters, and to provide people with access to the major areas of public open space for recreation. The main opportunities for Strategic Access Links relate to:

- Greenways
- Riverways
- Parkways

Greenways

2.6.14 There is an opportunity to develop a strategic network of predominantly car-free off-road 'Greenway' routes connecting the Harlow Area with the national, regional and sub-regional network of footpaths and cyclepaths (see Figure 6a for indicative links based on key destinations and gaps in the network). These would be key routes for recreation and commuting, providing good connections between the main centres of population, the main areas of public open space and major destinations for recreation and leisure within the Harlow Area.

2.6.15 The Greenways would be largely based on public footpaths and cyclepaths (and bridleways in some areas) through and alongside linear habitats, with some off-road sections requiring creation of new links. Occasionally, short sections of the local road network would need to be used to connect gaps between off-road sections of the proposed Greenways; within rural areas, the aim would be to promote 'quiet lanes' where traffic speeds and growth are controlled for the benefit of non-motorised users.

2.6.16 The Greenways could incorporate the Sustrans proposals for extending the national cycle network through the Harlow Area[37], proving shared routes for pedestrians and cyclists.

Riverways

2.6.17 'Riverways' are multi-functional strategic corridors providing a focus for water-based recreation and access along their banks for walkers, cyclists and horse riders. They include a number of destinations that are gateways to the wider network of footpaths, cyclepaths and bridleways in the Harlow Area. The Riverways can include navigable and non-navigable watercourses.

Parkways

2.6.18 'Parkways' are the strategic network of motorways, A roads and railways routes that connect towns in the Harlow Area to the national, regional and sub-regional transport network. There are key opportunities to improve the appearance of Parkways as they are important to the image and first impressions of the Harlow Area for visitors, and in many cases these will require targeted landscape design enhancements to improve the environmental quality of the route corridors and at key gateways - such as railway stations and roundabouts. The current proposal for a high quality public transport corridor linking Harlow with North Weald Bassett and Epping, provides an opportunity to create an attractive and ecological diverse access route as a key component of the Parkway network.

Summary - Access Networks and Recreational Facilities

The Harlow Area has a wide range of opportunities and facilities to enable local communities and visitors to gain access to and enjoy the countryside, for both formal and informal recreational activities. This includes an extensive and generally well-connected public footpath network, and key resources such as the Lee Valley Regional Park, Hatfield Forest Country Park and Epping Forest. There is a key opportunity to address an identified shortfall in public green space provision for the communities of North Harlow and Sawbridgeworth through the creation of a new linear park - the Stort Riverpark. There are also opportunities to further enhance the connectivity and quality of the existing access network in and around Harlow, including incorporation of the Sustrans proposals for extension of the national cycle network in the Harlow Area into the GIP.

[37] Pers Correspondence by Email 1/7/05 from Nigel Brigham, Regional Manager, Sustrans (East of England)

2.7 Key Green Infrastructure Assets and Opportunities in and around Harlow

2.7.1 The Harlow Area Landscape and Environment Study[38] identified key environmental assets in and around the northern, southern, western and eastern fringes of Harlow, and highlighted opportunities for safeguarding, enhancing and extending these assets to improve the quality and functionality of green infrastructure. The key assets are mapped on Figure 7 - Key Green Infrastructure Assets in and around Harlow, and these are described below with a summary of the main opportunities identified in each fringe area.

Northern Fringe of Harlow

Key Assets

2.7.2 The key green infrastructure assets within the Northern Fringe of Harlow are:

- Sensitive historic landscapes within the area include Pishiobury Park, Gibberd Garden and Gilston Park (which is being considered for the English Heritage Register of Historic Parks and Gardens). These historic landscapes are associated with pre 19th century historic fields within the River Stort corridor.
- Many areas of sensitive historic landscape are adjacent to historic communication routes.
- There are several areas of urban greenspace character within and adjoining the River Stort corridor to the north of Harlow. There are also substantial areas of urban greenspace character within the northern urban edge, for example, Harlow Town Park and the Sports Centre.
- The rising ridges and slopes to the north of Harlow, around Gilston and High Wych, are visually significant slopes which have an effect on the visual character of the area through their ability to restrict and control views between places.
- There are two sensitive recreational routes (Stort Valley Way and Towing Path), which follow the banks of the main rivers in the area.
- There are several sensitive woodland areas, which comprise small areas along field boundaries and within corners of fields, and larger areas of Ancient Woodland (Home Wood, Golden Grove, Sayes Coppice and Markhall Wood). Several of these areas are located in close proximity to the River Stort corridor.
- The higher ground of the slopes to the north of Harlow facilitates key long distance views of the town and the surrounding landscapes. These offer wide panoramic views in places.

[38] Volume 2 - Detailed Analysis of Harlow's Fringes (CBA, 2004)

- The River Stort's floodplain has many surviving areas of historic fields and numerous significant nature conservation designations.
- Important historic village cores, such as Eastwick - with some historic settlement cores designated as Conservation Areas, such as Churchgate Street within Harlow.

Key Opportunities

2.7.3 The main opportunities for safeguarding, enhancing and extending the above key assets within the Northern Fringe are set out below.

2.7.4 The River Stort Valley is a significant landscape feature containing important habitats and a number of protected or notable species. The river valley is already widely used for recreation and river based leisure pursuits. Access in some areas is constrained, with roads and railways being significant barriers to north-south crossing of the valley. The river corridor landscape and its associated vegetation are important to the setting of Harlow and provide significant screening in the wider landscape for the existing riverside industrial development. The minor tributaries of the Stort are important elements of landscape pattern, and are relics of an ancient landscape that offer an ecological potential as reserves for wildlife and as corridors for species movement.

2.7.5 Gilston Park and the surrounding landscape have a rich heritage that is both visible and attractive. The historic trees and hedgerows are important for biodiversity and together with the network of rural lanes and public rights of way, are important elements of the landscape character of the area and provide a sharp contrast to the modern urban area of Harlow.

2.7.6 The visually significant slopes between Gilston and High Wych are part of the setting of Harlow and its visual containment to the north. Trees and hedgerows have been lost to changes in agricultural practice and Dutch Elm disease, resulting in an open landscape low in biodiversity.

2.7.7 Other opportunities include:

- Conserve and enhance wetland habitats and woodland along the River Stort corridor and ensure that connections with tributaries are protected.
- Improve access and transport links for pedestrians, cyclists and equestrians along the River Stort valley linking into adjacent green spaces and public rights of way networks and ensure that movement is not impeded or discouraged by new infrastructure.
- Improve facilities and access for waterborne users of the River Stort and their craft.

- Utilise Aggregates Levy Sustainability Fund (ALSF), to seek landscape and ecological improvements in the area related to past mineral extraction.
- Conserve and strengthen the natural hydrology and vegetation of the minor river valleys, removing culverts where possible.
- Promote restoration and management of historic parkland landscapes including conservation of characteristic estate boundaries, replanting and perpetuation of specimen parkland trees and maintenance of distinctive estate buildings and cottages.
- Protect the character and setting of historical features and the historical parkland around Gilston Park and Eastwick and ensure ecological interest is sustained.
- Avoid intrusive development on the visually prominent open ridges and slopes around High Wych that are important as the countryside backdrop to the setting of Harlow.
- Following historic field patterns, plant new woodland blocks and hedgerows on the ridges and slopes around High Wych, connecting and enhancing existing features and linking potential areas for wildlife.
- Safeguard Gibberd's Garden including its landscape setting.
- Maintain a landscape buffer around historic settlements.
- Desirability of retaining the rural character of largely undeveloped/open countryside to the north of the Stort Valley, and avoiding an increased sense of urbanisation through erosion of individual identity of rural settlements and their dispersed pattern within the landscape.
- Scope for mitigating visual impact of development within landscape through careful siting of urban elements within undulating ridge and valley topography.
- Undeveloped, hidden and 'green' character of Stort Valley maintained by avoiding development within the floodplain.
- The potential major beneficial contribution of the Stort Valley as a new 'green wedge' providing a visual separation buffer between new and old urban areas.
- Scope for linking Stort Valley with new and existing green wedges/corridors to the north and south to provide a connected network of accessible open space and habitats for wildlife as part of a green infrastructure plan to deliver a new landscape framework of woodland blocks, hedgerows and hedgerow trees - with a strong focus on tributary river valleys.
- Scope for retention and linking of small nature conservation and historic environment sites and features such as woodland blocks and hedgerow field boundaries as significant elements of an overall green infrastructure plan for any urban extension.
- Desirability of maintaining and enhancing the character and fabric of sensitive historic landscapes within areas of designed parkland not currently recognised through formal designation.

Eastern Fringe of Harlow

Key Assets

2.7.8 The key green infrastructure assets within the Eastern Fringe of Harlow are:

- Sensitive historic landscape within the area encompasses the band of pre 19th century fields (located between Churchgate Street and Threshers Bush) and an area to the south of Latton Bush and Potter Street which includes a series of linear Commons and a combination of Ancient Woodland blocks and small areas of 18th-19th century enclosure.
- There are several areas of urban greenspace character, close to the urban edge within the Eastern Fringe, which contribute to the landscape character of the area.
- The visually significant slope running to the east of the urban edge, limits views into the town from areas of countryside to the east of the M11.
- Two sensitive recreational routes cross the area, providing access to Harlow and the surrounding countryside. The Forest Way route runs from Housham Tye through Latton Bush.
- There are several sensitive Woodland areas, which encompass areas of Ancient woodland, which are also designated as County Wildlife Sites. For example, Harlow Park, Mark Bushes and Latton Park woodland are all areas of Ancient Woodland and County Wildlife Sites. These areas of woodland are located close to the urban edge.
- Conservation Areas (areas of special local or regional architectural or historic interest and character) within the Eastern Fringe are often associated with clusters of Listed Buildings, such as within Churchgate Street, Harlow.

Key Opportunities

2.7.9 The main opportunities for safeguarding, enhancing and extending the above key assets within the Eastern Fringe are set out below.

2.7.10 The ridge top area is an extension of the common land and areas of woodland to the south of Harlow and although less extensive, represents the continuation of an important landscape. The woodland provides a backdrop to the town and emphasises the topographical containment of the ridge. The Common Land provides opportunities for open vistas and views over the town and surrounding countryside. The ridge top coincides with the Forest Way and footpaths connect with the edge of Harlow. Both the woodland and the Common Land are important for local biodiversity, although habitats are fragmented.

2.7.11 The edge of settlement along the Eastern Fringe is generally well served by footpaths and significant 'green wedges' connecting with the countryside. The green wedges have been extended through recent development ensuring a continuity of green corridors.

2.7.12 The farmland around the Eastern Fringe, whilst of historic interest, has been intensively farmed since the 1950's, resulting in significant amounts of hedgerow removals and consequent loss of trees and decline in biodiversity.

2.7.13 The historic settlements of Old Harlow and Churchgate Street and their settings are important features of the area. The new development at Newhall is a distinct new neighbourhood that will require its own setting and landscape framework.

2.7.14 Other opportunities include:

- Conserve and enhance the sensitive woodlands and common land of the broad ridge.
- Use the existing footpath network of the ridge as a focus for new woodland and grassland to 'bridge the gap' in these important habitats and to reinforce the visual containment of the ridge in the setting of Harlow.
- Improve connections between the green wedges of Harlow and the footpath network and accessible open spaces of the countryside.
- Restore the landscape character and biological diversity of the arable farmland through replanting hedgerows and trees along historic field boundaries.
- Protect the character of the historic settlements having regard for their landscape setting and ensure new development is placed in an appropriate landscape setting for its form and design.
- Protect the settings of scheduled monuments/listed buildings and seek to place under appropriate management.
- The countryside between the town and the M11 retains few areas of intact historic landscape, and the landscape character does not exhibit a strong and distinctive sense of place - the M11 corridor provides an obvious 'edge' to urban expansion as experienced from landscapes to the east
- Very limited sites/features of nature conservation and historic landscape value.
- Desirability of maintaining the historic character of Old Harlow and avoiding urbanisation of its landscape setting and further erosion of its identity as a distinct settlement.
- Scope for further extending green wedges between the existing urban edge of Harlow and new neighbourhoods set in the wider countryside to ensure a continuity of green corridors for access and wildlife.

- Scope for softening hard, developed edge of existing/extended urban areas through a green infrastructure plan to deliver new landscape framework of woodland blocks, hedgerows and hedgerow trees.

Southern Fringe of Harlow

Key Assets

2.7.15 The key green infrastructure assets within the Southern Fringe of Harlow are:

- There are significant areas of sensitive historic landscape within the Southern Fringe - to the south of Latton Bush, Foster Street and Potter Street housing (surrounding Harlow Park Ancient Woodland) there is a cluster of Commons, surviving pre 18th century fields and 18th-19th century enclosed fields.
- A combination of Common Land, pre 18th century fields and several historic settlements surround Latton Priory Farm. This area is also bounded by London Road to the east and Rye Hill Road to the south, both of which are surviving 19th Century and earlier roads.
- To the south of Sumners housing, close to Jack's Hatch, a large area of Common Land is situated adjacent to several historic settlements and a cluster of pre 18th century fields. Several surviving 19th century and earlier roads also serve the area.
- Seventeen areas with urban greenspace character provide accessible areas for sport and recreation, whilst also contributing to the landscape character of the area.
- The ridge landform has visually significant slopes, and provides a number of distinctive key long distance views over Harlow and the surrounding area. The ridge also forms part of the distinctive skyline of Harlow. The ridge visually separates the urban mass of Harlow from the character areas to the south.
- There are three interconnecting sensitive recreational routes in the Southern Fringe - Forest Way, Stort Valley Way and Three Forest Way. These provide access for pedestrians and cyclists throughout the area.
- There are five sensitive woodland areas within the fringe, which are particularly significant elements within the local landscape. Several of these are defined as Ancient Woodland and County Wildlife Sites, highlighting their importance as wildlife and nature conservation assets.

Opportunities

2.7.16 The main opportunities for safeguarding, enhancing and extending the above key assets within the Southern Fringe are set out below.

2.7.17 The ridge is rich in Common Land and areas of woodland. The woodland provides a backdrop to the town and emphasises the topographical containment of the ridge. The Common Land provides opportunities for open vistas and views over the town and surrounding countryside. The ridge is well served by public rights of way including two Trails (the Stort Valley Way and Forest Way), but in places poor management and connections inhibit access. Both the woodland and the Common Land are important for local biodiversity although existing habitats are fragmented with coverage in the middle section particularly poor.

2.7.18 The edge of settlement along the Southern Fringe is generally well served by footpaths and significant 'green wedges' connecting with the countryside, but it also suffers from suburbanisation and lack of landscape structure which discourage access. Access is impeded in some area by roads, physical barriers such as fences or gates, poor footpath connections and lack of interpretative information or signage.

2.7.19 The farmland on the slope south of the ridge, whilst of historic interest with good public access, has been intensively farmed since the 1950's resulting in significant removal of hedgerows and consequent loss of trees and decline in biodiversity.

2.7.20 Other opportunities include:

- Conserve and enhance the sensitive woodlands and common land of the broad ridge.
- Use the existing footpath network of the ridge as a focus for new woodland and grassland to 'bridge the gap' in these important habitats and to reinforce the visual containment of the ridge in the setting of Harlow.
- Enhance the landscape character of the rural urban interface to reinforce the sharp distinction between town and country and promote biodiversity.
- Improve connections between the green wedges of Harlow and the footpath network and accessible open spaces of the countryside.
- Restore the landscape character and biological diversity of the arable farmland on the uplands and southern slopes through replanting hedgerows and trees along historic field boundaries.
- Protect the ancient monuments and listed buildings, having regard for their settings and seek to place them under appropriate management.

- Desirability of maintaining the largely undeveloped/'green' character and well-defined edge/backdrop to Harlow's townscape by avoiding development on the visually sensitive open ridge slopes and the distinctive ridge-top skyline as experienced from internal green wedges.
- Safeguard existing major areas of woodland/common land of nature conservation, historic environment and landscape value along the urban edge from development.
- Desirability of retaining the largely rural nature of the wider countryside as experienced from views south of the ridge, and avoiding an increased sense of urbanisation within the countryside gap between Harlow and Epping.
- Scope for softening hard, developed edge of existing/extended urban areas through green infrastructure plan to deliver new landscape framework of woodland blocks, hedgerows and hedgerow trees.
- Potential of severance and amenity effects on key recreational routes such as the Stort Valley Way.

Western Fringe of Harlow

Key Assets

2.7.21 The key green infrastructure assets within the Western Fringe of Harlow are:

- There is one large significant area of historically significant and intricate sensitive historic landscape located to the south of Roydon and stretching to Broadley Common, Tylers Cross and Roydon Hamlet. This area encompasses the Nazeing and South Roydon Conservation Area, several interconnecting patches of pre 18th century fields and historic settlements. The area is also connected by a series of surviving 19th century and earlier roads.
- The substantial strip of urban greenspace running north south on the eastern boundary of the Western Fringe provides accessible open space for residents from surrounding housing areas. Parndon Brook is also lined on the northern side by a strip of urban greenspace, which enhances the setting of the river corridor.
- The visually significant slope that encompasses the hilltop between Roydon and Katherines permits several key long distance views of the urban edge and over the town. This landform, limits views to a certain extent from the northwestern areas of the Western Fringe.
- The lower areas of the River Stort and River Stort Navigation river valley are a flood risk area, and encompass highly sensitive concentrations of historic and nature conservation designations within the floodplain.
- There are two sensitive recreational routes in the Western Fringe - the Stort Valley Way and Three Forests Way, which allow access to the area for pedestrians and cyclists.

- There are several sensitive woodland areas within the Fringe. Three blocks are designated as Ancient Woodland (Totwellhill Bushes, Harold's Grove and Burnett's Wood), two of which are also County Wildlife Sites. These woodland blocks help to screen the urban edge, whilst also forming a key part of the landscape infrastructure for the area.

Opportunities

2.7.22 The main opportunities for safeguarding, enhancing and extending the above key assets within the Western Fringe are set out below.

2.7.23 A significant feature of the area is the Nazeing and South Roydon Rural Conservation Area and surrounding landscapes of historical interest. Historic landscape features are fragile and need careful management if they are to retain their historical interest. Interpretation is often difficult and the landscape often needs to be read in conjunction with built elements such as settlements or buildings and the pattern can often only be recognised from certain viewpoints.

2.7.24 The minor tributaries of the Stort are important elements of landscape pattern and are relics of an ancient landscape that in some locations include nationally important stands of native black poplars. The ecology and natural drainage of these tributaries are in parts compromised by culverts but nevertheless remain an important habitat for the black poplar and associated biodiversity.

2.7.25 The Stort River Valley is a significant landscape feature containing important habitats and a number of protected or notable species. The river valley is already widely used for recreation and river based leisure pursuits. Access in some areas is constrained, with roads and railways being significant barriers to north-south crossing of the valley. The landscape of the river and its associated vegetation are important to the setting of Harlow and provide significant screening in the wider landscape for the existing riverside industrial development. The minor tributaries of the Stort are important elements of landscape pattern and are relics of an ancient landscape that offer an ecological potential as reserves for wildlife and as corridors for species movement.

2.7.26 Other opportunities include:

- Promote restoration and management of the historic farmland landscapes in and around the Nazeing and South Roydon Conservation Area. This should include conservation of characteristic field boundaries, replanting and perpetuation of veteran trees and historic hedgerows and maintenance of distinctive farm buildings and cottages.

- Conserve and strengthen the natural hydrology and vegetation of the minor river valleys, removing culverts where possible.
- Safeguard the nationally important black poplars that grow along the minor river valleys, allowing sufficient space for them to reach maturity and for perpetuation of the species.
- Restore and reinforce the landscape structure around the edges of Roydonbury Park industrial development to soften and screen the harsh edge.
- Development and highway maintenance works or 'improvements' should respect the character of the rural lanes and resist changes that add to or introduce suburban features and materials.
- Desirability of retaining the individual identity of rural settlements and their dispersed pattern within the landscape by restricting growth to narrow corridors along existing urban edge of Harlow.
- Desirability of safeguarding the large area of nature conservation, historic environment and landscape value on the plateau between Roydon, Lower Nazeing and Epping Green by restricting growth to a narrow corridor along the existing urban edge of Harlow.
- Scope for major improvement of harsh/poor visual quality of rural-urban transition through new urban environment and enhanced landscape treatment along western edge of Harlow.

3.0 THE GREEN INFRASTRUCTURE NETWORK

3.0 THE GREEN INFRASTRUCTURE NETWORK

3.1 General

3.1.1 This section presents the Green Infrastructure Network for the Harlow Area - a strategic network of connected multi-functional green spaces and links created, protected and managed for the benefits of both people, wildlife and landscapes.

3.1.2 The development of the Network involved the integration of the environmental assets mapping and opportunities analysis to identify a vision and proposals for multi-functional green infrastructure. This process was informed by the views and aspirations of local stakeholder groups gathered via a well-attended seminar and workshop held in June 2005.

3.2 Strategic Opportunities for the Green Infrastructure Network

3.2.1 The analysis of the natural and cultural environmental assets within the Harlow Area in Section 2.0 demonstrates the potential to develop these assets as part of an integrated and connected network of green infrastructure to provide a spatial planning framework for land development, growth management and built infrastructure planning.

3.2.2 The overall strategic opportunities for the Green Infrastructure Network presented by the existing resource includes the following:

- The physical resources and natural systems that influence local and regional distinctiveness, land use, biodiversity, and landscape and townscape character. The GIP provides a significant opportunity to maximise the potential of river corridors, floodplains and tributary streams to meet social, economic and environmental benefits for local communities and provide important habitats for wildlife, while overcoming the challenges of climate change.

- The ecological assets that contribute to biodiversity throughout the Harlow Area. Key opportunities include the restoration, enhancement and improvement of features of ecological value, maintaining the connectivity and viability of ecological features and habitats throughout the area - focused on existing woodland, hedgerow field boundaries and river corridors. Other significant opportunities include the protection of existing sites of nature conservation value through the sensitive design, layout and location of new urban development, agricultural activities, flood defence operations and recreational uses. The priority areas for enhanced green spaces and links for wildlife in the Harlow Area were shown on Figure 3c.

- The diversity of landscapes and visual experiences that are a key contribution to landscape, townscape and riverscape character. The main opportunities for strengthening the local character and distinctiveness of landscapes within the Harlow Area primarily relate to the restoration, enhancement and improvement of landscape features of ecological value, historic designed landscapes and other landscape of cultural value through positive land management.

- The archaeological, historical and cultural assets that contribute to sense of place through a link with the past. Opportunities include developing a strategic approach to maximising the potential quality of life benefits of the historic environment through enhanced physical and intellectual access to, and improved presentation of, key archaeological, historical and cultural assets. This includes the legacy of Harlow's urban form and layout as designed by Gibberd. The priority areas for enhanced management of archaeological, historical and cultural assets in the Harlow Area were shown on Figure 5a.

- The network of green spaces and access links throughout the Harlow Area that provide a wide range of opportunities to enable local communities and visitors to gain access to and enjoy the countryside, for both formal and informal recreational activities. There are strategic opportunities to further enhance the connectivity and quality of the existing access and recreational resources, and to address deficiencies in access to public open space close to local communities in North Harlow and Sawbridgeworth through the creation of a linear Riverpark based on the Stort Valley. There is an opportunity to develop the network of existing and potential new strategic destinations within the Harlow Area that are focal points for the local community and visitors, and provide key gateways to the wider countryside. Maintaining and enhancing environmental quality and visitor facilities at existing destinations is vital to the provision of a functional, accessible and high quality network of green spaces, places and links for people in the countryside in and around Harlow Area. There are also opportunities to develop the network of existing and new strategic access links, by safeguarding, enhancing and extending these to connect key towns for commuters, and to provide people with access to the major areas of public open space for recreation. The priority areas for enhanced green spaces and access links for people in the Harlow Area were shown on Figure 6a.

- The key green infrastructure assets in and around Harlow which present opportunities for enhancing and extending these assets to improve the quality, functionality and accessibility of green infrastructure in the urban fringe for Harlow's residents.

3.2.3 Overall, there is a major opportunity to through the GIP to achieve more sustainable future landscapes in which the important environmental qualities and access opportunities of the countryside within the Harlow Area are sustained and positively enhanced, whilst enabling sensitively located and high quality new development to be successfully accommodated to meet strategic development needs.

3.3 The Vision for Green Infrastructure in the Harlow Area

3.3.1 The overall vision that underpins the GIP was presented at the front of this document, and is also set out in Box 3. The Vision for Green Infrastructure in the Harlow Area is based on an understanding of the natural and cultural assets in and around Harlow, and reflects the potential to develop these assets as part of an integrated and proactive approach to land development, growth management and built infrastructure planning. It is about promoting green infrastructure planning as a key mechanism for delivering sustainable communities and quality of life benefits within the Harlow Area, whilst proving appropriate protection and management of key green infrastructure assets.

3.4 The Green Infrastructure Network

3.4.1 The overall vision for green infrastructure in the Harlow Area will be pursued through the creation, protection and enhancement of a network of multi-functional and connected green spaces, places and links as illustrated on Figure 8 - The Green Infrastructure Network for the Harlow Area. This Network incorporates and reflects the key green infrastructure assets and opportunities outlined in Section 2.0.

3.4.2 The Green Infrastructure Network presented on Figure 8 is conceptual in nature, and serves to provide an indicative outline of the proposed network of green spaces and links throughout the Harlow Area. It is intended that the Network will be developed and defined in more detail at a local level through area-specific masterplans prepared by planners and developers for planned growth areas, and/or reflected in plans for environmental and access improvements by land owners, land managers and statutory public bodies with an influence on land management.

3.4.3 To aid its interpretation on the ground, the Green Infrastructure Network is mapped in greater detail on large-scale 1:10,000 plans. Copies of these plans are available on request from the organisations represented on the Steering Group (see Section 1.0).

Box 3 - The Vision for Green Infrastructure in the Harlow Area

Epping Forest, Hatfield Forest, the Stort Valley and the Lee Valley lie at the heart of the vision for the Green Infrastructure Network. The biodiversity, heritage and recreational value of these key green spaces will be protected and enhanced, and they will be well-connected to each other and the wider countryside via a network of biodiverse and attractive green corridors providing links for people and wildlife. In particular, a series of multi-functional and connected green spaces managed for wildlife, heritage conservation and recreation will be created along the Stort Valley on Harlow's doorstep, providing a new and substantial green space resource accessible to local communities and visitors alike. As with Epping Forest, Hatfield Forest Country Park and the Lee Valley Regional Park, the proposed 'Stort Riverpark' should be an exemplar of best practice and innovation in green infrastructure planning, design and management.

The vision for green infrastructure in the Harlow Area is of an attractive, distinctive, accessible, diverse and multi-functional network of green spaces and links, landscapes, biodiversity and heritage assets in and around Harlow that seeks to meet the social, economic and environmental needs of all communities. It will do this by promoting:

- The protection and enhancement of key ecological habitats and species
- New high quality urban edge landscapes of distinction creating an improved image and sense of place for urban fringe landscapes, gateways, transport corridors and other approaches to Harlow and other key towns;
- Health and fitness through provision of opportunities for community involvement in exercise, sport and active recreation;
- Improvements in air, water and soil quality and more sustainable drainage and flood mitigation;
- The protection, re-creation and rehabilitation of landscapes and habitats damaged or lost by development or land management practices;
- The potential of archaeological, historical and cultural heritage features to contribute to local identity and sense of place;
- High quality places to live and visit, and providing an attractive environment to businesses and inward investment;
- Opportunities for farmers, foresters and other land managers to diversify into the production of energy crops, organic food produce and the management of woodlands, water meadows and grasslands as publicly accessible green spaces.

The Green Infrastructure Network will be protected, enhanced and, where appropriate, extended through public and private sector investment in new green infrastructure at all scales. It will be widely recognised and valued by local communities, and offer opportunities for education, skills development and learning. The Network will connect urban and rural settlements and the countryside, and provide a spatial planning framework to guide sustainable development in the Harlow Area. The Green Infrastructure Network will raise expectations of better designed, higher quality, more environmentally sustainable and distinctive new development that enhances and sustains local character in and around Harlow.

3.4.4 The Green Infrastructure Network shown on Figure 8 defines the following indicative typology of strategic green spaces and corridor links[39]:

- Strategic Parks - large areas of multi-functional green space based on wooded and river valley landscapes serving the Harlow Area and beyond
- Local Green Space Parks - locally significant areas of multi-functional green space in and around urban areas
- Core Natural Green Spaces - designated sites of nature conservation as the focus of ecological functional network of green spaces for wildlife
- Heritage Landscapes - priority landscape-scale areas for integrated conservation management of archaeological, historical and cultural assets in and around Harlow
- Strategic Destinations and Gateways - main focal points of formal and informal recreational activity and access to the countryside in the Harlow Area
- Greenways - linear habitats incorporating routes that are part of, or link to, the national, regional and sub-regional rights of way network and recreational trails and cycle routes
- Riverways - multi-functional corridors and sequences of spaces and places
- New Urban Landscapes of Distinction - priority areas for environmental design improvements to create an improved image and sense of place at key strategic gateways in and around Harlow
- Parkways - key road transport corridors that would benefit from targeted environmental design improvements to create an improved image and sense of place for approaches to Harlow and other key towns
- Railways - key rail transport corridors that would benefit from targeted environmental design improvements to create an improved image and sense of place for approaches to Harlow and other key towns, with rail stations recognised as gateways of strategic importance to the Harlow Area

Strategic Parks

3.4.5 A linear New Strategic Park called the 'Stort Riverpark' as shown on Figure 8 should be established through the acquisition of land along the Stort Valley between the Lee Valley Regional Park and Bishop's Stortford, to enable the creation of a new and substantial multi-functional green space asset for the Harlow Area. This will realise and integrate the opportunities for delivering the Green Infrastructure Network identified in Section 2.0, especially Sections 2.2, 2.3, 2.4, 2.5, 2.6 and 2.7. The

[39] These definitions are based on Biodiversity by Design - A Guide for Sustainable Communities (TACP, 2004) and the Thames Gateway South Essex Green Grid Strategy (LDA Design, November 2004).

feasibility of developing the Stort Riverpark as a formal extension of the Lee Valley Regional Park should be examined, as this would provide a strategic co-ordinated approach to integrated management of ecological, landscape, heritage and access and recreation of the Lee and Stort river corridors as key components of the Green Infrastructure Network. The continued protection and management of the following Existing Strategic Parks should be supported as core elements of the Green Infrastructure Network:

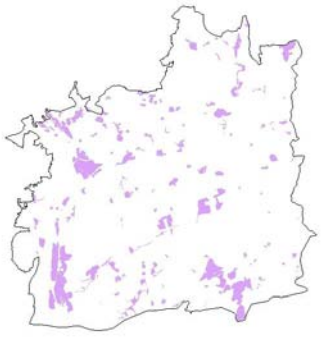
- Epping Forest - managed by the Corporation of London
- Hatfield Forest Country Park - managed by the National Trust
- The Lee Valley Regional Park - managed by the Lee Valley Regional Park Authority

Local Green Space Parks

3.4.6 The Local Green Space Parks shown on Figure 8 should be protected and enhanced as core elements of the Green Infrastructure Network. In relation to levels of new provision for 'local' or district-level public open space, the existing PPG17 Open Space Assessments[40] should be reviewed in light of the current standards of provision for a green infrastructure network[41] which advises that local natural green space parks over 20ha with publicly accessible open space should be provided within 1.2km of key urban areas. This will realise and integrate the opportunities for delivering the Green Infrastructure Network identified in Section 2.0, especially Sections 2.3, 2.4, 2.5, 2.6 and 2.7.

Core Natural Green Spaces

3.4.7 The Core Natural Green Spaces shown on Figure 8 should be protected and enhanced as core elements of the Green Infrastructure Network. To buffer and extend the Core Natural Green Spaces, the proposals for ecological interventions within the Habitat Enhancement and Creation Areas shown on Figure 3b should be implemented. The overall connectivity and integrity of the Core Natural Green Spaces and other key habitats as a functional ecological network should also be improved through the implementation of the proposals for ecological interventions within the Enhanced and New Habitat



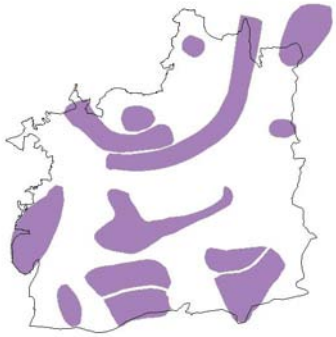
[40] Draft Harlow Green Space Strategy (Harlow DC, in preparation); Broxbourne Borough Open Space Assessment (Broxbourne Borough Council, 2001) ; East Hertfordshire District Open Space Assessment (East Hertfordshire Council, 2004).
[41] Biodiversity by Design - A Guide for Sustainable Communities, Page 18 (TACP, 2004)

Linkages shown on Figure 3b. This is critical in order to avoid fragmentation and isolation of natural habitats. This will realise and integrate the opportunities for delivering the Green Infrastructure Network identified in Section 2.0, especially Sections 2.2, 2.3, 2.4, 2.5, 2.6 and 2.7.

Heritage Landscapes

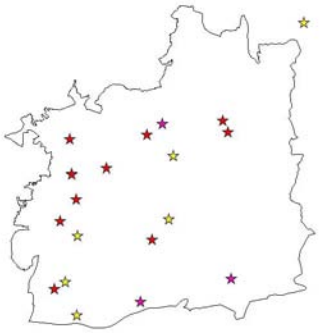
3.4.8 The Heritage Landscapes shown on Figure 8 should be given priority for integrated conservation management of archaeological, historical and cultural assets. This will realise and integrate the opportunities for delivering the Green Infrastructure Network identified in Section 2.0, especially Sections 2.2, 2.3, 2.4, 2.5, 2.6 and 2.7. They include (numbers refer to Figure 8):

- Ancient landscapes focused on the following broad areas
  1. Hatfield Forest
  2. Waltham Abbey and Environs
  3. Epping Forest Fringe
  4. Ongar park and Woodlands
  5. Nazeing and Rye Hill
- Historic parklands focused on the following broad areas
  1. North of River Stort
  2. Down Hall
  3. West of Hoddesdon
  4. Epping Forest Fringe
- Historic airfields focused on the following broad areas
  1. Allen's Green
  2. Hunsdon
  3. North Weald
- Stort Valley historic landscapes



Strategic Destinations and Gateways

3.4.9 The Strategic Destinations and Gateways shown on Figure 8 should be the focus of investment in high quality visitor facilities accessible by all, and be promoted as the primary gateways for access to the Strategic Parks and the wider countryside from a well-connected network of attractive and multi-functional movement corridors - comprising Greenways, Riverways, Parkways and Railways. This will realise and integrate the opportunities for delivering the Green Infrastructure Network identified in Section 2.0, especially Sections 2.4, 2.5 and 2.6.



The Major Strategic Destinations and Gateways shown on Figure 8 currently have reasonably well-developed visitor infrastructure and are primary gateways to the countryside, providing the main focal points for formal and informal recreational activities within the Harlow Area. These should be safeguarded as core functional components of the Green Infrastructure Network linking urban areas with the countryside. Where necessary, some of these destinations would benefit from enhancement to improve access, appearance and interpretation. These include (numbers refer to Figure 8):

1. Hatfield Forest Country Park
2. Parndon Wood Nature Reserve
3. Harlow Town Park
4. Clayton Hill Country Park
5. River Lee Country Park
6. Waltham Abbey

3.4.10 The Other Key Strategic Destinations and Gateways shown on Figure 8 that currently provide a more limited range of visitor infrastructure and/or access to recreational facilities, and are mainly the focus of access routes along and across the Lee and Stort river corridors, should be safeguarded - and further enhanced to improve access, appearance and interpretation where necessary - as functional components of the Green Infrastructure Network. They include (numbers refer to Figure 8):

1. Gibberd's Garden
2. Eastwick Medieval Settlement Site
3. Epping Green / Rye Hill
4. Roydon Mill
5. Cheshunt Station
6. Broxbourne / Keysers Estate
7. Dobb's Weir / Nazeing Mead
8. Rye House
9. St. Margarets / Amwell Nature Reserve
10. Pishobury Park

Other more local access gateways, particularly in the Lee Valley Regional Park, may also need consideration for investment in environmental improvements and visitor facilities.

3.4.11 To complement the existing network of Strategic Destinations and Gateways, the New Strategic Destinations and Gateways shown on Figure 8 should be developed to facilitate access to the wider countryside by providing a range of visitor facilities appropriate to the specific locations. These include (numbers refer to Figure 8):

1. Gilston Park Area - gateway to countryside north of Harlow
2. Copped Hall Area - gateway to Epping Forest from the Harlow Area
3. Wintry Wood to Beachet Wood - gateway to the woodland complex between Epping and North Weald Bassett and the wider countryside east of the M11

3.4.12 The New Strategic Destinations and Gateways offer key opportunities to promote wider access to and enjoyment of areas of the countryside that are currently less visited, yet provide (or have the potential to provide) a diverse range of landscape experiences that would be attractive to both local communities and visitors alike.

Greenways

3.4.13 The Greenways shown on Figure 8 should be developed to provide a largely car-free strategic network of footpath, bridleway and cycle routes that connect the main centres of population with the Strategic Parks via the Strategic Destinations and Gateways, and link the Harlow Area with the wider network of regional and sub-regional recreational trails and the Sustrans national cycle route. In addition to providing attractive and largely off-road recreational and commuter routes for people, the Greenways should also be managed to enhance their function as biodiverse corridors for the dispersal of wildlife, for example where they run along river corridors. This will realise and integrate the opportunities for delivering the Green Infrastructure Network identified in Section 2.0, especially Sections 2.2, 2.3, 2.4, 2.5, 2.6 and 2.7. The Greenways include (numbers refer to Figure 8):

1. Waltham Abbey / River Lee Country Park to Ware (via Lee Valley)
2. Broxbourne Woodland Complex to Clayton Hill Country Park
3. Roydon via Harlow Town Park to Bishop's Stortford (via Stort Valley)
4. Lower Nazeing / Clayton Hill Country Park to Latton Bush
5. Roydon via Nazeing Common to Epping Forest
6. Parndon Wood Nature Reserve / Kingsmoor to Epping
7. North Weald Bassett / Epping to Epping Forest

8. North Weald Bassett to Hatfield Forest Country Park
9. East Harlow to Matching Green
10. Sawbridgeworth to Hatfield Forest Country Park
11. Gilston to Bishop's Stortford
12. Waltham Abbey via Cobbin's Brook to Thornwood Common
13. West Harlow to Lee Valley
14. South Harlow to Rye Hill
15. North Harlow to River Stort
16. North West Harlow to River Stort
17. River Stort to Church Langley
18. Greenway 11 to Sawbridgeworth

3.4.14 The Greenways are based on the existing public rights of way network in the countryside, and may require works to upgrade surfaces on some routes and the creation of new sections to fill gaps in the network where necessary. The provision of bridges may also be required in specific locations to segregate users from road traffic where the Greenways need to cross busy roads. These should be designed as green bridges wherever possible, to facilitate the movement of wildlife across road barriers.

Riverways

3.4.15 

The River Lee Navigation and River Stort Navigation Riverways shown on Figure 8 should be managed as multi-functional riparian landscapes to provide access for water-based recreation and along their banks for walkers, cyclists and horse riders, and to protect their integrity as important linear wildlife corridors for migration, dispersal and genetic exchange. This will realise and integrate the opportunities for delivering the Green Infrastructure Network identified in Section 2.0, especially Sections 2.2, 2.3, 2.4, 2.5, 2.6 and 2.7.

New Urban Edge Landscapes of Distinction

3.4.16 The priority areas for *New Urban Edge Landscapes of Distinction* shown on Figure 8 should be subject to a package of environmental design improvements to create an improved image and sense of place at key strategic gateways and around Harlow. This will realise and integrate the opportunities for delivering the Green Infrastructure Network identified in Section 2.0, especially Sections 2.2, 2.3, 2.4, 2.5, 2.6 and 2.7. The priority areas include (numbers refer to Figure 8):

1. Harlow Rail Station/Town Park
2. West Harlow
3. East Harlow/New Hall
4. South East Harlow/M11 Approach

Parkways

3.4.17 The Parkways shown on Figure 8 should be subject to a targeted programme of environmental enhancement to improve their visual and ecological value. This will realise and integrate the opportunities for delivering the Green Infrastructure Network identified in Section 2.0, especially Sections 2.3, 2.4, 2.6 and 2.7. The Parkways include:

- The M25 which severs the main part of Epping Forest from the Harlow Area
- The M11 connecting the M25 with Stansted and Cambridge to the north
- The A10 connecting the M25 to Ware
- The A414 connecting the A10 near Ware to North Weald Bassett via Harlow / the M11
- The A1184 connecting Harlow to Bishop Stortford

3.4.18 In addition, the proposed high quality public transport corridor linking Harlow with North Weald Bassett and Epping should also be an integral part of the Parkway network. The route of this corridor is not currently known, but should seek to accommodate and facilitate the proposed Green Infrastructure Network through careful route selection and high standards of environmental design.

Railways

3.4.19

The Railways shown on Figure 8 should be subject to a targeted programme of environmental enhancement to improve their visual and ecological value. This will realise and integrate the opportunities for delivering the Green Infrastructure Network identified in Section 2.0, especially Sections 2.3, 2.4, 2.6 and 2.7. The Railways include:

- The WAGN railway line connecting Liverpool Street Station in London to stations in the Harlow Area along the Lee Valley and Stort Valley
- The London Underground Central Line connecting Epping to Liverpool Street Station in London

4.0 PRINCIPLES FOR THE PROTECTION, ENHANCEMENT AND CREATION OF GREEN INFRASTRUCTURE

4.0 PRINCIPLES FOR THE PROTECTION, ENHANCEMENT AND CREATION OF GREEN INFRASTRUCTURE

4.1 General

4.1.1 To assist in the implementation of the Green Infrastructure Network, the principles set out below should be used to guide the planning, design and management of green spaces and links in the Harlow Area. These are based on the Framework for Sustainable Future Landscapes in the Harlow Area and the Harlow Green Space Strategy[42], both of which emphasise the importance of a landscape-led approach to planning, design and management of green spaces in line with Gibberd's original Master Plan principles for the design of Harlow. The GIP principles also reflect emerging good practice from elsewhere[43/44] in relation to green infrastructure planning, design and management, and take into account the opportunities and vision identified in this GIP for the Harlow Area.

4.1.2 The green infrastructure principles include:

- Overarching Principles
- Physical Resources and Natural Systems Principles
- Ecology and Biodiversity Principles
- Landscape, Townscape and Riverscape Character Principles
- Archaeological, Historical and Cultural Heritage Principles
- Access and Recreation Principles
- Trees and Woodland Principles
- Urban Green Space Principles
- New Development and Infrastructure Design Principles

4.1.3 In order to ensure that the multi-functional benefits of the GIP are reflected in relevant plans or proposals that can make a contribution to the delivery of the Green Infrastructure Network, a checklist of key green infrastructure planning, design and management considerations is provided in Appendix B. These are intended to support the application of the key GIP principles set out below.

4.1.4 These principles are also supported by, and should be used in conjunction with, Volume 2 : Guidelines, which help to demonstrate to developers and planners how green infrastructure provision

[42] Volume 3 - Framework for Sustainable Future Landscapes in the Harlow Area (CBA, 2004)
[43] Planning Sustainable Communities - A Green Infrastructure Guide for Milton Keynes & the South Midlands (MKSM Environment & Quality of Life Sub Group, April 2005)
[44] Biodiversity by Design - A Guide for Sustainable Communities (TACP, 2004)

can be integrated into development schemes within the strategic framework provided by the Green Infrastructure Network. A reference link to the relevant Guideline(s) is provided under each principle.

Overarching Principles

Green infrastructure planning, design and management in the Harlow Area should:

- Be compliant with the Green Infrastructure Network and protect key green infrastructure assets and their immediate context;
- Reflect Gibberd's 'landscape-led' principles by accommodating nature, wildlife and archaeological, historical and cultural assets, and providing space for sport and recreation, within high quality green spaces as part of the design of new development in and around Harlow;
- Safeguard physical resources and integrate with natural systems and processes that underpin the health and integrity of the Green Infrastructure Network, in particular river and wetland systems;
- Maintain and enhance biodiversity to ensure that development and implementation results in a net gain of Biodiversity Action Plan habitats;
- Contribute to the management, conservation and improvement of landscape, townscape and riverscape character;
- Contribute to the protection, conservation and management of archaeological, historical and cultural landscape and built heritage assets;
- Create new access and recreational facilities, particularly those that present opportunities to link urban and countryside areas;
- Secure developer contributions towards new green infrastructure provision and qualitative improvements to existing assets and their contexts in line with community needs and aspirations;
- Where unavoidable loss or damage to key components of the Green Infrastructure Network through development occurs, require compensatory measures to enable improvements to other parts of the Network;
- Be designed to high standards of quality and sustainability to deliver social and economic, as well as environmental benefits.

Physical Resources and Natural Systems Principles

Green infrastructure planning, design and management in the Harlow Area should:

- Take account of the potential of wetland systems to recharge the water table by storing water during periods of excess (winter) and for periods of deficit (summer);
- Protect the integrity of river corridors as important linear corridors for the migration, dispersal and genetic exchange of wildlife;
- Conserve non-renewable resources and promote the use of renewable sources of construction material and energy.

Link to Guidelines:

1. Wildlife Habitat Enhancement, Creation and Links
3. Riverways
8. Sustainable Urban Drainage Systems

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Ecology and Biodiversity Principles

Green infrastructure planning, design and management in the Harlow Area should:

- Protect and enhance all existing Key Ecological Assets (statutory and non-statutory designated sites of nature conservation importance), key habitats and species as key components of the Green Infrastructure Network;
- Contribute to relevant BAP habitat and species targets in the Harlow Area;
- Be informed by ecological surveys and BAP priorities to guide the design and implementation of green infrastructure improvements and development schemes.

Link to Guidelines:

1. Wildlife Habitat Enhancement, Creation and Links
2. Countryside Access Routes
3. Riverways
4. Greening of Road Transport Corridors
5. Open Space and Recreation Facilities
6. New Housing Development
7. Industrial and Commercial Development
8. Sustainable Urban Drainage Systems

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Landscape, Townscape and Riverscape Character Principles

Green infrastructure planning, design and management in the Harlow Area should:

- Reflect Gibberd's 'landscape-led' approach in the design of new development in and around Harlow by incorporating a strong landscape framework into new developments to ensure that urban form and building design is shaped by, and responds to, the character of the surrounding countryside;
- Be informed by a detailed local characterisation and visual assessment to reflect distinctive landscape, townscape and riverscape characteristics, and to inform the creation of new viewpoints, landmarks and places of distinction;
- Promote the use of hard and soft building and landscaping materials that respect locally distinctive styles where appropriate.

Link to Guidelines:

1. Wildlife Habitat Enhancement, Creation and Links
2. Countryside Access Routes
3. Riverways
4. Greening of Road Transport Corridors
5. Open Space and Recreation Facilities
6. New Housing Development
7. Industrial and Commercial Development
8. Sustainable Urban Drainage Systems
9. Development Edge Treatment

Archaeological, Historical and Cultural Heritage Principles

Green infrastructure planning, design and management in the Harlow Area should:

- Protect, enhance, promote and interpret heritage assets, giving priority to the 'heritage landscapes' identified in this GIP as key components of the Green Infrastructure Network;
- Be informed by historic landscape, archaeological and built heritage surveys to evaluate conservation priorities, designs and proposals.

Link to Guidelines:

2. Countryside Access Routes
4. Greening of Road Transport Corridors
5. Open Space and Recreation Facilities
6. New Housing Development

Access and Recreation Principles

Green infrastructure planning, design and management in the Harlow Area should:

- Promote attractive, distinctive, accessible and safe routes for pedestrians, cyclists, horse-riders and river users within the Green Infrastructure Network;
- Ensure that proposals for new routes are informed by a survey and feasibility study to evaluate how proposed paths integrate with the existing path network and connect the destinations and gateways within the wider Green Infrastructure Network;
- Improve the environmental quality of all key strategic access links and gateways within the Green Infrastructure Network - including Greenways, Parkways and Railways and at the key gateways to Harlow.

Link to Guidelines:

1. Wildlife Habitat Enhancement, Creation and Links
2. Countryside Access Routes
3. Riverways
4. Greening of Road Transport Corridors
5. Open Space and Recreation Facilities

Trees and Woodlands Principles

Green infrastructure planning, design and management in the Harlow Area should:

- Promote managed recreational access to woodlands to avoid disturbance to wildlife and degradation of habitat in sensitive locations, such as in ancient semi-natural woodlands designated as SSSIs and identified as County Wildlife Sites;
- Ensure that new trees and woodlands are planted in appropriate locations, following the principle of *the right tree in the right place;* particularly within river valleys;
- Give full consideration to the fencing of woodland, both new and existing, to reduce over-grazing by deer and resulting loss of biodiversity by allowing woods to recover through natural regeneration.

Link to Guidelines:

1. Wildlife Habitat Enhancement, Creation and Links
4. Greening of Road Transport Corridors
5. Open Space and Recreation Facilities
6. New Housing Development
7. Industrial and Commercial Development
9. Development Edge Treatment

Urban Green Space Principles[45]

Green infrastructure planning, design and management in the Harlow Area should:

- Retain the physical framework of Harlow by developing the Green Wedge principles as part of the master planning of future extensions of Harlow;
- Ensure equity and extend use by providing for young people and older people;
- Maximise regeneration by linking the town centre to green spaces, particularly to the Town Park and southern Green Wedge;
- Increase community involvement by encouraging more self-management of specific facilities and/or areas of land;
- Improve community safety through good design as opportunities arise with new or replacement housing, or other buildings and projects;
- Enhance accessibility by improving off-road access routes that cross over, and provide links between, green spaces;
- Develop a more sustainable environment by developing more long grass areas and hay meadows for wildlife;
- Increase sustainable management by ensuring that new developments contribute to new or improved green spaces and related facilities.

Link to Guidelines:

1. Wildlife Habitat Enhancement, Creation and Links
3. Riverways
4. Greening of Road Transport Corridors
5. Open Space and Recreation Facilities
6. New Housing Development
7. Industrial and Commercial Development

[45] From the Draft Harlow Green Space Strategy (Harlow DC, in preparation)

New Development and Infrastructure Design Principles

Green infrastructure planning, design and management in the Harlow Area should:

- Contribute to the establishment and maintenance of the Green Infrastructure Network;
- Be of the highest standards of design and incorporate best practice in environmentally sustainable construction and building techniques;
- Promote the incorporation of habitats for urban wildlife into new and existing buildings in urban environments, such as green roofs and provision of roosting/nesting sites for pipistrelle bats, house sparrows and swifts

Link to Guidelines:

1. Wildlife Habitat Enhancement, Creation and Links
2. Countryside Access Routes
5. Open Space and Recreation Facilities
6. New Housing Development
7. Industrial and Commercial Development
8. Sustainable Urban Drainage Systems
9. Development Edge Treatment

5.0 DELIVERING THE GREEN INFRASTRUCTURE NETWORK

5.0 DELIVERING THE GREEN INFRASTRUCTURE NETWORK

5.1 General

5.1.1 This GIP provides an exciting opportunity to deliver a new and bold vision for multi-functional landscapes that meets the needs of urban and rural communities in the in the Harlow Area. Epping Forest, Hatfield Forest, the Stort Valley and the Lee Valley lie at the heart of this vision. In particular, the Stort Valley presents a major opportunity for developing a series of multi-functional and connected green spaces managed for wildlife, access and recreation on Harlow's doorstep, which is also readily accessible to other communities and visitors.

5.1.2 The Vision for Green Infrastructure in the Harlow Area set out in Section 3.0 seeks to develop an integrated and proactive approach to land development, growth management and built infrastructure planning through the creation of a multi-functional Green Infrastructure Network. It is about promoting green infrastructure planning as a key mechanism for delivering sustainable communities and quality of life benefits within the Harlow Area, whilst providing appropriate protection and management of key green infrastructure assets.

5.1.3 This final section identifies key strategic green infrastructure projects and outlines the next steps required to take forward the vision, and so turn the GIP into reality.

5.2 Strategic Projects

5.2.1 The Harlow Area Green Spaces Project partners intend to prepare a Business Plan in 2006 to guide the implementation of the GIP. The Business Plan will set priorities for the delivery of the following strategic green infrastructure projects that are required to implement the Green Infrastructure Network in different parts of the Harlow Area. The general locations of the project areas are shown on Figure 9 - Green Infrastructure Project: Areas. Numbering in brackets, e.g. (1) refer to Figure 8.

Project Area 1 –The Stort Riverpark

Public Open Space Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Creation of Stort Riverpark Initiative - land acquisition and access/environmental improvements
- Harlow Town Park restoration and enhancement and targeted environmental enhancements and visitor facility improvements as a Major Strategic Destination and Gateway (3)

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- Targeted environmental enhancements and visitor facility improvements at:
    * Roydon Mill - Key Strategic Destination and Gateway (4)
    * Pishobury Park - Key Strategic Destination and Gateway (10)

Greenway Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Roydon via Harlow Town Park to Bishop's Stortford (Stort Valley) Greenway (3) & Sustrans Cycle Route Implementation

Heritage Landscapes Conservation Management Projects (see Figures 5 & 5a/Section 2.5 for details)

- Stort Valley Historic Landscapes

Habitat Enhancement Projects (see Figure 3c/Section 2.3 for details)

- C1. River Stort - Enhancement of wetland
- C2. Spellbrook - Enhancement of pools, swamp and wet grassland, hedgerows and woodland
- I1. Harlow Urban Area - Enhancement of Town Park

New Urban Edge Landscapes of Distinction Projects (see Figures 7 & 8/Sections 2.7 & 3.4 for details)

- Harlow Rail Station/Town Park Environmental Design Improvements (1)

Parkway Corridor Enhancement Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Environmental Enhancement of the A414 Parkway (A10 near Ware to North Weald Bassett via Harlow / the M11)
- Environmental Enhancement of the A1184 Parkway (Harlow to Bishop Stortford)

Railway Corridor Enhancement Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Environmental Enhancement of the WAGN Railway and stations

Riverway Corridor Enhancement Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Stort Navigation

Project Area 2 –Harlow Town and Country Links Green Infrastructure Projects

See Figure 7/Section 2.7 for details of opportunities for a range of green infrastructure enhancements in and around Harlow that are applicable to many of the specific projects identified below designed to strengthen links between the town and the surrounding countryside.

Public Open Space Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

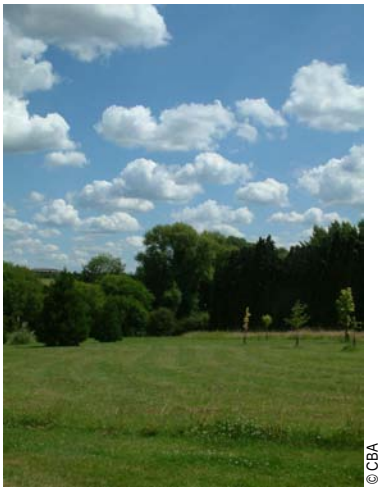
- Harlow Town Park Restoration and Enhancement and Targeted Environmental Enhancements and Visitor Facility Improvements as a Major Strategic Destination and Gateway (3)
- Targeted Visitor Facility Improvements at Gibberd's Garden as a Key Strategic Destination and Gateway (1)

Greenway Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- East Harlow to Matching Green Greenway (9) & Sustrans Cycle Route Implementation
- West Harlow to Lee Valley Greenway (13)
- South Harlow to Rye Hill Greenway (14)
- North Harlow to River Stort Greenway (15)
- North West Harlow to River Stort Greenway (16)

Habitat Enhancement Projects (see Figure 3c/Section 2.3 for details)

- I1. Harlow Urban Area - Enhancement of Town Park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Enhanced Habitat Linkages Projects (see Figure 3c/Section 2.3 for details)

- E4. West Harlow - Enhancement of verges and hedgerows
- I2. Harlow Urban Area - Enhancement of riparian habitats and verges within the Green Wedges

New Habitat Linkages Projects (see Figure 3c/Section 2.3 for details)

- F2. Rye Hill - Creation of new hedgerows and scrub
- F3. East Harlow - Creation of new woodland and hedgerows

New Urban Edge Landscapes of Distinction Projects (see Figures 7 & 8/Sections 2.7 & 3.4 for details)

- Harlow Rail Station/Town Park Environmental Design Improvements (1)
- West Harlow Environmental Design Improvements (2)
- East Harlow/New Hall Environmental Design Improvements (3)
- South East Harlow/M11 Approach Environmental Design Improvements (4)

Public Open Space Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)


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- Creation of New Strategic Destination and Gateway in the Copped Hall Area (2) to provide gateway to Epping Forest from the Harlow Area

Parkway Corridor Enhancement Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Environmental Enhancement of the A414 Parkway (A10 near Ware to North Weald Bassett via Harlow / the M11)
- Environmental Enhancement of the A1184 Parkway (Harlow to Bishop Stortford)

Project Area 3 - Roydon, Nazeing and Rye Hill Green Infrastructure Projects

Public Open Space Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Targeted Environmental Enhancements and Visitor Facility Improvements at:
  * Parndon Wood Nature Reserve - Major Strategic Destination and Gateway (2)
  * Epping Green / Rye Hill - Key Strategic Destination and Gateway (3)

Greenway Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Lower Nazeing / Clayton Hill Country Park to Latton Bush Greenway (4)
- West Harlow to Lee Valley Greenway

Heritage Landscapes Conservation Management Projects (see Figures 5 & 5a/Section 2.5 for details)

- Nazeing and Rye Hill Ancient Landscapes (5)

Habitat Enhancement Projects (see Figure 3c/Section 2.3 for details)

- E1. Kingsmead - Enhancement of grassland

Habitat Creation Projects (see Figure 3c/Section 2.3 for details)

- E2. Lower Nazeing - Creation of new grassland, wetland
- F1. South Harlow - Creation of new woodland, heathland, hedgerows and ditches
- G2. Thornwood - Creation of new hedgerows, scrub

Enhanced Habitat Linkages Projects (see Figure 3c/Section 2.3 for details)

- E3. Nazeing Brook - Enhancement of grassland, arable margins and hedgerows
- E4. West Harlow - Enhancement of verges and hedgerows

New Habitat Linkages Projects (see Figure 3c/Section 2.3 for details)

- E5. Nazeing to Cobbin's Brook - Creation of new hedgerows, ditches, verges and grassland
- E6. Roydon Park - Create new hedgerows, ditches, verges and grassland

New Urban Edge Landscapes of Distinction Projects (see Figures 7 & 8/Sections 2.7 & 3.4 for details)

- West Harlow Environmental Design Improvements (2)
- East Harlow/New Hall Environmental Design Improvements (3)

Copy Wood Field Meadow Community Conservation Project, Epping Long Green

There is potential to secure an existing rare unimproved flower-rich meadow, 0.7 hectares in area, known as Copy Wood Field, which is situated off Epping Long Green. Existing native species rich hedgerows and woodlands surround this small field. It has been a long-term objective of Epping Forest Countrycare to acquire this land for the public; as it is accessible from the adjacent well-used footpath network. At present Epping Forest Countrycare have informal agreement with the landowner to manage the land.

Project Area 4 - Epping and North Weald Basset Green Infrastructure Projects

Public Open Space Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Creation of New Strategic Destination and Gateway in the Wintry Wood to Beachet Wood Area (3) to provide a gateway to the woodland complex between Epping and North Weald Bassett and the wider countryside east of the M1

Greenway Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Parndon Wood Nature Reserve / Kingsmoor to Epping Greenway (6)
- North Weald Bassett / Epping to Epping Forest Greenway (7)

Heritage Landscapes Conservation Management Projects (see Figures 5 & 5a/Section 2.5 for details)

- Ongar Park and Woodlands Ancient Landscapes (4)
- North Weald Historic Airfield (3)

Habitat Creation Projects (see Figure 3c/Section 2.3 for details)

- G2. Thornwood - Creation of new hedgerows, scrub

New Habitat Linkages Projects (see Figure 3c/Section 2.3 for details)

- G4. Coopersale Common - Creation of new green bridge

Parkway Corridor Enhancement Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Environmental Enhancement of the M11 Parkway

Railway Corridor Enhancement Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Environmental Enhancement of the WAGN Railway and stations
- Environmental Enhancement of the London Underground Central Line Railway and Epping station

Project Area 5 - Epping Forest Fringes Green Infrastructure Projects

Public Open Space Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Creation of New Strategic Destination and Gateway in the Copped Hall Area (2) to provide gateway to Epping Forest from the Harlow Area

Greenway Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Roydon via Nazeing Common to Epping Forest Greenway (5)
- Waltham Abbey via Cobbin's Brook to Thornwood Common Greenway (12)

Heritage Landscapes Conservation Management Projects (see Figures 5 & 5a/Section 2.5 for details)

- Epping Forest Fringe Ancient Landscapes (3)
- Epping Forest Fringe Historic Parklands (4)

Habitat Enhancement Projects (see Figure 3c/Section 2.3 for details)

- G1. Upshire - Enhancement of grassland, stream channel, ponds and wetland

Enhanced Habitat Linkages Projects (see Figure 3c/Section 2.3 for details)

- G3. Cobbins Brook - Enhancement of riparian corridor habitats

New Habitat Linkages Projects (see Figure 3c/Section 2.3 for details)

- E5. Nazeing to Cobbin's Brook - Creation of new hedgerows, ditches, verges and grassland

Parkway Corridor Enhancement Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Environmental Enhancement of the M25 Parkway

Project Area 6 - Lee Valley Green Infrastructure Projects

Public Open Space Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Targeted Environmental Enhancements and Visitor Facility Improvements at:
  * Clayton Hill Country Park - Major Strategic Destination and Gateway (4)
  * River Lee Country Park - Major Strategic Destination and Gateway (5)
  * Waltham Abbey - Major Strategic Destination and Gateway (6)
  * Cheshunt Station - Key Strategic Destination and Gateway (5)
  * Broxbourne / Keysers Estate - Key Strategic Destination and Gateway (6)
  * Dobb's Weir / Nazeing Mead - Key Strategic Destination and Gateway (7)
  * Rye House - Key Strategic Destination and Gateway (8)
  * St. Margarets / Amwell Nature Reserve - Key Strategic Destination and Gateway (9)

Greenway Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Waltham Abbey / River Lee Country Park to Ware (Lee Valley) Greenway (1) & Sustrans Cycle Route Implementation
- Broxbourne Woodland Complex to Clayton Hill Country Park Greenway (2)

Heritage Landscapes Conservation Management Projects (see Figures 5 & 5a/Section 2.5 for details)

- Waltham Abbey and Environs Ancient Landscapes
- West of Hoddesdon Historic Parklands

Habitat Enhancement Projects (see Figure 3c/Section 2.3 for details)

- A1. Cheshunt Park - Enhancement of hedgerows, verges and grassland
- A2. Hoddesdon Park Wood Fringe - Enhancement of grassland and wet woodland
- B1. East of River Lee - Enhancement of grassland, wetland and hedgerows
- B2. Great Amwell - Enhancement of wetland and grassland

Habitat Creation Projects (see Figure 3c/Section 2.3 for details)

- A3. Park Lane - Creation of woodland, hedgerows and grassland

Enhanced Habitat Linkages Projects (see Figure 3c/Section 2.3 for details)

- A4. Broxbourne to the Lee valley - Enhancement of hedgerows and verges
- I3. Hoddesdon / Cheshunt Urban Area - Enhancement of species-rich grassland, scrub and aquatic habitats along the New River navigation canal

New Habitat Linkages Projects (see Figure 3c/Section 2.3 for details)

- E6. Roydon Park - Create new hedgerows, ditches, verges and grassland

Parkway Corridor Enhancement Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Environmental Enhancement of the M11 Parkway
- Environmental Enhancement of the A10 Parkway (M25 to Ware)

Railway Corridor Enhancement Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Environmental Enhancement of the WAGN Railway and stations

Riverway Corridor Enhancement Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Lee Navigation

Project Area 7 - North of Stort Green Infrastructure Projects

Public Open Space Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

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- Creation of New Strategic Destination and Gateway in the Gilston Park area (1) to provide a gateway to the countryside north of Harlow
- Targeted Environmental Enhancements and Visitor Facility Improvements at Eastwick Medieval Settlement Site Key Strategic Destination and Gateway (2)

Greenway Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Gilston to Bishop's Stortford Greenway (11)

Heritage Landscapes Conservation Management Projects (see Figures 5 & 5a/Section 2.5 for details)

- North of River Stort Historic Parklands (1)
- Allen's Green Historic Airfield (1)
- Hunsdon Historic Airfield (2)

Habitat Enhancement Projects (see Figure 3c/Section 2.3 for details)

- D1. Hunsdonbury - Enhancement of grassland
- D3. Gilston Park - Enhancement of new verges, woodland, scrub

Habitat Creation Projects (see Figure 3c/Section 2.3 for details)

- D2. The Grove - Creation of arable field margins, grassland

Enhanced Habitat Linkages Projects (see Figure 3c/Section 2.3 for details)

- C3. Fiddlers Brook - Enhancement of grassland, wetland, reed beds and aquatic vegetation
- D4. Fiddlers Brook - Enhancement of verges, hedgerows and brook

New Habitat Linkages Projects (see Figure 3c/Section 2.3 for details)

- C4. Hunsdon Lane/Brook - Creation of new habitats along road verges, brook, hedgerows, arable field margins
- D5. Between Fiddlers Brook and River Stort - Creation of new hedgerows, field margins, ponds, grassland, woodland

Parkway Corridor Enhancement Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Environmental Enhancement of the A1184 Parkway (Harlow to Bishop Stortford)

Hunsdon Community Conservation Ponds Project

There is opportunity to enhance the ponds in the vicinity of Hunsdon as part of a community driven conservation project. The construction of a series of new ponds between, for example, the Wilderness at Hunsdonbury and a series of small, existing, ponds to the west. Alternatively, new ponds could be created between Hunsdon village and the woodlands to the east, including Queen's Wood, which contains the remains of an old moat. This project could also incorporate work to reinstate or manage a number of ditches in the vicinity to further strengthen corridors to allow migration of amphibians across the landscape and allow them to colonise the new ponds.

Project Area 8 - East of M11 Green Infrastructure Projects

Public Open Space Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Targeted Environmental Enhancements and Visitor Facility Improvements at Hatfield Forest Country Park as a Major Strategic Destination and Gateway (1)

Greenway Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- North Weald Bassett to Hatfield Forest Country Park Greenway (8)
- Sawbridgeworth to Hatfield Forest Country Park Greenway (10)

Heritage Landscapes Conservation Management Projects (see Figures 5 & 5a/Section 2.5 for details)

- Hatfield Forest Ancient Landscapes (1)
- Down Hall Historic Parklands (2)

Habitat Creation Projects (see Figure 3c/Section 2.3 for details)

- H1. Matching - Creation of woodland and scrub
- H2. Grinstead Lane - Creation of wet grassland
- H3. Little Hallingbury Park - Creation of scrub, woodland, wet woodland

New Habitat Linkages Projects (see Figure 3c/Section 2.3 for details)

- H4. Hatfield Heath - Creation of new woodland, verges and hedgerows
- H5. Tilegate - Creation of verges and hedgerows
- H6. Lower Bobbingworth - Creation of grassland and scrub
- H7. Stortford Road - Creation of green bridge

Parkway Corridor Enhancement Projects (see Figures 6a and 8/Sections 2.6 and 3.4 for details)

- Environmental Enhancement of the M11 Parkway
- Environmental Enhancement of the A414 Parkway (A10 near Ware to North Weald Bassett via Harlow / the M11)

5.3 Next Steps

5.3.1 In outline, the next steps required to take forward the implementation of the GIP are to:

- Deliver one or both of the community projects for enhancing green infrastructure assets identified in Section 5.2 above in the short-term to demonstrate how the Harlow Green Spaces Project can deliver benefits through the GIP;

- Raise awareness of the GIP through a public launch (perhaps linked to the delivery of the above community projects) to promote the vision and proposals for the Green Infrastructure Network to a wide audience as possible;

- Prepare a Business Plan to identify a clear delivery framework for the implementation of the GIP - this will need to determine costs, identify potential sources of funding and to set out priorities for action and identify project leaders/champions;

- Undertake feasibility studies for site/route proposals to identify and resolve detailed design, implementation and management issues in relation to local opportunities and constraints;

- Consult key stakeholder groups and landowners to identify local opportunities, constraints and aspirations to inform the setting of priorities for action - the co-operation of landowners, and their willingness to dispose of land or implement alternative land management regimes, is fundamental to the implementation and long-term maintenance of the Green Infrastructure Network;

- Promote the adoption and use of the GIP by all local planning authorities in the Harlow Area as a strategic planning framework to guide the implementation of the Green Infrastructure Network through local development plan policies and proposals;

- Promote the Guidelines to developers and land managers to help demonstrate how green infrastructure provision can be integrated into development schemes and land management practices within the Harlow Area;

- Establish on-going mechanisms for engaging a wide range of local community and special interest groups in the implementation of the GIP to build and maintain recognition of, and gain buy in to, the vision and intended benefits of the Green Infrastructure Network for local communities, landscapes and wildlife in the Harlow Area.

APPENDIX A

HARLOW AREA GREEN INFRASTRUCTURE MAPPING AND ANALYSIS DATA SOURCES

APPENDIX A

HARLOW AREA GREEN INFRASTRUCTURE MAPPING AND ANALYSIS DATA SOURCES

A1. The Harlow Area Geographical Information Library

A1.1 All the GIS datasets used in the GIP are available in the 'Harlow Area Geographical Information Library' created for the project partners.

A1.2 The Geographical Information Library provides a consistent basis for analysis and interrogation of datasets. It presents data in a structured and accessible format in accordance with standard industry formats suitable for use within mainstream Geographical Information Systems (GIS). It is supported by a users guide, which describes the structure and content of the Geographical Information Library, data licensing and copyright constraints and other information relevant to data management and updating requirements.

A.1.3 The Geographical Information Library and user guide is available on CD from the Harlow Area Green Spaces Project Partners (see Section 1.0).

A2. Data Sources

A.2.1 The sources of data used in the mapping and analysis of green infrastructure features within the GIP are identified in the following table.

Fig No.	Figure Title	Boundary/Point/Other Data	Data Source	Date
1	The Harlow Area - An Overview	Harlow Area Green Infrastructure Plan	CBA/GIP Steering Group	04/04
		Green Arc Initiative	Fig 3 Thames Gateway South Essex Green Grid Strategy	11/04
		Lee Valley Regional Park	Lee Valley Regional Park Authority website	06/05
		Epping Forest	Corporation of London website	08/05
		Hatfield Forest Country Park	OS 1:25,000 mapping	08/05
		Watling Chase Community Forest	OS 1:25,000 mapping	08/05
		Hainault Forest Country Park	OS 1:25,000 mapping	08/05
		Thames Chase Community Forest	OS 1:25,000 mapping	08/05
		East London Green Grid	Fig 3 Thames Gateway South Essex Green Grid Strategy	11/04
2	Physical Resources and Natural Systems	Topography	OS Meridian	04/05
		Floodplain	Environment Agency	02/04
		Major Rivers	OS Meridian	01/05
		Sand & Gravel Extraction Sites	Essex County Council, Planning Hertfordshire County Council website	08/05 06/05
3	Existing Ecological Assets and Biodiversity : Key Ecological Assets	Ramsar Site	English Nature website	05/05
		Special Protection Area (SPA)	English Nature website	05/05
		Special Area of Conservation (SAC)	English Nature website	05/05
		Site of Special Scientific Interest (SSSI)	English Nature website	05/05
		National Nature Reserve (NNR)	English Nature website	05/05
		Ancient Woodland	English Nature website	05/05
		County Wildlife Sites	Essex CC, Planning, Debbie Knopp Herts Biological Records Centre	05/04 01/04
		Local Nature Reserve (LNR)	Essex CC, Planning, Debbie Knopp	05/04
3a	Existing Ecological Assets and Biodiversity : Land Cover	Aerial Photography	Bluesky International	11/04
3b	Existing Ecological Assets and Biodiversity : Key Habitats and Links	Grassland	CBA Ecological Survey for GIP	Summer 05
		Miscellaneous	CBA Ecological Survey for GIP	Summer 05
		Parkland	CBA Ecological Survey for GIP	Summer 05
		Lakes	CBA Ecological Survey for GIP	Summer 05
		Pond	CBA Ecological Survey for GIP	Summer 05
		Rivers and Streams	CBA Ecological Survey for GIP	Summer 05
		Scrub	CBA Ecological Survey for GIP	Summer 05
		Wetland	CBA Ecological Survey for GIP	Summer 05
		Ancient Woodland	CBA Ecological Survey for GIP	Summer 05
		Plantation Woodland	CBA Ecological Survey for GIP	Summer 05
		Other Woodland	CBA Ecological Survey for GIP	Summer 05
		Agricultural and Other Land Uses	CBA Ecological Survey for GIP	Summer 05

Fig No.	Figure Title	Boundary/Point/Other Data	Data Source	Date
3c	Priority Areas for Enhanced Green Spaces and Links for Wildlife	Core Sites/key Ecological Assets	English Nature website	05/05
			Essex CC, Planning, Debbie Knopp	05/04
		Key Dispersal Corridors	Defined by CBA for GIP	09/05
		Habitat Enhancement Areas	Defined by CBA for GIP	09/05
		Enhanced Habitat Linkages	Defined by CBA for GIP	09/05
		Habitat Creation Areas	Defined by CBA for GIP	09/05
		New Habitat Linkages	Defined by CBA for GIP	09/05
4	Landscape Character Types and Areas	Landscape Character Types	Essex CC	05/04
			Herts CC	01/04
		Landscape Character Areas	Harlow Area Landscape and Environment Study	06/04
		Woodland	Forestry Commission Inventory of Woods & Trees	02/04
		Major Rivers	OS Meridian	01/05
5	Archaeological, Historical and Cultural Assets	Scheduled Monuments	EH, National Monuments Record	10/04
			Essex HER, Essex CC Historic Environment Team	10/05
			Herts HER, Herts CC Historic Environment Unit	10/05
		Registered Historic Parks and Gardens	EH, National Monuments Record	10/04
			Essex HER, Essex CC Historic Environment Team	10/05
			Herts HER, Herts CC Historic Environment Unit	10/05
		Conservation Areas	Essex HER, Essex CC Historic Environment Team	10/05
			Herts HER, Herts CC Historic Environment Unit	10/05
			Broxbourne & East Herts Local Plans	05/04
		Ancient Landscapes[46]	Essex Structure Plan	05/04
		Visible Archaeological Features[47]	Defined by CBA for GIP	
		Historic Routeways[48]	Herts HER, Herts CC Historic Environment Unit	10/05
		Pre 18th Century Surviving Landscape Features	Essex Historic Landscape Characterisation Study, Essex CC Historic Environment Team	10/05
			Herts Historic Landscape Characterisation Study, Herts CC Historic Environment Unit	02/04
		18th &19th Century Surviving Landscape Features	Essex Historic Landscape Characterisation Study, Essex CC Historic Environment Team	10/05
			Herts Historic Landscape Characterisation Study, Herts CC Historic Environment Unit	02/04
		Key Sites[49]	Defined by CBA for GIP	

[46] NB. bias within the data - Ancient Landscapes only defined in Essex - N/A within Hertfordshire

[47] The identification of Visible Archaeological Features is based on the consultant's detailed knowledge of the Harlow Area. It includes key clusters of historic elements within the built landscape along with archaeological sites with a high degree of survival above ground. Visible Archaeological Features are indicative due to the strategic level of the study and any detailed analysis should be based upon consultation with the relevant County Archaeologist. Visible Archaeological Features are shown as point data, rather than polygonal data, so that a consistent approach could be achieved across the Study Area due to absence of polygonal data in Hertfordshire. Polygonal data would more clearly demarcate visible archaeological areas.

[48] NB. bias within the data - Historic Routeways only defined in Hertfordshire by the Hertfordshire Structure Plan - N/A within Essex

[49] Key sites were identified from the Epping Forest and Lee Valley, Hertford and Harlow 1:25,000 Explorer (174) map (2000), as sites marked as archaeological and historical information (e.g. site of antiquity, sites of battle, visible earthworks, Roman and non-Roman based on information provided by the Royal Commission on Historic Monuments for England [now part of English Heritage]). This data was

Fig No.	Figure Title	Boundary/Point/Other Data	Data Source	Date
5a	Priority Areas for Enhanced Management of Archaeological, Historical and Cultural Assets	Ancient Landscapes	Defined by CBA for GIP	11/05
		Historic Parklands	Defined by CBA for GIP	11/05
		Historic Airfields	Defined by CBA for GIP	11/05
		Stort Valley Historic Landscapes	Defined by CBA for GIP	11/05
		Background data	As per Figure 5	
6	Existing Access Networks and Recreational Facilities	Strategic Road Network	OS Meridian	08/05
		Car Parks	OS 1:25,000 mapping	08/05
		Railway	OS Meridian	01/05
		River Navigations	OS Meridian	01/05
		Public Rights of Way	Essex CC	07/04
			Herts CC	01/05
		Cycle Routes	OS 1:25,000 mapping	07/05
			Sustrans	09/05
		Strategic Public Open Space (>400ha)	Lee Valley Regional Park website	06/05
			Corporation of London website	06/05
			OS 1:25,000 mapping	06/05
		Public Open Space (<400ha)	OS 1:25,000 mapping	05
			Uttlesford, East Herts, Broxbourne, Epping Forest, Harlow Local Plans	
			MAGIC website	08/04
			Herts CC, Simon Odell	04/04
		Countryside Stewardship Access Land	Countryside Agency website	02/05
		Trails	OS 1:25,000 mapping	01/05
		Major Destinations / Focal Points	Defined by CBA for GIP	09/05
		Other Key Destinations / Focal Points	Defined by CBA for GIP	09/05
6a	Priority Areas for Enhanced Green Spaces and Access Links for People	Existing Car Parks	As per Figure 6	
		Existing Public Rights of Way	As per Figure 6	
		Existing Trails	As per Figure 6	
		Strategic Public Open Space to be Safeguarded	As per Figure 6	
		Other Public Open Space to be Safeguarded	As per Figure 6	
		Major Destinations/Focal Points to be Safeguarded and Enhanced	As per Figure 6	
		Other Key Destinations/Focal Points to be Safeguarded and Enhanced	As per Figure 6	
		New Destinations	Defined by CBA for GIP	09/05
		New Public Open Space	Defined by CBA for GIP	09/05
		Greenways	Defined by CBA for GIP	09/05
		Proposed Sustrans National Cycle Network Route	Sustrans	09/05
		Riverways	OS Meridian	01/05
		Parkways	OS Meridian	08/05

chosen as it provides a crude proxy for key cultural heritage features of interest to visitors to the Harlow Area, and is used for the purposes of the GIP only.

Fig No.	Figure Title	Boundary/Point/Other Data	Data Source	Date
7	Key Green Infrastructure Assets in and around Harlow	Scheduled Monument	EH, National Monuments Record	10/04
			Essex HER, Essex CC Historic Environment Team	10/05
			Herts HER, Herts CC Historic Environment Unit	10/05
		Site of Special Scientific Interest (SSSI)	English Nature website	05/05
		Indicative Floodplain	Environment Agency	02/04
		Registered Common Land	MAGIC Herts CC, Simon Odell	08/04 04/04
		Ancient Woodland	English Nature website	05/05
		Conservation Area	Essex HER, Essex CC Historic Environment Team	10/05
			Herts HER, Herts CC Historic Environment Unit	10/05
			Broxbourne & East Herts Local Plans	05/04
		Registered Historic Parks & Garden	EH, National Monuments Record	10/04
			Essex HER, Essex CC Historic Environment Team	10/05
			Herts HER, Herts CC Historic Environment Unit	10/05
		County Wildlife Site	Essex CC, Planning, Debbie Knopp	05/04
			Herts Biological Records Centre	01/04
		Green Wedge	Harlow DC	01/04
		Local Landscape Designations	Uttlesford, East Herts, Broxbourne, Epping Forest, Harlow Local Plans	
8	The Green Infrastructure Network for the Harlow Area		Defined by CBA for GIP based on Figures 1 - 7	
9	Green Infrastructure Project Areas		Defined by CBA for GIP	

APPENDIX B

HARLOW AREA GREEN INFRASTRUCTURE

PLANNING, DESIGN AND MANAGEMENT CHECKLIST

APPENDIX B

HARLOW AREA GREEN INFRASTRUCTURE PLANNING, DESIGN AND MANAGEMENT CHECKLIST

This checklist of key green infrastructure planning, design and management considerations is intended to help ensure that the multi-functional benefits of the GIP are reflected in all relevant plans or proposals that can make a contribution to the delivery of the Green Infrastructure Network in the Harlow Area. The checklist is designed to support the application of the key principles for the protection, design and management of the Green Infrastructure Network set out in Section 4.0 of this GIP.

Physical Resources and Natural Systems Considerations

Where relevant, does the plan or proposal:

- Minimise greenhouse gas emissions and other air pollutants?
- Respect water as a critical resource for the health of people and wildlife?
- Accept the need to adapt to effects of climate change such as increased flooding?
- Work with and contribute to natural processes and systems?
- Take account of the impacts of natural systems at the design stage?
- Incorporate Sustainable Drainage Systems (SuDS) into their design both within and outside of flood risk areas?
- Promote creative enhancement of watercourses as features for recreation and biodiversity which provide flood storage capacity, e.g. wetlands?
- Use more natural methods of protecting water quality where appropriate, e.g. use of reed beds which also act as wildlife habitat?
- Improve local environments and contribute to sustainable development through providing new woodlands to improve air quality, reduce noise and light pollution, and to act as long-term carbon sinks to offset carbon emissions and reduce the impact of development on global climate change?

Ecology and Biodiversity Considerations

Where relevant, does the plan or proposal:

- Ensure that new development avoids damage to existing designated sites and their functional contexts, and seeks to enhance them where possible?
- Ensure that development and implementation results in a net gain of relevant Biodiversity Action Plan habitats to maintain and enhance the biodiversity of the Harlow Area?
- Seek to halt and reverse habitat fragmentation and species isolation of existing biodiversity assets by buffering existing sites and creating new wildlife corridors between them?

- Identify areas for habitat restoration and re-establish them at a landscape scale?
- Integrate existing habitats into new development, ensuring development provides for a green transition between existing and new habitats and landscape?
- Improve and maintain the connectivity of open space, wildlife sites and habitats throughout the landscape as a network of corridors by maintaining, enhancing and, in some places, restoring important ecological links for the dispersal of wildlife with existing habitats, and linking new created habitats where appropriate?
- Consider biodiversity as an integral part of good urban design, construction and development and green space provision, and incorporate it all levels into plans, from individual buildings and streets to master plans?
- Base the planning and design of new development on up-to-date ecological surveys where such information does not exist?
- Incorporate sites of nature conservation value or interest, such as Sites of Special Scientific Interest and County Wildlife Sites?
- Base detailed enhancement schemes on a comprehensive evaluation of ecological management needs and priorities?
- Promote sensitive proposals which avoid or retain existing habitat or features of nature conservation value and which provide funding for their enhancement and long-term management?
- Encourage the planting of appropriate vegetation to link with and extend adjacent semi-natural woodland, scrub and grassland by reflecting species' composition to provide linear corridors linking isolated habitats?
- Encourage positive management of semi-natural or artificial habitats such as woodlands, grasslands, scrub and gravel pits, giving consideration to the reintroduction of traditional management regimes such as coppicing, pollarding or flood meadow habitat management?
- Encourage restoration of semi-natural habitats along river courses - such as reedbeds, overhanging trees and submerged vegetation, and bays, beaches and shallow marginal habitats;
- Reduce conflicts between recreation and nature conservation by restrictions on public access where it would be detrimental to wildlife?
- Consider replacement-planting programmes for mature trees?

Landscape, Townscape and Riverscape Character Considerations

Where relevant, does the plan or proposal use characterisation information and techniques to:

- Recognise and define the local landscape, townscape and/or riverside character?
- Guide the process of planning, designing and managing green space provision?
- Inform the management of green spaces as an integral part of the form and design of new built development?
- Input into master planning to guide and shape development at a more localised level?
- Consider the restoration of disused and derelict sites that are not suitable for development or have nature conservation or historic interest that should be conserved and properly managed?

- Consider the use of locally distinctive materials and techniques?
- Inform the general objective of continued visual containment of urban development by local topography and/or screening by existing and new areas of substantial tree cover?

Archaeological, Historical and Cultural Heritage Considerations

Where relevant, does the plan or proposal:

- Contribute to the protection and enhancement of the historic dimension of the landscape, including particular historic assets and their settings?
- Ensure that all new development avoids damage to protected areas, sites and features and enhances them where possible?
- Reflect the requirements of Conservation Management Plans produced for key historic assets, including options for conservation, enhancement and recreational and leisure use?
- Promote new opportunities for access to historic sites, especially where they secure the restoration of 'at risk' assets?
- Promote opportunities to take Scheduled Monuments out of arable cultivation in order to reduce damage to significant archaeological sites by ongoing ploughing?
- Promote opportunities for the repair, restoration an/or re-creation of historic landscapes, especially where they also restore or recreate wildlife habitats?
- Promote the repair, restoration and management of urban parks, historic parks and gardens, and other historic landscapes, where they provide opportunities for access to the wider countryside and other historic sites and features?
- Take account of historic townscape character and built heritage assets?
- Give particular attention to the significance and management requirements of historic buildings, sites and structures, and historic landscape features and elements?
- Protect important views and vistas of historic landmarks and their settings from inappropriate landscape change or intrusion by new developments and related infrastructure, having regard to opportunities for enhancement of views through redevelopment and improvement of degraded areas of built and natural environment?
- Base proposals for change at sensitive historic sites on Historic Landscape Surveys and Assessments, an evaluation of priorities for preservation, and a consideration of opportunities for restoration and repair of neglected or damaged features identified through comprehensive Conservation Management Plans?
- Encourage the appropriate re-use and renovation of neglected historic buildings and structures where this would ensure the perpetuation of these buildings as attractive and distinctive features?
- Encourage research to promote the historical and cultural associative value and interest of historic landscapes?

- Give particular regard to the repair, restoration and enhancement of historic parks and gardens, giving priority to conservation of:
  * Overall historic layout?
  * Avenues and designed vistas?
  * Reversion of arable to grassland land cover?
  * Specimen tree groups and field trees?
  * Exotic plantings?
  * Ornamental lakes and follies?
  * Estate boundary features (tree belts, 'deer pales' and ornamental fencing, gates and gate houses)?
- Protect historic riverside buildings and structures (e.g. mills) from redevelopment or inappropriate changes of use?
- Promote the historical use of the Rivers Stort and Lee for transport, improving where appropriate opportunities for access to and along the river corridors?

Access and Recreation Considerations

Where relevant, does the plan or proposal:

- Safeguard existing formal and informal sport and recreation facilities, including allotments from development where they meet local needs?
- Reflect opportunities to create new recreational facilities, particularly those that will link urban and countryside areas?
- Reflect and support the relevant Rights of Way Improvement Plans?
- Recognise the importance of linked up green space and green routes for providing recreational opportunities that can enhance health and well-being?
- Reflect audits and assessments of need in relation to formal and informal open space for sport and recreation undertaken by local authorities?

Trees and Woodland Considerations

Where relevant, does the plan or proposal:

- Conserve woodlands, hedgerows, green lanes and ancient/significant trees and their context?
- Promote woodlands as a core component of green infrastructure in the Harlow Area?
- Seek to deliver green infrastructure benefits through the enhancement of existing woodlands and/or by the creation of new woodlands?
- Give preference to native species and the use of planting stock of local origin?

- Seek to encompass opportunities to produce sustainable wood supplies for local renewable energy programmes through woodland management and creation?
- Programme new woodland planting well in advance of proposed development to allow time to mature?
- Promote opportunities to capitalise on the ability of woodland to contribute to sense of place, its popularity with the public for recreation, and its unique capacity to absorb recreational users and reduce the visual impact of development?
- Recognise the potential for recreational access to woodland to be actively used as a way of promoting physical activity, encouraging social cohesion and maintaining a sense of well-being that contributes to mental health?

Urban Green Space Considerations

Where relevant, does the plan or proposal:

- Promote the management of urban green space to accommodate nature, wildlife and historic and cultural assets, and provide for sport and recreation?
- Recognise that understanding the significance of green spaces, including their contribution to local townscape character, is a necessary first step in protection and management?
- Promote adequate provision for formal and informal recreational activities, including those that rely on the use of natural features or resources?
- Ensure that urban parks and green spaces are planned, managed and, where appropriate restored, with the active involvement of local communities?

New Development and Infrastructure Design Considerations

Where relevant, does the plan or proposal:

- Ensure that the design of new green infrastructure creates a distinctive sense of place?
- Incorporate the objectives of sustainable development to deliver social and economic as well as environmental benefits?
- Recognise that the design of green infrastructure is fundamental to the planning of town form, helping to integrate new urban extensions with existing settlements and the surrounding landscape, and to conserve and enhance the character of distinctive settlements and prevent urban coalescence?
- Seek creative green design solutions to the infrastructure demands of increasing population pressure?
- Encourage new developments to be built to the highest environmental standards, contribute to improved environmental sustainability including water efficiency measures, e.g. grey water recycling, rainwater butts, avoiding planting vegetation that requires large amounts of water, and/or designing for drier summers?

- Seek to manage flood risk at a spatial and local level through green spaces by adopting sustainable solutions such as Sustainable Urban Drainage Systems, which are a key measure to reduce flood risk and offer benefits for biodiversity, water quality, water resources and recreation?
- Contribute to reducing crime and anti-social behaviour through well-designed public space, taking into account its use at night as well as during day?
- Create and improve Public Rights of Way for all users and ensure a linked network providing access both to green spaces on the doorstep and the wider countryside?
- Help build community cohesion through good quality design of green spaces and links that offer cultural diversity of space and encourage access to such space for everyone?
- Establish new frameworks for urban-edge landscapes by creating distinctive edges, focuses, iconic landmarks, nodes and corridors of different size, scale and character that help differentiate, integrate and buffer a range of land use activities within the urban fringe landscape?
- Ensure that established open space and existing patterns of public access are maintained and improved;
- Ensure that new development sites are not severed from their countryside setting by providing footpath and cycleway linkages to the wider access network?
- Avoid adverse impacts on features of ecological, landscape, historical and amenity value?
- Resist further intensification of tranquil rural areas, unless absolutely necessary?
- Fully integrate new development into the landscape setting by use of distinctive design details and materials that help reinforce a strong sense of identity?
- Protect and enhance existing views of key visual and historical landmarks?
- Promote the provision of attractive frontages in new building designs that make a positive contribution to the experience of urban-edge landscapes?
- Screen facilities such as car parks, storage areas and access roads to protect key views?
- Protect and respect the historic value, setting and function of existing built heritage through sympathetic location, design and layout of new development and appropriate re-use of redundant buildings?
- Protect the small-scale and informal character of rural settlements from intensification and coalescence associated with inappropriate redevelopment, improvements or expansion?
- Only extend existing areas of residential development in environmentally acceptable locations?
- Provide opportunities to improve the visual and environmental quality of existing residential, commercial and industrial areas?
- Give full consideration and priority to the reuse of redundant land and buildings over greenfield development?
- Secure a high standard of architecture for all new urban development to improve the visual quality of landscapes and townscapes?
- Consider opportunities for the creation of new landmark buildings to contribute to distinctive, iconic or memorable places?

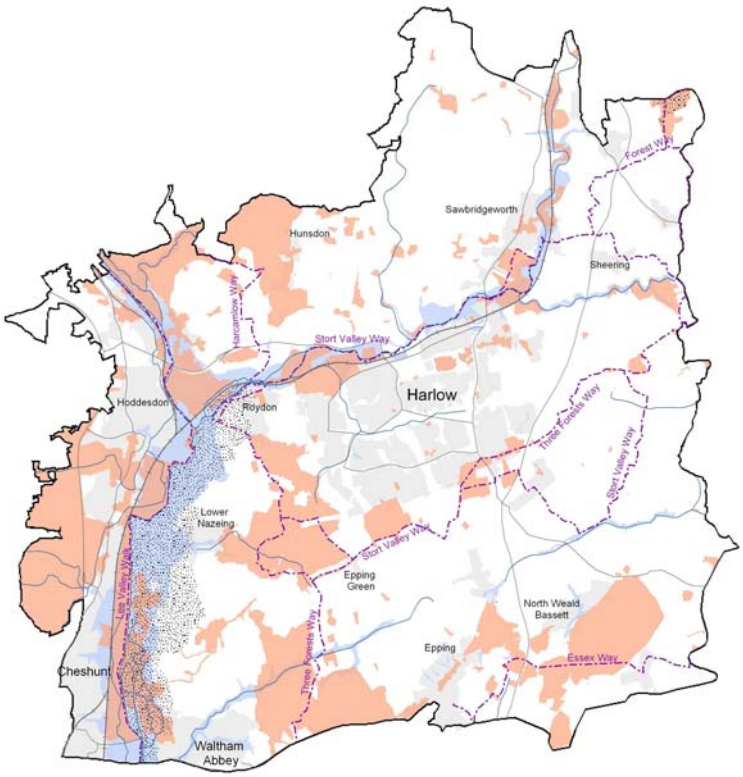
- Assess and consider the cumulative visual impact of the height, form and character of new buildings and structures on their landscape setting, both in long distance and local views?
- Integrate publicly accessible land into new development sites, ensuring that opportunities to improve existing areas of open space or create new ones are fully considered?
- Ensure that new development supports traditional activities and uses that contribute to local character and sense of place?
- Consider options for the regeneration of transitional urban-edge areas through new development to restore visual and physical links with the surrounding countryside?
- Promote the comprehensive redevelopment of redundant land where this would provide greatest benefits for visual and environmental improvement of the local landscape?
- Incorporate habitats for urban wildlife into new and existing buildings such as green roofs etc.

APPENDIX C

HARLOW AREA ECOLOGICAL SURVEY REPORT

The Harlow Area Green Spaces Project

HARLOW AREA ECOLOGICAL SURVEY REPORT



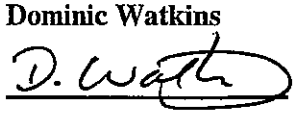
September 2005

CHRIS BLANDFORD ASSOCIATES

Environment Landscape Planning

The Harlow Area Green Spaces Project

HARLOW AREA ECOLOGICAL SURVEY REPORT

Approved By:	**Dominic Watkins**
Signed:	
Position:	**Associate Technical Director**
Date:	**22nd September 2005**

CHRIS BLANDFORD ASSOCIATES

Environment Landscape Planning

CONTENTS

1.0 INTRODUCTION

1.1 General

1.1.1 This report provides supplementary details of the targeted field based ecological surveys that were undertaken to inform the development of the ecological aspects of the Green Infrastructure Plan (GIP) for the Harlow area (CBA, 2005). The field survey data was used in conjunction with desk based datasets and sources of information to inform the preparation of the GIP.

1.2 Limitations of the Survey Methodology and Data

1.2.1 All surveys were undertaken using public rights of way. Consequently, complete coverage of each area was not possible and therefore mapping is incomplete in this respect. Most of the surveys were undertaken by foot using public footpaths and by-ways. Brief walkovers were undertaken where habitats of interest were encountered and where access was possible. Due to time limitations walk over surveys were limited to recording readily visible species but time was not spent undertaking static quadrat samples. Aquatic vegetation was assessed from the banksides and a grapnel was used in some places to identify weed.

1.2.2 The survey methodology was designed to meet project design objectives with the specific purpose of informing the strategic thinking behind the development of the GIP, as well as financial considerations. The survey results, therefore, are not directly comparable with conventionally accepted methods for ecological survey such as River Corridor surveys, National Vegetation Classification (NVC) etc.

1.2.3 The data contained within this report should therefore not be used for site specific purposes, for example, in relation to Environmental Impact Assessments. Data requirements for such exercises will require detailed surveys to be commissioned on a case by case basis.

2.0 ASSESSMENT METHODOLOGY

2.1 Methodology for Field Survey

2.1.1 A walkover survey was undertaken by experienced ecologists during the months of May, June and July 2005. Survey effort was distributed throughout each month in order to maximise the potential for recording a wide range of ecological interest within each habitat type including vascular plants, mammals such as badger, water vole and hare, butterflies and birds.

2.1.2 The survey method was based on an amended Phase 1 Habitat Survey methodology, based on the guidelines set out in the 'Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit' (JNCC, 2003). The survey data was subsequently used to inform the development of Figures 3b (Key Habitats and Links) and 3c (Priority Areas for Enhanced Green Spaces and Links for Wildlife). The survey included authentication and classification of habitats and identification of the presence, or potential presence, of certain protected and/or notable species of flora and fauna. The Survey also included identification of ideas for potential enhancement of habitats or where there was opportunity to create, link or use the habitat as a buffer.

2.1.3 Information sources were used regarding particular areas to provide focus for surveying in the field. These documents included:

- Biodiversity Action Plan: 50 Vision for the Wildlife and Natural Habitats of Hertfordshire (1998).
- Essex Biodiversity Action Plan.

2.2 Survey Areas and Target Notes

2.2.1 Survey Areas were agreed with the GIP Steering Group in order to focus survey effort. These are shown on Figure 1 and include:

Survey Area A –West of Hoddesdon,
Survey Area B – Lee River Corridor,
Survey Area C – Stort River Corridor,
Survey Area D – Gilston / Hunsdon Historic Landscapes,
Survey Area E – Roydon / Nazeing Plateau

Survey Area F – Southern and Eastern Harlow Urban Fringes,
Survey Area G - Epping Forest Fringe

2.2.2 Observed survey data were recorded as Target Notes (TNs). The location of the TN's are shown on Figure 1 and are set out in Section 3.0.

Section 3 TARGET NOTES

Section 3 Target Notes

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
A1	Elm and hawthorn hedgerow in Cheshunt Park, improved grassland with scattered trees and shrubs	False oat-grass, hogweed	Yes	Bats, invertebrates, reptile	Leave ruderal vegetation uncut
A2	Large reservoir surrounded by scrub and willow, some marginal vegetation	Common reed, bulrush		Bat, birds, reptile	
A3	Canal with concrete sides, bordered by improved grassland	Aquatic weed, willow, poplar species		Invertebrates	Create buffer along canal edge of grassland, not mown so frequently
A4	Semi-improved grassland with scrub and scattered trees	Tufted hair-grass, common knapweed, meadow buttercup, creeping bent	Yes	Invertebrates	
A5	Tree and scrub line with dead elm, oak and blackthorn				Replant gaps where elm dieback
A6	Pond with stagnant water	Willow, soft rush and yellow iris		Invertebrates, amphibians	Cut back some trees to decrease shading
A7	Planted trees with some scrub	Scot's-pine, ash and silver birch		Birds, invertebrates	
A8	Bramble scrub and dead elm				Replant gaps where elm dieback
A9	Earth works and active machinery at time of survey				
A10	Elm hedgerow with gaps				Replant gaps where elm dieback
A11	Two parallel hedgerows species-rich with bat and bird boxes	Hornbeam, elm, elder,	Yes	Badger, bats, birds, invertebrates	Replant gaps where elm dieback
A12	Shaded pond with scum layer over the surface	Reed sweet-grass		Amphibian	
A13	Broad-leaved woodland with old coppiced hornbeam and sycamore			Bats, birds, invertebrates	Link to northern woodlands
A14	Broad-leaved woodland of mature oak and ash and sparse ground flora	Red campion, honeysuckle and foxglove	Yes	Birds, invertebrates	
A15	Broad-leaved woodland similar to TN A14 -no access			Birds, invertebrates	
A16	Large dung heap in field			Reptiles	
A17	Line of mature broad-leaved trees			Birds, invertebrates	
A18	Tall ruderal and scrub - unmanaged	Hemlock		Birds, invertebrates, reptiles	Create grassland and ruderal habitat
A19	Blackthorn scrub and mature oak			Birds, invertebrates	
A20	Broad-leaved oak woodland			Birds, invertebrates	
A21	Scattered trees and heath (picnic site) with elm scrub	Common nettle and foxglove		Bats, birds, invertebrates	
A22	Improved grassland	Yorkshire fog, false oat-grass			Create species rich grassland
A23	Unimproved heathland	Sheep's fescue	Yes	Invertebrates	Expand into surrounding grassland
A24	Mature trees within estate grounds alongside stream	Oak, ash, elder		Bats, birds, invertebrates	
A25	Stream with clear running water	Fool's water-cress		Invertebrates	
A26	Estate - mixed woodland	Evergreen oak, holly, Scot's pine, beech and elm	Yes	Bats, birds, invertebrates	

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
A27	Broad-leaved oak and hornbeam woodland			Bats, birds, invertebrates	
A28	Tall ruderal bank	Hemlock and common nettle		Birds, invertebrates	Create grassland and ruderal habitat
A29	Semi-improved grassland but species-poor	False oat-grass, tufted vetch		Invertebrates	Create species rich grassland
A30	Semi-improved unmanaged grassland with piles of spoil	Mugwort		Invertebrates	Create grassland and ruderal habitat
A31	Broad-leaved woodland and moat with ruderal and scrub	Oak, ash and elm		Bats, birds, invertebrates	
A32	Country club grounds of mature trees and mown grassland	Scot's-pine and oak		Bats, birds, invertebrates	
A33	Attractive lake with water-lily and bulrush			Birds, invertebrates	
A34	Young poplar plantation linking woodlands			Birds, invertebrates	
A35	New housing development adjacent to woodland				
A36	Broad-leaved woodland of oak, hornbeam and elm			Bats, birds, invertebrates	
A37	Broad-leaved woodland of oak and sycamore			Bats, birds, invertebrates	
A38	Broad-leaved woodland plantation of young oak and bracken			Birds, invertebrates	
A39	Unimproved grassland with thick tussocks, species-poor.	Sheep's fescue		Birds, invertebrates	Top sward to enhance species richness and include into Hoddesdon Park Nature Reserve
A40	Unimproved grassland - rabbit grazed, with line of oak trees	Weld, creeping thistle and sheep's fescue		Bats, birds, invertebrates	
A41	Semi-improved grassland with some floristic interest	Common bird's-foot-trefoil, heath speedwell and fescue species	Yes	Birds, invertebrates	
A42	Unimproved grassland, poor species-richness and appears like parkland	Glaucous sedge	Yes	Invertebrates	
A43	Improved grassland in park with clumps of Scot's pine and horse chestnut, duck lake and tall ruderal vegetation			Birds, invertebrates	
A44	Park with amenity grassland and broad-leaved trees				
A45	Broad-leaved plantation in park with cedar and oak			Birds, invertebrates	
A46	Brook shaded by broad-leaved trees, earth banks poached by cattle			Birds, invertebrates	
A47	Two hedgerows bordering lane with unimproved verges of false oat-grass			Birds, invertebrates	
A48	Set aside/ unmanaged land			Invertebrates	Create species rich grassland
A49	Broad-leaved trees and scrub of dead elm adjacent to improved field with disturbed ground	Sycamore, hazel		Invertebrates	Replant gaps where elm dieback
A50	Set aside/ unmanaged land with little floristic interest	Common ragwort, Yorkshire fog		Invertebrates	Create species rich grassland
A51	Brook shaded by oak, willow and poplar			Invertebrates	
A52	Line of Scot's-pine and bank with rabbit warren and scrub			Invertebrates	
A53	Set aside/ unmanaged land with little floristic interest			Invertebrates	Create species rich grassland
A54	Pathway with hawthorn hedgerows and unimproved grassland edges	Oak standards		Invertebrates	

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
A55	Ash plantation and bramble scrub along A10 road bank	Dianthus species, pendulous sedge		Invertebrates	Expand along A10
A56	Quarry works with ruderal vegetation				
B1	Farmyard pond, overgrown with reeds	Reed sweet-grass and grey club-rush		Amphibian and reptile	Clear out
B2	Planted hedgerow of native species	Hawthorn, privet, prunus species			
B3	Set aside appears to have been sprayed, ruderal and arable weed species	Red fescue, weld, thistles, common mallow, white campion	Yes	Invertebrates	Create native grassland
B4	Set aside, visibly brown, moderate species richness	False brome, hemlock, weld, poppy	Yes	Invertebrates	Create native grassland
B5	Ditch beside arable land			Birds, invertebrates	
B6	Stream of running clear water, ruderal vegetation, overgrown and willow	Fool's water-cress, reed sweet-grass, reed canary-grass, Indian balsam, brooklime, water-crowfoot species	Yes	Water vole, Invertebrates, birds	Further survey of aquatic plants, water vole
B7	Plantation of black poplar hybrid, willow and wet grassland	Great willowherb, yellow iris, wood forget-me-not, cut-leaved crane's-bill	Yes	Birds, invertebrates	
B8	Footpath with unimproved grass margins, 100's of demoiselles	Welted thistle, common bird's-foot-trefoil, comphrey,	Yes	Birds, invertebrates, reptiles	
B9	Ditch and good area of hedgerows, large brown snails approximately 6cm in length				
B10	Broad-leaved oak/ash woodland including old boundary feature of hornbeam	Elm, dog's mercury, bugle, wood vetch, spindle, red campion	Yes	Bats, birds, invertebrates	
B11	Willow plantation adjacent to stream at bottom of attractive green valley	Fool's water-cress		Birds, invertebrates	
B12	Semi-improved grassland valley with patches of floristic interest and standard trees	Oak, cedar, horse chestnut, Scot's pine, beech, fescue species, germander speedwell, common cat's-ear	Yes	Bats, birds, invertebrates	Review grazing regime to improve floristic interest
B13	SNCI woodland - mixed pine and beech plantation	Silver birch, larch, horse chestnut, bracken, male fern, red campion	Yes	Bats, birds, invertebrates	Possibly manage bracken
B14	Planted cherry trees with unimproved grassland verge along footpath				
B15	Narrow lane with unimproved verges up to school				
B16	Tree line, bank with some elm dieback	Oak, Scot's pine, beech, red campion,		Bats, birds, invertebrates	Plant up gaps
B17	Small area of broad-leaved woodland of sycamore and ash			Bats, birds, invertebrates	
B18	Wet grassland, no access but appears to be encroached by willow scrub			Birds, invertebrates, amphibians	Review management and possibly cut back scrub
B19	Planted elm hedgerow and grass verge amongst arable fields	Lady's bedstraw, common knapweed, sun spurge, field pansy	Yes	Birds, invertebrates	Create more similar hedgerows to link together
B20	Broad-leaved oak/ash woodland adjacent to road and stream			Birds, invertebrates	Create more similar hedgerows to link together
B21	Old tree line of mature and stag horn oak	Elm, hawthorn, elder, cherry		Bats, birds, invertebrates	Create more similar hedgerows to link together
B22	Broad-leaved oak/ash woodland in village	Ash, sycamore, dog's mercury, false brome		Birds, invertebrates	
B23	Unimproved road verges with patches of floristic richness	Common bird's-foot-trefoil, yarrow, white clover, ribwort plantain	Yes	Invertebrates	
B24	Set aside fields/grassland with ruderal species and planted hedgerow adjacent to road	Hemlock, bee orchid, cut-leaved crane's-bill, yarrow, creeping cinquefoil, spear thistle	Yes	Birds, invertebrates	Create species-rich grassland
B25	Mosaic of meadows and water bodies, reed beds				

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
B26	Mosaic of willow scrub, wet grassland, dry ponds, ruderal vegetation			Birds, invertebrates, amphibians	Manage encroachment of ruderal and scrub
B27	Dense hemlock by railway line				Cut back manage as grassland
B28	Lake and wet grassland, reeds, sedges			Birds, invertebrates	
B29	Waterway with cement sides, some grassland with floristic interest, overhanging trees, some aquatic vegetation, Old Thames Water building with large bird nest box.	Common starwort, soft rush,		Birds, invertebrates	Less frequent mowing regime on surrounding grassland
B30	Wet grassland, no access			Birds, invertebrates	
B31	Planted young trees and semi-improved grassland				
B32	Landfill site adjacent to Nature Reserve with line of willow/scrub and area of good hedgerows	Weeping willow, goat willow, elm, sweet chestnut		Birds, invertebrates	Create more similar hedgerows to link together
B33	Old Thames Water building with large bird nest box			Birds	Create grassland behind this building (arable at present)
B34	Community woodland with plantation, glades of grassland with moderate species richness	Oak, silver birch, hornbeam, restharrow, smooth tare, common knapweed		Birds, invertebrates	
B35	Disturbed area within woodland TN B34 with floristic interest	Bee orchid, field forget-me-not, sheep's fescue, creeping cinquefoil, goat's-rue	Yes	Birds, invertebrates	Manage goat's-rue before it spreads further
B36	Unimproved grassland, rabbit grazed with some floristic interest, adjacent to waterway	Weld, hairy sedge, soft rush, sheep's fescue	Yes	Invertebrates	
B37	Lake possibly used for fishing, mown grassland and planted willow	Indian balsam		Birds, invertebrates	Treat and eliminate Indian balsam
B38	Garden with mature trees and mown lawn	Beech, yew, sweet chestnut, ground elder, nipplewort, cow parsley		Birds, invertebrates	
B39	Wet grassland with ruderal species and very overgrown	Great willowherb, tufted vetch, lesser pond-sedge		Birds, invertebrates	Mange ruderal vegetation
B40	Broad-leaved woodland/scrub	Laburnum, hazel, dogwood, guelder rose, white willow, field maple	Yes	Birds, invertebrates	
B41	Railway bank, footpath by water way, standing water in ditch, some floristic interest	Pendulous sedge, yellow iris, flote grass,		Birds, invertebrates, water vole, amphibians	
B42	Mature trees, canal and footpath	Poplar, ash, comphrey, black medick		Birds, invertebrates	
B43	Railway bank with bramble scrub and ruderal vegetation	Elder, blackthorn		Birds, invertebrates	
B44	Canal and mown improved grassland	Pondweed, colt's-foot, Yorkshire fog		Invertebrates	Less frequent mowing regime on surrounding grassland
B45	Canal, marginal vegetation and scrub	Snowberry, elder, hawthorn, Hart's-tongue fern		Birds, invertebrates	
B46	Broad-leaved strip of woodland			Bats, birds, invertebrates	
B47	Set aside, some sprayed, ruderal species	Italian rye-grass, creeping bent, creeping thistle		Invertebrates	Create species-rich grassland
B48	Nature reserve Glen Faba, unimproved grassland and scrub	Smooth tare, red fescue		Bats, birds, invertebrates	
B49	Ditch with ruderal vegetation and scrub line	Reed canary-grass, comphrey, hops		Birds, invertebrates	Plant up hedgerow and link to TN51 woodland
B50	Unimproved grassland and scrub with floristic interest	Wild carrot, lesser trefoil, upright hedge-parsley		Birds, invertebrates	
B51	Broad-leaved oak/ash woodland with species rich ground flora, deer droppings, buzzard	Dog's mercury, wood sedge, red campion, dog-violet, wood vetch, giant fescue,	Yes	Bats, birds, invertebrates	

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
B52	Willow carr and ditch overgrown with ruderal vegetation	Comphrey, hedge woundwort, common reed, gypsywort, Indian balsam	Yes	Birds, invertebrates	Treat and eliminate Indian balsam
B53	Banks of river, mature willow with some marginal vegetation, little aquatic	Indian balsam, meadowsweet, sedges	Yes	Bats, birds, invertebrates	Treat and eliminate Indian balsam
B54	Lock with ruderal vegetation overgrown with Indian balsam			Birds, invertebrates	Treat and eliminate Indian balsam
B55	Broad-leaved willow and sycamore woodland on island	Common reed		Bats, birds, invertebrates	
B56	Ruderal vegetation and willow carr				
B57	Small water reservoir linked to river, surrounded by silver birch plantation	Indian balsam			Treat and eliminate Indian balsam
B58	Overgrown scrub and marginal vegetation, mature ivy-clad trees	Common nettle, cleavers, hazel, wayfaring tree, hops		Bats, birds, invertebrates	Clear small glades to improved diversity
B59	Unimproved grassland, heavily grazed by horses with mature willow and elder scrub			Birds, invertebrates	Review grazing regime to improve floristic interest
B60	Broad-leaved trees and scrub at back of industrial buildings			Birds, invertebrates	
B61	River, marginal vegetation, fishing and cement banks	Lesser pond-sedge, meadowsweet, bittersweet, reed canary-grass, yellow water-lily	Yes	Birds, invertebrates, water vole	
B62	Managed lawn and broad-leaved trees, ruderal vegetation by Dobbs Weir	Sycamore		Birds, invertebrates	
B63	Mown grassland by river bank and scrub			Birds, invertebrates	
B64	Managed grassland and broad-leaved trees				
B65	Semi-improved grassland and spoil, works.			Birds, invertebrates	
B66	Set aside - grass and ruderal species				Create species-rich grassland
B67	Fishery works				
B68	Young tree plantation along hedgerow and ditch			Birds, invertebrates	
B69	Set aside appears to have floristic interest		Yes		Create species-rich grassland
B70	Semi-improved grassland with scattered scrub	Weld, hemlock, false oat-grass, creeping cinquefoil		Invertebrates	Review cutting regime to improve floristic diversity
B71	Village pond, reeds and willow			Birds, invertebrates, amphibians	
B72	Wet grassland with some floristic interest	Great willowherb, soft rush, silverweed, meadow vetchling	Yes	Birds, invertebrates, amphibians	Create wet grassland habitat
B73	Species-poor grazed grassland	Ox-eye daisy, common mallow, creeping buttercup		Invertebrates	Review grazing regime to improve floristic interest
B74	Lake, no access with bulrush				
B75	Track with ruderal vegetation, 10m wide, scrub	Hogweed, comphrey, bramble		Birds, invertebrates	
B76	Scattered scrub with ruderal vegetation	Bramble, hawthorn		Birds, invertebrates	
B77	Japanese knotweed by lake edge				Treat and eliminate Japanese knotweed
B78	Semi-improved grassland	Soft brome, grass vetchling, giant fescue	Yes	Invertebrates	Create species-rich grassland

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
B79	Japanese knotweed by lake edge				Treat and eliminate Japanese knotweed
B80	Semi-improved grassland with scattered scrub	Ox-eye daisy	Yes	Invertebrates	Create species-rich grassland
B81	Scrub/woodland no access	Elder, hawthorn, willow, ash		Birds, invertebrates	
B82	Broad-leaved ash/horse chestnut woodland	Holly, elder, ivy		Birds, invertebrates	
B83	Poor semi-improved grassland, crossed by ditches full of reeds	Yorkshire fog, meadowsweet, fool's water-cress		Birds, invertebrates, amphibians	Create wetland habitat
B84	Ditch network with reeds and willow	Water-fern, water figwort, rushes		Birds, invertebrates, amphibians	Treate and eliminate water fern
B85	Grassland, no access	Yorkshire fog and rushes		Invertebrates	Further botanical survey - link to marsh
B86	Semi-improved grassland with scattered scrub	Dog rose, meadow foxtail, crested dog's-tail	Yes	Invertebrates	Create species-rich grassland
B87	Orchard			Birds, invertebrates	
B88	Poor semi-improved grassland, with scattered scrub				
B89	Semi-improved grassland	Red fescue, soft brome, black medick, common ragwort, cut-leaved crane's-bill	Yes	Invertebrates	Create species-rich grassland
B90	Open water with bulrush and willow			Birds, invertebrates	
B91	Line of trees/scrub	Whitebeam, sycamore, elder, cherry		Birds	
B92	Two small ponds with marginal vegetation	Lesser bulrush, yellow iris		Birds, invertebrates, amphibians	
B93	Semi-improved grassland	Yellow rattle, sterile brome, common knapweed, creeping cinquefoil	Yes	Birds, invertebrates	
B94	Improved grassland with scrub and tree belt to south	Field maple, hawthorn, dogwood			
B95	Lane with hedgerows, dead elm and scrub	Hawthorn		Birds, invertebrates	Plant up hedgerows with native species
B96	Poor semi-improved grassland with scattered scrub	Hawthorn		Birds, invertebrates	Open up glades to improve floristic diversity
B97	Mosaic of poor semi-improved grassland and scrub	Red fescue, selfheal, grass vetchling, hawthorn, dog rose, bramble	Yes	Birds, invertebrates	
B98	Broad-leaved ash/willow woodland with bramble understorey	Horse chestnut, elder, nettle, hogweed		Bats, birds, invertebrates	
B99	Amenity grassland, ruderal margins	Cow parsley, comphrey, aspen, willow, ash		Bats, birds, invertebrates	
B100	Mosaic of amenity grassland, scrub, ruderal vegetation	Field maple, silver birch, willow, teasel, Japanese knotweed	Yes	Bats, birds, invertebrates	Treat and eliminate Japanese knotweed
B101	Dense scrub with some open areas overgrown with Japanese knotweed	Comphrey, hemlock		Birds, invertebrates	Treat and eliminate Japanese knotweed
B102	Poor semi-improved grassland and scrub	Common valerian, common knapweed, dog rose		Birds, invertebrates	Create species-rich grassland
B103	River banks dominated by Indian balsam				Treat and eliminate Indian balsam
B104	River, willows, elder scrub, margins of reeds	Bulrush, reed canary-grass		Birds, invertebrates	
B105	Willow woodland , no access	Hawthorn, hazel, bramble		Birds, invertebrates	

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
B106	Semi-improved grassland with scattered scrub	Common vetch, black medick, creeping cinquefoil	Yes	Birds, invertebrates	Create species-rich grassland
B107	Dense planted willow, ash woodland/scrub	Aspen, hawthorn,		Birds, invertebrates	
B108	Poor semi-improved grassland	Black medick, common knapweed, Yorkshire fog		Invertebrates	Create species-rich grassland
B109	Ash plantation			Birds, invertebrates	
B110	Poor semi-improved grassland	Cock's-foot, false oat-grass			
B111	Poor semi-improved grassland	False oat-grass, common vetch, black medick			
B112	Poor semi-improved grassland - closely mown				
B113	Pond with marginal vegetation	Bulrush, reed canary-grass, yellow iris		Birds, invertebrates, amphibians	
B114	River bordered by rank grassland and marginal vegetation	Reed canary-grass, hemlock, Indian balsam		Birds, invertebrates	Treat and eliminate Indian balsam
B115	Amenity grassland of varying floristic interest, willow woodland and scattered scrub	Meadow buttercup, common knapweed, dog rose, cherry, hazel	Yes	Birds, invertebrates	
B116	Semi-improved grassland bordered by aspen	Red fescue, great willowherb, Yorkshire fog	Yes	Birds, invertebrates	
B117	Pond with bulrush, small island of scrub	Great willowherb		Birds, invertebrates, amphibians, possibly water vole	
B118	Small brook shaded by aspen and other mature trees	Common nettle, Japanese knotweed		Birds, invertebrates	Treat and eliminate Japanese knotweed
B119	Aspen and willow, ruderal vegetation	Hemlock, teasel, comphrey, Japanese knotweed		Birds, invertebrates	Treat and eliminate Japanese knotweed
B120	Ash plantation	Sycamore, willow, aspen, cow parsley, comphrey, common nettle		Birds, invertebrates	
C1	Fishing pond surrounded by willow carr and overgrown sedge swamp.	Lesser pond-sedge, water lily		Birds, invertebrates possibly amphibians	Create adjacent small ponds without fish
C2	No access to clumps of broad-leaved trees in arable field - possibly ponds present.			Birds possibly amphibians	
C3	Unimproved grassland with encroachment from nettle and bramble, good hedgerows.	Sterile brome, smooth meadow-grass, glaucous sedge, field forget-me-not	Yes	Birds, bat, invertebrates, reptiles,	Top sward in early spring, control scrub and possible include within adjacent nature reserve
C4	Wet woodland with some sedge swamp ground cover and shallow water	Crack willow, alder, oak	Yes	Birds, invertebrates possibly amphibians	
C5	Wet grassland, drying at edges with patches of species richness	Reed canary-grass, red campion, common comphrey	Yes	Birds, invertebrates possibly amphibians	
C6	Pools including fishing ponds and gardens (no access).			Birds, bat, invertebrates, reptiles, possibly amphibians, water vole	Recommend full habitat survey and water vole as looks very good potential for flora and fauna.
C7	Wet woodland with sparse ground flora including bluebell	Crack willow, alder, oak, field maple		Birds, bat, invertebrates, reptiles,	Introducing coppicing
C8	Species-rich hedgerows along drive, overgrown.	Prunus species, sycamore, wych elm,	Yes	Birds, invertebrates	Link and replant gaps to nearby woodland
C9	Wood pasture plantation with oak	Giant fescue, red campion, common nettle			Link to adjacent woodland habitats
C10	Well managed estate with mature oak and semi-improved grassland. No access.				Link to SNCI beside river

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
C11	Overgrown wet grassland with reed canary-grass swamp	False oat-grass, soft rush, willow		Birds, invertebrates	Control encroachment of willow scrub - manage with local SNCI
C12	River by old mill with some marginal and aquatic vegetation	Flote grass, starwort species, fool's water-cress, water-lily	Yes	Bats, birds, invertebrates	Further survey of river aquatic vegetation
C13	Willow carr with very dense sedge swamps and shallow pools.	Lesser pond-sedge		Birds, invertebrates possibly amphibians	Maintain water levels
C14	Species rich hedgerow and trees bordering lane	Oak, hawthorn	Yes	Birds, invertebrates	Link to other hedgerows and plant up gaps
C15	Grassland - semi-improved with moderate floristic species richness	Soft brome, cock's-foot, creeping buttercup		Invertebrates	Top sward in spring to improve floristic diversity
C16	Road bordered by tall trees and hedgerow, species-rich verges	Common vetch, common bird's-foot-trefoil, strawberry clover, common knapweed, bulbous buttercup, meadow buttercup	Yes	Invertebrates	Create similar verges along length of road
C17	Heavily grazed pasture with some unmanaged parts with ruderal vegetation and scrub	Common nettle, hemlock, germander speedwell, blackthorn, bramble, wych elm	Yes	Birds, invertebrates	Control encroachment of scrub, and top sward in spring to reduce ruderals
C18	Railway banks - woodland herbs and good floristic species richness	Wood avens, creeping cinquefoil, false brome	Yes	Invertebrates, reptiles	Link to adjacent grassland within SNCI
C19	Arable field margin with moderate floristic species richness	Woody nightshade, meadow buttercup, wych elm, rose, yew		Invertebrates, reptiles	Replant hedgerows with elm dieback and encourage network of wider field margins
C20	Unimproved grass fields and line of sweet chestnut, field vole and good species richness in fields		Yes	Bats, birds, invertebrates	
C21	SNCI - lowland wet grassland.		Yes	Birds, invertebrates	Replant hedgerows where gaps encourage links to adjacent verge habitats
C22	Arable field with some margins of arable weeds and a ditch	Common reed, nettle, bramble, teasel, red campion, wintergreen, red-dead nettle, ox-eye daisy, meadow crane's-bill, ivy-leaved speedwell		Birds, invertebrates	Encourage wider field margins where appropriate
C23	Broad-leaved line of trees near to river	Willow, horse chestnut and ash	Yes	Bat, birds, invertebrates	Develop this corridor to river
C24	Road verge with moderate floristic species richness	Yorkshire fog, smooth meadow-grass, common knapweed		Birds, invertebrates	
C25	Broad-leaved line of trees beside road	Beech, oak, hawthorn		Bat, birds, invertebrates	
C26	Horse-grazed fields with willow scrub adjacent to river			Birds, invertebrates	
C27	Garden and adjacent foot path with mature trees and woodland herbs	Horse chestnut, field maple, white poplar, greater periwinkle, white bryony, Lords-and-Ladies, cow parsley	Yes	Bat, birds, invertebrates	
C28	Well maintained lawns within cemetery	Ash		Invertebrates	
C29	Hedgerow with trees, small gaps and mature trees leading down to river	Elder, ash, wych elm, hawthorn, bramble, ivy		Bat, birds, invertebrates	
C30	No access but appears as mature block of broad-leaved woodland	Oak, hawthorn		Bat, birds, invertebrates	Link to habitats adjacent to river, north and south
C31	Unmanaged field of ruderal vegetation, overgrown and no access	Cow parsley, common nettle		Invertebrates	Control encroachment of ruderals, and top sward in spring to encourage wild flowers
C32	Common reed beds within SNCI appears to be drying out as encroachment by willow		Yes	Birds, invertebrates	Control encroachment of willow scrub - manage within local SNCI plan
C33	Unmanaged field/set aside/ old hay meadow with ruderal species			Birds, invertebrates	Create grassland and control encroachment of ruderals, and top sward in spring to encourage wild flowers
C34	No access but appears as mature block of broad-leaved woodland	Oak, ash, sycamore.		Birds, invertebrates	Link to woodland to the west by river
C35	SNCI, Common reed bed and willow carr.		Yes	Birds, invertebrates	

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
C36	Stream bordered by trees and scrub, shaded			Birds, invertebrates	Create buffer zone along edge of stream to encourage diversity
C37	Road verge with moderate floristic species richness		Yes	Birds, invertebrates	Include under management plan of SNCI
C38	Village pond with moderate floristic species richness, possibly no fish present but water fowl	Bulrush, water mint, great willowherb, bittersweet, water starwort, gypsywort, water plantain pendulous sedge, curled pondweed, Japanese knotweed	Yes	Birds, invertebrates and possibly amphibians	Treat and eliminate Japanese knotweed
C39	Stream at Hallingbury Mill with species rich flora, trout pond and well maintained gardens	Water crowfoot beds, water lily, water starwort	Yes	Birds, invertebrates	Further survey of river aquatic vegetation
C40	Road verge with moderate floristic species richness			Birds, invertebrates	Include under management plan of SNCI
C41	Planted trees of beech and lime within gardens			Bats	
C42	Broad-leaved woodland with some additional planted species, low management and fallen trees, closed canopy, evidence of mammal paths and sparse ground flora	Sycamore, horse chestnut, large-leaved lime, holly, elm, yew, beech, oak, ash, dog's mercury, ivy, common nettle	Yes	Badger, bat, birds, invertebrates	Introduce coppice management
C43	Ditches with flowing water by roadside with woodland flora	Herb-robert, dog's mercury, lesser burdock, ground-ivy.	Yes	Birds, invertebrates	Creat buffer margin along ditch edge to link to surrounding hedgerows
C44	No access. Appears to be floristically species-rich hay meadows, good hedgerows and copse			Birds, invertebrates	Acting as a buffer to urban areas to west
C45	Species rich hedgerow and trees bordering lane	Field maple	Yes	Birds, invertebrates	Acting as a buffer to urban areas to west
C46	House and garden with mature trees surrounded by arable land			Bat	Acting as a buffer to urban areas to west
C47	Scattered trees and scrub with possibly unimproved grassland adjacent to R. Stort and reed beds	Soft brome, Yorkshire fog	Yes	Birds, invertebrates and possibly water vole	Acting as a buffer to urban areas to north
C48	Semi-natural woodland with oak and sycamore canopy, moderate species rich ground flora	Dog's mercury, pendulous sedge	Yes	Birds, invertebrates	Link to adjacent habitats along river and create buffer zone along its length
C49	Possibly unimproved grassland - rank grass tussocks with few herbs	Lords-and-Ladies		Birds, invertebrates	Include under management plan of adjacent SNCI
C50	Possibly unimproved grassland crossed by ditches with sedges	Creeping thistle, meadow fox-tail	Yes	Birds, invertebrates and possibly amphibians	Further survey, possibly create more of a wetland habitat
C51	Band of oak trees adjacent to river			Bats	
C52	Elder adjacent to river				
C53	River tributary with willow and possibly unimproved grassland with ruderal species	Cock's-foot, false oat-grass, creeping buttercup		Birds, invertebrates	Further survey of river aquatic vegetation
C54	Possibly unimproved grassland with some mature oak trees	Meadow fox-tail, field forget-me-not, false oat-grass, cow parsley	Yes	Bats, birds, invertebrates	Create species rich grassland
C55	Rank species-poor semi-improved grassland			Invertebrates	Create species rich grassland
C56	No access appears to be broad-leaved woodland	Horse chestnut, beech, hawthorn, elder		Birds, invertebrates	
C57	River with swift flow of water and partially shaded by ash trees and scrub			Birds, invertebrates	Link to adjacent habitats along river and create buffer zone along its length
C58	Unimproved grassland with rushes and tall ruderal species	Cow parsley, spear thistle	Yes	Birds, invertebrates	Create species rich grassland by topping sward in spring to reduce ruderal species
C59	Marginal vegetation along river with some bulrush			Birds, invertebrates	
C60	Brook with ruderal and marginal vegetation, some willow and hawthorn scrub			Birds, invertebrates	Further survey of river aquatic vegetation
C61	Willow and hawthorn scrub beside river. No access				

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
C62	Woodland contains pond with some pendulous sedge			Birds, invertebrates, amphibians	
C63	Broad-leaved woodland				
C64	Semi-improved species rich grassland, scattered trees and good hedgerows		Yes	Birds, invertebrates	
C65	Set aside field			Birds, invertebrates	Create species rich grassland
C66	Woodland with willow and ditch with water and common reeds	Field maple, ash, blackthorn, dog's mercury	Yes	Birds, invertebrates, amphibians	
C67	Some bulrush				
C68	Willow and alder scrub beside River Stort			Birds, invertebrates	Link to adjacent habitats along river and create buffer zone along its length
C69	Rough ground with ruderal species	Field horsetail, teasel, sterile brome		Birds, invertebrates	Create species rich grassland
C70	Wetland area dominated by sedges within SNCI			Birds, invertebrates	
C71	Series of pools, woodland with emergent vegetation	Bulrush, common reed, meadowsweet, water-cress		Birds, invertebrates, amphibians	Further survey
C72	Semi-improved grassland and large spoil mounds with ruderal vegetation			Birds, invertebrates, reptiles	Create species rich grassland
C73	Wetland area, water, willow and grassland and ditches.	Common reed, sedges, hard rush,		Birds, invertebrates	Further survey
C74	Wide body of water shaded by sycamore and horse chestnut, woodland flora	Alder, Norway maple, ground elder, bluebell, Indian balsam		Birds, invertebrates	Treat and eliminate Indian balsam
C75	Brook (little aquatic vegetation) shaded by willow and alder,			Birds, invertebrates	Further survey
C76	Common vetch abundant in semi-improved grassland field			Invertebrates	
C77	Hawthorn planted scrub and oak/ash trees	Dogwood, dog rose		Birds, invertebrates	Link with adjacent habitats (TN 76 and 78, 79) and manage to improved diversity
C78	Hazel scrub and open ruderal vegetation	Cow parsley, bramble, common nettle		Birds, invertebrates	
C79	Semi-improved grassland bordered by beech trees in the south			Birds, invertebrates	
C80	Apple orchard				
C81	Allotments				
C82	Semi-improved grassland with moderate floristic species richness		Yes		Top sward in spring to encourage diversity
C83	Road verges and good hedgerows with some floristic interest		Yes	Birds, invertebrates	Link and replant gaps in hedgerows
C84	Semi-improved grassland with good hedgerows	Blackthorn, hawthorn		Birds, invertebrates	Link and replant gaps in hedgerows
C85	No access - grassland and scattered hawthorn scrub			Birds, invertebrates	Create species rich grassland
C86	Broad-leaved woodland, small area			Birds, invertebrates	
C87	Horse-grazed paddocks which may have some floristic interest			Birds, invertebrates	
C88	Broad-leaved woodland, small area			Birds, invertebrates	

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
C89	No access - grassland and scattered scrub, field sloping down to river.			Birds, invertebrates	Link to riparian habitats and create species rich grassland
C90	Part of SNCI- scrub and occasional trees	Snowberry, hawthorn, ash, nettle		Birds, invertebrates	
C91	SNCI - hay meadows species-rich adjacent in floodplain				
C92	Estate - golf course with good hedgerows and mature trees	Hornbeam, cedar, yew, oak, sycamore, Scot's pine		Bat, birds, invertebrates	Review management of grassland and possibly reduce mowing regime in some areas to improved floristic interest
C93	Estate - unimproved grassland species-poor and neglected	Fescue, cock's-foot,		Invertebrates	Top sward to encourage floristic interest
C94	Hunsdon Brook - flowing clear water shaded by trees with woodland herbs and emergent vegetation	Crack willow, meadow sweet, water mint, greater pond-sedge	Yes	Bat, birds, invertebrates, possibly water vole	Further survey, create buffer zone alongside brook
C95	Garden with mature trees and unmanaged ruderal vegetation			Birds, invertebrates	Link to riparian habitats
C96	Mature trees and young planted saplings adjacent to brook with species rich ground flora.	Red campion, false brome, hairy sedge		Birds, invertebrates	Link to riparian habitats
C97	Semi-improved grassland with moderate floristic species richness		Yes	Invertebrates	Top sward to encourage floristic interest
C98	Riparian matrix of island, Hunsdon Brook, woodland and emergent vegetation, fish seen	Japanese knotweed, bulrush, white water-lily, yellow iris, gypsywort, water mint, great willowherb,	Yes	Birds, invertebrates possibly water vole	Further survey as lots of interest
C99	Unimproved grassland species-rich, trees bordering brook, poplars and some unhealthy looking blackthorn	Sweet vernal-grass, sorrel, meadow buttercup, thyme-leaved speedwell	Yes	Birds, invertebrates	Top sward to encourage floristic interest
C100	Broad-leaved woodland, no access			Birds, invertebrates	
C101	Avenue of horse chestnut with grass verges of floristic interest	Common mallow, yew	Yes	Bats, birds, invertebrates	
C102	Appears to be species-rich hedgerow and standard oak's			Birds, invertebrates	Link and replant gaps in hedgerows
C103	Between R. Stort and railway small area of willow carr and ruderal species			Birds, invertebrates	Further survey, create buffer zone alongside river
C104	River Stort with bankside vegetation dominated by comphrey	Hops		Birds, invertebrates	Further survey, create buffer zone alongside river
C105	SNCI carr, adjacent to Storr Navigation, mature crack willow, soft banks with holes	Lesser pond-sedge		Birds, invertebrates, possibly water vole	Further survey, create buffer zone alongside water body
C106	Hunsdon Meadows - SSSI Hay meadow	Meadow vetchling, meadow fox-tail		Birds, invertebrates	
C107	Broad-leaved woodland along R. Stort	Weeping willow, horse chestnut, oak	Yes	Bats, birds, invertebrates	Link to riparian buffer zone and Hunsdon Meadows
C108	Grazed semi-improved pasture with stream on eastern edge	Water figwort		Birds, invertebrates	Top sward to encourage floristic interest
C109	Overgrown foot path with hawthorn hedgerow and woodland flora	White bryony		Birds, invertebrates	
C110	Set aside and willow bordering railway	Docks, creeping thistle, prickly oxtongue		Birds, invertebrates	Create species rich grassland
C111	Thick hawthorn hedgerows and trees by roadside			Birds, invertebrates	
C112	Grazed semi-improved pasture with Scot's pine along track			Birds, invertebrates	Top sward to encourage floristic interest
C113	St Peter's churchyard conservation area with mature trees, ditches and woodland flora			Bats, birds, invertebrates	
C114	Line of Lombardy poplar by river/railway			Birds, invertebrates	Link to riparian buffer zone

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
C115	Broad-leaved woodland, no access			Bats, birds, invertebrates	
C116	Temple Farm - bare ground and spoil piles.			Invertebrates, reptiles	
D1	Drive with mature trees			Bats	
D2	Stream with trees and mown banks in village	Oak, sycamore, elder, fool's water-cress, water mint	Yes	Bats, birds, invertebrates	
D3	Broad-leaved oak wood with glades for pheasant with tall ruderal and bramble scrub, moat.	Ash, sycamore, elm, yew, false brome, dog's mercury, male fern, hedge woundwort	Yes	Bats, birds, invertebrates, reptile	Cut back scrub to enhance diversity
D4	Hawthorn hedgerow and oak trees with ditch	Meadow fox-tail		Birds, invertebrates	
D5	Semi-improved grassland	Hairy sedge, Yorkshire fog, creeping buttercup		Birds, invertebrates, reptiles	Top sward in spring to improve floristic interest
D6	Broad-leaved oak woodland. No access	Sycamore, ash		Bats, birds, invertebrates	
D7	Elm and hawthorn hedgerow alongside footpath and ditch	Blackthorn, soft brome, black medick, meadow vetchling, common bird's-foot trefoil, agrimony, hedge woundwort	Yes	Birds, invertebrates, little owl seen	
D8	Semi-improved grassland, species-poor	False oat-grass, meadow fox-tail, cock's-foot		Invertebrates	Top sward in spring to improve floristic interest
D9	Home wood - broad-leaved oak and ash	Spindle, elm, elder, privet, pendulous sedge, dog's mercury, ground ivy		Bats, birds, invertebrates	
D10	Foot path with species-rich borders and young planted hedgerow	Common mallow, garlic mustard, common poppy, prickly sowthistle	Yes	Birds, invertebrates	Check success of hedgerow
D11	Rural narrow lane with unimproved verges with hedgerows	False oat-grass, hawthorn and elm	Yes	Bats, birds, invertebrates	Keep cutting regime low
D12	St Mary's Churchyard with broad-leaved trees and unimproved grassland	Common bird's-foot trefoil, cowslip, common knapweed, creeping cinquefoil	Yes	Bats, birds, invertebrates, reptile	
D13	Rural narrow lane with unimproved verges and hedgerows	False oat-grass		Birds, invertebrates	Keep cutting regime low
D14	Rural narrow lane with unimproved verges	False oat-grass		Birds, invertebrates	Keep cutting regime low, create scrub/woodland margin to link surrounding woodland
D15	Goldon Grove wood - broad-leaved sycamore plantation	Elm, dog's mercury, cow parsley		Bats, birds, invertebrates	
D16	Maplecroft Wood - young ash plantation	Hornbeam, field maple, dog's mercury, false brome, enchanter's nightshade, rough meadow grass, wood avens	Yes	Bats, birds, invertebrates	
D17	Battles wood - broad-leaved ash plantation, more mature than TN D16	As TN16 plus Lord's-and-Ladies, foxglove	Yes	Bats, birds, invertebrates	
D18	Queen's Wood - mature broad-leaved ash plantation	As TN16 plus common figwort	Yes	Bats, birds, invertebrates	
D19	Moat with some water, island of broad-leaved trees	Bulrush, curled pondweed, white water-lily, goat willow		Bats, birds, invertebrates, amphibians	
D20	Tall hedgerow and trees by path and edges of unimproved grassland	Blackthorn, elm		Birds, invertebrates	Replant with native scrub if elm dieback
D21	Young broad-leaved plantation	Silver birch, cherry		Birds, invertebrates	
D22	Brook edge with tall ruderal vegetation	White willow		Birds, invertebrates, reptile	Cut back if scrub developing to improved diversity
D23	The moat (remains of 13th Century), unimproved grassland, tall ruderal and elm scrub	Elder, hawthorn, great willowherb, false oat-grass		Birds, invertebrates, reptile	Refer to management plan but possibly cut back scrub in places to improve diversity
D24	Old field boundary of dense scrub	Elm, elder, hawthorn		Birds, invertebrates	

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
D25	Line of white willow and tall ruderal vegetation in ditch			Birds, invertebrates, amphibians	Keep cutting regime low
D26	Narrow lane with unimproved grassland and ditch	Hawthorn, blackthorn, false oat-grass		Birds, invertebrates	
D27	Ditch and path - remains of 2 hedgerows	Red campion, feverfew		Birds, invertebrates	Plant up gaps in hedgerow
D28	Broad-leaved plantation	Field maple, hazel, elm, common nettle, dog's mercury		Birds, invertebrates	
D29	Poplar plantation			Birds, invertebrates	
D30	Unimproved road verges with some floristic interest	Great scabious, common mallow, red fescue, creeping cinquefoil, common knapweed	Yes	Bats, birds, invertebrates	
D31	Broad-leaved woodland with some fir tees.	Oak, sycamore, elder, red campion, wood dock, false brome		Bats, birds, invertebrates	
D32	Set aside with ruderal species	Creeping thistle, square-stalked willowherb, scentless mayweed	Yes	Birds, invertebrates	Create species rich grassland
D33	Mixed woodland and scrub, plantation	Oak, ash, Scot's pine, box, garden privet, elder, traveler's joy, red campion, ground-ivy	Yes	Bats, birds, invertebrates	
D34	Lord's Wood. No access, mixed semi-natural woodland with brook	Willow, silver birch, white poplar, black poplar hybrid, field maple, guelder rose		Bats, birds, invertebrates	
D35	Huge oak tree and wet grassland/ruderal , damp vegetation (previously may have been a water body)	White willow, sedges, common nettle	Yes	Bats, birds, invertebrates, amphibians	Manage and return to wetland habitat
D36	Brook. No access, tall ruderal vegetation	Bulrush, reed sweet-grass		Birds, invertebrates	Create a buffer margin alongside brook
D37	Possibly unimproved grassland (no access) with scattered scrub	False-oat grass, cock's-foot, hawthorn		Invertebrates	Refer to management and possibly cut back scrub
D38	Cemetery with tall Scot's pine and unimproved grassland	False-oat grass		Bats, invertebrates	Refer to management and possibly reduce mowing regime
D39	Hunsdon House Estate with managed lawns and specimen trees			Bats, birds, invertebrates	Reduce mowing regime in some areas of lawn
D40	Derelict barns with slate and tin roofs			Bats, barn owl, reptile	
D41	Poor semi-improved grassland	Perennial rye-grass, false oat-grass, cock's-foot, hogweed		Invertebrates	Top sward in spring to improve floristic diversity
D42	Plantation young (15 yrs)	Field maple, hawthorn, oak, ash, false oat-grass, Lady's bedstraw		Birds	
D43	Fishing lakes with planted species	White and pink water lily, yellow iris, Canadian pondweed		Birds	
D44	Plantation adjacent to mature hedgerow about 15m wide boundary feature	Oak, ash , field maple, Lombardy poplar, elder, blackthorn		Birds	
D45	Plantation as in TN D44 and mature hedgerow	Field maple, blackthorn, hawthorn, ash		Birds	
D46	Footpath with 2 parallel hedgerow/trees, ruderal unimproved verges in village	Hawthorn, oak, hazel, white bryony	Yes	Birds, invertebrates	Replant hedgerows in gaps with native species
D47	Track and wide hedgerow and trees linking to woodland with unimproved verges	False oat-grass and ruderal species		Bats, birds, invertebrates	
D48	Fillet's farm/Oak Park - managed flower beds and pond	Soft rush, water lily		Bats, invertebrates	Reduce mowing regime
D49	Broad-leaved trees sunken (previously pond?)	Oak, hawthorn		Bats, birds, invertebrates	
D50	Semi-improved grassland and pond covered in algae	Common reed, yellow iris		Amphibians, invertebrates	Reduce shading of pond and remove some weed
D51	Broad-leaved trees and yew, wooden threshing barn with tile roof	Elder, common nettle		Bats, birds, invertebrates	

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
D52	Tall ruderal on bank approximately 3m high and 100m length of soil/rubble	Hemlock, teasel, common nettle		Reptile	
D53	Hedgerow and tree line, stag horn oak tree	Hawthorn		Bats, birds, invertebrates	Plant up gaps in hedgerow
D54	Black hut wood - Broad-leaved plantation	Sycamore, oak, hornbeam, bramble, dog's mercy, enchanter's nightshade, red campion	Yes	Bats, birds, invertebrates	
D55	Eastwick wood - Broad-leaved plantation	Beech, hornbeam, sycamore, horse chestnut, field maple, hazel, dog's mercury, cow parsley	Yes	Bats, birds, invertebrates	
D56	Cement track and arable margins, providing narrow corridor between woodlands TN D54 and D55	Common mallow, hogweed, common nettle, garlic mustard		Invertebrates	Make a wider corridor with grass and scrub
D57	In arable field grass belt - possibly a beetle bank feature			Invertebrates	
D58	Mature broad-leaved woodland plantation	Oak, hornbeam, field maple, elm, false brome, thin-spiked wood-sedge, dog's mercury, bugle, enchanter's nightshade, wood avens		Bats, birds, invertebrates	
D59	Tall ruderal vegetation and newly planted hedgerow up driveway	Oak, horse chestnut		Birds, invertebrates	
D60	Stream	Fool's water-cress, Indian balsam, reed sweet-grass, yellow iris, duckweed, weed species	Yes	Birds, invertebrates	Treat and remove Indian balsam
D61	Semi-improved (poor) grassland and poplar plantation in field	Yorkshire fog, meadow barley, false oat-grass, creeping thistle		Invertebrates	Top sward in spring to improve floristic diversity
D62	Path adjacent to woodland	Oak, ash, Scot's pine, elder, nipplewort, wood dock, wood avens, hedge bedstraw, false brome, red campion	Yes	Bats, birds, invertebrates	
D63	Hedgerow and foot path edge	Elm, ash, blackthorn, honeysuckle, hazel, common knapweed, black bryony, goat's-beard, red fescue, Yorkshire fog, yarrow	Yes	Birds, invertebrates	
D64	Hedgerow linking into main woodland, dry ditch and rabbit warren	Hornbeam, hazel, blackthorn, rough meadow-grass, bluebell		Birds, invertebrates	
D65	Main woodland and path running through it	Oak, ash, hornbeam, field maple, beech, bracken, dog's mercury, rough meadow-grass, foxglove, bramble, bamboo, garden privet, holly		Bats, birds, invertebrates	
D66	Adjacent to brook ruderal and unimproved grassland	Pendulous sedge, perfoliate St. John's-wort, hogweed, hedge woundwort, false oat-grass	Yes	Birds, invertebrates	
D67	Unimproved verges of track dominantly false-oat grass	Horse chestnut trees		Birds, invertebrates	
D68	Improved pasture	Yorkshire fog, cock's-foot, creeping bent, perennial rye-grass		-	
D69	Unimproved grass bank by edge of wood	False-oat grass, selfheal, Timothy grass		Invertebrates	
D70	Brook	Weeping willow, white poplar, Lombardy poplar		Bats, birds, invertebrates	
D71	Farm with wooden barns, spoil piles of mud and tall ruderal vegetation			Bats, invertebrates, reptiles	
D72	Broad-leaved oak woodland with open glades	Hornbeam, cherry, sycamore, field maple, silver birch, holly, traveler's-joy, rough meadow-brome, dog's mercury, wood sedge	Yes	Bats, birds, invertebrates	
D73	Broad-leaved woodland with open glade, species as in TN D72, sparse understorey,	Fir tree species, honeysuckle, foxglove, remote sedge, thin-spiked sedge, false-fox sedge, white bryony, meadowsweet, creeping jenny	Yes	Bats, hare, birds, invertebrates	
D74	Long ditch parallel to wood and area of open unimproved grassland	Thin-spiked wood-sedge, creeping bent, cut-leaved crane's-bill, hedge woundwort, soft rush, purple loosestrife, field forget-me-not, meadow vetchling, black medick, tufted vetch	Yes	Bats, birds, invertebrates	Good diversity at present, Top sward if ruderal species become to dominant
D75	Tree line with mature oak and blackthorn hedgerow, old barn			Bats, birds, invertebrates	

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
D76	Broad-leaved oak, hornbeam plantation with bees noted exiting from hole in the ground	Field maple, hazel, white bryony, dog's mercury, rough meadow-grass	Yes	Bats, birds, invertebrates	
D77	Broad-leaved plantation	Poplar species, oak, ash		Bats, birds, invertebrates	
D78	Tree line with mature broad-leaved species			Bats, birds, invertebrates	
D79	Pond approx 20m by 4m, heavily shaded, dead wood and weed	Goat willow, white willow, common couch, Cyperus sedge, common nettle, greater willowherb, bittersweet		Birds, invertebrates, amphibians	Increase amount of light to pond - cut back scrub
D80	Hawthorn hedgerow and ash mature trees	Elder, bramble, wild privet, field maple, scentless mayweed, prickly sowthistle, shepherd's purse, dog rose, upright-hedge parsley, meadow fox-tail	Yes	Bats, birds, invertebrates	Leave wider margin by footpath
D81	Semi-natural woodland with additional planting and very mature oak trees	Hornbeam, ash, hawthorn, elm, elder, box, garden privet, spurge laurel	Yes	Bats, birds, invertebrates	
D82	Bonnington's Estate. No access, specimen trees, managed lawns and lake	Cedar, maple species, willow		Bats, birds, invertebrates, amphibians	Possibly lower mowing regime in places
D83	Set aside and sprayed field dominated by great willowherb, old barn on edge overgrown with elder			Bats, invertebrates	Create species rich grassland
E1	Broad-leaved woodland and scrub bordering lane	Sycamore, hawthorn and field maple		Bat, birds, invertebrates, deer	Replant where elm dieback
E2	Broad-leaved woodland of mature oak	Scot's pine and sycamore		Birds, invertebrates	Link to estate to north
E3	Mixed plantation within grounds of house	Cedar, laurel, cherry and rhododendron		Bats, birds, invertebrates	
E4	Verges with some floristic interest	Common vetch, hoary ragwort, cow parsley and white dead-nettle	Yes	Invertebrates	Review and reduce mowing regime along length of road where appropriate
E5	Set aside with standard oak trees in adjacent hedgerow	Giant fescue, meadow-grass and fescue species		Invertebrates	Create species rich grassland
E6	Broad-leaved woodland and ditch with black poplar hybrid	Oak, willow and sycamore,		Birds, invertebrates	
E7	Pond overgrown with bulrush and hoary willowherb			Invertebrates, amphibians	Clear out some of the bulrush
E8	Pasture for hay with standard trees	Oak and sweet chestnut		Invertebrates	
E9	Lane with verges with floristic interest, dry ditch	Cow parsley, common vetch	Yes	Invertebrates, amphibians	Review and reduce mowing regime along length of road where appropriate
E10	Ditch and running water	Fool's water-cress, water mint and hoary willowherb		Invertebrates, amphibians	
E11	Lane with verges and ditches, standard trees	Hawthorn and oak	Yes	Invertebrates	Review and reduce mowing regime along length of road where appropriate
E12	Lane, dry ditch and scrub	Willow, elm, hogweed		Birds, invertebrates	
E13	Verges with some floristic interest and bramble scrub	Meadow buttercup, creeping cinquefoil	Yes	Invertebrates	Review and reduce mowing regime along length of road where appropriate
E14	Ditch beside bridleway	Soft rush, agrimony		Invertebrates, amphibians	
E15	Hedgerows and bramble scrub	Elm, spindle, winter-cress, hedge woundwort,		Birds, invertebrates	Link to other hedgerows
E16	Young conifer plantation and managed grounds			Invertebrates	
E17	Oak trees			Bat	Link to bridleway TN E15

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
E18	Hedgerows with adjacent dry pond	Black poplar hybrid		Bats, birds, invertebrates	
E19	Semi-improved grassland with floristic interest	Soft brome, black medick, and spring sedge		Birds, invertebrates	Link to adjacent habitats
E20	Tree/hedgerow	Oak, hawthorn and field maple		Birds, invertebrates	Replant where elm dieback
E21	Pond surrounded by ruderal vegetation	Broad-leaved pondweed, bulrush and garlic mustard		Invertebrates, amphibians	Link to adjacent habitats
E22	Thick hedgerow	Oak, elm and blackthorn		Birds, invertebrates	Link to adjacent habitats
E23	Semi-improved grassland with floristic interest	Hairy tare, common knapweed and germander speedwell	Yes	Birds, invertebrates	
E24	Hedgerow and ditch and arable field margin	Greater stitchwort, white bryony and meadow buttercup	Yes	Birds, invertebrates (mayfly swarm)	Keep field margin wide and top occasionally
E25	Mature oak trees with thick grassland underneath	Sterile brome, red campion,		Birds, bat and invertebrates	
E26	Ditch and hawthorn hedgerow	Fool's water-cress, nipplewort and hoary willowherb		Birds, invertebrates	Link to other hedgerows
E27	Hawthorn hedgerows on golf course and ditch	White bryony, wood forget-me-not and wood avens	Yes	Birds, invertebrates	Link to other hedgerows
E28	Unimproved grassland and scrub	Fescue species, meadow buttercup and cut-leaved crane's-bill	Yes	Birds, invertebrates	
E29	Stream	Bulrush, fool's water-cress, water figwort and yellow iris		Birds, invertebrates	
E30	Lake with waterfowl, man-made	Hard rush, white water-lily, pondweed and New Zealand pgymyweed		Birds, invertebrates	Plant with few more aquatics
E31	Planted poplar and semi-improved grassland			Birds, invertebrates	
E32	Hedgerow and lane adjacent to woodland and stream	Oak, sycamore and ivy		Bats, birds, invertebrates	
E33	Semi-improved grassland with floristic interest	Soft brome, rough meadow-grass,	Yes	Invertebrates	Review and reduce mowing regime where appropriate
E34	Broad-leaved trees, scrub over pond	Elm and oak		Invertebrates, amphibians	
E35	Pond with bulrush and willow			Amphibians	
E36	Local nature reserve with ponds and willow carr	Sweet flag, false fox-sedge	Yes	Bats, birds, invertebrates, amphibians	
E37	Lane with verges, hawthorn hedgerow	Herb-robert, bush vetch, greater stitchwort	Yes	Birds, invertebrates	Review and reduce mowing regime where appropriate
E38	Unimproved grassland left unmanaged within golf course	Soft rush	Yes	Birds, invertebrates	
E39	Ditch and hawthorn hedgerow	Water plantain, water figwort		Birds, invertebrates, amphibians	
E40	Planted saplings and rough grassland			Birds, invertebrates	
E41	Nazeing Brook - clay banks, shaded and slow moving bordered by trees	White poplar, white willow, ash and oak		Birds, invertebrates	Create buffer margin beside length of brook
E42	Spoil tip with ruderal vegetation			Reptile	
E43	Japanese knotweed at top of path				Treate and eliminate Japanese knotweed
E44	Semi-improved grassland with floristic interest	Soft brome, meadow fox-tail	Yes	Invertebrates	

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
E45	Broad-leaved woodland	Ash, hornbeam, yew and rose species		Bats, birds, invertebrates	
E46	Broad-leaved woodland	Hornbeam, ash and horse chestnut		Bats, birds, invertebrates	
E47	Small pond, shaded and no aquatic vegetation	Green alkanet, giant fescue and false brome		Birds, invertebrates, amphibians	
E48	Small pond with crack willow			Birds, invertebrates, amphibians	
E49	Brook with common reed bed and willow			Bats, birds, invertebrates	Further survey of vegetation and create buffer margin alongside brook
E50	Area with good species rich hedgerows		Yes	Birds, invertebrates	
E51	Churchyard with mature field maple and conservation area with woodland herbs	Bluebell	Yes	Bats, birds, invertebrates	
E52	Village pond with aquatic vegetation	Spiked water-milfoil, white water-lily, yellow iris	Yes	Terrapin present	Remove terrapins to encourage native amphibians
E53	Dry stream bed and species-rich hedgerow	Ash, blackthorn, spindle, nipplewort and lesser burdock		Birds, invertebrates	
E54	Broad-leaved woodland species rich	Common dog violet, herb-robert		Bats, birds, invertebrates	
E55	Pond with bulrush and soft rush			Birds, invertebrates, amphibians	
E56	Corner of field with tall ruderal vegetation and apple trees			Birds, invertebrates	
E57	Foot path with woodland herbs	Oak, false brome, black bryony		Birds, invertebrates	
E58	Semi-improved grassland with floristic interest	Black medick, common knapweed, crested dog's-tail	Yes	Birds, invertebrates	
E59	Broad-leaved woodland with grass glade and spoil mounds	Rough meadow-grass	Yes	Birds, invertebrates	
E60	Footpath bordered by two hedgerows	Elder, elm		Birds, invertebrates	Replant where elm dieback
E61	Epping Green - unimproved pathway with damp areas and woodland	Flote grass, sedges species,	Yes	Further survey	
E62	Poor semi-improved grassland and area of hedgerows	Timothy, black medick		Bats, birds, invertebrates, amphibians	
E63	Track with scrub, damp grassland and woodland herbs	Red campion, soft rush and common vetch	Yes	Birds, invertebrates	
E64	Broad-leaved oak woodland strip by road	Field maple		Birds, invertebrates	
E65	Ditch ad with water-cress jacent to arable			Birds, invertebrates, amphibians	Creat buffer margin alongside ditch
E66	Plantation of oak and conifers			Birds, invertebrates	
E67	Poor semi-improved grassland	Cock's-foot and Timothy grass		Invertebrates	Create species rich grassland
E68	Double line of oak trees			Bats, birds, invertebrates	
E69	Poor semi-improved grassland with scattered scrub	Ox-eye daisy and common knapweed		Invertebrates	Control scrub encroachment to enhance species richness of grassland
E70	Semi-improved grassland with floristic interest	Meadow buttercup, and common knapweed	Yes	Invertebrates	

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E71	Semi-improved grassland with floristic interest	Meadow fox-tail and giant fescue	Yes	Invertebrates	
E72	Poor semi-improved grassland with scattered scrub			Invertebrates	Control scrub encroachment to enhance species richness of grassland
E73	Mixed scrub with trees of ash and field maple	Dog's mercury and hedge woundwort		Bats, birds, invertebrates	
F1	Broad-leaved woodland			Bats, birds, invertebrates	
F2	Mature trees and elm hedgerows	Oak, horse chestnut, dog rose		Bats, birds, invertebrates	Link to others
F3	Tall ruderal vegetation with new planting	Field maple, rowan, oak, thistles and docks		Birds, invertebrates	Cut back ruderal to improve species-richness
F4	Planted ornamental scrub and ditch				
F5	Waterbody overgrown with scrub and reeds, newly sown banks	Common reed, goat willow, brooklime, Indian balsam	Yes	Birds, invertebrates, amphibians	Cut back scrub and refill with water
F6	Mixed plantation about 20 years old including old hedgerow boundary	Oak, elm, rose	Yes	Birds, invertebrates	
F7	Hedgerow and dry ditch within housing area, good species richness	Field maple, hawthorn, oak, elm, crap apple, hazel, greater stitchwort	Yes	Birds, invertebrates	
F8	Play area surrounded by mature hawthorn scrub, with a small pond full of rubbish	Field maple, willow, elm, elder, oak, dog rose, false brome, Lord's-and-Lady's, red campion	Yes	Bats, birds, invertebrates	Clear out pond, put in path through scrub
F9	'Leftover' beech hedgerow amongst housing development and trees over ditch with flowing water around 200m in length	Hawthorn, blackthorn, ash, elder, garlic mustard, great willowherb		Birds, invertebrates	Try to link to other green space
F10	New planting by M11, including row of mature willow, scrub and unmanaged grassland, pond with some water	Field maple, hawthorn, false oat-grass, common vetch, agrimony, flote grass, soft rush, water mint	Yes	Bats, birds, invertebrates, amphibians	Manage within adjacent SNCI plan - improve pond
F11	Hog's Farm SNCI - grazed grassland, wet ditch, unimproved verges	Hairy sedge, false brome, soft brome, common mouse-ear	Yes	Invertebrates, amphibians	Create links into housing areas - hedgerows
F12	Edge of Common - unimproved grassland with good species richness	Meadow vetchling, meadow fox-tail, fairy flax, hairy tare, common knapweed, red fescue, hairy sedge, creeping cinquefoil	Yes	Invertebrates	Create adjacent species rich grassland on road verges
F13	Small pond, half shaded with dead wood in water	Flote grass, great willowherb, bittersweet		Invertebrates, amphibians	
F14	Old hedgerow and footpath, out grown hawthorn, and adjacent line of field maple and ash trees	Blackthorn, false brome, Lord's-and-Ladies, rough meadow-grass		Invertebrates	
F15	Garden including large pond with common reed			Reptiles, amphibians	
F16	Unimproved grassland	Sheep's fescue, wild carrot, sorrel, ox-eye daisy, germander speedwell, common vetch, common bird's-foot-trefoil	Yes	Invertebrates, deer	Top in spring to improve floristic diversity
F17	Scrub, new planting and hedgerow adjacent to M11	Oak, field maple, hawthorn, perforate St John's-wort, Yorkshire fog	Yes	Birds, invertebrates, deer	Limit scrub encroachment over grassland
F18	Semi-improved grassland	Meadow fox-tail, soft brome, meadow buttercup, germander speedwell	Yes		
F19	Footpath with verges	False brome, cow parsley, field forget-me-not		Invertebrates	
F20	Hedgerow and footpath about 300m in length, compost heaps at back of houses	Blackthorn, field maple, hawthorn, ash, garlic mustard		Invertebrates, reptiles	
F21	Semi-improved grassland - heavily grazed by horses, manure heaps,	Meadow buttercup, sweet vernal grass,		Invertebrates, reptiles	
F22	Water in ditch under hedgerow			Invertebrates, amphibians	

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
F23	Improved grassland and bramble scrub, deep droppings	Common ragwort, white clover		Invertebrates	
F24	Area of wet unimproved grassland, ruderal species near garage	Tufted hair-grass, soft rush, marjoram, teasel, goat's-rue, thyme-leaved speedwell, yarrow	Yes		
F25	Pond adjacent to woodland, shaded and stagnant water	Goat willow, ash, elm, common nettle, false brome		Birds, invertebrates, amphibians	Clear back some scrub to open up a little
F26	Grazed semi-improved pasture (species poor)	Soft rush, Yorkshire fog, annual meadow-grass			Review grazing regime and include under management of adjacent SNCI
F27	Latton Common SNCI of unimproved grassland and scrub, large pond	Bulrush, yellow iris, elm, oak		Bats, birds, invertebrates, amphibians	
F28	Thick scrub/hedgerow	Blackthorn, ash, hawthorn, red campion, Lord's-and-Lady's		Birds, invertebrates	
F29	Broad-leaved woodland plantation and scrub	Oak, elm, elder, willow, horse chestnut, bluebell		Birds, invertebrates	
F30	Track between two lines of scrub	Hawthorn, blackthorn, ash, red campion, dog's mercury		Birds, invertebrates	
F31	Line of dense scrub	Ash, oak, hazel, sycamore		Birds, invertebrates	
F32	Broad-leaved oak/ash woodland plantation and scrub			Birds, invertebrates	
F33	Scrub line, dry ditch and pond with bulrush	Ash, oak, hazel, sycamore, field maple, cow parsley		Bats, birds, invertebrates, amphibians	Link up with additional planting to create larger areas of woodland
F34	Broad-leaved woodland - no access				
F35	Wide road verge with some floristic interest,	Timothy grass, meadow buttercup		Invertebrates	
F36	Brook with marginal and aquatic vegetation	Water figwort, water-cress, brooklime, great willowherb, common nettle		Birds, invertebrates	
F37	Area of arable with hawthorn hedgerows and occasional standard oak and ash trees			Birds, invertebrates	Link up scrub and other areas of green with hedgerows, possibly plant up more woodland
F38	Hedgerow by roadside	Turtle dove			
F39	Pond in arable, hawthorn scrub	Soft rush, bulrush		Invertebrates, amphibians	
F40	Semi-improved species poor pasture surrounded by thick hawthorn hedgerow	Cow parsley, Yorkshire fog, Timothy grass		Invertebrates	Create species rich grassland
F41	Brook, shaded and lined of mature trees	Indian balsam, oak, elm, hawthorn		Possibly water vole, invertebrates, birds	Further survey for water vole, treat and eliminate Indian balsam
F42	Trees bordering lane, adjacent stream, water vole seen here	Indian balsam, oak, elm, hawthorn		Water vole, birds, invertebrates	Further survey for water vole, treat and eliminate Indian balsam
F43	Broad-leaved woodland - hornbeam/oak	Hawthorn, common nettle		Birds, invertebrates	Link to TN44 woodland
F44	Broad-leaved woodland - no access but dense scrub	Oak, hornbeam		Birds, invertebrates	
F45	Semi-improved species poor pasture			Invertebrates	Create species rich grassland
F46	Semi-improved species poor pasture and scattered scrub				
F47	Broad-leaved woodland - hornbeam/field maple	Elder, hazel, hawthorn, dog's mercury, Lord's-and-Ladies	Yes	Birds, invertebrates	
F48	Grazed pasture also used for recreational quad bikes	Creeping buttercup, daisy, common knapweed		Invertebrates	

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F49	Small broad-leaved woodland - oak/hawthorn	Common nettle, hedge woundwort		Birds, invertebrates	
F50	Dense hedgerow and trees			Birds, invertebrates	
F51	Hawthorn scrub - open	Red campion, cow parsley, ash saplings		Birds, invertebrates	
F52	Rank grassland and scrub - bramble	False fox-sedge, hard rush, ox-eye daisy, common knapweed		Birds, invertebrates	Control scrub encroachment and create species rich grassland
F53	Tree belt of oak, field maple and a small copse with additional planting	Hawthorn, blackthorn,		Birds, invertebrates	
F54	Pond hidden in copse - some open water, surrounded by hawthorn scrub			Birds, invertebrates, amphibians	
F55	Conifer plantation over grassland, dense scrub boundaries - part of a garden				
F56	Thick hawthorn scrub	Elder, elm, hazel, ash, blackthorn		Birds, invertebrates	
F57	Dry reservoir with bulrush, broad-leaved plantation and ditch			Birds, invertebrates, amphibians	Create wetland area and water body
F58	Ruderal vegetation and copse in fields, scrub/tree belt			Birds, invertebrates, amphibians	
G1	Broad-leaved woodland, dead elm along bridleway	Oak, ash, sweet chestnut and false brome, dog's mercury		Bats, birds, invertebrates	Replant gaps with native trees
G2	Derelict nursery site with outbuildings and scrub and ruderal species			Invertebrates	When/if develop keep wide margins of scrub habitat
G3	Land adjacent to nursery unmanaged with tall ruderal species dominant			Bats, birds, invertebrates	Create species-rich neutral grassland
G4	Unimproved grassland with good species-richness	Yorkshire fog, Timothy grass, common knapweed, common bird's-foot-trefoil, smooth tare	Yes	Invertebrates, birds	
G5	Brook with marginal vegetation, running water but few aquatics	Comphrey, common reed, reed sweet-grass		Birds, invertebrates	Clear of rubbish
G6	Derelict nursery site overgrown with dense scrub	Blackthorn, elm		Birds, invertebrates	Cut back scrub to improve grassland
G7	Footpath with ruderal vegetation and standard trees	Hedge woundwort, common couch, giant fescue and white bryony	Yes	Invertebrates	
G8	Young plantation and unimproved grassland-good species-richness, and ant hills	Hazel, field maple, oak, rose, Timothy grass, false oat-grass	Yes	Birds, invertebrates	
G9	Unimproved grassland with poor species-richness	False oat-grass, creeping thistle, meadow buttercup		Invertebrates	Top grass in spring to improved floristic interest
G10	Blackthorn hedgerow and bramble scrub thick.			Birds, invertebrates	Extend to north to provide a link
G11	Wet grassland and scrub adjacent to brook - diverse and overgrown	Aspen, alder, ox-eye daisy, hawthorn		Birds, invertebrates, reptiles and amphibians	Clear scrub and keep open
G12	Deep ditch with standing water leading into brook, shaded and marginal vegetation and woodland herbs	Angelica, bush vetch, hedge woundwort, hedge bedstraw, field maple and Lombardy poplar	Yes	Birds, invertebrates, reptiles and amphibians	
G13	Warlies park - semi-improved grassland with good species-richness in patches	Yorkshire fog, meadow vetchling, crested dog's-tail		Birds, invertebrates, reptiles and possibly hare	Look at management plan and see if opportunities to enhance species richness
G14	Mixed woodland, sparse ground flora and area of willow carr in dry pond	Oak, hornbeam, Scot's pine, red campion, dog's mercury, goat willow, soft rush, common marsh bedstraw		Birds, invertebrates	Opportunities to coppice parts would improve diversity
G15	Derelict nursery site with ruderal species	Hogweed, common nettle		Birds, invertebrates, reptiles	Include into management of Warlies Park and create neutral grassland

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G16	Semi-improved grassland with patches of species-richness	Yorkshire fog, white clover, creeping bent, crested dog's-tail.	Yes	Birds, invertebrates	Look at management plan and see if opportunities to enhance species richness
G17	Brookmeadow wood adjacent to brook, diverse structure	Oak, ash, hornbeam, black poplar hybrid, false brome and red campion	Yes	Birds, bat, invertebrates,	
G18	Offices and outbuildings, planted borders, mixed woodland and ruderal verges			Bats, birds, invertebrates	Create pond/add nest boxes for birds/bats
G19	Roadside verge bank with some species-richness	Creeping thistle		Plant, invertebrates, birds	Top grass in spring to diminish thistles and improved species richness
G20	Semi-improved grassland with patches of species-richness	Yorkshire fog, white clover, creeping bent, crested dog's-tail.	Yes	Birds, invertebrates	Look at management plan and see if opportunities to enhance species richness
G21	Bridleway along woodland ride, water-logged and badly poached	Redshank, flote grass, rough meadow-grass		Plants, invertebrates	Review use in winter by horses or create new pathway
G22	Oxleas wood - mixed with sparse ground flora	Oak, hornbeam, Scot's-pine and bramble		Bats, birds, invertebrates	
G23	Bridleway verge with good species-richness and mature trees, fox seen	Ash, oak, holly and elder		Bats, birds, invertebrates	
G24	Semi-improved grassland with few herbs	Timothy grass, creeping bent, Yorkshire fog		Birds, invertebrates	Top in spring to improve species richness
G25	Deciduous wood with suckering elm and sparse ground flora of bracken	Oak, holly		Bats, birds, invertebrates	Replant gaps with native trees
G26	Bridleway in woodland with good species-richness	Oak, ash, greater stitchwort, nipplewort, flote grass and redshank		Bats, birds, invertebrates	
G27	Unimproved wet grassland with ruderal species by road with wood margins	Hoary willowherb, goat's-rue, broad-leaved dock	Yes	Birds, invertebrates, reptiles	
G28	Unimproved grassland by roadside with good species-richness	Soft rush, sterile brome, black horehound, upright hedge-parsley	Yes	Birds, invertebrates, reptiles	Top in spring to improve species richness
G29	Tall ruderal area of hemlock near farm buildings			Birds, invertebrates, reptiles	
G30	Grazed horse fields and very high muck heap (30m)			Invertebrates	
G31	Fishing lakes, ponds and ditches with emergent plants and little aquatic vegetation	Weeping willow, water lily, common reed, yellow iris, sea-club rush, purple loosestrife, grey club-rush, lesser bulrush		Birds, invertebrates, reptiles	
G32	20m high spoil tip and earth, rubbish with ruderal vegetation	Common couch		Reptiles	
G33	Small pond shaded by lime tree, with rubbish and ruderal species	Broad-leaved pondweed and redshank		Birds, reptiles and amphibians	Clear of rubbish
G34	Semi-improved grazed grassland with patches of species-richness	Crested dog's-tail, self-heal, smooth tare, hoary ragwort	Yes	Invertebrates	Top in spring to improve species richness
G35	Wet grassland and ditch with some species-richness	Soft rush, lesser stitchwort, glaucous sedge, common knapweed, red valerian and silverweed		Birds, invertebrates and amphibians	Create wetland by controlled flow of water through the grassland
G36	Deciduous woodland part of Epping Forest, with bramble ground flora	Oak, ash, sycamore, holly and elder	Yes	Bat, badger, bird, invertebrate	
G37	Open grass glade in woodland with some species-richness	Soft rush, Yorkshire fog and creeping thistle		Birds, invertebrates, reptiles	
G38	Dense scrub growing over brook with no aquatic plants	Hawthorn and blackthorn		Birds, invertebrates, reptiles	
G39	Small pond in woodland with bulrush and willow	Soft rush		Birds, invertebrates, reptiles, amphibians	
G40	Ash, hazel coppice woodland with stream, Purple hairstreak	Red campion, ivy, Indian balsam,		Birds, invertebrates, reptiles	Treat and eliminate Indian balsam
G41	Mixed plantation with sparse ground flora of bramble	Ash, sycamore and conifer		Birds, invertebrates, reptiles	

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
G42	Mixed copse and blackthorn scrub at edge	Oak and sycamore		Birds, invertebrates, reptiles	
G43	Pond with willow, little grebe	Ash and sycamore		Birds, invertebrates, reptiles, amphibians	
G44	Poor semi-improved grassland, rank and tussocky	False oat-grass, creeping thistle, teasel and ox-eye daisy		Birds, invertebrates, reptiles	Top in spring to improve species richness
G45	Broad-leaved woodland, by roadside, open	Oak, hornbeam		Birds, bat, invertebrates	
G46	Broad-leaved oak woodland with sparse ground flora	Red campion, bramble and docks		Birds, bat, invertebrates	
G47	Woodland (oak) ride with good species-richness, wet in places	Indian balsam, foxgloves, red campion	Yes	Birds, bat, invertebrates and amphibians	Treat and eliminate Indian balsam
G48	Willow and ash - pond? No access.			Amphibians	
G49	Semi-improved grassland with poor species-richness	Yorkshire fog, Lady's bedstraw		Invertebrates	Top in spring to improve species richness
G50	Small pond in woodland covered in duckweed	Ash, hornbeam, Scot's pine and elder		Birds, bat, invertebrates and amphibians	
G51	Stream, shaded with trees and ruderal vegetation	Willow, ash, bramble and common nettle		Birds, invertebrates	Create buffer margin along Cobbin's Brook to include variety of habitats - swamp, reed beds and grassland
G52	Oak, hornbeam coppiced woodland and sparse ground flora	Hawthorn and blackthorn		Birds, bat, invertebrates	Possibly re-introduce coppicing to increase diversity
G53	Oak, hornbeam coppiced woodland, no understorey and sparse ground flora	Common nettle and bramble		Birds, bat, invertebrates	Possibly re-introduce coppicing to increase diversity
G54	Elm regeneration in ash-oak woodland	Elder, honeysuckle		Birds, bat, invertebrates	Replant with variety of scrub such as hawthorn
G55	Broad-leaved woodland and small pond	Ash, elm, field maple, hawthorn, elder		Birds, bat, invertebrates	
G56	Oak and willow trees and scrub			Birds, bat, invertebrates	
G57	Brook shaded by oak, elder with no aquatics seen	Willow and ash		Birds, invertebrates, reptiles	
G58	Rank grassland and ruderal vegetation alongside stream with patchy species-richness	Yorkshire fog, spear thistle, meadow fox-tail, common figwort, docks	Yes	Birds, invertebrates, reptiles	Top in spring to improve species richness
G59	Broad-leaved oak woodland and scrub			Birds, bat, invertebrates	
G60	Mixed plantation	Oak, elder and hawthorn		Birds, bat, invertebrates	
G61	Grassland overgrown with thistles	False oat-grass, Yorkshire fog		Birds, invertebrates, reptiles	Top in spring to improve species richness
G62	Broad-leaved woodland of willow, ash and oak and water body (no access)			Birds, bat, invertebrates, amphibians	
G63	Mature oaks and scrub over ditch, no aquatic plants visible			Birds, bat, invertebrates and reptiles	
G64	Track lined with oak and ash trees	Hazel, elm, blackthorn		Birds, bat and reptiles	
G65	Shaded ditch with slow flowing water	Hawthorn and blackthorn		Invertebrates	
G66	Broad-leaved oak woodland with extensive die-back, sparse ground flora	Hazel, elm, holly		Birds, bat, invertebrates	Re plant where needed oak
G67	Poplar plantation with elder and hawthorn scrub, open glade			Invertebrates, birds	

CBA ID	Target Note	Species of Note	Flora Interest	Potential	Recommendations
G68	Tall ruderal and some grassland with ash trees by edge of road	Thistles and common nettle		Invertebrates, birds	Cut in early spring to encourage diversity
G69	Dense scrub belt beside road and occasional trees	Horse chestnut, field maple, dog rose, elder, hawthorn		Birds, bat, invertebrates	
G70	Small area of oak woodland by road side with elm scrub	Ash, garlic mustard and dog's-mercury		Birds, bat, invertebrates	
G71	Ash, willow woodland south of stream	Field maple		Birds, bat, invertebrates	
G72	Japanese knotweed - small amount at present				Treat and remove
G73	Small stream shaded by ash and willow with little aquatic vegetation	Water figwort, brooklime and water mint		Birds, bat, invertebrates	
G74	Dry ditch with tall ruderal vegetation	Common nettle and creeping thistle		Invertebrates	
G75	Broad-leaved woodland of ash and oak			Birds, bat, invertebrates	

Figure 1 Survey Areas and Target Note Locations

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The Harlow Green Spaces Project

A GREEN INFRASTRUCTURE PLAN FOR THE HARLOW AREA

Volume 2 : Guidelines

November 2005

CHRIS BLANDFORD ASSOCIATES
Environment Landscape Planning

The Harlow Green Spaces Project

A GREEN INFRASTRUCTURE PLAN FOR THE HARLOW AREA

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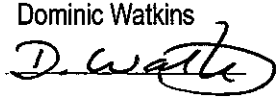
Approved By: Dominic Watkins

Signed: 

Position: Associate Technical Director

Date: 30 November 2005

November 2005

CHRIS BLANDFORD ASSOCIATES

Environment Landscape Planning

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CONTENTS

USING THE GUIDELINES

USING THE GUIDELINES

Background

Green infrastructure is the network of multi-functional green spaces and linkages in the countryside in and around towns. Green spaces can include areas such as parks, gardens, woods and nature reserves with or without public access; linkages include linear features such as off-road paths, highways, rivers, streams or hedgerows, which can provide dispersal corridors for wildlife and connect people to open spaces.

The concept of green infrastructure planning is based on a strategic approach to ensuring that environmental assets of natural and cultural value are integrated with land development, growth management and built infrastructure planning at the earliest stage. This approach enables land management to be more proactive, less reactive, and better integrated with efforts to manage growth and development at all spatial planning levels. Green infrastructure planning is therefore a key mechanism for delivering sustainable communities and quality of life benefits within growth areas.

The Harlow, Epping Forest, the River Stort and the Lea Valley Green Spaces Project (the Harlow Green Spaces Project), which is part-funded by the ODPM, aims to enhance the intrinsic character and nature of the green spaces within Harlow Area, acquire new green spaces for public access and to create links between these green spaces. The Harlow Green Spaces Project partners commissioned Chris Blandford Associates (CBA) to prepare a Green Infrastructure Plan for the Harlow Area to provide a strategic framework and guidelines for the implementation of a connected and multi-functional green infrastructure network of wildlife sites, public open spaces and green links within the countryside in and around Harlow. The GIP comprises two documents:

- Volume 1 – The Green Infrastructure Network

- Volume 2 – Guidelines (this document)

To assist in the implementation of the Green Infrastructure Network, these Guidelines are intended to demonstrate to developers and planners how green infrastructure provision can be integrated into development schemes within the Harlow Area. They can be used to inform masterplanning and detailed design processes, and also guide the development of green space management plans.

Importantly, it should be noted that the Guidelines are indicative and are not intended to be prescriptive; they should be considered as a toolkit of best practice that can be tailored according to the nature of the situation. The Guidelines should always be used in conjunction with the principles for the planning and design of the Green Infrastructure Network set out in Volume 1.

The Guidelines are based on emerging good practice developed both within the Harlow Area and from elsewhere, and reflect local opportunities and priorities identified in the Green Infrastructure Plan. Users of these Guidelines are advised to refer to *Biodiversity by Design – A Guide for Sustainable Communities* published by the Town and Country Planning Association in 2004, which provides general guidance on how to maximise the opportunities for biodiversity / green infrastructure in the planning and design of sustainable communities. *Biodiversity by Design* sets out design principles and provides advice on their application to the preparation of context studies, masterplans, detailed designs and management approaches using a range of best practice case studies from the UK and abroad. In relation to masterplanning and detailed design of green infrastructure specifically, Biodiversity by Design sets out advice on the following key areas relevant to the implementation of the Harlow Area GIP:

- Creating new green infrastructure which complements and enhances the function of existing green infrastructure;
- Managing regional parks, green grids and community forests to sustain biodiversity and function as community assets;
- Designing and managing parks and natural green spaces to increase biodiversity and maximise their function as nature reserves;
- Maximising the ecological function of woodland and wetland linear wildlife corridors /greenway linkages;
- Using street trees to define streets, improve the urban environment and provide linkages in habitat networks;
- Creating fine grain functional habitat mosaics, such as communal / private courtyards, pocket green spaces and green buildings, which are responsive to a range of microclimate conditions and provide an experience of nature on people's doorstep.

The scope and structure of the Guidelines

Guidelines are provided for the following topics, selected to demonstrate where green infrastructure benefits can be delivered through good planning and design:

- Wildlife Habitat Enhancement, Creation and Links;
- Countryside Access Routes;
- Riverways;
- Greening of Road Transport Corridors;
- Open Space and Recreation Facilities;
- New Housing Development;
- Industrial and Commercial Development;
- Sustainable Urban Drainage Systems.

The Guidelines are structured as follows:

- Title
- Scope
- Context
- Guidelines
- Key Links to Other Guidelines
- Sources of Further Information

1.0 WILDLIFE HABITAT ENHANCEMENT, CREATION AND LINKS

WILDLIFE HABITAT ENHANCEMENT, CREATION AND LINKS

Scope

This guideline provides information to developers and planners on wildlife habitat enhancement, creation and links in the context of the Green Infrastructure Plan for the Harlow Area.

The Guidelines cover:

- Woodlands;
- Grassland;
- Field Boundaries (hedges).

Context

The biodiversity of the Harlow area is rich and varied, comprising a spectrum of habitats. Several areas of mature woodland, such as Parndon Wood, Lord's Wood and Galleyhill Wood, are scattered throughout the Harlow Area. The northern extent of Epping Forest (comprising a diverse mixture of woodland, grassland, heathland and marshland habitats) is located within the south of the area. Fields, hedges and agricultural boundaries offer a source of biodiversity and provide a valuable habitat and wildlife refuge within a landscape where modern agricultural practices have generally reduced biodiversity across the area. These ecologically-rich pockets of habitats require protection from encroachment of modern farming practices. Habitats within the Harlow Area contain several rare and protected species such as great crested newt (a European protected species), reptiles (common lizard, slowworm and grass snake) and breeding birds. There is a need for connection and enhancement of existing habitats to form an inter-connected mosaic of biodiversity throughout the Harlow Area by identifying and protecting 'wildlife corridors' between wildlife sites.

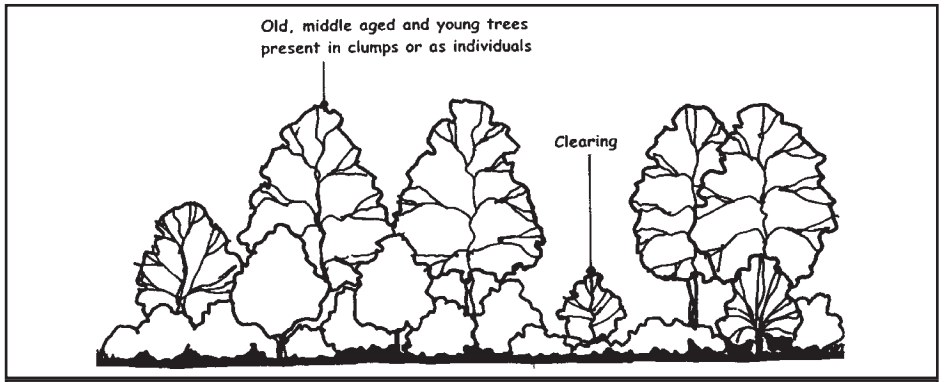
The River Stort Corridor

Rough Grassland within the Stort River Valley

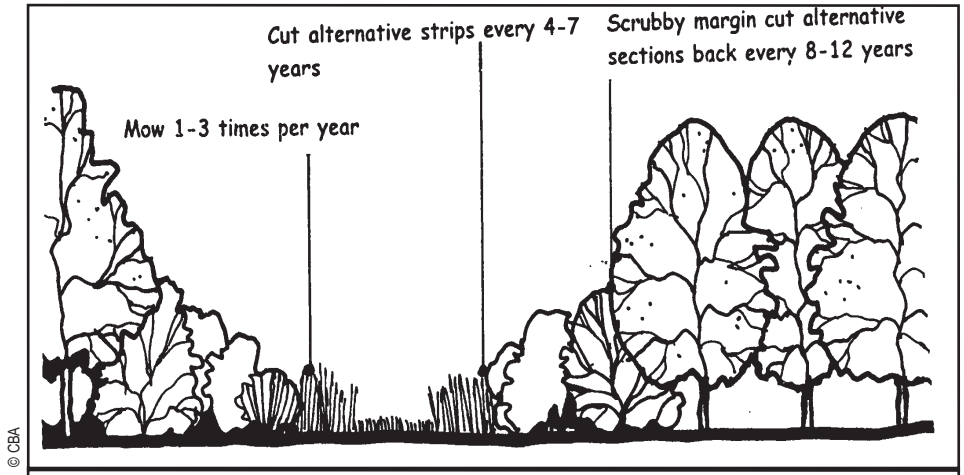
Woodland with fern understorey within Harlow Urban Area

Woodland guidelines

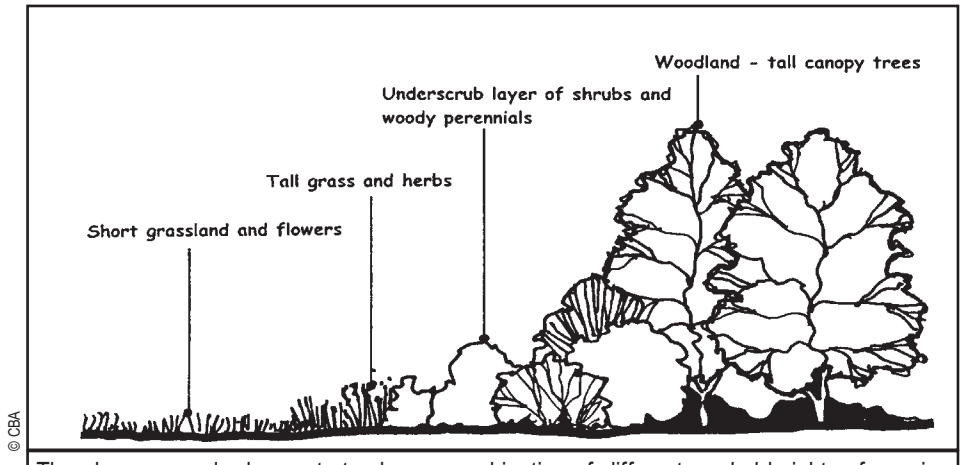
- Conserve the ancient and semi-natural woodlands of the Harlow area (e.g. Parndon Wood, Harlow) as a landscape, historical and ecological resource;
- Encourage and manage for controlled public access to woodland landscapes;
- Improve and re-juvenate small pockets of broadleaved woodland as well as the larger woodlands;
- Where soil conditions are appropriate, encourage and accelerate the trend towards mixed and broadleaved plantings in preference to coniferous plantation.



The above example demonstrates how a variety of ages of species should be encouraged to maintain diversity in stand structure.

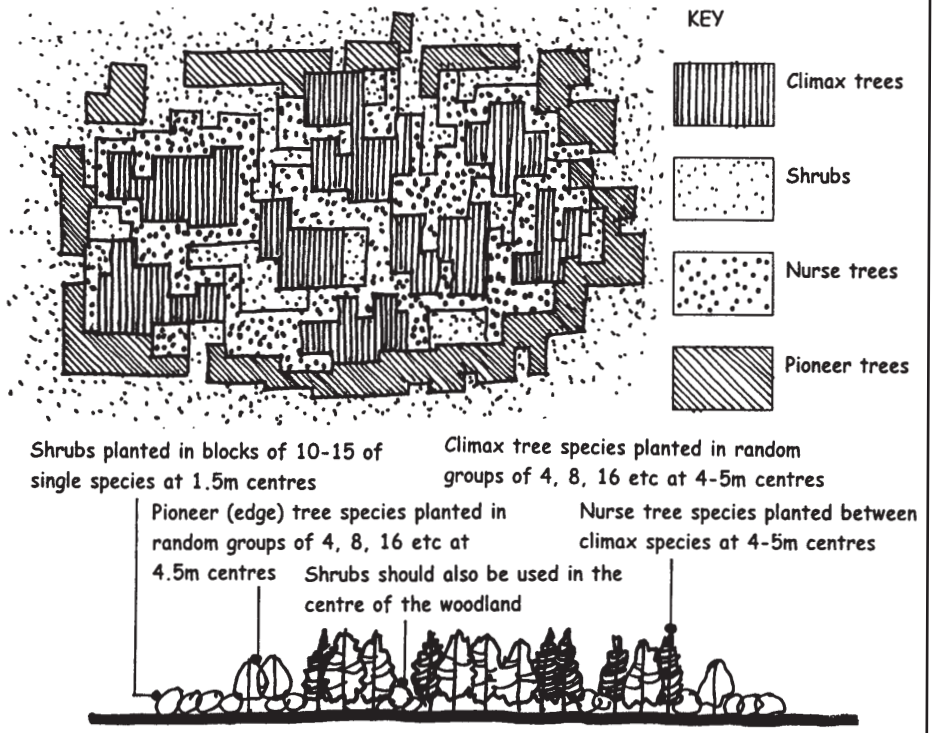


The above example demonstrates how woodland edges can be managed to create graduated transitions from tall woodland to grassland.



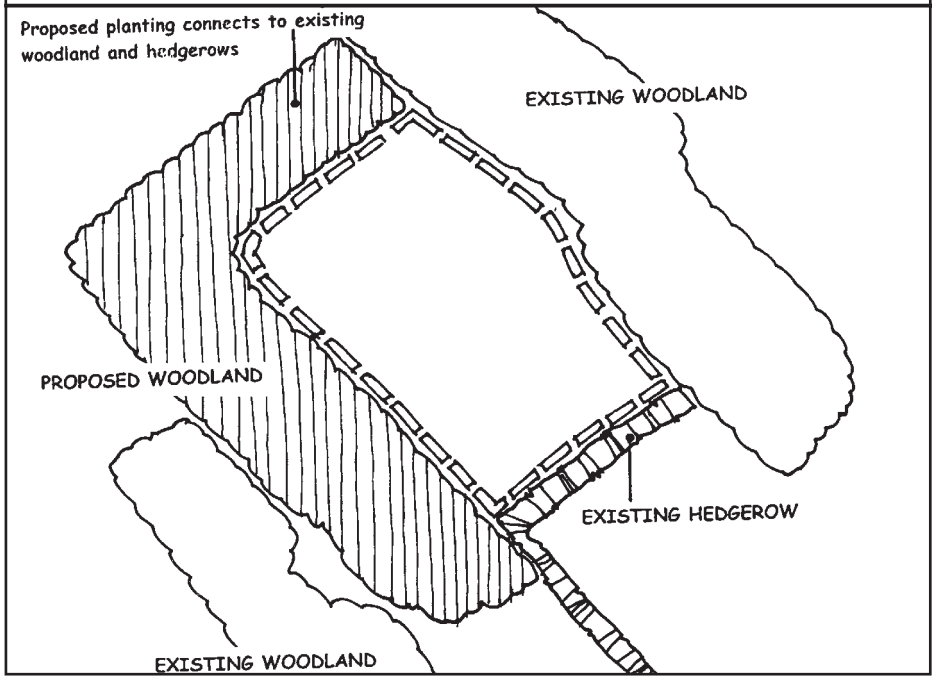
The above example demonstrates how a combination of different graded heights of species can be planted to create a diverse and inviting woodland edge, encouraging diversity in stand structure.

Example of a possible naturalistic planting pattern for an area of new woodland



The above example demonstrates an example of a woodland planting pattern. Liaison should be encouraged with local woodland and wildlife trusts. An integrated forest or woodland design strategy is encouraged across the Harlow Area, which should fit with existing landscape character and vegetation pattern, respect the scale of landscape features and reflect the existing native species composition. Advice could be made more widely available to landowners on establishing small woodlands, consistent with maintaining existing ecologically rich sites.

Creation of possible new woodland links with existing vegetation



Existing woodland links with potential for enhancement (Galleyhill Wood and Deerpark wood) to the north of Waltham Abbey

Essex's wildlife resource

'Only a small proportion of Essex's wildlife resource is protected by statutory designations (SAC, SPA, SSSI, NNR, LNR). Whilst these may cover the most important wildlife habitats in the county, they are insufficient to maintain the overall biodiversity of Essex.

The commonest trees and shrub species are the most important for invertebrates. Oak and willows support the greatest number of invertebrate species. Other important trees and bushes of lowland broad-leaved woodlands are aspen, ash, birch, blackthorn, bramble, elms, field maple, hazel, hawthorn and rose. Hornbeam and beech support rather few foliage feeding invertebrates but the dead wood of these trees can support a rich fauna.

Scalloping involves the creation of small clearings along the woodland margin. Scallops of 30 metres by 20 metres have been employed for butterfly conservation but areas a fraction of this size may be valuable for many invertebrates. The area within the scallop may be coppiced or mown. For the creation of a circular walk a curved or irregular pathway is better than a straight one. Like deadwood, flat stones or bricks lying on the soil surface provide sites for hibernation of insects or act as a refuge.This is especially important for ground beetles, which are very useful as natural pest agents.

Standing dead timber is an important resource. Dead wood provides a habitats for many insects and may also be used as a hibernation sites by small mammals such as hedgehogs. Some deadwood should be located in shaded areas.

Log piles can provide a useful habitat and will eventually gather an interesting invertebrate community.

Piles of brashing and other fine material will support a wide range of invertebrates. If piles of brashing and finer branches are to be created, a few piles are better than many smaller ones'.

Extract from: 'Integrating Biodiversity into development....realising the benefits: Guidance for Developers and Planners in Essex, Southend and Thurrock' (Essex Biodiversity Project, 2005)

Guidelines for the management of existing and establishment of new grasslands

- A range of new grasslands may be required for nature conservation, landscape and amenity purposes;
- New grasslands should be low maintenance;
- Long term management is essential for the maintenance of all types of grassland, although levels of maintenance vary;
- Soil treatment will depend on individual site circumstances: prior surveys and investigation of former use;
- Seed mixtures need to be tailored to individual sites;
- Harvest local seeds from a soil types similar to new areas to be created if possible, for example for future sites by arrangement with one of the seed companies;
- Cut grassland cut at times of year to benefit wildflower pollination and seeding.

Species-rich wildflower grasslands

- Require low nutrient soil conditions;
- Soil preparation may include measures to reduce soil fertility, including topsoil removal or inversion of soil horizons, or to remove existing competitive species;
- Seed composition must be carefully suited to the site and should reflect species already occurring in the Harlow area (British provenance and in accordance with local landscape character).

Guidelines for lowland wet grassland

Lowland wet grasslands occur in areas with a high water table and areas subject to periodic flooding. Most areas of wet grassland are grazed, with only those which are dry enough in summer for machinery, cut for hay. Lowland wet grassland is generally confined to low-lying areas with impeded drainage (such as alluvial floodplains within river valleys, such as the River Lee) and to areas specifically flooded as part of their management (water meadows and washlands).

In most cases, lowland wet grassland has been agriculturally improved, resulting in a loss of its characteristic wetland associated flora and fauna. The main interest of this habitat is wetland birds, although wet grasslands are also generally rich in invertebrates.

- Grazing by cattle should be delayed until after mid-June to minimise potential disturbance to breeding waders;
- Grazing and some poaching of ditch edges by cattle can benefit the edge flora by increasing the areas of muddy/ marshy margin available for annuals. Trampling can also prevent the development of tall, rank vegetation along the ditch edges. Creation of open poached ditch edges also provides feeding areas for breeding waders;
- Control of water levels (in liaison with the Environment Agency) on areas of existing lowland wetland grassland can also be used to make those areas more suitable for waders and wildfowl (with success likely to be greater on larger sites);
- Wintering wildfowl in particular are very susceptible to disturbance and regular large numbers of birds are likely to be attracted if there are nearby sanctuary areas for roosting;
- There may be a periodic requirement for selective weed control, particularly ragwort and creeping thistle. Control may be achieved either through mechanical 'topping' or hand pulling;
- During winter, shallow (2-20cm) temporary or permanent flooding can be created to attract wintering wildfowl and waders by making seeds and invertebrates available for them to feed on.

For further information see Managing Habitats for Conservation, W.J. Sutherland & D.A Hill (1995).

Lowland acid grassland

Lowland acid grassland occurs on nutrient-poor; generally free-draining soils. It often occurs as an integral part of lowland heathland landscapes and parklands and is normally managed as pasture. As with other lowland semi-natural grassland types, acid grassland has undergone substantial decline in the 20th century, mostly due to agricultural intensification.

For further information on the management of lowland acid grassland see:

- The Lowland Grassland Management Handbook, English Nature/ The Wildlife Trusts, Peterborough Crofts, A. & Jefferson, R.G (1994);
- http://www.ukbap.org.uk - A 50-year vision for the Wildlife and Natural Habitats of Hertfordshire.

Lowland grassland within the Stort Valley floodplain

Grassland management

'Grasslands tend to be over-managed with a low diversity sward or under-managed and left to become scrub or are planted up with non-native species of shrub and tree. Such grassland holds little value for wildlife.

The main function of grassland management is to remove cut material to avoid the development of a thick 'thatch' that effectively smothers weaker, smaller plants and to create colonising gaps.

Rotational cutting retains standing stems, increases sward height and structural diversity, and can ensure a range of flowering stages. Traditional cutting would take place after mid-July, although in some cases an early cut in April can reduce vigorous, coarse grass species.

Creating grassland

Hay-meadow creation could be achieved by using freshly cut 'green hay'. The source site should have about half the area of the receiver site so that it is spread quite thinly. To eliminate any worries of depleting the seed bank at the source site limit the extraction to once every five years. Alternatively bale only a fifth of the field. One of the disadvantages of using freely cut 'green' hay is that it must be transported and spread on the same day. It will rapidly heat up if left overnight in heaps and bales and the high temperatures will reduce seed viability'.

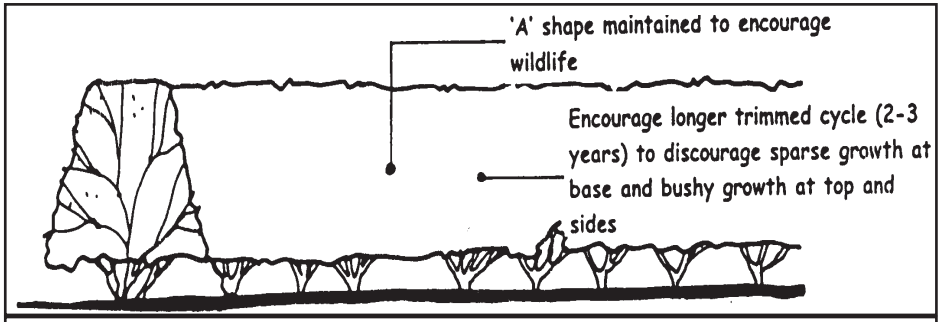
Extract from: 'Integrating Biodiversity into development....realising the benefits: Guidance for Developers and Planners in Essex, Southend and Thurrock' (Essex Biodiversity Project, 2005)

Diverse grassland, Harlow Common

Verge alongside B1393 (London Road) with potential for wildflower and wildlife enhancement

Guidelines for field boundaries (hedges)

- Conserve and protect existing field boundaries in accordance with local landscape character;
- Improve agricultural field boundaries to visually strengthen and increase occurrence of traditional hedge species;
- Reconstruct boundaries to the local traditional style along main road corridors, at urban fringes, and at publicly visible locations where appropriate to re-establish traditional rural views;
- Enhance nature conservation value of all field boundaries as linear habitats, corridors and refugia;
- Avoid planting trees or hedgerows in areas of open landscape, which could be detrimental to local landscape character and also for species such as skylarks and corn buntings;
- Establish and maintain standard trees in hedgerows;
- Manage hedges to ensure that they are visually interesting and valuable for wildlife by using traditional management methods, including hedge-laying, coppicing and trimming rather than continual severe cutting back.



© CBA

The above examples demonstrates how overgrown hedges can be trimmed and maintained to provide diverse field boundaries, which contribute to and enhance local landscape character. Consider the importance of dominant tree/scrub species in a hedgerow that will dictate its structure including its height and density. The hedgerow's structure may influence the suitability of habitat particularly for local flora and fauna.

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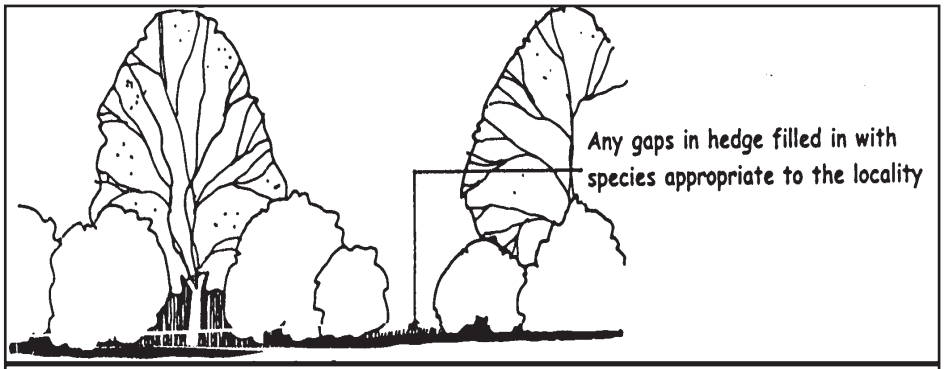
An example of a well-maintained hedge within the Harlow Area



© CBA

The above examples demonstates how hedges can be replenished using species appropriate to local landscape character.

Key links to other guidelines

2. Countryside Access Routes
3. Riverways
4. Greening of Transport corridors and gateways
5. Open space and recreation facilities
8. Sustainable Urban Drainage Systems

Sources of further information

- Integrating Biodiversity into development...realising the benefits (Essex Biodiversity Project, 2005)
- Managing Public Access: A Guide for Land Managers (The Countryside Agency)
- Harlow's protected Wildlife sites: Harlow District Council (Nov 2002) Wildlife Sites, Supporting document for the Replacement Harlow Local Plan.
- Urban Habitats - http://www.essexwt.org.uk/w2000/urban.htm
- Wildflower meadows - http://www.essexwt.org.uk/Tables/wildflower_meadows.htm

Prepared by Chris Blandford Associates - www.cba.uk.net

2.0 COUNTRYSIDE ACCESS ROUTES

COUNTRYSIDE ACCESS ROUTES

Scope

This guideline provides information to developers and planners on countryside access routes in the context of the Green Infrastructure Plan for the Harlow Area.

The Guidelines cover:

- Public rights of way (footpaths and bridleways)
- Minor roads and rural lanes.

Context

Countryside Access Routes consist of a combination of roads and public rights of way which provide access to landscapes outside the major urban areas within the Harlow Area. Several recreational routes run through the area (e.g. Lea Valley Walk, Harcamlow Way, Stort Valley Way, Essex Way and Forest Way).

In some cases, the character of rural lanes is being eroded through the loss of verges, hedgebanks, ditches and hedgerows. A variety of different styles of signage can provide visual clutter and confusion to users of footpaths and recreational routes. There is potential for greening and improving the connectivity of this network of footpaths and roads, to provide comprehensive public access to the landscape. Rural roads can provide diverse wildlife corridors, with wide verges providing an ideal habitat for wildflowers.

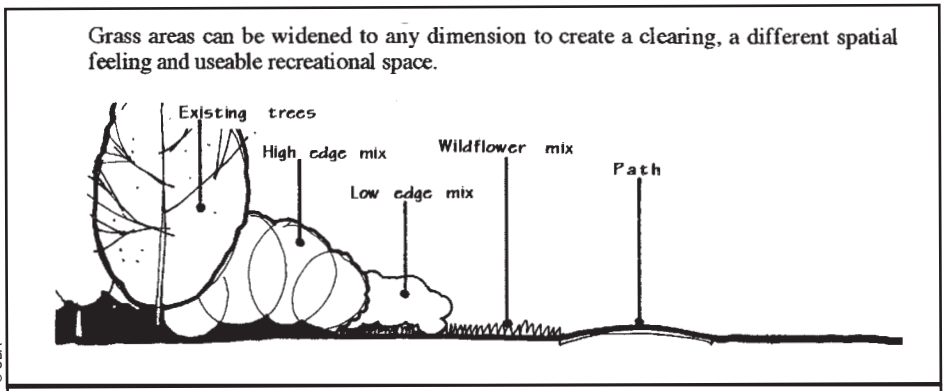
* See Figure 4 in Volume 1 for Landscape Character Area Map

Existing public rights of way signage (marking recreational routes such as the Forest Way) which although serves its purpose, does not promote a local, cohesive identity throughout the area

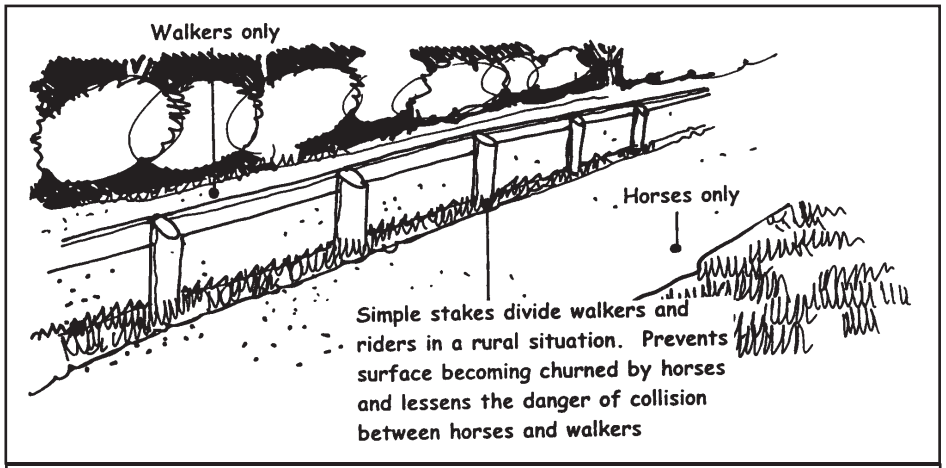
Existing potential 'quiet lane' within Toot Hill Ridge Landscape Character Area*

Guidelines for creating integrated, green countryside access routes

- Open up and improve existing public access to areas of countryside to create safe and attractive links through the Harlow area connecting a variety of attractions.
- Promote the use of existing public rights of way through clear signposting particularly from:
  - settlement edges;
  - transport corridors;
  - gateways;
- Seek to integrate existing countryside access routes through use of detailed treatment which will reflect local circumstances and landscape character.



There is potential to create and enhance paths, taking into account safety issues (such as potential lighting and width of path). Vegetation can be planted in a graded layout, with lower species in close proximity to the edge of the path.



The above example demonstrates how a well integrated and user-friendly combined footpath, cycleway and bridleway could be created, for example along the Essex Way.

Example of an existing informal 'greenway' within the Harlow Area

Guidelines for minor roads and rural lanes

- Conserve historic and ecologically important hedge/ woodland banks and road verges;
- Manage hedges with sympathetic trimming;
- Practice the laying of hedges and conserve hedgerow trees;
- Keep the number of signs to a minimum. Amalgamate and cluster signs and other street furniture to reduce cluster.

Quiet Lanes and Greenways

'Quiet Lanes are part of a toolkit of ideas the Countryside Agency has for improving travel choice, quality of life and strategic traffic management of rural roads for the benefit of local residents and businesses and visitors. Quiet Lanes are minor rural roads which are appropriate for shared use by walkers, cyclists, horse riders and motorised users. These roads should already have low levels of traffic travelling at low speeds.

Greenways are off-road routes, managed to enable shared use by people of all abilities on foot, bike or horseback, for commuting, play or leisure. Whilst some short sections of road may be needed to link up to the Greenway network, Greenways, unlike Quiet Lanes are essentially designed to be car free routes. Quiet Lanes and Greenway routes can be linked together to form networks of routes'.

Further information is available from the Countryside Agency: http://www.greenways.gov.uk (Countryside Agency Quiet Lanes Technical Guidance Instructions).

Rural road within Matching Plateau Landscape Character Area

Rural lane within Stansted and Pishiobury Parklands Landscape Character Area

Key links to other guidelines:

1. Wildlife Habitat Enhancement, Creation and Links
3. Riverways
4. Greening transport corridors and gateways
5. Public open space and recreation faclilities

Sources of further information

- Countryside Agency Quiet Lanes Technical Guidance (http://www.greenways.gov. uk)
- Managing Public Access: A Guide for Land Managers (The Countryside Agency)
- Harlow Landscape and Environment Study (Volumes 1-3) Chris Blandford Associates, September 2004)
- Sustrans - Integrated Harlow Map (http://www.sustrans.org.uk)
- Watling Chase and Hertsmere Greenways Demonstration site (http://www.greenways.gov.uk/site/shared/demos/watling.htm).

Prepared by Chris Blandford Associates - www.cba.uk.net

3.0 RIVERWAYS

RIVERWAYS

Scope

This guideline provides information to developers and planners on riverways in the context of the Green Infrastructure Plan for the Harlow Area.

The Guidelines cover:

- Greening river corridors and edges;
- Footpaths along river corridors;
- Wetlands.

Context

The main rivers (Lee and Stort) and smaller tributaries (including Pincey Brook, Fiddlers Brook, Hunsdon Brook & Great Hallingbury Brook) within the Harlow area retain apredominance of natural wetland habitats, including wet grassland, reedbeds, open water, water margin and swamp. Rivers within the area are important for water voles, white-clawed crayfish and benthic invertebrates. Several of the smaller tributaries are well integrated into the surrounding landscape. In places, however, the edges of the riverways are harsh and neglected, with vegetation that is poorly managed and a lack of managed access to the river corridor.

Pressures to increase agricultural production; recreational pursuits and the planting of woodland could lead to wetland habitat loss through land drainage, cultivation and nutrification from fertilisers. Run off, discharge and spillage of pollutants from intensive agriculture, urban areas and industry pose a significant threat to the existing river systems.

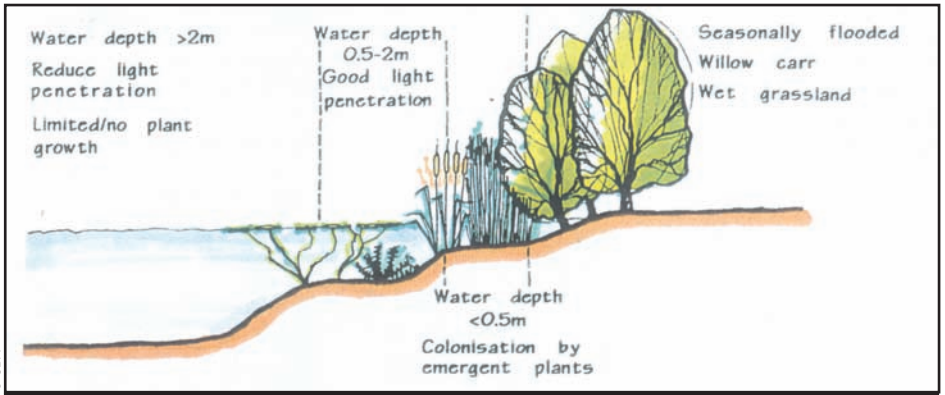
Vegetation along the Lee Riverway, partially screening industry within the river corridor

Small, easily accessible tributary within Harlow urban greenspace

Harsh, poorly maintained edge along the River Stort

Guidelines for greening river corridors and edges

- Maintain and enhance the existing ecological character and habitats within river corridors and wetlands to enhance biodiversity for target species such as otter, overwintering and breeding birds;
- Improve river frontages to satisfy aesthetic and/ or ecological objectives in urban and industrial areas;
- Maintain a high level of water quality throughout river catchments;
- Continue to exercise strict control and monitoring of the discharges from urban areas, industry and agriculture into wetlands and river catchments;
- Avoid the introduction of river uses or development which could cause a change to existing fluvial systems;
- Control and manage the growth of recreational pursuits to avoid conflicts;
- Conserve biodiversity and landscape quality of rivers and river valleys as an overriding objective.



It is suggested that aquatic vegetation should be cleared from one bank only, treating different sections each year. Dredgings should be left on banks for 24 hours to allow invertebrates to return to the watercourse. The development of tall fen and emergent vegetation and the abandonment of the adjacent land to this function might be considered especially in areas of flood risk.

Managing riverside habitats

'Habitat improvements should include retention and repollarding of riverside willows, planting of alder woodland as landscape/buffering, thickening the boundary hedges and introducing positive bankside management ('soft' engineering solutions with biodiversity spin offs).

The ditch should be left open (not culverted), cleaned up and reprofiled to benefit water vole and otters. Porous car park surfacing would reduce flash run-off and water-bourne pollutants. Road bridges across the river and ditch should include an underlying bank or ledge to enable otters to move freely up/ down the river). This will reduce road kill/injuries, as otters will pass over roads if ledges are not provided at bridge crossings'.

Extract from: 'Integrating Biodiversity into development....realising the benefits: Guidance for Developers and Planners in Essex, Southend and Thurrock' (Essex Biodiversity Project, 2005)

Mature riverside and aquatic vegetation along the River Stort corridor

Guidelines for riverside footpaths

The Environment Agency should be consulted during the design process for footpath locations along river corridors.

All footpaths along rivers and watercourses should be set back from the top of the bank of the watercourse by at least 8 m (the top of the bank is defined as the point at which the bank meets normal land levels). It is standard Environment Agency practice to seek, as part of any new development close to a watercourse, the inclusion of a green buffer zone alongside the watercourse. Where a buffer zone does not currently exist, the Environment Agency would normally require that one is established.

Footpaths should meander away from the river to provide a more dynamic experience for users. Footpaths set directly against the top of the bank form a break between river and land habitats. Is important to have continuous transition between these habitats to maintain the integrity of the river corridor for the movement of wildlife.

Buffer zones between footpaths and rivers are also important in providing space for improvements to the river corridor to be carried out for the benefit of biodiversity, such as naturalisation of the riverbanks and planting.

Guidelines for wetlands

Waterbodies

- New waterbodies such as large ponds, gravel pits and reservoirs should be designed to create extensive shallows with approximately half of their area less than 0.5m deep and the rest up to 2m deep (making allowance for seasonal change in water level);
- Deeper waterbodies have less wildlife value and therefore should contain as much shallow water as possible (0.05m – 0.3m below summer water optimal for waders and wildfowl);
- Aim to create a variety of semi-natural vegetation types including scrub, tall herb and permanent grass (as an important nesting or feeding place for waterfowl and roosting area for aquatic insects such as dragonflies) within 10m of ponds and at least 50m of larger waters;
- In larger waterbodies, marginal and emergent plants should also be planted in single-species stands, taking into account the depth of water, which they will be able to colonise;
- Aim for a varied structure and composition of emergent and fringing vegetation.

Reedbeds

Reedbeds are usually dominated by common reed (Phragmites australis) and the majority are either riverine or in waterlogged depressions. Reedbeds are important for birds and also support a similar diversity of mammal and invertebrate species.

- Where appropriate, manage reedbeds by cutting dead reed stems during the winter;
- All winter cutting should take place after the reed leaves have fallen off the stems and dried out (normally after the start of December);
- Before attempting any management, the wildlife value of the site should be assessed and decisions made over which target species or communities are important and a plan developed for appropriate management regimes to suit them.

Fens

Fens receive their nutrients from river catchments as well as from rainfall and support great diversity of plants and mammals. The hydrology of these wetlands should be carefully considered (in liaison with the Environment Agency) before any activities are undertaken.

- Wherever possible, conserve and manage taller mixed fens as habitats for breeding birds such as Reed Warblers, Sedge Warblers and Reed Buntings;
- Maintain and manage dykes as important wildlife habitats;
- Vegetation management if required to help restrict invasion of woody plants and succession to scrub. Grazing or mowing may be used. Grazing may create a more diverse sward, although moving in summer will also be valuable, however material should not be allowed to remain on the ground.

For further information see Managing Habitats for Conservation, W.J. Sutherland& D.A Hill (1995).

For further information on wetlands within the Harlow area (such as those along the River Lee corridor) see:

BTCV: Wetlands Handbook, Promoting nature in cities and towns English Nature (1993) Otters and river habitat management

Wetlands within the River Lee valley

Key Links to Other Guidelines

1. Wildlife Habitat Enhancement, Creation and Links
2. Countryside Access Routes
8. Sustainable Urban Drainage Systems

Sources of Further Information

- Biodiversity By Design (Town and Country Planning Association, 2004)
- Integrating Biodiversity into development....realising the benefits (Essex Biodiversity Project, 2005)
- RSPB: Managing water levels (http://www.rspb.org/action/managingreserves/habitats/water_wetlands/index.asp
- http://www.euwfd.com/html/wetlands_-_organisations_and_p.html
- http://www.essexbiodiversity.org.uk
- http://www.ramsar.org
- A 50 Year Vision for the Wildlife and Natural Habitats of Hertfordshire (http://www.ukbap.org.uk/

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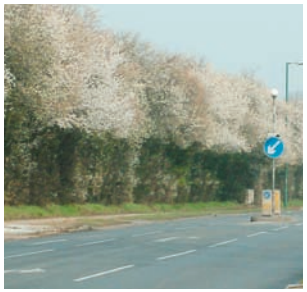


4.0 GREENING OF ROAD TRANSPORT CORRIDORS

GREENING OF ROAD TRANSPORT CORRIDORS

Scope

This guideline provides information to developers and planners on greening of road transport corridors and gateways in the context of the Green Infrastructure Plan for the Harlow Area.

The Guidelines cover:

- Integrating road corridors into the surrounding landscape;
- Greening gateways.

Context

The majority of visitors' and residents' perception of the area stems from the principal road corridors such as the A414 (connecting A10 near Ware to North Weald Bassett - via Harlow), A1184 (connecting Harlow to Bishops Stortford) and several B - roads. Some road corridors are well integrated into the landscape, however several are exposed, open and poorly integrated, resulting in wider visual impacts. There is a need to develop stronger links between road corridors and the surrounding landscape and also enhance transport links to project a quality image. The existing gateways are mostly uninspiring and can be summarised as occurring on the:

- Major road corridors which cross the boundaries to the study area;
- Rail – major gateways into the study area occur at the railway stations (for example Sawbridgeworth, Harlow, Cheshunt and Broxbourne) some of the main entrance and departure points for visitors to the area. However, the first impression of many of the railway stations is uninspiring and confusing created by the lack of signs and interpretation features;
- Entrances and approaches to major urban areas (for example roundabouts along the A414 Harlow, A1170 Hoddesdon/ Cheshunt, B194 Waltham Abbey); and to other important sites such as publicly accessible open spaces (Harlow Town Park, Lee Valley Park) and employment sites (e.g. Pinnacles Industrial Estate) and other smaller commercial parks within Cheshunt, Broxbourne, Hoddesdon, Waltham Abbey and Sawbridgeworth.

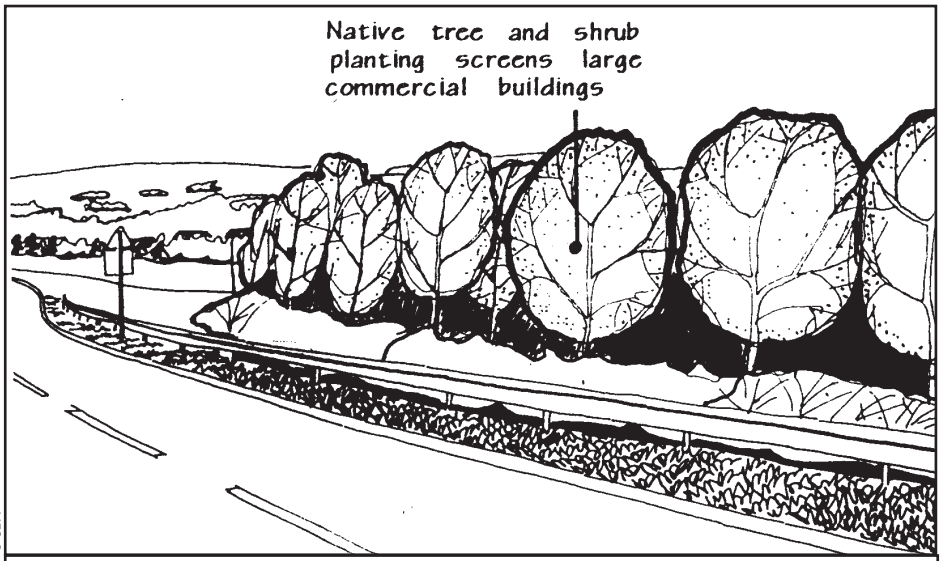
Green, well-integrated attractive corridor along Elizabeth Way (A1169), to the northeast of Canon's Bridge

Bland railway station gateway, Harlow

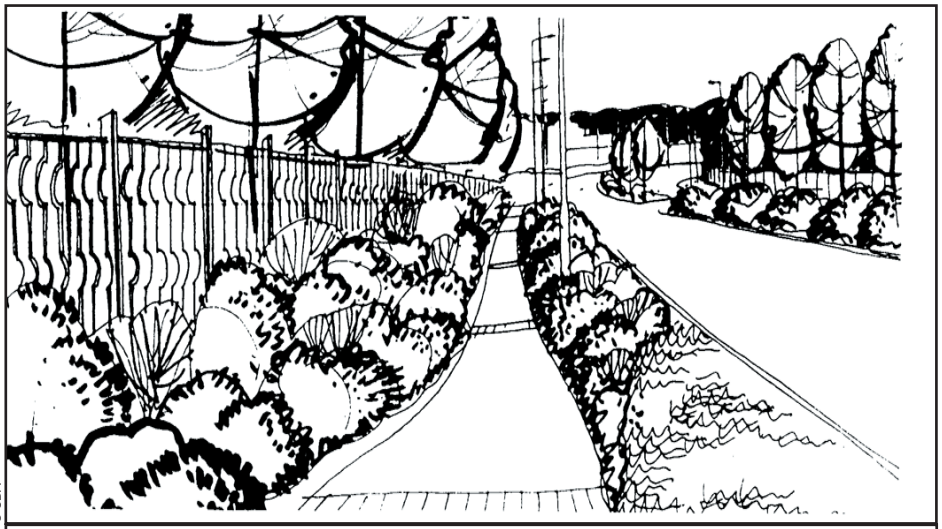
Well integrated green road corridor along Elizabeth Way (A1169)

Guidelines for integrating road corridors

- Consider planting native trees and shrubs along the road to soften the route corridor;
- Consider planting the central reservation with trees and shrubs (taking into account visibility and safety issues - in liaison with the Highways Agency);
- Where lighting columns are necessary, consider painting them black to reduce visual dominance;
- Seek to screen unnattractive features along the road corridor.



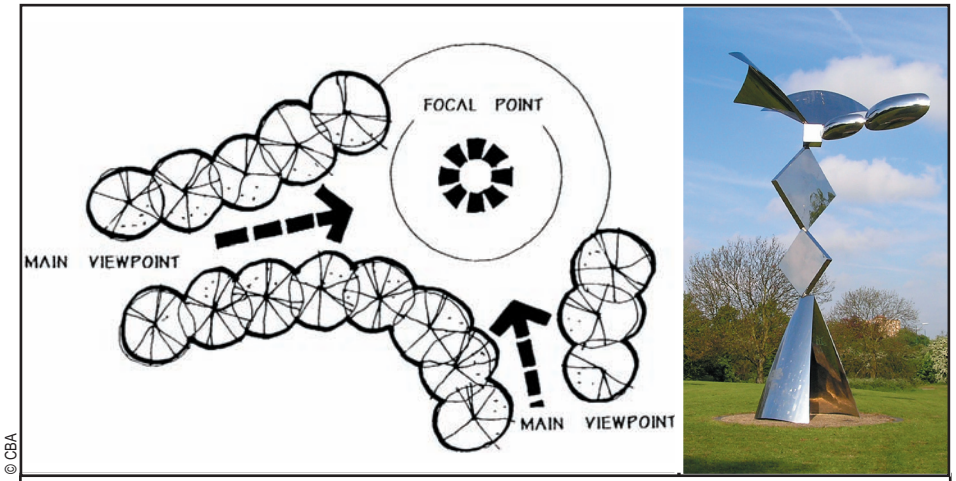
The above example demonstrates how native tree and shrub planting has been used to screen commercial buildings along the side of the road, helping to green the corridor. There are several locations within the Harlow area where this guideline could be applied, for example, along A414 (Temple Fields Industrial Estate) A1169 (Pinnacles Industrial Estate and Roydonbury Business Park) along B133 (Industrial area Hoddesdon).



The above example demonstrates how native trees and shrubs have been used to soften the edges of road corridors. This could be applied, for example, along stretches of the A414 and A10, and to many A-roads and B-roads in the Harlow area.

Although existing planting will mature, there is potential for further screening of industrial buildings from road corridor

Guidelines for greening gateways



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Views may be focused along major transport corridors towards a sculpture (for example, situated on a roundabout). The sculpture should be appropriate to rural or urban locations and may reflect local heritage themes to determine a sense of place.

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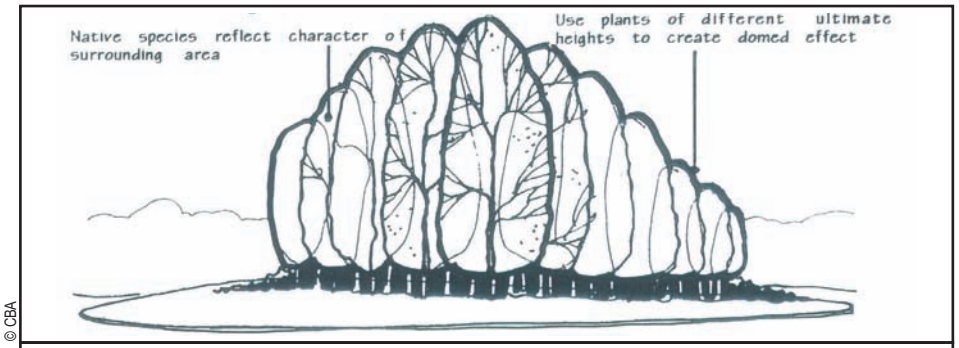
Sculptured landform used to emphasise gateway to Roydonbury Business Park



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Planting of native species (in this example, on a roundabout) can create and enhance a positive local sense of place, whilst also creating a green gateway. The use of local building styles and materials should also be encouraged.

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New signage can use materials which are appropriate to local landscape character and reflect local heritage or ecological themes

Key links to other guidelines

1. Wildlife Habitat Enhancement, Creation and Links
2. Countryside Access Routes
3. Riverways

Sources of further information

- Design Manual for Roads and Bridges: Volume 10, The Good Road Guides (The Highways Agency, 2004)
- Integrating Biodiversity into development...realising the benefits (Essex Biodiversity Project, 2005)

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5.0 OPEN SPACE AND RECREATION FACILITIES

OPEN SPACE AND RECREATION FACILITIES

Scope

This guideline provides information to developers and planners on open space and recreational facilities in the context of the Green Infrastructure Plan for the Harlow Area.

The Guidelines cover:

- Improving existing internal and urban fringe greenspaces;
- Creation of wildlife corners and edges;
- Creation of linking amenity spaces on areas of derelict or underused land

Context

Open space within the Harlow area consists of a combination of two main categories:

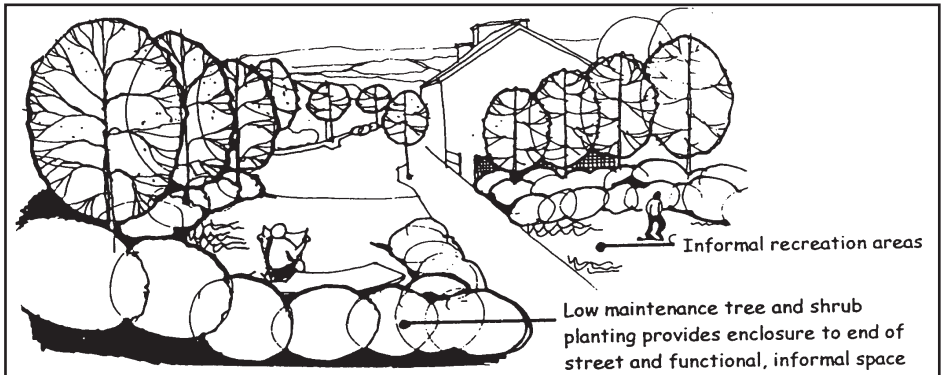
- Rural recreation areas such as Hatfield Country Park and Lee Valley Regional Park, community woodlands and smaller-scale recreational areas, such as small seating areas with picnic tables connected with public rights of way and road corridors;
- Urban fringe and internal greenspaces such as playing fields, allotment gardens, children's playgrounds, town and pocket parks.

There is reasonable provision of urban fringe and internal urban greenspaces, particularly within Harlow urban area. Levels of accessibility, state of dereliction and quality of spaces, however, vary throughout Harlow Area. There is a need to improve open space and recreational facilities within the urban fringe and internal urban areas to form useful, attractive and functional spaces popular for recreational and amenity use by locals and visitors. There is also a need to improve accessibility to existing open spaces and recreational facilities to create an interconnected network of urban and rural greenspaces.

Attractive internal urban greenspace combining formal and informal recreation areas

Bland formal seating provision alongside a public right of way

Harsh, unattractive, bland range of formal sports and play facilities within an internal urban greenspace



The above example demonstrates how internal greenspaces can be improved through the introduction of informal and formal recreation, seating spaces and low maintenance planting. Naturalistic native and ecological planting (in accordance with local landscape character). Internal spaces should relate to the adjacent landscape and needs of the local community.

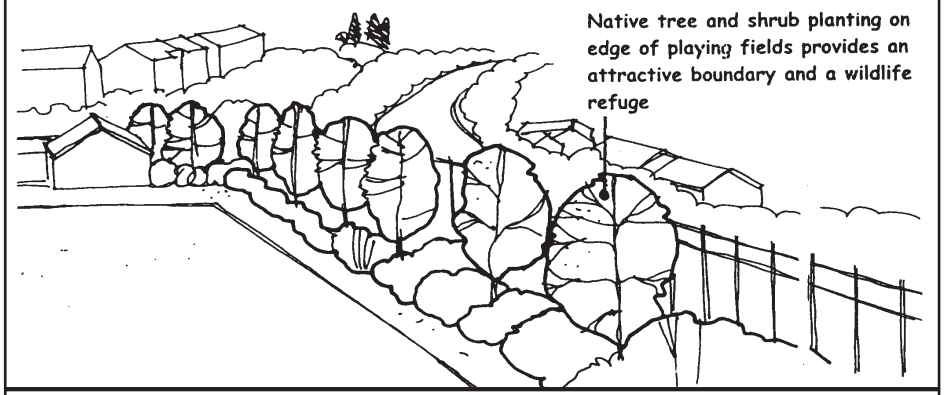
Encouraging community participation in local greenspaces: case study of the Epping Upland Doorstep Green Initiative

The main aim of this initiative is to create a Doorstep Green on a flat four-acre field, immediately outside the village of Epping Upland.

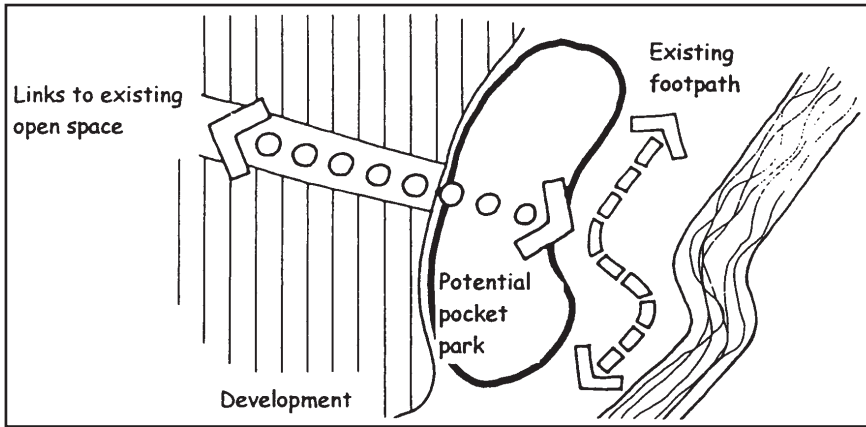
The Green will be a landscaped area, with an area for a junior football pitch and space set aside for the ball games and skateboarding. There will also be a conservation area, with a dragonfly reserve, and a water feature which will provide a home for an existing colony of great crested newts.

Example of naturalistic edges along a footpath within an internal urban greenspace

There is also an opportunity to develop wildlife areas and diversity of species in derelict areas or under used spaces of recreation areas, such as corners and edges.



Diverse wildlife areas, housing a variety of species can be created in derelict areas, under-used corners and along the edges of greenspaces.



The above diagram illustrates how underused spaces can be linked with the existing public footpath network to enhance public access and use. Such spaces could then become informal leisure and recreation spaces.

A positive arrangement of a series of linked informal leisure and recreation open spaces (Tye Green) in Harlow - there is also potential for enhancement of these spaces for wildlife and recreation value

Bland, unattractive children's playgound within the southern fringe of Harlow urban area

Key Links to Other Guidelines

1. Wildlife Habitat Enhancement, Creation and Links
2. Countryside Access Routes
6. New Housing Development
7. Industrial and Commercial Development
8. Sustainable Urban Drainage Systems

Sources of Further Information

- Biodiversity by Design (Town and Country Planning Association, 2004)
- Lee Valley Park Plan (http://www.leevalleypark.org.uk)
- Integrating Biodiversity into Development...realising the benefits (Essex Biodiversity Project, 2005)
- Managing Public Access: A Guide for Land Managers (The Countryside Agency)
- Community Greenspace and new development (The Countryside Agency, Hertfordshire Countryside Management Services & Watling Chase Community Forest, 2004)

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6.0 NEW HOUSING DEVELOPMENT

NEW HOUSING DEVELOPMENT

Scope

This guideline provides information to developers and planners on new housing development in the context of the Green Infrastructure Plan for the Harlow Area.

The Guidelines cover:

- Integrating wildlife into development;
- Integrating new housing developments into the landscape.

Context

It is often the case that new housing developments within the Harlow Area exhibit harsh urban edges, with little vegetation or screening along boundaries of the development sites. Such developments affect the visual character of settlement edges and expand suburban character into surrounding landscape character areas. There is a need to ensure that new housing developments, particularly on the edges of major urban areas, are well screened and integrated into the surrounding landscape. Wherever possible, it is necessary to integrate significant landscape features and key wildlife habitats into new developments (of which New Hall housing is a good example of such practice).

Harsh, new housing development, with little screening at the boundary (Harlow)

New Hall housing development: attractive urban form, with use of materials appropriate to local landscape character

Harsh urban edge along the southern edge of Harlow

New Housing: Case Study of New Hall, Harlow

'This large greenfield development on the eastern fringes of Harlow has the potential to provide a sustainable community for about 6000 residents. Phase 1 of the development, including 440 dwellings and a local centre, was granted planning permission in 1998 and is now under construction.

Key Issues

The majority of the site is currently arable land which is of low ecological value. Other habitats found within the site are improved and semi-improved grassland, woodland, hedgerows, scattered trees, streams ponds and water treatment beds (reeds). These features are of greater ecological significance. There are two non-statutory woodland Wildlife Sites close to the application site and several sites of local importance for nature conservation. The site also has a Sustainable Urban Drainage System.

Integrating development and biodiversity

The layout of the proposed development retains the key landscape features of ecological value and also habitats of importance for protected species. Landscape proposals also include reinforcement and enhancement of these areas.

Some of the area that is proposed for development does, however, serve as a foraging habitat. Areas have been identified to compensate for this loss and the layout includes provision for wildlife corridors that will enable access to those identified areas and for movement between individual populations. The inclusion of water features or the sustainable urban drainage system will provide further habitat for the great crested newts.

In addition to the mitigation and compensation measure for predicted ecological impacts, there are proposals to carry out a variety of enhancement works to improve the remaining areas of habitat for wildlife. These measures include new roosting opportunities for bats (e.g.. bat boxes and barn usage), planting of native trees and shrubs, maintaining/ enhancing existing hedgerows, managing the woodlands as conservation areas, and managing the undeveloped northern part of the site as an informal recreation and conservation area, including fencing the woodland areas from adjacent pastures to encourage the development of understorey and ground flora.

Tree shelter belts act as wind protection and buffer zones between the housing and nearby habitats. These features provide an attractive setting for the built development and will mature into useful habitat for nesting birds and insects. The inclusion of corridors between different features such as ponds and greens ensures a real connection between the different types of habitat required by the various species.

Extract from: 'Integrating Biodiversity into development....realising the benefits: Guidance for Developers and Planners in Essex, Southend and Thurrock' (Essex Biodiversity Project, 2005)

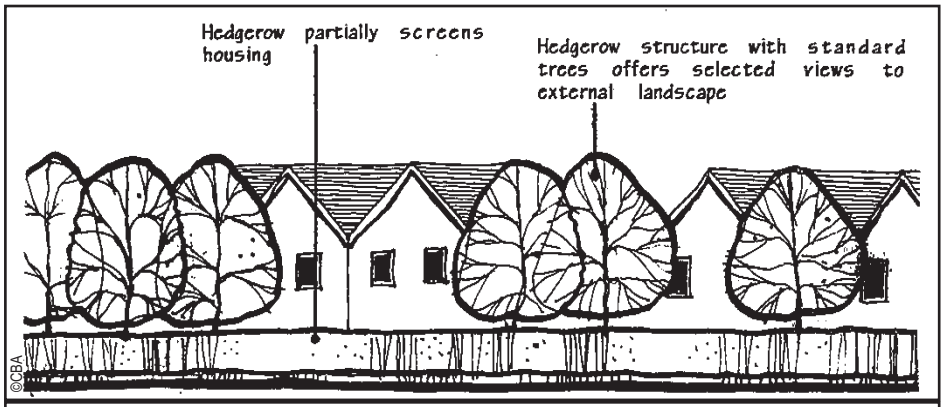
Guidelines for integrating new housing developments into the landscape

Retention of significant corridors outside of the residential plots along hedgerows, ditches, streams etc., is a good way of providing habitats for wildlife. Areas like this offer the most potential for wildlife, with the back sections and gardens providing undisturbed space for trees, shrubs and dense plant cover (Fig 1). It also adds value for wildlife if these areas are linked together in continuous strips between gardens, and link to larger open spaces outside the development' (Fig 2)

Fig 1

Fig 2

Extract from: 'Integrating Biodiversity into development....realising the benefits: Guidance for Developers and Planners in Essex, Southend and Thurrock' (Essex Biodiversity Project, 2005)



The above example demonstrates ways in which hedges can be used to the screen the edge of new housing developments. Even with the addition of hedges at the boundary to housing areas, new housing should avoid location on prominent ridges which may be extremely visible from surrounding landscape character areas both close and at distance from the settlement.

Key links to other guidelines

1. Wildlife Habitat Enhancement, Creation and Links
8. Sustainable Urban Drainage Systems
9. Development Edge Treatment

Sources of further information

- Biodiversity by Design (Town and Country Planning Association, 2004)
- Community Greenspace and new development (Hertfordshire Countryside Management Service, Watling Chase Community Forest & the Countryside Agency)
- Integrating Biodiversity into development....realising the benefits: Guidance for developers and Planners in Essex, Southend and Thurrock (Essex Biodiversity Project).

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7.0 INDUSTRIAL AND COMMERCIAL DEVELOPMENT

INDUSTRIAL AND COMMERCIAL DEVELOPMENT

Scope

This guideline provides information to developers and planners on industrial and commercial development in the context of the Green Infrastructure Plan for the Harlow Area.

The Guidelines cover:

- Screening industrial and commercial developments from the surrounding landscape setting
- Creating bold entrances to industrial and commercial areas;
- Green roofs;
- General landscape improvements to industrial and commercial areas;
- Creating new industrial and commercial developments in keeping with local landscape character.

Context

There are several industrial and commercial areas within the larger urban areas (Broxbourne, Cheshunt, Waltham Abbey, Harlow). These developments often exhibit harsh edges, with little vegetational screening, determining that they are highly visible from surrounding roads, footpaths and also from landscape at the edge of settlements. Often, an amalgamation of different signage creates a confusing and untidy image. Buildings are often out of context with the scale, pattern and colours of the surrounding buildings and landscape features (for example, several of the larger industrial and commercial buildings along the western edge of Pinnacles industrial estate, Harlow).

There is a general need to enhance existing industrial and commercial sites within the Harlow Area to integrate them more with the surrounding landscape and townscape and potentially make them more attractive to investors and customers alike. There is also a need to ensure that new industrial and commercial development is designed to cause minimum visual intrusion and is in keeping, wherever possible, with local landscape character. Brownfield sites are also particularly important for urban wildlife habitats.

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Poor juxtaposition of historic built heritage and new industrial development within a viewpoint, Pinnacles, Harlow

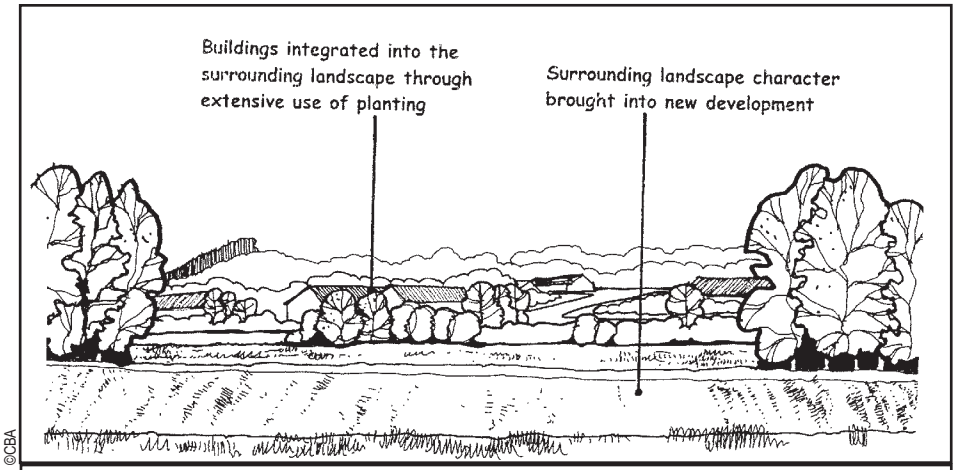
© CBA

Harsh edge to new commercial development, the Water Gardens and Civic Centre, Harlow.

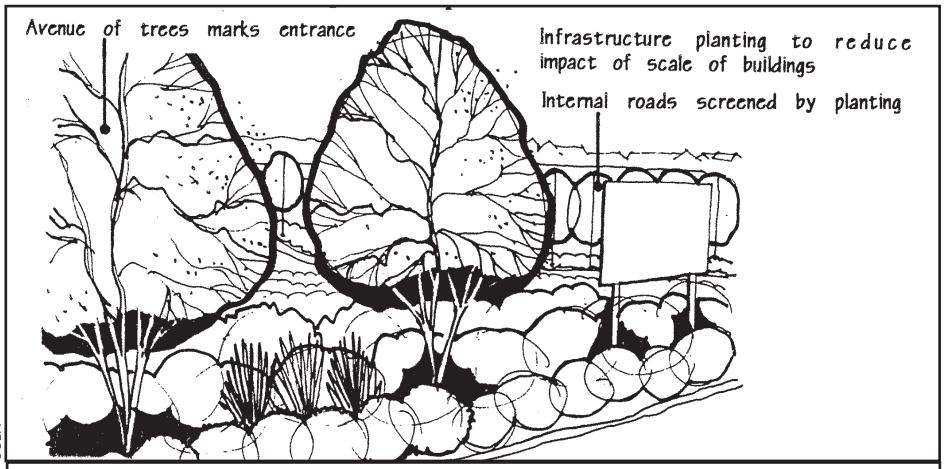
© CBA

Pinnacles industrial estate (western Harlow) - Even with screening, the skyline of industrial development is a visual detractor when viewed from the surrounding landscape

Guidelines for screening and integrating industrial and commercial developments



The above example demonstrates ways in which planting and screening can be used to integrate commercial and industrial development into the landscape.



The above example demonstrates possible ways to create and enhance entrances to industrial and commercial areas.

Guidelines for green roofs for urban wildlife such as birds

Green roofs can be created in high roofs, office blocks and factories, predominantly in towns and cities by spreading a thin layer of nutrient-poor substrate; e.g. crushed brick and concrete.

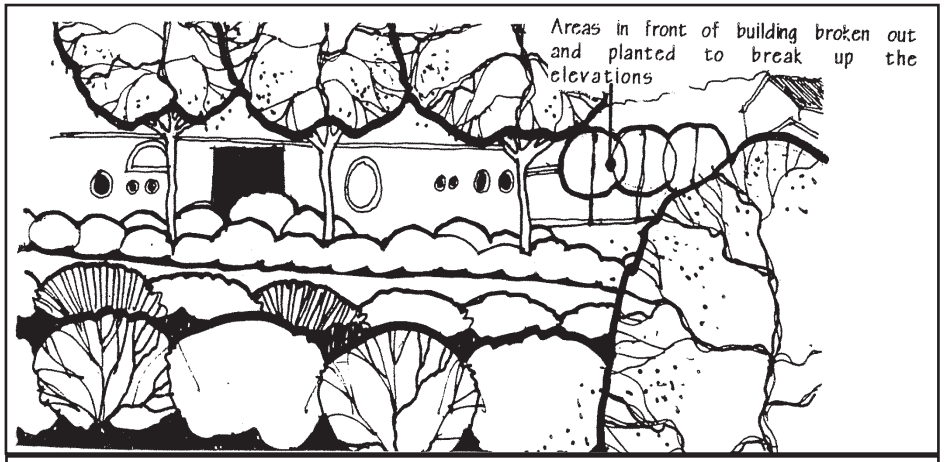
Individual particles consisting of dust up to 30mm; depths should vary from 7-15cm; i.e. ridge and furrow structure. Large rocks and logs can be added to create a diversity of habitat.

Benefits:

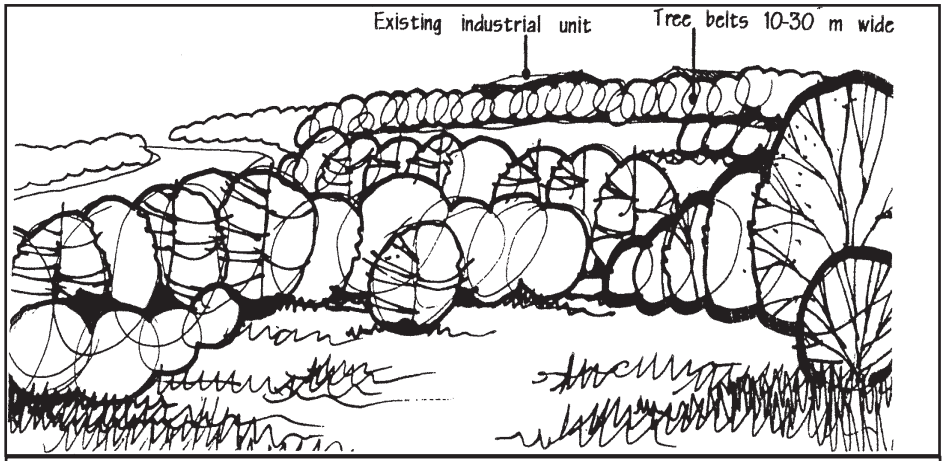
- Solar panels work more effectively on green roofs;
- Energy is saved through the insulation provided by the substrate and vegetation (alongside lower heating and air conditioning costs);
- The life-span of the roof increases (this can be doubled for flat roofs);
- Provides protection from temperature extremes, standing water and ultra-violet radiation;
- Controls stormwater run-off by acting as a sponge and allowing water to run off gradually. As a result, a significant proportion of the water evaporates back into the atmosphere;
- Provides noise insulation;
- Increases biodiversity - e.g. 28 species of rare invertebrate can benefit from green roofs;
- Aesthetic/ landscape value - green roofs are pleasant to look at in comparison to conventional roofs;
- Green roofs can potentially increase property values.

'Natural' features can be created, with imagination, as roof gardens (examples in London include Greenwich Reach West leisure complex, Laban Dance Centre - Deptford Creek, Wandle Delta (Wandsworth residential development). In these examples, landscaping included such features as mixed and piled aggregates, windbreaks, song posts and sparse vegetation.

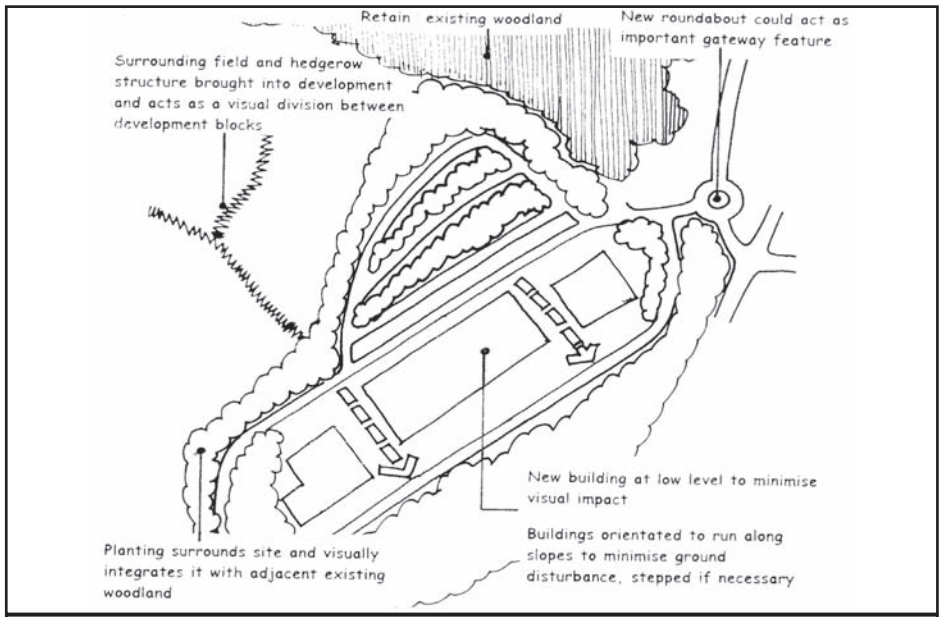
For further information on green roofs see http://www.blackredstarts.org.uk/



The above example demonstrates how planting can be used to soften the edges and tall facades of large industrial and commercial buildings.



The above example demonstrates how structured planting can be used to provide a screened landscape setting to industrial and commercial developments.



The above example demonstrates ways in which industrial and commercial development may be integrated into the surrounding landscape character of the area.

Key links to other guidelines

1. Wildlife Habitat Enhancement, Creation and Links
2 Greening Transport Corridors and Gateways
6. New Housing Development
9. Development Edge Treatment

Sources of further information

- Biodiversity by Design (Town and Country Planning Association, 2004)
- Integrating Biodiversity into development....realising the benefits: Guidance for developers and Planners in Essex, Southend and Thurrock (Essex Biodiversity Project, 2005)
- http://www.blackredstarts.org.uk/
- http://www.greenroof.co.uk

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8.0 SUSTAINABLE URBAN DRAINAGE SYSTEMS

SUSTAINABLE URBAN DRAINAGE SYSTEMS

Scope

This guideline provides information to developers and planners on sustainable urban drainage systems (SUDS) in the context of the Green Infrastructure Plan for the Harlow Area.

The Guidelines cover:

- Principles underlying sustainable urban drainage systems and their potential applications within the Harlow Area.

Context

SUDS are 'drainage systems, which try to mimic natural drainage using infiltration, evaporation and storage with the objective of limiting runoff from the developed site to the predevelopment values or less' (PPG 25 Development and flood risk). SUDS can help reduce the environmental impact of development and their use provides a significant contribution towards more sustainable development.

Older residential, commercial and industrial developments within the Harlow area do not make use of SUDS. Newer developments, however, such as New Hall (residential development) incorporate SUDS into the overall layout and design of the site. There is a need to promote SUDS as a sustainable method of drainage to be incorporated into designs for new industrial, commercial and residential development within the Harlow area.

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Ponds can be used to store and filter water from an adjacent residential area as part of a sustainable urban drainage system

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Open drainage swales help to gather surface water quickly at surface level as part of sustainable urban drainage systems

© CBA

Open drainage ditches gather water at the surface - the above example is in need of planting to enhance the appearance of the ditch

Benefits of using SUDS on residential, commercial and industrial sites include:

- Management of runoff flowrates, reducing the impact of urbanisation on flooding;
- Protection or enhancement of water quality;
- Provision of a habitat for wildlife in urban watercourses.

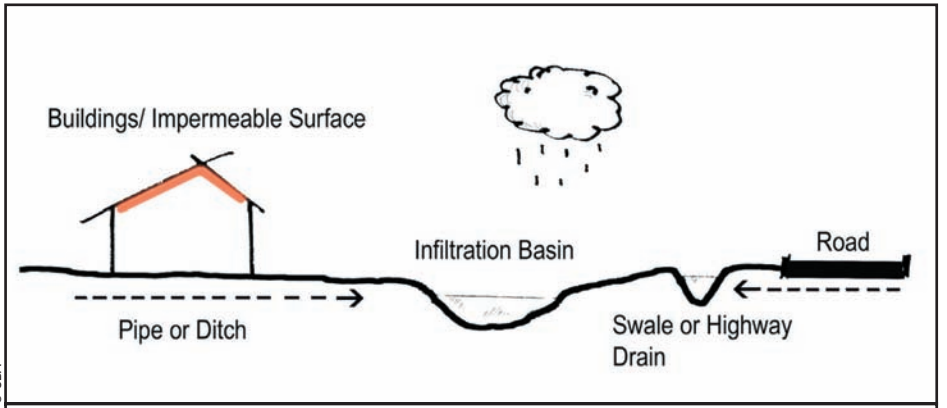
This is achieved through a combination of the following methods:

- Dealing with runoff close to where the rain falls;
- Managing potential pollution at its source;
- Protecting water resources from point pollution (such as accidental spills) and diffuse sources.

Sustainable urban drainage systems use techniques to control surface water run-off as close to its origin as possible, before it enters a watercourse. This involves moving away from traditional piped drainage systems to engineering solutions that mimic natural drainage processes.

A combination of the following design options can be implemented to create sustainable urban drainage systems:

- Preventative methods for example, high quality design and maintenance, rain-water recycling;
- Filter strips and swales with downhill gradients, to drain water evenly off impermeable surfaces, recreating natural drainage patterns;
- Filter drains, permeable and porous pavements and surfaces to below ground storage;
- Infiltration devices such as soakaways, infiltration trenches, swales with infiltration and infiltration basins;
- Detention basins, balancing/attenuation ponds, flood storage reservoirs, lagoons, retention ponds and wetlands/reed beds.



The above example demonstrates the principles of the SUDS process within an urban environment

Consideration of the following issues early in the planning and design stages of SUDS is essential:

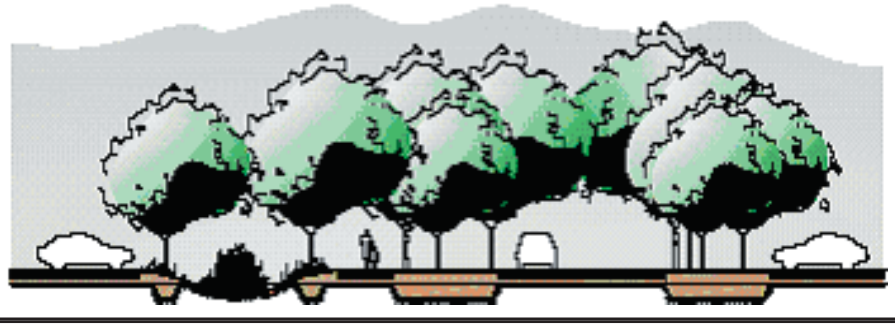
- Integration of sustainable urban drainage into the overall site concept and layout;
- The need for investigation and subsequent remediation of contaminated land;
- Agreements on adoption, maintenance and operation of the systems;
- The need for monitoring long-term performance;
- Designing systems with appropriate capacity to handle run-off at their location (in consultation with the Environment Agency).

Based on PPG 25: Development and Flood Risk.

'Planners and developers should work closely with the Environment Agency in order to develop practical and effective surface water management systems. Tree canopies can reduce the rate at which rainwater reaches the ground. Reed beds and ponds can also help to filter dispersed pollutants and clean water that drains off roads, roofs, car parks and agricultural land. All new development should incorporate features of sustainable drainage systems' (http://www.ciria.org.uk/acatalog/C609.html & PPG25).

Extract from: 'Integrating Biodiversity into development....realising the benefits: Guidance for Developers and Planners in Essex, Southend and Thurrock (Essex Biodiversity Project, 2005)

An example of porous paving surface treatment



The above example demonstrates how a reed bed or swale can be built into the design of a car park to implement a sustainable drainage system.

Key links to other guidelines

1. Wildlife Habitat Enhancement, Creation and Links
3. Riverways
6. New Housing Development
7. New Industrial and Commercial Development
9. Development Edge Treatment

Sources of further information

- Biodiversity by Design (Town and Country Planning Association, 2004)
- http://www.sepa.org.uk/pdf/publications/leaflets/suds/setting_the_scene.pdf
- http://www.environment-agency.gov.uk
- http://www.britishwater.co.uk/Tech_Guidance_SUDS-final-1Jun05.pdf

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9.0 DEVELOPMENT EDGE TREATMENT

DEVELOPMENT EDGE TREATMENT

Scope

This guideline provides information to developers and planners on development edge treatment in the context of the Green Infrastructure Plan for the Harlow Area.

The Guidelines cover:

- Settlement edge treatments;
- Treatment of field boundaries

Context

Several urban edges within the Harlow Area are harsh and visually intrusive within views from surrounding landscape character areas. The juxtaposition between development and countryside is often characterised by:

- An abrupt edge;
- No real connection, either visually or physically between development and countryside;
- Adhoc development with little respect for existing landform, vegetation and the surrounding landscape.

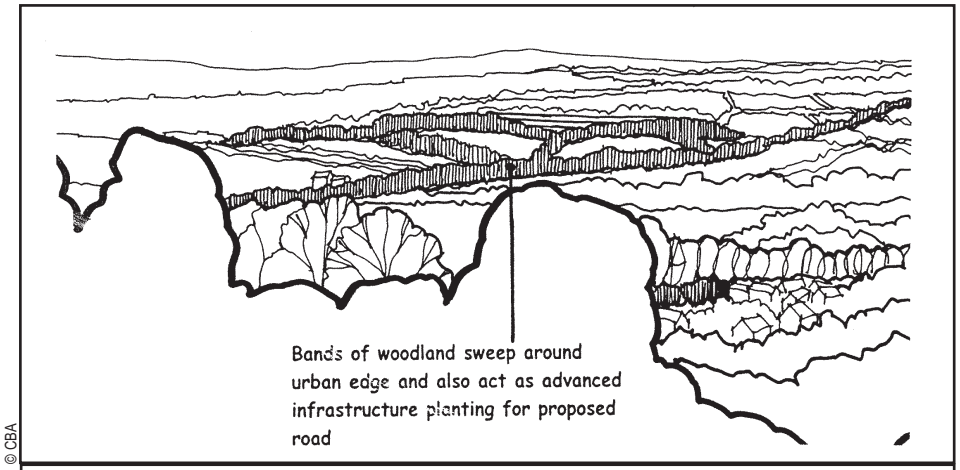
There is a need to integrate the edges of development with the surrounding landscape through provision of a strong landscape structure, in accordance with the landscape character of the area, helping to create a positive and coherent image upon arrival at the edge of a major urban area.

Bland, unattractive housing overlooking common within the southern fringe of Harlow urban area

Predominantly green edge to Harlow within the Stort Valley, screening a large proportion of industry

Harsh, unattractive, urban edge

Guidelines for development edge treatment



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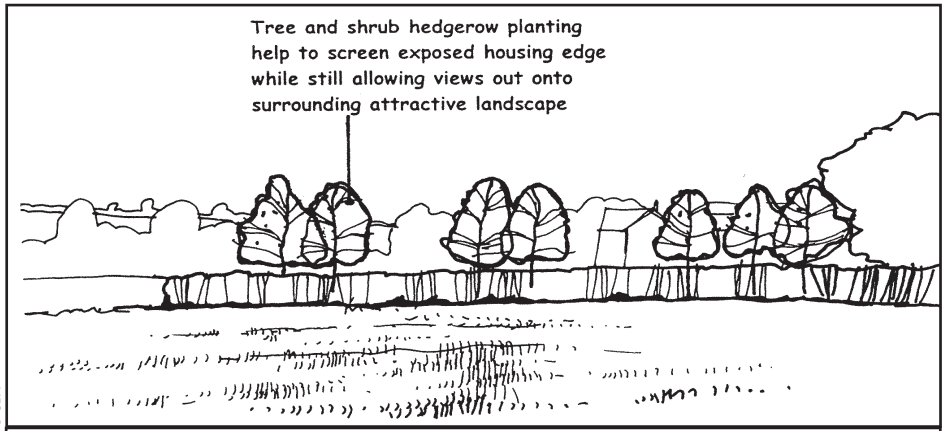
The above example demonstrates how enhancing and greening field boundaries within the landscape setting close to the edges of development can create a ready-made soft green edge.



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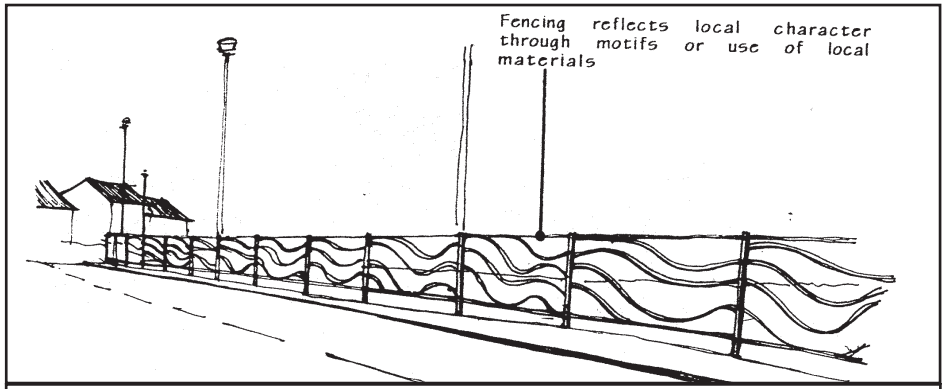
The above example demonstrates how hedgerow planting can be used to green the edges of settlements, also providing an important habitat for urban wildlife.



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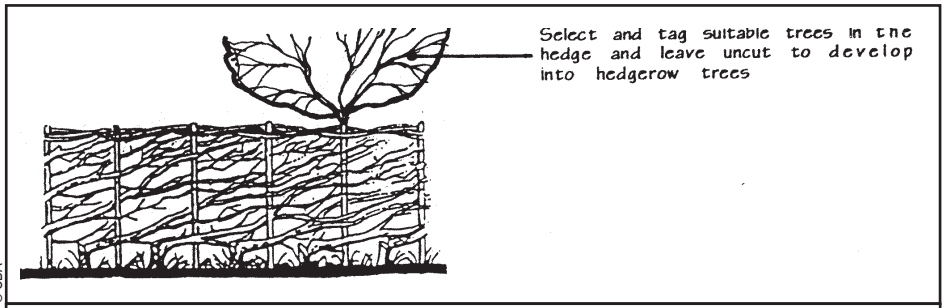
The above example demonstrates how fencing or other elements such as lighting can be used to foster identity at the edges of settlements and to reflect local character.



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The above example seeks to promote the use of traditional hedge laying techniques wherever possible at field boundaries or within hedgerows at the edges of settlements.

Key Links to Other Guidelines

1. Wildlife Habitat Enhancement, Creation and Links;
7. New housing development;
8. Industrial and commercial development.

Further Information

- Biodiversity by Design (Town and Country Planning Association, 2004)
- Integrating Biodiversity into development...realising the benefits (Essex Biodiversity Project, 2005)

Prepared by Chris Blandford Associates - www.cba.uk.net

Further Sources of General Information

- Bat Conservation Trust: www.bats.org.uk
- Countryside Management Service in Hertfordshire and Barnet: http://enquire.hertscc.gov.uk/cms
- DEFRA-RDS: www.defra.gov.uk
- English Nature: www.english-nature.org.uk
- Environment Agency: www.environment-agency.gov.uk
- Essex Biodiversity Project: www.essexbiodiversity.org.uk
- Essex Wildlife Trust: www.essexwt.org.uk
- Farming and Wildlife Advisory Group: www.fwag.org.uk
- Harlow Biodiversity Project: www.harlow.gov.uk
- Hertfordshire Landscape Character Assessment: http://enquire.hertscc.gov.uk/landscsh/default.htm
- Hertfordshire Natural History Society: www.hnhs.org
- Herts. and Middlesex Wildlife Trust: www.wildlifetrust.org.uk/herts/
- The Countryside Agency: www.countryside.gov.uk
- The Woodland Trust: www.woodland-trust.org.uk
- Wildfowl and Wetlands Trust: www.wwt.org.uk

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