

Preliminary Ecological Appraisal

Highfield House, Little Chesterford

Site	Highfield House, Little Chesterford			
Project number	116821			
Client name / Address	Eclipse Planning Services Ltd, 12 Church Green, Ramsey, Cambridgeshire, PE26 1DW			

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2.0	10 January 2022	Amendments to Section 4 and Section 5
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Declaration of compliance

This Preliminary Ecological Appraisal has been undertaken in accordance with British Standard 42020:2013 "Biodiversity, Code of practice for planning and development". The information which we have provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.



MKA Ecology Ltd is a CIEEM Registered Practice. This means that MKA Ecology Ltd are formally recognised for high professional standards, working at the forefront of our profession.

Validity of data

Unless stated otherwise the information provided within this report is valid for a maximum period of 24 months from the date of survey. If works at the site have not progressed by this time an updated site visit may be required in order to determine any changes in site composition and ecological constraints.



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1. EXECUTIVE SUMMARY

In July 2021 MKA Ecology Limited was commissioned to undertake a Preliminary Ecological Appraisal of Highfield House, Little Chesterford. The appraisal included a habitat survey, protected species scoping survey and desktop study of protected and notable sites and species in the area. A site visit was undertaken on 26 August 2021.

The Site comprises a residential property (Highfield House), driveway and rear garden habitats including modified grassland, ruderal/ephemeral habitats, bare ground, scattered trees and species-rich hedgerows. The proposed development involves the construction of two residential dwellings with gardens in what is currently the rear garden of Highfield House. A new access road will also be created.

The following ecological constraints were identified at the Site with recommendations made as follows;

- Off-site habitats: The River Cam runs approximately 80m north, which classifies as a Section 41
 Habitats of Principal Importance (NERC Act, 2004) and is a County Wildlife Site. The ditch adjacent
 to the Site provides valuable habitat connectivity to the River Cam. Both the River Cam and the ditch
 must be protected from impacts during construction and post-development.
- On-site habitats: The hedgerows on site classify as Section 41 Habitats of Principal Importance (NERC Act, 2004). Hedgerows and mature trees should be retained wherever possible. Where hedgerows and/or trees are lost, these will be replaced with new native hedgerow and/or tree planting.
- **Plants:** The invasive non-native species, buddleia *Buddleja davidii* is present on site. This should be removed and appropriately disposed of.
- **Reptiles:** A large pile of grass cuttings offers suitable habitat for breeding grass snake. The grass cuttings should be retained in-situ or, if removed, a hand search must be conducted by a suitably qualified ecologist to check for reptiles and/or eggs prior to removal.
- **Birds:** The hedgerows and scattered trees offer breeding habitat for birds. Schedule vegetation clearance between September and February inclusive to avoid the bird breeding season.
- Bats: No further survey work is required prior to tree felling; however, Tree 4 has low roosting
 potential and should be felled outside of the bat hibernation season under the supervision of an
 ecologist. Soft felling works are also recommended for Tree 4. If the buildings will be impacted then
 a Preliminary Roost Assessment is also required.
- **Hedgehog:** The modified grassland is suitable for hedgehogs. Hedgehog highways should be installed in fences (excluding those adjacent to roads) to maintain habitat connectivity.

The development presents an opportunity to incorporate biodiversity enhancements into the design scheme. Simple biodiversity features, such as including native planting, bird and bat boxes, deadwood features and hedgehog highways should be included. The recommendations made in this report are in line with local and national planning policy and will help achieve a sustainable development.



2. INTRODUCTION

2.1. Aims and scope of Preliminary Ecological Appraisal

In July 2021 MKA Ecology Limited was commissioned to undertake a Preliminary Ecological Appraisal at Highfield House, Little Chesterford by Eclipse Planning Services Ltd in order to support a planning application for the construction of two residential dwellings at the Site.

The aims of the Preliminary Ecological Appraisal were to:

- Undertake a desktop study to identify the extent of protected and notable species and habitats within close proximity of the Site;
- Prepare a habitat map for the Site;
- Identify evidence of protected species/species of conservation concern at the Site;
- Assess the potential impacts of the proposed development, using existing plans;
- Detail recommendations for further survey effort where required; and
- Detail recommendations for biodiversity enhancements.

2.2. Site description and context

The survey area is shown on the map in Figure 1. Within this report this area is referred to as the Site or Highfield House, Little Chesterford. The Site (central OS grid reference TL 51091 42139) is located on London Road, 0.7km southeast of the town of Great Chesterford. The Site is under the jurisdiction of Uttlesford District Council and currently comprises a residential property (Highfield House), outbuilding, a gravel driveway and rear garden habitats.

The Site is bordered by hedgerows and is immediately surrounded by arable fields. There is a ditch present along the northwest Site boundary and the River Cam runs approximately 80m north of the Site. The village of Little Chesterford is approximately 0.7km southeast of the Site.

2.3. Proposed development

The proposed development involves the construction of two residential dwellings with associated gardens and landscaping in what is currently the rear garden of Highfield House. A new access road will also be created, adjoining London Road to the southwest. The existing Highfield House and outbuilding are not expected to be impacted by the proposed development.



2.4. Legislation and planning policy

This Preliminary Ecological Appraisal has been undertaken with reference to relevant wildlife legislation and planning policy. Relevant legislation considered within the scope of this document includes the following:

- The Wildlife and Countryside Act 1981 (as amended);
- The Conservation of Habitats and Species Regulations 2017 (as amended);
- Natural Environment and Rural Communities (NERC) Act 2006;
- The Countryside and Rights of Way (CRoW) Act 2000;
- Protection of Badgers Act 1992; and
- Wild Mammals (Protection) Act 1996.

Further information is provided in Appendix 1, including levels of protection granted to the species considered in Section 3.3. In addition to obligations under wildlife legislation, the revised National Planning Policy Framework (NPPF) updated on 20 July 2021 requires planning decisions to contribute to conserving and enhancing the local environment. Further details are provided in Appendix 1.

Uttlesford District Council is in the process of producing a new draft Local Plan, however the 2005 Local Plan is currently adopted. The adopted Local Plan (2005) covers a number of policies relating to biodiversity and habitat conservation, including:

- Policy GEN7 Nature Conservation: Where the site includes protected species or habitats suitable for protected species, a nature conservation survey will be required. Measures to mitigate and/or compensate for the potential impacts of development, secured by planning obligation or condition, will be required. The enhancement of biodiversity through the creation of appropriate new habitats will be sought.
- Policy ENV3 Open Spaces and Trees: The loss of traditional open spaces, other visually important spaces, groups of trees and fine individual tree specimens through development proposals will not be permitted unless the need for the development outweighs their amenity value.
- Policy ENV8 Other landscape elements of importance for nature conservation: Development that may adversely affect landscape elements including hedgerows, semi-natural grassland, green lanes and special verges, and river corridors, will only be permitted if the need for development outweighs the need to retain the elements for their importance to wildlife; mitigation measures are provided that would compensate the harm and reinstate the nature conservation value of the locality.

Where relevant these are discussed in further detail in Section 5.



3. METHODOLOGIES

This Preliminary Ecological Appraisal has been undertaken in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal, 2nd edition (CIEEM, 2017).

3.1. Desktop study

A data search was conducted for the Site and the surrounding area within 2km. Data was retrieved from the sources listed in Table 1.

Table 1:	Sources	of data f	or desktop	studv
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Organisation	Data collected	Date collected
Multi-agency Geographic Information	Information on local, national and	10/09/2021
for the Countryside (MAGIC)	international statutory protected areas.	
www.magic.gov.uk		
Essex Wildlife Trust Biological	Information on protected and notable	10/09/2021
Records Centre	sites and species within 2km of the Site	
	(TL 51057 42105).	
Ordnance Survey maps and aerial	Information on habitats and connectivity	10/09/2021
photography	between the Site and the surrounding	
	landscape	
Plantlife Important Plant Areas	Information on hotspots of diversity for	10/09/2021
Buglife Important Invertebrate Areas	plants and invertebrates and	
	populations of internationally threatened	
	plant and invertebrate species.	

Uttlesford District Council planning portal was also referred to in order to understand the scope of further development surrounding the Site.

3.2. UK Habitat Classification

Habitats were surveyed using the standardised UK Habitat classification and mapping methodology (UK Habs) (Butcher *et al*, 2020). Data were recorded onto field maps and then transferred onto a Geographic Information System (GIS). Dominant plant species were observed and recorded within each habitat type. The plant species nomenclature follows that of Stace (2019).

The DAFOR scale is used to describe the relative abundance of species. The scale is shown in Table 2. It is important to note that where a species is described as rare this description refers to its relative



abundance within the Site and is not a description of its abundance within the wider landscape. Therefore, a species with a rare relative abundance within the Site may be common within the wider landscape.

Table 2: DAFOR scale

DAFOR code	Relative abundance		
D	Dominant		
A	Abundant		
F	Frequent		
0	Occasional		
R	Rare		

3.3. Protected and notable species scoping survey

As part of the Preliminary Ecological Appraisal, an assessment of the potential for the habitats on site to support protected or notable species was made. This assessment was based on the quality, extent and interconnectivity of suitable habitats, along with the results of the desktop study detailed in Section 3.1. The potential to support rare or notable species is also considered. This includes Species of Principal Importance as listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006), and Red and Amber listed Birds of Conservation Concern (BoCC) as per Eaton *et al.*, 2015 (see Appendix 1).

Protected and notable species considered within the protected species scoping survey for Highfield House, Little Chesterford include the following:

- Plants and fungi: Hoary plantain *Plantago media*, field scabious *Knautia arvensis*, wild clary *Salvia verbenaca* and squinancywort *Asperula cynanchica*.
- Invertebrates: Small heath Coenonympha pamphilus and four-spotted moth Tyta luctuosa.
- Fish: European eel Anguilla anguilla, river lamprey Lampetra fluviatilis and brown trout Salmo trutta subsp. fario.
- Amphibians: Natterjack toad *Epidalea calamita*, great crested newt *Triturus cristatus* and common toad *Bufo bufo*.
- Reptiles: Adder *Vipera berus*, common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis* and grass snake *Natrix natrix helvetica*.
- Birds: With special reference to species listed under Schedule 1 of The Wildlife and Countryside Act 1981 (as amended) and Species of Principal Importance.



• Mammals: Badger *Meles meles*, bats (all species), water vole *Arvicola amphibius*, otter *Lutra lutra*, hazel dormouse *Muscardinus avellanarius*, hedgehog *Erinaceus europaeus*, brown hare *Lepus europaeus*, harvest mouse *Micromys minutus* and polecat *Mustela putorius*.

In each case the likelihood of presence of these protected species at the Site was classified as being either confirmed, high, moderate, low or negligible.

Confirmed: The species is confirmed on the site during the Preliminary Ecological Appraisal, previous survey effort or recent records.

High: Habitats are available onsite which are highly suitable for this species and there are records within the desktop study. The surrounding areas also provide widespread opportunities for the species which are well connected to the Site.

Moderate: Some suitable habitat available on site for the species although not of optimum quality. Species is present with the desktop study.

Low: Some suitable habitat available on site for the species but this is low value and possibly of small scale or with poor connectivity. No, or very few, records returned in the desktop study.

Negligible: No suitable habitat available for the species, or very little poor-quality habitat.

This protected species scoping survey is designed to assess the *potential* for presence or absence of a particular species or species group, and does not constitute a full survey for these species.

3.4. Surveyor, author and reviewer

The survey was undertaken, and report written, by Libby Pool, Qualifying CIEEM member and Graduate Ecologist at MKA Ecology Limited. Libby has one year's experience conducting Preliminary Ecological Appraisals. The report was reviewed by Gabrielle Wilbur ACIEEM, Senior Ecologist at MKA Ecology Ltd. Gabrielle has 6 years' experience as an ecologist.

3.5. Date, time and weather conditions

See Table 3 below for details of the date, time and prevailing weather conditions recorded during the site visit for the Preliminary Ecological Appraisal.



Date	Time of survey	Weather conditions*
		Wind: 5 SW
26/08/2021	15:30	Cloud: 7/8
		Temp: 16°C
		Rain: None

Table 3: Date.	time and	l weather	conditions	of survey visit
			••••••	••••••

*Wind as per Beaufort Scale / Cloud cover given in Oktas.

3.6. Constraints

A single visit cannot always ascertain the presence or absence of a protected species. However, an assessment is made of the likelihood for protected species to occur based on habitat characteristics and the ecology of each species. Where there is potential for protected species, additional survey work may be required to ascertain their presence or absence.

Data on species records obtained from local biological records centres are sometimes only available at low spatial resolutions and are constrained by the voluntary nature of the contributions and what has been chosen to be submitted as records. While these records provide a useful indication of species recorded in the local area, in particular protected or notable species, the data is not necessarily an accurate reflection of species assemblages or abundance in the vicinity.

The Site plans were updated after the Preliminary Ecological Appraisal was conducted and three additional trees (Tree 4, Tree 5 and T18) were targeted for removal. These trees were not assessed for potential roosting features for bats during the survey. Photographs of these trees were sent to MKA Ecology Ltd on 15 December 2021 to assess the trees' potential to support roosting bats. These photographs were taken in the winter, meaning any potential features for roosting bats on the trunk and branches could be adequately assessed and ruled out.



4. RESULTS

4.1. Desktop study

An ecological desktop study was completed for the Site and the surrounding 2km. Data provided by Essex Wildlife Trust Biological Records Centre identified some UK and European protected species, Species and Habitats of Principal Importance (as listed under Section 41 of the NERC Act 2006), and species of conservation concern within 2km of the Site. It should be noted that this is not a comprehensive list of the distribution or extent of the local flora and fauna of conservation importance. These species records are discussed in greater detail in the protected species scoping survey section (Section 4.3 below).

There are no statutorily designated sites within a 2km radius of the Site.

Details of non-statutorily designated sites identified as part of the desktop study are displayed in Table 4 below. These consist of four Local Wildlife Sites (LWS) and two County Wildlife Sites (CWS).

Site name	Area (ha)	Distance and	Reasons for selection		
		direction			
Emanuel Wood	9.1 ha	2.1km E	 Native canopy composition of 		
(LWS)			pedunculate oak Quercus robur, ash		
			Fraxinus excelsior, field maple Acer		
			campestre and some hazel Corylus		
			avellana coppice.		
			 Varied ground flora with ancient 		
			woodland indicators including bluebell		
			Hyacinthoides non-scripta, early purple		
			orchid Orchis mascula, yellow		
			archangel Lamiastrum galeobdolon and		
			primrose <i>Primula vulgaris</i> .		
			Small grassy glade with chalk grassland		
			flora, including many species scarce in		
			Essex such as quaking grass Briza		
			media, fairy flax Linum catharticum and		
			wild thyme Thymus polytrichus.		
Strethall Field	0.2 ha	1.8km W	Section of road verge designated in		
Special Roadside			recognition of its flora, which includes		
Verge (LWS)			lesser meadow-rue Thalictrum minus.		

Table 4: Non-statutorily designated sites within 2km of Highfield House, Little Chesterford



Highfield House, Little Chesterford – Preliminary Ecological Appraisal January 2022

Site name	Area (ha)	Distance and	Reasons for selection		
		direction			
Great	0.3 ha	1.0km N	The northernmost section of Essex		
Chesterford			County Council Protected Road Verge		
Road Verge			(PRV).		
(LWS)			Chalk grassland flora including greater		
			knapweed Centaurea scabiosa, wild		
			basil <i>Clinopodium vulgare</i> , field		
			scabious <i>Knautia arvensis</i> , bladder		
			campion Silene vulgaris and hoary		
			plantain.		
Little Chesterford	0.7 ha	1.1km SE	Three sections of road verge		
Verges (LWS)			comprising part of an Essex County		
			Council Protected Roadside Verge		
			(PRV).		
			Support important chalk grassland flora,		
			including wild liquorice Astragalus		
			glycyphyllos, small scabious Scabiosa		
			columbaria, greater knapweed and wild		
			basil.		
Coploe Hill Pit	0.2 ha	1.8km NW	Supports a population of a Nationally		
(CWS)			Scarce vascular plants including		
			eyebright <i>Euphrasia pseudokerneri</i> .		
River Cam	N/A	80m N	Major river with adjacent semi-natural		
(CWS)			habitat that has not been grossly		
			modified by canalisation and/or poor		
			water quality.		
			• Areas with concentrations of mature		
			pollard willows.		

The Site is immediately surrounded by arable fields with intersecting hedgerows and pockets of woodland. The River Cam runs approximately 80m north of the Site and provides an important corridor for wildlife to move through the landscape.

The Site lies within the Natural England Impact Risk Zone (IRZ) for at least one SSSI (Natural England, 2019): Hildersham Wood SSSI, which is approximately 4.1km northeast of the Site. Developments relating to aviation proposals or livestock and poultry units in this IRZ will require consultation with Natural England. The Site is proposed for a small-scale residential development and therefore consultation with Natural England will not be required.



There are no Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or RAMSAR sites within a 5km radius of the Site. The Site does not fall within any Plantlife Important Plant Areas (IPAs) or Buglife Important Invertebrate Areas (IIAs).

There are no veteran trees within a 2km radius of the Site.

An outline planning application (reference UTT/20/2724/OP) has been submitted immediately west of the Site for the construction of up to 124 dwellings. This application is awaiting decision and is referred to as Land east of London Road, Great Chesterford.

An outline planning application (reference UTT/21/3048/DOC) has also been granted approximately 180m southwest of the Site for the construction of up to 76 dwellings, with vehicular and pedestrian access and public open space. This Site is referred to as Land to the South West of London Road, Little Chesterford.

4.2. UK Habitat Classification

The Site was found to comprise modified grassland with areas of ruderal/ephemeral habitat, bare ground, some scattered trees and two buildings. The Site is bordered by species-rich hedgerows and there is a ditch running along the northeast Site boundary. More detailed species lists, along with their relative abundance, can be found in Appendix 2. The UK habitat classification survey map is provided in Figure 1 at the end of this section. Descriptions of the habitat types present along with dominant species compositions are provided below.

Building (u1b5)

There are two buildings on site: a residential dwelling (Highfield House) and a small outbuilding (Photograph 1).

Modified grassland (g4) – Frequently mown (66)

The majority of the Site comprises frequently mown modified grassland, currently used as a garden lawn (Photograph 1). The modified grassland was dominated by perennial ryegrass *Lolium perenne*, with frequent couch grass *Elymus repens* and common mouse ear *Cerastium fontanum*. Species including yarrow *Achillea millefolium* and smooth hawksbeard *Crepis capillaris* were abundant, common nettle *Urtica dioica* and creeping thistle *Cirsium arvense* were occasional and spear thistle *Cirsium vulgare* and common mallow *Malva sylvestris* were rare.



Other developed land (u1b6)

There is decking present along the northeast aspect of the residential building (Highfield House), which is used as garden habitat by the residents (Photograph 2). There is also a small paved area with a jacuzzi at the northwest boundary and there is a swimming pool present within the modified grassland (Photograph 3).

Other developed land (u1b6) – Flower bed (1150)

There are raised flower beds present around the perimeter of the paved area to the northwest of the Site, which contained ornamental garden species (Photograph 4).

Artificial unvegetated, unsealed surface (u1c)

There is a gravel driveway to the southeast of the residential dwelling (Highfield House) with piles of building materials and rubble present (Photograph 5).

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Modified grassland (g4) – Ruderal/ ephemeral (17)
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There are patches of ruderal/ephemeral habitat around the perimeter of the modified grassland (Photograph 6-7). No one species was dominant, however common nettle, and prickly sow thistle *Sonchus asper* were abundant, cocksfoot *Dactylis glomerata* and common mallow were occasional and herb-robert *Geranium robertianum* was rare.

Modified grassland (g4) – Bare ground (73)

There were some patches of bare ground throughout the modified grassland, where the grass had died back (Photograph 8).

Modified grassland (g4) – Scattered trees (11)

Scattered trees are present within the modified grassland on site (Photograph 9), including wild cherry *Prunus avium*, wild privet *Ligustrum vulgare*, hazel and Norway maple *Acer platanoides*. These trees were all relatively mature.

Hedgerow – Priority habitat (h2a)

Species-rich hedgerows are present along the southeast and northeast Site boundaries (Photograph 10). Species present include bramble *Rubus fruticosus* and common nettle, which were abundant, common ivy *Hedera helix*, which was frequent, wild privet and hawthorn *Crataegus monogyna*, which



were occasional and lilac *Syringa vulgaris* which was rare. The hedgerows also contained mature standing trees, including oak sp. *Quercus sp.*, sycamore, willow sp. *Salix sp.* and horse chestnut *Aesculus hippocastanum*.

Standing open water and canals (r1)

There is a ditch present along the northeast Site boundary (Photograph 11-12). This ditch was dry at the time of survey but contained vegetation dominated by species typical of wetland habitats. Common nettle was dominant, with reeds *Phragmites australis* and reed canary-grass *Phalaris arundinacea* also present.



Highfield House, Little Chesterford – Preliminary Ecological Appraisal January 2022



Figure 1: UK Habitat Classification map of Highfield House, Little Chesterford



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4.3. Protected species scoping survey

Plants and fungi

The data search returned records of two Section 41 Species of Principal Importance (NERC Act, 2006): Deptford pink *Dianthus armeria* and eyebright. Cambridgeshire and Peterborough Additional Species of Interest were also returned including squinancywort, quaking-grass and common valerian *Valeriana officinalis*. Species listed as near threatened on the IUCN Red List for England, including hoary plantain, field scabious and wild clary were returned, as well as species listed as Vulnerable of the IUCN Red List for Great Britain such as cat mint *Nepeta cataria* and fine-leaved fumitory *Fumaria parviflora*.

The Site largely comprised modified grassland which was mown short at the time of the survey. The modified grassland is used as a garden and is therefore likely to be mown frequently. The modified grassland and small patches of scrub present on site do not provide suitable habitat for rare and/or notable plant species and the species recorded during the survey were all common in the wider landscape. The Site is therefore considered to have **negligible** potential to support rare and/or notable plant species.

The data search returned records of Japanese knotweed *Fallopia japonica*, which is listed on Schedule 9 of the Wildlife and Countryside Act (1981). It is illegal to allow this species to spread into the wider landscape. No Japanese knotweed was identified on site during the survey. Buddleia *Buddleja davidii* was also returned in the data search, and a buddleia bush was identified on site (TN1, Figure 1; Photograph 13). Although not listed on Schedule 9, buddleia is a non-native and highly invasive species.

Invertebrates

The data search returned of two Section 41 Species of Principal Importance (NERC Act, 2006): small heath and four-spotted moth, however no records of invertebrates specially protected under Schedule 5 of the Wildlife and Countryside Act (1981) were returned. The modified grassland and scrub habitats on site were not botanically diverse and are unlikely to support rare and/or notable invertebrates. The modified grassland was mown short and is unlikely to support a range of flowering species to provide foraging resources for invertebrates. The likelihood of the Site supporting species group is not considered further in this report.

Fish

No records of protected and/or notable fish species were returned in the data search. The River Cam is likely to support fish species, including brown trout, however the closest point of the river to the Site is 80m north. Therefore, impacts on notable fish species as a result of the development are unlikely.



There are no suitable waterbodies for fish present on site. The ditch immediately adjacent to the Site was dry at the time of the survey and therefore does not provide suitable habitat for fish. The Site is considered to have **negligible** potential to support protected and/or notable fish species and this species group is not considered further in this report.

Amphibians

No records of amphibians, including great crested newt, were returned in the data search and no European Protected Species Licences have been granted for great crested newt within a 2km radius of the Site (DEFRA, 2021). The River Cam to the north, and the M11 motorway and railway to the south, will act as significant barriers to the dispersal of great crested newt through the local landscape. There are no ponds within 500m of the Site that fall within these barriers, meaning the only waterbody that could potentially support great crested newt is the ditch along the northeast Site boundary. This ditch was dry at the time of the survey; however, it is possible that it holds water during the great crested newt breeding season (March to June).

MKA Ecology Ltd surveyed the ditch in March 2021 while completing ecological works for another Site in the area (MKA Ecology Ltd, 2021a). The ditch was found to contain only a small amount of water and contained a large amount of vegetation. This makes it less suitable for breeding great crested newts as no open water was present.

Given the lack of records of great crested newt within a 2km radius of the Site, the lack of suitable ponds within 500m and the fact that the ditch was found to be unsuitable for breeding great crested newt earlier this year, the Site is considered to have **negligible** potential to support great crested newt and the species is not considered further in this report.

Reptiles

Records of common lizard were returned in the data search from Coploe Hill Pit CWS, approximately 1.8km northwest of the Site. The modified grassland on site does not provide suitable habitat for reptiles, nor does the arable landscape surrounding the Site. However, the ditch adjacent to the Site provides some suitable habitat for grass snake, which are also likely present in the River Cam and on the grassland banks to the north.

There is a large pile of grass cuttings on site (TN2, Figure 1; Photograph 14) which could support breeding grass snake. The ditch and hedgerows provide some habitat connectivity between this pile of grass cuttings and suitable habitats to the north including the River Cam. Therefore, there is a **low** chance of reptiles, namely grass snake, being present on site.



Birds

Five species were recorded during the site visit. These species are shown in Table 5 together with their conservation status. It is important to note that this is not a full inventory of species for the Site.

Common name	Systematic name	S1 W&CA ¹	BoCC ² Status	S41 SPI ³	Local PrSp ⁴
Woodpigeon	Columba palumbus	-	Green	-	-
Carrion crow	Corvus corone	-	Green	-	-
Blue tit	Cyanistes caeruleus	-	Green	-	-
Blackbird	Turdus merula	-	Green	-	-
House sparrow	Passer domesticus	-	Red	Yes	-

Table 5: Bird species recorded during site visit at Highfield House, Little Chesterford

¹ Schedule 1 of The Wildlife and Countryside Act 1981 (see Appendix 1)

² Birds of Conservation Concern (see Appendix 1)

³ Section 41 (NERC Act 2006) 'Species of Principal Importance' (see Appendix 1)

⁴ Local Priority Species

The data search returned records of bird species protected under Schedule 1 of the Wildlife and Countryside Act (1981) including kingfisher *Alcedo atthis*, marsh harrier *Circus aeruginosus*, stone curlew *Burhinus oedicnemus*, hobby *Falco subbuteo*, redwing *Turdus iliacus* and fieldfare *Turdus pilaris*. Kingfisher is likely to be present along stretches of the River Cam north of the Site, however there is no suitable habitat for the species on the Site itself. There is also no suitable breeding habitat for birds of prey species on site, including marsh harrier or hobby. Stone curlew breed on bare ground within grass heathland and therefore are unlikely to be present on site. Small numbers of winter-visiting redwing and fieldfare may occasionally use the Site for nesting and foraging; however, these species are unlikely to occur in large numbers. Overall, the likelihood of the Site supporting specially protected bird species is **negligible**.

The data search returned records of arable bird species including skylark *Alauda arvensis*, corn bunting *Emberiza calandra* and yellowhammer *Emberiza citrinella*, which are all Section 41 Species of Principal Importance (NERC Act, 2006). These species are likely to be present in neighbouring arable fields and may occasionally pass over the Site. However, the Site is unlikely to support breeding populations of these species.

The hedgerows and scattered trees on site contain suitable habitat for breeding birds, particularly small passerines. The likelihood of breeding birds being present on site is therefore **high**, however the likelihood of the Site supporting significant population assemblages of breeding birds is **negligible**.



Bats

The data search returned records of three bat species within a 2km radius of the Site: brown long-eared bat *Plecotus auritus*, serotine *Eptesicus serotinus* and *Pipistrellus sp.* No European Protected Species Licences have been granted for bats within 2km of the Site.

Roosting bats

The buildings on site are not expected to be impacted by the proposed development. Therefore, the buildings were not assessed for their potential to support roosting bats during the survey.

There are several mature scattered trees on site, both within the modified grassland and the speciesrich hedgerows, which could contain potential roosting features for bats. Two trees were due to be felled as part of the original development plans: Tree 1 (wild cherry, Photograph 15) and Tree 3 (wild cherry, Photograph 17). Tree 2 (Norway maple, Photograph 16) is due to be pruned. Tree 1, 2 and 3 are referred to as T14, T15 and T19 respectively in the Arboricultural Impact Assessment (AIA) (Ligna Consultancy Ltd, 2021). These trees were checked for potential roosting features, such as knotholes, woodpecker holes, cracks and crevices. No features were identified on Trees 1 and 2. There was a cavity in Tree 3 (Photograph 18), however this faced upwards so is likely to fill with rain in adverse weather and will not be suitable for roosting bats. Therefore, the likelihood of roosting bats being present in Trees 1, 2 and 3 is **negligible**.

All other mature trees were expected to be retained at the time of the survey and were not thoroughly assessed for potential roosting features. Three additional trees are now expected to be removed including Tree 4, an English oak *Quercus robur* (T13 in the AIA), Tree 5 (T12 in the AIA) and a small tree (hereby referred to as Tree 18 as in the AIA) not mapped during the Preliminary Ecological Assessment and described as 'other' in the AIA.

Photographs of these additional trees were sent by the client to MKA Ecology Ltd on 15 December 2021 to review their potential to support roosting bats. Tree 5 is shown in Photograph 20, Tree 4 in Photograph 21-22 and T18 in Photograph 23. Based on these photographs, Tree 5 and T18 are deemed to have **negligible** risk of supporting roosting bats. Both of these trees are small and immature and are highly unlikely to contain features such as knotholes and crevices that could support roosting bats.

The photographs of Tree 4 (Photograph 21-22) show a knothole on the west aspect; however, the knothole faces upwards and so will likely fill with rainwater. This feature is therefore unlikely to be suitable for bats. The photos have been taken in winter, meaning the branches are not obscured by foliage; the branches are fairly small and are unlikely to support features of potential. Overall, Tree 4 is considered to have a **low** potential to support roosting bats.



There is a mature willow (Tree 9) in the hedgerow along the northwest boundary, which was covered in dense ivy and could therefore support small numbers of roosting bats (Photograph 19), however Tree 9 is expected to be retained.

Foraging/commuting bats

The hedgerows and scattered trees on site will support invertebrate species, in turn providing a foraging resource for bats. However, the modified grassland which dominates is unlikely to support a diverse invertebrate community. Therefore, the Site has **low** potential to support foraging bats. The ditch along the northeast boundary and the hedgerows on site provide strong linear features which bats may utilise for commuting. These linear features may form part of a network of hedgerows and watercourses in the wider landscape, providing important commuting routes for bats. Therefore, the Site has **moderate** potential of supporting commuting bats.

Badgers

The data search returned two records of badger with a 2km search radius, one found dead on the road on the M11 near lckleton and one with the location withheld. The modified grassland on site does not provide suitable habitat for badgers and no evidence of badger, such as tracks of prints, was found on site during the survey. There is also no suitable sett building habitat for the species on site. It is likely that badger are active in the wider landscape, however the likelihood of the species building setts on site is **negligible** and badger are not considered further in this report.

Water vole

The data search returned records of water vole from the River Cam and water vole are highly likely to be present in the stretch of the river 80m north of the Site. The ditch adjacent to the northeast Site boundary was dry at the time of the survey and no evidence of water vole was observed in the ditch.

MKA Ecology Ltd conducted a water vole survey along the ditch in March 2021 while completing ecological works in the area (MKA Ecology Ltd, 2021b). No evidence of water vole was found during this survey. Given that no evidence of water vole was present earlier this year, the likelihood of water vole being present is **negligible**.

Other mammals

The data search returned records of otter, hedgehog and brown hare from within a 2km radius of the Site. Several records of otter were returned from along the River Cam in both Great Chesterford and Little Chesterford and it is likely that the species is active in the stretch of the river to the north. However, the Site itself does not contain suitable aquatic habitat for otter and, as such, there is **negligible** chance



of the species being present. The garden habitats on site are suitable for hedgehog and this species has a **moderate** likelihood of being present. Brown hare are likely active in the arable fields surround the Site, but the likelihood of the species being present on site is **negligible**.



5. ECOLOGICAL CONSTRAINTS, OPPORTUNITIES AND RECOMMENDATIONS

This section outlines key ecological issues for consideration, recommendations for further work and ecological enhancements where appropriate.

Off-site habitats

The River Cam runs approximately 80m north of the Site. River bodies classify as Section 41 Habitats of Principal Importance under the NERC Act (2004) and the River Cam is also designated as a County Wildlife Site. Measures must be taken to ensure the River Cam is not adversely impacted by the proposed development. Pollution run-off from the Site into the river is a potential issue and measures must be taken to ensure pollutants do not enter the river course both during construction works and post-development. This can be achieved through appropriate storage of construction materials on site. An ecologically sensitive drainage and water management policy should also be designed for the development. This is in line with Policy ENV8 of the Local Plan (2005), which states that development should not adversely affect landscape elements including river corridors.

Recommendation 1

Protect the River Cam from adverse impacts, including pollution run-off, both during construction works and post-development.

The ditch adjacent to the Site should also be protected from adverse impacts both during construction works and post-development. Again, pollution run-off into the ditch must be avoided through appropriate storage of construction materials and the development of an ecologically sensitive drainage and water management policy. An appropriate buffer zone to the ditch (at least 5m and ideally 8m) should be established and maintained for the duration of construction works. This should be marked by Heras fencing.

Recommendation 2

Protect the ditch from adverse impacts, including pollution run-off. Establish and maintain a buffer zone of at least 5m (ideally 8m) from the development boundary, marked with Heras fencing.

On-site habitats

The species-rich hedgerows on site classify as Section 41 Habitats of Principal Importance under the NERC Act (2006). The hedgerows on site should be retained in the design scheme wherever possible. This is in line with Policy ENV8 of the Local Plan (2005), which states that development should not



adversely affect landscape elements including hedgerows. The hedgerow along the northeast Site boundary will be retained (referred to as G1 in the AIA), however the hedgerow along the southeast Site boundary (G2) will be removed to accommodate the new garage and access drive (Ligna Consultancy, 2021). The loss of this hedgerow will be mitigated for through new native hedgerow planting on the east and northeast Site boundaries and along the boundary between the new dwellings and the existing Highfield House. New hedgerow planting will total a greater length than the hedgerow lost to the development.

Recommendation 3

Retain the hedgerows on site wherever possible. Where hedgerows will be lost to the development, this will be mitigated for through new native hedgerow planting totalling a greater length than the hedgerow that will be removed.

The mature trees on site should be retained wherever possible in the design scheme. This is in line with Policy ENV7 of the Local Plan (2005), which states that the loss of individual tree specimens should be avoided.

Six trees will be removed as part of the proposed works, including Trees 1, 3, 4 and 5. T18, a small tree described as 'other' in the AIA will also be removed, and T17, a common lilac *Syringa vulgaris* shrub. All other trees are expected to be retained. Please see the AIA for full details (Ligna Consultancy, 2021).

The loss of six trees from the Site will be mitigated for through new native tree planting. The number of new trees planted should equal a greater number than those lost to the development.

Recommendation 4

Retain the mature trees on site wherever possible. Where trees will be lost to the development, this will be mitigated for through new native tree planting to equal a greater number than those lost.

Plants

The invasive, non-native species, buddleia, was identified on the Site. Even though this species is not listed on Schedule 9 of the Wildlife and Countryside Act (1981), it is recommended that this species is removed to prevent spread into the wild.

Recommendation 5

Remove the invasive, non-native buddliea from the Site.



Reptiles

All UK reptile species are protected under Schedule 5 of the Wildlife & Countryside Act (1981), and are listed as Species of Principal Importance under the NERC Act (2006). It is an offence to intentionally kill or injure individuals of these species (see Appendix 1 for more information).

The modified grassland on site is not suitable for reptiles, nor is the largely arable landscape surrounding the Site. As such, the chances of reptiles being present on site are low. However, there is a large pile of grass cuttings on site which could support breeding grass snake. The ditch adjacent to the Site provides suitable habitat for grass snake and provides habitat connectivity to the River Cam. It is recommended that the pile of grass cuttings is retained if possible. If the pile of grass cuttings is removed, a hand search for reptiles and/or eggs must be conducted by a suitably qualified ecologist prior to removal to ensure no reptiles are disturbed or harmed.

Recommendation 6

Retain the pile of grass cuttings on site where possible. If the grass cuttings are removed, a hand search for reptiles and/or eggs must be conducted by a suitably qualified ecologist prior to removal to ensure no reptiles are disturbed or harmed.

Birds

All wild birds, their active nests and eggs are protected under The Wildlife and Countryside Act 1981 (as amended), which makes it an offence deliberately, or recklessly, to kill or injure any wild bird or damage or destroy any active birds' nest or eggs.

The hedgerows and scattered trees on site provide suitable habitat for breeding birds, especially small passerine species.

Scheduling vegetation removal works between the months of September and February inclusive (i.e., outside of the bird season) would avoid impacts on breeding birds.

Where vegetation clearance works are required during the breeding bird season (between the months of March and August inclusive), such works can only proceed following the completion of a nesting bird check undertaken by an experienced ornithologist. Any active birds' nest identified during this check must be protected from harm until the nesting attempt is complete. This will require a buffer to be left around the nest, the size of which will depend upon the species involved (as a general rule, this will be 10m in all directions around the nest). Any buffers established as a result of the initial nesting bird check must be subjected to a second check after the original nesting attempt is completed, before such areas can be removed during the breeding bird season.



Recommendation 7

Schedule vegetation and building clearance works between the months of September and February inclusive to avoid impacts on breeding birds. Where this timing is not feasible works should be preceded by a nesting bird check.

It is strongly recommended that any potential nesting bird habitat is cleared outside the breeding bird season in order to avoid potentially lengthy delays if nests are found during nesting bird checks.

Bats

All bat species are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of Conservation of Habitats and Species 2017 (as amended) (see Appendix 1). Bats are also Species of Principal Importance listed on Section 41 of the NERC Act (2006).

It is an offence to deliberately disturb a bat, damage or destroy a bat roost, intentionally or recklessly disturb a bat at a roost, or obstruct access to a roost.

Trees 1, 2 and 3 are due to be removed/pruned as part of the proposed development. A ground-level assessment was conducted for these trees during the survey and no potential roosting features were identified. No further survey work is required for these trees.

The Site plans were updated after the survey and three additional trees (Tree 4, Tree 5 and T18) were targeted for removal. Photographs of these trees were sent to MKA Ecology Ltd on 15 December 2021 for review. Based on these photographs, and the surveyor's memory of these trees from the site visit, Tree 5 and T18 are considered to have negligible potential to support roosting bats and no further survey work or precautionary measures are required. Tree 4 is considered to have low potential to support roosting bats. In line with best practice guidelines (Collins, 2016), no further survey work is required and Tree 4 can be felled using precautionary measures.

As a precautionary measure, it is recommended that Tree 4 is felled outside of the bat hibernation period (November to February inclusive) to avoid impacts on any hibernating bats in the unlikely event that they are present. Soft felling techniques should be employed for Tree 4, where the tree is carefully cut down in sections and each section is slowly lowered to the ground to leave the habitat intact. The soft felling of Tree 4 should be supervised by a suitably qualified ecologist.

Recommendation 8

Tree 4 should be felled outside of the bat hibernation period (i.e., outside of the period of November to February inclusive). Tree 4 should be cut down using soft felling techniques under the supervision of a suitably qualified ecologist.



The two buildings on site are not expected to be impacted by the proposed development. If this changes, a Preliminary Roost Assessment will be required to assess the potential of the buildings to support roosting bats.

Recommendation 9

Conduct a Preliminary Roost Assessment on the buildings if impacts are anticipated as part of the proposed development.

Bat roosting behaviour, commuting and foraging activity can additionally be dramatically affected by artificial lighting (BCT, 2018). It is strongly recommended that any proposed exterior lighting on the new buildings is designed and managed appropriately to ensure that the area remains suitable for foraging bats. A sensitive lighting scheme should be developed to allow suitable roosting and foraging areas for bats. Specifically, the ditch, hedgerows and mature trees on site should remain unlit. This should be secured through a planning condition.

Recommendation 10

Light pollution from any lighting should be minimised both during and after the construction phase. A sensitive lighting scheme should be developed and secured through a planning condition to allow for suitable roosting and foraging areas for bats within the site with maximum use of appropriate luminaries and directed lighting.

Other mammals

The garden habitats on site have potential to support hedgehogs. The installation of boundary fences between gardens can impact on hedgehogs through loss of habitat connectivity. At least one 13cm x 13cm hole should be installed at the bottom of each boundary fence (with a focus on fences separating residential gardens, and excluding fences adjacent to roads), in order to maintain connectivity for hedgehogs between properties. These 'hedgehog highways' (PTES, 2018) should have appropriate signage installed to indicate their purpose and stipulate that they should remain open.

Recommendation 11

Maintain habitat connectivity for hedgehog through the installation of at least one 13cm x 13cm hole at the bottom of each boundary fence (with a focus on fences separating residential gardens, and excluding fences adjacent to roads). These should be accompanied with appropriate signage indicating their purpose and stipulating that they should remain open.

Opportunities for biodiversity enhancement

Following the issue of the National Planning Policy Framework (NPPF; see Appendix 1), all planning decisions should aim to maintain and enhance, restore or add to biodiversity and geological



conservation interests. Ecological enhancements should aim to deliver biodiversity gains for the proposed development site.

Planting of native species or those with a known attraction or benefit to local wildlife is recommended in landscape proposals. This will help to increase native plant species diversity, provide more ecologically valuable habitats, and result in a greater diversity of other dependent taxonomic groups.

Recommendation 12

It is recommended that native British species are incorporated within the planting scheme for the final landscaping design in order to enhance the overall value of the site for biodiversity, in line with the requirements of the NPPF.

Deadwood features should be created on site using wood from felled trees on site. The drilling of holes or cutting of notches into the deadwood can add even more value for invertebrates.

Recommendation 13

Create deadwood features on site using wood from felled trees on site.

Enhanced opportunities for breeding birds should be incorporated into the design scheme. Bird boxes should be integrated into the walls of the new dwellings during construction, or mounted onto mature trees. It is recommended that there is focus on swift, together with the provision of generalist bird boxes. The generalist boxes should have different sized entrance holes to provide for a variety of species (see Appendix 4). Examples of suitable boxes are shown in Appendix 4 together with information concerning the correct siting of these enhancement features.

Recommendation 14

A minimum of six bird boxes should be installed at the Site, to include four swift boxes and two generalist boxes.

The Site currently has limited potential roosting habitats for bats. With this in mind, enhanced opportunities for roosting bats should also be provided at the site through the installation of bat boxes. It is recommended that two integrated bat boxes (one on each building) are installed into the walls of the new buildings during construction, facing south or west. Examples of suitable boxes are shown in Appendix 4.

Recommendation 15

Provisions should be made for roosting bats at the Site post-development, to include a minimum of two bat boxes integrated into the walls of the new dwellings on site.



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Summary of recommendations

Table 6 below summarises the recommendations made within this report, and specifies the stage of the development at which action is required. Colour coding of cells within the table is as follows:

Key:

 No action required for this species group at this stage

 Action required (see notes for details)

Level of action required will be determined following the further survey work

Table 6: Summary of recommendations at Highfield House, Little Chesterford

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Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Off-site habitats	Protect River Cam and ditch from adverse impacts	Q	Protect River Cam and ditch from adverse impacts	N/A
On-site habitats	Retain hedgerows and mature trees where possible	OZ	Q	Native planting Deadwood features
Plants	No	No	Remove buddleia	No
Bats	Preliminary Roost Assessment of buildings if impacts are anticipated Sensitive lighting scheme	Tree 4 to be felled outside of bat hibernation period Soft felling techniques for Tree 4	Incorporate integrated bat boxes into new buildings	Bat boxes and native planting



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Species	Pre-planning action required?	Pre-construction action required?	Construction phase mitigation required?	Enhancements proposed?
Reptiles	°Z	Q	Retain/protect grass cuttings pile OR conduct a hand search prior to removal	Q
Birds	°Z	Q	Timing of works for vegetation removal OR further survey work Incorporate integrated bird boxes into new buildings	Bird boxes and native planting
Hedgehog	Q	No	Hedgehog highways	Hedgehog highways



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6. CONCLUSIONS

A Preliminary Ecological Appraisal was conducted at Highfield House, Little Chesterford by MKA Ecology Ltd in order to identify ecological constraints associated with the proposed development at the Site. The Site was found to comprise a residential building (Highfield House) and outbuilding with a gravel driveway and garden habitats including modified grassland, ruderal/ephemeral habitats, hedgerows and scattered trees.

The species-rich hedgerows on site classify as Section 41 Habitats of Principal Importance under the NERC Act (2006). These hedgerows should be retained and enhanced in the design scheme where possible. Where species-rich hedgerows must be removed, this will be mitigated for through new native hedgerow planting totalling a greater length than the hedgerows lost. Mature trees on site should also be retained where possible and any trees that must be removed should be replaced with a greater number of new native trees. Notable off-site habitats must be protected from adverse impacts of the development (namely pollution run-off) both during and post construction. This includes the River Cam to the north and the ditch immediately adjacent to the Site.

Overall, the habitats on site have limited potential to support protected species. There is a small risk of breeding grass snake using the grass cuttings pile on site and a hand search by a suitably qualified ecologist is recommended prior to the removal of the grass cuttings to avoid harming or disturbing any reptiles and/or eggs. Sensitive timing of vegetation clearance is also recommended to ensure breeding birds are not harmed or disturbed. Seven trees are due to be felled/pruned as part of the works. One of these trees (Tree 4) has low potential to support roosting bats; Tree 4 should be felled outside of the bat hibernation period and under the supervision of a suitably qualified ecologist to avoid impacts on bats. Soft felling techniques should also be adopted for Tree 4.

Development at the Site presents an opportunity to incorporate biodiversity enhancements into the design scheme. Simple biodiversity features, such as including native planting, bird and bat boxes, deadwood features and hedgehog highways should be included in the landscaping plans. The recommendations made in this report are in line with local and national planning policy and will help achieve a sustainable development.



7. REFERENCES

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8. APPENDICES

8.1. Appendix 1: Relevant wildlife legislation and planning policy

Please note that the following is not an exhaustive list, and is solely intended to cover the most relevant legislation pertaining to species commonly associated with development sites.

Subject	Legislation (England)	Relevant prohibited actions
Amphibians	•	
Great crested newt <i>Triturus cristatus</i> Natterjack toad <i>Epidalea calamita</i>	Schedule 2 of Conservation of Habitats and Species Regulations (2017) Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	 Deliberately capture or kill, or intentionally injure; Deliberately disturb or recklessly disturb them in a place used for shelter or protection; Damage or destroy a breeding site or resting place; Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection; and Possess an individual, or any part of it, unless acquired lawfully.
Reptiles		
Common lizard Zootoca vivipara	Part of Sub-section 9(1) of Schedule 5 of The Wildlife and Countryside Act 1981 (as	 Intentionally kill or injure individuals of these species (Section 9(1)).
Adder <i>Vipera berus</i> Slow-worm <i>Anguis</i> fragilis	amended)	
Grass snake Natrix helvetica helvetica		



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Subject	Legislation (England)	Relevant prohibited actions
Sand lizard <i>Lacerta agilis</i> Smooth snake <i>Coronella austriaca</i>	Full protection under Section 9 of Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	 Deliberately or intentionally kill, capture (take) or intentionally injure; Deliberately disturb; Deliberately take or destroy eggs; Damage or destroy a breeding site or resting place or intentionally damage a place used for shelter; or Intentionally obstruct access to a place used for shelter.
Birds		
All wild birds	Wildlife and Countryside Act 1981 (as amended)	 Intentionally kill, injure, or take any wild bird or their eggs or nests.
'Schedule 1' birds	Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)	 Disturb any wild bird listed on Schedule 1 whilst it is building a nest or is in, on, or near a nest containing eggs or young; or Disturb the dependent young of any wild bird listed on Schedule 1.
Mammals		
Bats (all UK species)	Schedule 2 of Conservation of Habitats and Species Regulations (2017)	 Deliberately capture, injure or kill a bat; Deliberately disturb a bat (disturbance is defined as an action which is likely to: (i) Impair their ability to survive, to breed or reproduce, or to rear or nurture their young; (ii) Impair their ability to hibernate or migrate; or (iii) Affect significantly the local



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Subject	Legislation (England)	Relevant prohibited actions
	Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	 distribution or abundance of the species); Damage or destroy a bat roost; Intentionally or recklessly disturb a bat at a roost; or Intentionally or recklessly obstruct access to a roost. In this interpretation, a bat roost is "any structure or place which any wild [bat]uses for shelter or protection". Legal opinion is that the roost is protected whether or not the bats are present at the time.
Badger <i>Meles meles</i>	Protection of Badgers Act 1992	 Under Section 3 of the Act: Damage a sett or any part of it; Destroy a sett; Obstruct access to, or any entrance of, a sett; or Disturb a badger when it is occupying a sett. A sett is defined legally as any structure or place which displays signs indicating current use by a badger (Natural England 2007).
Hazel dormouse <i>Corylus avellana</i>	Schedule 2 of Conservation of Habitats and Species Regulations (2017)	 Intentionally or deliberately capture or kill, or intentionally injure;



Subject	Legislation (England)	Relevant prohibited actions
	Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	 Deliberately disturb or intentionally or recklessly disturb them in a place used for shelter or protection; Damage or destroy a breeding site or resting place; Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection; and Possess an individual, or any part of it, unless acquired lawfully.
Otter Lutra lutra	Schedule 2 of Conservation of Habitats and Species Regulations (2017) Section 9(4)(b) and (c) of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	 Deliberately capture, injure or kill an otter; Deliberately disturb an otter in such a way as to be likely to significantly affect the local distribution or abundance of otters or the ability of any significant group of otters to survive, breed, rear or nurture their young; Intentionally or recklessly disturb any otter whilst it is occupying a holt; Damage or destroy or intentionally or recklessly obstruct access to an otter holt.
Water vole <i>Arvicola</i> <i>amphibius</i>	Section 9 of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	 Intentionally kill, injure or take water voles; Possess or control live or dead water voles or derivatives; Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection; or Intentionally or recklessly disturb water voles whilst occupying a structure or place used for that purpose.



Subject	Legislation (England)	Relevant prohibited actions	
Crustaceans			
White-clawed crayfish	Section 9(1) of Schedule 5 of	• Intentionally kill, injure or take white-	
Austropotamobius	Wildlife and Countryside Act	clawed crayfish by any method.	
pallipes	1981 (as amended)		

The Conservation of Habitats and Species Regulations 2017 (as amended) Full legislation text available at: <u>https://www.legislation.gov.uk/uksi/2017/1012/contents/made</u>

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The Wildlife and Countryside Act 1981 (as amended)

Full legislation text available at: <u>http://www.legislation.gov.uk/ukpga/1981/69/contents.</u>

Countryside and Rights of Way Act 2000

Full legislation text available at: http://www.legislation.gov.uk/ukpga/2000/37/contents

Protection of Badgers Act 1992

Full legislation text available at: http://www.legislation.gov.uk/ukpga/1992/51/contents

Section 41 of Natural Environments and Rural Communities (NERC) Act 2006 Full legislation text available at: <u>http://www.legislation.gov.uk/ukpga/2006/16/section/41</u>

Many of the species above, along with a host of others not afforded additional protection, are listed on Section 41 of the NERC Act 2006.

Section 41 (S41) of the Natural Environment and Rural Communities (NERC Act 2006) requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The list (including 56 habitats and 943 species) has been drawn up in consultation with Natural England and draws upon the UK Biodiversity Action Plan (BAP) List of Priority Species and Habitats.

The S41 list should be used to guide decision-makers such as local and regional authorities to have regard to the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006. The duty applies to all local authorities and extends beyond just conserving what is already there, to carrying out, supporting and requiring actions that may also restore or enhance biodiversity.



Schedule 9 of Wildlife and Countryside Act 1981 (as amended)

In addition to affording protection to some species, The Wildlife and Countryside Act 1981 (as amended) also names species which are considered invasive and require control. Section 14 of the Act prohibits the introduction into the wild of any animal of a kind which is not ordinarily resident in, and is not a regular visitor to, Great Britain in a wild state, or any species of animal or plant listed in Schedule 9 to the Act. In the main, Schedule 9 lists non-native species that are already established in the wild, but which continue to pose a conservation threat to native biodiversity and habitats, such that further releases should be regulated.

Wild Mammals (Protection) Act 1996

Full legislation text is available at: http://www.legislation.gov.uk/ukpga/1996/3/contents

Under this legislation it is an offence to cause unnecessary suffering to wild mammals, including by crushing and asphyxiation. It largely deals with issues of animal welfare, and covers all non-domestic mammals including commonly encountered mammals on development sites such as rabbits, foxes and field voles.

Birds of Conservation Concern (BoCC)

This is a quantitative assessment of the status of populations of bird species which regularly occur in the UK, undertaken by the UK's leading bird conservation organisations. It assesses a total of 246 species against a set of objective criteria to place each on one of three lists – Green, Amber and Red – indicating an increasing level of conservation concern. There are currently 52 species on the Red list, 126 on the Amber list and 68 on the Green list. The classifications described have no statutory implications, and are used merely as a tool for assessing scarcity and conservation value of a given species.

National Planning Policy Framework (NPPF)

Full text is available at: <u>https://www.gov.uk/government/publications/national-planning-policy-</u> <u>framework--2</u>

The revised NPPF was updated on 20 July 2021 setting out the Government's planning policies for England and the process by which these should be applied. The policies within the NPPF are a material consideration in the planning process. The key principle of the NPPF is a presumption in favour of sustainable development, with sustainable development defined as a balance between economic, social and environmental needs.

Policies 174 to 188 of the NPPF address conserving and enhancing the natural environment, stating that the planning system should:



- Contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes;
- Recognise the wider benefits of ecosystem services; and
- Minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

Furthermore there is a focus on re-use of existing brownfield sites or sites of low environmental value as a priority, and discouraging development in National Parks, Sites of Specific Scientific Interest, the Broads or Areas of Outstanding Natural Beauty other than in exceptional circumstances.

Where possible, planning policies should also

"promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity".



8.2. Appendix 2: UK Habitat Classification species list

Please note that these lists are intended to be incidental records and do not constitute a full botanical survey of the site. Relative abundance is given using the DAFOR scale. Please see Table 2 for details.

Common Name	Systematic Name	Relative abundance
Perennial rye-grass	Lolium perenne	D
Fescue sp.	Festuca sp.	A
Smooth hawksbeard	Crepis capillaris	A
Yarrow	Achillea millefolium	A
Common couch	Elytrigia repens	F
Common mouse-ear	Cerastium fontanum	F
Bristly oxtongue	Picris echioides	0
Clover sp.	Trifolium sp.	0
Common nettle	Urtica dioica	0
Common ragwort	Jacobaea vulgaris	0
Creeping buttercup	Ranunculus repens	0
Creeping thistle	Cirsium arvense	0
Cut-leaved cranesbill	Geranium dissectum	0
Dandelion sp.	Taraxacum sp.	0
Dove's-foot cranesbill	Geranium molle	0
Field bindweed	Convolvulus arvensis	0
Ground-ivy	Glechoma hederacea	0
Hawkbit sp.	Leontodon sp.	0
Ribwort plantain	Plantago lanceolata	0
Black mullein	Verbascum nigrum	R
Buddleia	Buddleja davidii	R
Common mallow	Malva sylvestris	R
Herb robert	Geranium robertianum	R
Spear thistle	Cirsium vulgare	R
White campion	Silene latifolia	R

Modified grassland (g4) – Frequently mown (66)

Modified grassland (g4) – Ruderal/ ephemeral (17)

Common Name	Systematic Name	Relative abundance
Common nettle	Urtica dioica	A
Prickly sow thistle	Sonchus asper	A
Bramble	Rubus fruticosus	0
Bristly oxtongue	Helminthotheca echioides	0



Common Name	Systematic Name	Relative abundance
Cock's-foot	Dactylis glomerata	0
Common mallow	Malva sylvestris	0
Creeping cinquefoil	Potentilla reptans	0
Curled dock	Rumex crispus	0
Ground-ivy	Glechoma hederacea	0
lvy	Hedera helix	0
Red deadnettle	Lamium purpureum	0
Yarrow	Achillea millefolium	0
Common hop	Humulus lupulus	R
Cotton thistle	Onopordum acanthium	R
Elder	Sambucus nigra	R
Hazel	Corylus avellana	R
Hedge woundwort	Stachys sylvatica	R
Herb robert	Geranium robertianum	R

Modified grassland (g4) – Scattered trees (11)

Common Name	Systematic Name	Relative abundance
Wild cherry	Prunus avium	N/A
Wild privet	Ligustrum vulgare	N/A
Hazel	Corylus avellana	N/A
Lilac	Syringa vulgaris	N/A
Norway maple	Acer platanoides	N/A
Oak sp.	Quercus sp.	N/A
Willow sp.	Salix sp.	N/A

Hedgerow – Priority habitat (h2a)

Common Name	Systematic Name	Relative abundance
Bramble	Rubus fruticosus	A
Common nettle	Urtica dioica	А
lvy	Hedera helix	F
Hawthorn	Crataegus monogyna	0
Hazel	Corylus avellana	0
Prickly sow thistle	Sonchus asper	0
Wild privet	Ligustrum vulgare	0
Horse chestnut	Aesculus hippocastanum	R
Lilac	Syringa vulgaris	R
Oak sp.	Quercus sp.	R
Sycamore	Acer pseudoplatanus	R



Common Name	Systematic Name	Relative abundance
Willow sp.	Salix sp.	R



8.3. Appendix 3: Site photographs



Photograph 1: Modified grassland (foreground) and buildings (rear)

Photograph 2: Other developed land – paved areas and decking







Photograph 3: Swimming pool

Photograph 4: Other developed land – paved areas and raised flower beds







Photograph 5: Artificial unvegetated, unsealed land

Photograph 6: Ruderal/ephemeral habitat







Photograph 7: Ruderal/ ephemeral habitat

Photograph 8: Modified grassland with bare ground







Photograph 9: Modified grassland with scattered trees

Photograph 10: Hedgerow (priority habitat)







Photograph 11: Ditch (dry at time of survey)

Photograph 12: Ditch







Photograph 13: Buddleia Buddleja davidii

Photograph 14: Pile of grass cuttings







Photograph 15: Tree 1

Photograph 16: Tree 2







Photograph 17: Tree 3

Photograph 18: Cavity in Tree 3







Photograph 19: Tree 9

Photograph 20: Tree 5 (T12, AIA)







Photograph 21: Tree 4 (T13, AIA) – knothole on west aspect

Photograph 22: Tree 4 (Tree 13, AIA)







Photograph 23: T18 (AIA)



8.4. Appendix 4: Bird and bat box recommendations

Bird box recommendations

A large number of bird boxes are available, designed for the specific needs of individual species. These are normally either designed to be mounted onto trees, external walls or integrated into a building. In general, bird boxes should be mounted out of direct sunlight and prevailing winds, out of reach of predators, with suitable foraging habitat for the subject species close by. Bird boxes should also be left up over winter as they can provide useful roosting sites for birds in bad weather.

Nest boxes should be cleaned at the end of each bird breeding season. All nesting material and other debris should be removed from the box. It should then be scrubbed clean with boiling water to kill any parasites (avoid using any chemicals). Once the box is clean, it should be left to dry out thoroughly. Under the Wildlife and Countryside Act 1981 it is an offence to disturb breeding birds and therefore annual cleaning is best undertaken from October to January when there is no risk of disturbing breeding birds.

Generalist boxes

Boxes to attract garden birds and woodland breeding species such as tits, nuthatch, redstart and pied flycatcher can be placed in gardens, orchards, woodlands and a wide variety of other habitats. The species of birds attracted to the box will depend upon the size of the entrance hole (see table below).

Boxes should be fixed two to five metres up a tree or wall, out of the reach of predators such as domestic cats. Unless there are trees or buildings, which give permanent shelter, it is best facing between north and east.

Generalist		
Example	Description	Picture
Bird Brick Houses Integrated bird box	http://www.birdbrickhouses.co.uk/brick- nesting-boxes/integrated-bird-box/ Integrated into outside skin of 75mm and most 3" brickwork courses. Comes with a variety of hole sizes to suit particular bird species.	
Entrance Hole	Species	



28mm	Blue tit, marsh tit, coal tit, crested tit and wren.	
34mm	Great tit, blue tit, marsh tit, coal tit, crested tit, nuthatch, pied flycatcher and house sparrow.	
Vivara Pro Seville 28/32mm WoodStone Nest Box	https://www.nhbs.com/vivara-pro- seville-32mm-woodstone-nest-boxThis nest box is manufactured from WoodStone which is a mix of concrete and FSC certified wood fibres. This robust material safeguards against attacks from predators such as woodpeckers, cats and squirrels, whilst also providing a well-insulated interior.The nest box should be positioned between 1.5m and 3m high.	
Entrance Hole	Species	
32 mm	Blue tits, tree sparrows, house sparrows, great tits, crested tits, nuthatches, coal tits and pied flycatchers.	
28 mm	Tree sparrows, blue tits, coal tits and great tits.	

Swift boxes

Swifts are colonial nesters and it is important to have several nest sites in one area. It is recommended that most buildings should have between 4 and 10 nest provisions. Swifts also feed almost exclusively on the aerial plankton of flying insects and airborne spiders of small to moderate size, so therefore require habitats which support these invertebrates.

Nest boxes designed for swifts should be installed at least 5m high, around the eaves of the building or under deeply overhanging eaves to allow swifts to drop into the air to forage. The boxes should be positioned away from climbing plants to avoid access for predators such as rodents.

Swifts typically nest in flat spaces within buildings or within a crevice or cavity. The ideal nest box should have an oval or rectangular hole around 30mm (h) x 65mm (w). The internal dimensions of the box should be approximately 400mm (w) x 200mm (d) x 150mm (h).



Swifts can be attracted to areas that they have not previously colonised using 'swift response calls'. Audio CDs are available for this purpose and are available on the Schwegler website (www.schweglernature.com).

Swift	Swift		
Example	Description	Picture	
Action for Swifts 'S Brick'	https://actionforswifts.blogspot.com/p/s- brick.html The S Brick comprises a nest chamber, a built-in nest form and a brick slip front. It can be tailored for different brick sizes, cavity widths and brick facings. It is available in three configurations, for installation in brick walls, for installation in rendered walls and for installation inside closed eaves.		
Ibstock Swift Box	https://www.nhbs.com/ibstock-eco- habitat-for-swifts This swift brick can be built into a wall on new buildings.		

Bat box recommendations

A wide range of bat boxes are available to suit a variety of species and design requirements. Bat boxes can be mounted externally on buildings, built directly into the wall structure or mounted on trees (dependent on box design).

Boxes are more likely to be inhabited if they are located where bats feed and it may help to place the box close to features such as tree lines or hedgerows, which bats are known to use for navigation and can provide immediate cover for bats leaving the roost. Boxes should be placed in areas sheltered from strong winds and are exposed to the sun for part of the day. Access to any bat roosting features should not be lit and should also be at a reasonable height to avoid predation (at least 2m if possible, preferably 4-5m).



Example	Description	Picture
Ibstock Enclosed Bat Box 'B'	https://www.nhbs.com/ibstock-enclosed-bat-box-b Dimensions: Small Enclosed Bat Box 'B': 215 x 215mm Large Enclosed Bat Box 'B': 215 x 290mm This bat box is designed for integration into the wall of new buildings or renovation projects and is intended to provide summer roosting space for pipistrelles. It has several roosting chambers to provide zones of differing temperatures within the box. The box is available in two sizes and three colours.	Large Bespoke 215 x 290 mm
	Maintenance: The entrance at the bottom allows droppings to fall out, making the box is maintenance free.	
Habibat Bat Box – Custom Brick Facing	https://www.nhbs.com/habibat-bat-box-custom-brick-facingDimensions: 215 (w) x 440 (h) x 102 (d)mmWeight: approximately 9kgThis box is designed to be incorporated into the fabric of a building as it is built or renovated. The box is suitable for species which are most commonly found roosting in buildings in the UK, such as Pipistrelle, Natterer's, Whiskered, and Brandt's bats. This box is made to order and faced in brick to match your building.	





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