



Preliminary Ecological Appraisal

Eight Ash Green, Colchester

On Behalf of:

Bloor Homes Eastern

December 2025

© SES 2025

www.ses-eco.co.uk

Ecology, Countryside Management
Professional Service ● Pragmatic Solutions
phone: 01268 711021 email: team@ses-eco.co.uk website: www.ses-eco.co.uk
Address: The Sudbury Stables, Sudbury Road, Downham, Essex, CM11 1LB

SES Quality Management

Project	Eight Ash Green, Colchester
Project Number	3171684
Report title	Preliminary Ecological Appraisal
Revision Number	Rev B

Revision	Status	Date	Author(s)	Technical review by	Quality review by
A	Final	12/11/2025	Lindsay Hubert BSc (Hons) Ecologist	Luke Owen BSc (Hons) MSc Senior Ecologist	Josey Travell BSc (Hons) MCIEEM Principal Ecologist
B	Final	19/12/2025	Lindsay Hubert BSc (Hons) Ecologist	Luke Owen BSc (Hons) MSc Senior Ecologist	Josey Travell BSc (Hons) MCIEEM Principal Ecologist

Disclaimer

SES has prepared this report for the exclusive use of the client for the intended purpose as stated in the terms and conditions under which the scope of work has been agreed and completed.

No part of this report may be copied or duplicated without the express permission of the client and SES. The copyright of this document lies with SES, with all rights reserved.

The report may not be relied upon by any other party without explicit agreement from the client and SES. No other warranty, expressed or implied, is made as to the professional advice included in this report.

Site assessments / surveys (where required) have been restricted to a level of detail required to achieve the stated objectives of the work.

Due to the temporal nature of ecology, the findings of this report should not be relied upon if a significant amount of time has passed, as defined by the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines.

Ecology, Countryside Management

Professional Service • Pragmatic Solutions

phone: 01268 711021 email: team@ses-eco.co.uk website: www.ses-eco.co.uk

Address: The Sudbury Stables, Sudbury Road, Downham, Essex, CM11 1LB

Executive Summary

1. This report presents the results of a Preliminary Ecological Appraisal (PEA) undertaken at the land off Halstead Road, Eight Ash Green, Colchester (centred at ordnance survey grid reference: TL 9344 2601). It is understood that the client seeks the allocation of the land for residential development of approximately 250 dwellings with associated hard and soft landscaping, as well as access roads, and areas of greenspace.
2. The site comprised a large arable field of winter wheat with recently mowed modified grass verges and a further four fields comprising modified grassland managed as hay fields. The site was bounded by hedgerows with an area of woodland adjacent to the south-eastern corner of the site. A small area of mixed scrub was located in the north-eastern corner with a gravel path running through the centre of it. The site was located in a wider arable mosaic with the residential area of Eight Ash Green to the north of the site.
3. Designated sites located within the Zone of influence of the site included Abberton Reservoir Special Protection Area (SPA) and RAMSAR, located 7.5km south-east of the site. The site also falls within the Impact Risk Zone (IRZ) for a further two sites classified under the Essex Coast Recreational Disturbance Avoidance and Mitigation Strategy (RAMS) comprising the Blackwater Estuary SPA/RAMSAR and the Dengie SPA/RAMSAR. As such, a Habitats Regulations Assessment (HRA) and a Designated Sites Assessment is recommended for any future planning submission.
4. The arable habitat dominating much of the site was considered to be of low ecological value and hence more suitable for development than the valuable boundary habitats comprising the hedgerows and adjacent woodland. These habitats should be retained, buffered and enhanced through the development of the site.
5. The preliminary survey identified potential for the site to support a number of protected and notable species, as such recommended further surveys and assessments, to be undertaken at the appropriate time of year include:
 - Pre-construction badger walkover three to six months prior to groundworks;
 - Seasonal bat activity and static surveys - April to October;
 - Aerial tree inspection for roosting bats – May to August;
 - Breeding bird surveys – March to July;
 - Wintering bird survey – November to February;
 - Hazel dormice surveys – April to November;
 - Application to Great Crested Newt (GCN) District Level Licence (DLL) (no further surveys required) or eDNA surveys for GCN within waterbodies - mid April to end of June;
 - Seven presence/likely absence visits for reptiles (May to September);
 - Habitats Regulations Assessment (HRA);
 - Designated sites assessment; and,
 - Biodiversity Net Gain (BNG) assessment– optimum season April to September.
6. An updated redline was provided on 19.12.2025. This small area was not assessed during the preliminary ecological appraisal however, given the common and widespread nature of the habitats on site this is

not deemed a notable constraint to the preliminary assessment and the updated redline will be utilised for all future species-specific surveys (Appendix 11).

7. Proposals should aim to follow the mitigation hierarchy; avoid, mitigate, compensate and enhance along with Eight Ash Green Neighbourhood plan (Colchester City Council, 2018) and the National Planning Policy Framework (MHCLG, 2024).

Contents

1.0	Introduction	1
2.0	Methods	2
3.0	Baseline Ecological Conditions	6
4.0	Preliminary Prediction of Impacts, Mitigation and Enhancement Measures and Residual Effects.....	22
5.0	Conclusions	36
6.0	References.....	39

Appendices

Appendix 1: Site Plans	41
Appendix 2: Legislative and Policy Framework	43
Appendix 3: Detailed Methods	48
Appendix 4: UKHab Survey Plan.....	51
Appendix 5: Plant Species recorded during UKHab Survey	52
Appendix 6: Site Photos	54
Appendix 7: Bat Roosting Potential Map	56
Appendix 8: Pond Location Plan.....	57
Appendix 9: Plant Species of Known Benefit to Wildlife.....	58
Appendix 10: Species of Known Benefit to Wildlife especially Bats and Invertebrates	59
Appendix 11: Updated redline as of 19.12.2025	63

1.0 Introduction

- 1.1** Southern Ecological Solutions Ltd. (SES) were commissioned by Bloor Homes Eastern (the client) to undertake a Preliminary Ecological Appraisal (PEA) of the land off Halstead Road, Eight Ash Green, Colchester (referred to as ‘the site’). The site is approximately 15.49ha in extent and located at central point Ordnance Survey (OS) Grid Reference TL 9344 2601. This report presents the findings and recommendations of the UK Habitat Classification survey, in addition to recommendations for further ecological surveys.
- 1.2** The site comprised a large arable field of winter wheat with recently mowed modified grass verges and a further four fields comprising modified grassland managed as hay fields. The site was bounded by hedgerows with an area of woodland adjacent to the south-eastern corner of the site. A small area of mixed scrub was present in the north-eastern corner with a gravel path running through the centre of it. The site was located in a wider arable mosaic with the residential area of Eight Ash Green to the north of the site. The Site Location Plan is provided in Appendix 1.
- 1.3** It is understood that the client seeks the allocation of the land for residential development of approximately 250 dwellings with associated hard and soft landscaping, as well as access roads, and areas of greenspace. The high-level proposed plan is also provided in Appendix 1.
- 1.4** The objectives of this report are to set out the ecology baseline for the surveyed area, assess constraints and opportunities for development across the surveyed area and provide options for enhancements of both habitats and species. This information will also help to identify the most appropriate form and scale of development to be accommodated within the site and to subsequently promote that development through the local plan process.
- 1.5** The objectives of this appraisal were to:
- Map the main ecological features within the surveyed area and compile a plant species list for each habitat type;
 - Make an initial assessment of the presence or likely absence of species of conservation concern;
 - Identify any legal and planning policy constraints relevant to nature conservation which may affect the development proposals;
 - Determine any potential further ecological issues;
 - Determine the possible need for further surveys and mitigation; and
 - Make recommendations for minimising impacts on biodiversity and providing net gains in biodiversity where possible in accordance with Chapter 15: *Conserving and Enhancing the Natural Environment*, of the National Planning Policy Framework (NPPF) (MHCLG, 2024), and Eight Ash Green Neighbourhood Plan (Colchester City Council, 2018).
- 1.6** The details of relevant wildlife legislation in addition to national and local planning policies related to nature conservation and biodiversity are provided in Appendix 2.

2.0 **Methods**

2.1 This report has been prepared with reference to British Standards Institution (BSI) BS 42020:2013 'Biodiversity – code of practice for planning and development' (BSI, 2013) and The Chartered Institute of Ecology and Environmental Management's (CIEEM) and Technical Guidance Series 'Ecological Report Writing' (CIEEM, 2017a) and Code of Professional Conduct (CIEEM, 2019a).

2.2 The following PEA follows guidance and methods as prescribed by the CIEEM Guidelines for Ecological Appraisal 2nd edition (2017b) and the Guidelines for Ecological Impact Assessment (2019b). Following these methods, a baseline of rare and/or noted ecological receptors (species and habitats) was established and valued. Predicted significant impacts upon these receptors have been identified and constraints and opportunities identified. This step-wise assessment process has informed likely mitigation and enhancement measures. These surveys will fully inform the predicted impacts of the scheme in accordance with the NPPF (MHCLG, 2024), Eight Ash Green Neighbourhood Plan (Colchester City Council, 2018) and relevant wildlife legislation.

Desk Study

2.3 SES commissioned a data search from the Essex Field Club for records of protected and notable species and for data on non-statutory designated sites. The data search encompassed the study area, and up to 2km from the boundary. Data was received on 22nd July 2025.

2.4 A web-based search for statutory designated sites via the Multi Agency Geographic Information for the Countryside (MAGIC) spatial data resource magic.defra.gov.uk was undertaken on 25th September 2025 for the following statutory designated sites: European (up to 10km from the site boundary), National (5km from the site boundary) and Local (up to 2km from the site boundary). A search was also conducted for European Protect Species (EPS) License returns within 2km of the site boundary and for Priority Habitats within 1km of the site boundary.

2.5 A search of the Natural England GCN Risk Map was accessed on the 25th September 2025 to determine the GCN Risk Zone the site falls into.

2.6 An online search was undertaken for waterbodies within 250m utilising MAGIC online spatial data resource (<https://magic.defra.gov.uk/>) on 25th September 2025.

2.7 Hazel dormouse *Muscardinus avellanarius* records were also sought existing publicly available resources and local knowledge. As dormouse are particularly under-recorded, the data search for this species encompassed an area of up to 10km from the site boundary.

2.8 The Essex Coast Recreational Avoidance Mitigation Strategy (RAMS) (Place Services, 2019) was referred to, in order to determine the Zone of Influence (Zoi) for coastal European Designated sites and hence the requirement for targeted mitigation. The Zoi are set out in Table 1.

Table 1: Zones of Influence of Essex Coast European Designated Sites (Place Services, 2019)

European designated site	Underpinning SSSIs*	Zols (km)
Stour and Orwell Estuaries SPA and Ramsar	Orwell Estuary SSSI Stour Estuary SSSI Cattawade Marshes SSSI	13
Hamford Water SPA and Ramsar	Hamford Water SSSI	8
Colne Estuary SPA and Ramsar	Colne Estuary SSSI	9.7
Blackwater Estuary SPA and Ramsar	Blackwater Estuary SSSI	22
Dengie SPA and Ramsar	Dengie SSSI	20.8
Crouch and Roach Estuaries Ramsar and SPA	Crouch and Roach Estuaries SSSI	4.5
Foulness Estuary SPA and Ramsar	Foulness SSSI	13
Essex Estuaries SAC	Blackwater Estuary SSSI Colne Estuary SSSI Crouch and Roach Estuaries SSSI Dengie SSSI	*
Benfleet and Southend Marshes SPA and Ramsar	Benfleet and Southend Marshes SSSI	4.3
Thames Estuary and Marshes SPA and Ramsar	Mucking Flats and Marshes SSSI	8.1

*Underpinning SSSIs are listed here as these are what the IRZs are aligned to.

Key: SPA = Special Protection Area; SSSI = Site of Special Scientific Interest; SAC = Special Conservation Area

UK Habitat Classification

2.9 A UK Habitat Classification (UKHab) Survey was carried out on 8th September 2025 by suitably qualified Assistant Ecologist Hal Edwards BSc (Hons) during appropriate weather conditions (fine and dry). UKHab survey methods are set out in the UK Habitat Classification User Manual – Version 2.01 (Butcher et al. 2023). UKHab is a comprehensive habitat classification system designed for the UK and is intended for ecologists to identify and map habitats to provide outputs that are suitable for ecological impact assessment. Habitat mapping was undertaken using the standard classification to indicate habitat types.

2.10 The dominant and readily identifiable higher plant species identified in each of the various habitat parcels were recorded and their abundances assessed on the DAFOR scale:

- D - Dominant
- A - Abundant
- F - Frequent
- O - Occasional
- R - Rare

2.11 These scores represent the abundance within the defined area only and do not reflect national or regional abundances. Plant species nomenclature follows Stace (2019).

2.12 All impacts upon ecological features have been considered for the purposes of this survey following industry best practice guidance. Only relevant protected and notable species have been discussed within this report to keep its contents concise and relevant to the works being undertaken and for ease of application.

Protected and Notable Species

2.13 The site was assessed during the UKHabs survey for its suitability for protected and notable species that are likely to occur in the area. Considering the results of the desk study, the location and habitats in the surveyed area, an assessment was carried out for:

- Flora;
- Badger *Meles meles*;
- Bats (roosting, foraging and commuting);
- Breeding and over-wintering birds;
- Great crested newt *Triturus cristatus*;
- Hazel dormouse;
- Rare or notable invertebrates;
- Water voles *Arvicola amphibius*;
- Otters *Lutra lutra*;
- Reptiles; and
- Other notable species.

2.14 Further detail of methods is provided in Appendix 3.

Assessment of Nature Conservation Value

2.15 CIEEM guidelines for Ecological Impact Assessment in the United Kingdom (2019) have been utilised to assess the impacts upon habitats within the ZoI of the site. CIEEM suggests that it is best to use the geographical scale (i.e., International, National, Regional etc.) at which a feature (i.e. a habitat, species or other ecological resource) may or may not be important as the appropriate measure of value. As such, data from the data search and UKHabs survey have been reviewed and the likely occurrence of protected and notable species/species groups assessed. This has allowed predictions of impacts to be made along with recommendations for mitigation, compensation and enhancement. Further targeted survey will refine the evaluation and associated recommendations.

Constraints

2.16 Desktop data searches are a valuable tool in evaluating a site's potential to hold rare and protected species, it is not however an absolute in confirming presence or absence of notable species due to the nature of how the records are collected.

2.17 Where any data supplied by the client, or any other sources have been used, it has been assumed that the information is correct. No responsibility can be accepted by SES for inaccuracies in the data supplied by any other party. The conclusions and recommendations in this report are based on the assumption that all relevant information has been supplied by those bodies from whom it was requested.

2.18 All the plant species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent at different seasons. The

initial assessment of the site was undertaken in September 2025, which falls within the optimal plant growing season. Therefore, an accurate characterisation of the habitats was made.

3.0 **Baseline Ecological Conditions**

Statutory Designated Sites

European Designated Sites

- 3.1** One European designated site was returned within 10km of the site boundary. The site comprised Abberton Reservoir SPA and RAMSAR which was located 7.5km south-east. The reasons for designation are summarised in Table 2.
- 3.2** The site also falls within the ZoI of two sites listed within the Essex Coast RAMs (Dengie SPA and Ramsar site and Blackwater Estuary SPA and Ramsar site).
- 3.3** These sites are designated under the Conservation of Habitats and Species Regulations 2017 (as amended) and are of **International** importance.

Nationally Designated Sites

- 3.4** There was one Site of Special Scientific Interest (SSSI), considered to be of **National** importance. This comprised Marks Tey Brickpitt SSSI located 2.25km south-west. This site was designated for geological reasons and as such was not considered further in this report.
- 3.5** The site also falls within the Natural England SSSI Impact Risk Zone for Abberton Reservoir and the proposed works fall within the highlighted risk category of: '*Residential development of 100 units or more*'.

Locally Designated Sites

- 3.6** There were three locally designated sites within 5km of the site boundary of **National** importance. The closest being Spring Lane Meadow Local Nature Reserve (LNR) located 3.48km east.

Non-statutory Designated Sites

- 3.7** There were eight non-statutory designated sites within 2km of the site. The closest comprised Daisy Green Grove Local Wildlife Site (LWS), located directly adjacent to the southern boundary.
- 3.8** LWS's are considered important at a **Local** Level.

Table 2: Statutory and non-statutory designated sites within the vicinity of the site

Site name	Distance & direction	Size (ha)	Reason for designation
European Designated Sites within 10km			

Site name	Distance & direction	Size (ha)	Reason for designation
Abberton Reservoir RAMSAR/SPA/ SSSI	7.5km south-east	718.31	Abberton Reservoir, situated southwest of Colchester in Essex, is one of the largest freshwater bodies in southern England. Originally constructed for water supply, it has become a wetland of outstanding international importance. The open water, surrounding grasslands, and marginal habitats support an extensive mosaic of wetland communities. The reservoir is of particular importance for waterbirds, holding internationally important populations of wildfowl in both winter and during migration. Species of note include Bewick's swan <i>Cygnus columbianus bewickii</i> , shoveler <i>Anas clypeata</i> , gadwall <i>Mareca strepera</i> , teal <i>Anas crecca</i> , and pochard <i>Aythya ferina</i> . The site is also an important moulting ground for waterfowl and supports large numbers of coot <i>Fulica atra</i> and great crested grebe <i>Podiceps cristatus</i> . In addition, the reservoir and its margins provide feeding and roosting habitat for a variety of waders and other water-dependent birds, with regular use by species such as golden plover <i>Pluvialis apricaria</i> and lapwing <i>Vanellus vanellus</i> .
Blackwater Estuary RAMSAR/SPA	11.47km south-east	4403.41	The Blackwater Estuary is the largest estuary in Essex north of the Thames and, is one of the largest estuarine complexes in East Anglia. Its mudflats, fringed by saltmarsh on the upper shores, support internationally and nationally important numbers of overwintering waterfowl. Shingle and shell banks and offshore islands are also a feature of the tidal flats. The surrounding terrestrial habitats; the sea wall, ancient grazing marsh and its associated fleet and ditch systems, plus semi-improved grassland are also of high conservation interest. This rich mosaic of habitats supports an outstanding assemblage of nationally scarce plants and a nationally important assemblage of rare invertebrates. There are 16 British Red Data Book species and 94 notable and local species.
Dengie RAMSAR/SPA	17.71km south	3133.98	Dengie is a large and remote area of tidal mudflat and saltmarsh at the eastern end of the Dengie peninsula, between the Blackwater and Crouch Estuaries. The saltmarsh is the largest continuous example of its type in Essex. Foreshore, saltmarsh and beaches support an outstanding assemblage of rare coastal flora. It hosts internationally and nationally important wintering populations of wildfowl and waders, and in summer supports a range of breeding coastal birds including rarities. The formation of cockleshell spits and beaches is of geomorphological interest.
Nationally designated sites within 5km			
Marks Tey Brickpit SSSI	2.25km south-west	29.82	Marks Tey Brickpit is designated for geological reasons and as such is not considered further.
Spring Lane Meadows LNR	3.48km east	2.01	Previously the riverside meadows were cultivated with cereal crops. In the 1990 they were sown with a mixture of wildflowers and grasses to provide pasture. Cattle now graze these meadows in the spring and summer. The site is rich in wildlife; otter <i>Lutra lutra</i> and kingfisher <i>Alcedo atthis</i> are found on the river, with snipe <i>Gallinago gallinago</i> in the wet meadows. nightingale <i>Luscinia megarhynchos</i> can be heard in the spring on the edge of Charter Wood and noctule <i>Nyctalus noctula</i> bats over the arable fields in the evenings.
Lexden Park LNR	3.56km east	8.07	The lower part of the reserve (running alongside Church Lane) is mainly a species rich grassland meadow. The ornamental lake is spring fed and is surrounded by trees and shrubs that shade the banks, the small island and inaccessible banks are popular with wildfowl. The remainder of the reserve comprises of woodland.
Hilly Fields LNR	4.12km east	37.5	Much of the reserve is grassland partially invaded by scrub and woodland, but the eastern section towards the town has very sandy soils and patches of heathland have developed.
Non-statutory designated sites within 2km			
Daisy Green Grove LWS	Adjacent to site.	1.89	This small ancient woodland remnant comprises mainly pedunculate oak <i>Quercus robur</i> standards with hazel <i>Corylus avellana</i> coppice Amongst the ground flora is wood anemone <i>Anemone nemorosa</i> , a plant with a strong affinity to ancient woodland, whilst goldilocks buttercup <i>Ranunculus auricomus</i> , remote sedge <i>Carex remota</i> and wood-sedge <i>Carex sylvatica</i> , additional indicator species, are present.

Site name	Distance & direction	Size (ha)	Reason for designation
Fiddlers Wood LWS	0.2km north	10.91	This woodland appears on the Ancient Woodland Inventory and supports a small number of associated indicator species.
Fordham Heath LWS	0.66km north-east	11.7	Much of the site supports acid grassland and heathland, although the southern grassland and eastern fringe is more akin to the mesotrophic community specified in the Lowland Meadows Habitats of Principal Importance in England (HPIE). The woodland areas are not ancient, but satisfy the definition of the Lowland Mixed Deciduous Woodland HPIE. The vascular plant criteria is applied for the presence of populations of two ERDL species: sneezewort <i>Achillea ptarmica</i> and harebell <i>Campanula rotundifolia</i> .
Fordham Bridge Meadow LWS	1.02km north-west	1.25	The diverse stands of vegetation within this floodplain site represent an increasingly scarce habitat type that is consistent with the Lowland Fens Habitat of Principal Importance in England.
Aldham Hall Wood LWS	1.05km south-west	2.19	This small ancient wood is the remains of once larger woodland, extending south west now lost to agriculture. It has a mixed canopy with an extensive understorey of hazel. The ground flora is dominated by bramble <i>Rubus fruticosus</i> agg and bluebell <i>Hyacinthoides non-scripta</i> . Patches of wood anemone, testify to the ancient origins of the wood. The diminutive plant pignut <i>Conopodium majus</i> is also found in this wood.
Iron Latch Lane and Woods LWS	1.19km east	19.16	The site includes wet woodland, a Priority Habitat Woodland Type, as well as deciduous woodland which is non-ancient but satisfies the Lowland Mixed Deciduous Woodland Habitat of Principal Importance in England description. Portions of the unimproved grassland appear to conform to a MG5 NVC community, with other areas better fitting the criteria for Other Neutral Grasslands.
Spring/Grove Wood LWS	1.88km north-east	10.29	This woodland appears on the Ancient Woodland Inventory, containing some large oak standards and a small number of indicator plants.
Seven Star Green LWS	120m east		The site clearly has acidic influences with much of the grassland being consistent with Lowland Dry Acid Grassland communities. However, areas such as the upper slopes, support coarser grasses and herbs including Common Knapweed and Yellow-rattle which match the description of the Lowland Meadows HPIE.

Key: SPA=Special Protection Area, RAMSAR=Site designated for it's importance to birds, SSSI=Site of Special Scientific Interest, LNR=Local Nature Reserve, LWS=Local Wildlife Site

Priority Habitats

3.9 The search for Priority Habitats within 1km returned results for ancient semi-natural woodland, traditional orchards, deciduous woodland, lowland heathland, priority ponds, coastal and floodplain grazing marsh. Of these habitats the closest was an area of ancient semi-natural woodland comprising Daisy Green Grove LWS, adjacent to the southern corner of the site.

Habitats

3.10 A UKHab map of the site is provided within Appendix 4 whilst plant species recorded per habitat type are tabled in Appendix 5 and site photos are provided in Appendix 6.

3.11 The UKHab types within the site are listed below followed, by a description of each habitat type:

- Artificial unvegetated, unsealed surface;
- Cereal crop;
- Species rich native hedgerows with trees and associated with a bank/ditch;
- Species-rich native hedgerow – associated with bank or ditch;

- Native hedgerow with trees associated with a bank/ditch;
- Native hedgerow with trees;
- Non-native ornamental hedgerow;
- Mixed scrub; and,
- Modified grassland.

Artificial unvegetated: unsealed surface (u1c)

- 3.12** A small gravel track was located in the north-eastern corner of the site, providing access into the northern-most field.

Cereal crop (c1c)

- 3.13** The western-most field comprised a large arable field of winter stubble previously comprising wheat *Triticum* sp. At the time of the survey the crop had been harvested and the field ploughed.

Species rich native hedgerows with trees and associated with a bank/ditch (h2a5; 11, 50)

- 3.14** There were six total species-rich native hedgerows surrounding the site. These were associated with a bank/ditch. These were predominantly in good condition with few gaps but with varying management regimes. Details of these are provided in Table 3 below.

Species-rich native hedgerow – associated with bank or ditch (h2a5; 50)

- 3.15** There was one species rich hedgerow associated with a bank or ditch. Details of this hedgerow are provided in Table 3 below.

Native hedgerow with trees associated with a bank/ditch (h2a6; 11, 50)

- 3.16** There were three native hedgerows with trees associated with a bank/ditch around the site. These were generally in good condition with a few gaps noted, and access points within for public footpaths. Details of these are provided in Table 3 below.

Native hedgerow with trees (h2a6; 11)

- 3.17** There were two native hedgerows with trees located on site. These hedgerows had low levels of maintenance and were large in width and height as a result. Details of these are provided in Table 3 below.

Non-native ornamental hedgerow (h2b)

- 3.18** There was one non-native ornamental hedgerow comprising Leyland cypress *Cupressus leylandii* on the northern boundary of Field 2. This provided screening for the inhabitants of the adjacent property. Further details are provided in Table 3 below.

Table 3: Hedgerows noted on site during the walkover

Hedge no.	Habitat code	Hedge type	Description	Pictures
1	h2a5; 11, 50	Species-rich native hedgerow with trees – associated with bank or ditch	Located on northern boundary of Field 1. Measured 4m tall and 3m wide, some gaps but mostly uniform.	
2	h2a5; 50	Species-rich native hedgerow – associated with bank or ditch	Located on northern boundary of Field 1. Measured 1.5m tall and 3m wide, flailed heavily, no gaps.	
3	h2a6; 11, 50	Native hedgerow with trees – associated with bank or ditch	Located on western boundary of Field 1. Measured 3m tall and 2m wide, one larger gap approximately 4m for access gate to barn.	
4	h2a6; 11, 50	Native hedgerow with trees – associated with bank or ditch	Located on southern boundary of Field 1. Measured 3m tall and 1m wide, many gaps at the base and canopy was uneven, one complete gap approximately 3m for public footpath.	

Hedge no.	Habitat code	Hedge type	Description	Pictures
5	h2a5; 11, 50	Species-rich native hedgerow with trees – associated with bank or ditch	Located on southern boundary of Field 1. Measured 4m tall and 3m wide, very gappy throughout.	
6	h2a5; 11, 50	Species-rich native hedgerow with trees – associated with bank or ditch	Located on eastern boundary of Field 1. Measured 6m tall and 4m wide, some gaps at base but not significant.	
7	h2b	Non-native and ornamental hedgerow	Located on the northern boundary of Field 2, creating screening for the farmyard. Comprised an ornamental non-native species Leyland cypress 2m tall and 2m wide	
8	h2a5; 11, 50	Species-rich native hedgerow with trees – associated with bank or ditch	Eastern boundary of Field 2. Measured 3m tall by 3m wide some gaps in canopy but not significant.	

Hedge no.	Habitat code	Hedge type	Description	Pictures
9	h2a5; 11, 50	Species-rich native hedgerow with trees – associated with bank or ditch	Southern boundary spanning Field 2 to 4. Measured 4-10m tall by 4m wide, gaps in canopy due to trees.	
10	h2a6; 11, 50	Native hedgerow with trees – associated with bank or ditch	Eastern boundary of Field 3. Measured 3m tall and 2m wide.	
11	h2a6; 11	Native hedgerow with trees	Eastern boundary of Field 4. Measured 12m tall and 4m wide, not regularly maintained and mostly comprised of trees, gaps in canopy due to differing heights of trees and some gaps at base.	
12	h2a6; 11	Native hedgerow with trees	Western boundary of Field 5. Measured 4m tall and 2.5m wide.	

Mixed scrub (h3h)

3.19 There was an area of mixed scrub located in the north-eastern corner of the site. A gravel path bisected the area. The scrub comprised abundant blackthorn *Prunus spinosa* and bramble *Rubus fruticosus* agg.

Ruderal species were also present including dandelion *Taraxacum officinale*, bristly oxtongue *Helminthotheca echioides*, and broadleaved dock *Rumex obtusifolius*.

Modified grassland (q4)

- 3.20** The field margins of Field 1 comprised modified grassland and were regularly managed, having been recently cut, prior to the survey. The sward height was approximately 10cm in height with species composition comprising perennial rye-grass *Lolium perenne* and false oat-grass *Arrhenatherum elatius*, with occasional common nettle *Urtica dioica* encroaching.
- 3.21** Fields 2 to 5 comprised modified grassland which was managed for hay production by the farmer. The fields had been recently mown at the time of the survey and had a sward of approximately 10cm. Botanical diversity was poor and dominated by grassland species such as perennial rye-grass and false oat-grass. Herbaceous species were limited in these margins and included species such as common nettle, creeping thistle *Cirsium arvense*, and cleavers *Galium aparine*. The full community of grasses was likely not fully captured due to the short sward height of the recently cut fields.

Protected/Priority Habitats

- 3.22** The species-rich hedgerows (hedges 1, 2, 5, 6, 8, and 9) on site are considered to meet the definition for classification as UK Natural Environment Research Council (NERC) Act (2006) habitat of principal importance (i.e. more than 80% UK native woody species)(JNCC, 2008). These hedgerows are also deemed to meet the definition of 'important' hedgerows under the hedgerows regulations act (Hedge Regulations, 1997) due to presence of seven or more woody species listed on Schedule 3 of the Hedge Regulations (1997).
- 3.23** Additionally, Daisy Green Grove LWS was located adjacent to the southern boundary of Field 1 and was designated as an Ancient Semi-Natural Woodland (ASNW) which is designated as a priority habitat.

Summary

- 3.24** Due to a history of conventional arable management incorporating regular spraying, soil improvement and periodic soil disturbance, a large proportion of the habitat within the site was considered to be of low ecological value and common within the wider landscape. The mature trees and scrub were deemed to be of higher biodiversity value, with the potential to support protected species, including those of conservation concern. Therefore, these areas are considered to be of **Site** importance confidence in this assessment is **high**.
- 3.25** The species-rich hedgerows (hedges 1, 2, 5, 6, 7, and 8) on site and Daisy Green Grove LWS, located adjacent to the site, were considered of up to **Local** importance confidence in this assessment is **high**.

Protected and Notable Species

- 3.26** Protected species are animals and plants protected under the Wildlife and Countryside Act (WCA) 1981 (as amended), Conservation of Habitats and Species Regulations 2017 (as amended), the Protection of

Badgers Act 1992, or listed in Section 40 or 41 of the NERC Act 2006. Protected and notable species with existing records within 2km of the site are detailed in Table 4 below.

Table 4: Summary of protected and notable species records within 2km of the site.

Species	Number of records	Last recorded	Closest record (km)
European Protected Species (Conservation of Habitats and Species Regulations (as amended), 2017)			
Brown long eared bat <i>Plecotus auritus</i>	4	2023	0.1
Great-crested newt	104	2023	0.2
Common pipistrelle bat <i>Pipistrellus pipistrellus</i>	1	2016	0.9
Pipistrelle bat species <i>Pipistrellus</i> sp.	1	2019	1.3
Otter	9	2019	1.6
UK Protected Species (WCA, 1981/ Protection of Badgers Act 1992)			
Smooth newt <i>Lissotriton vulgaris</i> *	2	2023	0.4
Common Lizard <i>Zootoca vivipara</i> *	1	2018	0.6
Stag beetle <i>Lucanus cervus</i> *	1	2015	1.2
Badger	4	2017	1.4
NERC Act species			
West European hedgehog <i>Erinaceus europaeus</i>	88	2017	1.6
Birds			
Schedule I Protected Species (WCA, 1981)			
Red kite <i>Milvus milvus</i>	24	2023	On site
Kingfisher <i>Alcedo atthis</i>	2	2022	1.4
Marsh harrier <i>Circus aeruginosus</i>	3	2020	1.4
Peregrine <i>Falco peregrinus</i>	1	2020	1.4
Hobby <i>Falco subbuteo</i>	10	2019	1.4
Brambling <i>Fringilla montifringilla</i>	1	2023	1.4
Fieldfare <i>Turdus pilaris</i>	19	2023	1.4
Green sandpiper <i>Tringa ochropus</i>	6	2021	1.4
Redwing <i>Turdus iliacus</i>	29	2023	1.4
Barn owl <i>Tyto alba</i>	4	2023	1.6
Schedule 9 Invasive Flora (WCA, 1981)			
New Zealand pigmyweed <i>Crassula helmsii</i>	2	2018	1.0
Japanese rose <i>Rosa rugosa</i>	1	2024	1.0

* (in respect of section 9(5) only)

Protected and Invasive Flora

3.27 No protected or invasive species listed under WCA 1981 Schedule 8 or 9 were observed on site during the UKHab survey. Given the lack of identified protected plant species and the relatively common habitats on site, the site is currently considered to be of **Site** importance for flora, confidence in this assessment was **high**.

Badger

3.28 The walkover survey found no evidence of badger setts within the site or within 30m of the site boundary, however a latrine was found along H8, suggesting that badger may use the site for foraging and commuting, with potential setts within the adjacent habitats (however no connecting pathways were noted on site). The site had potential to support foraging and commuting habitats along the

hedgerows and within the small parcel of scrub in the north-east. Hedgerows were predominantly species-rich, providing a wide variety of food plants suitable for badger diet such as fruits, nuts, and seeds, as well as creating a diverse habitat for invertebrates and small mammals also considered within the badger’s diet.

3.29 Additionally, areas of woodland adjacent to the south of Field 1 may provide suitable sett-building habitat, however no evidence of badger was identified during the walkover. The area of scrub and the ditches which the hedgerows were located on may also provide some suitable sett-building habitat.

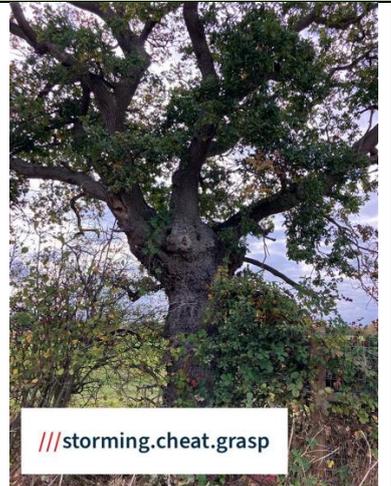
3.30 Whilst no evidence of badger setts had been identified during the assessment, a latrine on site suggests use of the habitats by badgers for foraging and commuting, they are a highly mobile species and as such may create setts on site in the future. The site is therefore currently considered of **Site** importance for badger and confidence in this assessment is **high**.

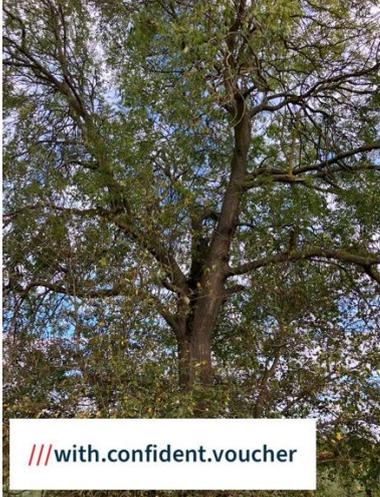
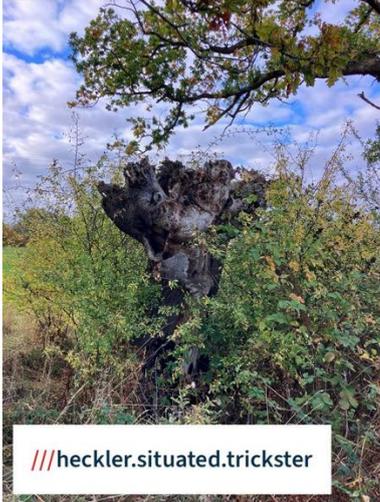
Bats

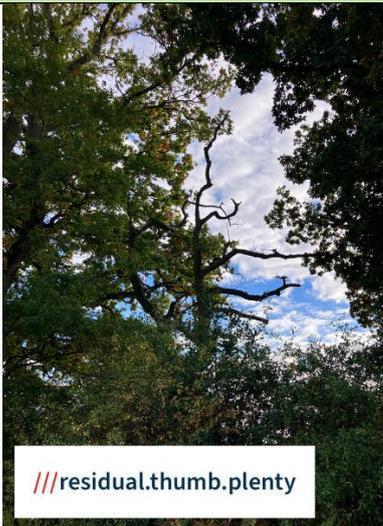
Bats – Roosting

3.31 Of the trees assessed from ground level for Potential Roosting Features (PRF’s), five trees were identified as Further Assessment Required (FAR) potential as shown in Table 5 below (Collins, 2024). Locations are provided in Appendix 7.

Table 5: Ground level tree assessment for potential roosting features

Tree Number	Species	Potential Roosting Features	Suitability	Picture
T1	English oak <i>Quercus robur</i>	Mature oak with large cavities in stem and a rotted limb shear. Cavities have potential to extend.	FAR	

Tree Number	Species	Potential Roosting Features	Suitability	Picture
T2	English oak	Large standing deadwood trunk with some live growth. Stump had multiple cavities, likely rotted out through the entire central column.	FAR	 <p data-bbox="1086 667 1390 712">///chambers.estimate.urgent</p>
T3	Ash <i>Fraxinus excelsior</i>	Mature ash with wound on trunk forming a callous roll. Small branch tear out with potential for a cavity to extend.	FAR	 <p data-bbox="1086 1160 1390 1205">///with.confident.voucher</p>
T4	English oak	Large standing deadwood trunk. Stump had multiple cavities, with sections of thick, peeling bark.	FAR	 <p data-bbox="1086 1671 1390 1715">///heckler.situated.trickster</p>

Tree Number	Species	Potential Roosting Features	Suitability	Picture
T5	Unidentified (dead)	Thin standing deadwood tree with multiple cavities limb tear outs. Access constrained by density of hedgerow it was located within.	FAR	

3.32 Additionally, the woodland adjacent to the southern boundary of Field 1 (which includes the area of Daisy Green Grove LWS) was noted to contain several veteran trees with features including cracks, holes, and split limbs, considered suitable for use by roosting bats.

3.33 As such, there is potential for the site to support roosting bats both within the trees on site and within the woodlands adjacent to site. The site is therefore currently considered to be of up to **Site** importance for roosting bats. Confidence in this assessment is **moderate**, pending further surveys.

Bat - Foraging

3.34 Boundary habitats such as the hedgerows and adjacent woodlands, as well as the small area of scrub to the north-east, were considered to be of 'moderate' suitability for foraging/commuting bats (Collins, 2024). In addition, the site had good connectivity with neighbouring suitable habitats of potential value to bat species such as hedgerows and woodland.

3.35 The site is therefore currently considered to be of **Site** importance for foraging/commuting bats. Confidence in this assessment is **moderate** pending further surveys.

Birds

3.36 During the walkover survey a Schedule 1 species comprising red kite, was noted on site foraging. Given the individual nature of the trees within the hedgerows on site, it is deemed unlikely this species is nesting on site, however it may be found in neighbouring areas of mature woodland, such as the large woodland to the east of the site.

3.37 The scrub and hedgerows onsite were considered to offer suitable nesting habitat for birds, providing highly suitable opportunities for small passerines. Furthermore, the arable cropland may provide some suitable habitat for ground-nesting species such as skylark *Alauda arvensis*.

- 3.38** The habitats onsite are not considered optimal to support the majority of the qualifying waterfowl species of Abberton Reservoir SPA/Ramsar, due to the lack of suitable water bodies on site. However, the arable and grassland habitats may provide some winter foraging opportunities for wintering birds, including waterfowl and red-listed arable seed feeding species.
- 3.39** Overall, the site is likely to support a range of widespread breeding and wintering species associated with scrub, hedgerows, open grassland and arable land. As such the site was considered to be of up to **Local** importance for breeding and wintering birds. Confidence in this assessment is **moderate** pending further surveys.

Amphibians

- 3.40** Review of online resources identified a Great Crested Newt (GCN) Survey License (ref: 59541) returned in 2017, 250m west of the site (centered at OS Grid Reference TL 929 262). The majority of the site falls within the Green Zone for GCN risk on the Natural England GCN Risk Zone Map however, small areas comprising the eastern and western boundaries fall within the Amber Zone for GCN Risk.
- 3.41** There were no ponds located on site however, five ponds were identified within 250m; located 110m east (P1), 175m east (P2), 184 south (P3), 174m west (P4), and 187m west (P5). The ponds were all dry at the time of the survey and as such, a Habitat Suitability Index (HSI) assessment was not able to be completed. A pond map is provided in Appendix 8.
- 3.42** A large proportion of the site was considered suboptimal terrestrial habitat for GCN and other amphibians, owing to a history of periodic soil disturbance associated with the arable cropping in Field 1 and hay making in Field 2-5. However, the hedgerows throughout the site were considered to provide opportunities for commuting, foraging, hibernation, and sheltering. The hedgerows also provided connectivity between confirmed GCN ponds and the site, as well as to highly suitable terrestrial habitats adjacent to the site, such as Daisy Green Grove LWS/ASNW to the south of Field 1.
- 3.43** Therefore, the site was considered to be of **Site** importance for GCN and other amphibians. Confidence in this assessment is **moderate**.

Hazel Dormouse

- 3.44** Whilst no records were provided by the data search within 2km, a review of open source data identified 10 records of hazel dormice within 10km of the site, the closest being located 5.3km south.
- 3.45** The hedgerows on site were generally species rich, providing a good variety of foraging options for dormouse, including bramble and some hazel *Corylus avellana*, a preferred feeding resource for dormouse. The hedgerows were generally in a well-managed state with few gaps, providing good connecting habitat throughout the site, as well as to off-site habitats such as the ASNW to the south comprising Daisy Green Grove LWS.
- 3.46** As such, the site was considered to be of **Site** value for hazel dormice. Confidence in this assessment is **moderate** pending further surveys.

Notable Invertebrates

- 3.47** Suitable invertebrate habitats on site comprised hedgerows with occasional trees, small areas of scrub, and to a lesser extent the margins of the fields. The woodland adjacent to the south of Field 1 potentially provided some higher value invertebrate habitat due to deadwood habitats which contained ecological niches for a range of invertebrate species.
- 3.48** While there were some areas which have potential to support more notable invertebrates such as the deadwood within areas of woodland, the majority of the site comprised highly managed arable fields, therefore reducing the likelihood of the site to support a notable assemblage of invertebrates. As such, the site is considered likely to be only of **Site** importance for notable invertebrates. Confidence in this assessment is **high**.

Water Vole and Otter

- 3.49** There were no waterbodies or watercourses on site, as such the site lacked suitable aquatic habitat for water vole and otter. The terrestrial habitats comprised predominantly arable-managed lands with established bordering hedgerows, some of which were located on drainage ditches which were dry at the time of survey, therefore opportunities for foraging were limited.
- 3.50** Whilst nine records for otter were returned by the desk study, the closest was located 1.6km north and was likely associated with the River Colne - the closest substantial watercourse. There were networks of small watercourses and waterbodies in the wider environment, located approximately 1km south-west. However, the site provided little to no connectivity between suitable aquatic habitats and did not provide a commuting corridor for species which may utilise these watercourses. The woodland adjacent to site was deemed to provide limited suitable habitat due to its distance from the closest watercourse and lack of riparian habitats.
- 3.51** Given the lack of aquatic habitats on or adjacent to site, the poor foraging opportunities on site, and the limited connectivity of the site, it is deemed highly unlikely water voles or otter will be found on site during the works. As such, both water voles and otters are considered likely absent from the site and not considered further in this report.

Reptiles

- 3.52** Whilst Field 1 was considered to be sub-optimal for reptiles, as conventionally managed arable land, Fields 2-5 were likely to be suitable for reptiles prior to the final hay cut. Furthermore, the hedgerows, field margins, and area of scrub provided additional suitable foraging and commuting habitat for widespread reptile species. Daisy Green Grove LWS/ASNW adjacent to the southern boundary also provided highly suitable habitat and was well connected to the site, therefore reptiles may disperse from this wooded area into the site. Additionally, areas of rooting deadwood provided some hibernation potential for reptiles.
- 3.53** As such, the site was considered to have potential to be of **Site** importance for reptiles. Confidence in this assessment is **moderate** pending further surveys.

Other Notable Species

- 3.54** Onsite habitats such as hedgerows, scrub, and grassland on site were considered to be suitable for hedgehog and common toad *Bufo bufo*, with arable habitat suitable for brown hare *Lepus europaeus*. The site was deemed to be sub-optimal for harvest mouse *Micromys minutus* due to the regular mowing regime and lack of tussocky grasslands.
- 3.55** As such, the site is considered to be of **Site** importance for other notable species. Confidence in this assessment is **high**.

Summary

- 3.56** An evaluation of the surveyed area in relation to ecological features is provided in Table 6.

Table 6: Evaluation of existing ecological features

Feature	Summary Description	Importance	Confidence
Statutory Designated Sites	Abberton Reservoir SPA/RAMSAR/SSSI 7.6km south-east. Site lies within the IRZ for Essex Coast RAMS and for Abberton Reservoir for residential development. Spring Lane Meadow LNR located 3.48km east.	International/ National	High
Non-statutory Designated Sites	Daisy Green Grove LWS and ASNW adjacent to site.	County	High
Habitats	Majority of site made up of arable land. Other habitats consisted of hedgerows with trees, patches of scrub, and adjacent woodland. Species-rich hedgerows and adjacent woodland were deemed habitats of principal importance.	Site/Up to Local	High
Protected and Invasive Flora	No notable species in records or noted on site.	Site	High
Badgers	Potential for badgers to commute, forage, and build setts on site.	Site	High
Bats - roosting	Trees with bat roosting potential present.	Site	Moderate
Bats – foraging/ commuting	Habitats on site provide ‘moderate’ suitability for foraging/commuting bats.	Site	Moderate
Birds	Likely to support a breeding and wintering assemblage of common and widespread species including red and amber list Birds of Conservation Concern (BoCC) associated with grassland, hedgerows, and arable land. Situated within proximity of Abberton Reservoir SPA/Ramsar, designated for its large and varied waterfowl assemblage.	Up to Local	Moderate

Feature	Summary Description	Importance	Confidence
Great Crested Newts	One GCN licence return and five waterbodies within 250m of the site. Suitable terrestrial habitat within the site.	Site	Moderate
Hazel Dormouse	Suitable habitat within the site's species-rich hedgerows which also provide connectivity to woodland habitats.	Site	Moderate
Invertebrates	Most habitat suitable for common and widespread invertebrate species. Deadwood may provide habitat for stag beetle.	Site	High
Water vole and otter	Site lacks suitable aquatic habitat, has limited foraging potential, and lacks connectivity to habitats suitable in wider environment.	Considered likely absent	
Reptiles	Potential for reptile species within field margins, woodland edge, hedgerows, grassland, deadwood, and scrub habitats.	Site	Moderate
Other notable species	Suitable habitat for European hedgehog and common toad within the hedgerows, field margins, scrub, and adjacent woodland. Suitable habitat for brown hare within the arable land habitat.	Site	High

4.0 Preliminary Prediction of Impacts, Mitigation and Enhancement Measures and Residual Effects

Description of Proposals

- 4.1** It is understood that the client seeks the allocation of the land for residential development of approximately 250 dwellings with associated infrastructure, landscaping and public open space.

Statutory Designated Sites

- 4.2** Given the proximity of designated sites and the extent of the works, a Habitat Regulations Assessment (HRA) will be required to determine any likely significant effects (LSE) on nearby internationally designated sites or associated functional land.
- 4.3** Likely mitigation detailed in the HRA could include minimising impacts on protected sites either directly or indirectly, for example from air or hydrological pollution, increased recreation, and general urbanisation effects.
- 4.4** In terms of recreation pressure, all new residential developments (of net 1+ dwellings) within the Zol of the RAMS are required to mitigate for potential in-combination effects of increased recreational disturbance at Essex coastal European designated sites via a financial contribution towards strategic mitigation. The current charge (as of 1st April 2025) is £169.45 per net new dwelling.
- 4.5** In 2018, prior to the RAMS being adopted, Natural England also issued advice to the Essex Local Authorities to ensure new residential development and any associated recreational disturbance impacts on European designated sites were compliant with the Habitats Regulations (Letter reference: 244199). This advice included a standardised HRA flow-chart template, which recommended that larger-scale developments (defined by Natural England as “100 units +, or equivalent, as a guide”) within the Zol of the Essex RAMS, should include:

“Provision of well-designed open space/green infrastructure, proportionate to its scale. Such provisions can help minimise any predicted increase in recreational pressure to the European sites by containing the majority of recreation within and around the development site boundary away from European sites. We advise that the Suitable Accessible Natural Green Space (SANGS) guidance can be helpful in designing this; it should be noted that this document is specific to the SANGS creation for the Thames Basin Heaths, although the broad principles are more widely applicable. As a minimum, we advise that such provisions should include:

- *High-quality, informal, semi-natural areas*
- *Circular dog walking routes of 2.3-2.7 km within the site and/or with links to surrounding public rights of way (PRoW)*
- *Dedicated ‘dogs-off-lead’ areas*
- *Signage/information leaflets to householders to promote these areas for recreation*
- *Dog waste bins*
- *A commitment to the long term maintenance and management of these provisions”.*

- 4.6** Assuming the current maximum proposals comprising approximately 250 dwellings, it is estimated that approximately 4.98ha of SANG land will be required for the development to reduced pressures on designated sites.
- 4.7** Given the early stages of planning, it is considered likely that the site will be able to achieve the above recommendations by designing a masterplan which develops on the habitats with low ecological value (such as the cereal crop fields), retains the boundary hedgerows, and puts buffer zones on the habitats of higher ecological value (such as the adjacent woodlands). Therefore, subject to the delivery of suitable mitigation, it is predicted that the development will have a neutral residual effect on statutory designated sites.

Non-statutory Designated Sites

- 4.8** There was one non-statutory designated site comprising Daisy Green Grove LWS and ASNW, located adjacent to the southern boundary of the site. Given the proximity of the site there is likely to be direct or indirect impacts as a result of the works, in absence of appropriate mitigation. Likely impacts include root compaction, limb damage, lighting and noise impacts, and increased recreational disturbance. As such, it is recommended that mitigation measures are detailed in an HRA and a Construction Ecological Management Plan (CEMP) is required to mitigate against likely impacts.

Habitats

- 4.9** Notable habitats on site include the hedgerows and mature trees located within them. The remaining habitats on site are of low ecological value or are common and widespread within the surrounding environment.
- 4.10** Potential impacts from development, in the absence of mitigation, comprise construction phase impacts such as the loss of habitats through site clearance and potential damage to retained habitats e.g. due to pollution events, direct damage, or compaction of roots. During the occupational phase, retained habitats are also at risk of losing their ecological functionality through edge effects due to lighting and recreational disturbance, therefore adversely affecting their biodiversity value.
- 4.11** It is recommended that works are restricted to the least ecologically valuable habitats such as the arable land and the masterplan should seek to retain all existing boundary features and habitats of value as far as possible, creating gaps only where strictly necessary to allow access. All access routes should, where possible, make use of existing gaps and areas of lower-density vegetation, avoiding mature notable trees. Buffering should be combined with native planting, alongside the woodland and tree lines. This will serve to maintain their ecological functionality and protect them during construction and from lighting disturbance during operation.
- 4.12** It is recommended that all retained and adjacent habitats are protected during construction works through the provision of suitable fencing such as Heras fencing. Heras fencing should follow BS standard BS 5837: 2012 Trees in relation to design, demolition and construction. Together, adherence to these recommendations will serve to maintain a functional network of 'green corridors' through the site. Other habitats of value including Daisy Green Grove LWS and ASNW which should be retained and buffered 15m from the built development.

- 4.13** Once detailed landscape plans have been produced it is required that a Biodiversity Net Gain (BNG) Plan is produced to demonstrate that a net gain is deliverable using the Statutory Metric available from DEFRA in accordance with current national planning policy (MHCLG, 2024). Where impacts to habitats cannot be avoided, compensatory habitat will need to be provided to ensure that measurable Biodiversity Net Gain (BNG) is delivered. The Environment Bill mandates that a gain of at least 10% must be demonstrated for new developments and that calculation should be carried out using the Statutory Metric. The use of a recognised Biodiversity Net Gains (BNG) calculator such as the DEFRA metric, is advised to ensure a measurable net gain for biodiversity is delivered. If an onsite gain cannot be achieved, an off-site solution may need to be explored.
- 4.14** It is further noted that where on-site mitigation (i.e. high-quality, informal, semi-natural open space) is required for Habitats Regulations Sites, BNG is only attributable to such habitat creation or enhancement that proves measurable ‘additionality’ over and above the minimum requirements. For BNG to be delivered on the areas of high-quality, informal, semi-natural open space, the provided space should achieve nature conservation outcomes that demonstrably exceed existing requirements of the Strategy (i.e. higher quality habitat, and/or additional habitat interest, over and above what is required to make the area functional as high-quality, informal, semi-natural open space). This will need to be considered as the extent of on-site semi-natural open space required to mitigate recreational effects on designated sites is defined.
- 4.15** If boundary habitats or those considered of value are to be removed in part/full, in order to mitigate habitat losses, compensatory planting should be undertaken and retained boundary habitats enhanced with native, species-rich mixes using species of local abundance through gap filling. In addition, loss of habitats including areas of neutral grassland, hedgerow, and woodland should be compensated for through the enhancement of retained habitats or provision of additional habitats of equal or greater value. Restoration of boundary habitats which act as a wildlife corridor should also be implemented by creating a transitional habitat (Figure 1) including a 1.5m buffer of grassland to tall ruderal to scrub.

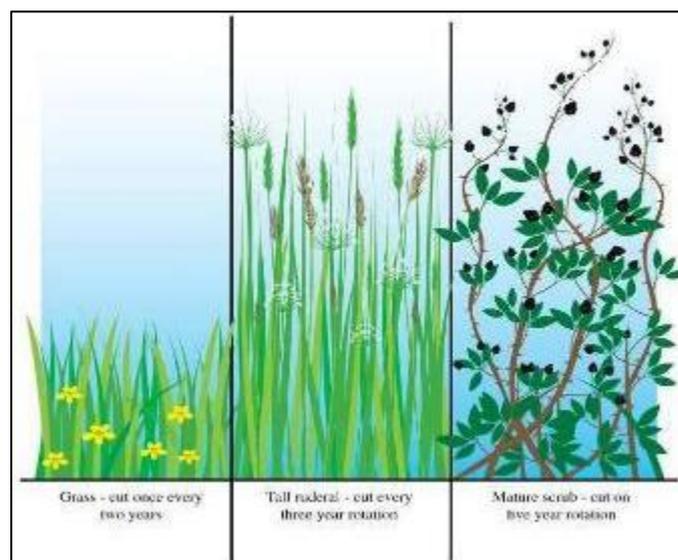


Figure 1: Edge Habitat Sketch

- 4.16** The inclusion of native planting and habitat creation within the development plan, together with retaining and enhancing boundary habitats and habitats of value (woodland, pond, neutral grassland) where possible, buffering works from retained habitats and managing the retained habitats for wildlife is predicted to result in a residual positive impact on habitats.

Protected and Notable Species

- 4.17** All legislation relating to protected and notable species is provided in Appendix 2.

Badger

- 4.18** Badgers are legally protected under the Protection of Badgers Act (1992). Construction works within 30m of an active badger sett have potential to damage/destroy a sett, or disturb/injure badgers occupying a sett, both of which are offences under the Protection of Badgers Act 1992.

- 4.19** Given that badgers are prolific sett-builders, an updated badger walkover survey is recommended within three to six months prior to commencement of any construction on site, to check that no setts have established.

- 4.20** Standard mitigation measures provided below shall be implemented to prevent harm to individual badgers moving through the site during the construction period:

- Covering trenches at night or leaving a plank of wood leant against the side to ensure badgers can escape if they were to accidentally fall in;
- Covering open pipework with a diameter of greater than 120mm at the end of the workday to prevent animals from entering and becoming trapped;
- Covering chemicals and storing them appropriately overnight;
- Regular removal of litter; and
- Low speed limits (≤ 20 mph).

- 4.21** The loss of foraging habitat during clearance for the proposed development should be mitigated against through the enhancement of existing habitats, the creation of complementary new habitats within areas of proposed open space, and maintaining areas of boundary habitats as dark corridors during the construction and operational stages. This can be achieved through planting using a range of native, berry and fruit-bearing tree and shrub species within the landscaping scheme (a list of potential species is provided in Appendix 9). Additionally, the adoption of varied mowing regimes through grassland areas in order to create shorter-sward areas, which in turn would facilitate earthworm predation, would be beneficial to badgers. This would result in a residual positive impact on badgers.

Bats - Roosting

- 4.1** All bat species are legally protected under the WCA (1981, as amended) and Habitats Regulations (2017, as amended). Taken together, it is an offence to destroy/damage or obstruct access to a bat roost, to kill/injure or disturb individual bats, or to deliberately disturb bats in such a way to be likely to significantly affect their ability to survive, breed, rear or nurture their young or their local distribution.

- 4.2** In the first instance, it is recommended that all trees with roosting potential are retained and therefore not directly impacted by the proposed development. Additionally, indirect impacts should also be avoided with a suitable buffer retained around the trees (up to 20m) to ensure that the trees are not subject to increased light or vibration levels. If trees with suitability for roosting bats are impacted, detailed further assessment will be required for the identified trees. Possible impacts could include felling/pruning, significant lighting and vibration disturbance, or where connected habitat (e.g. hedgerows) will be significantly lost or fragmented.
- 4.3** Where trees with PRFs are impacted (either directly or indirectly), required surveys are likely to comprise an aerial inspection with an endoscope to search for evidence of roosting bats in the first instance. Aerial tree inspections are possible at any time of year, however trees with PRF-M features require three climbs within the bat active season between May-August, with surveys spaced at least 3 weeks apart. Should inspections confirm the absence of roosting bats, the trees may be subject to a pre-fell check and finally removal of the roosting feature under an ecological method statement. Further, should the first inspection of the PRF's downgrade their suitability to PRF-I or negligible suitability for roosting bats, then no further surveys are required. Trees with only PRF-I features may be soft-felled under a method statement, with supervision from an Ecological Clerk of Works (ECoW). The loss of PRF trees should be mitigated for through the provision of bat boxes. Where trees are deemed not safe to climb, up to three dusk emergence surveys may be required to establish bat presence/likely absence. Emergence surveys are only possible to undertake during the bat active season between May-September (peak season May-August) with surveys undertaken at three-week intervals.
- 4.4** If a bat roost is discovered, and will be impacted by proposals, then a European Protected Species Mitigation (EPSM) licence will be required to permit works. Works to confirmed roosts may be subject to seasonal timings (dependant on roost type). Application for a licence can only be made once full/detailed planning permission has been granted, and a licence will only be issued once all relevant wildlife related conditions have been discharged. Potential mitigation for loss of any existing roost could comprise bat boxes installed on retained trees/integrated into new buildings or translocation of the original roost feature to a tree set to be retained (involving removal of the associated limb and attachment to a nearby tree). Ahead of any licence approval, all confirmed bat roosts will need to be provisioned with a suitable exclusion buffer (30m).
- 4.5** The proposed development provides the opportunity to enhance the surveyed area for bats through the provision of additional roosting areas on retained trees and new buildings. Bat boxes should be integrated into new buildings and installed upon retained trees. A variety of bat boxes that can integrate seamlessly into the design of new buildings are available, such as the Habitat Bat Box, which can be supplied plain for a rendered finish, or faced with brick (see Figure 2). Alternatively, there are a wide range of woodcrete bat boxes with a long lifespan that are suitable for installation on trees (see Figure 3). Ongoing tree management also has potential to deliver favourable habitats for roosting bats, through new natural roost feature creation (e.g. deliberate cutting of crevices) and/or transplantation of suitable features from trees that need to be removed for health and safety reasons.



Figure 2: Habibat Bat Box faced with red brick, incorporated within wall at gable end



Figure 3: Schwegler 1FD bat box erected on a tree.

- 4.6** On trees, boxes should be sited at a minimum 5m height, with a clear uncluttered flight path to the box. Integrated boxes in buildings should be sited in properties close to the boundaries of the development and retained established vegetation. Ideally, the boxes would be installed with a variety of orientations, including south-facing, high up on gable ends, or directly under the eaves.
- 4.7** It is considered that mitigation is fully achievable within the surveyed area with regards to roosting bats through a sensitive design at masterplan stage incorporating use of bat roosting features throughout the site. This will likely have a residual positive impact on roosting bats.

Bats – Foraging and Commuting

- 4.8** The hedgerows and adjacent woodland were considered to be of ‘moderate’ value for foraging and commuting bats. Other habitats are assessed as being of ‘low’ (arable, modified grassland, small area of scrub) value.
- 4.9** The masterplan should be designed to avoid impacts on moderate value habitats. Should impacts be unavoidable, it is recommended that bat activity surveys are undertaken to determine the level of usage of the site by foraging and commuting bats. Bat activity surveys are only possible during the bat active season between April-October; given the mobility of bats as a species group, and their tendency to utilise different habitats and areas in varying frequency throughout the year, a ‘moderate’ level of survey effort is considered proportionate to likely impacts. As such, survey effort is recommended to include three seasonal (Spring; Summer; Autumn) transects and monthly automated surveys within the habitats of moderate foraging suitability between April and October.
- 4.10** In general, it is recommended that site lighting around key features likely to be used by potential roosting, foraging or commuting bats, such as the on-site treelines, is avoided during both the construction and operational phases. If lighting is necessary, then there are a number of ways to minimise the effect of lighting on bats. The following mitigation strategies have been taken from the Institution of Lighting Professionals and Bat Conservation Trust’s Guidance Note 08/23 Bats and artificial lighting in the UK (2023) and other referenced sources:

- All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used;

- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability;
- A warm white light source (2700Kelvin or lower) should be adopted to reduce blue light component;
- Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012);
- Internal luminaires can be recessed (as opposed to using a pendant fitting) where installed in proximity to windows to reduce glare and light spill;
- Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges;
- Column heights should be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards;
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered;
- Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt;
- Where appropriate, external security lighting should be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate;
- Use of a Central Management System (CMS) with additional web-enabled devices to light on demand;
- Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS;
- The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.
- Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely;

4.11 The loss of foraging habitat (such as hedgerows and scrub) should be mitigated by the planting of native fruit-producing and nectar-rich hedgerow and tree species as this is more favourable for invertebrates (bats prey). This approach would serve to enhance the site for bats by improving connectivity and offering an additional foraging resource. Furthermore, any new hedgerows to be planted within the development should be native-species rich (at least five native woody species), as this is most attractive to invertebrates. Wherever feasible, hedgerows should incorporate maiden trees at intervals, as bats tend to prefer hedgerows with a more complex structure. Further enhancement could be delivered through the planting of lower flora known to be favoured by their invertebrate prey within the open space landscaping, such as night-flowering and nectar producing species attractive to moths (see Appendix 10).

4.12 It is considered that mitigation is fully achievable within the surveyed area with regards to foraging bats and would have a residual neutral to positive impact.

Birds

- 4.13** All breeding birds are protected from deliberate destruction under the WCA 1981 (as amended). Under this legislation all birds, their nests and eggs are protected by law and it is an offence, with certain exceptions, to intentionally kill, injure, or take any wild bird or their eggs or nests (exceptions to this are listed in Schedule 2). In addition, a select group of species are further listed under Schedule 1 of the Act and these have additional protection that makes it an offence to disturb these birds at the nest, or to disturb their dependent young. In addition to this statutory protection British birds are also classified according to their conservation status, including their position on the Red and Amber lists of Birds of Conservation Concern (BoCC)(BTO, 2021) and whether they have been identified as Priority Species.
- 4.14** The hedgerows, trees, arable land, and grassland within the site are considered to contain the potential for nesting birds. Therefore, potential impacts on nesting birds include damage to/disturbance of nests and loss of nesting habitat, during vegetation clearance prior to construction. Furthermore, the BoCC bird community utilising the sites could potentially be negatively impacted by loss of arable/grassland feeding resource.
- 4.15** It is predicted significant impacts of nesting habitat loss can be avoided and minimised through sensitive design at master planning stage to retain the existing hedgerows likely utilised by the majority of the breeding bird community. Existing trees and hedgerow habitats should be retained and reinforced with native species (suitable to mitigate for a range of generalist species likely to utilise the site) wherever feasible.
- 4.16** Due to the presence of suitable habitat and proximity of European designated sites, breeding and wintering bird surveys should be undertaken to confirm the value of the breeding and non-breeding assemblages and to guide the development of an appropriate mitigation strategy for the site. Given the mobility of birds as a species group, and their tendency to utilise different habitats and areas in varying frequency throughout the year, it is recommended that a comprehensive assessment of birds breeding and wintering use of the site is carried out.
- 4.17** The breeding bird surveys will require six visits, with at least one per month spread over the core breeding bird season between March to July. The surveys will be undertaken using a cut-down version of the standard Common Bird Census (CBC) methods, devised by the British Trust for Ornithology (BTO) (Marchant, 1983; Bibby *et al.*,1992) and will also focus on arable species such as skylark.
- 4.18** Six visits are also recommended for the wintering bird surveys, to take place over the wintering season from November to February. These surveys also involve visits to habitats in the surrounding area to determine the locations at which species for which the nearby SPA/Ramsar & SSSIs are designated are feeding and roosting, in order to determine whether these species will be impacted by the development.
- 4.19** If any nesting bird habitat is to be lost or disturbed through construction then these areas should be cleared outside of the nesting bird season (March to August inclusive) where possible. If works on these habitats are required during the nesting bird season, then a nesting bird check / habitat inspection should be undertaken to ensure that there is no nest disturbance within the site by an

ecologist within 24 hours prior to clearance to confirm the absence of active nests. Any active nests located during inspections will be protected with a species-suitable buffer of retained vegetation around the nest (of appropriate size to the species) and monitored until the nest is no longer active/all chicks have fledged, when the ecologist will provide sign off for clearance to be undertaken.

4.20 Further mitigation recommendations may be required dependant on the assemblage of breeding birds noted on site. Should nesting skylark be noted on site potential mitigation could include the offsite provision of compensatory skylark plots at a ratio of 2 plots for each identified nest.

4.21 To enhance the site for nesting birds, artificial nesting opportunities are recommended to be integrated into properties and installed on trees. Boxes are recommended to be included on buildings or retained trees to attract species known to occur locally, in particular house sparrow *Passer domesticus* and swift *Apus apus* (swift boxes are suitable for both species, Figure 4). Nest boxes should be installed with a northerly orientation to create a cool nesting environment and minimise the risk of chicks overheating. Swift boxes should be installed on buildings at 4-5m with a clear flight line directly below the eaves of properties. The locations of boxes should be grouped within the scheme due to the colonial nesting nature of these species, to facilitate likelihood of uptake. An example of suitable locations for the swift bricks to be installed is provided in Figure 6.



Figure 4: Manthorpe Swift box (integrated)

Figure 5: Schwegler 1B bird box for erection on trees

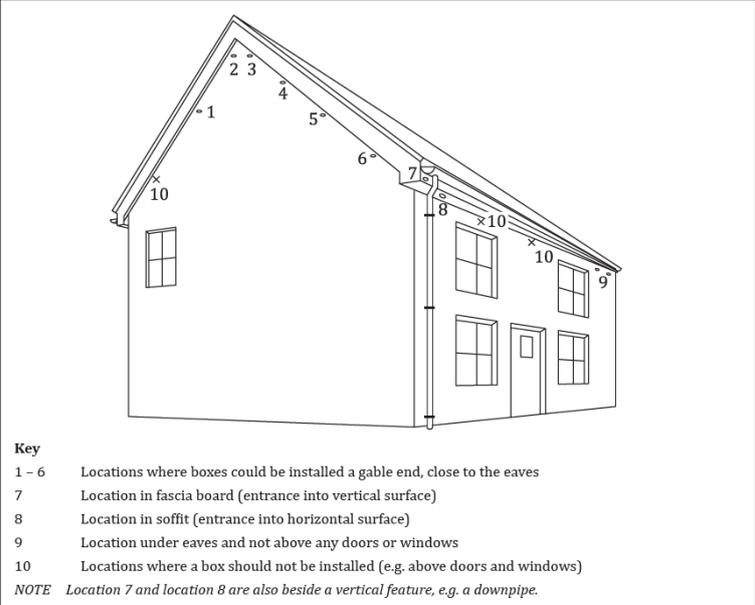


Figure 6: Suitable locations for the installation of nest boxes in a typical residential home (from BS 42021:2022)

4.22 Further measures to maintain and enhance the site post-development and provide feeding resources include the planting of new hedgerow, scrub, woodland and trees and reinforcement of existing

habitats, with native species that are attractive to invertebrates and also provide suitable plant-based food sources (buds and berries). In addition, a low-intensity management regime should be adopted for hedgerow habitats, including late winter cutting to maintain food availability through the winter, and cutting only one side of hedges each time.

- 4.23** It is considered that mitigation is fully achievable within the surveyed area with regards to nesting birds and mitigation measures will result in a neutral to positive impact.

Great Crested Newt

- 4.24** Great crested newts are legally protected under the WCA (1981, as amended) and Conservation of Habitats and Species Regulations (2017, as amended). Taken together, it is an offence to destroy/damage a great crested newt resting place, to kill/injure individual animals, to disturb them within their resting places, or to impact them in such a way to be likely to significantly affect their ability to survive, breed, rear or nurture their young or their local distribution.

- 4.25** Suitable terrestrial habitats are present within and adjacent to the site. It is therefore possible that impacts could result from the clearance of suitable terrestrial habitats on-site to facilitate the development.

- 4.26** This location has good connectivity to the site through established hedgerows. As such, it is deemed likely that GCN would utilise the site for commuting and potential hibernation and it is recommended that the site is entered into the District Level Licensing (DLL) scheme provided by Natural England to mitigate for GCN disturbance. This will mean that no further surveys concerning GCN are required and that works could be completed under ecological supervision, with the appropriate mitigation fee being paid.

- 4.27** Should the DLL not be available at the time of application, or not the desired route of mitigation, further surveys for GCN, including eDNA (April 15th – June 30th) presence/likely absence, should be undertaken of all water bodies within 250m of the site. Surveys should follow current guidance as outlined in the Great Crested Newt Mitigation Guidelines (English Nature, 2001). Should GCN be confirmed as present, further population size class surveys would likely be required to inform any standard European Protected Species mitigation licence. It should be noted that such a licence would require full planning approval with all conditions pertaining to ecology discharged. Onsite mitigation would also be needed, in the form of translocation undertaken in an appropriate time of year (February – November, weather dependent) and compensation measures captured within the scheme design in the form of bespoke receptor areas/creation of terrestrial and aquatic habitat and long-term monitoring of the population.

- 4.28** Given the characteristics of the site, mitigation through either the DLL or standard EPS licence route is considered to be fully achievable. Therefore, any residual effects on great crested newts would likely be up to positive.

Hazel Dormouse

- 4.29** Hazel dormouse are listed on Schedule 5 of the WCA 1981, and are also protected under Schedule 2 of the Habitats Regulations 2010 making them European Protected Species (EPS).
- 4.30** Suitable habitat for hazel dormouse included the hedgerows, small areas of scrub, and woodland adjacent to the southern boundary of the site. Current proposals indicate the loss of part of these habitats to facilitate the development, primarily through access point provision between parcels.
- 4.31** Given the presence of suitable habitat in and around the site, further surveys for hazel dormice are advised. A habitat assessment survey is recommended to determine the quality of habitats on site and their likelihood to support hazel dormouse. This survey will assess the species diversity present per km/hedgerow or per ha/woodland/scrub and the structural complexity of the site. This survey can be undertaken at any time of the year, however it is recommended for within the summer months to capture optimal botanical season (mid-May to August)(Wells, D., Chanin, P. & Gubert, L., 2025).
- 4.32** The habitat assessment will determine the level of further survey effort required for dormouse and will indicate the number of nest tubes needed and whether footprint tunnel surveys will also be required. Surveys are undertaken during the active season, usually April to November and typically comprise of nest-tube surveys combined with nut searching. Should hazel dormice be identified as present, a suitable mitigation strategy may be required depending on the results of the survey and proposed loss of habitat. Most mitigation strategies must be undertaken under a European Protected Species (EPS) licence and would likely comprise the like-for-like replacement of habitats at an equal ratio to what is lost and protective, thorny planting or retained habitats. Lighting design will also need to consider provision of dark corridors around newly created and retained habitats suitable for this species.
- 4.33** Given the characteristics of the site, mitigation (if required) is considered to be fully achievable through the retention of existing boundary habitats, creation of new habitats, and appropriate mitigation and enhancement as detailed above. Mitigation if required would result in a neutral residual impact on dormouse.

Invertebrates

- 4.34** Section 40 of The Natural Environment and Rural Communities Act (NERC) 2006 places a legal duty on Local Authorities to conserve biodiversity. Section 41 (S41) sets out a list of 943 species and Habitats of Principal Importance. These species are known as England Biodiversity Priority (EBP) species and are those identified as requiring action under the former UK Biodiversity Action Plan (BAP) and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework.
- 4.73** In the first instance, it is recommended that suitable invertebrate habitat (hedgerows, standing deadwood, and scrub) be retained. No further surveys are considered necessary although it is recommended that clearance of suitable notable invertebrate habitat should be dismantled using hand tools in a methodical manner to allow invertebrates to move from the area to adjacent suitable habitat. Any deadwood removed should be dismantled by hand and reassembled in areas of unaffected habitat. Any notable invertebrates (namely stag beetle larvae) found during this time should be

translocated to a suitable area of habitat nearby. Clearance should be done under supervision of an ECoW.

- 4.74** Retained habitat should be enhanced for invertebrates through additional planting and a sensitive long-term management plan. In addition, the proposal should include planting of native fruit and seed-bearing trees and shrubs such as those listed in Appendix 10 as well as areas of wildflower grassland throughout public open space. This will have a neutral to positive impact on invertebrates.

Reptiles

- 4.35** Common reptiles are protected under the WCA 1981, they are listed as schedule 5 species, therefore part of Section 9(1) and section 9(5) apply; the Countryside and Rights of Way Act 2000 (CROW) also strengthens their protection.
- 4.36** Areas of woodland edge, hedgerow, grassland, and scrub, provide some potential habitat features for reptiles and it is likely there will be impacts to reptile habitats. As such, it is recommended that a seven-visit presence/likely absence surveys are undertaken across all suitable habitats to determine if reptiles currently use the site. This should be undertaken during the active reptile season from April – September and during appropriate weather conditions, with temperature being the pre-eminent factor, by following current best practice guidelines (Froglife, 1999). The results of the surveys will determine the level of mitigation is required.
- 4.37** If reptile presence is confirmed on site, a review of habitat loss will determine likely mitigation required. If suitable sheltering habitat is to be lost, mitigation will likely require removal of these habitats under the supervision of an ECoW, with any reptiles found moved to suitable retained habitats outside of the works area. If proposals require the removal of large amounts of suitable reptile habitat, mitigation may require the installation of exclusion fencing along site boundaries, followed by trapping and translocation of reptiles to a suitable onsite receptor site with log piles/ hibernacula, followed by a destructive search supervised by an ECoW and under an appropriate precautionary working method statement.
- 4.38** Exclusion fencing for GCN (if required) would also function as mitigation for reptiles by prohibiting access onto the construction area. Furthermore, a Toolbox Talk would be carried out to site workers and reptile identification information should be displayed.
- 4.39** The provision of habitat buffers adjacent to hedgerows and grassland areas, as well as the site boundaries should aid to minimise impacts as these areas are likely to be most frequently utilised by reptile species. Within these areas, ongoing management should seek to create and maintain areas of dense scrub grading down to tall sward grasses and ruderals, and then into shorter grassed areas. This will provide a highly favourable mix of refuge and foraging opportunities, increasing the carrying capacity of retained habitats. To deliver additional habitat to compensate for any losses elsewhere through the site, new tussock type grassland (e.g., Emorsgate EM10) and native scrub planting should be incorporated in further areas of open space. Log piles and hibernacula should also be created within the open space close to retained hedgerow areas, using materials from any required tree clearance (Figure 7).

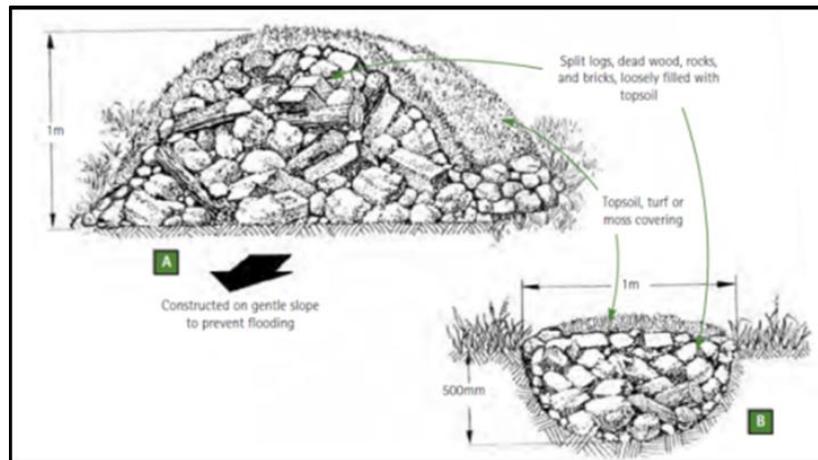


Figure 7: Hibernacula Design

4.40 Given the characteristics of the site, mitigation is considered to be fully achievable through the proposed layout. The above mitigation and enhancement recommendations would likely result in a positive residual effect.

Other Notable Species

4.41 Habitats on site were suitable for hedgehog, common toad, and brown hare, comprising the adjacent woodland, hedgerows, grassland, and scrub. No further species-specific surveys are likely to be required under current legislation and planning policy. However, sightings of these species during other surveys should be recorded to inform iterative assessments.

4.42 Potential impacts to hedgehog, common toad, and brown hare include risk of death/injury during construction/vegetation clearance. In addition, if access is impeded to new residential gardens, habitat loss/fragmentation could significantly impact hedgehog during the occupational phase. As such, clearance of suitable habitats should occur outside of hedgehog hibernation (March-September) under supervision of an ECoW. Precautionary measures implemented to protect badgers, including low speed limits, would also serve to protect hedgehogs during the operational stage of the development.

4.43 Habitat loss and fragmentation within the site will be minimised through the retention of woodland, hedgerows, ponds, tree lines, and grassland wherever feasible. The loss of larger open arable habitats is likely to displace brown hare from areas of the site; however, given the abundance of alternative suitable habitat within the wider rural-arable local landscape, this in itself is unlikely to have a significant negative impact on the local population. Buffering of retained boundary features and retention of areas of neutral grassland will maintain ecological connectivity through the site for other notable species, and provide some resting-up opportunities for brown hare (where at less disturbed boundaries of the developments).

4.44 To retain access into the site for hedgehogs post-development, it is recommended that garden boundaries are either defined by permeable hedgerows, or hedgehog highways are added to garden fences by creating ad hoc 13cm x 13cm holes in fencing/walls. This size gap is too small for most pets and can be undertaken by raising a fence panel per garden; installing Hedgehog friendly fencing (Figure 8); removing a brick at the bottom of a wall or cutting a hole in fencing/walls. Regular dropped curbs will protect hedgehogs from road collision. Furthermore, the installation of hibernacula and use of

native, species-rich seed mixes (Appendix 9) in informal areas will provide suitable foraging habitat for this species.



Figure 8: Hedgehog friendly fencing

- 4.45** Creation of new hedgerow, wetland, and grassland habitats, together with hibernacula provision as detailed for reptiles, would benefit hedgehog and harvest mouse by providing enhanced foraging, breeding and refuge opportunities on the site. This would result in a neutral to positive impact for other notable species.

5.0 Conclusions

- 5.1** The site supports a range of notable and priority habitats, including mature trees, hedgerows, and adjacent woodland, in addition to areas of lower value arable habitats. The site provides suitable habitat for a number of protected and/or notable species. A summary of features, likely impacts, and outline mitigation and enhancement measures is provided in Table 7.
- 5.2** Through incorporation of relevant surveys, mitigation and precautionary methods, including the retention, buffering and enhancement of habitats of ecological value wherever feasible, compensatory provision where losses are unavoidable and seeking on-site solutions first before off-site compensation, it is considered that the surveyed area could deliver a BNG in terms of measures to support high value habitats and protected species and to carry this out in line with current wildlife legislation, *chapter 15 of the NPPF* (MHCLG, 2024); and policies within Eight Ash Green Neighbourhood Plan (Colchester City Council, 2018) relevant to nature conservation.
- 5.3** The proposed development therefore provides an important opportunity to deliver biodiversity benefits which enhance habitats within and adjacent to the site and strengthen ecological connectivity for priority habitats and protected and notable species.

Table 7: Summary of likely impacts, mitigation and enhancement measures and residual effects

Feature	Likely Impacts	Further Surveys and Assessment	Likely Mitigation and Enhancement Measures
Statutory Designated Sites	Pollution events, and increased recreational pressure.	HRA including Designated sites assessment	To be confirmed within HRA but likely to comprise provision of on-site semi-natural open space. Contribution to the Essex Coast RAMS and provision of SANG.
Non-statutory Designated Sites	Tree root compaction, limb loss, pollution events, and increased recreational pressure.	CEMP: Biodiversity	Retention and buffering of the Daisy Green Grove LWS. Likely mitigation to include sensitive lighting strategy.
Priority Habitats	Impacts to retained and/or adjacent habitats during construction, via direct damage, dust, pollution events, light and noise.	Biodiversity Net Gain Assessment using Defra Statutory Metric calculations	Retention, buffering and enhancement of habitats of ecological value wherever feasible, with compensatory provision where losses are unavoidable. Buffering of adjacent woodland habitats. Suitable habitat creation/enhancement throughout the site including enhancing existing woodland, new grassland, native tree, shrub, and hedgerow planting. Sensitive lighting scheme.
Badger	Injury/death of dispersing individuals during construction and operation. Loss of foraging and sett building habitat.	Update walkover survey 3 to 6 months before construction commences	Standard precautionary measures during construction; covering trenches overnight or installing a plank/mammal ladder, sensible storage of chemicals/equipment, avoidance of littering, low speed limits. Delivery of suitable enhancement for foraging badger within open space.

Feature	Likely Impacts	Further Surveys and Assessment	Likely Mitigation and Enhancement Measures
Bats - Roosts	Loss/disturbance of a roost (if present) Lighting impacts during/post construction	Aerial inspection of trees (May to August)	Further surveys and/or additional mitigation required if trees with potential to support roosting bats are impacted, and further surveys identify presence. If present, then application for an EPSL to cover the works. Retention of all mature trees where possible within the design. Sensitive design to avoid impacts to trees with suitability for roosting bats. Provision of bat boxes/suitable roost features on retained trees/within new buildings.
Bats - Activity	Loss and fragmentation of foraging/ commuting habitat Disturbance effects due to lighting	Seasonal bat activity surveys and monthly static monitoring	Retention of priority habitats, plus reinforcement & buffering of woodlands and tree lines. Sensitive lighting and wildlife-friendly landscaping schemes, incorporating new native tree, woodland, and hedgerow planting.
Birds	Injury/death of birds and eggs Destruction/damage of nests Disturbance of nests Loss of nesting and foraging habitat	Breeding bird surveys (six per season, May to July) Wintering bird surveys (six per season, November to February)	Sensitive timings for vegetation clearance or nesting bird check by an ecologist within 48 hours prior with suitable buffer to be applied around any nests found. Retention, reinforcement and buffering of adjacent woodland and hedgerow trees. Sensitive lighting and wildlife-friendly landscaping schemes, incorporating new native tree and hedgerow planting. Provision of artificial nesting opportunities (bird boxes).
GCN	Death/injury of adult great crested newt and loss of habitats Loss and fragmentation of foraging/ dispersal habitat	DLL: No further survey effort required Traditional licence route: eDNA surveys to confirm status. Presence /absence and population class pond surveys	Payment of DLL fee. No further surveys required. Mitigation will comprise on site ECoW during clearance of suitable habitats under a suitable Method Statement. If present then application for an EPSL to cover the works. New suitable habitat created/ enhancements delivered e.g. SUDS, hibernacula.
Hazel dormouse	Death/injury of hazel dormice and loss and/or fragmentation of habitats	Habitat Suitability Assessment to inform further survey effort (optimal season May to September)	If present, mitigation measures must be undertaken under an EPSL. Retention and enhancement of woodland and hedgerow habitats. Creation of new woodland/hedgerow. Maintenance of ecological connectivity through retaining and enhancing hedgerows.

Feature	Likely Impacts	Further Surveys and Assessment	Likely Mitigation and Enhancement Measures
Invertebrates	<p>Potential for a range or notable species including stag beetle</p> <p>Direct loss of habitat</p> <p>Indirect impacts such as light disturbance during and post construction</p>	N/A	<p>Retention and buffering of higher-value priority habitats; woodlands and mature trees.</p> <p>Wildlife friendly planting scheme throughout development, incorporating resources for a range of pollinator species.</p> <p>Log piles and retention of deadwood for stag beetle.</p> <p>Sensitive lighting scheme.</p>
Reptiles	<p>Death/injury of common reptile species</p> <p>Habitat loss/fragmentation</p>	Seven presence/likely absence surveys in active season (April to September)	<p>Likely mitigation includes staged removal of suitable habitats under ecological supervision. If significant numbers of reptiles are recorded a translocation may be required.</p> <p>Key habitats to be retained/protected (grassland margins to woodland and hedgerows).</p> <p>Habitat enhancements e.g. hibernacula provision, new grassland creation, edge habitat creation.</p>
Hedgehog, common toad, and brown hare	<p>Death/injury</p> <p>Habitat loss/fragmentation</p>	Sightings to be reported in combination with other species specific surveys	<p>Retention and buffering of woodland, areas of grassland and hedgerows to maintain ecological connectivity through the sites.</p> <p>Habitat creation including new grassland and shrub areas and enhancement of existing neutral grassland. Sensitive timings for works to terrestrial habitats, e.g. outside of hedgehog hibernation season (November-March).</p> <p>Provision of hedgehog highways in fencing and culverts for animal movement under new roads.</p> <p>Precautionary measures already specified for badgers will also serve to protect hedgehogs from harm during construction.</p>

6.0 References

Bibby, C. J., Burgess, N. D. and Hill, D. A. (1992) *Bird census techniques*. London: Academic Press.

British Standards Institution (2012) *BS 5837: 2012 Trees in relation to design, demolition and construction – Recommendations*. British Standards Institution: London.

British Standards Institution (2013) *BS 42020: 2013 Biodiversity – Code of Practice for Planning and Development*. British Standards Institution: London.

BRITISH Trust for Ornithology (2021) *Birds of Conservation Concern 5*. Available online: <https://www.bto.org/our-work/science/publications/reports/birds-conservation-concern>

Butcher, B., Carey, P., Edmonds, R., Norton, L., & Treweek, J. (2023). The UK habitat classification user manual, version 2.01. UKHab. <http://www.ukhab.org/>

CIEEM (2017a) *Guidelines on Ecological Report Writing*. Chartered Institute of Ecology and Environmental Management: Winchester.

CIEEM (2017b) *Guidelines for Preliminary Ecological Appraisal 2nd edition*. Chartered Institute of Ecology and Environmental Management: Winchester.

CIEEM (2019a) *Code of Professional Conduct*. Chartered Institute of Ecology and Environmental Management: Winchester.

CIEEM (2019b) *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine* version 1.1. Chartered Institute of Ecology and Environmental Management: Winchester.

Colchester City Council (2018) *Eight Ash Green Neighbourhood Plan*. Available online: <https://cbccrmdata.blob.core.windows.net/noteattachment/Eight%20Ash%20Green%20Neighbourhood%20Plan.pdf>

Collins, J. (ed.) (2024) *Bat Surveys for Professional Ecologists: Good Practice Guidelines 4th Edition*. London: The Bat Conservation Trust.

Department for Environment, Food and Rural Affairs (DEFRA) (January 2022) *Consultation on Biodiversity Net Gain Regulations and Implementation*

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

Froglife (1999) *Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife advice sheet 10. Froglife, Halesworth.

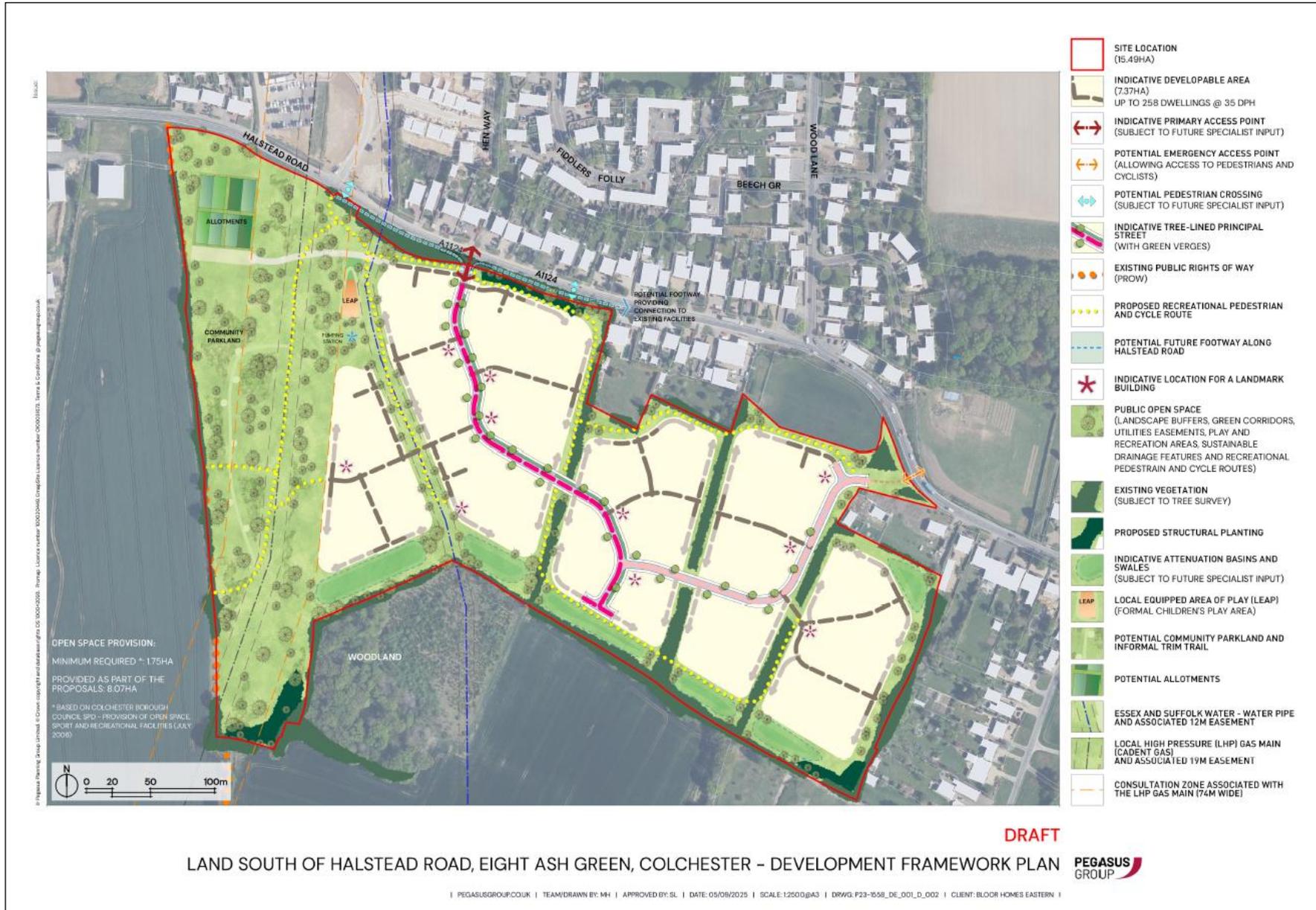
- Gunnell, K., Grant, G. and Williams, C. (2012). *Landscape and Urban Design for Bats and Biodiversity*. Bat Conservation Trust
- Harris, S., Cresswell, P. and Jefferies, D. (1989) *Surveying Badgers: Occasional Publication No.9*. The Mammal Society.
- Hundt, L. (2012) *Bat Surveys: Good Practice Guidelines 2nd Edition*. The Bat Conservation Trust: London.
- Institution of Lighting Professionals (2023) *Guidance Note 08/23: Bats and Artificial Lighting at Night*. Institution of Lighting Professionals, Warwickshire.
- JNCC (2008) *UK Biodiversity Action Plan: Priority Habitat Descriptions*. Peterborough.
- Marchant, J.H. (1983) *BTO Common Birds Census instructions*. BTO: Tring.
- Ministry of Housing, Communities and Local Government (MHCLG) (2024) *National Planning Policy Framework*.
- Natural England (2009). *Guidance on 'Current Use' in the Definition of a Badger Settle*. Natural England: Peterborough.
- Place Services (March 2019) *The Essex Coast Recreational disturbance Avoidance Mitigation Strategy – Habitat Regulations Assessment Strategy Document 2018-2038*. Essex County Council
- Stace, C. A. (2019) *New Flora of the British Isles, 4th Edition*. Cambridge University Press: Cambridge.
- Stone, E.L., Jones, G., Harris, S. (2012) *Conserving energy at a cost to biodiversity? Impacts of LED lighting on bats*. *Glob Change Biol.* 18, 2458-2465.
- Wells, D., Chanin, P. & Gubert, L. (2025) *Hazel Dormouse Mitigation Handbook*. The Mammal Society. ISBN: 978-1-0687982-2-1

Appendix 1: Site Plans

Site Location Plan



Current Proposed Plans



Appendix 2: Legislative and Policy Framework

National Planning Policy Framework (NPPF)

The *NPPF* (MHCLG, 2024) outlines what the planning system should do to contribute to and enhance the natural and local environment through the following policy statements:

Relevant Paragraphs

Paragraph 8

Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):

c) an environmental objective – to contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy.

Paragraph 20

Strategic policies should set out an overall strategy for the pattern, scale and quality of development, and make sufficient provision for:

d) conservation and enhancement of the natural, built and historic environment, including landscapes and green infrastructure, and planning measures to address climate change mitigation and adaptation.

Paragraph 29

Non-strategic policies should be used by local planning authorities and communities to set out more detailed policies for specific areas, neighbourhoods or types of development. This can include allocating sites, the provision of infrastructure and community facilities at a local level, establishing design principles, conserving and enhancing the natural and historic environment and setting out other development management policies.

Paragraph 77

The supply of large numbers of new homes can often be best achieved through planning for larger scale development, such as new settlements or significant extensions to existing villages and towns, provided they are well located and designed, and supported by the necessary infrastructure and facilities (including a genuine choice of transport modes). Working with the support of their communities, and with other authorities if appropriate, strategic policy-making authorities should identify suitable locations for such development where this can help to meet identified needs in a sustainable way. In doing so, they should:

a) consider the opportunities presented by existing or planned investment in infrastructure, the area's economic potential and the scope for net environmental gains;

Paragraph 109

Transport issues should be considered from the earliest stages of plan-making and development proposals, so that:

f) the environmental impacts of traffic and transport infrastructure can be identified, assessed and taken into account – including appropriate opportunities for avoiding and mitigating any adverse effects, and for net environmental gains; and

Paragraph 124

Planning policies and decisions should promote an effective use of land in meeting the need for homes and other uses, while safeguarding and improving the environment and ensuring safe and healthy living conditions. Strategic policies should set out a clear strategy for accommodating objectively assessed needs, in a way that makes as much use as possible of previously-developed or 'brownfield'

land (Except where this would conflict with other policies in this Framework, including causing harm to designated sites of importance for biodiversity.)

Paragraph 125

Planning policies and decisions should:

- a) encourage multiple benefits from both urban and rural land, including through mixed use schemes and taking opportunities to achieve net environmental gains – such as developments that would enable new habitat creation or improve public access to the countryside;
- b) recognise that some undeveloped land can perform many functions, such as for wildlife, recreation, flood risk mitigation, cooling/shading, carbon storage or food production;

Paragraph 151

Once Green Belts have been defined, local planning authorities should plan positively to enhance their beneficial use, such as looking for opportunities to provide access; to provide opportunities for outdoor sport and recreation; to retain and enhance landscapes, visual amenity and biodiversity; or to improve damaged and derelict land.

Paragraph 162

Plans should take a proactive approach to mitigating and adapting to climate change, taking into account the long-term implications for flood risk, coastal change, water supply, biodiversity and landscapes, and the risk of overheating and drought from rising temperatures. Policies should support appropriate measures to ensure the future health and resilience of communities and infrastructure to climate change impacts, such as providing space for physical protection measures, or making provision for the possible future relocation of vulnerable development and infrastructure.

Paragraph 187

Planning policies and decisions should contribute to and enhance the natural and local environment by:

- a) protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
- b) recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and;
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate.

Paragraph 188

Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

Paragraph 192

To protect and enhance biodiversity and geodiversity, plans should:

- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity⁵⁶; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- b) 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.

Paragraph 193

When determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

Paragraph 194

The following should be given the same protection as habitats sites:

- a) potential Special Protection Areas and possible Special Areas of Conservation;
- b) listed or proposed Ramsar sites;
- c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

Paragraph 195

The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.

Paragraph 198

Planning policies and decisions should also ensure that new development is appropriate for its location taking into account the likely effects (including cumulative effects) of pollution on health, living conditions and the natural environment, as well as the potential sensitivity of the site or the wider area to impacts that could arise from the development. In doing so they should:

- c) limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

Eight Ash Green Neighbourhood Plan

Objective: To protect the existing hedgerows in the whole of the village

Policy: Environment Policy 3 (EP 3): Development proposals in the Neighbourhood Plan Area resulting in the destruction and/or removal of existing hedgerows will only be supported if replaced, on the same site

Rationale

- Protection and enhancement of the open aspect, rural nature and feel of the village is important to and much valued by the villagers. In addition, hedgerows, trees and woods provide a vital habitat and wildlife corridors for a wide variety of species enhancing the biodiversity and ecology of a locality which also helps to reduce carbon dioxide in the atmosphere.
- The village contains a Priority Deciduous Woodland Habitat alongside the south east corner of Choats Wood, a Priority Woodland and Old Orchard Habitat site alongside Blind Lane. The protection of trees and woodland are a material consideration in determining planning applications. In addition, guidance provides for formal protection is available through designation by Tree Preservation Orders and within conservation areas.

Context

The Hedgerow Regulations 1997 make provision for the appropriate protection of important hedgerows in England and Wales. The Landscape Character Assessment referred to in Section 3 above makes reference to the “Character” of a locality by reference to a combination of factors to include its ecological component i.e. the existing hedgerows, trees and woods in the village.

Intent

The intent behind this Policy is to ensure that should any damage be caused to the existing hedgerows in the village as a result of any development, that mitigation measures are put in place to restore what was there before.

Wildlife Legislation

The two principal wildlife statutes are the Conservation of Habitats and Species Regulations (The Habitats Regulations 2019), which deals with internationally important sites and species, and the Wildlife and Countryside Act (WCA) 1981, which deals with nationally important sites and species.

Certain habitats and species within discrete sites are protected as SSSI under the WCA 1981. A proportion of these are more strictly protected as proposed or designated SPA, SAC and Ramsar sites under the Conservation of Habitats and Species Regulations (2019). These designations protect features and resources listed as being of international importance from both direct and indirect effects arising from a range of issues including proposed development. In addition, non-statutory designated sites (e.g. Local Wildlife Sites) are protected under the National Parks and Access to the Countryside Act, (1949) Section 21.

Certain species listed on Schedule 5 of the WCA 1981, including all bat species, great crested newt *Triturus cristatus*, hazel dormouse *Muscardinus avellanarius* and otter *Lutra lutra* are also protected under Schedule 2 of the Habitats Regulations 2010 making them European Protected Species (EPS). Taken together it is illegal to:

- Deliberately kill, injure or capture any wild animal of EPS;
- Deliberately disturb wild animals of any EPS in such a way to be likely to significantly affect:
 - The ability of that species to survive, breed, rear or nurture their young; or
 - The local distribution of that species.
- Recklessly disturb an EPS or obstruct access to their place of rest;
- Damage or destroy breeding sites or resting places of such animals;
- Deliberately take or destroy the eggs of such an animal;
- Possess or transport any part of an EPS, unless acquired legally; and/or
- Sell, barter or exchange any part of an EPS.

A range of species other than birds, including water vole *Arvicola amphibius*, is protected from disturbance and destruction under the WCA 1981 through inclusion on Schedule 5.

All breeding birds are protected from deliberate destruction under the WCA 1981. Certain species are further protected from disturbance at their nest sites being listed on Schedule 1 of the WCA 1981.

Common reptiles including common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix helvetica* and adder *Vipera berus* are protected under the WCA 1981, they are listed as schedule 5 species, therefore part of Section 9(1) and section 9(5) apply; the Countryside and Rights of Way Act 2000 (CRoW) also strengthens their protection.

Badger *Meles meles* is protected from sett disturbance and destruction under the Protection of Badgers Act 1992.

Section 40 of The Natural Environment and Rural Communities Act (NERC) 2006 places a legal duty on Local Authorities to conserve biodiversity. Section 41 (S41) sets out a list of 943 species and Habitats of Principal Importance. These species are known as England Biodiversity Priority (EBP) species and are those identified as requiring action under the former UK Biodiversity Action Plan (BAP) and which continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework.

Native, species-rich hedgerows that fit certain criteria are protected as being 'important' under the Hedgerow Regulations (1997).

Japanese Knotweed *Reynoutria japonica*, along with other introduced and invasive species are listed under Schedule 9 of the WCA 1981. Japanese knotweed is highly invasive, and its rhizomes cause damage to buildings and other infrastructure. Hence it is also classed as controlled waste under the Environment Protection Act 1990 and has therefore either to be removed or disposed of in a licensed landfill or the rhizomes buried to a depth of at least 5m.

Appendix 3: Detailed Methods

Badger

- 6.1** Surveys were carried out using standard guidelines for classifying badger setts and categorising entrance holes (Harris et al., 1989; Scottish Badgers, 2018; Natural England, 2009). All areas of the site and wider area were readily accessible except private residential properties.
- 6.2** The survey comprised a detailed systematic walkover survey of the site. The badger signs looked for were:
- Additional holes/setts;
 - Prints;
 - Badger runs;
 - Hairs;
 - Latrines;
 - Scratching posts, and;
 - Snuffle marks.
- 6.3** The number of entrances and levels of use were recorded, and the sett was classified according to the criteria used in the National Badger surveys (Harris et al., 1989). The classification criteria are given below:
- Main setts – a large well established, often extensive and in continuous use. There is only one main sett per social group of badgers. This is where the cubs are most likely to be born.
 - Annexe setts – occur in close association with the main sett and are linked to the main sett by clear well-used paths. If a second litter of cubs are born, they will be reared here.
 - Subsidiary setts – these often have 3-5 holes and are normally over 50m from a main sett and are not linked by clear paths. These setts are not continually active.
 - Outlying setts – these usually have 1-3 holes, have small spoil heaps and are sporadically used. Foxes and rabbits may move in.
- 6.4** An assessment of the activity of each sett was undertaken; the following categories were assigned to the entrance holes to make this assessment:
- Well-used: Entrances clear of debris and vegetation and are obviously well used.
 - Partially-used: Entrances are not in regular use and have debris such as leaves or twigs across the entrances. These holes could come into regular use with minimal clearance.
 - Disused: Entrances have not been used for some time, are partially or completely blocked. There may be a depression in the ground where the hole used to be.
- 6.5** A badger sett is protected by legislation if it “displays signs indicating current use by a badger”. A sett is therefore protected if such signs remain present (Natural England, 2009). As such, a sett is likely to fall outside the definition of a sett in the Act if the evidence available indicates that it is not in current use by badgers; e.g. absence of badger field signs, debris in sett entrances etc.

Bats

- 6.6** A scoping exercise was undertaken to assess the sites suitability to support roosting, foraging and commuting bats.
- 6.7** All trees within the site boundary were assessed for their potential to support roosting bats. Trees and buildings were assessed to determine if further surveys including ground level tree assessments and preliminary bat roosting feature assessments are required.

6.8 Habitats on and adjacent site were assessed for their suitability to support roosting, foraging and commuting bats using guidelines issued by the Bat Conservation Trust (Collins, 2023).

Table 8: Assessment of the potential suitability of a proposed development site for roosting, foraging and commuting bats (Collins, 2023)

Suitability	Roosting habitats	Commuting and foraging habitats
Negligible	No obvious habitat features on site likely to be used by roosting; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion	Negligible habitat features on site likely to be used by commuting and foraging bats
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by another habitat Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or patch of scrub
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge High-quality habitat that is well-connected to the wider landscape that is likely used regularly by foraging bats such as broad-leaved woodland, tree-lined watercourses and grazed parkland Site is close to and connected to known roosts

Table 9: Assessment of the potential suitability of tree for roosting bats (Collins, 2023)

Suitability	Description
NONE	Either no PRFs in the tree or highly unlikely to be any
FAR	Further assessment required to establish if PRFs are present in the tree
PRF	A tree with at least one PRF present

Table 10: Categorisations of the potential suitability of PRFs for bats (Collins, 2023)

Suitability	Description
PRF-I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony

Birds

6.9 The site was assessed for its potential to support breeding birds and significant wintering and/or migratory bird populations. Suitable habitat generally includes scrub, trees and can also include buildings, open grassland and piles of debris. Detailed bird surveys were not undertaken at this preliminary stage.

Great Crested Newt

- 6.10** Aquatic and terrestrial habitats were assessed for their suitability for great crested newts. Suitable terrestrial habitat generally includes rough grassland and woodland where they can forage and hibernate, with good links to ponds where they breed.

Hazel Dormouse

- 6.11** Habitats on site were assessed for their general suitability for hazel dormouse. This species generally uses areas of dense woody vegetation and are more likely to be found where there is a wide diversity of woody species contributing to a three-dimensional habitat structure, a number of food sources, plants suitable for nest-building materials and good habitat connectivity.

Invertebrates

- 6.12** The site was assessed for its potential to support rare or notable invertebrate species; this assessment was made on the basis of the range of the habitats present.

Otter

- 6.13** The site was assessed for its potential to support otters. Otters have been recorded exploiting virtually all types of water and waterways in the UK and can be found on still waters (canals, lakes, ponds and reservoirs) as well as rivers and streams of all sizes. Suitable sites must have an abundant supply of food (normally associated with high water quality), together with suitable habitat, such as vegetated riverbanks, islands, reedbeds and woodland, which are used for foraging, breeding and resting.

Water Vole

- 6.14** The site was assessed for its potential to support water voles. Water voles will inhabit most open water and wetland habitats including streams, canals, wet ditches and ponds however they do require certain characteristics to thrive. These include slow-flowing waters around 1m deep, steep earth banks to create burrows, and tall herbaceous vegetation to provide food and cover from predators.

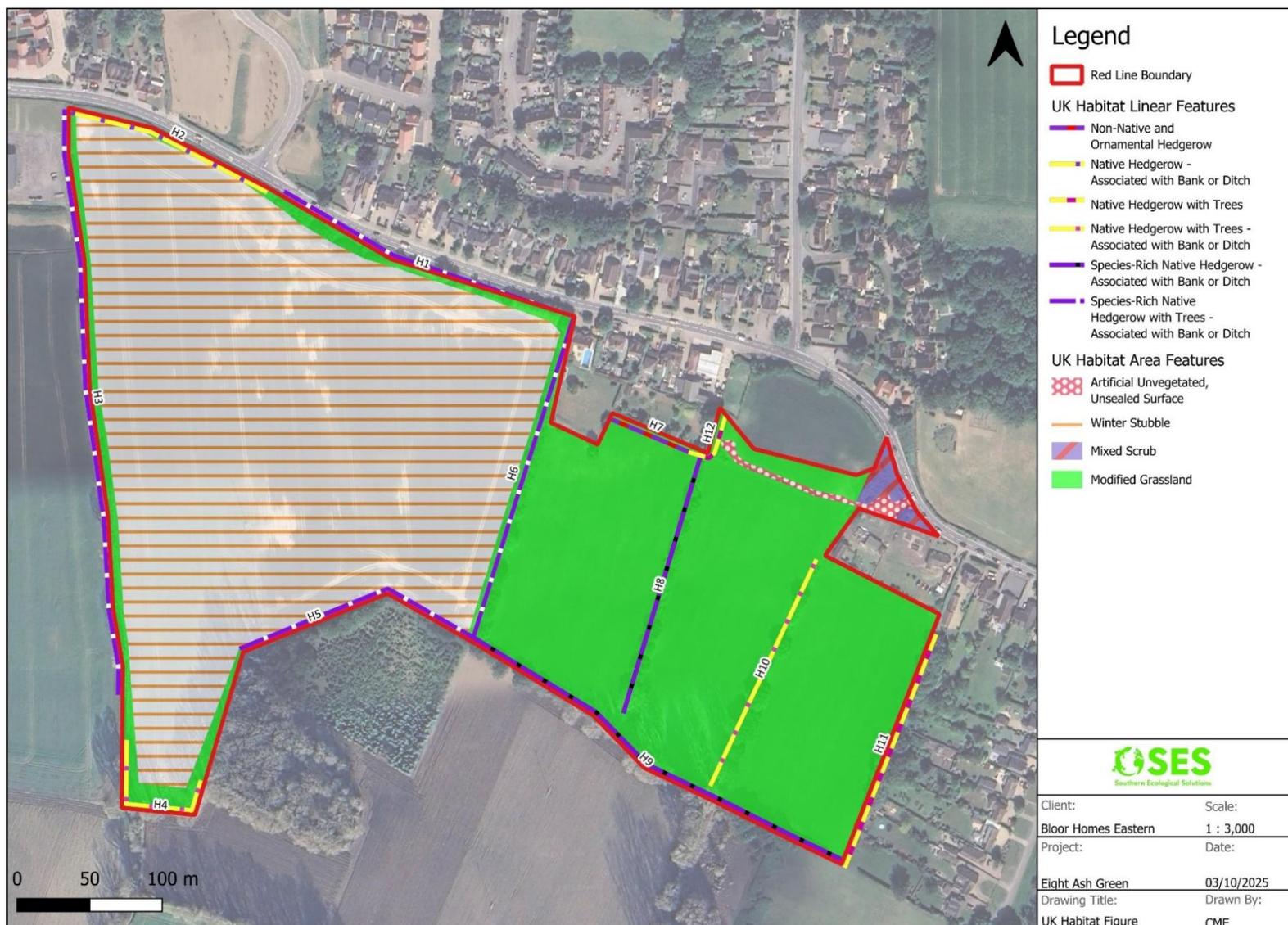
Reptiles

- 6.15** The site was assessed for its suitability for the four common UK reptile species; common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix natrix* and adder *Vipera berus*. Specific habitat requirements vary between species. Common lizard and slow worm prefer rough grassland although they can be found in a variety of habitats ranging from woodland glades to walls and pastures. Grass snakes have similar habitat requirements but have a greater reliance on ponds and wetlands. Adder is more associated with dry grasslands, heathland and woodland edge habitats.

Other Notable Species

- 6.16** The site was assessed for its potential to support Natural Environment and Rural Communities (NERC) Act 2006 species of principal importance which are likely to occur in the local area especially hedgehog *Erinaceus europaeus* and brown hare *Lepus europaeus*.

Appendix 4: UKHab Survey Plan



Appendix 5: Plant Species recorded during UKHab Survey

Common name	Latin Name	Mixed scrub	Modified grassland	H1	H2	H3	H4	H5	H6	H7	H8	H9	H10	H11	H12
Ash	<i>Fraxinus excelsior</i>			O		O		R	O					O	
Blackthorn	<i>Prunus spinosa</i>	A		F	A	D	A	A	F		A	A	F	A	D
Bracken	<i>Pteridium aquilinum</i>										O	O	O		
Bramble	<i>Rubus futicosus agg.</i>	A		R	A	F	A	O	O			O	O	F	
Broad-leaved dock	<i>Rumex obtusifolius</i>	O													
Butterfly bush	<i>Buddleia davidii</i>														
Cleavers	<i>Galium aparine</i>		O												
Cock's-foot	<i>Dactylis glomerata</i>		O												
Common dandelion	<i>Taraxacum officinale</i>	O													
Common nettle	<i>Urtica dioica</i>		O		O								O		
Creeping thistle	<i>Cirsium arvense</i>	F	R												
Curled dock	<i>Rumex crispus</i>	O													
Dog rose	<i>Rosa canina</i>			O	O	O	O		O		A	O			O
Dogwood	<i>Cornus sanguinea</i>														
Elder	<i>Sambucus nigra</i>				R			R						R	
False oat-grass	<i>Arrhenatherum elatius</i>		F												
Field elm	<i>Ulmus minor</i>				O										
Field maple	<i>Acer campestre</i>			A		A			O			O		O	
Gorse	<i>Ulex europaeus</i>										R				
Grey willow	<i>Salix cinerea</i>			R	O										
Hawthorn	<i>Crataegus monogyna</i>			F	D			D	F			F	F	A	
Hazel	<i>Corylus avellana</i>			R			R		R			R			

Holly	<i>Ilex aquifolium</i>							O	R		O	O			
Hornbeam	<i>Carpinus betulus</i>										O				
Ivy	<i>Hedera helix</i>			O	O	O			R						
Leylandii	<i>Cupressus × leylandii</i>									D					
Oxeye daisy	<i>Leucanthemum vulgare</i>	O													
Oxtongue	<i>Helminthotheca echioides</i>	O													
Pedunculate oak	<i>Quercus robur</i>			F	R	F	D	A	A		A	D	D	D	
Perennial rye-grass	<i>Lolium perenne</i>	A	A												
Plum	<i>Prunus sp.</i>														
Poplar	<i>Populus sp.</i>							O			R				
Storks's bill	<i>Erodium cicutarium</i>	R													
Wild cherry	<i>Prunus avium</i>							R							
Wild mint	<i>Mentha spp.</i>												R		

Appendix 6: Site Photos



Plate 1: Field 1 comprising arable land.



Plate 2: Boundary hedgerows surrounding site.



Plate 3: Modified grassland fields (fields 3-5)



Plate 4: Hedgerows with trees surrounding the field boundaries.



Plate 5: Small area of scrub in north-eastern corner.



Plate 6: Gravel track running through scrub in north-eastern corner of site.



Plate 7: Adjacent woodland (Daisy Green Grove LWS)

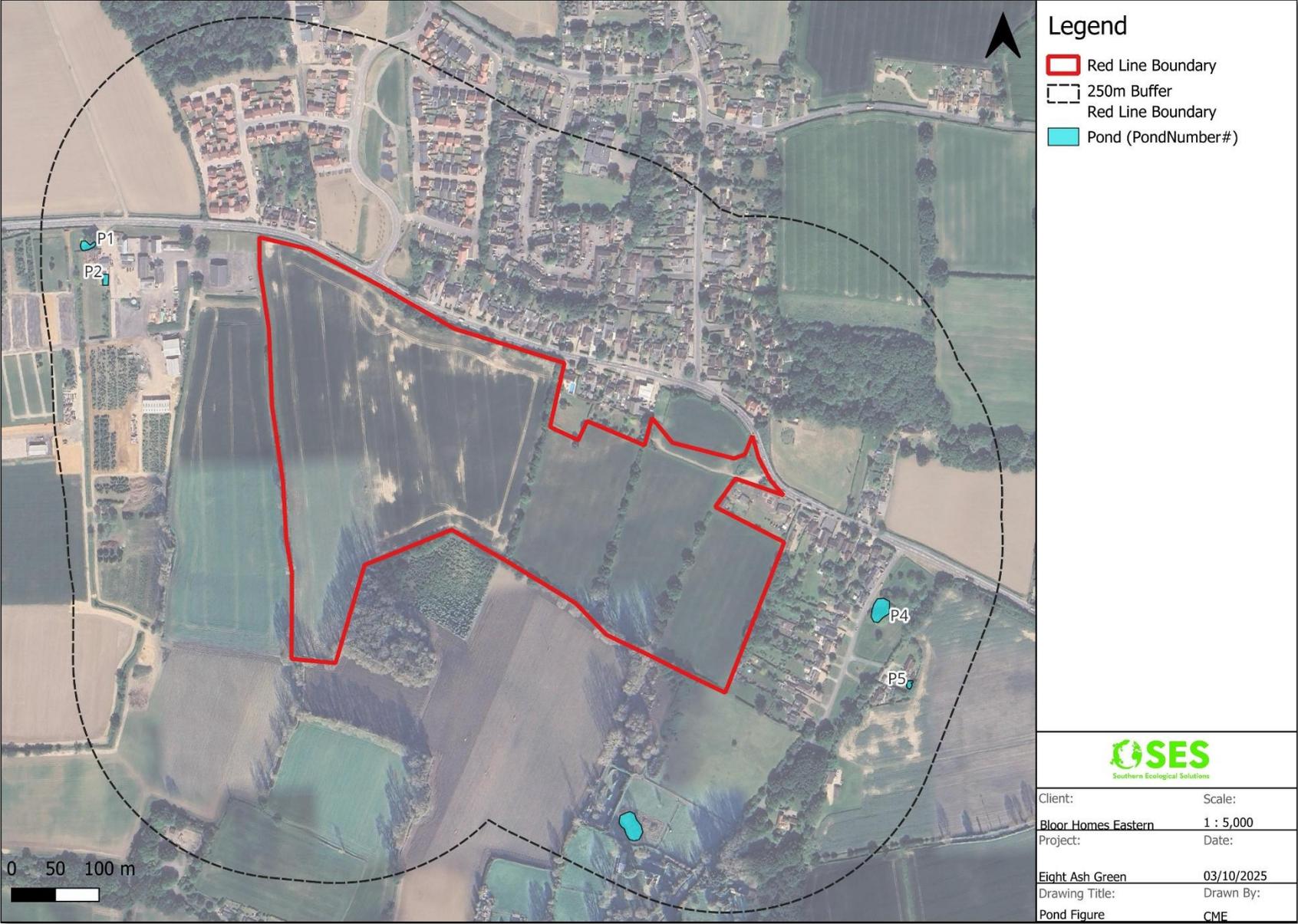


Plate 8: Pond 1, dry at the time of survey.

Appendix 7: Bat Roosting Potential Map



Appendix 8: Pond Location Plan



Appendix 9: Plant Species of Known Benefit to Wildlife

Common Name	Scientific Name	Benefits
Shrubs		
Barberry *	<i>Berberis spp.</i>	Nectar, fruit, nesting cover
Blackthorn	<i>Prunus spinosa</i>	Nectar, fruit, larval foodplant, nesting cover
Broom	<i>Cystisus scoparius</i>	Nectar, larval foodplant
Buckthorn #	<i>Rhamnus cathartica</i>	Nectar, berries, larval foodplant, nesting cover
Butterfly bush*	<i>Buddleja davidii</i>	Nectar, nesting cover
Butterfly bush*	<i>Buddleja globosa</i>	Nectar
Californian lilac*	<i>Ceanothus spp.</i>	Nectar, nesting cover
Cherry laurel*#	<i>Prunus laurocerasus</i>	Nectar (including extra-floral nectaries)
Dog Rose	<i>Rosa canina agg.</i>	Nectar, fruit, larval foodplant, nesting cover
Dogwood	<i>Cornus sanguinea</i>	Nectar, fruit, larval foodplant
Elder	<i>Sambucus nigra</i>	Nectar, fruit, larval foodplant, nesting cover
Field rose	<i>Rosa arvensis</i>	Nectar, larval foodplant, fruit
Firethorn*	<i>Pyracantha spp.</i>	Nectar, fruit, nesting cover
Flowering currant *	<i>Ribes sanguineum</i>	Nectar, larval foodplant
Garden lavender*	<i>Lavandula x intermedia</i>	Nectar
Gorse	<i>Ulex europaeus</i>	Nectar, larval foodplant, nesting cover
Guelder rose	<i>Viburnum opulus</i>	Nectar, fruit, larval foodplant
Hawthorn	<i>Crataegus monogyna</i>	Nectar, fruit, larval foodplant, nesting cover
Hazel	<i>Corylus avellana</i>	Nuts, larval foodplant
Hebe *	<i>Hebe spp.</i>	Nectar
Holly	<i>Ilex aquifolium</i>	Nectar, fruit, larval foodplant, nesting cover
Laurustinus*	<i>Viburnum tinus</i>	Nectar, nesting cover
Mexican orange *	<i>Choisya ternata</i>	Nectar
Portuguese laurel *	<i>Prunus lusitanica</i>	Nectar, fruit, nesting cover
Rosemary *	<i>Rosmarinus officinalis</i>	Nectar
Spindle #	<i>Euonymus europaeus</i>	Nectar, fruits
Tutsan	<i>Hypericum androsaemum</i>	Nectar, fruit, larval foodplant
Wayfaring tree	<i>Viburnum lantana</i>	Nectar, fruit, larval foodplant
Yew#	<i>Taxus baccata</i>	Berries, nesting cover
Climbers		
Clematis*	<i>Clematis tangutica</i>	Nectar, seeds
Honeysuckle	<i>Lonicera periclymenum</i>	Nectar, fruit, larval foodplant, nesting cover
Ivy	<i>Herdera helix</i>	Nectar, fruit, larval foodplant, nesting cover
Traveller's joy	<i>Clematis vitalba</i>	Nectar, seeds, larval foodplant
Note: * Non-native species # Poisonous ** Native Woody species		

Appendix 10: Species of Known Benefit to Wildlife especially Bats and Invertebrates

The following table is reproduced from Gunnell, K., Grant, G. and Williams, C. (2012). Landscape and Urban Design for Bats and Biodiversity, Bat Conservation Trust. This table contains a suggested species list of plants that can provide benefit for bats either by providing a food source for insects and/ or roost potential. The plants listed are predominately native to Britain. The small group of non-native plants included for their documented value for wildlife. The list has been checked by the author against Natural England's list of invasive non-native plants.

Plant species	Common name	Native (N)	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain gardens	Hedge/ trees	Beds/ borders
<i>Acer campestre</i>	Field maple	N	T/S	C	Any	Sun/ shade				Y	
<i>Acer platanoides</i>	Norway maple		T	S	Well drained/ alkaline	Sun/ shade				Y	
<i>Acer saoocharum</i>	Sugar maple		T	S	Any	Sun/ shade				Y	
<i>Achillea millefolium</i>	Yarrow	N	HP	C,F	Well drained	Sun				Y	
<i>Ajuga reptans</i>	Bugle	N	HP	C,F	Any	Sun/ shade	Y		Y		
<i>Anthyllis vulneraria</i>	Kidney vetch	N	HP	F	Well drained	Sun	Y				
<i>Aubrieta deltoidea</i>	Aubrieta		H	F	Well drained	Sun/shade		Y			
<i>betula pendula</i>	Sliver birch	N	T	C	Sandy/ acid	Sun				Y	
<i>Cardamine pratensis</i>	Cuckoo-flower	N	HP	F	Moist	Sun/ shade			Y		Y
<i>Carpinus betulus</i>	Hornbeam	N	T	C	Clay	Sun				Y	
<i>Centaurea nigra</i>	Common knapweed	N	HP	C,F	Dry, not acid	Sun	Y				Y
<i>Centranthus ruber</i>	Red valerian		HP	F	Well drained	Sun	Y				Y
<i>Clematis vitalba</i>	Old man's Beard	N	C	F	well drained/ alkaline	Sun				Y	
<i>Corylus avellana</i>	Hazel	N	S	C	Any dry	Sun/ shade		Y		Y	
<i>Crataegus monogyna</i>	Hawthorn	N	S	S,C	Any	Sun/shade				Y	
<i>Daucus carota</i>	Wild carrot	N	Bi	S,C,F	Any	Sun	Y				Y
<i>Dianthus spp.</i>	Pinks	N	A-Bi	F	Well drained	Sun	Y	Y			Y
<i>Digitalis purpurea</i>	Foxglove	N	Bi	C	Well drained	Shade/ partial shade				Y	Y
<i>Erica cinera</i>	Bell heather	N	S	F	Sandy	Full sun					Y
<i>Ersimum cherira</i>	Wallflower		Bi-P	F	Well drained	Sun		Y			Y
<i>Eupatorium</i>	Hemp agrimony	N	H	F	Moist	Sun/ shade			Y		Y

Plant species	Common name	Native (N)	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain gardens	Hedge/ trees	Beds/ borders
<i>Fagus sylvatica</i>	Beech	N	T	C, R	Well drained alkaline	Sun/ shade				Y	
<i>Foeniculum vulgare</i>	Fennel		H	F	Well drained	Sun					Y
<i>Fraxinus excelsior</i>	Common Ash	N	T	C, R	Any	Sun/ shade				Y	
<i>Hebe spp.</i>	Hebe species		S	F	Well drained	Sun /shade				Y	Y
<i>Hedera Helix</i>	Ivy	N	C	F,C	Any	Sun/ shade		Y	Y	Y	Y
<i>Hesperis matronalis</i>	Sweet Rocket		H	F	Well drained/ dry	Sun/ shade					Y
<i>Hyacinthoides non-scripta</i>	Bluebell	N	B	F	Loam	Shade/ partial shade		Y		Y	Y
<i>Ilex aquaifolium</i>	Holly	N	T	C	Any	Sun/ shade				Y	
<i>Jasmine officinale</i>	Common jasmine		C	F	Well drained	Sun		Y			Y
<i>Lavandula spp.</i>	Lavender species		S	F	Well drained / sandy	Sun		Y			Y
<i>Linaria vulgaris</i>	Toadflax	N	HP	C	Well drained/ alkaline	Sun	Y				Y
<i>Lonicera periclymenum</i>	Honeysuckle	N	C	F	Well drained	Sun		Y		Y	
<i>Lotus corniculatus</i>	Bird's foot trefoil	N	HP	F	Well drained/ dry	Sun	Y				Y
<i>Lunaria annua</i>	Honesty		Bi	F	Any	Sun/ partial shade	Y				Y
<i>Malus spp.</i>	Apple		T	C	Any	Sun				Y	Y
<i>Matthiola longipetala</i>	Night - scented stock		A	F	Well drained/ moist				Y		Y
<i>Myosotis spp.</i>	Forget me not sp.	N	A	F	Any	Sun	Y	Y			Y
<i>Nicotiana glauca</i>	Ornamental tobacco		A	F	Well drained moist	Sun / partial shade			Y		Y
<i>Oneothesa spp.</i>	Evening primrose		Bi	F	Well drained	Sun	Y				Y
<i>Origanum vulgare</i>	Marjoram	N	HP	F	Well drained / dry	Sun				Y	

Plant species	Common name	Native (N)	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain gardens	Hedge/ trees	Beds/ borders
<i>Populus alba</i>	White poplar	N	T	C	Clay loam	Sun				Y	
<i>Primula veris</i>	Cowslip	N	HP	F	Well drained/ moist	Sun/ partial shade	Y				Y
<i>Primula vulgaris</i>	Primrose	N	HP	F	Moist	Partial shade	Y	Y		Y	Y
<i>Prunus avium</i>	Wild cherry	N	T	C	Any	Sun				Y	Y
<i>Prunus domestica</i>	Plum		T	C	Well drained/ moist	Sun				Y	Y
<i>Prunus spinosa</i>	Blackthorn	N	S	C	Any	Sun/ partial shade				Y	
<i>Querois petraea</i>	Sessile oak	N	T	C,R	Sandy loam	Sun/ shade				Y	
<i>Quercus robur</i>	Common oak	N	T	R	Clay Loam	Sun/ shade				Y	
<i>Rosa canina</i>	Dog rose	N	S	C	Any	Sun			Y	Y	Y
<i>Salix spp.</i>	Willow species	N	S	S,C	Moist	Sun/ shade			Y	Y	
<i>Sambucus nigra</i>	Elder	N	T	C	Clay loam	Sun				Y	
<i>Saponaria officinalis</i>	Soapwort	N	HP	F	Any	Sun					Y
<i>Saxifraga oppositifolia</i>	Saxifrage	N	HP	C	Well drained	Sun	Y	Y			Y
<i>Scabiosa columbaria</i>	small scabious	N	HP	F	Well drained/ alkaline	Sun	Y				Y
<i>Sedum spectabile</i>	Ice plant		HP	F	Well drained/ dry	Sun	Y				Y
<i>Silene dioecia</i>	Red campion	N	HP	F	Any	Shade/ partial shade		Y	Y	Y	Y
<i>Sorbus aucuparia</i>	Rowan	N	T	C	Well drained	Sun				Y	
<i>Stachys lanata</i>	Lamb's ear		HP	F	Well drained/ dry	Sun					Y
<i>Symphotrichum spp.</i>	Michaelmas daisies		HP	F	Any	Sun					Y
<i>Tages patula</i>	French marigold		A	F	Well drained	Sun					Y
<i>Thymus serpyllum</i>	Creeping thyme	N	HP/S	F	Well drained/ dry	Sun	Y	Y			Y

Plant species	Common name	Native (N)	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain gardens	Hedge/trees	Beds/borders
<i>Tilia x europaea</i>	Common lime		T	C	Any	Sun/ shade				Y	
<i>Trifolium spp.</i>	Clover species	N	H	F	Any	Sun	Y				Y
<i>Valerina spp.</i>	Valerian species	N	HP	F	Moist	Sun/ partial shade			Y		Y
<i>Verbascum spp.</i>	Mulleins	N	Bi, HP	C	Well drained	Sun					Y
<i>Verbena bonariensis</i>	Verbena		HP	F	Well drained/moist	Sun					Y
<i>Viburnum lantana</i>	Wayfaring tree	N	S	C	Any	Sun/ shade				Y	Y
<i>Viburnum opulus</i>	Guelder rose	N	S	C	Moist	Sun/ shade			Y	Y	
<i>Viola tricolor</i>	Pansy	N	A	F	Well drained/moist	Sun/ partial shade	Y	Y			Y

Legend

Type		Benefit	
HP	Herbaceous perennial	C	Moth caterpillar food plant
Bi	Biennial	S	Sap sucking insects (e.g., whiteflies)
BiP	Biennial perennial	F	Flowers attract adult moths
T	Tree	E	Good roost potential
S	Shrub		
H	Herb		
A	Annual		
B	Bulb		
C	Creeper/ climber		

Appendix 11: Updated redline as of 19.12.2025

