



**Preliminary Ecological Assessment of land at Reed House,
Jackson Lane, Reed, Hertfordshire, SG8 8AB.**

FINAL REPORT

For
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Jackson Lane
Reed
Hertfordshire
SG8 8AB

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To achieve the study objectives stated in this report, we were required to base our conclusions on the best information available during the period of the investigation and within the limits prescribed by our client in the agreement.

No investigative method can completely eliminate the possibility of obtaining partially imprecise or incomplete information. Thus, we cannot guarantee that the investigations completely defined the degree or extent of e.g. species abundances or habitat management efficacy described in the report.

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0 NON- EXECUTIVE SUMMARY

- 0.1 Cambridge Ecology Ltd was commissioned to carry out a Preliminary Ecological Assessment involving desk-based ecology data search, Phase 1 Habitat Survey and Protected Species Scoping Survey of the land at and adjacent to Reed House, Jackson Lane, Reed, Hertfordshire, SG8 8AB. The results of the survey would aim to inform the planning application for the construction of 14 new residential dwellings on the site.
- 0.2 This survey would update a previous survey carried out by Cambridge Ecology in 2020 (Cambridge Ecology in 2020).
- 0.3 This survey aimed to provide a baseline evaluation of the ecological value of the development site and to highlight the potential for ecological features (e.g. protected species) that could be present, which may need to be considered in relation to maintaining compliance with wildlife legislation and planning policy.
- 0.4 The dominant habitats present within the development site were amenity grassland and boundary hedgerows. Other habitats within the development site, mature trees, and introduced shrub. In the survey area adjacent to the development site were tall ruderal, dense scrub, dry ditch and three pond habitats. Within the development site the hedgerows were considered to be of conservation importance in their own right, being listed as Habitats of Principal Importance in Section 41 of the Natural Environment and Rural Communities Act (NERC 2006). However, they were not considered 'Important Hedgerows' under the terms of the Hedgerows Regulations 1997. Adjacent to the development site the waterbody habitat was considered to be of conservation importance.
- 0.5 The hedgerows on the eastern and western boundary would be unaffected by the proposed development, while the existing gap in the hedgerow on the northern boundary would be increased to provide a safe entrance to the proposed development. The waterbodies were outside the proposed development and would remain unaffected.
- 0.6 An updated Habitat Suitability Index (HSI) assessment was carried out on three the three waterbodies adjacent to the development site. The scores were comparable to those obtained in 2020, despite the different time of year and the paucity of water in the ponds. The results indicated that the pond's potential suitability to support breeding Great Crested Newt below average to poor.
- 0.7 The five mature trees along the western, northern hedgerows boundaries and beyond the eastern and southern boundary were considered to have a low potential to support roosting bats. As these trees were expected to remain unaffected by the proposed development, potential bat roosts would not likely be adversely affected.

- 0.8 The presence of habitats suitable to support protected species and signs indicating the actual and potential presence of breeding birds, commuting and foraging bats, and Species of Principal Importance including West European Hedgehog, Common Frog and Common Toad were observed.
- 0.9 Based on these findings, an evaluation of the ecological importance of the proposed development site, using recognised ecological criteria, indicated that the site should be considered of **'local' value for its biodiversity**.
- 0.10 The following ecological constraints were identified at the site with recommendations made as follows:
- **Birds:** Suitable nesting habitat for birds on site, including Species of Principal Importance was observed. It is recommended that mitigation measures be included to avoid contravention of the law pertaining to breeding birds;
 - **Bats (foraging and commuting):** Suitable habitat for foraging and commuting bats were present within the development site. As a precaution, measures have been recommended to reduce the risk of bats being affected by the proposed development and help ensure legal compliance.
 - **NERC Act Section 41 Species:** Suitable habitat for Common Frog, Common Toad and West European Hedgehogs were present within the development site. Proportionate mitigation measures have been recommended, such as leaving Hedgehog sized gaps under boundary fences.
- 0.11 Opportunities exist to enhance the biodiversity value of the site post-development. These enhancement recommendations would meet the requirements of the North Hertfordshire District Council's adopted Local Plan and the National Planning Policy Framework (NPPF 2023 as amended), which aims for "no net loss" of biodiversity. Ecological enhancement recommendations comprise:
- **Habitats:** creation of new habitats as part of the scheme design. These should include open ditches and ponds (as part of the sustainable urban drainage scheme) as well as new hedgerows and enhancements to the existing hedgerows. All soft landscaping should use, suitable native plant species, planted to provide food including seeds, berries, nectar and pollen and areas of shelter.
 - **Amphibians:** creation of amphibian hibernacula, such as log piles and breeding ponds.
 - **Birds:** Installation, on buildings and trees, of bird nest boxes of various designs.
 - **Bats (roosting):** Installation, on buildings and trees, of bat boxes of various designs.
 - **NERC Act Section 41 Species:** Installation of Hedgehog boxes of various designs. Creation of foraging areas and safe commuting routes that enable animals to avoid crossing roads.
 - **Invertebrates:** Installation of invertebrate boxes of various designs.

- 0.12 Bearing in mind the ability for wildlife to periodically move to new locations, it is recommended that if the planning application and/or development proposals were likely to be delayed for one year from the date of this study, then a further equivalent ecological survey (and or certain species-specific surveys) would be required to update the results provided in this report and inform the development proposals in the future.

1 INTRODUCTION

Background to the study

- 1.1 Cambridge Ecology Ltd was commissioned to carry out a Preliminary Ecological Assessment involving desk-based ecology data search, Phase 1 Habitat Survey and Protected Species Scoping Survey of the land at and adjacent to Reed House, Jackson Lane, Reed, Hertfordshire, SG8 8AB. The results of the survey would aim to inform the planning application for the construction of 14 new residential dwellings on the site.
- 1.2 This survey would update a previous survey carried out by Cambridge Ecology in 2020 (Cambridge Ecology in 2020).
- 1.3 Wildlife such as Bats, Eurasian Badgers, Great Crested Newt and nesting birds etc. are protected by National and International law. Protected and Biodiversity Action Plan (BAP) species such as native reptiles are also of material consideration for individual planning consents under the National Planning Policy Framework 2023 as amended (NPPF 2023), which promotes the enhancement of natural and local environments through planning and encourages a move towards achieving net gains for biodiversity where possible.
- 1.4 This survey was required to provide a baseline evaluation of the ecological value of the site and to highlight the potential for ecological features (e.g. protected species) to be present, which may cause a constraint to the proposed development and need to be considered in relation to maintaining compliance with wildlife legislation and planning policy.
- 1.5 For clarity in this report the development site and survey area both refer to the land within 50m of the proposed development and includes the potential zone of influence (see Figure 1.1).

Aims and objectives

- 1.6 The aim of this survey was to establish the current ecological value of the land at and adjacent to Reed House, Jackson Lane, Reed, Hertfordshire, SG8 8AB (Grid Ref: TL 36377 36487), including its potential to support protected species and habitats.
- 1.7 The key objectives of the literature search, survey and report were to:
 - collate baseline data for the site through a review of recent biological records,
 - provide a record of the ecological features present within the site/study area,
 - determine which species (some of which could be protected) were currently or had been utilising the site,
 - identify any potential ecological constraints that might require species specific surveys,

- determine the ecological interest of the site in relation to the surrounding area; achieved by using various criteria, such as the presence of protected species, local and UK BAP species and habitat,
- identify any other surveys that may be necessary to ensure legal compliance afforded certain protected species under the terms of national statutory instruments such as the Wildlife & Countryside Act 1981 (as amended).

1.8 The data collected would be used as the basis to:

- determine the ecological value of the site,
- highlight the potential ecological features that may be affected by possible future development on or near the site,
- enable any possible future development to address and maintain any existing ecological features that may be of biodiversity value,
- enable any possible future development to incorporate potential opportunities to enhance the ecological value of the site.

Ecology Survey Area and Development Proposals

1.9 It was considered that due to the size and character of the site; the extent of the proposed development within the footprint of the site; the character of the surrounding area and proximity of the nearest protected and/or priority habitats/species, an actual zone of influence within the development site was considered proportionate.

1.10 Therefore, the survey area for the Protected Species Scoping survey comprised the area with the red-line boundary of the site (See Figure 1.1) and a buffer area up to 50m boundary beyond the development site, where access was possible.

1.11 The site was located along the northern part of Reed village, Hertfordshire approximately 4km to the south of the Royston. The centre of the development site was located at grid reference TL 36377 36487.

1.12 The development site is bordered to the east, by a public footpath through dense scrub and trees. To the north the site is bordered by The Joint Road beyond which is arable land. To the south is located Reed House with mature gardens and trees. To the west is grazing pasture trees and paddocks.

1.13 Within the development site there were no buildings. Habitats within the development site comprised amenity grassland (extensive managed lawns), introduced shrub (mature gardens), mature trees, hedgerows.

1.14 The proposal is for the construction of 14 new residential dwellings. Figure 1.2 shows the indicative layout of the new residential area.

Relevant Legislation and Policy

- 1.15 Relevant legislation and policies relating to the remit of this survey are listed below and outlined in more detail in the Appendices.
- The Conservation of Habitats and Species Regulations 2019 (as amended);
 - Natural Environment and Rural Communities (NERC) Act 2006;
 - The Wildlife and Countryside Act 1981 (as amended);
 - National Planning Policy Framework 2021;
 - The UK and Cambridgeshire Biodiversity Action Plan.
 - Wild Mammals (Protection) Act 1996.
 - The Countryside and Rights of Way (CROW) Act 2000;
 - Protection of Badgers Act 1992;
 - Birds of Conservation Concern (BoCC) Eaton et.al. (2021)
- 1.16 In addition to duties under the terms of the wildlife legislation; the National Planning Policy Framework (NPPF 2023 as amended); requires planning decisions to contribute to conserving and enhancing the local environment.
- 1.17 The North Hertfordshire District Council (NHDC) has produced an adopted Local Plan which deals with a number of policies relating to biodiversity and habitat conservation, including statutorily designated sites, biodiversity and development, sustainable development, river corridors, trees, woodland and hedgerows, light pollution and landscaping.

2 METHODS

Desk-based literature search

- 2.1 A desk-based literature search was undertaken in **September 2023** to gather existing ecological information relating to the proposed survey area. Only records of species and habitats that were less than ten years old (i.e. since **September 2013**) were included, older records were noted, but less likely to be relevant.
- 2.2 Records of protected species were gathered from various sources. These included the following:
- Cambridge and Peterborough Environmental Records Centre
 - Norfolk Biodiversity Information Service
 - Multi-Agency Geographical Information Coverage (MAGIC)
 - National Biodiversity Network Database (NBN)
- 2.3 The scope of the literature searches for protected species and habitats data comprised a search area up to **2km** from the development site.
- 2.4 The findings of the desk-based literature search have been reported in Section 3 (Results).

Phase1 Habitat Survey

- 2.5 Figure 1.1 illustrates the extent of the ecology survey area. It was considered that an actual zone of influence comprising the red line boundary of the development site plus an area up to 50m beyond the red line boundary was proportionate.
- 2.6 The Phase 1 habitat survey and Protected Species Scoping survey would record all the habitats on site according to guidelines produced by JNCC (2004).
- 2.7 The aims of the survey were to:
- provide a record of the vegetation and wildlife habitats present within the site.
 - determine whether any species, some of which may be protected, were utilising the site, in particular, mammals (e.g. bats), amphibians, reptiles and birds.
- 2.8 Each distinct habitat unit within the site was observed by the surveyor and classified in accordance with the habitat codes within the JNCC guidelines.
- 2.9 Maps were annotated in the field with features of species and habitat interest. Where necessary target notes were added to the Phase 1 map to provide information on the location of any habitats and plant communities of interest and which were too small (e.g. badger latrines) to be recorded in detail on the Phase 1 habitat map.
- 2.10 A description of the ecological features highlighted by the target notes was provided in a table in the results section.

- 2.11 Data collected from the field surveys were used to determine an ecological baseline for the site.
- 2.12 Botanical nomenclature follows that of the 4th edition of the 'New Flora of the British Isles' (Stace, 2019).
- 2.13 The DAFOR scale was used to define the relative abundance of species. The scale is shown in Table 2.1. It is important to note that where a species is described as rare this description refers to its relative abundance within the site and is not a description of its rarity at a county, regional or national level.

Table 2.1: DAFOR scale

2.14 code	DAFOR	2.15 Relative abundance
D		Dominant
A		Abundant
F		Frequent
O		Occasional
R		Rare

Protected Species Scoping Survey

- 2.16 A protected species scoping survey was carried out on the **2nd October 2023** to locate signs indicating the presence of protected species and assess the site's suitability to support protected species, including priority and rare species, in accordance with approved guidelines.
- 2.17 It should be noted that this protected species scoping survey is aimed at assessing the potential for a species or species group to be present or absent, and it does not constitute a full survey for these species.
- 2.18 For each species, an assessment of their likely presence was undertaken. The assessment was based on the factors shown in Table 2.2.

Table 2.2: Protected Species Assessment

2.19 Assessment Results	2.20 Criteria
2.21 Confirmed	2.22 The species is confirmed on the site during the Preliminary Ecological Appraisal, previous survey results or biological records from the last 10 years.
2.23 High	2.24 Highly suitable habitats present onsite for the species and onsite biological records from the last 10 years. The surrounding habitats also provide widespread opportunities for the species which are well connected to the site.
2.25 Moderate	2.26 Some suitable habitats available on site for the species although not of optimum quality. Biological records of the species within the last 10 years.
2.27 Low	2.28 Some suitable habitats available on site for the species but this is low value and possibly of small scale or

2.19 Assessment Results	2.20 Criteria
	with poor connectivity. No, or very few, biological records returned in the literature search of the species within the last 10 years.
2.29 Negligible	2.30 No suitable habitat available for the species, or very little poor-quality habitat. No biological records of the species within the last 10 years.

- 2.31 Photographs were taken (see Photographs Section) to illustrate the presence of protected species; or verify features showing evidence of protected species.
- 2.32 **Amphibians:** all known and accessible ponds within 250m of the site (unless ecologically separated from the site by significant barriers, such as major roads or rivers or where access was not possible) were assessed for their potential to support breeding protected amphibians, such as Great Crested Newt. If necessary, a Habitat Suitability Index for breeding Great Crested Newt would be carried out on all accessible suitable water bodies.
- 2.33 **Bats:** Mature trees and suitable buildings/structures within the site boundary, which would be affected by the development, were assessed to evaluate their potential to support roosting bats (see Table 2.3 for evaluation criteria) and to look for potential roost features (PRFs). The assessment was made from ground level using high powered torches and binoculars.

Table 2.3 Bat roost evaluation protocol for trees and buildings

Bat Roost Potential	Field Signs
Confirmed Roost	Evidence of the past or current presence of bats, e.g. bats, droppings, staining.
High Potential Roost Site	Features suitable to support roosting bats. Character and condition of tree/building suitable to support roosting bats
Medium Potential Roost Site	Some optimal features suitable to support roosting bats. Character and condition of tree/building suitable to support roosting bats
Low Potential Roost Site	Few suboptimal features suitable to support roosting bats. Character and condition of tree/building unsuitable to support roosting bats
Negligible Potential Roost Site	No features present, character and condition of tree/building unsuitable to support roosting bats

- 2.34 **Badgers:** A visual survey for setts, hair, latrines, prints, snuffle marks or other signs of Badgers was undertaken within the site boundary.
- 2.35 **Water Vole/Otter:** A visual survey of ditches and water courses was made to search for, latrines, prints, feeding remains, burrows and holts or other signs of Water Vole and Otter was undertaken within the site boundary.
- 2.36 **Dormice:** A visual survey for the presence of suitable habitat, such as woodland/suitable hedges with good under-storey/shrub layer and a range of food plant species, such as hazel, bramble and honeysuckle; was carried out to assess if dormice were likely to be present.
- 2.37 **Birds:** A visual survey of bird activity and suitable nesting habitat was carried out, to determine if any areas would be suitable for WCA Schedule 1

birds, Birds of Conservation Concern or other common and widespread nesting birds.

2.38 **Reptiles:** A visual survey for the presence of habitat suitable to support reptiles was carried out.

2.39 **Invertebrates:** The site was inspected for significant areas of rotting deadwood, open mosaic habitat, and high-quality aquatic or other habitats, such as short ephemeral perennial and bare-ground; which could be used by significant assemblages of invertebrates, or by any of the invertebrates highlighted in the data search. Any water bodies were assessed for their potential to support white-clawed crayfish.

2.40 **Species and habitats listed on Section 41 of the NERC Act 2006 and Red and Amber listed Birds of Conservation Concern (BoCC) as per Eaton et al., 2021:** all habitats, animal and plant species which were identifiable at the time of the survey were recorded.

Staff

2.41 The extended Preliminary Ecological Appraisal was undertaken by Darren Frost BSc. (Hons.) CEnv MCIEEM, CBiol MRSB.

2.42 Mr Frost is a Chartered Environmentalist based near Cambridge with over fifteen years of experience in environmental consultancy. He has undertaken surveys, produced ecological assessments and provided advice on legislative constraints and solutions to private and public-sector developments throughout the UK. He holds bat, Great Crested Newt, White-clawed Crayfish survey licences and Schedule 1 bird species (Barn Owl) disturbance licences from Natural England.

2.43 Mr Frost meets the requirements for knowledge, skills and practical experience as set out in the Competencies for Species Survey guidelines (CIEEM 2021) for all surveys undertaken.

Site Evaluation

2.44 An initial evaluation of the ecological importance of the site was made by comparing the field survey results against recognised criteria for establishing the presence of valued ecological receptors.

2.45 The criteria used to determine the ecological value of the site included the following:

- Species and habitats listed as part of the Conservation of Habitats and Species Regulations 2019 (as amended).
- Species protected under Schedule 5 and Section 9 of the Wildlife and Countryside Act (1981 as amended).
- Badgers protected under the Protection of Badgers Act.
- Nesting birds protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended).
- Bird species protected under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).
- Species and Habitats of Principal Importance– as listed on Section 41 of the Natural Environment and Rural Communities Act (NERC 2006).

- Birds of Conservation Concern (BoCC) Red/Amber List (Hayhow et al., 2017).
- Important habitats – as listed on the UK BAP priority habitats.
- Important species – as listed on the UK BAP priority species.
- Important hedgerows – as defined by The Hedgerow Regulations 1997.

Assessment Methodology

- 2.46 The methodology for the assessment of the likely ecological effects of the proposed development is based on the principles of CIEEM's Guidelines for Ecological Assessment in the UK, 2nd Edition (11). Although this assessment does not constitute a formal Ecological/ Environmental Impact Assessment, the CIEEM guidelines provide a useful framework for assessing ecological impacts at any level.
- 2.47 Features of ecological interest are valued on a geographic scale. Value is assigned on the basis of legal protection, national and local biodiversity policy and cultural and/or social significance.

Limitations and Assumptions

- 2.48 The survey provided a representative indication of the potential for the site to support protected species and habitats. The survey was considered to have been carried out methodically and all accessible areas searched thoroughly to locate signs indicating the presence of protected species and habitats.
- 2.49 The survey was carried out in October at the end of the optimal season (April- September) for Phase1 Habitat surveys. However, due to the nature of the site and that a previous survey had been carried out during the optimal period it was considered that the habitats identified were representative of those that were present and would not be significantly different if the survey had been carried out at a different time of year. It is however likely that the plant species list would be higher if additional survey visits had been carried out during other months, but this would not have changed the classification of the habitats identified.
- 2.50 It must be noted that the absence of certain protected species, such as bats and amphibians, would not preclude their presence on a site. There would always be a risk that a protected species was over-looked, either owing to the timing (both time of day and time of year) of the survey, the scarcity of the species at the site or the ability of protected species to move to new sites periodically and therefore move into an area after the survey had been carried out. It should be noted that for some species signs and evidence are rarely found during a single survey visit, even if the species is on site.
- 2.51 The desk study used available records and historical data for the local area. The biological records are useful as a general guide to supplement the site visits, but absence of records does not necessarily indicate the absence of species from the site. Therefore, on their own, these records do not provide a reliable indication of species present/absence as records depend entirely on survey effort in the area, which can be highly variable.

- 2.52 The baseline conditions reported and assessed in this document represent those identified at the time of the survey on the 2nd October 2023. Although a reasonable assessment of habitats present can be made during the survey visit, changes due to seasonal variations were not observed. All areas within the development site were accessible on the day of the survey.

3 RESULTS

Desk-based literature search

3.1 The key ecological features associated with the study area fell largely within the following categories:

- Statutory and non-statutory designated sites
- Protected habitats and species; and
- Non-protected habitats and species.

3.2 This section outlines the baseline data for the site under these broad headings and incorporates the results from the desk-based literature search.

Statutory Designated Sites of Nature Conservation Importance

3.3 Statutory sites are those that are legally protected and development within or near them is strictly controlled, such as Sites of Special Scientific Interest (SSSI). There were no statutory designated sites within the development site or within 2km of the development site.

Non-Statutory Designated Sites of Nature Conservation Importance

3.4 Non-statutory designated sites include Local Wildlife Sites (LWS), Sites of Importance for Nature Conservation (SINC) and other locally designated sites that receive some limited protection. There were no non-statutory designated sites within the site.

3.5 There were 14 non-statutory sites within 2km of the development site. These comprised Local Wildlife Site (LWS). The details of these sites are shown in Table 3.1.

Table 3.1: Non-statutory designated sites within 2km of the site

Site Name	Grid Ref	Approximate distance (m) and direction from site	Area (ha)	Reasons for designation
Local Wildlife Site				
Reed Chalk Pit	TL359370	~680m NW	0.34	Disused chalk pit overgrown with scrub, mainly of Elder and Hawthorn with an open central area of calcareous grassland. Recorded species include Hound's-tongue, Greater Knapweed and Burnet-saxifrage. Wildlife Site criteria: Grassland indicators.
Fiddlers Green S.W. Meadow	TL362358	~540m S	3.90	Unimproved damp calcareous meadow with a pond surrounded by shrubs and trees and bordering dry banks. The sward supports species such as Glaucous Sedge, Common Knapweed, Lady's Bedstraw, Meadow Vetchling, Common Sorrel, Sheep's Sorrel and Salad Burnet. Other species of interest

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Site Name	Grid Ref	Approximate distance (m) and direction from site	Area (ha)	Reasons for designation
				recorded include orchids Common Spotted-orchid and Bee Orchid and Slender Tufted Sedge from a wet flush. Wildlife Site criteria: Grassland indicators.
Moat Meadow, Fiddlers Green	TL365358	~570 S	1.93	Two fields of rough, semi-improved and unimproved grassland. Some marshy areas, ponds and drier banks of former fish ponds are present in the southern field. Species recorded in the sward include Common Knapweed, Meadow Vetchling, Bird's-foot Trefoil, Cowslip, Glaucous Sedge and Germander Speedwell. Old hedgerows border the fields. Wildlife Site criteria: Grassland indicators.
Green Lane from Reed to Reed Wood	TL364355	~510m S	2.07	Green lane with ditches, old hedges and arable margins supporting a moderate diversity of woody species, including several woodland indicator species such as Hazel, Field Maple, Midland Hawthorn and Field Rose. Wildlife Site criteria: Green Lane with features and structure indicative of ancient origins; woodland indicators.
Meadow W. of Gannock Green	TL365354	~970m S	2.34	Meadow supporting species-rich unimproved, neutral to calcareous grassland. Damper areas, a clump of trees and shrubs and boundary hedgerows add to the habitat diversity. The sward supports species such as Common Knapweed, Meadowsweet, Lady's Bedstraw, Meadow Vetchling, Bird's-foot Trefoil, Cowslip, Pepper-saxifrage and Meadow Buttercup. Wildlife Site criteria: Grassland indicators.
Reed and Hilly Woods	TL361350	~1240m S	9.62	Ancient semi-natural Ash /Field/Hazel and Pedunculate Oak coppice-with-standards woodland. The ground flora is quite diverse with a good number of woodland indicator species recorded including Bluebell, Cowslip, Wood Sedge, Remote Sedge and Giant Fescue. Several orchid species have also been recorded including Broad-leaved Helleborine, Early Purple Orchid and Common Twayblade. Scrub, open rides, a small shallow pool, ditch and a hedge around the margins add habitat diversity.

Site Name	Grid Ref	Approximate distance (m) and direction from site	Area (ha)	Reasons for designation
				Wildlife Site criteria: Ancient Woodland Inventory site; woodland indicators.
Roundabout Wood	TL369354	~1060m SE	3.10	Ancient semi-natural Pedunculate Oak/Ash/Hazel coppice-with-standards woodland. Damp marshy ground on the west side. Supports a reasonably diverse ancient woodland flora including Bluebell, Wood Sedge, Wood Millet, Primrose and several ferns. Wildlife Site criteria: Ancient woodland with a semi-natural canopy and field evidence suggesting an ancient origin; shown on the 1st Ed. OS; woodland indicators.
Bush Wood	TL370357	~880m SE	4.54	Ancient semi-natural Pedunculate Oak/Field Maple/Ash/Hazel coppice-with-standards woodland. The ground flora supports woodland indicator species, mainly Dog's Mercury plus other species such as Yellow Archangel, Wood Sedge, Bluebell, Wood Millet and Common Dog-violet. Habitats include a central glade and a moat and associated earthworks which periodically floods. Wildlife Site criteria: Ancient Woodland Inventory site; woodland indicators.
Rokey Wood	TL374358	~1050m SE	6.44	Ancient semi-natural Ash/Field Maple/Hazel coppice-with-standards woodland. Wet on the eastern edge where there is a small spring. A diverse ground flora which includes species typical of damp Boulder Clay woodland has been recorded including species such as Bluebell, Dog's Mercury, Wood Millet, Primrose (<i>Primula vulgaris</i>), Broad Buckler-fern, Wood Sedge and Early Dog-violet. Ancient banks and ditches occur along much of the margin. Wildlife Site criteria: Ancient Woodland Inventory site; woodland indicators.
Barkway Chalk Pit	TL381366	~1720m E	0.32	Disused chalk pit of geological interest showing chalk exposure pushed over boulder clay by the action of ice during the Anglian Ice Advance. The surrounding vegetation is mainly chalk scrub with remnants of chalk grassland. A range of mosses have been recorded from the site including <i>Seligeria calcarea</i> (a nationally scarce species). Disused chalk pit.

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Site Name	Grid Ref	Approximate distance (m) and direction from site	Area (ha)	Reasons for designation
				Notified an SSSI in 1953, denotified in 1987. Wildlife Site criteria: Species.
Barkway House Area	TL383357	~1980m SE	0.00	Building and environs important for protected species. Wildlife Site criteria: Species.
Reed Churchyard	TL361357	~740m SW	0.48	Churchyard with close mown unimproved slightly calcareous grassland. Lady's Bedstraw particularly abundant. Anthills present. Building and environs important for protected species. Wildlife Site criteria: Grassland indicators, Species.
Mardleybury Area	TL350365	~1260m W	0.00	Building and environs important for protected species. Wildlife Site criteria: Species.
A10 Road Bank near Hilly Wood	TL356344	~1720m SW	0.38	Road verge supporting moderately species-rich neutral to calcareous rough grassland including Common Knapweed, Cowslip, Bird's-foot-trefoil, Common Centaury and Bee Orchid recorded. Wildlife Site criteria: Grassland indicators.

Protected Habitats

- 3.6 The desk-based research indicated that no protected sites were present within the development site.
- 3.7 It was recognised that there were a number of BAP habitat and Habitat of Principal Importance (NERC Act 2006) present within the site and 2km of the site. These included ponds, good quality semi-improved grassland, traditional orchard and deciduous woodland. The nearest of these was the traditional orchard located approximately 250m to the south east of the development site.

Protected Species

- 3.8 The data search from found no records (within the last 10 years) for any protected or notable species actually located within the red line boundary of the development site.
- 3.9 It was noted that within 2km of the development site, records of protected and notable species (Species of Principal Importance) were found, these included:
- No records of amphibians (including Great Crested Newt), within 2km during the last 10 years. However, a European Protected Species Licence application granted for Great Crested Newt, from a site located approximately 1.5km to the west of the Reed House site and was issued in 2009, indicating this species is present within 2km. In

addition, there were two records of Great Crested Newt from 2004, located ~1.9km to the south east of the development site;

- No records of reptiles.
- 69 species of bird, listed on various conservation designations;
- 24 records of four species of bat including; Brown Long-eared, Common Pipistrelle, Nathusius's Pipistrelle and Serotine Bat. The nearest record was of Common Pipistrelle ~200m west of the development site. One European Protected Species Licence application was granted for bat species within 2km, this was located approximately 1.9km to the south east of the site and was issued in 2011 for Common Pipistrelle bats.
- Four records of Eurasian Badger; the nearest record was ~0.6km to the west of the development site;
- No records of European Otter;
- No of European Water Vole;
- One record of West European Hedgehog; ~200m west of the development site
- One record of Brown Hare, ~1.8km to the north of the development site;
- Nine species of invertebrates listed on various conservation designations.
- Five species flowering listed on various conservation designations.

Date, Time and weather conditions

- 3.10 Table 3.2 details the weather conditions at the time of the Phase 1 Habitat Survey and Protected Species Scoping Survey on the 2nd October 2023.

Table 3.2: Weather Conditions during the survey visit

Time of Survey	Weather Conditions
1000	Temperature 17°C Cloud 100% cover Wind SW 4mph Rain None Humidity 90%

Phase 1 Habitat Survey

- 3.11 It is considered that the survey recorded appropriate and accurate data to enable the ecological value of the site to be determined. The survey area and development site comprised Reed House with mature gardens and adjacent land. Habitats within the development site comprised amenity grassland, introduced shrub, mature trees and hedgerows. Other habitats within the survey area but NOT within the development site comprised dense scrub, ponds, tall ruderal, dry ditches.
- 3.12 The survey indicated that the habitats present within and adjacent to the site had not changed significantly since the previous survey in May 2020 (Cambridge Ecology 2020).

Habitats

- 3.13 The habitats recorded within the survey area and development site during the Phase 1 Habitat survey are listed and described below.
- Amenity Grassland – on site
 - Introduced Shrub – on site and adjacent to the site
 - Tall Ruderal – on site and adjacent to the site
 - Ponds - adjacent to the site
 - Individual Trees – on site and adjacent to the site
 - Hedgerows – on site and adjacent to the site
 - Dense Scrub – adjacent to the site
 - Dry Ditches – adjacent to the site
 - Buildings – adjacent to the site
 - Bare-ground/Hard Standing – on site and adjacent to the site
- 3.14 Figure 3.1 shows the indicative location of notable ecological features within the survey area.
- 3.15 Examples of the habitats identified during the survey are illustrated in the Photographs section.

Amenity Grassland – on site

- 3.16 Amenity Grassland habitat was the dominant habitat situated across most of the landscaped parts of survey area within the development site, especially associated with the garden north of Reed House. This habitat was dominated by short mown Perennial Rye-grass. The grassland was maintained as mown lawn.
- 3.17 Towards the northern boundary of the grassland were two earth mounds created from excess subsoil and topsoil excavated from works close to Reed House (Landscape Science Consultancy 2013). The mounds were circular in shape and planted on top with a horseshoe shaped hedge of ornamental Laurel bushes.
- 3.18 Flowering plants recorded in the included Daisy, Dandelion, Small-flowered Cranesbill, Greater Plantain and Ribwort Plantain. See Photographs and Appendix 1 for further details.
- 3.19 Amenity Grassland habitat is not a UKBAP habitat or Principal Habitat of Importance under Section 41 of the NERC Act 2006 - Habitats and Species of Principal Importance in England.

Introduced Shrub - on site and adjacent to the site

- 3.20 Introduced Shrub habitat, comprising mature shrub borders of species such as Roses and Berberis sp., was situated in various areas within the development site; associated with the landscaped areas around the formal garden of the large adjacent detached residential property of Reed House. See Photographs and Appendix 1 for further details.

- 3.21 Introduced Shrub habitat is not a UKBAP habitat or Principal Habitat of Importance under Section 41 of the NERC Act 2006 - Habitats and Species of Principal Importance in England.

Tall Ruderal - on site and adjacent to the site

- 3.22 Tall Ruderal habitat was situated along the western boundary of the site associated with the adjacent hedgerow (H2). This habitat was also located outside the development site associated with the public footpath around eastern boundary of the site and the edge of other habitats such as the hedgerows and dense scrub.
- 3.23 This habitat was dominated by Stinging Nettle, Cow Parsley and Dock sp. See Photographs and Appendix 1 for further details.
- 3.24 Tall Ruderal habitat is not a UKBAP habitat or Principal Habitat of Importance under Section 41 of the NERC Act 2006 - Habitats and Species of Principal Importance in England.

Waterbodies - adjacent to the site

- 3.25 Three waterbodies (ponds) were identified and accessible within 250m of the development site, but none were present within the development site itself. The nearest pond to the development site was the one situated in the garden of Reed House ~50m to the south of development site boundary. Target Note 1 of Figure 3.1 shows the indicative location of the waterbodies.
- 3.26 The vegetation associated with each pond varied depending on the amount of water and shading present in their location. See Photographs and Appendix 1 for further details.
- 3.27 Pond 1 (P1) was located in the south east part of the garden of Reed House and was devoid of any vegetation. This pond collected water from a drainage pipe from Reed House. It was shaded by mature willow and has a depth of ~1.5m, with vertical sides on the south, east and west and a graded edge on the northern banks. At the time of survey, the pond was mostly empty of water. Mature and young Willow trees, together with Silver Birch, were also in close proximity to the pond.
- 3.28 Pond 2 (P2) was located by the roadside southwest of Reed House. The pond was shaded by a dense Laurel hedge and was virtually dry and obtained water via a roadside ditch from pond P3.
- 3.29 Pond 3 (P3) was located by the roadside southeast of Reed House. This pond was by the side of the road and prone to pollution from road and field drain runoff. This pond contained water and an assemblage of aquatic plants was present including Yellow Flag Iris, Fool's Watercress, Bittercress, Brooklime and Water Crowfoot and Greater Willow-herb.
- 3.30 Pond/waterbody habitat is a UKBAP habitat or Principal Habitat of Importance under Section 41 of the NERC Act 2006 - Habitats and Species of Principal Importance in England.

Individual Trees - on site and adjacent to the site

- 3.31 Individual trees were scattered throughout the development site but primarily associated with the development site boundary amongst the hedgerows and as landscaped features. The trees included Ash, Cherry sp., Elm, Field Maple, Holly, Scot's Pine, Silver Birch and Willow sp. Some trees had Ivy present on their trunks.
- 3.32 The trees appeared to vary in size and age, having trunk diameters ranging from 100 to 500mm and between 5-10m tall.
- 3.33 Around the perimeter there were lines of Leylandii trees forming a visual screen. These trees ran parallel to the boundary hedgerows. Amongst the boundary hedgerows there were a number of larger mature trees such as Ash, Horse Chestnut, Oak, and Poplar.
- 3.34 Beneath the trees the ground cover was dominated by amenity grassland habitat in keeping with the rest of the development site. See Photographs and Appendix 1 for further details.
- 3.35 Individual trees are not a UKBAP habitat or principal habitat of importance under Section 41 of the NERC Act 2006 - Habitats and Species of Principal Importance in England.

Hedgerows (intact species-poor) - on site and adjacent to the site

- 3.36 The hedgerow habitats (species-poor intact with trees) were located around the western, northern, southern and eastern perimeter of the site. The hedgerows on the northern, southern and eastern boundary were also associated with a line of Leylandii trees acting as a visual screen.
- 3.37 Hedgerow 1 (H1) was located along the eastern boundary and was dominated by Leylandii trees which form two lines of trees at the northern end of the hedge, Willow and Laurel replace the Leylandii trees. A mature Horse Chestnut tree was located along this hedgerow.
- 3.38 Hedgerow 2 (H2) was located along the northern boundary of the site along the boundary with the road and dry ditch. This hedgerow comprised Field Maple, Hawthorn, Elderberry, Elm, and Blackthorn. It was also bordered by a line of Leylandii and Poplar trees. A mature Ash tree was located at the western end of this hedgerow.
- 3.39 Hedgerow 3 (H3) was located along the western boundary of the site. Of the three hedgerows this was the most biodiverse, but still did not constitute an important hedgerow under the conditions of the Hedgerows Regulations 1997. There were five native woody species in this hedgerow, namely, Field Maple, Hawthorn, Elderberry, Elm, Privet, Blackthorn and Crab Apple. A mature Ash tree was located along this hedgerow.
- 3.40 Hedgerow 4 (H4) was located along the southern boundary and was dominated by tall Leylandii trees.

- 3.41 The four hedgerows were similar in physical character, being at least 3m tall and contained individual mature trees. The width of these hedgerows was <3m wide.
- 3.42 Beneath the hedgerow on the western boundary vegetation included, Dog's Mercury, Ground Ivy, Goose-grass, Hedge Garlic, Spear Thistle and White Dead-nettle, Stinging Nettle and Broad-leaved Dock and Cow Parsley.
- 3.43 Beneath the hedgerow on the northern boundary vegetation included, Spear Thistle, Stinging Nettle and Broad-leaved Dock and Perennial Rye Grass and Meadow Grasses.
- 3.44 Beneath the hedgerow on the eastern and southern boundary the ground was bare.
- 3.45 Laurel has been used in a number of locations to create architectural vegetation structures within the garden.
- 3.46 See Photographs Section 9 and Appendix 1 for further details.
- 3.47 Hedgerow habitat is a UKBAP (and Cambridgeshire BAP) habitat and Principal Habitat of Importance under Section 41 of the NERC Act 2006 - Habitats and Species of Principal Importance in England. However, it was recognised that the hedgerows present at this site were species poor and did not meet the important hedgerow criteria set out in the Hedgerows Regulations 1997.

Dense Scrub - adjacent to the site

- 3.48 Dense Scrub was located within the survey area, outside the development site, beyond the eastern boundary. This habitat separated the site from the neighbouring areas and was associated with a public footpath.
- 3.49 The dense scrub included Blackthorn, Hawthorn and Bramble. See Photographs Section 9 and Appendix 1 for further details.
- 3.50 Dense Scrub habitat by itself is not a UKBAP habitat or principal habitat of importance under Section 41 of the NERC Act 2006 - Habitats and Species of Principal Importance in England.

Ditches (Dry) - adjacent to the site

- 3.51 A dry ditch (D1) was located beyond the eastern boundary of the development site and ran parallel to the public footpath. This dry ditch was heavily shaded by mature trees and dense scrub and was devoid of vegetation.
- 3.52 Dry ditch (D1) was connected at the north eastern corner of the survey area to dry ditch (D2). Dry ditch (D2) ran along the northern boundary of the development site boundary and was associated with the hedgerow and roadside verge. Vegetation in dry ditch (D2) comprised Dock sp., Goose-

grass, Greater Willow-herb, Spear Thistle and Stinging Nettle. See Photographs Section 9 and Appendix 1 for further details.

- 3.53 Dry Ditch habitat is not a UKBAP habitat or principal habitat of importance under Section 41 of the NERC Act 2006 - Habitats and Species of Principal Importance in England.

Buildings - adjacent to the site

- 3.54 There were no buildings present within the development site. Reed House was located adjacent to the southern boundary of the development site within the survey area.
- 3.55 Plants associated with Reed House were part of the formal garden and borders of introduced shrubs. Vegetation included Roses, Lilac, Berberis, Magnolia, Begonia and Oregon Grape. See Photographs Section 9 and Appendix 1 for further details.

Bare-ground/Hard-Standing - on site and adjacent to the site

- 3.56 Bare ground comprising aggregate hard standing was located within the development site forming the access roads and car park area to Reed House and an access point along the northern boundary hedgerow.
- 3.57 There were no plants associated with the bare ground or hard standing.

Target Notes

- 3.58 Target notes have been added to the Phase 1 map (Figure 3.1) to provide information on the location of any habitats and plant communities of interest (if present). The target notes have also been included to identify the location of features that are too small to be recorded in detail on the Phase 1 habitat map. They include the location of signs/features (such as sites for nesting birds) of any protected species (if found). Target notes (TN) have been annotated within the text with specific descriptions given in Table 3.3.

Table 3.3: Target Notes and Descriptions

Target Note	Description	Reason for Classification
1	Ponds potential amphibian habitat	The presence habitat with potential to support protected species is of material consideration when considering planning applications. Information is needed to ascertain the current status of protected species on and within close proximity to the development site.
2	Rubble pile refugia suitable for amphibians, reptiles and hedgehog	
3	Log pile refugia suitable for amphibians, reptiles, and hedgehog	
4	Tree with some potential roof features suitable bats	
5	Signs of nesting birds	

Protected Species Scoping Survey

Protected Species

- 3.60 Photographs (see Photographs Section) illustrate the characteristics of the habitats at the site and the surrounding area and its suitability to support protected species.
- 3.61 Figure 3.1 shows the indicative location of notable ecological features within the survey area.

Amphibians – Great Crested Newt

- 3.62 During the site visit a thorough search was carried out of suitable areas and natural refugia to detect the presence of amphibians, in particular Great Crested Newt. No amphibians were found. It was recognised that the survey was carried out during the season when amphibians would be active and detectable, but during the day when they would be sheltering.
- 3.63 An Ordnance Survey map and aerial photographs were checked for the presence of waterbodies within 250m of the site boundary and three suitable waterbodies were found.
- 3.64 A Habitat Suitability Index (HSI) assessment for Great Crested Newt was carried out for each pond. Table 3.4 details the results of the HSI assessment.
- 3.65 The HSI scores ranged from 0.41 (poor) to 0.55 (below average), which indicated the suitability of the ponds to support breeding Great Crested Newts was Negligible.
- 3.66 There was limited terrestrial habitat for Great Crested Newt within the development site (mostly comprising amenity grassland), including the log/rubble piles (Figure 3.1 TN2 and TN3). Within the survey area but outside the development site, the dense scrub habitat was the most suitable for the terrestrial part of the Great Crested Newts life-cycle.
- 3.67 See also Photographs Section 9 for further details.
- 3.68 In combination, the HSI assessment score, the presence of a limited amount of suitable terrestrial habitat, the distance of the development site to the ponds, the minimum damage to potential terrestrial habitat would likely result in no adverse impact on Great Crested Newt.
- 3.69 Therefore, the likelihood of Great Crested Newt being affected by the proposed development is Negligible.

Table 3.4: Habitat Suitable Index Assessment of Ponds for Great Crested Newt

Feature	Pond 1		Pond 2		Pond 3	
	Score	HSI	Score	HSI	Score	HSI
S1 - Location	A	1	A	1	A	1

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Feature	Pond 1		Pond 2		Pond 3	
S2 – Pond Area	900m ²	0.95	100m ²	0.2	400m ²	0.8
S3 – Pond Drying	Annually	0.1	Annually	0.1	Annually	0.1
S4 Water Quality	Poor	0.33	Poor	0.33	Poor	0.33
S5 - Shade	80%	0.6	100%	0.2	20%	1
S6 – Waterfowl	Absent	1	Absent	1	Absent	1
S7 – Fish	Absent	1	Absent	1	Absent	1
S8 – Pond Density	3/km ²	0.95	3/km ²	0.95	3/km ²	0.95
S9- Terrestrial Habitat	Poor	0.33	Poor	0.33	Poor	0.33
S10 – Macrophyte Cover	0%	0.3	0%	0.3	0%	0.3
HSI Score	0.53		0.41		0.55	

Reptiles

- 3.70 During the site visit a thorough search was carried out of suitable areas, and natural refugia, to detect the presence of reptiles, such as Common Lizard, Grass Snake and Slow Worm. No reptiles were found. It was recognised that the survey was carried out when reptiles would be active and detectable.
- 3.71 There were few features or habitat within the development site suitable to support breeding populations of reptiles. Log and rubble piles (Figure 3.1 TN2 and TN3) could provide suitable hibernation habitat for reptiles.
- 3.72 See also Photographs Section 9 for further details.
- 3.73 The development site as a whole contained very limited habitat suitable to support parts of the life cycle of reptile species. There were suitable terrestrial foraging areas for reptiles e.g. amongst the hedgerows on the site boundary and in the adjacent tall ruderal and pond beyond the development site.
- 3.74 The availability of suitable habitat, together with the four records of two species of reptiles within 2km suggested that the likelihood of reptiles using the site is Negligible.

Birds

- 3.75 During the survey, 13 bird species were recorded. The development site was considered to be of some value for nesting birds with the presence of individual mature trees, introduced shrubs and hedgerows. These habitats had the potential to provide nest sites for breeding birds.
- 3.76 The following species Hedge Sparrow, House Sparrow, Song Thrush and Starling were recorded during the survey and are recognised as being of conservation value based on their listing on certain designations (i.e. UKBAP priority species, Species of Principal Importance and BoCC Red/Amber List species).
- 3.77 The other bird species seen during the survey included: Wood Pigeon, Blackbird, Robin, Wren, Nuthatch, Great Tit, Coal Tit, Jackdaw and Greenfinch.

- 3.78 Due to the nature of the ecology survey (comprising a single site visit), the list of bird species observed may not be considered comprehensive. In addition, the detection of active birds' nests would also be likely to be under recorded.
- 3.79 Some of the passerine species observed during the site visit and those listed on the data search (which are listed as either Red or Amber on the BoCC Red List), have the potential to utilise the site for breeding and overwintering.
- 3.80 There were no signs of nesting or foraging Barn Owl in any of the trees or buildings. The location of the site and characteristics of the land adjacent to the site were considered unsuitable for use by foraging Barn Owl. Therefore, the site was considered unsuitable for nesting Barn Owl. The potential for the site supporting breeding Barn Owl is **Negligible**
- 3.81 The likelihood of breeding birds utilising the site for nesting is considered to be **High**. The potential for the site supporting important (at a district level) assemblages of birds is **Negligible**. This is based on the variety of habitats present, and the biological records of bird species listed on Annex 1 of the Birds Directive, Schedule 1 of the Wildlife and Countryside Act 1981, Section 41 of the NERC Act (2006), UK Biodiversity Action Plan and birds listed as Red and Amber on BoCC. It is recognised that the presence of four UKBAP/ Species of Principal Importance is of particular note.

Mammals

Bats – Roosting Bats in Trees

- 3.82 At the time of the survey no bats were found during the searches made of the trees.
- 3.83 Six mature trees (TN4) on the boundary of and adjacent to the development site contained few potential roost features (PRFs) and were assessed as having low potential to support roosting bat. Photographs illustrate the characteristics of the trees and their suitability to support roosting bats.
- 3.84 Beyond the development site boundary there were other trees also suitable to support roosting bats.
- 3.85 In combination, the limited presence of potential roost features within some of the mature trees and biological records indicating the presence of bats within 200m of the site, and the distance of the proposed development from the six mature trees (TN4) suggests the likelihood of bats being affected by the proposed development is **Negligible**.

Bats – Roosting Bats in Buildings

- 3.86 There were no buildings within the development site, therefore the likelihood of bats utilising buildings at the site for roosting is considered to be **Negligible**.

General Habitats for Bats

- 3.87 Beyond the development site boundary (within 2km), there were numerous residential buildings and trees that could support roosting bats.

Bats – Foraging and Commuting Bats

- 3.88 The development site was considered to provide some foraging and commuting habitat for bats. For instance, foraging amongst the groups of individual trees and commuting along the lines of trees and hedgerows around the boundary of the site.
- 3.89 Beyond the development site boundary, habitats were considered to be suitable for foraging and commuting bat activity, with a small network of hedgerows, clumps of dense scrub and woodland plantation.
- 3.90 In combination, the biological records indicating the presence bats within 200m of the site and presence of suitable habitat for foraging and commuting suggests that the likelihood of the site supporting foraging and commuting of bats is **High**.

Eurasian Badgers

- 3.91 At the time of the survey no Eurasian Badger setts were found within the site or within 50m of the site.
- 3.92 During the site visit a thorough search was carried out of suitable areas to detect the presence of Eurasian Badger activity.
- 3.93 It was recognised that the site provided limited foraging habitat for Eurasian Badger (e.g. amongst the amenity grassland).
- 3.94 The absence of Eurasian Badger setts and signs of Eurasian Badger activity within the site, or suitable habitat, but recognition of four biological recording showing their presence within 0.6km of the site indicated that the likelihood of Eurasian Badger utilising the site for foraging and commuting is considered to be **Negligible**.

European Otter

- 3.95 The absence of suitable habitat, together with no records of European Otter within 2km; suggested that the likelihood of European Otter using the site is **Negligible**.

Brown Hare

- 3.96 The absence of suitable habitat on site, along with only one record of Brown Hare within 2km; suggested that the likelihood of Brown Hare using the site is **Negligible**.

Water Vole

- 3.97 The absence of suitable habitat, together with no records of Water Vole within 2km; suggested that the likelihood of Water Vole using the site is **Negligible**.

Other protected mammal species

- 3.98 There were no habitats present within the site suitable to support Dormouse sp. No biological records were found to indicate their presence within 2km of the site. The likelihood of the site supporting Dormouse species is **Negligible**.

Invertebrates

White-clawed Crayfish

- 3.99 There were no habitats within the site suitable to support White-clawed Crayfish. No biological records were found to indicate their presence within 2km of the site. The likelihood of the site supporting White-clawed Crayfish is **Negligible**.

Terrestrial Invertebrates

- 3.100 The site comprised a limited variety of habitats (e.g. mainly amenity grassland) and therefore had little potential to support a range of invertebrate groups and species of principal importance.

- 3.101 The absence of invertebrate species and limited variety of good habitats recorded during the survey and the limited number of biological records suggested that the likelihood of the site supporting protected or notable invertebrate species is **Negligible**.

Plants

- 3.102 Within the site there were no specialist plant species of high conservation value.

- 3.103 There were no signs indicating the presence of alien invasive plant species, namely Japanese Knotweed within the development site.

- 3.104 The limited diversity of plant species recorded during the survey and lack of biological records suggest that the likelihood of the site supporting protected or notable plant species is **Negligible**.

NERC Act Section 41 Species

West European Hedgehog/Common Frog/Common Toad

- 3.105 No West European Hedgehog, Common Frog or Common Toad were found during the searches made of the site. It was recognised that the survey was carried out during the part of the year when these species would be active and detectable, but during the day when they would be sheltering and less visible.

- 3.106 However, some limited habitats such as the adjacent ponds and log piles and rubble piles within the site provide potential shelter/hibernating, foraging and breeding habitat for West European Hedgehog as well as shelter/hibernating and foraging habitat for Common Frog and Common Toad.
- 3.107 The limited availability of suitable habitat, together with the absence of amphibian records and only one record of West European Hedgehog (albeit with 200m of the development) showing their presence within 2km suggested that the likelihood of West European Hedgehog, Common Frog or Common Toad using the site is **Low**.

4 IMPLICATIONS OF THE DEVELOPMENT PROPOSALS

4.1 There are three phases of the development that have the potential to affect the ecological value of the site. These include:

- i. Site clearance – vegetation clearance
- ii. Construction
- iii. Post-construction operation/management

Site Clearance and Construction

4.2 Factors associated with the proposed development that have the potential to affect the ecological value of the site during site clearance and construction include the following:

- i. Habitat loss, species displacement, direct mortality.
- ii. Disturbance – noise, visual, light, dust.

Post Construction Operation and Management

4.3 Factors associated with the proposed development that have the potential to affect the ecological value of the site post-construction operation/management include the following:

- i. Direct mortality
- ii. Habitat creation/enhancement.
- iii. Disturbance – noise, visual, light.

Potential Impacts

4.4 Without mitigation, the proposed development may result in the following biophysical changes during construction and/or operation:

- Death and/or injury to and loss of habitat for protected species and/or Species of Principal Importance should they be present.
- Loss of commuting/foraging habitat for protected species, namely nesting birds, bats and/or Species of Principal Importance.
- Loss of habitat and nesting sites for birds, including species listed as UKBAP, Species of Principal Importance and BoCC Red/Amber List species.
- Habitat creation/enhancement opportunities.

Great Crested Newt Rapid Risk Assessment

4.5 It is considered unlikely that Great Crested Newt would be adversely affected by the proposed development because:

- The habitat on site was not considered optimal for this species.
- No biological records of this species within 500m of the site.
- No ponds will be lost.
- No terrestrial habitat suitable for use by Great Crested Newt will be lost.
- Non-licensable precautionary mitigation measures will be implemented.

- Habitat creation and enhancement opportunities will be developed as part of the landscaping plan for the site.

Roosting Bats

4.6 It is considered unlikely that roosting bats would be adversely affected by the proposed development because:

- No mature trees containing potential roost features would be removed.
- No buildings containing potential roost features would be removed.
- The trees on site were considered unsuitable for roosting bats.
- There were no biological records of bat species roosting within 300m of the site.
- Non-licensable precautionary mitigation measures will be implemented.
- Habitat creation and enhancement opportunities will be developed as part of the landscaping plan for the site.

5 ECOLOGICAL EVALUATION, CONSTRAINTS AND RECOMMENDATIONS

- 5.1 The results of the literature search and survey have been used to outline key ecological issues for consideration, such as: make recommendations for further survey work, ecological mitigation and where appropriate biodiversity enhancements.
- 5.2 The site contained a notable selection of species and habitats for a site of comparable size and bio-geographical location. Based on the findings of the Phase 1 Habitat and Protected Species Scoping Survey, the presence of species and habitats listed on the criteria used to evaluate the ecological importance of the site indicates that it is considered to be of **local biodiversity value**.
- 5.3 Of the criteria used to evaluate the importance of the site for biodiversity the following are considered to be relevant to this site:
- Species protected as 'European Protected Species' under regulation 43 of the Conservation of Habitats and Species Regulations 2017, such as Bats;
 - Species protected under Schedule 5 and Section 9 of the Wildlife and Countryside Act (1981 as amended) such as Reptiles;
 - Nesting birds protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended).
 - Birds of Conservation Concern 5 (BoCC) Red/Amber List (Stanbury et al., 2021);
 - Important species – as listed on the UK BAP priority species.
 - Species and Habitats of Principal Importance– as listed on Section 41 of the Natural Environment and Rural Communities Act (NERC 2006).
 - Species and Habitats of Principal Importance– as listed on Section 41 of the Natural Environment and Rural Communities Act (NERC 2006).
- 5.4 There are a number of different species that are afforded protection under European and UK national legislation. For this site, the species groups that would be considered as being present or having potential to be present within and immediately adjacent to the site are:
- Breeding Birds - nesting
 - Bats – roosting, foraging and commuting
 - Species of Principal Importance as listed on Section 41 of the NERC Act 2006, namely West European Hedgehog and amphibians including Common Frog, Common Toad.

Off-site habitats

- 5.5 There were 14 non-statutorily designated site of nature conservation value identified in the biological records search. The nearest was Green Lane from Reed to Reed Wood located approximately 0.5km to the south.
- 5.6 There were four habitats of note within 2km of the development site which included ponds, good quality semi-improved grassland, traditional orchard

and deciduous woodland. The nearest of these was the traditional orchard located approximately 250m to the south east of the development site.

- 5.7 The distance between the nearest LWS (Green Lane from Reed to Reed Wood) and the notable habitats namely the traditional orchard, from development site and the relatively small scale of the proposed development suggested that there are not likely to be any direct or indirect impacts.
- 5.8 Therefore, it is considered that the LWS and notable habitats do not represent a constraint to the proposed development.

On-site habitats

- 5.9 One habitat within the development site was considered of conservation value being UKBAP habitats and/or Habitats of Principal Importance. This was the boundary hedgerows, although none were considered important under the terms of the Hedgerow regulations 1997.
- 5.10 The all hedgerows would remain unaffected by the proposed development. The entrance to the site would be via an existing access point along the northern boundary of the site. It is possible that a section of this hedgerow may be affected in order to provide the required visibility splays.
- 5.11 Therefore, this hedgerow (H2) could be affected (through habitat loss/degradation and/or fragmentation) by the proposed development if its presence was not considered during the design phase of the scheme.
- 5.12 It is recommended that proportionate and appropriate mitigation measures are implemented to offset impact of the development on the hedgerow.
- 5.13 In addition, enhancement opportunities that could help deliver a net gain in biodiversity and therefore meet the terms of the NPPF 2023 (as amended) would also be possible. These could be achieved by incorporating habitat features as part of the development proposals to maintain examples of the habitats that were considered of conservation value, namely the hedgerows. The retained hedgerows should be protected from the construction works and enhanced to improve their biodiversity value. In addition, as part of the sustainable drainage scheme, open ditches and ponds should be created. An ecological management plan should be created to ensure these hedgerows are managed to the best advantage for biodiversity.
- 5.14 **Recommendations:**
- **Minimise the loss of habitat when considering the scheme design.**
 - **Avoid removing any large mature trees.**
 - **Incorporate new and enhanced hedgerow habitats as part of the scheme's landscaping design.**

- **Incorporate new open ditches and pond habitats as part of the scheme's landscaping design.**
- **Plant only species of native origin and that are characteristic of the local area.**
- **Create an ecological management plan for the site to detail any habitat creation and habitat management aftercare measures.**

Protected Species

- 5.15 The likelihood of each species/species group occurring on site was based on local biological records; the suitability of the habitat on site; connectivity of habitats to the site; the suitability of surrounding habitats and whether signs or evidence of the species/species group were found during the survey visit. It should be noted that signs and evidence for some species are rarely found during a single survey visit, even if the species is on site.
- 5.16 The risk of impact was determined based on the likelihood of the species occurring on site within the area of impact, and the hazard presented based on the extent and form of the current maintenance and potential maintenance/development proposals.
- 5.17 Each species/group will be discussed in turn below.

Birds

- 5.18 There was suitable habitat available on site for breeding birds. Vegetation clearance has the potential to kill or injure wild birds or damage or destroy any active birds' nest or eggs as well as cause the loss of the potential nesting habitat.
- 5.19 All wild birds, their active nests and eggs are protected under The Wildlife and Countryside Act 1981 (as amended), which makes it an offence deliberately, or recklessly, to kill or injure any wild bird or damage or destroy any active birds' nest or eggs.
- 5.20 Mitigation measures must be implemented to avoid contravention of the law pertaining to breeding birds and to replace nesting habitat loss.
- 5.21 Enhancement opportunities that could help deliver a net gain in biodiversity and therefore meet the terms of the NPPF 2023 (as amended) would also be possible as a result of incorporating features suitable for breeding birds as part of the development proposals.
- 5.22 **Recommendations:**
- **Scheduling vegetation removal and ground clearance works between the months of October and February inclusive (i.e. outside of the bird season) would avoid impacts on breeding birds.**

- If vegetation and ground clearance works was necessary during the breeding season (between March and September inclusive), such works must only proceed following the completion of a nesting bird check undertaken by an experienced ornithologist. Any active birds' nest found during this check must be protected from harm until the nesting attempt is complete. This would require a buffer to be left around the nest, the size of which will depend upon the species involved (generally, this would be 10m in all directions around the nest). Before any vegetation in the buffer area can be removed it must be checked a second time after the original nesting attempt is completed.
- Install up to 15 bird nesting boxes of various designs, see Figure 5.2 for examples.
- Protected species tool-box talks prior to site clearance and construction work commencing. All appropriate site personnel must be informed of their legal obligations, responsibilities and what to do in the event that a protected species is found on site.
- Biodiversity enhancements including:
 - areas of soft landscaping – where soft landscaping is proposed, suitable native plant species should be planted with the aim to provide nest sites, nest material and food for birds. The plants should also supplement and enhance the amount of nectar and pollen bearing plants available for use by other wildlife.

Bats – roosting, foraging and commuting

- 5.23 At the time of the survey no bats or signs of roosting bats were found in any of the five trees considered to have low bat roost potential. None of these trees shown at TN4 in the Phase 1 Habitat map Figure 3.1. would be directly affected by the works. There were no buildings on the site that could support roosting bats.
- 5.24 Based on the survey results, the development would be expected to avoid contravention of the law pertaining to bats; provided that none of the adjacent trees were protected from the construction activities. However, it was considered that suitable habitats present (scattered trees and hedgerows) at the site that could be used by commuting and foraging bats.
- 5.25 Bat behaviour and therefore commuting and foraging activity can be adversely affected by artificial lighting (BCT, 2018). It is therefore possible that commuting and foraging bats could be displaced during and post construction. The development proposals and operation of the site must be mindful for the potential for foraging and commuting bats. As a precaution, some basic measures should be taken prior to construction and during operation.

5.26 Legislation – All species of Bats in the UK are protected under Schedule 2 of Conservation of Habitats and Species Regulations 2017 (as amended) and Schedule 5 of The Wildlife and Countryside Act 1981 (as amended).

5.27 Enhancement opportunities that could help deliver a net gain in biodiversity and therefore meet the terms of the NPPF 2023 (as amended) would also be possible as a result of incorporating features suitable for roosting bats as part of the development proposals.

5.28 Recommendations:

- **As a precaution to reduce further the risk of the development work adversely affecting bats, the following measures have been recommended and should be included within the construction programme:**
 - before site clearance work commences; protect the trees that have low potential to support roosting bats (i.e. those identified as TN4), by creating exclusion zones where vehicles and night time lighting is prohibited.
 - prior to construction works commencing all appropriate site personnel should be informed of their legal obligations, responsibilities and what to do in the event that a bat is found on site. This could be achieved through the provision of a tool-box talk relating to bats.
 - in the event of bats being encountered at any stage of the renovation, work must stop, and advice be sought (e.g. by contacting Cambridge Ecology tel. 01954 231239). Further advice can be given on how to proceed with the renovation whilst ensuring that no bats are harmed and any bat roost at the site is maintained.
 - as with all ecological surveys and the nature of wildlife, the behaviour and dwellings of bats can change periodically. Therefore, an Ecological Clerk of Work (ECoW) may be employed periodically to oversee some of the construction works. This will help to ensure legal compliance pertaining to bats.
- **Mitigation measures related to minimising potential effects of light include:**
 - ensuring security lighting is kept to a minimum and activated by motion sensors and serviced and maintained in good working order;
 - avoiding illumination of retained boundary features;
 - avoiding direct illumination of any bat boxes added as part of biodiversity enhancement;
 - using light sources that emit minimal ultraviolet light and avoid white or blue wavelengths to avoid attracting lots of insects (attracting insects to lamps may reduce their abundance in darker foraging areas favoured by bats); and

- installing lighting that is hooded/shielded and directed where needed to avoid unnecessary light spillage.
- Biodiversity enhancements include:
 - areas of soft landscaping – where soft landscaping is proposed suitable native plant species should be planted with the aim to provide suitable feeding and commuting habitat for bats.
 - the installation of up to 15 bat roosting boxes of various designs, see Figure 5.3 for examples.

NERC Act Section 41 Species - Species of Principal Importance

West European Hedgehog/Common Frog/Common Toad

- 5.29 No West European Hedgehog, Common Frog or Common Toad were found within the development site during the survey. However, biological records indicate that West European Hedgehog are present in the vicinity (within 250m) and the habitats within the site had potential to support sheltering/hibernating, foraging and breeding West European Hedgehog and foraging and sheltering/hibernating Common Frog, Common Toad.
- 5.30 As a precaution, the proposed development should take account of the potential presence for foraging and sheltering/hibernating West European Hedgehog, Common Frog, Common Toad within the site boundary. As a precaution, some basic measures to avoid direct mortality should be in place prior to and during construction.
- 5.31 Enhancement opportunities that could help deliver a net gain in biodiversity and therefore meet the terms of the NPPF 2023 (as amended) would also be possible as a result of incorporating features suitable for West European Hedgehog, Common Frog and Common Toad as part of the development proposals.
- 5.32 **Recommendations:**
- **Avoid night time demolition/construction works.**
 - **Cover any exposed excavations at night.**
 - **Provide a means of escape for any animals that may accidentally enter excavation works.**
 - **Keep external lighting (e.g. security) to a minimum and certainly no more than that already present.**
 - **Vegetation and site clearance work must proceed with vigilance and sensitivity to address the potential for West European Hedgehog, Common Frog and Common Toad to be present. To that end vegetation clearance, should be carried out under the supervision of an ECoW.**

- **Boundary fences must include Hedgehog size gaps beneath the fences to allow Hedgehogs to safely pass from garden to garden and avoid being forced to cross roads.**
- **Protected species tool-box talks prior to demolition, site clearance and construction work commencing. All appropriate site personnel must be informed of their legal obligations, responsibilities and what to do in the event that a protected species is found on site.**
- **Biodiversity enhancements including:**
 - **creation of new open ditches and pond habitats as part of the scheme's landscaping design.**
 - **areas of soft landscaping – where soft landscaping is proposed, suitable native plant species should be planted with the aim to provide suitable habitat for West European Hedgehog, Common Frog and Common Toad.**
 - **the installation of up to 5 Hedgehog boxes of various designs and amphibian hibernacula, see Figure 5.4 for examples and see Figure 5.1 for amphibian hibernacula. the planting that would provide feeding and commuting routes for West European Hedgehog, Common Frog and Common Toad.**

5.33 Species that are not considered to represent a constraint to the development include:

- Great Crested Newt
- Reptiles
- Eurasian Badger
- European Otter
- Brown Hare
- Water Vole
- Dormouse sp.
- Invertebrates
- Flowering Plants

5.34 As a precaution, demolition and construction works must proceed with vigilance and sensitivity in the event that any of these protected species appear at the site. To that end all appropriate site personnel should be informed of their obligations, responsibilities and what to do in the event that amphibians and reptiles are found on site. This should be achieved through the provision of a tool-box talk.

5.35 Enhancement opportunities that could help deliver a net gain in biodiversity and therefore meet the terms of the NPPF 2023 (as amended) would also be possible as a result of incorporating features suitable for various protected species/groups that are not currently present at the site as part of the development proposals.

5.36 Recommendation:

- **Protected species tool-box talks prior to demolition, site clearance and construction work commencing.**
- **Biodiversity enhancements including:**
 - creation of new habitats such as open ditches and pond habitats as part of the scheme's landscaping design.
 - enhancement of existing habitats, such as the hedgerows, for the benefit of biodiversity.
 - creation of areas of soft landscaping - where soft landscaping is proposed, suitable native plant species should be planted with the aim to provide suitable habitat for Invertebrates, mammals, and amphibians.
 - the installation of up to 15 insect boxes of various designs, see Figure 5.5 for examples.

6 KEY POINTS AND FINDINGS

- 6.1 Cambridge Ecology Ltd was commissioned to carry out a Preliminary Ecological Assessment involving desk-based ecology data search, Phase 1 Habitat Survey and Protected Species Scoping Survey of the land at and adjacent to Reed House, Jackson Lane, Reed, Hertfordshire, SG8 8AB. The results of the survey would aim to inform the planning application for the construction of 14 new residential dwellings on the site. The work would involve the clearance of existing vegetation, some tree and hedgerow removal.
- 6.2 This survey would update a previous survey carried out by Cambridge Ecology in 2020 (Cambridge Ecology in 2020).
- 6.3 The dominant habitats present within the development site were amenity grassland and boundary hedgerows. Other habitats within the development site included, mature trees, and introduced shrub. In the survey area adjacent to the development site were tall ruderal, dense scrub, dry ditch and waterbodies habitats. Within the development site the hedgerows were considered to be of conservation importance in their own right, being listed as Habitats of Principal Importance in Section 41 of the Natural Environment and Rural Communities Act (NERC 2006). However, they were not considered 'Important Hedgerows' under the terms of the Hedgerows Regulations 1997. Adjacent to the development site the waterbody habitat was considered to be of conservation importance.
- 6.4 The presence of three waterbodies within 250m of the development site (but not within the red line boundary of the development site itself), which are Habitats of Principal Importance is recognised. An HSI assessment of these waterbodies indicated that they had below average potential to support breeding Great Crested Newt. It is understood that none of these waterbodies would be directly affected by the development. The surrounding terrestrial habitat is not considered optimal for Great Crested Newt. In addition, there were no biological records of Great Crested Newt or other amphibians within 2km in the last 10 years. Although it was recognised that there were two records of Great Crested Newt in 2004 located approximately 1.9km to the south east of the development site. Therefore, Great Crested Newt are not considered a potential constraint to the proposed development.
- 6.5 During the survey the presence of habitats suitable to support protected species and signs indicating the actual and potential presence of protected species were found, comprising, breeding birds, (including UKBAP species and Species of Principal Importance); as well as potential presence of commuting and foraging bats, and Species of Principal Importance as listed on Section 41 of the NERC Act 2006 such as West European Hedgehog, Common Frog or Common Toad.

- 6.6 Therefore, the Preliminary Ecological Appraisal has identified some potential protected species constraints, which must be of material consideration for this development.
- 6.7 Where these species are present, mitigation measures are necessary to fulfil legal obligations and to ensure the continued conservation status of these species in the area. Where present the habitat for breeding bird species, commuting and foraging bats, West European Hedgehog, Common Frog and Common Toad would require some careful management, but it is unlikely that they would preclude any proposed development at the site.
- 6.8 Mitigation measures have been recommended, necessary to minimise the potential adverse effect of the proposed development on protected habitats and species, to ensure legal compliance and meet planning policy requirements.
- 6.9 The absence of and or low potential for other protected species such as amphibians, reptiles, roosting bats, Eurasian Badger, Dormouse sp., European Otter, Brown Hare, Water Vole, invertebrates, flowering plants within the development site, indicated that these species do not represent a constraint to this development.
- 6.10 Enhancement measures have been recommended, which if included in the development proposals and implemented fully, have the potential to offset the potential adverse effects of the proposed development on the ecological value of this site and could provide biodiversity enhancement for Species of Principal Importance such as West European Hedgehog, Common Frog and Common Toad, and therefore meet national and local planning policy requirements relating to biodiversity targets.
- 6.11 Bearing in mind the ability for wildlife to periodically move to new locations, it is recommended that if the planning application and/or development proposals were likely to be delayed (e.g. for one year from the date of this study), then a further equivalent ecological survey (and or certain species-specific surveys) would be required to update the results provided; hence an equivalent ecological survey would need to be carried out.

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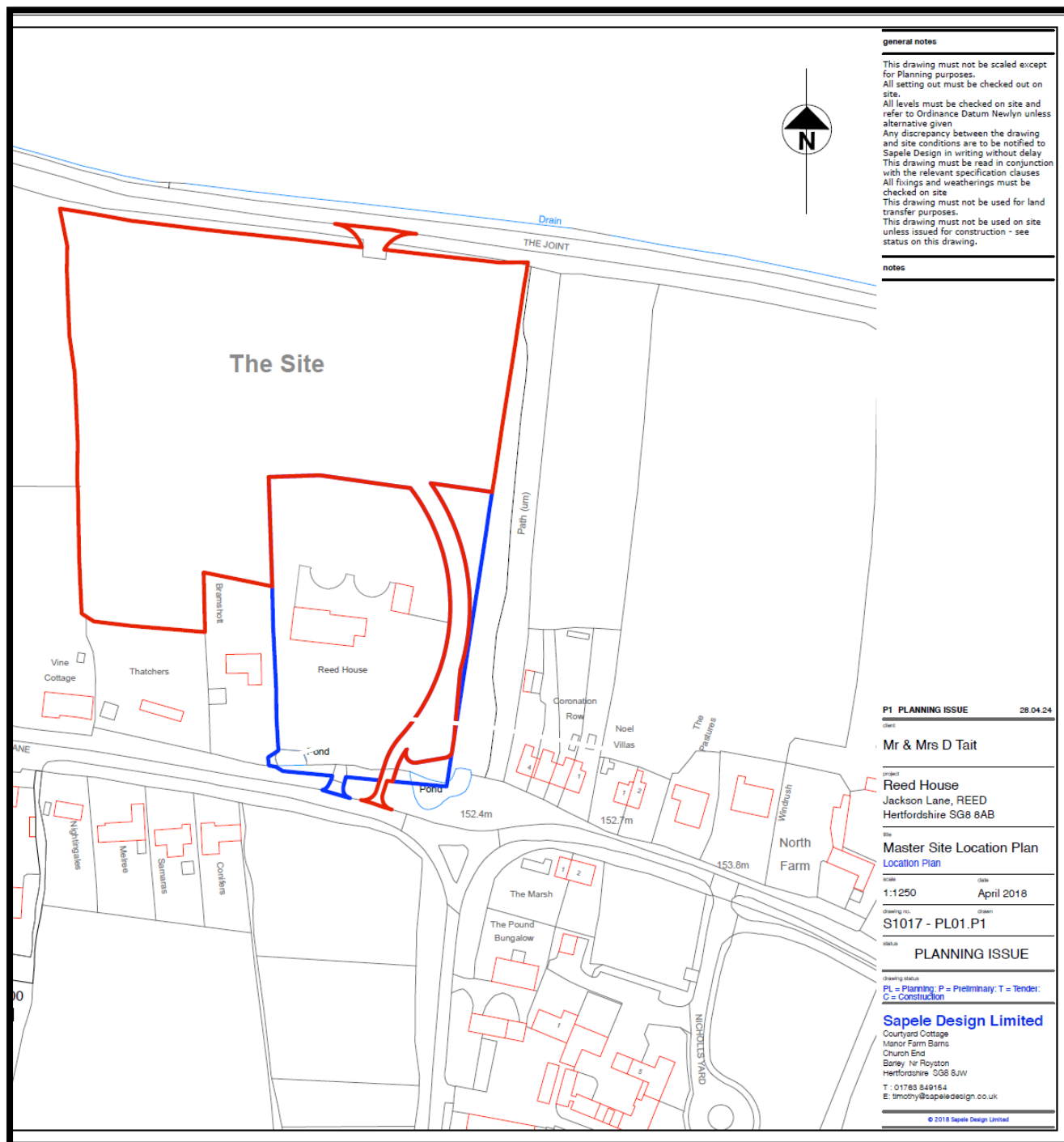
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8 FIGURES

Figure 1.1: Plan of the development site (Red Line boundary) and survey area (Red and Blue Line Boundary)



[illegible]

Figure 3.1: Phase 1 Habitat Map.

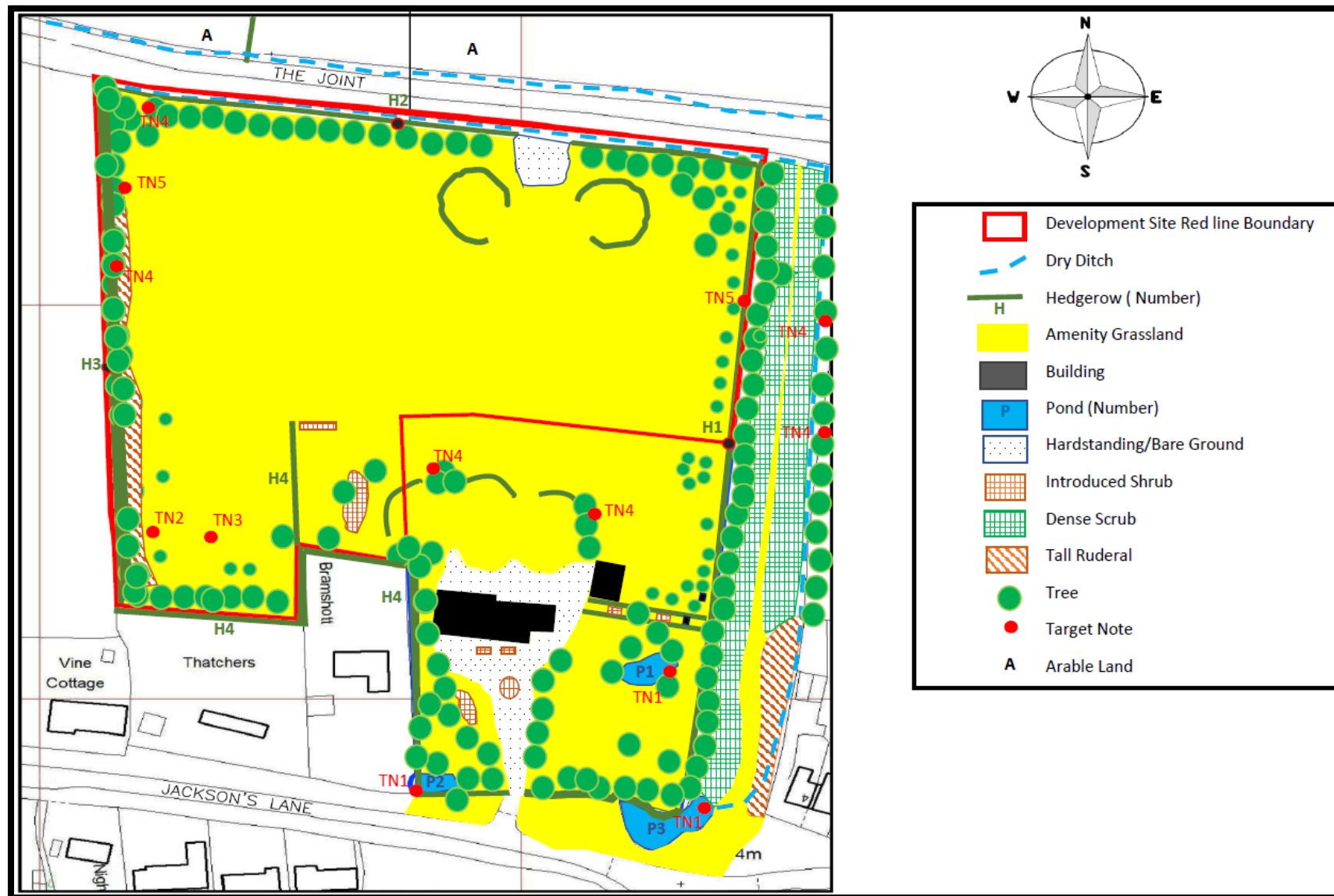
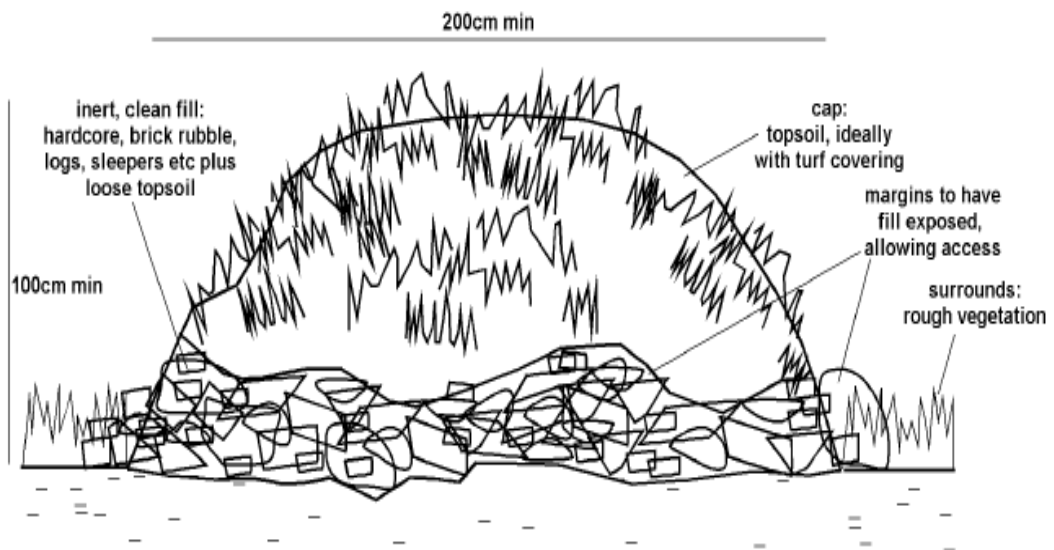


Figure 5.1: Schematic sectional view of an amphibian hibernation site and breeding pond



Reproduced from Natural England (2001)

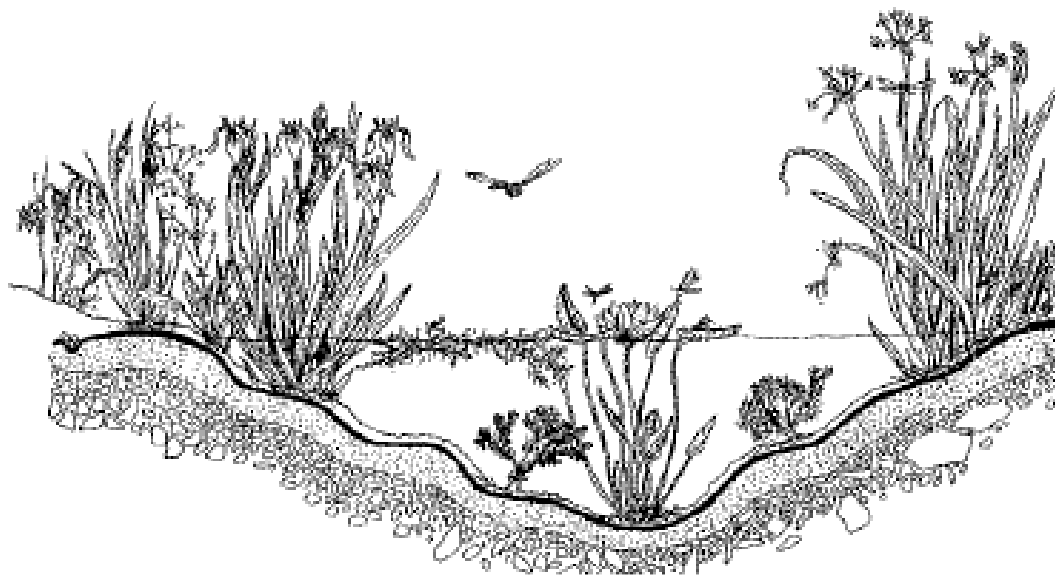


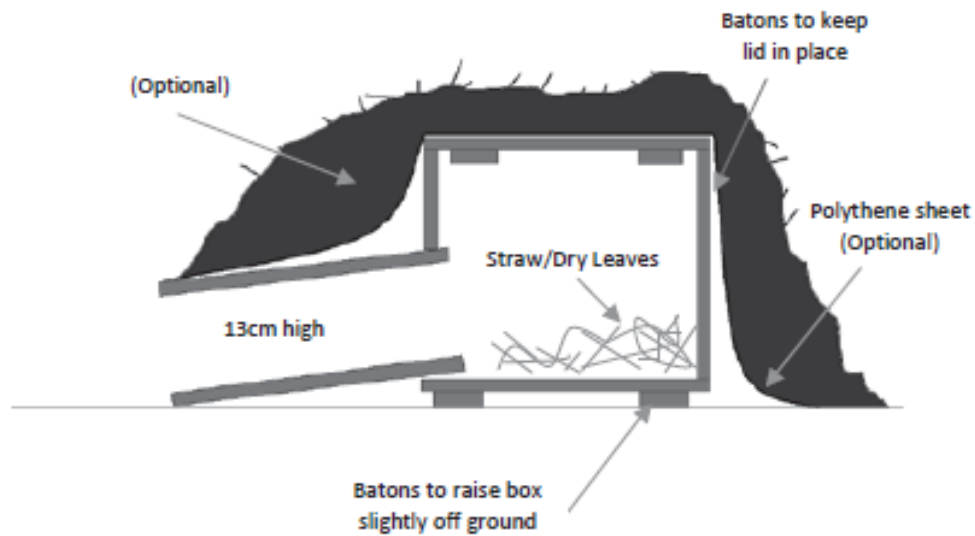
Figure 5.2: Suggested Bird Nest Box Designs



Figure 5.3: Suggested Bat Box Designs



Figure 5.4: Suggested Hedgehog House Designs



N.B. Do not creosote or treat wood.



Figure 5.5: Suggested Insect House Designs



9 PHOTOGRAPHS

Photo No.	Photograph	Description
1		Example of Amenity Grassland Habitat on site
2		Example of Introduced Shrub Habitat on site

3		Example of Tall Ruderal Habitat within the site along Hedgerow H3
4		Example of Tall Ruderal Habitat adjacent to the site
5		Example of Dense Scrub Habitat adjacent to the site

Preliminary Ecological Assessment of land at Reed House, Jackson Lane, Reed, Hertfordshire, SG8 8AB:
Survey Report and PEA

6		Example of Hard Standing drive way to Reed House
7		Example of Dry Ditch Habitat D1 adjacent to the site
8		Example of Dry Ditch Habitat D2 adjacent to the site

9		Example of Pond Habitat P1 adjacent to the site (TN1)
10		Example of Pond Habitat P2 adjacent to the site. (TN1)
11		Example of Pond Habitat P3 adjacent to the site. (TN1)

Preliminary Ecological Assessment of land at Reed House, Jackson Lane, Reed, Hertfordshire, SG8 8AB:
Survey Report and PEA

12		Example of Hedgerow Habitat (H1) on the eastern boundary of the site
13		Example of Hedgerow Habitat (H1) on the eastern boundary of the site
14		Example of Hedgerow Habitat (H2) on the northern boundary of the site

15		Example of Hedgerow Habitat (H2) on the northern boundary of the site
16		Example of Hedgerow Habitat (H3) on the western boundary of the site
17		Example of Hedgerow Habitat (H3) on the western boundary of the site

Preliminary Ecological Assessment of land at Reed House, Jackson Lane, Reed, Hertfordshire, SG8 8AB:
Survey Report and PEA

18		Example of Leylandii Hedgerow Habitat (H4) on the southern boundary of the site
19		Example of individual/groups of trees within the site
20		Example of individual/groups of trees within the site

21		Western mound a landscaped feature within Amenity Grassland comprising earth mound and laurel hedge
22		Eastern mound a landscaped feature within Amenity Grassland comprising earth mound and laurel hedge
23		Example of rubble pile on site suitable for use by amphibians, reptiles and West European Hedgehog Target Note 2

Preliminary Ecological Assessment of land at Reed House, Jackson Lane, Reed, Hertfordshire, SG8 8AB:
Survey Report and PEA

24		Example of rubble pile on site suitable for use by amphibians, reptiles and West European Hedgehog Target Note 2
25		Example of rubble pile on site suitable for use by amphibians, reptiles and West European Hedgehog Target Note 3
26		Example of rubble pile on site suitable for use by amphibians, reptiles and West European Hedgehog Target Note 3

27		Example of Tree suitable for roosting bats Target Note 4
28		Example of Tree suitable for roosting bats Target Note 4

**Preliminary Ecological Assessment of land at Reed House, Jackson Lane, Reed, Hertfordshire, SG8 8AB:
Survey Report and PEA**

29		Example of Tree suitable for roosting bats Target Note 4
30		Example of Tree suitable for roosting bats Target Note 4
31		Example of signs of nesting bird Target Note 5

32		Example of signs of nesting bird Target Note 5
33		Example of agricultural land beyond the northern boundary of the site

10 APPENDICES

Appendix 1: Phase 1 Habitat Survey Species List

- 10.1 The list of plant species given for each habitat represent those recorded at the time of the survey and are intended to be sufficient to enable a general habitat classification to be established. These records are not intended to constitute a full botanical survey of the site. The relative abundance uses the DAFOR scale as detailed in Table 2.1.

Amenity Grassland

Common Name	Systematic Name	Relative Abundance
Perennial Rye-grass	<i>Lolium perenne</i>	D
Greater Plantain	<i>Plantago major</i>	O
Cock's Foot	<i>Dactylis glomerata</i>	A
Clover	<i>Trifolium sp.</i>	O
Field speedwell	<i>Veronica persica</i>	O
Dandelion	<i>Taraxacum officinale</i>	F
Daisy sp.	<i>Bellis sp.</i>	F
Ribwort Plantain	<i>Plantago lanceolata</i>	O
Creeping Buttercup	<i>Ranunculus repens</i>	O
Common Mouse-ear	<i>Cerastium fontanum</i>	O
Ground Ivy	<i>Glechoma hederacea</i>	O
Small-flowered Cranesbill	<i>Geranium pusillum</i>	O

Dense Scrub

Common Name	Systematic Name	Relative Abundance
Blackthorn	<i>Prunus spinosa</i>	A
Bramble	<i>Rubus fruticosus</i>	O
Hawthorn	<i>Crataegus monogyna</i>	F
Dog Rose	<i>Rosa canina</i>	O

Introduced Shrub

Common Name	Systematic Name	Relative Abundance
Lilac	<i>Syringa vulgaris</i>	O
Rose	<i>Rosa sp.</i>	O
Berberis	<i>Berberis sp.</i>	O
Laurel	<i>Laurus nobilis</i>	O
Oregon Grape	<i>Mahonia aquifolium</i>	O
Rhododendron	<i>Rhododendron sp.</i>	O
Begonia	<i>Begonia sp.</i>	O
Magnolia	<i>Magnolia sp.</i>	O
Japanese Anemone	<i>Eriocapitella hupehensis</i>	O
Bay	<i>Laurus nobilis</i>	O

Tall Ruderal

Common Name	Systematic Name	Relative Abundance
Stinging Nettle	<i>Urtica dioica</i>	D
Broad-leaved Dock	<i>Rumex obtusifolius</i>	A
Bramble	<i>Rubus fruticosus</i>	O

Common Name	Systematic Name	Relative Abundance
Creeping Thistle	<i>Cirsium vulgare</i>	O
Cleavers	<i>Galium aparine</i>	O
Cow Parsley	<i>Anthriscus sylvestris</i>	O
Meadow Grasses	<i>Poa sp.</i>	A

Ponds

Common Name	Systematic Name	Relative Abundance
Bittercress	<i>Cardamine hirsuta</i>	A
Brooklime	<i>Veronica beccabunga</i>	O
Fool's Watercress	<i>Apium nodiflorum</i>	A
Greater Willowherb	<i>Epilobium hirsutum</i>	O
Water Crowfoot	<i>Ranunculus aquatilis</i>	A
Yellow Flag iris	<i>Iris pseudacorus</i>	O

Individual Trees

Common Name	Systematic Name	Relative Abundance
Bird Cherry	<i>Prunus padus</i>	O
Holly	<i>Ilex aquifolium</i>	O
Ash	<i>Fraxinus excelsior</i>	F
Pedunculate Oak	<i>Quercus robur</i>	O
Silver Birch	<i>Fraxinus excelsior</i>	O
Field Maple	<i>Acer campestre</i>	F
Leylandii	<i>Cupressus × leylandii</i>	A
Poplar	<i>Populus sp.</i>	O
Scot's Pine	<i>Pinus sylvestris</i>	R
Weeping Willow	<i>Salix babylonica.</i>	O
Elm	<i>Ulmus sp.</i>	O
Horse Chestnut	<i>Aesculus Hippocastanum</i>	R
Ivy	<i>Hedera helix</i>	F
Acer sp.	<i>Acer sp.</i>	
Goat Willow	<i>Salix caprea</i>	
Walnut	<i>Juglans regia</i>	
Yew	<i>Taxus baccata</i>	

Hedgerows

Common Name	Systematic Name	Relative Abundance
Hawthorn	<i>Crataegus monogyna</i>	F
Laurel	<i>Laurus nobilis</i>	O
Elderberry	<i>Sambucus nigra</i>	O
Crab Apple	<i>Malus sylvestris</i>	R
Dog Rose	<i>Rosa canina</i>	O
Blackthorn	<i>Prunus spinosa</i>	O
Bramble	<i>Rubus fruticosus</i>	O
Privet	<i>Ligustrum ovalifolium</i>	O
Elm	<i>Ulmus sp.</i>	O
Field Maple	<i>Acer campestre</i>	F
Hedge Garlic	<i>Alliaria petiolata</i>	O
Ground Ivy	<i>Glechoma hederacea</i>	F
White Dead-nettle	<i>Lamium album</i>	O
Dog's Mercury	<i>Mercurialis perennis</i>	F

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Common Name	Systematic Name	Relative Abundance
Forget-me-Not	<i>Myosotis scorpioides</i>	O
Spear Thistle	<i>Cirsium vulgare</i>	O
Cleavers	<i>Cirsium vulgare</i>	A
Leylandii	<i>Cupressus × leylandii</i>	A

Ditches (Dry)

Common Name	Systematic Name	Relative Abundance
Spear Thistle	<i>Cirsium vulgare</i>	O
Stinging Nettle	<i>Urtica dioica</i>	A
Cleavers	<i>Cirsium vulgare</i>	A
Greater Willowherb	<i>Epilobium hirsutum</i>	O

Appendix 2: Relevant Wildlife Legislation and Planning Policy**Habitats**

- 10.2 A variety of sites are designated in the UK, under The Conservation of Habitats and Species Regulations 2017 (as amended), for their nature conservation importance and interest. These are statutory designated sites. The general aim of these designations is to conserve and protect ecological resources in addition to raising awareness and understanding of the general public of the ecological value of these sites. Non-statutory sites are afforded some protection through local plans. Table 10.1 outlines the most common statutory and non-statutory designations.

Table 10.1 Common statutory and non-statutory designations

Designation	Brief Description
Ramsar Sites	Wetlands of international importance. Ramsar Sites are effectively protected, through the planning system, under the Wildlife and Countryside Act 1981, as amended, and the Countryside and Rights of Way Act 2000 through their notification as SSSIs and through other regulatory systems addressing water, soil and air quality.
Special Protection Areas (SPAs)	SPAs are the most important habitats for rare and migratory birds within the European Union. The Birds Directive, adopted by the UK in 1979, provides for the protection, management and control of all species of naturally occurring wild birds in the European territory of Member States, including the UK. Conservation of Habitats and Species Regulations 2017 (as amended).
Special Areas of Conservation (SACs)	SACs are sites that are chosen to conserve the natural habitat types and species of wild flora and fauna listed in Annex I and II of the Habitats Directive. They are the best areas to represent the range and variety of habitats and species within the European Union. Conservation of Habitats and Species Regulations 2017 (as amended).
National Nature Reserves (NNRs)	NNRs are nationally important areas of wildlife habitat and geological formations in Britain. NNRs are designated and protected under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981, as amended. They receive additional protection under the Countryside and Rights of Way Act 2000. They are managed for the benefit of nature conservation.
Sites of Special Scientific Interest (SSSIs)	SSSIs are nationally important sites for wildlife, geological and geomorphological features in England. They are designated and protected under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981, as amended. They receive additional protection under the Countryside and Rights of Way Act 2000.
Local Nature Reserves (LNRs)	LNRs are similar to NNRs but they apply to the local context. They are sites of value to nature conservation and are designated under the National Parks and Access to the Countryside Act 1949. They are managed for the benefit of nature conservation.
Hedgerows	Hedgerows are a very significant wildlife habitat over large parts of Britain. They provide essential refuge for a great many woodland

Designation	Brief Description
	and farmland plants and animals. Hedgerows are given protection under The Hedgerows Regulations 1997. As a result, since 1 June 1997, it has been against the law to remove most countryside hedgerows (or parts of them) without first notifying the local planning authority.
Ancient Woodland	Ancient woodlands are woodlands that have been established since or before 1600AD. They are non-statutory sites and are not legally protected, but they may be afforded some protection in, for example, structure and local plans.
Wildlife Sites	These non-statutory sites are sites designated by a local authority as being of county nature conservation value but may not be notified as SSSIs. These include County Wildlife Sites (CWS).

Species

- 10.3 In addition to habitats, a number of species have now become so rare that they are also afforded protection through international and National law (Conservation of Habitats and Species Regulations 2017 (as amended)). Other species are considered to contribute to our 'quality of life'. Although these species do not benefit from legal protection, they can be material considerations in the planning process.
- 10.4 Table 10.2 outlines the key forms of protection afforded to species. The details provided are intended to highlight the most relevant legislation pertaining to species commonly linked with development sites.
- 10.5 For full details of the relevant legislation it is recommended that the appropriate government webpages be consulted at www.legislation.gov.uk.

Table 10.2 Summary of Wildlife Protection for Species

Species	Relevant Legislation	Details
Amphibians		
Great Crested Newt <i>Triturus cristatus</i> Natterjack Toad <i>Epidalea calamita</i>	Schedule 2 of Conservation of Habitats and Species Regulations 2017 (as amended) Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	• Deliberately capture or kill, or intentionally injure; • Deliberately disturb or recklessly disturb them in a place used for shelter or protection; • Damage or destroy a breeding site or resting place; • Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection; and • Possess an individual, or any part of it, unless acquired lawfully.
Reptiles		
Common lizard <i>Zootoca vivipara</i> Adder <i>Vipera berus</i> Slow-worm <i>Anguis fragilis</i> Grass snake <i>Natrix helvetica</i>	Part of Sub-section 9(1) of Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	Intentionally kill or injure individuals of these species (Section 9(1)).
Sand lizard <i>Lacerta agilis</i> Smooth snake <i>Coronella austriaca</i>	Full protection under Section 9 of Schedule 5 of The Wildlife and Countryside Act 1981 (as amended)	• Deliberately or intentionally kill, capture (take) or intentionally injure; • Deliberately disturb; • Deliberately take or destroy eggs; • Damage or destroy a breeding site or • resting place or intentionally damage • a place used for shelter; or • Intentionally obstruct access to a • place used for shelter.
Birds		
All wild birds	Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill, injure or take any wild bird. • Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built. • Intentionally take or destroy

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Species	Relevant Legislation	Details
		the egg of any wild bird. • Have in one's possession or control any wild bird, dead or alive, or any part of a wild bird, which has been taken in contravention of the Act or the Protection of Birds Act 1954. • Have in one's possession or control any egg or part of an egg which has been taken in contravention of the Act or the Protection of Birds Act 1954. • Use traps or similar items to kill, injure or take wild birds. • Have in one's possession or control any bird of a species occurring on Schedule 4 of the Act unless registered, and in most cases ringed, in accordance with the Secretary of State's regulations
Birds listed as Schedule 1 species	Schedule 1 of the Wildlife and Countryside Act 1981 (as amended)	• Intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.
Mammals		
Bats (all UK species)	Schedule 2 of Conservation of Habitats and Species Regulations 2017 (as amended) Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	• Deliberately capture, injure or kill a bat; • Deliberately disturb a bat (disturbance is defined as an action which is likely to: (i) Impair their ability to survive, to breed or reproduce, or to rear or nurture their young; (ii) Impair their ability to hibernate or migrate; or (iii) Affect significantly the local distribution or abundance of the species); • Damage or destroy a bat roost; • Intentionally or recklessly disturb a bat at a roost; or

Species	Relevant Legislation	Details
		Intentionally or recklessly obstruct access to a roost. A bat roost is defined as "any structure or place which any wild [bat]...uses for shelter or protection". Legal opinion considers that a roost is protected irrespective of whether bats are present at the time or not.
Eurasian Badger <i>Meles meles</i>	Protection of Badgers Act 1992	- Damage a sett or any part of it; - Destroy a sett; - Obstruct access to, or any entrance of, a sett; or - Disturb a Badger when it is occupying a sett. A sett is defined legally as any structure or place which displays signs indicating current use by a Badger (Natural England 2007).
Hazel Dormouse <i>Corylus avellus</i>	Schedule 2 of Conservation of Habitats and Species Regulations 2017 (as amended) Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	- Intentionally or deliberately capture or kill, or intentionally injure; - Deliberately disturb or intentionally or recklessly disturb them in a place used for shelter or protection; - Damage or destroy a breeding site or resting place; - Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection; and - Possess an individual, or any part of it, unless acquired lawfully.
Otter <i>Lutra lutra</i>	Schedule 2 of Conservation of Habitats and Species Regulations 2017 (as amended) Section 9(4)(b) and (c) of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	- Deliberately capture, injure or kill; - Deliberately disturb in such a way as to be likely to significantly affect the local distribution or abundance or the ability of any significant group to survive, breed, rear or nurture their young; - Intentionally or recklessly disturb whilst it is occupying a holt;

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Species	Relevant Legislation	Details
		• Damage or destroy or intentionally or recklessly obstruct access to a holt.
Water Vole <i>Arvicola amphibius</i>	Section 9 of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	• Intentionally kill, injure or take; • Possess or control live or dead or derivatives; • Intentionally or recklessly damage, destroy or obstruct access to any structure or place used for shelter or protection; or • Intentionally or recklessly disturb whilst occupying a structure or place used for that purpose.
Crustaceans		
White-clawed crayfish <i>Austropotamobius pallipes</i>	Section 9(1) of Schedule 5 of Wildlife and Countryside Act 1981 (as amended)	Intentionally kill, injure or take by any method.

Other Relevant Legislation and Policies

- 10.6 The intention of all nature conservation planning policy is that sites and species of nature conservation concern are to be protected from the impact of development. Where development is allowed, which could potentially harm such sites, mitigation measures aimed to protect, conserve and enhance and benefit species and wildlife are required.
- 10.7 Under the Natural Environment and Rural Communities Act (2006), "*Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity*". In order to comply with this 'Biodiversity Duty', planning decisions must ensure that they adequately consider the potential ecological impacts of a proposed development.
- 10.8 Section 41 (S41) of the Natural Environment and Rural Communities (NERC Act 2006) requires the Secretary of State to publish a list of habitats and species that are of principal importance for the conservation of biodiversity in England. The list (including 56 habitats and 943 species) has been drawn up in consultation with Natural England and draws upon the UK Biodiversity Action Plan (BAP) List of Priority Species and Habitats.
- 10.9 The S41 list should be used to guide decision-makers such as local and regional authorities to have regard to the conservation of biodiversity in the exercise of their normal functions – as required under Section 40 of the NERC Act 2006. The duty applies to all local authorities and extends beyond just conserving what is already there, to carrying out, supporting and requiring actions that may also restore or enhance biodiversity.

National Planning Policy Framework (NPPF)

- 10.10 A revised NPPF was published in December 2023 detailing the Government's planning policies for England and the manner by which they should be applied. The policies within the NPPF are a material consideration in the planning process. The key principle of the NPPF is a presumption in favour of sustainable development, with sustainable development defined as a balance between economic, social and environmental needs. Policies 170 to 183 of the NPPF address conserving and enhancing the natural environment, stating that the planning system should:
- Contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes;
 - Recognise the wider benefits of ecosystem services; and
 - Minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.
- 10.11 Furthermore, there is a focus on re-use of existing brownfield sites or sites of low environmental value as a priority, and discouraging development in National Parks, Sites of Specific Scientific Interest, the Broads or Areas of Outstanding Natural Beauty other than in exceptional circumstances.
- 10.12 Where possible, planning policies should also "promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity".
- 10.13 Natural England has published Standing Advice on protected species and Ancient Woodland. When determining an application for development that is covered by the Standing Advice, Local Planning Authorities must take into account the Standing Advice. The Standing Advice is a material consideration in the determination of applications in the same way as a letter received from Natural England following consultation.
- 10.14 The UK Biodiversity Action Plan (BAP) published in 1994, sets out this Country's response to Article 6 of this Convention. Previously, management and progress were implemented by Species Action Plans (SAPs) and Habitat Action Plans (HAPs). However, a review completed in 2008 concluded that these action plans were best assessed at a country level, whilst still largely being delivered at a local level by Local Biodiversity Action Plans (LBAPs). This is because "priority species whose needs can be fulfilled by general habitat management actions will be the responsibility of country habitat groups. This is to try to ensure that the broad habitat management actions that are taken also consider the needs of priority species and provide suitable conditions for these species across the UK". Under the terms of NERC Act 2006 there are currently 1150 Priority Species 65 Priority Habitats that extend across the UK. They are aimed at specific species and habitats considered to be at risk of damage, decline or extinction.

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

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

Wild Mammals (Protection) Act 1996

- 10.16 This legislation makes it an offence to cause unnecessary suffering to wild mammals, including by crushing and asphyxiation. It mainly deals with issues of animal welfare and covers all non-domestic mammals including those commonly encountered on development sites such as rabbits and foxes as well as small mammals.

Birds of Conservation Concern (BoCC)

- 10.17 This is a quantitative assessment of the status of populations of bird species which regularly occur in the UK. It assesses a total of 246 species against a set of objective criteria to place each on one of three lists - Green, Amber and Red - indicating an increasing level of conservation concern. There are currently 70 species on the Red list, 103 on the Amber list and 72 on the Green list. The classifications described have no statutory implications and are mainly used to assess the scarcity and conservation value of a given species.