



## Preliminary Ecological Appraisal

Land off Cornells Lane, Widdington, Essex

On Behalf of:

Clarke Smith Partnership

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**Ecology, Countryside Management**

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## Executive Summary

1. This report presents the results of a preliminary ecological appraisal undertaken at Land off Cornells Lane, Widdington, in Essex (referred to herein as 'the site'). The purpose of this report was to provide an assessment of the potential ecological impacts of the proposed development plan, and advise appropriate mitigation measures and further surveys, where necessary.
2. The site is approximately 0.48 hectares and comprises part of a single grassland field. Field boundaries include species-rich hedgerow on the southern border and wooden fenceline recently installed close to the eastern boundary separating a footpath from the site.
3. There are two Sites of Special Scientific Interest (SSSI) within 5km. The closest Local Wildlife Site (LWS) is High/Priors Wood LWS located 0.5km south-east of the site.
4. The site offers some opportunities for foraging and commuting badgers *Meles meles*. No setts were found however the site offers future sett-building opportunities. Precautionary measures during construction will need to be implemented to prevent disturbance to badgers and their setts and injury/death to badgers during the construction phase.
5. The site has potential for foraging and commuting bats. The boundary hedgerows are being retained within the final development. Sensitive lighting recommendations have been provided.
6. Common bird species are likely to use boundary habitats for nesting. As such, it is recommended that any vegetation clearance should be undertaken outside the nesting season (March to August, inclusive) or once an ecologist confirms absence of active nests.
7. The grassland within the development zone is being maintained at a low sward height to deter usage by foraging, commuting and hibernating great crested newts (GCN) and reptiles. As the site is being kept to a low sward height and due to the small amount of habitat suitable for GCN being lost and the distance of the surrounding ponds from the site, it is considered unlikely that GCN will be impacted by the proposed development.
8. Enhancements for biodiversity will include bat and bird boxes, planting up of hedgerows with native species, planting of new hedgerows, and the establishment of grassy margins which are managed for wildlife. The adjacent grassland area to the north is being enhanced as an ecology area. Along with additional planting, it will have log piles, a small pond added and will be subject to a relaxed mowing schedule to increase its value for wildlife.
9. It is considered that all significant impacts on biodiversity, including potential adverse impacts upon specific protected species, habitats and designated sites can likely be wholly mitigated and there is abundant scope within the proposal to enhance the ecological value of the site. The proposals are predicted to provide a notable biodiversity net gain.

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## **1.0 Introduction**

**1.1** Southern Ecological Solutions Ltd. (SES) was commissioned by Clarke Smith Partnership to undertake a preliminary ecological appraisal (PEA) of land at Cornells Lane, Widdington, Essex (the site) (Appendix 1). The site is centered around Ordnance Survey Grid Reference TL53963152 and is c. 0.48ha, comprising a small part of a single grassland field. Field boundaries include species-rich hedgerow to the south, fences just beyond the east and west boundaries, and the north open with no defining features. The proposed development plan is provided in Appendix 2, along with a landscape plan.

**1.2** The objectives of this PEA were to:

- Map the main ecological features within the site 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;
- Determine any potential further ecological issues;
- Determine the need for further surveys and mitigation;
- 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, 2019) and relevant nature conservation policies within the Uttlesford Local Plan Adopted January 2005.

**1.3** Details of relevant wildlife legislation and planning policies are provided in Appendix 3.

## **2.0 Methods**

**2.1** The following PEA follows guidance and methods as prescribed by the British Standard BS42020:2013 (The British Standards Institution, 2013) and the Chartered Institute for Ecology and Environmental Management (CIEEM) Guidelines for Ecological Appraisal 2<sup>nd</sup> edition (CIEEM, 2017) and the Guidelines for Ecological Impact Assessment (CIEEM, 2019). 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 stepwise assessment process has informed likely mitigation and enhancement measures.

### **Desk Study**

**2.2** SES commissioned a data search for records of protected and notable species and protected sites from the Essex Field Club (EFC). The data search encompassed the study area, and up to 2km from the boundary. Hazel dormouse records were also sought from the National Biodiversity Network (NBN) Atlas, which holds data from the People's Trust for Endangered Species (PTES).

**2.3** A web-based search for statutory designated sites via the Multi Agency Geographic Information for the Countryside (MAGIC) spatial data resource [www.magic.gov.uk](http://www.magic.gov.uk) was undertaken on 23 October 2020 for the following designations: European (up to 22km from the site boundary); and national (5km from the site boundary).

**2.4** An online search was undertaken for waterbodies within 500m of the site boundary utilising MAGIC Map on 19 October 2020.

### **Extended Phase 1 Habitat Survey**

**2.5** An extended Phase 1 Habitat Survey was carried out on 9 March 2018 by suitably qualified ecologist Darren Denmead BSc (Hons) GradCIEEM and updated on 21 October 2020 by suitably qualified ecologist Luci Coyne in appropriate weather conditions. This is a standard technique for obtaining baseline ecological information for areas of land, including proposed development sites. Phase 1 Habitat Survey methods are set out in the Handbook for Phase 1 Habitat Survey (Joint Nature Conservation Committee, 2010). Habitat mapping was undertaken using the standard classification to indicate habitat types.

**2.6** 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

**2.7** These scores represent the abundance within the defined area only and do not reflect national or regional abundances. Plant species nomenclature follows Stace (2010).

**2.8** 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.

## Badgers

- 2.9 An initial assessment was made to identify areas that might be used by badgers for foraging, commuting and sett creation.

## Bats

- 2.10 Trees were assessed for their potential to support roosting bats using guidelines issued by the Bat Conservation Trust (Collins, 2016). These were assessed externally from ground level; roosting habitats were assigned a level of suitability according to the descriptions outlined in Table 1.
- 2.11 Good bat foraging habitat generally includes sheltered areas and habitats with good numbers of insects, such as woodland, scrub, ponds, lakes and species-rich or rough grassland. Good commuting habitat generally comprises linear features such as well-connected hedgerows, woodland edge and watercourses. The site was assigned a level of suitability according to the descriptions outlined in Table 1.

**Table 1: Assessment of the potential suitability of a proposed development site for roosting, foraging and commuting bats (Collins, 2016)**

Suitability	Roosting Habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting and foraging bats.
Low	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.	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 tree 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 tree 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.	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.

## **Birds**

- 2.12** The site was assessed for its potential to support breeding birds. Suitable habitat generally includes scrub, trees and ruderal vegetation but can also include buildings, open grassland and piles of debris.
- 2.13** The site was also assessed for its potential to support significant wintering and/or migratory bird populations.

## **Great Crested Newts**

- 2.14** The terrestrial habitat on site was assessed for its 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. In addition, all accessible waterbodies within 250m of the site were assessed for their suitability to support great crested newt, in accordance with best practice guidelines (Oldham *et al.* 2000).

## **Hazel Dormice**

- 2.15** Habitats were assessed for their general suitability for hazel dormice. 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**

- 2.16** The site was assessed for its potential to support rare or notable invertebrate species.

## **Reptiles**

- 2.17** The site was assessed for its suitability for the four most common reptile species; common lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, grass snake *Natrix helvetica* and adder *Vipera berus*. Specific habitat requirements vary between species. Common lizard favour rough grassland, however they can be found in a variety of habitats ranging from woodland glades to walls and pastures. Slow-worms use similar habitats to common lizards and are often found in gardens and derelict land. Grass snake have similar habitat requirements to common lizards but have a greater reliance on ponds and wetlands where they hunt amphibians. Adders occupy areas of rough, open countryside and are often associated with woodland edge habitats.

## **Other Notable Species**

- 2.18** The site was assessed for its potential to support species of principal importance listed under the Natural Environment and Rural Communities (NERC) Act (2006) which are likely to occur in the local area.

## **Assessment of Nature Conservation Importance**

- 2.19** CIEEM (2019) has been adopted to assess the impacts upon habitats within the zone of influence 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 importance. As such, data from the data search and extended Phase 1 habitat 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.

**2.20** The following geographical scale categories is considered appropriate:

- International;
- National (England);
- Regional (South East);
- County (Essex);
- District (Uttlesford District);
- Local (Widdington); and
- Site.

### **Constraints**

**2.21** 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.

**2.22** The preliminary site walkovers were undertaken outside the flowering season for most notable plant species. Given the habitats present it is unlikely that rare or notable species are present on site.

**2.23** These constraints are not considered to significantly constrain the recommendations of this report given the detailed site visit.



### 3.0 Baseline Ecological Conditions

#### Site Description

3.1 The site comprised part of a single grass field with associated boundary hedgerow to the south. There is a single access point from Cornells Lane, with residential development adjacent to the site to the west and opposite Cornells Lane to the south. Cornells Lane abuts the site directly to the south and arable land directly to the east. To the north of the site is the remainder of the paddock.

#### Statutory/Non-statutory Sites

##### European Designated Sites

3.2 There are no European designated sites within 22km of the site.

##### Nationally Designated Sites

3.3 There are three national statutory designated sites within 5km, all of which are designated as Sites of Special Scientific Interest (SSSI) (Table 2). Debden Water Site of Special Scientific Interest (SSSI) is the closest, located approximately 2.3km north of the site. Details of all statutory designated sites within 5km of the site are provided below in Table 2.

3.4 The SSSIs are considered important at a **national** level.

**Table 2: Statutory Designated Sites within the vicinity of the site**

Name and Site Designation	Approximate Distance and Direction from Site	Size (ha.)	Designated Features
<b>UK Statutory Designated Sites</b>			
Debden Water SSSI	2.3km north	21.27	Debden Water is a small freshwater stream which runs through a narrow sheltered valley on the Chalky Boulder Clay of north east Essex and forms a tributary to the River Cam at Newport. The surrounding land has a varied topography and supports a range of habitat types including tall fen vegetation within the flood plain, unimproved neutral grassland, broadleaved woodland, species rich calcareous grassland on the valley slopes, and sandy areas surrounding a number of small disused gravel pits.
Quendon Wood SSSI	2.3km south-west	33.51	Quendon Wood is an ancient coppice-with-standards woodland supporting an unusually rich and varied flora associated with a range of soil types. The pedunculate oak-hornbeam woodland includes both the rare birch-hazel variant and the ash-maple variant, developed over chalky boulder clay and glacial gravels.
Hall's Quarry SSSI	5km south-west	0.7	Geological designation.

**Key: SSSI:** Site of Special Scientific Interest

##### Non-Statutory Designated Sites

3.5 The closest Local Wildlife Site (LWS) is High/Priors Wood LWS, situated approximately 0.5km south-east at its closest point.

3.6 The LWSs are considered important at a **local** level.

## Habitats

3.7 The Phase 1 habitat map of the site is provided within Appendix 4 and the plant species recorded per habitat type are tabled in Appendix 5. Site plates are illustrated in Appendix 6.

3.8 The Phase 1 Habitat types within and adjoining the site (JNCC, 2010) were:

- Dense scrub;
- Hedgerow with trees; and
- Species-poor semi-improved grassland;

### Dense Scrub

3.9 Dense scrub was present in the south-western corner of the site adjacent the access track in the form of bramble *Rubus fruticosus agg.* thickets. Partial clearance had recently been undertaken to allow access.

### Hedgerow with Trees

3.10 A single hedgerow was present within the red line boundary along the southern side. Species included bramble, blackthorn *Prunus spinosa*, field maple *Acer campestre*, hazel *Corylus avellana* and ash *Fraxinus excelsior*. The hedgerow to the east of the site is outside of the site boundary and will not be affected by the proposed development. Any overhanging trees will be protected as per the schemes AIA.

3.11 The hedgerow is considered to meet the definition for classification as a NERC Act (2006) Habitats of Principal Importance (HoPI), (i.e. comprising more than 80% UK native woody species) (JNCC, 2008).

3.12 A formal hedgerow survey was not undertaken as this was outside the scope of the PEA. However, it is likely that the hedgerow is 'important' under the wildlife criteria of The Hedgerow Regulations 1997.

### Species-poor Semi-improved Grassland

3.13 Species-poor semi-improved grassland was the dominating habitat throughout the site. At the time of the October 2020 survey, the grass had recently been cut to a low sward height. Species present included rank grass species which are common and widespread throughout due to the management of the site. The grassland showed evidence as being managed as a hay meadow due to the uniform sward length. Historic aerial photographs support this assessment. Grassland species that were identified were common such as cocksfoot *Dactylis glomerata* and Yorkshire fog *Holcus lanatus*. An additional species present within the sward include cow parsley *Anthriscus sylvestris*. The southern and eastern boundary of the grassland was dissected by mammal pathways.

### Summary

3.14 The majority of the habitats within the site are considered to be of low ecological value due to the management regime of the grassland which dominates the site. These habitats are considered to be valued at a **site** level. Areas of ecological value are considered to be limited to the site hedgerow. This habitat is considered to be valued at a **local** level. Confidence in this assessment is high.

## Protected and Notable Species

### Rare and Notable Plants

- 3.15** No species listed under Schedule 8 or Schedule 9 of the Wildlife and Countryside Act (WCA, 1981) were recorded on site.
- 3.16** The Phase 1 Habitat survey was undertaken at a sub-optimal time of year for surveying flowering plants, however given the habitats found on site and plants identified in their vegetative state, it is considered unlikely that the site supports scarce or protected plants. The site is therefore considered to be of up to **negligible** importance for its botanical assemblage, and confidence in this assessment is high.

### Badger

- 3.17** No badger setts were found within the red line boundary, or within 20m of this. A mammal path was noted bisecting the site from north to south.
- 3.18** The site is considered to be of **site** value for this species. Confidence in this assessment is high.

### Bats

- 3.19** The EFC data search returned records of at least ten bat species within 2km (Table 3).

**Table 3: Records of bat species within 2km of the site boundary**

Bat species	Number of records	Last recorded
Barbastelle <i>Barbastellus barbastella</i>	1	2014
Brown long-eared <i>Plecotus auritus</i>	3	2012
Common pipistrelle <i>Pipistrellus pipistrellus</i>	2	2014
Soprano pipistrelle <i>Pipistrellus pygmaeus</i>	1	2014
Unidentified pipistrelle <i>Pipistrellus sp.</i>	1	2014

### Bats – Roosting (Trees)

- 3.20** Trees of varying species, age and size were present on the southern boundary of the site and were inspected from ground level. No trees were considered to support features suitable for roosting bats. Overall, the site is considered to be of importance at a **negligible** level with respect to roosting bats, with confidence in this assessment high.

### Bats - Foraging/Commuting

- 3.21** The majority of the site consisted of species-poor semi-improved grassland which is considered to be of low value to foraging and commuting bats. The hedgerows on site are well-connected to the wider landscape and are likely to be used by commuting and foraging bats. Overall, the site is considered to offer moderate suitability and be of **local** importance for foraging/commuting bats, with confidence in this assessment high.

### Birds

- 3.22** Birds within the site during both surveys were considered common and widespread throughout. The site is considered to hold suitable nesting habitat, restricted to the hedgerow habitat which is to be retained.

- 3.23 The site is considered to have the potential to support a breeding bird assemblage of **site** importance, with confidence in this assessment high.

#### Great Crested Newt

- 3.24 The data search returned a single record of great crested newt (GCN) within 2km of the site boundary.
- 3.25 The site was dominated by a managed species-poor semi-improved grassland field considered sub-optimal terrestrial habitat for GCN. The hedgerows on the southern boundary offered suitable terrestrial habitat. No suitable aquatic habitat was present on site.
- 3.26 Potentially suitable aquatic habitat within the wider landscape includes two waterbodies recorded within 250m of the site with connectivity to the site (Appendix 7). The closest water body is located approximately 120m to the south of the site and is an ornamental garden pond within an amenity-grassland residential garden. This pond has no vegetative connection to the site which would be used by commuting GCN. The second closest waterbody is located approximately 135m to the north-east of the site within a residential garden. These ponds are approximately 400m from each other although have ponds within 170m and 60m, respectively.
- 3.27 The site is considered to be of **site** importance for GCN and confidence in this assessment is moderate.

#### Hazel Dormice

- 3.28 There were no records of hazel dormouse within the data search from NBN Atlas and due to a lack of connectivity between the site and any suitable dormouse habitat such as woodland, it is considered that hazel dormouse are absent from the site. The site is considered to have **negligible** value for hazel dormouse and as such are not considered further in this assessment. Confidence in this assessment is high.

#### Invertebrates

- 3.29 The majority of the site is unlikely to currently support rare or notable invertebrates due to the lack of habitat mosaic, specific micro-habitats and structural diversity. The site is considered to have **negligible** value for invertebrates and is hence not considered further in this assessment. Confidence in this assessment is high.

#### Otter and Water Vole

- 3.30 The ditch on the southern boundary of the site was dry at the time of the survey. Due to lack of management, the ditch has become full of mud and other debris washed from the road. No evidence of water voles or otter was recorded on site. The ditches are considered to provide poor habitat for both species. The site is therefore considered to be of **negligible** importance for these species, which are not considered any further in this assessment. Confidence in this assessment is high.

#### Reptiles

- 3.31 The data search returned no records of reptile species within 2km.
- 3.32 The majority of the site is considered to provide sub-optimal habitat for reptiles in the form of species-poor semi-improved grassland which is regularly mown to keep it to a low sward height. However, the boundary habitats in the form of a hedgerow is considered to provide foraging habitat for reptile species.

**3.33** The site is considered to be of **site** importance, and confidence in this assessment is high.

Other Notable Species

**3.34** The grassland, scrub and hedgerows were considered to provide nesting and foraging habitat for European hedgehog *Erinaceus europaeus*. The grassland on site is managed in a way that makes the habitat on site unsuitable for harvest mouse *Micromys minutus*. It is also considered likely that brown hare *Lepus lepus* are absent from the site due to a lack of suitable habitats.

**3.35** The site is considered to have **site** importance for European hedgehog. Confidence in this assessment is high.

Summary

**3.36** Table 4 provides a summary of the evaluation features.

**Table 4: Summary Evaluation of Features**

Feature	Summary Description	Importance	Confidence
SSSI	Three SSSIs within 5km, with Debden Water SSSI closest at 2.2km from site.	National	High
LWS	High/Priors Wood LWS closest, located 0.5km from site.	Local	High
Habitats	Hedgerows Scrub, and semi-improved grassland habitats.	Local Site	High
Flora	No rare or notable plant species	Negligible	High
Badger	No setts present on site. The site provides optimal foraging, commuting, and sett building habitat	Site	High
Bats (Roosting)	No roosting potential on site. Trees to be retained.	Negligible	High
Bats (Foraging)	Moderate foraging/commuting potential focused along boundary habitats. Boundary habitats to retain intact, with no removal.	Local	High
Birds	Suitable habitat for a common assemblage of breeding birds.	Site	High
Great crested newts	Suitable terrestrial habitat. Two ponds within the 250m of the site.	Site	Moderate
Hazel dormice	Habitats are not considered suitable for this species and are not connected to other suitable habitats	Negligible	High
Invertebrates	Habitats considered not likely to support diverse invertebrate species	Negligible	High
Otter and water vole	No riparian habitat on or adjacent the site.	Negligible	High
Reptiles	Suitable terrestrial habitat in the form of grassland, scrub and hedgerows.	Site	High
Other notable species	Suitable terrestrial habitat for European hedgehog.	Site	High

## 4.0 Preliminary Prediction of Impacts, Recommendations and Mitigation Measures

### Description of proposals

- 4.1 The proposal for the site is for four residential units, with associated facilities. The proposed layout is provided in Appendix 2.

### Statutory/Non-statutory Sites

#### Nationally Designated Sites

- 4.2 The closest nationally designated site is Debden Water SSSI, located 2.2km from the site. The site falls within the IRZ (via DEFRA's Magic Map- [magic.defra.gov.uk](http://magic.defra.gov.uk)) for Debden Water SSSI. The IRZ criteria advise likely impacts as a result of residential developments of 50 units or more, as well as pipelines, pylons, overhead cables and transport infrastructure. As the development is for 4 homes, the proposal does not meet the criteria for consultation with Natural England. As such, no impacts are predicted.
- 4.3 Direct or indirect effects of the proposed site on other nationally designated sites are not considered likely due to the distances involved and the small scale of the development.

#### Non-statutory Designated Sites

- 4.4 The closest non-statutory designated site is High/Priors Wood LWS, located 0.5km south-east of the site. The LWSs are considered unlikely to be adversely affected both directly and indirectly by the proposed development due to the distance from site, the size of the site and the number of proposed units.

### Habitats

#### Hedgerow

- 4.5 The southern boundary hedgerow is to be retained within the final development with the exception of the access incursion. There is abundant scope to enhance the external boundary through native species planting where there are gaps in the existing hedgerows.
- 4.6 Hedgerows should be protected during the construction phase of the proposed development using Heras fencing or similar as per the AIA recommendations.
- 4.7 The southern hedgerow on site should feature rough grassland margins at its base to maximise their value for biodiversity and maintain habitat connectivity across the site, and a long-term management plan should be produced to guide their management through the construction and operational phases.
- 4.8 The inclusion of native planting within the development plan, together with retaining hedgerows, buffering works from remaining hedgerows, and managing the hedgerows on site through rotational cutting is predicted to result in a residual **positive** impact on this habitat at a **local** level, given the size of the site and the significance of hedgerows in landscape connectivity.

#### Biodiversity Net Gain

- 4.9 The current landscape plan shows a large number of trees are due to be planted comprising native species,

with hedgerows of native species to be planted along all boundaries (external and internal). An ecological area is included to the north of the site boundary and will include additional trees, pond and will include grassland with a relaxed mowing regime. Log piles will also be located in this area. Hedgehog highways will also be provided between properties and also into the ecological area to the north. All of the above will provide increased benefits for biodiversity across the site and is predicted to result in a notable biodiversity net gain.

- 4.10** Uttlesford District Council (UDC) have issued an Interim Climate Change Policy (UDC, 2021) which pledges to increase the number of trees in the district by developing policies to require developers to plant trees and/or hedgerows on new developments. As mentioned in the previous paragraph, the landscape plan shows a high number of new trees due to be planted as part of the proposed development alongside several proposed hedgerows.
- 4.11** The site's habitats have been mapped which allows the principles of Biodiversity Net Gain (BNG) to be applied. This will involve a predevelopment calculation of biodiversity units using Natural England's metric 2.0 (or subsequent update). A target should be set for BNG across the site which informs and evolves the landscape plan. A post development biodiversity unit score can then be calculated and BNG can be objectively evidenced. In addition, the recommended management plan can be used to ensure future management including monitoring is reported and the route to achieving the targeted BNG is mapped.

### **Protected and Notable Species**

#### *Badgers*

- 4.12** No badger setts were recorded within the site boundary. The proposed development is likely to result in a reduction in suitable foraging habitat within the grassland as a whole, however the proposed development site only takes up a small part of grass paddock with the remainder to be retained along with hedgerows and scrub. In addition, any new planting should include native fruit and seed-bearing trees and shrubs such as those listed in Appendix 8.
- 4.13** A solid 1.8m close board fence has been installed adjacent to the eastern boundary, separating the site and remainder of the paddock from the public footpath that runs along the eastern hedgerow just outside of the site. This will act as a buffer to prevent access to the site from the east by wildlife. Photos are included in Appendix 6.
- 4.14** A pre-construction badger survey is recommended if the commencement of works hasn't started within 12 months of this report.
- 4.15** Potential impacts are badger death/injury during construction. To mitigate these impacts the following precautionary techniques that are sympathetic to badgers are recommended:
- 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 work day to prevent animals from entering and becoming trapped;
  - Storing chemicals according to COSHH regulations overnight and covering them if left unattended at any time;
  - Regular removal of litter.

**4.16** It is considered that the implementation of the above general precautionary measures, together with the retention and enhancement of areas of suitable foraging habitat is likely to result in a **positive** effect at a **site** level.

### Bats

#### *Bats - Foraging/Commuting*

**4.17** The site is currently considered to provide moderate suitability habitat of site importance for foraging/commuting bats in the form of hedgerows. A small new access drive (5.5m wide with radii) will be installed within the site frontage, as shown on final scheme proposals included in Appendix 1, requiring the loss of a small section of hedgerow (which related tree survey indicates is “patchy” and of “low quality”). Further surveys are therefore not considered necessary as the boundary habitats are not being significantly affected.

**4.18** The current landscape plan seeks to retain important foraging/commuting routes to ensure that landscape connectivity is maintained. The access road will be a private drive and as such will not be adopted by the highway authority, therefore no street lighting is required.

**4.19** If lighting is considered necessary at a later stage, 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 08/18 Bats and artificial lighting in the UK (2018) and other referenced sources:

- In general, light sources will not emit ultra-violet light to avoid attracting insects and thus potentially reducing numbers in adjacent areas, which bats may use for foraging. Metal halide and fluorescent sources will not be used.
- LED luminaires will be used where possible. A warm white spectrum (ideally <2700Kelvin) will be adopted to reduce blue light component. Luminaires will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- The height of lighting columns will be limited to 8m and the spacing of lighting columns will be increased to reduce spill of light into unwanted areas such as hedgerows and trees (Fure, 2006). Only luminaires with an upward light ratio of 0% and with good optical control will be used. Luminaires will always be mounted on the horizontal, *i.e.* no upward tilt.
- Other ways to reduce light spill include the use of directional luminaires, shields, baffles and/or louvres. Flat, cut-off lanterns are best. Additionally, lights will be located away from reflective surfaces where the reflection of light will spill onto potential foraging/commuting corridors. Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill. Where windows and glass facades etc. cannot be avoided, low transmission glazing treatments may be a suitable option in achieving reduced illuminance targets.
- Lighting that is required for security or access will use a lamp of no greater than 2000 lumens (150 Watts) and be PIR sensor activated on a short timer (1 minute), to ensure that the lights are only on when required and turned off when not in use (Jones, 2000; Hundt, 2012). A control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

**4.20** The site could be further enhanced for bats through the planting of flora known to be favoured by their invertebrate prey within the landscaping plans (Appendix 9) and the inclusion of traditional bat boxes on



retained trees or new dwellings. There are numerous bat box designs but the Schwegler universal bat box 1FF (Figure 1) provides excellent summer roosting conditions for crevice inhabiting species and is easily erected on retained trees or buildings. Additionally, a variety of bat boxes that can integrate seamlessly into the design of new buildings are available, such as the Habibat Bat Box (Figure 2), which can be supplied plain for a rendered finish, or faced with brick, or faced with brick.

**Figure 1: Schwegler 1FF bat box erected on a tree.**



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



- 4.21** It is considered likely that any adverse effects from lighting and land take upon potential bat populations on site and within the wider landscape can be mitigated satisfactorily with these lighting and planting recommendations. A **positive** residual effect at a **local** level is considered achievable as a result of the proposed development.

#### **Birds**

- 4.22** All breeding birds and their nests (when 'active') are protected from deliberate destruction under the WCA 1981. Impacts could include damage or destruction to active bird nests during construction. Therefore, if any nesting bird habitat (scrub and trees) is to be lost or disturbed through construction, this should be cleared outside of the nesting season (which is generally March to August, inclusive) or after an ecologist has confirmed active nests are not present.
- 4.23** To further enhance the site for breeding birds; bird-nesting features or boxes should be installed on retained trees or within the developed realm to provide nesting opportunities for birds. Bird boxes should be made of a long-lasting material, with the *Schwegler 1B Nest Box* (Figure 2) offering nesting habitat for a variety of birds which have been recorded in the wider landscape. The *Schwegler 1SP Sparrow Terrace* (Figure 4) offers a nest box specific to house sparrows.

Figure 3: Generalist Bird Box from Schwegler (General Purpose Nest Box 1B)



Figure 4: 1SP Terrace House Sparrow Box



4.24 The above mitigation and enhancements would likely result in a **positive** residual effect at **site** level.

Great Crested Newts

4.25 Potential effects caused by the development on GCN could include disturbance, habitat loss, loss of a resting place and death and/or injury if present on site. However, only two ponds are located within 250m of the site and one GCN has been recorded within 2km of the site. The two ponds suitability for GCN are unknown. Notwithstanding this the ponds are approximately 400m from each other, with suitable terrestrial habitats within close proximity to both ponds. One pond is to the south and one to the north-east of site and so it is unlikely that GCN will cross the site to get from one pond to the other given the distance involved.

4.26 Research undertaken by English Nature (English Nature, 2004), now Natural England, indicates it is most common to encounter GCN within 50m of a breeding pond, with few moving further than 100m – unless significant linear features are involved, when GCN can be encountered at distances of between 150m–200m. At distances greater than 200m-250m, GCN are hardly ever encountered.

4.27 Plans for the site include the removal of a small section of hedgerow to provide access.

4.28 The area of hedgerow to be removed is approximately 5m wide. Natural England’s Rapid Risk Assessment Tool is shown below in Table 5. Assuming GCN is present and breeding within the waterbodies off site, even the removal of all of the habitat suitable for GCN along Cornells Lane is considered highly unlikely to result in an offence being committed. As such, surveys are not considered necessary.

Table 5: Natural England’s Rapid Risk Assessment

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notational offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	0.001 – 0.01 ha lost or damaged	0.01
Land >250m from any breeding pond(s)	No effect	0
Individual great crested newts	No effect	0
		Maximum: 0.01
Rapid risk assessment result:	<b>Green: Offence Highly Unlikely</b>	

4.29 Although it is considered unlikely to come across GCN during works on site, a precautionary approach is considered suitable in this instance. Precautionary measures include ecology supervision for removal of the section of hedgerow as well as keeping the area of grassland within the development zone at a low sward height, and thus maintain its unsuitability for this species. The landowner has been keeping the grass to a short sward height, recent photos of which can be found within Appendix 6. In the highly unlikely event that GCN

are found during construction, works should cease and a licence from Natural England will be applied for.

- 4.30** Enhancement measures would include additional native species included in the boundary habitats, log piles within the retained area of grassland and also relaxed mowing within this area.
- 4.31** Inclusion of these enhancements for GCN could result in a **neutral** residual effect at **site** level.

### **Reptiles**

- 4.32** Potential effects caused by the development on reptiles could include habitat loss, death and/or injury. Loss of habitat is not considered to be a significant effect, given the small area of suitable habitat being lost to development and the retention and enhancement of suitable areas immediately adjacent the site's boundary.
- 4.33** It is therefore recommended that the grassland within the construction zone is managed at its current low sward height and grass piles can be created within the retained grassland to the north. The landowner has been keeping the grass to a short sward height, recent photos of which can be found within Appendix 6. Any habitats suitable for reptiles to be cleared should be undertaken in a two staged-manner during April-October during suitable weather conditions under ecology supervision (above 5°C overnight and above 11°C during the day, sunny conditions) with the first cut down to 150mm and the second cut 24 hours later down to ground level.
- 4.34** In the highly unlikely event that common reptile species are found during construction works, they can be moved to suitable habitats to the north of the construction site. Enhancement measures would include grass piles in the retained grassland to the north of the site along the boundaries, grass margins along retained hedgerows, log piles within the retained area of grassland and also relaxed mowing within this area. These enhancements are shown on the landscape plan in Appendix 2.
- 4.35** Inclusion of these enhancements for reptiles could result in a **positive** residual effect at **site** level.

### **Other Notable Species**

- 4.36** Potential effects caused by development to hedgehogs could include loss of foraging habitat, death and/or injury. Loss of habitat is not considered to be a significant effect, given the small size of the site.
- 4.37** It is recommended that removal of any grassland and scrub is limited to that which is strictly necessary for the development. If any suitable habitats are to be removed this should be undertaken outside of the hedgehog hibernating season (generally November to February inclusive) in a staged way to ensure animals can move from the area (or after an ecologist has declared the area clear of active nests and hedgehogs). The optimum time to remove vegetation would be during September/October as this avoids both the nesting bird season as well as hedgehog hibernation season.
- 4.38** Grassy margins should be retained along hedgerows to maintain grassy corridors. It is also recommended that any vegetation removal is mitigated for with additional native species planting along the boundaries and managing them for wildlife. 'Hedgehog highways' can be included within the proposed development scheme to allow hedgehogs to move through new gardens.
- 4.39** These mitigation measures will result in a **neutral** effect for hedgehog and a positive residual effect up to **site** level for European hedgehog.

## 5.0 Conclusions

5.1 The site consists primarily of a section of species-poor semi-improved grassland field, hedgerow and scrub. A hedgerow forms the southern boundary of the site. The western boundary is close to residential gardens and the northern boundary abuts the remainder of the grassland field (to be retained and enhanced for biodiversity). The eastern boundary lies close to a wooden fence, which has been installed to prevent access to the site by members of the public via the adjacent public footpath.

5.2 It is considered that the site may provide suitable habitat for a small number of protected and/or notable species. A summary of likely impacts and mitigation is provided in Table 6.

**Table 6: Summary of Likely Impacts, Mitigation and Enhancement Measures and Residual Impacts.**

Feature	Likely Impacts	Further Surveys	Likely Mitigation and Enhancement Measures	Residual Effect	Significance
SSSI/LWS	N/A	N/A	N/A	Neutral	National/ Local
Habitats	Loss of small area of species-poor semi-improved grassland, and minor losses of other habitats.  Lighting impacts on boundary habitats.	Biodiversity Net Gain calculations would quantify the amount of net gain.	Tree/hedgerow protection areas around habitats to be retained.  Enhancement of retained hedgerows and scrub through sensitive management and planting of native species.  Provision of an ecology area to the north of the development (approximately 0.1ha / ¼ acres)  Implementation of wildlife sensitive lighting.	Positive	Local
Badgers	Potential injury/death during construction  Loss/disturbance of commuting and foraging habitat.	A pre-construction survey for badgers should be undertaken prior to construction if not commenced within 12 months of this report.	Precautionary construction techniques.  Enhancement of retained boundary habitats.  Planting of fruit-bearing tree species within the development.	Positive	Site
Bats	Loss/disturbance of commuting and foraging habitat.	N/A unless boundary habitats are significantly affected.	Implementation of wildlife sensitive lighting (no lighting currently proposed)  Native species planting along boundaries of the development.  Provision of bat boxes on retained trees and/or housing.	Positive	Local

Feature	Likely Impacts	Further Surveys	Likely Mitigation and Enhancement Measures	Residual Effect	Significance
Birds	Loss of nesting habitat and destruction of nests	N/A	Any vegetation clearance to be undertaken outside of breeding bird season or after an ecologist has confirmed no active nests.  Retention and enhancement of boundary habitat including wildlife friendly planting  Bird box installation.	Positive	Site
Great Crested Newts	Considered unlikely to impact upon GCN	N/A	Keep sward height of grassland low before construction commences.  Removal of small section of hedgerow under ecology supervision.  If a GCN is found on site during construction, works should stop immediately and a licence from Natural England applied for.  Native planting at the boundaries, log piles within retained grassland and a relaxed mowing regime in this area.	Neutral	Site
Reptiles	Loss of resting, foraging, and commuting habitat.  Potential for injury/death.	N/A	Retention of a low sward height within grassland.  Two-staged phased habitat manipulation under ecology supervision on areas suitable for reptiles.  Native planting incorporated into landscape scheme as an enhancement  Relaxed mowing, log piles and grassy margins within retained grassland to the north of the site and along the hedgerow boundaries.	Positive	Site
Other notable species	Loss of foraging habitat.  Injury and/or death of hedgehogs.	N/A	Sensitive habitat removal.  Retention of grassland and boundary habitat where possible, managed for wildlife and enhancement with wildlife friendly species.  Creation of 'hedgehog highways'	Neutral	Site

5.3 Through the above recommended surveys and precautionary methods, it is considered that all significant

impacts upon biodiversity, including any potential adverse impacts upon specific protected species, habitats and designated sites will likely be able to be wholly mitigated in line with relevant wildlife legislation, Chapter 15 of the National Planning Policy Framework (MHCLG, 2019).

## 6.0 References

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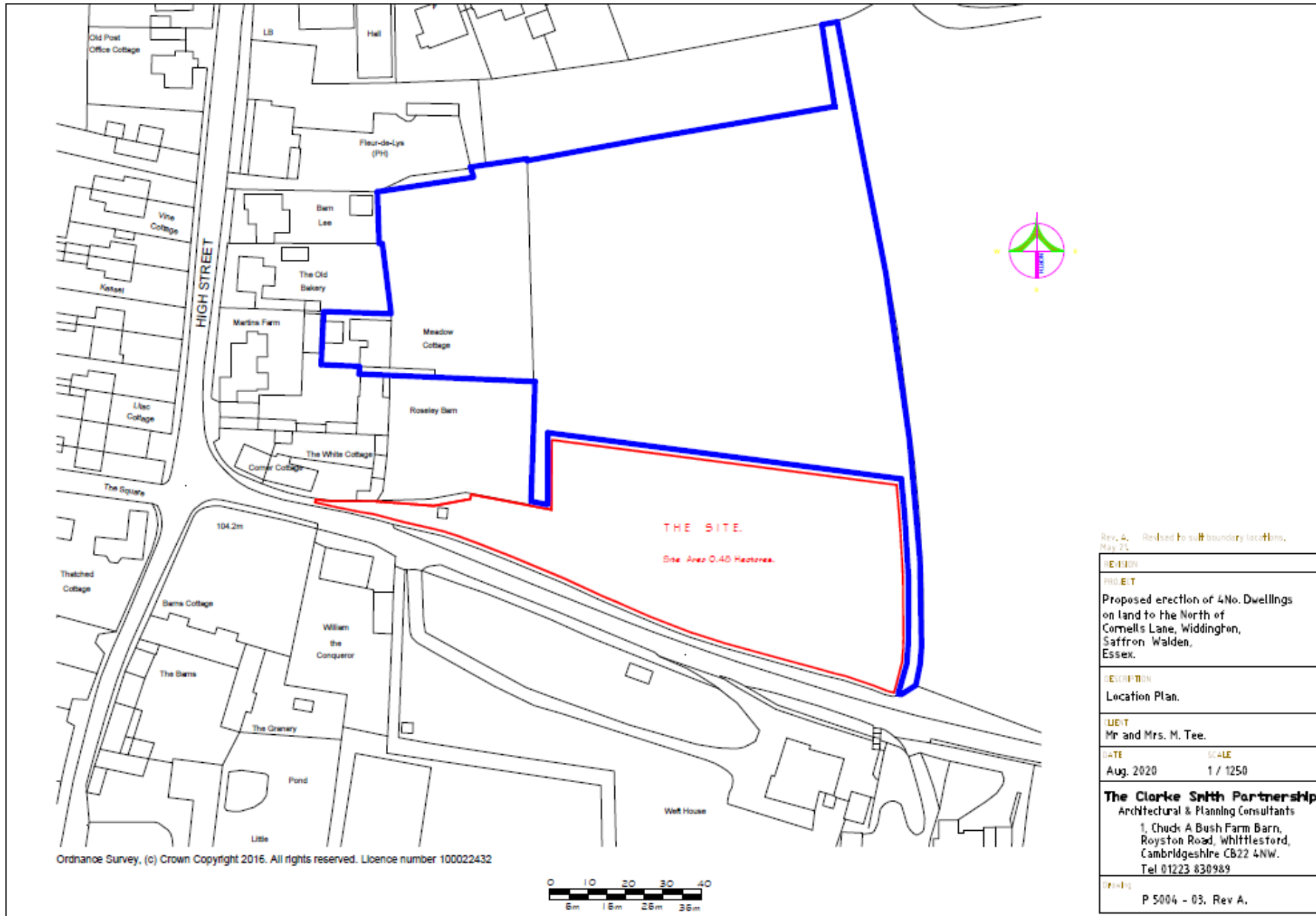
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**Appendix 1: Site Location**



Rev. A. Revised to suit boundary locations.  
May 25

<b>REVISION</b>	
<b>PROJECT</b>	Proposed erection of 4 No. Dwellings on land to the North of Cornells Lane, Widdington, Saffron Walden, Essex.
<b>DESCRIPTION</b>	Location Plan.
<b>CLIENT</b>	Mr and Mrs. M. Tee.
<b>DATE</b>	<b>SCALE</b>
Aug. 2020	1 / 1250
<b>The Clarke Smith Partnership</b> Architectural & Planning Consultants 1, Chuds A Bush Farm Barn, Royston Road, Whittlesford, Cambridgeshire CB22 4NW. Tel 01223 830989	
<b>DRAWING</b>	P 5004 - 03, Rev A.



**Appendix 2. Proposed Plan (provided by client)**



**Proposed Landscape Plan (provided by client)**



## **Appendix 3: Legislative and Policy Framework**

### **National Planning Policy**

The NPPF (MHCLG, 2019) outlines what the planning system should do to contribute to and enhance the natural and local environment through the following policy statements:

#### **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 28**

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 102**

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

- d) 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 118**

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 141

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 170

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;

#### Paragraph 174

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 biodiversity; 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 175

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 176

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; and 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 177

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 180

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.

### **Local Planning Policy**

The policies related to nature conservation within the Uttlesford Local Plan Adopted 2005 related to biodiversity relevant to this assessment, and other selected policies which either concern the site specifically, or relevant designations.

#### *Policy ENV3 – Open Spaces and Trees*

The loss of traditional open spaces, other visually important spaces, groups of trees and fine individual tree specimens through development proposals will not be permitted unless the need for the development outweighs their amenity value.

Where the principle of development is acceptable it should avoid taking away features that are prominent elements and enhance the local environment, such as for example, healthy mature trees. However, as a specific example, it may not be possible to accommodate a residential development on a tight space without removing a clump of sycamore saplings or similar. This may be considered acceptable. Sometimes public facilities may be proposed on open space. Again, if a successful design can be achieved, a limited loss of open space may be permitted.

#### *Policy ENV5 – Protection of Agricultural Land*

Development of the best and most versatile agricultural land will only be permitted where opportunities have been assessed for accommodating development on previously developed sites or within existing development limits. Where development of agricultural land is required, developers should seek to use areas of poorer quality except where other sustainability considerations suggest otherwise.

## *Policy ENV7 – The Protection of the Natural Environment – Designated Sites*

Development proposals that adversely affect areas of nationally important nature conservation concern, such as Sites of Special Scientific Interest and National Nature Reserves, will not be permitted unless the need for the development outweighs the particular importance of the nature conservation value of site or reserve.

Development proposals likely to affect local areas of nature conservation significance, such as County Wildlife Sites, ancient woodlands, wildlife habitats, sites of ecological interest and Regionally Important Geological/Geomorphological Sites, will not be permitted unless the need for the development outweighs the local significance of the site to the biodiversity of the District. Where development is permitted the authority will consider the use of conditions or planning obligations to ensure the protection and enhancement of the site's conservation interest.

## *Policy ENV8 – Other Landscape Elements of Importance for Nature Conservation*

Development that may adversely affect these landscape elements

Hedgerows, linear tree belts, larger semi-natural or ancient woodlands, semi-natural grasslands, green lanes and special verges, orchards, plantations, ponds, reservoirs, river corridors, linear wetland features, networks or patterns of other locally important habitats will only be permitted if the following criteria apply:

- a) the need for the development outweighs the need to retain the elements for their importance to wild fauna and flora;
- b) mitigation measures are provided that would compensate for the harm and reinstate the nature conservation value of the locality.

Appropriate management of these elements will be encouraged through the use of conditions and planning obligations.

## **Wildlife Legislation**

The two principal wildlife statutes are the Conservation of Habitats and Species Regulations (Habitats Regulations 2017) that deals with internationally important sites and species, and the Wildlife and Countryside Act (WCA) 1981 that 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 (2017). 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 (GCN) *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 any significant groups of animals 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.

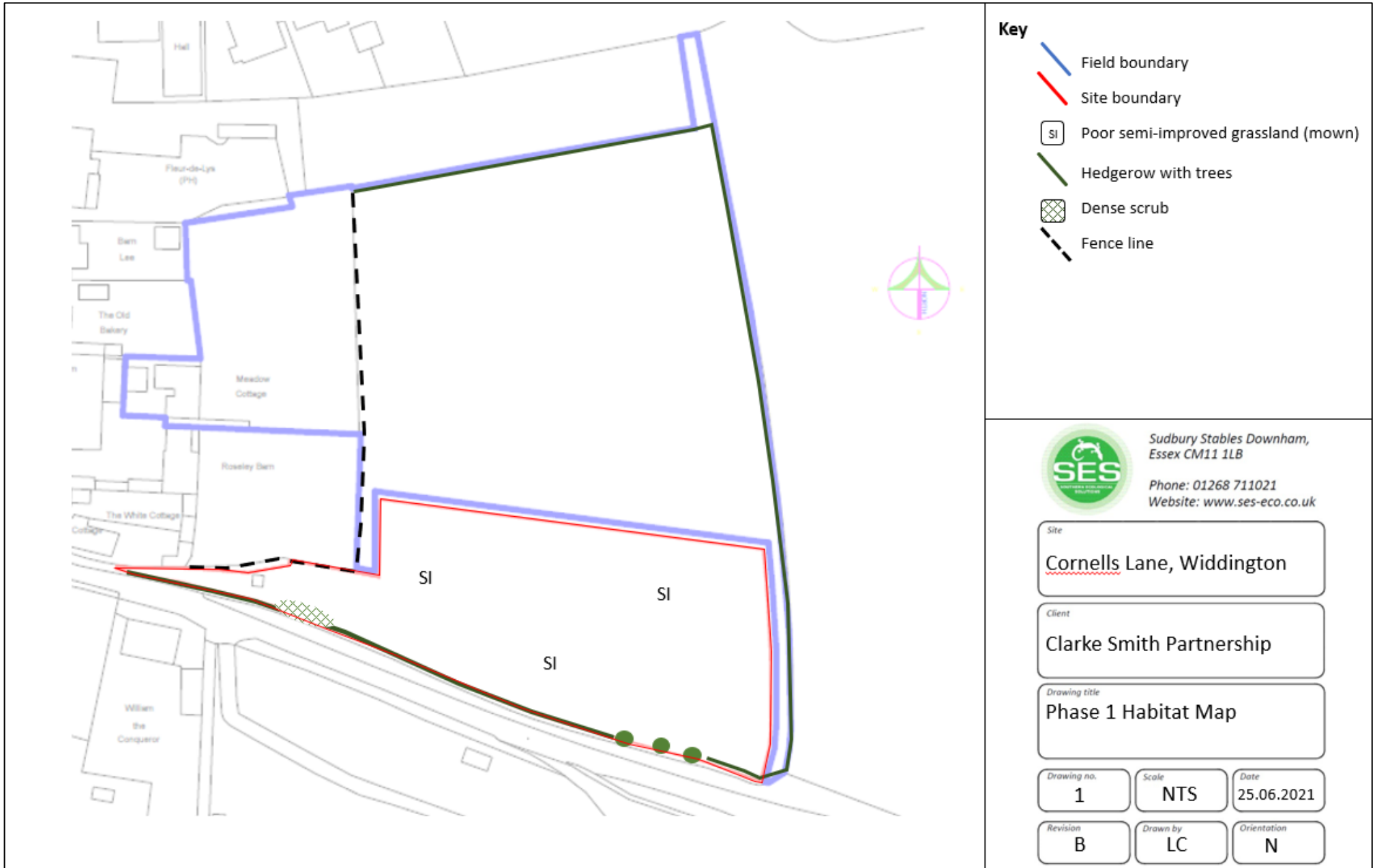
Badger *Meles meles* is protected from sett disturbance and destruction under the Protection of Badgers Act 1992.

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 *Fallopia 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 built structures. 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 4: Phase 1 Habitat Plan**





## Appendix 5: Plant Species List and Relative Abundance

Common name	Latin name	Dense scrub	Hedgerow with trees	Species-poor Grassland	Semi-improved
Bramble	<i>Rubus</i>	D	F		
Common nettle	<i>Urtica dioica</i>		O		
Dog rose	<i>Rosa canina</i>		O		
Blackthorn	<i>Prunus spinosa</i>		O		
Hawthorn	<i>Crataegus monogyna</i>		A		
Elder	<i>Sambucus nigra</i>		O		
Cock's-foot	<i>Dactylis glomerata</i>			O	
Yorkshire Fog	<i>Holcus lanatus</i>			A	
Ash	<i>Fraxinus excelsior</i>		O		
Field maple	<i>Acer campestre</i>		A		
Sycamore	<i>Acer pseudoplatanus</i>		O		
Cow parsley	<i>Anthriscus sylvestris</i>		O	F	
Yarrow	<i>Achillea millefolium</i>			O	
Ribwort plantain	<i>Plantago lanceolata</i>			O	
Ivy	<i>Hedera helix</i>		A		

D=Dominant; A=Abundant; F=Frequent; O=Frequent; R=Rare

**Appendix 6: Plates**



Plate 1: Poor semi-improved grassland is the dominant habitat on site (photo taken May 2021)

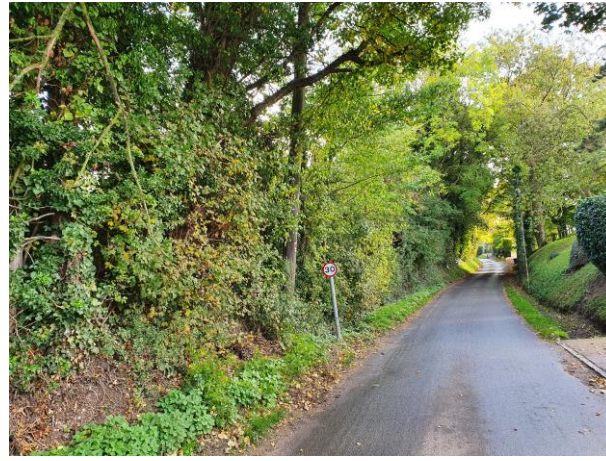


Plate 2: Hedgerow along the southern boundary.



Plate 3: Scrub present adjacent the southern hedgerow



Plate 4: Poor semi-improved grassland is the dominant habitat on site (photo taken spring 2021)



Plate 5: Close board wooden fence installed close to the eastern boundary

Appendix 7: Ponds within 250m of Site



## Appendix 8: Plants Offering a Value to Wildlife

Common Name	Scientific Name	Benefits
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
Crab Apple	<i>Malus sylvestris</i>	Nectar, nesting cover, fruit
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
Field maple	<i>Acer campestre</i>	Nesting cover,
Gorse	<i>Ulex europaeus</i>	Nectar, larval foodplant, nesting cover
Guelder rose	<i>Viburnum opulus</i>	Nectar, fruit, larval foodplant
Hawthorn (Common)	<i>Crataegus monogyna</i>	Nectar, fruit, larval foodplant, nesting cover
Hawthorn (Midland)	<i>Crataegus laevigata</i>	Nectar, fruit, larval foodplant, nesting cover
Hazel	<i>Corylus avellana</i>	Nuts, larval foodplant, nesting cover, early pollen for bees.
Holly	<i>Ilex aquifolium</i>	Nectar, fruit, larval foodplant, nesting cover
Hornbeam	<i>Carpinus betulus</i>	Year-round shelter, roosting nesting & foraging opportunities for birds and small mammals
Oak	<i>Quercus robur/Quercus petraea</i>	Nesting cover, nuts, larval foodplant,
Rosemary *	<i>Rosmarinus officinalis</i>	Nectar
Rowan	<i>Sorbus aucuparia</i>	Fruit, nesting cover
Silver Birch	<i>Betula pendula</i>	Nesting cover
Spindle #	<i>Euonymus europaeus</i>	Nectar, fruits
Wayfaring tree	<i>Viburnum lantana</i>	Nectar, fruit, larval foodplant
Wild Cherry	<i>Prunus avium</i>	Nectar, fruit, nesting cover, larval food plant
Yew#	<i>Taxus baccata</i>	Berries, nesting cover
Wild Service Tree	<i>Sorbus torminalis</i>	Nectar, larval foodplant, fruit
<b>Climbers</b>		
Clematis*	<i>Clematis tangutica</i>	Nectar, seeds
Honeysuckle	<i>Lonicera periclymenum</i>	Nectar, fruit, larval foodplant, nesting cover
Ivy	<i>Hedera helix</i>	Nectar, fruit, larval foodplant, nesting cover
Traveller's joy	<i>Clematis vitalba</i>	Nectar, seeds, larval foodplant

Note:

\* Non-native species

# poisonous

## Appendix 9: Plant Species of Known Benefit for Bats

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 suggests plant species that can provide benefit for bats by either 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. This list has been checked 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 saooarum</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
<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

Plant species	Common name	Native (N)	Type	Benefit	Soil	Light	Extensive green roofs	Living walls	Rain gardens	Hedge/ trees	Beds/ borders
<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 aquifolium</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 species	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	
<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>Quercus 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>	saxifage	N	HP	C	Well drained	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>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>	Michalemas 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
<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>	Mulliens	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		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		