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East Wisbech Urban Extension / Preliminary Ecological Appraisal / Fenland District Council

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East Wisbech Urban Extension

Preliminary Ecological Appraisal & Hedgerow Survey

Fenland District Council

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Summary of key issues

The Ecology Consultancy was commissioned to carry out a Preliminary Ecological Appraisal (PEA), comprising a Phase 1 habitat survey, hedgerow survey, protected species assessment and ecological evaluation of the proposed East Wisbech Urban Extension site. The main findings of the PEA are as follows:

- The site comprised a mix of arable land, managed and unmanaged orchards, domestic gardens, paddocks and mature woodland interspersed with hedgerows and a network of drainage ditches.
- The site is not subject to any statutory or non-statutory nature conservation designations. There are no statutory designated sites within a 5km radius, although the site partially falls within the IRZ for Nene Washes SSSI/SAC/SPA/Ramsar.
- One of 18 hedgerows (H17) surveyed within the site met the criteria to qualify as Important' under the Hedgerow Regulations 1997. Other hedgerows on site, some of which are species-rich, are also of value as green corridors and wildlife habitat. Hedgerows should be retained wherever possible.
- Habitats present are considered of value within the immediate vicinity of the site only (but may assume higher value where they support protected and/or notable species). The habitats of most ecological interest include the hedgerows and broad-leaved woodland, both of which are thought to qualify as Habitats of Principal Importance, as well as the unmanaged orchards, drainage ditches, semi-improved grassland and native broad-leaved scattered trees. These habitats should be retained, enhanced and incorporated into the sites green infrastructure framework.
- **Bats** – buildings and trees with potential to support roosting bats were identified within the site and may be affected by development on the site. Further survey is required to ascertain if bats are currently using these features for roosting. Should a bat roost be present a Natural England licence and mitigation strategy may be required.
- **Bats – transect and static detector surveys** should be carried out at the site to adequately assess the importance of this site for foraging and commuting bats.
- **Great crested newts – habitats** suitable for great crested newts in the terrestrial and aquatic phases of their life cycle is present – further surveys will be required to establish their presence/likely absence in ponds and ditches within 500m of the site in order to enable the design of any appropriate mitigation and compensation measures and to identify any licensing requirement.

- **Otter** – habitat suitable for transient otters is present - further surveys will be required to establish the current value of the site for these species and to enable the design of appropriate mitigation and compensation measures and to identify any licensing requirement.
- **Breeding birds** – habitat suitable for a range of breeding birds is present, including farmland specialists and other species in decline, including barn owls which are listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended). Further surveys will therefore be required to establish the current value of the site for these species.
- **Reptiles** – habitat suitable for widespread reptiles is present – further surveys will be required to establish the current value of the site for these species and to enable the design of appropriate mitigation and compensation measures.
- **Water voles –** The network of drainage ditches on site provides suitable habitat for water voles - further surveys will be required to establish the current value of the site for these species and to enable the design of appropriate mitigation and compensation measures and to identify any licensing requirement.
- **Invertebrates** – Habitats suitable for a number of Species of Principal Importance (Section 41 of the NERC Act 2006) and Cambridgeshire and Peterborough BAP invertebrates is present on site – further surveys will be required to establish whether the site supports any diverse assemblages or large populations of these species.
- **Invasive species** – A small stand of Himalayan balsam was present within a ditch on site – control measures will be required to avoid spread of this Schedule 9 (Wildlife & Countryside Act 1981 (as amended) invasive species.
- **Badgers** – habitat suitable for badger is present on site – further surveys will be required to establish their presence/likely absence and to enable the design of any appropriate mitigation and compensation measures, and to identify any licensing requirement.
- **Other Species of Principal Importance** – habitats suitable for brown hare, harvest mouse and hedgehog is present – measures should be taken to continue accommodating these species on site post-development.
- A range of measures should be undertaken to satisfy the requirement for ecological enhancement included in planning policy.

1 Introduction

BACKGROUND TO COMMISSION

1.1 The Ecology Consultancy was commissioned by Fenland District Council (FDC) in June 2017 to carry out a Preliminary Ecological Appraisal (PEA) comprising a Phase 1 habitat survey, hedgerow survey, protected species assessment and ecological evaluation of the proposed East Wisbech Urban Extension site. The appraisal was carried out in order to inform the Broad Concept Plan (BCP) in line with Fenland Local Plan Development Plan Document (FLP)[1], Policy CS09 of the KLWNBC Core Strategy[2] and Policy F3.1 of the Site Allocations Plan[3]. This appraisal considers land within the planning application site boundary (hereon referred to as 'the site'), as indicated on the plan provided by the client (FDC, 2017).

SCOPE OF THE REPORT

1.2 The aim of this appraisal is to provide baseline ecological information about the site. This will help establish the ecological features which would be important to retain in the BCP and enable recommendations to be made for a Green Infrastructure framework which will, in turn, be used to help with the masterplanning for the development. This will also be used to identify any potential ecological constraints associated with the proposed development and/or to identify the need for additional survey work to further evaluate any impact that may be risk contravention of legislation or policy relating to protected species and nature conservation.

1.3 This appraisal is based on the following information sources:

- a desk study of the site and land within a 5 kilometre (km) surrounding radius;
- a Phase 1 habitat survey (JNCC, 2010) of the site to identify and map the habitats present;
- a hedgerow survey;
- a protected species assessment of the site to identify features with potential to support legally protected species; and

[1] Fenland Local Plan, Adopted May 2014 http://www.fenland.gov.uk/CHttpHandler.ashx?id=10010&p=0
[2] King's Lynn & West Norfolk Borough Council Local Development Framework - Core Strategy https://www.west-norfolk.gov.uk/downloads/download/68/core_strategy_document
[3] Site Allocations And Development Management Policies Plan Adopted September 2016 https://www.west-norfolk.gov.uk/info/20093/site_allocations_and_development_management_policies_plan/514/adopted_plan

- an evaluation of the site's importance for nature conservation.

1.4 This appraisal has been prepared with reference to best practice guidance published by the Chartered Institute for Ecology and Environmental Management (CIEEM, 2013) and as detailed in British Standard 42020:2013 *Biodiversity - Code of Practice for Biodiversity and Development* (BSI, 2013).

1.5 The survey, assessment and report were conducted and written by Sam Mardell BSc, an ecologist with over three years' experience who is competent in carrying out Phase 1 habitat, hedgerow surveys and protected species assessments.

SITE CONTEXT AND STATUS

1.6 The East Wisbech Urban Extension site is approximately 73 hectares (ha) in size and is centred on Ordnance Survey National Grid reference TF 47724 09492. The site falls within the two administrative boundaries of FDC and the Borough Council of King's Lynn and West Norfolk (KLWNBC) within a predominantly arable landscape on the outskirts of the existing urban townscape of Wisbech. The site comprises a mix of managed and unmanaged orchards, arable land, domestic gardens, paddocks and mature woodland interspersed with hedgerows and a network of drainage ditches.

1.7 The site accommodates three public rights of way, including Sandy Lane which bisects the northern and southern halves of the site. The site is bordered by established urban townscape to the north and west; Burrettgate Road and arable land to the east and the College of West Anglia to the south. The site is not subject to any nature conservation designations.

DEVELOPMENT PROPOSALS

1.8 The development proposals for the site, based on current plans provided by the client (FDC, 2017), is for a predominately residential led development of *c.*1,450 homes with associated infrastructure including a primary school, local centre and areas of open space.

RELEVANT LEGISLATION AND PLANNING POLICY

1.9 The following key pieces of nature conservation legislation are relevant to this appraisal. A more detailed description of legislation is provided in Appendix 5:

- The Conservation of Habitats and Species Regulations 2010 (as amended) (commonly referred to as the Habitats Regulations);

- Wildlife and Countryside Act 1981 (as amended);
- Natural Environment and Rural Communities Act 2006 (NERC Act);
- Hedgerow Regulations 1997;
- Protection of Badgers Act 1992; and
- Wild Mammals (Protection) Act 1996.

1.10 The National Planning Policy Framework (Department of Communities and Local Government, 2012) requires local authorities to avoid and minimise impacts on biodiversity and, where possible, to provide net gains in biodiversity when taking planning decisions.

1.11 Other planning policies at the local level which are of relevance to this development include the Fenland Local Plan (2014), as well as the Cambridgeshire and Peterborough Biodiversity Action Plan and Norfolk Biodiversity Action Plan. Further information is provided in Appendix 6.

2 Methodology

DESK STUDY

2.1 The following data sources were reviewed to provide information on the location of statutory designated sites[4], non-statutory designated sites[5], legally protected species[6], Species and Habitats of Principal Importance[7] and other notable species[8] and notable habitats[9] that have been recorded within a 5km radius of the site:

- Local Biological Records Centres; Cambridgeshire & Peterborough Environmental Records Centre (CPERC) and Norfolk Biodiversity Information Service (NBIS), principally for species records and information on non-statutory sites;
- MAGIC (http://www.magic.gov.uk/) - the Government's on-line mapping service; and
- Ordnance Survey mapping and publically available aerial photography.

HABITAT SURVEY

2.2 A habitat survey of the site was carried out over two days on the 18 and 19 June 2017 in warm, clear, dry conditions. It covered the entire site including boundary features. Habitats were described and mapped following standard Phase 1 habitat survey methodology (JNCC, 2010). Habitats were marked on a paper base map and subsequently digitised using ESRI ArcGIS software. Habitats were also assessed against descriptions of Habitat of Principal Importance as set-out by the JNCC (BRIG, 2008)[10].

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4 Statutory designations include Special Areas of Conservation (SAC), Special Protection Areas (SPA), Ramsar sites, National Nature Reserves (NNR), Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNR).

5 Non-statutory sites are designated by local authorities (e.g. Sites of Importance for Nature Conservation or Local Wildlife Sites).

6 **Legally protected species** include those listed in Schedules 1, 5 or 8 of the Wildlife and Countryside Act 1981; Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended); or in the Protection of Badgers Act 1992 (as amended).

7 **Species of Principal Importance** are those defined by Section 41 of the Natural Environment and Rural Communities Act, 2006.

8 **Notable species** include Species of Principal Importance under the Natural Environment and Rural Communities Act 2006; Local Biodiversity Action Plan (LBAP) species; Birds of Conservation Concern (Eaton *et al.*, 2015); and/or Red Data Book/nationally notable species (JNCC, undated).

9 **Notable habitats** include Habitats of Principal Importance under the Natural Environment and Rural Communities Act, 2006; those included in an LBAP; Ancient Woodland Inventory sites; and Important Hedgerows as defined by the Hedgerow Regulations 1997.

10 Data required to confirm that certain habitats (including rivers and ponds) meet criteria for Habitats of Principal Importance is beyond that obtained during a Phase 1 habitat survey. In these cases the potential for such habitats to meet relevant criteria is noted but further surveys to confirm this assessment may be recommended

2.3 Records for dominant and notable plants are provided, as are incidental records of birds and other fauna noted during the course of the habitat survey.

2.4 Common names are used, where widely accepted, for amphibians, birds, fish, mammals, reptiles and vascular plants. Scientific names are provided for other groups but at first mention only if there is also an accepted common name.

2.5 The site was also surveyed for the presence of invasive plant species as defined by Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). However, detailed mapping of such species is beyond the scope of this commission and the location on habitat plan are indicative only.

2.6 Target notes are used to provide information on specific features of ecological interest (e.g. a badger sett) or habitat features that were too small to be mapped.

HEDGEROW SURVEY

2.7 A hedgerow survey was carried out at the site at the same time as the habitat survey. Hedgerows were recorded and mapped following standard procedures outlined in The Hedgerow Survey Handbook (Defra, 2007) and assessed under the criteria given in the Hedgerows Regulations 1997. A map showing the location of hedgerows is presented in Appendix 1, Figure 1.

2.8 Each hedgerow was surveyed for the following characteristics:

- length;
- average height – based on the height of the shrub element and excluding trees;
- average width – from one side of the hedge to the other, including any suckering scrub growth;
- shrub/tree species – noting dominant species and any other shrubs and trees present, including saplings and woody climbers;
- field layer– a representative but not exhaustive list of the species growing in the hedge bottom, including woodland species within a 1m radius of the hedge base and invasive plant species listed on Schedule 9 of the Wildlife and Countryside Act, 1981 (as amended);
- landscape connections – including adjacent hedgerows, woodland and ponds;
- associated features – parallel hedgerows, walls, banks and ditches; and,
- notes – a general description of the hedgerow including its condition, previous management and any notable features such as veteran trees, invasive species etc.

2.9 In addition, a 30 metre (m) sample section was chosen for recording the average number of woody species as defined under the Hedgerows Regulations 1997 (Schedule 3). If the total hedgerow length was less than 60m (as with Hedgerow 1), a single 30m section in the middle was surveyed. If the total hedgerow length was greater than 150m (as with Hedgerow 2), two 30m samples were taken and the average number of woody species was calculated.

PROTECTED AND NOTABLE SPECIES ASSESSMENT

2.10 The suitability of the site for legally protected species was assessed on the basis of relevant desk study records[11] combined with field observations from the habitat survey. The likely value of habitat for protected species occurrence was ranked on a scale from 'negligible' to 'present' as described in Table 2.1.

2.11 The assessment of habitat suitability for protected or notable species was based on professional judgement drawing on experience of carrying out surveys of a large number of urban and rural sites and best practice survey guidance on identifying field signs which includes that for the following species: badger (e.g. Roper, 2010); bats (Collins (ed.), 2016); hazel dormouse (English Nature, 2006); great crested newt (Langton *et. al.* 2001); otter (Chanin, 2003); reptiles (Gent and Gibson, 2003); and water vole (Dean *et al.* 2016).

Table 2.1: Protected species assessment categories

Category	Description
Present	Presence confirmed from the current survey or by recent, confirmed records.
High	Habitat present provides all of the known key requirements for a given species/species group. Local records are provided by desk study. The site is within or close to a national or regional stronghold for a particular species. Good quality surrounding habitat and good connectivity.
Moderate	Habitat present provides all of the known key requirements for a given species/species group. Several desk study records and/or site within national distribution and with suitable surrounding habitat. Factors limiting the likelihood of occurrence may include small habitat area, barriers to movement and disturbance.
Low	Habitat present is of relatively poor quality for a given species/species group. Few or no desk study records. However, presence cannot be discounted on the basis of national distribution, nature of surrounding habitats or habitat fragmentation.
Negligible	Habitat is either absent or of very poor quality for a particular species or species group. There were no desk study records. Surrounding habitat unlikely to support wider populations of a species/species group. The

[11] Primarily dependent on the age of the records, distance from the site and types of habitats at the site.

	site may also be outside or peripheral to known national range for a species.

2.12 The findings of this assessment establish the need for protected species surveys that are likely to be required to ensure compliance with relevant legislation. Surveys are commonly required for widespread species such as bats, great crested newt, reptiles and badger; but may be necessary for other species if suitable habitat is present.

2.13 Surveys may be required where a site is judged to be of low suitability for a particular species/species group. However, in some cases there may be opportunities to comply with legislation, without further survey, through precautionary measures prior to and during construction.

SITE EVALUATION

2.14 The site's ecological value has been evaluated broadly following guidance issued by the Chartered Institute of Ecology and Environmental Management (CIEEM, 2016) which ranks the nature conservation value of a site according to a geographic scale of reference: international, national, regional, county/metropolitan, district/borough, local/parish or of value at the site scale. In evaluating the nature conservation value of the site the following factors were considered: nature conservation designations; species/habitat rarity; naturalness; fragility and connectivity to other habitats;

2.15 An initial assessment of the site's contribution to green infrastructure and ecosystem services, as recommended by *BS 42020:2013 Biodiversity. Code of practice for planning and development,* is also included.

DATA VALIDITY AND LIMITATIONS

2.16 Every effort has been made to provide a comprehensive description of the site; however, the following limitations apply to this assessment.

- The protected species assessment provides a preliminary view of the likelihood of protected species occurring on the site. It should not be taken as providing a full and definitive survey of any protected species group. Additional surveys may be recommended if on the basis of the preliminary assessment or during subsequent surveys it is considered reasonably likely that protected species may be present;
- The ecological evaluation is preliminary and may change subject to the findings of further ecological surveys (should these be required);

- Even where data for a particular species group is provided in the desk study, a lack of records for a defined geographical area does not necessarily mean that there is a lack of ecological interest, the area may simply be under-recorded;
- Where only four figure grid references are provided for protected species by third parties, the precise location of species records can be difficult to determine and they could potentially be present anywhere within the given 1km x 1km square. Equally six figure grid references are accurate to the nearest 100m only;
- The Phase 1 habitat survey does not constitute a full botanical survey or provide accurate mapping of invasive plant species;
- The network of ditches within the site were heavily vegetated with tall ruderal vegetation during the time of survey, which limited the search for field signs of water vole;
- Building 13 is present on OS maps and aerial photographs close to the northern site boundary. The area was completely inaccessible at the time of survey due to the presence of dense scrub, which restricted access to assess its condition, or note whether it still even exists;
- A number of domestic gardens close to the northern site boundary were not surveyed due to access restrictions; and
- Ecological survey data is typically valid for two years unless otherwise specified.

2.17 Despite these limitations, it is considered that this report accurately reflects the habitats present, their biodiversity value and the potential of the site to support protected and notable species.

3 Results

DESIGNATED SITES

Statutory designated nature conservation sites

3.1 The proposed development site is not subject to any statutory nature conservation designations. There are no European or national statutory sites within a 5km radius of the site.

3.2 The site though is partially located within the Impact Risk Zone (IRZ) for Nene Washes Site of Special Scientific Interest (SSSI) which is located approximately 9.5km south-west of the site at its closest point. Nene Washes SSSI is a component of Nene Washes Special Area of Conservation (SAC), Nene Washes Special Protection Area (SPA) and Nene Washes Ramsar, which are all also covered under the IRZ.

3.3 IRZs are intended as a tool for local planning authorities to identify when specific types of development may require consultation with Natural England regarding their potential impact on designated sites. Where proposals include 'planning applications outside/ extending outside existing settlements/urban areas affecting greenspace, farmland, semi natural habitats or features such as trees, hedges, streams, rural buildings/ structures' they match the type of development representing a potential risk to the SSSI/SAC/SPA and Ramsar (MAGIC, 2017).

3.4 Details of the relevant designated sites are provided in (Table 3.1).

Table 3.1: Statutory Designated Sites

Site Name	Distance from site and orientation	Reason for designation
Nene Washes SPA	9.5km south-west at closest point	Following the SPA Review, the site qualifies under Article 4.1 of the EC Birds Directive by regularly supporting an internationally important wintering population of Bewick's swan and ruff. It qualifies under Article 4.2 by supporting nationally important wintering populations of pintail and shoveler and a wintering bird assemblage of 20,000 waterfowl. The SPA citation further lists wintering teal, wigeon and gadwall as qualifying species under Article 4.2. Following the SPA Review, the Nene Washes qualifies under Article 4.1 by supporting populations of European importance of the following Annex 1 species: ruff and spotted crake. It qualifies under Article 4.2 by supporting populations of European importance of the migratory black-tailed godwit. The SPA citation further lists breeding

		shoveler, garganey and gadwall as qualifying species under Article 4.2.
Nene Washes (Ramsar)	9.5km south-west at closest point	The site represents one of the country's few remaining areas of washland habitat. It supports an internationally important wintering population of Bewick's swan with potentially significant populations of black-tailed godwit in spring and autumn and pintail in winter. The site also supports an important assemblage of nationally rare breeding birds and a wide range of raptors occur throughout the year. Several nationally scare plants, and two vulnerable and two rare invertebrates have been recorded. Species of waterfowl occurring at levels of national importance over winter include whooper swan, wigeon, teal, shoveler, pochard, golden plover and ruff.
Nene Washes (SAC)	9.5km south-west at closest point	A large drainage channel runs along the eastern flank of the Nene Washes known as Moreton's Leam. This channel supports the highest recorded density of spined loach in the UK. There may also be thriving populations in the smaller ditches of the Washes.
Nene Washes (SSSI)	9.5km south-west at closest point	This site represents one of the country's few remaining areas of washland habitat which is essential to the survival nationally and internationally of populations of wildfowl and waders. The mosaic of rough grassland and wet pasture provide bird nesting and feeding habitat. These washlands accommodate wildfowl populations displaced from the Ouse Washes when deep floodwaters prevent their feeding. The site is favoured by large numbers of wintering wildfowl and particularly the dabbling ducks wigeon, teal, pintail and Bewick's swan. Wetland birds such as snipe and redshank regularly breed and during passage periods there is often a large movement of waders and raptors through the area. Many of the ditches support a rich flora which includes such uncommon species as frogbit, water violet and flowering rush.

Non-statutory designated nature conservation sites

3.5 The proposed development site is not subject to any non-statutory nature conservation designations. Three non-statutory sites designated as County Wildlife Sites (CWS) are present within 5km of the site (see Table 3.2).

Table 3.2: Non-Statutory Designated Sites

Site Name	Distance from site and orientation	Reason for designation
River Nene	1.4km west	The site is designated as a CWS because of its rare plant and invertebrate interest. The site supports a number of Nationally Scarce vascular plant species such as at least three species of *Potamogeton spp*. There are also a number of plant species which are rare in the county. Part

Table 3.2: Non-Statutory Designated Sites

Site Name	Distance from site and orientation	Reason for designation
		of the site is also a Grade C site in the JNCC Invertebrate Site Register (ISR).
Honington House Farm	4.6km north-west	A linear site comprising saltmarsh, grassland and scrub along the east bank of the River Nene, on the border with Cambridgeshire. The site qualifies as CWS because it supports rare plant species including Sea club-rush *Scirpus maritimus*, greater sea-spurrey *Spergularia media*, southern marsh-orchid *Dactylorhiza praetermissa* and spiny restharrow *Ononis spinose*.
Leverington Gull	4.5km north-west	The site qualifies as CWS because it supports at least 0.5ha of NVC community S4 Common Reed swamp.

Habitat inventories and landscape-scale conservation initiatives

Ancient woodland

3.6 A search of the MAGIC database (www.magic.gov.uk) revealed no ancient woodlands within a 5km radius of the site.

Habitats of Principal Importance

3.7 A search of MAGIC's Priority Habitat Inventory revealed the presence of an area of 'Traditional Orchard' within the site close to the northern boundary, which is classified as a Habitat of Principal Importance (see Target Note 1 and Photograph 9). However, following survey, this habitat was not thought to be of sufficient quality to qualify as a Habitat of Principal Importance given that it had been recently cleared.

3.8 MAGIC's Priority Habitat Inventory also classified the on-site woodland close to the southern boundary as 'Lowland Mixed Deciduous Woodland', also a Habitat of Principal Importance. Another area just to the north was also classified under this habitat type, although following survey was not thought to be of sufficient quality to qualify as a Habitat of Principal Importance given that the area was considered to comprise species-rich hedgerow and scrub rather than broad-leaved woodland.

PHASE 1 HABITAT SURVEY

Overview

3.9 The site primarily comprised managed orchard and arable land with areas of unmanaged orchard, woodland, semi-improved, improved and amenity type grassland, scrub, horticultural planting and tall ruderal vegetation. These habitats were interspersed by a network of hedgerows and drainage ditches, as well as a number of scattered trees. There was also 15 buildings on site, the majority of which are located close to the northern boundary.

3.10 Phase 1 habitats types are mapped in Figure 1, areas are given in Table 3.3. A description of dominant and notable species and the composition of each habitat is provided below.

Table 3.3: Phase 1 Habitat Areas

Phase 1 Habitat	Extent	%
Plantation woodland - Managed orchard	18.65ha	26.64%
Arable land	15.67ha	22.38%
Semi-improved grassland	10.71ha	15.30%
Plantation woodland - Unmanaged orchard	7.16ha	10.23%
Broad-leaved woodland	3.94ha	5.63%
Dense scrub	3.77ha	5.38%
Amenity grassland	3.40ha	4.86%
Improved grassland	3.05ha	4.36%
Tall ruderal	1.01ha	1.44%
Plantation woodland - Coniferous woodland plantation	0.74ha	1.05%
Domestic garden not accessed	0.68ha	0.97%
Horticultural planting	0.42ha	0.60%
Buildings and hardstanding	0.68ha	0.34%
Bare ground	0.12ha	0.17%
Running water (drainage ditches)	4127m	
Species-poor hedgerow	2834m	
Species-rich native hedgerow with trees	995m	

Habitat description

Plantation Woodland - Managed orchard

3.11 The northern half of the site was dominated by managed orchard, which accounts for approximately 26.64% of the site area (see Photograph 1, Appendix 2). The orchard species comprised apple varieties which were planted in rows with spacing ranging from approximately 1-3m. Short mown improved grassland was present on the orchard floor, dominated by perennial ryegrass, with frequent white clover and greater plantain. The orchard appeared to be intensively managed for fruit production, indicated by the presence of sprayed herbicide strips along the tree rows, where the ground was generally bare. The improved grassland floor appeared to be frequently mown and it is likely that the orchard is subject to the input of further chemicals, such as pesticides and inorganic fertilisers. For this reason, this habitat does not qualify as a 'Traditional Orchard' under Habitats of Principal Importance, given that it is not currently subject to traditional low intensity management techniques, as defined by the UKBAP Priority Habitat Descriptions (JNCC, 2011).

Arable land

3.12 Arable land was present in the southern half of the site, representing approximately 22.38% of the site area. Around 43% of the arable land was left fallow and was dominated with barley crop which had not been harvested, along with frequent bristly oxtongue, rosebay willowherb and spear thistle (see Photograph 2, Appendix 2). The remaining 57% of arable land appeared to be intensively managed and was planted with a winter barley crop at the time of survey (see Photograph 3, Appendix 2). The grassland margins meanwhile were approximately 1m in width and dominated by false oat grass and Yorkshire fog, with frequent nettle and creeping thistle. These margins were not thought to qualify as 'Arable Field Margins' under Habitats of Principal Importance given that they comprised a low diversity of common species and did not appear to be managed specifically to provide benefit to wildlife. Similarly, the margins are not thought to qualify as 'Cereal Field Margins' under the local Habitat Action Plan for Norfolk for the same reason.

3.13 Both arable land and arable field margins are though featured on the local Habitat Action Plan for Cambridgeshire and Peterborough.

Semi-improved neutral grassland

3.14 A number of areas of semi-improved grassland were present across the site, representing approximately 15.30% of the site area. This included an area within the managed orchards in the northern half of the site, as well as an area adjacent to the broad-leaved woodland in the south (see Photograph 4, Appendix 2). The majority of this grassland appeared to have been infrequently cut and, as a result, was long and in seed at the time of survey. Grass species included; timothy grass, false oat grass, perennial rye grass, rough meadow grass, Yorkshire fog and cock's-foot grass, while herb species included; ragwort, creeping thistle, nettle and broad-leaved dock.

Plantation Woodland - Unmanaged orchard

3.15 Two areas of unmanaged orchard were present within the site, together representing approximately 10.23% of the site area. This included a former plum orchard located close to the centre of the site, as well as a former apple orchard close to the southern site boundary (see Photograph 5, Appendix 2). Both of these orchards appeared to have been unmanaged for a number of years and, as a result, were colonised with dense scrub and pockets of semi-improved grassland. Both of these habitats are not considered to qualify as 'Traditional Orchards' under Habitats of Principal Importance, given that they are not currently subject to traditional low intensity management techniques, as defined by the UKBAP Priority Habitat Descriptions (JNCC, 2011). Anecdotal records though suggest the former plum orchard close to the centre of the site is the possible remnants of a Traditional Orchard, although this is not classified on MAGIC's Priority Habitat Inventory. Despite this, however, these areas are still considered to represent some of the higher quality habitat within the site, due to their likely value for a range of taxa, including birds and invertebrates.

Broad-leaved woodland

3.16 Three areas of broad-leaved woodland were present within the site, representing approximately 5.63% of the site area. This included a small block of broad-leaved woodland located close to the southern site boundary, owned by the College of West Anglia (see Photography 6, Appendix 2). The canopy here was dominated by mature black poplar, with an understorey consisting mainly of field maple with occasional ash, oak, hawthorn and alder. Ground flora, meanwhile, was dominated by Yorkshire fog and nettle with occasional wood avens and hogweed. The woodland included a number of internal paths and open glades that were colonised with grassland.

3.17 In addition, two small areas of self-set broad-leaved woodland were also present close to the northern site boundary, adjacent to private paddocks. Species here comprised silver birch, ash, oak, poplar and hawthorn.

3.18 Both of these habitats were thought to qualify as Habitats of Principal Importance under 'Lowland Mixed Deciduous Woodland'. This habitat type is also featured on the local Habitat Action Plan for both Norfolk, Cambridgeshire and Peterborough.

Dense scrub

3.19 Areas of dense scrub were present throughout the site, representing approximately 5.38% of the site area. This habitat was dominated by bramble, hawthorn, elder and dog rose and was largely associated with areas of green space which had been left unmaintained for a number of years, such as the unmanaged orchards and paddocks to the north (see Photograph 7, Appendix 2).

Amenity grassland

3.20 Amenity grassland accounted for approximately 4.86% of the site area and was associated with domestic gardens in the northern half of the site, as well as the school building (Building 15) in the south. This habitat was dominated by perennial ryegrass, with frequent daisy, white clover, creeping buttercup and dandelion. All areas of amenity grassland within the site were mown very short and appeared to be regularly managed in this way (Photograph 8, Appendix 2). Two gardens close to the northern site boundary were not accessed during the survey, although from aerial photographs appear to predominantly comprise of this habitat type.

3.21 Domestic gardens are featured on the local Habitat Action Plan for Cambridgeshire and Peterborough.

Improved grassland

3.22 Improved grassland was present across the site, representing approximately 4.36% of the site area. This grassland was noted on private padocks, as well as an area classified as 'Traditional Orchard' on the MAGIC database, which had recently been cleared (see Photograph 9, Appendix 2). Species noted included perennial ryegrass, Yorkshire fog, greater plantain and dove's-foot cranesbill. These habitats were classified as improved grassland rather than semi-improved, given that they contained a low species diversity and were likely subject to regular enrichment from frequent mowing and grazing.

Tall ruderal

3.23 Tall ruderal vegetation accounted for 1.44% of the site area and was present in two areas in the northern and southern halves of the site, as well as being frequent along the network of drainage ditches (see Photograph 10, Appendix 2). Species included; rosebay willow herb, black knapweed, nettle, mugwort, hogweed and creeping thistle.

Plantation Woodland - Coniferous woodland plantation

3.24 A former Christmas tree plantation comprising Norway spruce was noted close to the middle of the site, representing approximately 1.05% of the site area (see Photograph 11, Appendix 2).

Horticultural planting

3.25 A small, private, linear parcel of land used for growing fruit and vegetables was present in the southern half of the site, accounting for approximately 0.60% of the site area (see Photograph 12, Appendix 2). Some of the beds at the time of survey were unmanaged and as a result were colonised with tall ruderal vegetation, while others were planted with French bean, rhubarb, garden strawberry and raspberry. Short mown amenity grassland was present between the beds, along with a number of scattered trees including damson and ash.

Buildings, hardstanding and bare ground

3.26 Fifteen buildings were identified within the site and are described in detail below;

- Building 1 was a brick-built bungalow with a pitched concrete-tiled roof located close to the northern site boundary. The building was generally in a good state of repair with well pointed brickwork and the roof tiles tight fitting and in good condition (see Photograph 13, Appendix 2).
- Building 2 and 3 were both corrugated tin sheds associated with Building 1 (see Photograph 14, Appendix 2).
- Building 4 was a single storey brick-built workshop with a pitched asbestos-panelled roof located close to the northern site boundary see (Photograph 15, Appendix 2). The building was generally in a good state of repair with well pointed brickwork and the roof in good condition.
- Buildings 5 was large greenhouse located close to the northern site boundary that was in a poor state of repair and completely overgrown with scrub (see Photograph 16, Appendix 2).

- Building 6 was a small wooden shed with a pitched roof located within a domestic garden close to the northern site boundary.
- Building 7 and 8 were both small corrugated metal sheds located within horse paddocks close to the northern site boundary. The buildings were used for equine storage. Building 6 has a flat roof, while Building 7 has a pitched roof.
- Building 9 was a wooden horse stable with a flat corrugated metal roof located within a horse paddock close to the northern site boundary.
- Building 10 was a two storey house with a pitched terracotta pan tiled roof located close to the northern site boundary.
- Buildings 11 and 12 were two outbuildings associated with Building 9.
- Building 13 is present on OS maps and aerial photographs close to the northern site boundary. The area was completely inaccessible at the time of survey due to the presence of dense scrub, which restricted access to assess its condition, or note whether it still even exists.
- Building 14 was a large garden shed situated in a domestic garden close to the centre of the site
- Building 15 was a large single storey school building with a pitched roof located in the southern half of the site on the grounds of Meadowgate Academy (see Photograph 17, Appendix 2).

3.27 Areas of hardstanding and bare ground were generally associated with most of the buildings on site, as well as Sandy Lane that bisects the northern and southern halves of the site (see Photograph 18, Appendix 2).

Running water (Drainage ditches)

3.28 A network of drainage ditches, comprising a total length c.4127m, was present throughout the site, which is linked to a wider network of ditches in the surrounding area. All of the ditches appeared to be unmanaged and, as a result, were heavily vegetated with tall ruderal species dominated by rosebay willow herb, with frequent nettle, common reed and bulrush (see Photograph 19, Appendix 2). A small stand of Himalayan balsam was also present within a ditch along the eastern site boundary with Burrettgate Road (see Target Note 2 and Photograph 20, Appendix 2). This species is listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) as an invasive species.

3.29 Drainage ditches within the Fenlands are featured on the local Habitat Action Plan for Cambridgeshire and Peterborough.

Species-poor hedgerow

3.30 A number of species-poor hedgerows, comprising a total length of c. 2834m, were present throughout the site, mostly associated with the managed orchard in the northern half of the site (see Photograph 21, Appendix 2). These hedgerows were classified as species-poor given that they contained less than five native woody species per 30m section. Species were dominated by hawthorn, with occasional elder and dog rose. The majority of the hedgerows within and bordering the orchard appeared to be regularly cut, with hedgerow bases sprayed with a herbicide, resulting in a ground layer largely devoid of vegetation.

3.31 All of the hedgerows were assessed under the Hedgerow Regulations 1997 criteria as part of the hedgerow survey, the results of which are provided below.

Species-rich native hedgerow with trees

3.32 Three species-rich native hedgerows with trees, comprising a total length of c. 995m, were present within the site (see Photograph 22, Appendix 2). Hedgerow species included hazel, privet, damson, elder and hawthorn, while tree species included ash, silver birch, poplar, walnut and grey willow. Ground flora species meanwhile included perennial rye grass, Yorkshire fog, nettle, creeping thistle and hogweed.

3.33 All of the hedgerows were assessed under the Hedgerow Regulations 1997 criteria as part of the hedgerow survey, the results of which are provided below.

Scattered trees

3.34 A number of scattered trees were present across the site mainly associated with the arable fields and managed orchards (see Photograph 23, Appendix 2). These included native species dominated by semi-mature/mature ash with locally rare walnut. In addition, a domestic garden located close to the centre of the site included a high proportion of coniferous and non-native species planted as ornamentals. This included copper beech, eucalyptus, Leyland cypress and Norway maple.

Hedgerow Survey

3.35 A total of 18 hedgerows were surveyed within the site. In accordance with the criteria specified in The Hedgerow Regulations 1997, one out of the 18 hedgerows classified as being 'Important' considering both the Wildlife and Landscape criteria.

3.36 H17 was classified as 'important' given that it contained four woody species on average per 30m section and 2 associated features, as well as being adjacent to a byway open to all traffic. A summary table of the hedgerow features and species has been included in Appendix 3.

3.37 The remaining 17 hedgerows meanwhile, were not thought to meet any of the criteria required to qualify as 'important'.

3.38 Notwithstanding their status under the Regulations, all of the hedgerows, with the exception of H5 and H13, which consisted predominantly of bramble and garden privet (not included in the definition of native woody species), were considered to qualify as Habitats of Principal Importance, making them a material consideration in the planning process. These hedgerows also feature on the local Habitat Action Plan for both Norfolk, Cambridgeshire and Peterborough.

3.39 The hedgerows are considered important green corridors and habitat for wildlife in a predominantly arable landscape on the outskirts of the existing urban townscape of Wisbech.

PROTECTED AND INVASIVE SPECIES ASSESSMENT

3.40 The potential for the site to support protected species has been assessed using criteria provided in Table 3.4 based on the results of the desk study and observations made during the site survey of habitats at the site. Other legally protected species are not referred to as it is it is considered that the site does not contain habitats that would be suitable to support them. The following species/species groups are potentially present at the site:

- bats;
- dormice;
- great crested newts;
- otter;
- breeding birds;

- invertebrates;
- reptiles;
- water voles;
- invasive species; and
- badger.

3.41 The table also summarises relevant legislation and policies relating to protected and invasive species. Key pieces of statute are summarised in Section 1 and set-out in greater detail in Appendix 6.

Table 3.4: Protected and Invasive Species Assessment

Habitat/ species	Status [12, 13]	Likelihood of occurrence
Bats	HR WCA S5	**HIGH:** The desk study returned 108 records for bats within 5km of the site, with species including; common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, Natterer's bat, Daubenton's bat, serotine, noctule and brown long eared bat. A small number of bat roost records were also returned, the closest being approximately 0.3km north of the site at Walsoken Parish Church in 2002 (species unknown). The buildings and trees within the site provide roosting opportunities for bats, although a more detailed targeted preliminary roost assessment is required to establish the level of potential and identify any evidence of use. In addition, the scrub, woodland, hedgerows, drainage ditches and unmanaged orchard habitats within the site are likely to serve as important commuting routes and foraging grounds for off-site roosting sites within the urban environment immediately to the north and west, such as Walsoken Parish Church. The site therefore is likely to be of local importance to bats in a predominately arable and urban landscape, with limited connectivity to suitable offsite habitats. **As there is high potential for foraging and commuting bats within the site and opportunities for roosting bats within on site building and trees, this species group is considered further in Section 4 of this report.** Further Phase 2 surveys are recommended. Any future development on site would need to consider the features identified above and be informed by the further survey recommendations in Section 4.
Dormice	HR WCA S5	**NEGLIGIBLE**: The habitats present on site that could support foraging or nesting dormouse includes the hedgerows, dense scrub, broad-leaved woodland and unmanaged orchards. However, there is limited arboreal connectivity to the site and the wider landscape consists predominantly of arable and urban land of no value to dormouse, with no significant areas of woodland within 5km. In addition, the desk study returned no records for dormice within 5km of the site, which suggests that they are likely absent from the local area. Overall, based on the limited connectivity and availability of suitable off-site habitat in the wider landscape, it is highly unlikely that this species is present. **As there is a negligible likelihood of presence, dormice are not considered further in Section 4 of this report.**

[12] The following abbreviations have been used to signify the legislation regarding different species: HR = Conservation of Habitats and Species Regulations 2010 (as amended); WCA S1 = Schedule 1 of the Wildlife and Countryside Act 1981 (as amended); WCA S5 = Schedule 5 of the Wildlife and Countryside Act 1981 (as amended); WCA S9 = Schedule 9 of the Wildlife and Countryside Act 1981 (as amended); PBA = Protection of Badgers Act, 1992.

[13] The following abbreviations have been used to signify the policy of conservation assessments applying to notable species: SPI = Species of Principal Importance under the NERC Act 2006; LBAP = Local Biodiversity Action Plan species; BoCC = Birds of Conservation Concern - amber list / red list (Eaton *et al.*, 2015); and/or RD/NN = red data book/nationally notable species (JNCC, undated).

Table 3.4: Protected and Invasive Species Assessment

Habitat/ species	Status [12, 13]	Likelihood of occurrence
Great crested newts	HR WCA S5	**MODERATE:** The desk study returned 17 records of great crested newt, the closest of which was located approximately 2.1km west. The woodland, scrub, grassland, hedgerows and unmanaged orchard habitats within the site provide a range of suitable foraging and dispersal habitat for great crested newts, while mammal burrows and tree root systems provide suitable hibernation habitat. There are no ponds on site, although the network of drainage ditches may provide suitable on-site breeding habitat. There are seven ponds within 500m of the site, three of which are within 250m, as well as a network of further ditches that are connected to the site. Connectivity to most of these ponds is limited by Green Lane, Burrettgate Road and arable land to the east, although there is some connectivity to three ponds located to the south along hedgerows and ditches. **As there is moderate potential for great crested newts to be present on site, this species is considered further.** Further Phase 2 surveys are recommended. Any future development on site would need to consider the features identified above and be informed by the further survey recommendations in Section 4.
Otter	HR WCA S5	**LOW:** The desk returned no records for otter within 5km of the site. The network of drainage ditches on site may offer foraging and dispersal habitat for otter, although the site is unlikely to make up any regular territory for this species given the distance and limited connectivity to any suitable water courses or holt habitat. It is considered therefore that otters may only use or pass through the site occasionally on a transient basis. **As there is low potential for otters to be present on site, this species is considered further in Section 4 of this report.** Further Phase 2 surveys are recommended. Any future development on site would need to consider the features identified above and be informed by the further survey recommendations in Section 4.
Breeding birds	WCA Sections 1-8	**HIGH**: The desk study returned a large number of bird records, including a number of birds of prey such as peregrine, marsh harrier and buzzard, as well as waders and waterfowl such as Bewick's swan, shelduck and ringed plover, for which there are no suitable habitats within the site. The desk study also returned records for farmland specialists of conservation concern such as turtle dove, skylark and linnet, as well as the more generalist birds of conservation concern such as yellowhammer, spotted flycatcher and fieldfare which are red-listed birds of conservation concern (Eaton *et al* 2015) and Species of Principal Importance. Records for barn owl, a species listed under Schedule 1 of the WCA were also returned by the desk study. Bird species noted at the site during the survey included goldfinch, robin, dunnock (amber-listed BoCC), kestrel (amber-listed BoCC), jay, chaffinch, spotted woodpecker, house sparrow (red-listed BoCC, Cambridgeshire and Peterborough BAP species) and wood pigeon. The scrub, woodland, hedgerows and unmanaged orchard habitats within the site provide nesting habitat for a wide range of nesting birds including red-listed species such as spotted flycatcher, yellowhammer and turtle dove. The arable habitats, meanwhile, provide suitable foraging and nesting habitat for farmland bird species turtle dove, skylark and linnet. The semi-improved grassland habitats also provide suitable foraging habitats for barn owl, although nesting habitat is limited.

Table 3.4: Protected and Invasive Species Assessment

Habitat/ species	Status [12, 13]	Likelihood of occurrence
		It is likely that birds will breed in the suitable habitat available at the site in moderate numbers. As such they are considered further in Section 4 of this report. Further Phase 2 surveys are recommended. Any future development on site would need to consider the features identified above and be informed by the further survey recommendations in Section 4.
Reptiles	WCA S5	**MODERATE:** The desk study returned no records of reptiles within 5km of the site. Reptiles though are often under-recorded so this does not indicate their absence from the local area. The grassland habitats as well as bases of hedgerows and edges of woodland, scrub and unmanaged orchards provide a range of suitable habitats for basking and foraging habitat for reptiles such as common lizard and slow worm, while mammal burrows and tree root systems provide suitable hibernation habitat. The drainage ditches also offer additional foraging opportunities for habitat for grass snake. **As there is MODERATE potential for reptiles to be present on site, this species is considered further.** Further Phase 2 surveys are recommended. Any future development on site would need to consider the features identified above and be informed by the further survey recommendations in Section 4.
Water Voles	WCA S5	**HIGH:** The desk study returned 12 records of water vole within 5km of the site, the closest of which was located approximately 3.3km south. The network of drainage ditches on site provides suitable habitat for water voles and is well connected to further ditches in the surrounding area. The ditches were heavily vegetated at the time of survey which limited the search for evidence of water vole presence, such as burrows, droppings and feeding stations. Despite this, it is thought that there is a high potential for water vole presence within the site, given the extent of ditches and connectivity to the wider landscape **As there is high potential for presence within the site, water voles are considered further in Section 4 of this report.** Further Phase 2 surveys are recommended. Any future development on site would need to consider the features identified above and be informed by the further survey recommendations in Section 4.
Invertebrates	WCA S9	**MODERATE:** The desk study returned 25 records of invertebrates, the majority of which were moth species such as cinnabar, grey dagger and bearded chestnut which are Species of Principal Importance and Cambridgeshire and Peterborough BAP species. There was also one record for wall butterfly as well as three records for small heath butterfly, both of which are also Species of Principal Importance and Cambridgeshire and Peterborough BAP species. The woodland, scrub, grassland, hedgerows and unmanaged orchard habitats within the site provide a range of suitable habitats for these species and may support notable populations or diverse assemblages due to its size. Butterfly species noted on the site during the survey included meadow brown, tortoiseshell, common blue, large white, red admiral, ringlet and peacock butterfly.

Table 3.4: Protected and Invasive Species Assessment

Habitat/ species	Status [12, 13]	Likelihood of occurrence
		Considering the above, there is moderate potential for rare invertebrates or species of principal importance at the site and therefore further invertebrate surveys are recommended. Further Phase 2 surveys are recommended. Any future development on site would need to consider the features identified above and be informed by the further survey recommendations in Section 4.
Invasive species	WCA S9	**CONFIRMED:** The desk study returned two records of muntjac within 5km of the site, with no records of invasive plant species. Muntjac were confirmed present within the site during the survey. Muntjac though are ubiquitous and their presence within the site cannot realistically be controlled. A small stand of Himalayan balsam was also present within a ditch along the eastern site boundary of the site with Burrettgate Road (see Target Note 2 and Photograph 20, Appendix 2). This species is listed on Schedule 9 of the Wildlife and Countryside Act. **As there is a Schedule 9 species within the site, this is considered further in Section 4 of this report.**
Badgers	PBA	**MODERATE:** The desk study returned three records of badger within 5km of the site, the closest of which was located approximately 3.5km north east. The areas of woodland, scrub, grassland, hedgerows and unmanaged orchard within the site provide suitable habitat for badger foraging and sett creation. These habitats are likely to represent some of the more suitable habitats in the local area, with adjacent areas predominately comprising arable and urban land. The likelihood of badgers using the site is therefore considered to be moderate, especially as badgers have been recorded in the local area. Despite this though, no evidence of badgers such as setts, latrines, footprints or signs of digging were noted during the survey, although a more detailed, targeted survey is required. **As there is moderate potential for presence at the site, badgers are considered further in Section 4 of this report.** Further Phase 2 surveys are recommended. Any future development on site would need to consider the features identified above and be informed by the further survey recommendations in Section 4.

NATURE CONSERVATION EVALUATION

3.42 The site is not subject to any nature conservation designations. It principally comprises common and widespread habitats, with the exception being the unmanaged orchards. Habitats of Principal Importance within the site are thought to include the broad-leaved woodland and majority of hedgerows, with one of the hedgerows qualifying as 'Important' under the Hedgerow Regulations 1997. An area classified as 'Traditional Orchard' on the MAGIC database is also present in the northern half of the site, though was found to have been recently cleared (see Target Note 1 and Photograph 9). A number of habitats within the site also feature on the local Habitat Action Plan for Cambridgeshire and Peterborough. These included arable land, arable field margins, domestic gardens, drainage ditches, broad-leaved woodland and hedgerows, the latter two of which also feature on the local Habitat Action Plan for Norfolk.

3.43 The site is situated on the edge of Wisbech, bordered by established urban townscape to the north and west; Burrettgate Road and arable land to the east and The College of West Anglia to the south.

3.44 The habitats within the site, although relatively common, are therefore likely to be of significant value to wildlife, given that similar opportunities are rare in a predominately arable and urban landscape.

3.45 The habitats also provide important ecosystem services, including flood alleviation from the network of drainage ditches, as well as a therapeutic benefit to the public that use the footpaths and semi-natural habitats, such as the broad-leaved woodland.

3.46 The habitats on site were suitable for a range of note-worthy species, including Species of Principal Importance and both Norfolk, Cambridgeshire and Peterborough BAP species, as reported in the desk study or recorded during the survey, as follows:

- bats species, such as brown long eared bat and soprano pipistrelle;
- great crested newts;
- otter;
- yellowhammer and other widespread but declining species of birds that are also species of conservation concern[14];
- slow worm and other widespread species of reptile;

[14] Birds of Conservation Concern - amber list / red list (Eaton *et al.*, 2015);

- water voles;
- invertebrates associated with widespread habitats such as small heath butterfly and wall butterfly;
- badger;
- brown hare;
- harvest mouse; and
- hedgehog;

3.47 The majority of the habitats on the site and populations of the above species are likely to be of value within the immediate vicinity of the site only. However, further targeted surveys are required to establish whether the site supports any rare, or diverse assemblages or large populations of any noteworthy species.

3.48 Records of a number of bat species were returned from the data search, including soprano pipistrelle and brown long-eared bats, which are Species of Principal Importance and both Norfolk, Cambridgeshire and Peterborough BAP species. It is not possible to confirm the value of the site for roosting, foraging and commuting bats or the value of bat populations that may be present at the site until further surveys have been undertaken. Recommendations for further survey are provided in Section 4.

3.49 Records of great crested newts were returned from the data search and habitats on site have the potential to support this species. Further survey is therefore required to establish the value of the population on site; however, it is considered that the population of great crested newts at the site could be of value up to local level given the habitats present and distribution of the species in the county. Recommendations for further survey are provided in Section 4.

3.50 The network of drainage ditches within the site may support transient otter. Further survey is therefore required to establish the value of the population on site; however, it is considered that this could be of value up to local level given the extent of drainage ditches and known distribution of otter within the county. Recommendations for further survey are provided in Section 4.

3.51 Numerous records of noteworthy bird species were returned by the data search, including Schedule 1 species such as barn owl and fieldfare (though the latter does not breed this far south in the UK) as well as red-listed birds of conservation concern, Species of Principal Importance and Norfolk, Cambridgeshire and Peterborough BAP

species. Further survey information is required to establish which the likely value of the populations on site; however, it is considered that these could be of value up to local level given the habitats present and distribution of the species in the county. Recommendations for further survey are provided in Section 4.

3.52 Despite no records of reptiles being returned from the data search, the habitats on site have the potential to support this species group. Further survey information is required to establish the value of the populations on site; however, it is considered that the populations of reptiles at the site could be of value up to local level given the habitats present and distribution of species in the county. Recommendations for further survey are provided in Section 4.

3.53 The network of drainage ditches within the site may support water voles and further survey is required to establish the value of the population on site. However, it is considered that this could be of value up to site level only given the extent of drainage ditches and known distribution of water voles within the county. Recommendations for further survey are provided in Section 4.

3.54 Records of a number of Species of Principal Importance and Cambridgeshire and Peterborough BAP moth and butterfly species were returned from the data search and habitats on site have the potential to support these species groups. Further survey is required to establish whether the site supports any diverse assemblages or large populations; however, it is considered that the populations of invertebrates at the site could be of value up to local level given the habitats present and distribution of species in the county. Recommendations for further survey are provided in Section 4.

3.55 Habitats on site have potential for a number of Species of Principal Importance, namely brown hare, harvest mouse and hedgehog, with records of brown hare and hedgehog returned by the data search. However, given the availability of suitable habitats in the wider area and across the county, it is considered that the value of the populations of these species is likely to be up to site level only. Recommendations for these species are provided in Section 4.

4 Potential Impacts and Recommendations

4.1 This section summarises the potential impacts on habitats and notable species that may be present at this site. The impact assessment is preliminary and further detailed assessment and surveys will be required to assess impacts and design suitable mitigation, where appropriate.

4.2 The following key ecological issues have been identified:

- the site is not subject to any statutory or non-statutory nature conservation designations. There are no statutory designated sites within a 5km radius, although the site partially falls within the IRZ for Nene Washes SSSI/SAC/SPA/Ramsar.
- one of 18 hedgerows (H17) surveyed within the site met the criteria to qualify as 'Important' under the Hedgerow Regulations 1997.
- the broad-leaved woodland and hedgerows (with exception of H5 and H13) were thought to qualify as Habitats of Principal Importance. An area classified as 'Traditional Orchard' on the MAGIC database though was found to have been recently cleared in the northern part of the site;
- the unmanaged orchards within the site were not thought to qualify as 'Traditional Orchards', although are still considered to represent some of the higher quality habitat within the site, due to their likely value for a range of taxa, including birds and invertebrates;
- a number of habitats within the site also feature on the local Habitat Action Plan for Cambridgeshire and Peterborough. These include arable land, arable field margins, domestic gardens, drainage ditches, broad-leaved woodland and hedgerows, the latter two of which also feature on the Habitat Action Plan for Norfolk.
- habitat suitable for roosting bats is present – further surveys will be required to establish their presence/likely absence in buildings and trees that are due to be removed or potentially affected in other ways by the development. Further surveys should also be undertaken to establish the current value of the site for foraging and commuting bats and to enable the design of appropriate mitigation and compensation measures and identify any licensing requirement;
- habitat suitable for great crested newts in the terrestrial and aquatic phases of their life cycle is present – further surveys will be required to establish their presence/likely absence in ponds and ditches within 500m of the site in order to

enable the design of appropriate mitigation and compensation measures and identify any licensing requirement;

- habitat suitable for transient otter is present - further surveys will be required to establish the current value of the site for this species and to enable the design of appropriate mitigation and compensation measures;
- habitat suitable for a range of breeding birds is present, including farmland specialists and other species in decline and, in the case of barn owl, also listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) – further surveys will be required to establish the current value of the site for breeding birds;
- habitat suitable for widespread reptiles is present – further surveys will be required to establish the current value of the site for these species and to enable the design of appropriate mitigation and compensation measures;
- The network of drainage ditches on site provides suitable habitat for water voles - further surveys will be required to establish the current value of the site for these species and to enable the design of appropriate mitigation and compensation measures and to identify any licensing requirement;
- habitat suitable for Species of Principal Importance and Cambridgeshire and Peterborough BAP invertebrate species is present - further surveys will be required to establish whether the site supports any diverse assemblages or large populations of these species groups;
- A small stand of Himalayan balsam was also present within a ditch on site – control measures will be required to avoid spread of this Schedule 9 invasive species;
- habitat suitable for badger is present – further surveys will be required to establish their presence/likely absence and to enable the design of any appropriate mitigation and compensation measures and identify any licensing requirement;
- habitat suitable for brown hare, harvest mouse and hedgehog is present – measures should be taken to continue accommodating these species on site post-development; and
- A range of measures should be undertaken to satisfy the requirement for ecological enhancement included in planning policy.

CONSTRAINTS AND MITIGATION/COMPENSATION

Designated Nature Conservation Sites

4.3 No direct impacts are envisaged on statutory or non-statutory designated sites due to their distance from the proposed development site. However, given that the site partially falls within the IRZ for Nene Washes SSSI/SAC/SPA/Ramsar, consultation with Natural England is recommended to determine whether or not screening as part of a Habitats Regulations Assessment (HRA) is necessary as part of the proposals.

Habitats

4.4 Plans are not at the stage where details are available about the development proposed for the site; however, the findings of this report will establish the ecological features that should be retained and be incorporated into the site's green infrastructure framework.

4.5 Hedgerows represent important boundary and wildlife corridor features and there should be a presumption that, where possible, all hedgerows, in particular H17 identified as 'Important' under the Hedgerows Regulations 1997 will be retained and protected as part of development proposals. In addition, it is recommended that hedgerows are not incorporated as boundaries to private dwellings as this will reduce the ability to appropriately manage them in the long-term and their wildlife value. Ideally they should be incorporated into the provision of wide corridors including woody habitats alongside grassland habitats.

4.6 The Hedgerow Regulations 1997 are designed to give protection to important hedgerows. Anyone proposing to remove any hedgerow, or part of any hedgerow covered by the Regulations must first notify the Local Planning Authority (LPA) by submitting a Hedgerow Removal Notice. Notification for permission to remove a hedgerow does not override requirements to comply with protected species legislation.

4.7 The hedgerows (with exception of H5 and H13) are also thought to be Habitats of Principal Importance, as well as featuring on the Habitat Action Plan for both Norfolk, Cambridgeshire and Peterborough. If hedgerows are to be removed, following consultation with the LPA, their loss should be compensated through appropriate landscaping e.g. the creation of new species-rich native hedgerows, particularly where these might reconnect existing sections of hedgerow and strengthen wildlife corridors throughout the site. Retained hedgerows should be safeguarded from any potential impacts at all stages before, during and after the development and enhanced through appropriate long-term management.

4.8 Other habitats that should be retained, as far as possible, include the broad-leaved woodland, also considered to be a Habitat of Principal Importance, as well as featuring on the Habitat Action Plan for both Norfolk, Cambridgeshire and Peterborough. The network of drainage ditches, which feature on the Habitat Action Plan for Cambridgeshire and Peterborough should also be retained as far as possible.

4.9 The unmanaged plum orchard close to the centre of the site, thought to be the remnants of a Traditional Orchard, as well as the unmanaged apple orchard to the south, should be restored and managed as Traditional Orchards to mitigate for the recent clearance of this Habitat of Principal Importance in the northern half of the site. Restoration of priority habitats such as this is an objective on the Fenland Local Plan. Traditional Orchards also feature on the local Habitat Action Plan for both Norfolk, Cambridgeshire and Peterborough.

4.10 Other habitats that should be retained that are not listed as being of principal importance or local BAP habitats include areas of semi-improved grassland and native scattered broad-leaved trees. Both of these habitats, as well as the habitats discussed above, should be retained as far as possible, and incorporated into the site's green infrastructure which should aim to enhance semi-natural habitat connectivity throughout the site and to the wider landscape.

4.11 Although arable land, arable field margins and domestic gardens are listed on the Habitat Action Plan for Cambridgeshire and Peterborough, these habitats within the site are of low ecological value, being common and widespread in the local area and of value within the immediate vicinity of the site only. Therefore, no specific recommendations for retention or enhancement are considered necessary.

Bats

4.12 All British species of bat are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended). Under this legislation it is an offence to deliberately capture, kill, disturb and damage or destroy a bat roost. Some species of bat are also Species of Principal Importance and Norfolk, Cambridgeshire and Peterborough BAP species.

4.13 There are a number of buildings and trees within the site that provide roosting opportunities for bats. Detailed, targeted surveys should therefore be carried out on any buildings and trees to be removed in order to determine the presence/likely absence of

roosting bats as outlined below to ensure compliance with the legislation. Should a bat roost be present, a Natural England licence and mitigation strategy may be required to allow works to proceed lawfully and to ensure the favourable conservation status of bats at the site is maintained or enhanced long-term.

4.14 Habitats on site are highly likely to provide foraging and commuting habitat for bats and further surveys to establish the value of the site for foraging/commuting bats are recommended.

4.15 It is recommended that measures to avoid artificial illumination of features with potential for roosting bats, as well as areas that could provide flight lines and foraging habitats for bats are considered at the design planning stage and following more detailed bat surveys.

Great crested newts

4.16 Great crested newts are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended). Under this legislation it is an offence to deliberately capture, kill or disturb a great crested newt or damage or destroy their habitat. Great crested newts are also a Species of Principal Importance as well as a Norfolk, Cambridgeshire and Peterborough BAP species.

4.17 As there is potential for these habitats to be affected by development at the site, further surveys will be necessary to determine the presence/likely absence of the species as outlined below and comply with legislation. Should great crested newts be present a Natural England licence and mitigation strategy may be required to allow works to proceed lawfully and to ensure the favourable conservation status of newts at the site is maintained or enhanced long-term.

Otter

4.18 Otters are listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2010 (as amended). Under this legislation it is an offence to deliberately capture, kill or disturb an otter or damage or destroy their habitat. Otters are also a Species of Principal Importance and Cambridgeshire and Peterborough BAP species.

4.19 The network of drainage ditches within the site is suitable for transient otter. Further surveys will be required to establish the current value of the site for this species and to enable the design of appropriate mitigation and compensation measures.

Breeding birds

4.20 All wild birds and their active nests are protected under the Wildlife and Countryside Act 1981 (as amended). The site is highly likely to support a range of common species of breeding bird as well as others of greater conservation concern and other Species of Principal Importance and Local BAP species. In addition, the site is likely to be of value for foraging throughout the year.

4.21 Further surveys will be necessary to determine the species assemblage and numbers present before a full evaluation of the site can be made. These surveys will inform necessary mitigation/compensation requirements to ensure compliance with legislation and ensure the value of the site is maintained or enhanced for birds in the long-term.

Reptiles

4.22 All species of reptile are protected from killing or injuring under the Wildlife and Countryside Act 1981 (as amended). Grass snake, adder, common lizard and slow worm are also Species of Principal Importance and Cambridgeshire and Peterborough Bap species

4.23 Habitats on site with potential to support reptiles included grassland habitats as well as bases of hedgerows and edges of woodland, scrub and unmanaged orchards.

4.24 As there is potential for habitat for these species to be affected by development at the site, further surveys will be necessary to determine presence/likely absence and the value of the site for those species. Should reptiles be present, appropriate mitigation/compensation measures and precautionary methods of working will be required to ensure compliance with legislation and ensure the value of the site for reptiles is maintained or enhanced long-term.

Water vole

4.25 Water voles are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is an offence to intentionally capture, kill or injure a water vole, to disturb water voles while in their burrows or to damage or destroy

their habitat. Water voles are also a Species of Principal Importance as well as a Norfolk, Cambridgeshire and Peterborough BAP species.

4.26 The network of drainage ditches on site provides suitable habitat for water voles and is well connected to further ditches in the wider landscape. As there is potential for water vole habitat to be affected by development at the site, further surveys will be necessary to determine the current population status and the value of the site for the species. These surveys will inform necessary mitigation/compensation and licensing requirements to ensure compliance with legislation and maintenance or enhancement of the value of the site for water voles in the long term.

Invertebrates

4.27 The woodland, scrub, grassland, hedgerows and unmanaged orchard habitats within the site provide a range of suitable habitats for a number of Species of Principal Importance and Cambridgeshire and Peterborough BAP butterfly and moth species.

4.28 As there is potential for habitat for these species to be affected by development at the site, further surveys will be required to establish whether the site supports any diverse assemblages or large populations of these species and to enable a full evaluation of the site for invertebrates.

Badger

4.29 Badgers are protected under the Protection of Badgers Act 1992. Under this legislation it is an offence to wilfully capture, kill or injure a badger, to disturb badgers while in their setts or to damage, destroy or disturb their setts.

4.30 There is potential for this species to be present on the site and therefore further surveys will be necessary to determine the current population status and the value of the site for the species. These surveys will inform necessary mitigation/compensation and licensing requirements to ensure compliance with legislation.

Brown hare and other small mammals.

4.31 The proposed development has the potential to impact on habitats utilised by brown hare, harvest mouse and hedgehog, all of which are Species of Principal Importance and Cambridgeshire and Peterborough BAP species. Brown hare also feature as a Norfolk BAP species, although this does not include harvest mouse and hedgehog. The development is likely to result in the direct loss of habitat and fragmentation of foraging

and refuge habitat. It is therefore recommended that consideration is given to retaining and creating foraging and refuge areas within the masterplan and to maintaining connectivity across the site to allow continued dispersal within the wider landscape.

Invasive species.

4.32 A small stand of Himalayan balsam, listed on Schedule 9 of the Wildlife and Countryside Act 1918 (as amended), was present within a ditch on site. Control measures will therefore be required to avoid the spread of this invasive species. These should be undertaken by a specialist contractor.

Environmental best practice

4.33 Retained trees should be protected in accordance with British Standards Institution (2012) guidelines. See accompanying arboriculture report for further details.

FURTHER SURVEY REQUIREMENTS

4.34 Table 4.1 details the further survey requirements as recommended in the constraints section.

Table 4.1: Further survey requirements

Species/ Habitat	Survey Requirement	Number of surveys and seasonal considerations
Bats	To survey buildings and trees with bat roosting potential. Ground level tree assessment followed by climbed tree inspection if necessary, and/or emergence/re-entry surveys as required.	Following a detailed building inspection, at least two emergence/re-entry survey visits are required for any features with moderate roost potential and three for those with high roost potential. These must be carried out between May and August and spread evenly across this period (Collins, 2016). Following a ground level tree assessment, a single climbed tree inspection may be required if features higher up cannot be inspected. At least two emergence/re-entry survey visits are required for any features with moderate roost potential and three for those with high roost potential. Climbed tree inspections can be carried out at any time of year and emergence surveys must be carried out between May and August and spread evenly across this period (Collins, 2016).
Bats	Transects and static detector surveys to assess bat activity across the site	Following current guidance (Collins, 2016) to adequately assess the importance of this site for foraging and commuting bats, three seasonal transects and three seasonal remote detection surveys should be carried out. These would need to be carried during the seasons of Spring (April-May), Summer (June, July and August) and Autumn (September-October) (Collins, 2016).

Table 4.1: Further survey requirements

Species/ Habitat	Survey Requirement	Number of surveys and seasonal considerations
Great crested newts	To assess the habitat suitability of ponds and ditches for great crested newts within 500 metres of the site. To survey suitable ponds and ditches within 500m of the site where there is reasonable potential for newts to be affected.	*Presence/likely absence surveys:* The eDNA survey method requires a single visit to be undertaken between mid-April and the end of June (Biggs et al., 2014)[15]. OR The traditional field survey method (which can include bottle-trapping, torch survey, egg search, netting and refuge search) requires four visits to be undertaken in suitable weather conditions between mid-March and mid-June, with at least two of these visits during mid-April to mid-May (English Nature, 2001)[16]. *Population size class surveys:* If required, six visits should be undertaken using the traditional field survey method in suitable weather conditions between mid-March and mid-June, with at least three of these visits during mid-April to mid-May (English Nature, 2001)[16].
Otter	Otter surveys are recommended to assess the likelihood that the site is being used by transient otters.	Optimal survey time for this species is April to September when water levels are at their lowest providing greater opportunity to find signs such as spraints and footprints. One to two surveys is thought to be sufficient given the low number of records.
Breeding birds	To determine the assemblage of birds on site and allow rudimentary territory analysis to quantify the individual populations of important species.	Breeding bird surveys are required across the site within suitable habitat that may be affected between April and June. This will comprise a minimum of four visits over this period and will provide enough detail to determine the assemblage of birds on site and allow rudimentary territory analysis to quantify the individual populations of important species. The survey methodology will be undertaken with reference to CBC methodology (Marchant 1983).
Wintering birds	To survey suitable habitat which has potential to support key species or significant numbers of overwintering birds.	Survey period between October – March inclusive. Survey methods should be based upon and adapted from the generic wintering bird surveys given in Gilbert et al. (1998) and the standard Wetland Bird survey (WeBs) methodology (Pollit et al. 2003) depending on site context and availability of suitable habitat.
Reptiles	To determine the presence/likely absence of reptile species.	The deployment of artificial refugia (roofing felt or corrugated metal) in areas of potential habitat on site that may be affected. After these have been left to 'bed down' (typically around two weeks) they are checked by an ecologist for basking reptiles in combination with a visual search of surrounding habitat on multiple occasions. Seven survey visits will be carried out during the optimal timing for reptile surveys which is spring (April and May usually being the best months) or autumn (September).

[15] Biggs, J., Ewald, N., Valentini, A., Gaboriaud, C., Griffiths, R. A., Foster, J., Wilkinson, J., Arnett, A., Williams, P. and Dunn, F. (2014). Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (Triturus cristatus) environmental DNA. Freshwater Habitats Trust, Oxford

16 English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature, Peterborough

Table 4.1: Further survey requirements

Species/ Habitat	Survey Requirement	Number of surveys and seasonal considerations
Water vole	Presence/absence survey and estimation of population density	A minimum of two water vole surveys are required to be carried out in spring and autumn to determine presence/likely absence and to enable a population calculation to be made. Surveys are carried out by an experienced surveyor walking within the channel recording field signs (Dean et al, 2016).
Invertebrates	To determine the value of the site for invertebrates.	Four visits to the site and within adjacent habitat that may be affected by a suitably experienced entomologist should be made over the period May-August to sample key habitats for their invertebrate fauna.
Badger	To determine the presence/likely absence of badgers.	A badger survey must be undertaken at the site within habitat that may be affected to determine the presence/likely absence of badgers and their activity across the site. Badger surveys can be undertaken at any point throughout the year though spring and autumn are optimal as vegetation levels are lower and territorial marking activity more pronounced.

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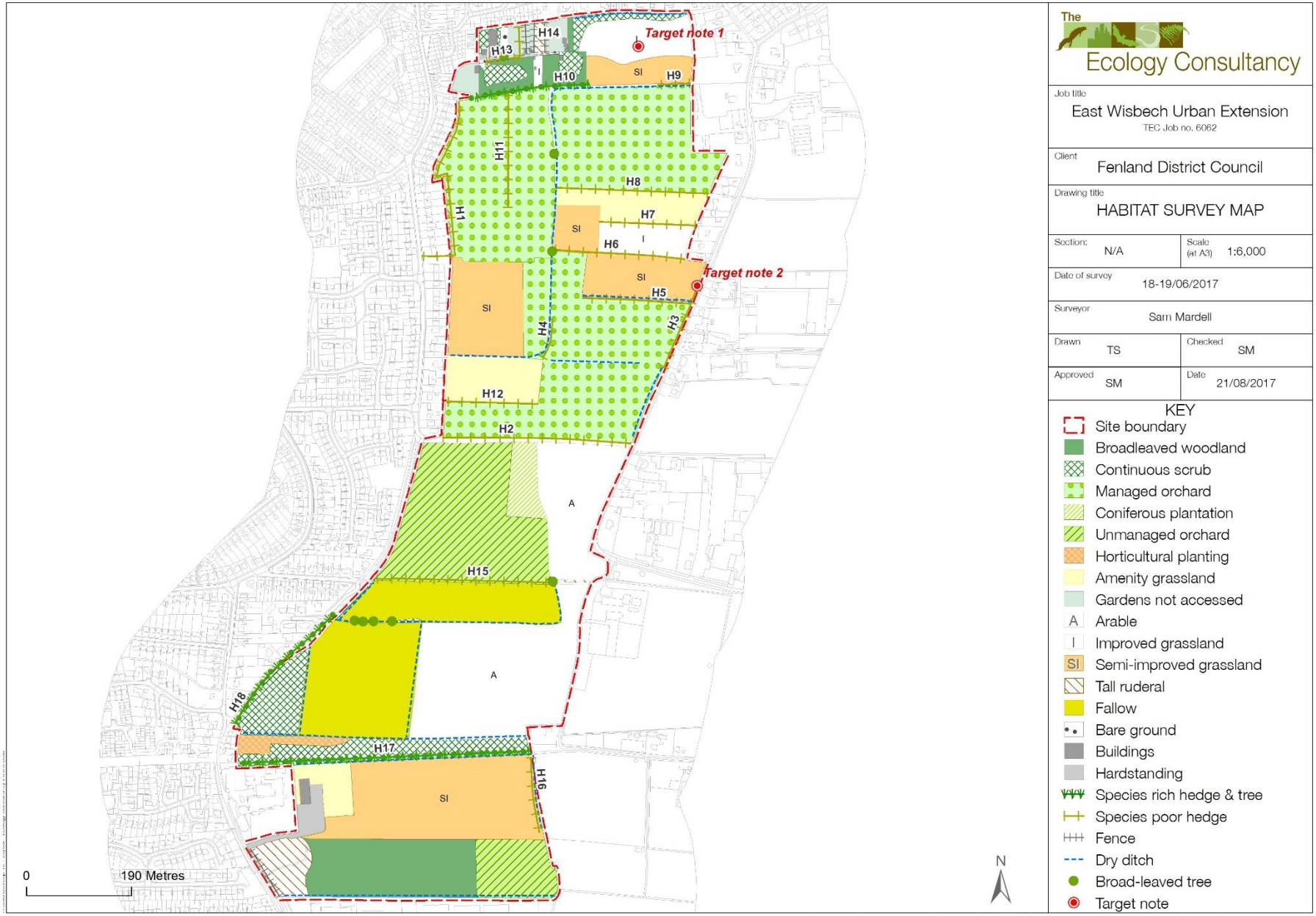
Appendix 1: Habitat Map

Figure 1: Habitat Survey Map



Appendix 2: Photographs

Photograph 1
Managed orchard in the northern half of the site with herbicided strips

Photograph 2
Arable land close to the centre of the site planted with barley crop

Photograph 3
Fallow arable land close to the centre of the site

Photograph 4
Semi-improved grassland in the southern half of the site adjacent to the broad-leaved woodland

Photograph 5
Area of unmanaged plum orchard close to the centre of the site, thought to be the remnants of a Traditional Orchard

Photograph 6
Broad-leaved woodland along the southern site boundary. View looking south west

Photograph 7
Dense scrub in the northern half of the site

Photograph 8
Domestic gardens comprising short mown amenity grassland close to the eastern boundary in the northern half of the site

Photograph 9
Improved grassland on area of recently cleared Traditional Orchard. View looking east

Photograph 10
Tall ruderal in the south west corner of the site adjacent to broad-leaved woodland. View looking north

Photograph 11
Christmas tree plantation close to centre of the site. View looking north

Photograph 12
Area of horticultural planting close to the western site boundary. View looking west

Photograph 13
Northern elevation of Building 1 looking south

Photograph 14
Building 3 which represents the typical type of outbuilding present within the northern half of the site

Photograph 15
Southern elevation of Building 4 looking north

Photograph 16
Building 5 looking west

Photograph 17
Building 15 looking west

Photograph 18
Sandy Lane that bisects the northern and southern halves of the site. View looking east

Photograph 19
A section of drainage ditch within the managed orchard. View looking west

Photograph 20
Small stand of Himalayan balsam in a ditch along the eastern site boundary

Photograph 21
Species-poor hedgerow (H2) along managed orchard boundary with Sandy Lane

Photograph 22
Species-rich native hedgerow with trees (H17) classified as 'important' along a public right of way in the southern half of the site. View looking east

Photograph 23
Scattered ash trees along fallow arable field margin close to the western boundary in the southern half of the site

Appendix 3: Hedgerow Survey Results Table

Table 1: Summary of Hedgerow Features

Attribute/Hedge Number	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10
Important										
Length	350m	340m	160m	60m	200m	250m	200m	230m	150m	250m
Average height	3-4m	3m	3m	4m	2-3m	4-5m	10m	5m	2m	5m
Average width	2-3m	2m	2-3m	2m	5m	3m	2m	2-3m	2-3m	3m
Shrub and tree species (those highlighted are on Schedule 3)	Cor-ave, Sam-nig, Bet-pen, Rub-fru, Cup-ley	Cra-mon, Sam-nig	Cra-mon, Sam-nig	Cra-mon, Rub-fru, Pru-dom	Ros-can, Cra-mon, Rub-fru, Sam-nig, Pru-dom	Ros-can, Cra-mon, Rub-fru, Pru-dom, Ace-pse	Ace-pse, Cra-mon, Fra-exc, Rub-fru, Sam-nig, Bet-pen	Cra-mon, Hed-hel, Rub-fru, Sam-nig, Lig-vul, Pru-dom,	Cra-mon, Hed-hel, Rub-fru, Ace-pse, Pru-dom, Mal-dom	Pop-spp, Sam-nig, Lig-vul, Sal-alb, Pru-dom, Fra-exc, Bet-pen, Cor-ave, Rub-fru
Number of woody species (Schedule 3) on average per 30m section	2 (only 1x Bet-pen)	2	2	1	3	2	3 (only 1x Bet-pen)	3	1	5
Field layer species (those highlighted are on Schedule 2)	Urt-dio, Rum-obt, Cir-arv, Lol-per, Hol-lan	Urt-dio	Urt-dio	Urt-dio, Lol-per, Cir-arv	Con-arv, Cir-arv	Urt-dio, Lol-per, Jac-vol, Cir-vul, Rum-obt, Cir-arv	Urt-dio, Hol-lan, Lol-per, Ger-mol, Dac-glo	Urt-dio, Lol-per, Hol-lan, Cir-arv	Urt-dio, Cha-ang, Hol-lan, Lol-per	Urt-dio, Lol-per, Hol-lan, Cir-arv
Number of woodland species (Schedule 2)	0	0	0	0	0	0	0	0	0	0
One standard tree on average every 50m	X	X	X	X	X	✓	✓	X	✓	✓
* Connection to another hedge (1 point for each hedge within 10m)	1	0	1	0	0	0	0	0	0	2
* Connection to a wood (50% broadleaved) (2 points for each wood within 10m)	2	0	0	0	0	0	0	0	0	2
* Connection to a pond (2 points for each pond within 10m)	0	0	0	0	0	0	0	0	0	0
Connected to landscape features (4+ points)	X	X	X	X	X	X	X	X	X	✓
Parallel hedge within 15m	X	X	X	X	X	X	X	X	X	X
Wall or bank more than half length of hedge	X	X	X	X	X	X	X	X	X	X
Ditch more than half length of hedge	X	X	X	✓ (dry)	✓ (dry)	X	X	X	X	X (dry ditch only along 1/3)
No gaps >10% length	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Number of associated features	1	1	1	2	2	2	2	1	2	3
Adjacent to a footpath or bridleway etc	X	✓ (parallel to road)	X	X	X	X	X	X	X	X
Recognised important species (including those on Schedules 1, 5 & 9 WCA Act, 1985; stag beetles; other notable invertebrates)	X	X	X	X	X	X	X	X	X	X
Previous management	Recently unmanaged	Hedgerow base recently sprayed	Hedgerow base recently sprayed	Hedgerow base recently sprayed	Hedgerow base recently sprayed	Recently unmanaged	Recently unmanaged	Cut on both sides	Unmanaged on other side of ditch	Hedgerow base recently sprayed
Recommended management										

* A combined minimum of 4 points must be scored in these three attributes for the hedgerow to be considered suitably connected to adjacent landscape features. These features do not count if a public right of way is being included in the criterion.

Attribute/Hedge Number	H11	H12	H13	H14	H15	H16	H17	H18
Important							Yes	
Length	200m	171m	60m	60m	330m	140m	600m	360m
Average height	20m	0.5m	2m	20m	5m	6-7m	15m	15m
Average width	1m		1m	1m	3-4m	1m	5m	3m
Shrub and tree species (those highlighted are on Schedule 3)	Aln-glu, Sam-nig, Rub-fru	Pop-spp	Lig-ova	Pop-spp, Fra-exc	Cra-mon, Que-rob, Hed-hel, Rub-fru	Aln-glu, Sal-alb	Fra-exc, Cra-mon, Pru-dom, Sam-nig, Ace-Cam, Hed-hel, Rub-fru	Ace-pse, Fra-exc, Sam-nig, Sal-alb, Jug-reg, Lig-vul, Rub-fru, Pru-dom, Lon-per, Cra-mon
Number of woody species (Schedule 3) on average per 30m section	2	1	1	1	1	2	4 (qualifies as adjacent to byway)	5 (only 1x Jug-reg)
Field layer species (those highlighted are on Schedule 2)	Urt-dio, Cir-arv	Lol-per	Lol-per, Urt-dio, Hol-lan, Tar-off	Lol-per, Urt-dio, Hol-lan, Dac-glo	Arr-ela, Hol-lan, Urt-dio, Hel ech, Lol-per, Cir-arv	Urt-dio, Cha-ang	Lol-per, Urt-dio, Her-sph, Aeg-pod, Hol-lan	Urt-dio, Her-sph, Cir-arv, Hol-lan, Lol-per,
Number of woodland species (Schedule 2)	0	0	0	0	0	0	0	0
One standard tree on average every 50m	✓	✓	X	✓	X (3x Que-rob all at one end)	✓	✓	✓
* Connection to another hedge (1 point for each hedge within 10m)	1	0	1	1	1	1	1	0
* Connection to a wood (50% broadleaved) (2 points for each wood within 10m)	2	0	2	2	0	0	0	0
* Connection to a pond (2 points for each pond within 10m)	0	0	0	0	0	0	0	0
Connected to landscape features (4+ points)	X	X	X	X	X	X	X	X
Parallel hedge within 15m	X	X	X	X	X	X	X	X
Wall or bank more than half length of hedge	X	X	X	X	X	X	X	X
Ditch more than half length of hedge	X	X	X	X	X	✓ (dry)	✓ (dry)	X
No gaps >10% length	X	X	✓	✓	✓	X	✓	X (20% gaps)
Number of associated features	1	1	1	2	1	2	3	1
Adjacent to a footpath or bridleway etc	X	X	X	X	✓ (parallel to public footpath)	X	✓ (parallel to byway open to all traffic)	✓ (parallel to byway open to all traffic)
Recognised important species (including those on Schedules 1, 5 & 9 WCA Act, 1985; stag beetles; other notable invertebrates)	X	X	X		X	X	X	X
Previous management	Hedgerow base recently sprayed		Boundary hedge recently trimmed		Recently unmanaged	Unmanaged row of trees	Recently unmanaged	Recently unmanaged
Recommended management								

Appendix 4: Plant Species List

Plant Species List for East Wisbech Urban Extension compiled from Phase 1 habitat survey carried out on the 18th and 19th July 2017.

Scientific nomenclature and common names for vascular plants follow Stace (2010). Please note that this plant species list was generated as part of a Phase 1 habitat survey, does not constitute a full botanical survey and should be read in conjunction with the associated results section of this PEA.

Abundance was estimated using the DAFOR scale as follows:
D = dominant, A = abundant, F = frequent, O = occasional, R = rare, L = locally c=clumped, e=edge only, g=garden origin, p=planted, y = young, s=seedling or sucker, t=tree, h=hedgerow, w=water

SCIENTIFIC NAME	COMMON NAME	ABUNDANCE	QUALIFIER
Acer campestre	Field maple	O	h
Acer platanoides	Norway maple	LR	t, p
Acer pseudoplatanus	Sycamore	LR	t, y, p
Achillea millefolium	Yarrow		
Aegopodium podagraria	Ground elder	O	e
Aesculus hippocastanum	Horse chestnut	LR	p
Alnus glutinosa	Common alder	LF	t, p
Arrhenatherum elatius	False oat grass	F	
Artemisia vulgaris	Mugwort	O	e
Anthriscus sylvestris	Cow parsley	LR	e
Bellis perennis	Daisy	F	
Betula pendula	Silver birch	LF	t, y, h
Buddleja davidii	Buddleia	R	p
Carex pendula	Pendulous sedge	R	p
Centaurea nigra	Black knapweed	LR	e
Chamaecyparis lawsoniana	Lawson cypress	LF	p
Chamerion angustifolium	Rosebay willowherb	F	w
Cirsium arvense	Creeping thistle		
Cirsium vulgare	Spear thistle		
Convolvulus arvensis	Field bindweed	O	
Cornus sanguinea	Dogwood		
Corylus avellana	Hazel	LF	h
Crataegus monogyna	Hawthorn	LA	
Cupressus × leylandii	Leyland cypress	LF	t, p
Dactylis glomerata	Cock's foot grass	F	
Eucalyptus spp.	Eucalyptus	LR	t, p
Fagus sylvatica f.purpurea	Copper beech	LR	t, p
Fragaria ananassa	Garden strawberry	LR	p
Fraxinus excelsior	Ash	F	t, y, h
Galium aparine	Cleavers	LF	e
Geranium molle	Dove's-foot crane's-bill	O	
Geum urbanum	Wood avens	LR	
Glechoma hederacea	Ground-ivy	LF	
Hedera helix	Ivy	LF	h
Holcus lanatus	Yorkshire-fog	LF	
Helminthotheca echioides	Bristly oxtongue	F	
Heracleum sphondylium	Common hogweed	O	
Impatiens glandulifera	Himalayan balsam	LR	g, w
Juglans regia	Walnut	LR	t, h
Knautia arvensis	Field scabious	LR	
Lamium album	White dead-nettle	LR	e

Ligustrum ovalifolium	Garden privet	LR	p
Ligustrum vulgare	Common privet	LR	h
Lolium perenne	Perennial rye-grass	A	
Lonicera periclymenum	Honeysuckle	LR	h
Malus spp.	Apple	A	p
Pinus spp.	Pine	F	t, y, p
Picea abies	Norway spruce	LF	t, p
Phaseolus vulgaris	French beans	LR	p
Phleum pratense	Timothy grass	LF	
Phragmites australis	Common reed	LF	w
Plantago lanceolata	Ribwort plantain	O	
Plantago major	Greater plantain	O	
Poa annua	Annual meadow-grass	O	e
Poa ssp.	Meadow-grass	F	
Poa trivialis	Rough meadow-grass	R	e
Populas spp.	Poplar	LF	t, p
Populas nigra	Black poplar	LF	
Prunus domestica subsp. insititia	Damson	LF	t, h
Quercus robur	Oak	R	t, h
Ranunculus repens	Creeping buttercup	O	
Rheum x rhabarbarum	Rhubarb	LR	p
Rosa canina	Dog rose	O	
Rosa spp.	Rose	R	g
Rubus fruticosus L.agg	Bramble	A	
Rubus idaeus	Raspberry	LR	p
Rumex obtusifolius	Broad-leaved dock	R	e
Salix babylonica	Weeping willow	LR	t, p
Salix caprea	Goat willow	LR	t
Salix fragilis	Crack willow	LR	t, h
Sambucus nigra	Elder	O	t, y, s
Senecio jacobaea	Common ragwort	R	
Taraxacum spp.	Dandelion	O	
Trifolium repens	White clover	O	
Typha latifolia	Bulrush	LR	w
Urtica dioica	Common nettle	A	e

Appendix 5: Target Notes

Target Notes List for East Wisbech Urban Extension, from the Phase 1 habitat survey and protected and notable species assessment carried out on the 18th and 19th July 2017.

Target note (TN)	Description
1	Recently cleared 'Traditional Orchard'
2	Small stand of Himalayan balsam

Appendix 6: Legislation and Planning Policy

Important notice: This section contains details of legislation and planning policy applicable in Britain only (i.e. not including the Isle of Man, Northern Ireland, the Republic of Ireland or the Channel Islands) and is provided for general guidance only. While every effort has been made to ensure accuracy, this section should not be relied upon as a definitive statement of the law.

A NATIONAL LEGISLATION AFFORDED TO SPECIES

The objective of the EC Habitats Directive[17] is to conserve the various species of plant and animal which are considered rare across Europe. The Directive is transposed into UK law by The Conservation of Habitats and Species Regulations 2010 (as amended) (formerly The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended)) and The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended).

The Wildlife and Countryside Act 1981 (as amended) is a key piece of national legislation which implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and implements the species protection obligations of Council Directive 2009/147/EC (formerly 79/409/EEC) on the Conservation of Wild Birds (EC Birds Directive) in Great Britain.

Since the passing of the Wildlife & Countryside Act 1981, various amendments have been made, details of which can be found on www.opsi.gov.uk. Key amendments have been made through the Countryside and Rights of Way (CRoW) Act (2000).

Other legislative Acts affording protection to wildlife and their habitats include:

- Deer Act 1991;
- Countryside and Rights of Way (CRoW) Act 2000;
- Natural Environment & Rural Communities (NERC) Act 2006;
- Protection of Badgers Act 1992:
- Wild Mammals (Protection) Act 1996.

Species and species groups that are protected or otherwise regulated under the aforementioned domestic and European legislation, and that are most likely to be affected by development activities, include herpetofauna (amphibians and reptiles), badger, bats, birds,

[17] Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora

dormouse, invasive plant species, otter, plants, red squirrel, water vole and white clawed crayfish.

Explanatory notes relating to species protected under The Conservation of Habitats and Species Regulations 2010 (as amended) (which includes smooth snake, sand lizard, great crested newt and natterjack toad), all bat species, otter, dormouse and some plant species) are given below. **These should be read in conjunction with the relevant species sections that follow.**

- In the Directive, the term 'deliberate' is interpreted as being somewhat wider than intentional and may be thought of as including an element of recklessness.
- The Conservation of Habitats and Species Regulations 2010 (as amended) does not define the act of 'migration' and therefore, as a precaution, it is recommended that short distance movement of animals for e.g. foraging, breeding or dispersal purposes are also considered.
- In order to obtain a European Protected Species Mitigation (EPSM) licence, the application must demonstrate that it meets all of the following three 'tests': i) the action(s) are necessary for the purpose of preserving public health or safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequence of primary importance for the environment; ii) that there is no satisfactory alternative and iii) that the action authorised will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

Badger

Badgers *Meles meles* receive protection under The Protection of Badgers Act 1992 which consolidates the previous Badger Acts of 1973 and 1991. The Act makes it an offence to:

- Wilfully kill, injure, take, or, in England and Wales only, attempt to kill, injure or take a badger
- Cruelly ill-treat a badger, including use of tongs and digging
- Possess or control a dead badger or any part thereof
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett[18] or any part thereof

[18] A badger sett is defined in the legislation as *"any structure or place which displays signs indicating current use by a badger"*. This includes seasonally used setts. Natural England (2009) have issued guidance on what is likely to constitute current use of a badger sett: www.naturalengland.org.uk/Images/WMLG17_tcm6-11815.pdf

- Intentionally or recklessly disturb[19] a badger when it is occupying a badger sett
- Intentionally or recklessly cause a dog to enter a badger sett
- Sell or offers for sale, possesses or has under his control, a live badger

How is the legislation pertaining to badgers liable to affect development works?

A Development Licence[20] will be required from the relevant countryside agency (e.g. Natural England, Natural Resources Wales or Scottish Natural Heritage) for any development works liable to affect an active badger sett, or to disturb badgers whilst in the sett. In Wales, the Welsh Government is responsible for issuing licences in relation to agricultural and forestry operations or works to maintain or improve any existing watercourse or drainage works, or to construct new works required for the drainage of land, including works of defence against seawater or tidal water.

Depending on the nature of the works and the specifics of the sett and its environs, badgers could be disturbed by work near the sett even if there is no direct interference or damage to the sett itself. The countryside agencies have issued guidelines on what constitutes a licensable activity[3]. N.B. there is no provision in law for the capture of badgers for development purposes and therefore it is not possible to obtain a licence to translocate badgers from one area to another.

Bats

All species of bat are fully protected under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. all bats)
- Deliberate disturbance of bat species as:

[19] For guidance on what constitutes disturbance and other licensing queries, see Natural England (2006 revised 2011) Badgers & Development: A Guide to Best Practice and Licensing (IN75),http://publications.naturalengland.org.uk/publication/73034?category=19010, Natural England (2009) Interpretation of 'Disturbance' in relation to badgers occupying a sett www.naturalengland.org.uk/Images/WMLG16_tcm6-11814.pdf, Scottish Natural Heritage (undated) Badgers http://www.snh.gov.uk/about-scotlands-nature/wildlife-and-you/badgers/ and Countryside Council for Wales (2011) Badgers: Guidelines for Developers http://naturalresourceswales.gov.uk/search.

[20] Natural England, Natural Resources Wales and Scottish Natural Heritage will only consider issuing a licence where detailed planning permission (if applicable to operation) has already been granted

a) to impair their ability:

(i) to survive, breed, or reproduce, or to rear or nurture young;

(ii) to hibernate or migrate[3]

b) to affect significantly the local distribution or abundance of the species

- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

Bats are also currently protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

How is the legislation pertaining to bats liable to affect development works?

The appropriate licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Though there is no case law to date, the legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost[21].

Birds

All wild birds, their nests and eggs are protected under Sections 1-8 of the Wildlife and Countryside Act 1981 (as amended). Among other things, this makes it an offence to:

- Intentionally kill, injure or take any wild bird;

[21] Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected? Mammal News, No. **150**. The Mammal Society, Southampton.

- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built;
- Intentionally take or destroy an egg of any wild bird:
- Sell, offer or expose for sale, have in his possession or transport for the purpose of sale any wild bird (dead or alive) or bird egg or part thereof.

Certain species of bird, for example the barn owl, black redstart, hobby, bittern and kingfisher receive additional special protection under Schedule 1 of the Act and Annex 1 of the European Community Directive on the Conservation of Wild Birds (2009/147/EC). This affords them protection against:

- Intentional or reckless disturbance while it is building a nest or is in, on or near a nest containing eggs or young;
- Intentional or reckless disturbance of dependent young of such a bird.

How is the legislation pertaining to birds liable to affect development works?

To avoid contravention of the Wildlife and Countryside Act 1981 (as amended), works should be planned to avoid the possibility of killing or injuring any wild bird, or damaging or destroying their nests. The most effective way to reduce the likelihood of nest destruction in particular is to undertake work outside the main bird breeding season which typically runs from March to August[22]. Where this is not feasible, it will be necessary to have any areas of suitable habitat thoroughly checked for nests prior to vegetation clearance.

Those species of bird listed on Schedule 1 are additionally protected against disturbance during the breeding season. Thus, it will be necessary to ensure that no potentially disturbing works are undertaken in the vicinity of the nest. The most effective way to avoid disturbance is to postpone works until the young have fledged. If this is not feasible, it may be possible to maintain an appropriate buffer zone or standoff around the nest.

Herpetofauna (Amphibians and Reptiles)

The sand lizard *Lacerta agilis*, smooth snake *Coronella austriaca*, natterjack toad *Epidalea calamita* and great crested newt *Triturus cristatus* receive full protection under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion

[22] It should be noted that this is the main breeding period. Breeding activity may occur outwith this period (depending on the particular species and geographical location of the site) and thus due care and attention should be given when undertaking potentially disturbing works at any time of year.

on Schedule 2. The pool frog *Pelophylax lessonae* is also afforded full protection under the same legislation. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of species listed on Schedule 2
- Deliberate disturbance of any Schedule 2 species as:

  a) to impair their ability:

  (i) to survive, breed, or reproduce, or to rear or nurture young;

  (ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate

  b) to affect significantly the local distribution or abundance of the species
- Deliberate taking or destroying of the eggs of a Schedule 2 species
- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

With the exception of the pool frog, these species are also currently listed on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

Other native species of herpetofauna are protected solely under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Species such as the adder *Vipera berus*, grass snake *Natrix natrix,* common lizard *Zootoca vivipara* and slow-worm *Anguis fragilis* are listed in respect to Section 9(1) & (5). For these species, it is prohibited to:

- Intentionally (or recklessly in Scotland) kill or injure these species
- Sell, offer or expose for sale, possess or transport for purpose of sale these species, or any part thereof.

Common frog *Rana temporaria*, common toad *Bufo bufo*, smooth newt *Lissotriton vulgaris* and palmate newt *L. helveticus* are listed in respect to Section 9(5) only which affords them protection against sale, offering or exposing for sale, possession or transport for the purpose of sale.

How is the legislation pertaining to herpetofauna liable to affect development works?

The appropriate licence issued by the relevant countryside agency (e.g. Natural England) will be required for works liable to affect the breeding sites or resting places of those amphibian and reptile species protected under The Conservation Habitats and Species Regulations 2010 (as amended). A licence will also be required for operations liable to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licences are to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Although not licensable, appropriate mitigation measures may also be required to prevent the intentional killing or injury of adder, grass snake, common lizard and slow worm, thus avoiding contravention of the Wildlife and Countryside Act 1981 (as amended).

Otter

Otters *Lutra lutra* are fully protected under The Conservation of Habitats and Species Regulations 2010 (as amended) through their inclusion on Schedule 2. Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of otters
- Deliberate disturbance of any Schedule 2 species (e.g. otter) as:
    - a) to impair their ability:
        - (i) to survive, breed, or reproduce, or to rear or nurture young;
        - (ii) (to hibernate or) migrate
    - b) to affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place
- Keeping, transporting, selling, exchanging or offering for sale whether live or dead or of any part thereof.

In England and Wales, otters are also protected under the Wildlife and Countryside Act 1981 (as amended) through their inclusion on Schedule 5 in respect to sub-sections 9 (4) (b) and (c) and 9 (5). Under this Act, they are additionally protected from:

- Intentional or reckless disturbance while in their place of shelter (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale.

How is the legislation pertaining to otters liable to affect development works?

A European Protected Species Mitigation (EPSM) Licence issued by the relevant countryside agency (e.g. Natural England, Natural Resources Wales and Scottish Natural Heritage) will be required for works liable to affect otter breeding or resting places (often referred to as holts, couches or dens) or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, and rear young). The licence is to derogate from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficacy to be monitored.

Invasive Plant Species

Certain species of plant, including Japanese knotweed *Fallopia japonica*, giant hogweed *Heracleum mantegazzianum* and Himalayan balsam *Impatiens glandulifera* are listed on Part II of Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) in respect to Section 14(2). Such species are generally non-natives whose establishment or spread in the wild may be detrimental to native wildlife. Inclusion on Part II of Schedule 9 therefore makes it an offence to plant or otherwise cause these species to grow in the wild.

How is the legislation pertaining to invasive plants liable to affect development works?

Although it is not an offence to have these plants on your land per se, it is an offence to cause these species to grow in the wild. Therefore, if they are present on site and development activities (for example movement of spoil, disposal of cut waste or vehicular movements) have the potential to cause the further spread of these species to new areas, it will be necessary to ensure appropriate measures are in place to prevent this happening prior to the commencement of works.

Water Vole

In England and Wales, the water vole *Arvicola amphibius* (=*terrestris*) is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- Intentionally kill, injure or take (capture) water voles
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection
- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection
- Sell, offer or expose for sale, or have in his possession or transport for the purpose of sale, any live or dead water vole or part thereof .

In Scotland, the water vole is only afforded partial protection under the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to:

- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection
- Intentionally or recklessly disturb water voles while they are occupying a structure or place used for shelter or protection

How is the legislation pertaining to water voles liable to affect development works?

In England and Wales, wherever development works are liable to affect habitats known to support water voles, the relevant countryside agency must be consulted. It must be shown that means by which the proposal can be re-designed to avoid contravening the legislation have been fully explored e.g. the use of alternative sites, appropriate timing of works to avoid times of the year in which water voles are most vulnerable, and measures to ensure minimal habitat loss. Conservation licences for the capture and translocation of water voles *may* be issued by the relevant countryside agency (e.g. Natural England or Natural Resources Wales) for the purpose of development activities if it can be shown that the activity has been properly planned and executed and thereby contributes to the conservation of the population. The licence will then only be granted to a suitably experienced person if it can be shown that adequate surveys have been undertaken to inform appropriate mitigation measures. Identification and preparation of a suitable receptor site will be necessary prior to the commencement of works.

In Scotland, the Wildlife and Natural Environment (Scotland) Act 2011 (WANE Act) has added a licensing purpose to the Wildlife and Countryside Act 1981 (as amended) at section 16(3)(i)) for social, economic or environmental purposes[8]. SNH can only grant a licence under these purposes if they are satisfied; (a) that undertaking the conduct authorised by the licence will give rise to, or contribute towards the achievement of, a significant social, economic or environmental benefit; and (b) that there is no other satisfactory solution.

Wild Mammals (Protection) Act 1996

All wild mammals are protected against intentional acts of cruelty under the above legislation. This makes it an offence to:

- Mutilate, kick, beat, nail or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.

To avoid possible contravention, due care and attention should be taken when carrying out works (for example operations near burrows or nests) with the potential to affect any wild mammal in this way, regardless of whether they are legally protected through other conservation legislation or not.

Hedgerows Regulations 1997

The Hedgerows Regulations 1997 are intended to protect 'important' countryside hedgerows from destruction or damage. A hedgerow is considered important if it: (a) has existed for 30 years or more; and (b) satisfies at least one of the criteria listed in Part II of Schedule 1 of the Regulations.

Under the Regulations, it is against the law to remove or destroy certain hedgerows without permission from the local planning authority. Hedgerows on or adjacent to common land, village greens, SSSIs (including all terrestrial SACs, NNRs and SPAs), LNRs, land used for agriculture or forestry and land used for the keeping or breeding of horses, ponies or donkeys are covered by these regulations. Hedgerows *'within or marking the boundary of the curtilage of a dwelling-house'* are not.

B NATIONAL AND EUROPEAN LEGISLATION AFFORDED TO HABITATS

Statutory Designations: National

Nationally important areas of special scientific interest, by reason of their flora, fauna, or geological or physiographical features, are notified by the countryside agencies as statutory **Sites of Special Scientific Interest** (SSSIs) under the National Sites and Access to the Countryside Act 1949 and latterly the Wildlife & Countryside Act 1981 (as amended). As well as underpinning other national designations (such as **National Nature Reserves** which are declared by the countryside agencies under the same legislation), the system also provides statutory protection for terrestrial and coastal sites which are important within a European context (Natura 2000 network) and globally (such as Wetlands of International Importance). See subsequent sections for details of these designations. Improved provisions for the protection and management of SSSIs have been introduced by the Countryside and Rights of Way Act 2000 (in England and Wales).

The Wildlife & Countryside Act 1981 (as amended) also provides for the making of **Limestone Pavement Orders**, which prohibit the disturbance and removal of limestone from such designated areas, and the designation of **Marine Nature Reserves**, for which byelaws must be made to protect them.

Statutory Designations: International

Special Protection Areas (SPAs), together with **Special Areas of Conservation** (SACs) form the **Natura 2000** network. The Government is obliged to identify and classify SPAs under the EC Birds Directive (Council Directive 2009/147/EC (formerly 79/409/EEC)) on the Conservation of Wild Birds). SPAs are areas of the most important habitat for rare (listed on Annex I of the Directive) and migratory birds within the European Union. Protection afforded SPAs in terrestrial areas and territorial marine waters out to 12 nautical miles (nm) is given by The Conservation of Habitats & Species Regulations 2010 (as amended). The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SPAs in UK offshore waters (from 12-200 nm).

The Government is obliged to identify and designate SACs under the EC Habitats Directive (Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Flora). These are areas which have been identified as best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive within the European Union. SACs in terrestrial areas and territorial marine waters out to 12 nm are protected under The Conservation of Habitats & Species Regulations 2010 (as amended). The Offshore Marine Conservation (Natural Habitats, &c.) Regulations 2007 (as amended) provide a mechanism for the designation and protection of SACs in UK offshore waters (from 12-200 nm).

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention covers all aspects of wetland conservation and wise use, in particular recognizing wetlands as ecosystems that are globally important for biodiversity conservation. Wetlands can include areas of marsh, fen, peatland or water and may be natural or artificial, permanent or temporary. Wetlands may also incorporate riparian and coastal zones adjacent to the wetlands. Ramsar sites are underpinned through prior notification as Sites of Special Scientific Interest (SSSIs) and as such receive statutory protection under the Wildlife & Countryside Act 1981 (as amended) with further protection provided by the Countryside and Rights of Way (CRoW) Act 2000. Policy statements have been issued by the Government in England and Wales highlighting the special status of Ramsar sites. This effectively extends the level of protection to that afforded to sites which have been designated under the EC Birds and Habitats Directives as part of the Natura 2000 network (e.g. SACs & SPAs).

Statutory Designations: Local

Under the National Sites and Access to the Countryside Act 1949 Local Nature Reserves (LNRs) may be declared by local authorities after consultation with the relevant countryside agency. LNRs are declared for sites holding special wildlife or geological interest at a local level and are managed for nature conservation, and provide opportunities for research and education and enjoyment of nature.

Non-Statutory Designations

Areas considered to be of local conservation interest may be designated by local authorities as a Wildlife Site, under a variety of names such as County Wildlife Sites (CWS), Listed Wildlife Sites (LWS), Local Nature Conservation Sites (LNCS), Sites of Biological Importance (SBIs), Sites of Importance for Nature Conservation (SINCs), or Sites of Nature Conservation Importance (SNCIs). The criteria for designation may vary between counties.

Together with the statutory designations, these are defined in local and structure plans under the Town and Country Planning system and are a material consideration when planning applications are being determined. The level of protection afforded to these sites through local planning policies and development frameworks may vary between counties.

Regionally Important Geological and Geomorphological Sites (RIGS) are the most important places for geology and geomorphology outside land holding statutory designations such as SSSIs. Locally-developed criteria are used to select these sites, according to their value for education, scientific study, historical significance or aesthetic qualities. As with local Wildlife Sites, RIGS are a material consideration when planning applications are being determined.

C NATIONAL PLANNING POLICY

The National Planning Policy Framework (NPPF)

The National Planning Policy Framework (NPPF) replaced Planning Policy Statement (PPS9) in April 2012 as the key national planning policy concerning nature conservation. The NPPF emphasises the need for suitable development. The Framework specifies the need for protection of designated sites and priority habitats and priority species. An emphasis is also made for the need for ecological networks via preservation, restoration and re-creation. The protection and recovery of priority species – that is those listed as UK Biodiversity Action Plan priority species – is also listed as a requirement of planning policy. In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring

that: designated sites are protected from adverse harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; opportunities to incorporate biodiversity in and around developments are encouraged; planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and The Biodiversity Duty

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 40 of the Act requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act (Section 42 in Wales) requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity.' They are referred to in this report as Species of Principal Importance and Habitats or Principal Importance. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

D LOCAL PLANNING POLICY

The Fenland Local Plan (2014) deals with matters of strategic importance for Fenland. Key chapters include Chapter 6 – Environmental Quality. The key environmental policies are summarised below.

Policy LP19 – The Natural Environment

The Council, working in partnership with all relevant stakeholders, will conserve, enhance and promote the biodiversity and geological interest of the natural environment throughout Fenland.

Through the processes of development delivery (including the use of planning obligations), grant aid (where available), management agreements and positive initiatives, the Council will:

- Protect and enhance sites which have been designated for their international, national or local importance to an extent that is commensurate with their status, in accordance with national policy in the National Planning Policy Framework.

- Refuse permission for development that would cause demonstrable harm to a protected habitat or species, unless the need for and public benefits of the development clearly outweigh the harm and mitigation and/or compensation measures can be secured to offset the harm and achieve, where possible, a net gain for biodiversity.
- Promoted the preservation, restoration and re-creation of priority habitats, and the preservation and increase of priority species identified for Fenland in the Cambridgeshire and Peterborough Biodiversity Action Plans.
- Ensure opportunities are taken to incorporate beneficial features for biodiversity in new developments, including, where possible, the creation of new habitats that will contribute to a viable ecological network extending beyond the District into the rest of Cambridgeshire and Peterborough, and other adjoining areas.

F REGIONAL AND LOCAL BAPS

Many local authorities in the UK have also produced a local Biodiversity Action Plan (LBAP) at the County or District level. Both the Norfolk, Cambridgeshire and Peterborough Biodiversity Action Plans are based on the UK list of Species and Habitats of Principal Importance.

The Ecology Consultancy is part of the Temple Group.

Making places better for people and wildlife

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