FKY LIMITED

ECOLOGYSOLUTIONS

Part of the ES Group

LAND AT TILEKILN GREEN, STANSTED

Ecological Assessment

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ecology solutions for planners and developers

PROTECTED SPECIES

This report contains sensitive information
relating to protected species.
The information contained herein
should not be disseminated without the
prior consent of Ecology Solutions.

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1. INTRODUCTION

1.1. Background & Proposals

1.1.1. Ecology Solutions was commissioned in January 2020 by FKY Limited to undertake an ecological assessment of land at Tilekiln Green, Stansted, Essex (see Plan ECO1).

1.1.2. The proposals for the site are for the development of an open logistics facility with associated new access, parking areas and ancillary office and amenity facilities.

1.2. Site Characteristics

1.2.1. The site is approximately 5.3ha in size and dominated in the centre by recolonising semi-improved grassland, ephemeral / short perennial and tall ruderal habitats. Areas of broadleaved woodland are present in the northeast and along the southern boundary of the site. A shallow stream is located off-site along each of the western and southern boundaries, separating the site from the adjacent former railway embankment, now designated as Flitch Way Local Wildlife Site (LWS) and Country Park (see Plans ECO1 and ECO2).

1.2.2. The M11 motorway is located approximately 100m to the west, whilst the B1256 and Tilekiln Green run along the northern and eastern boundaries of the site respectively. Further afield, the town of Bishop's Stortford is located to the west and the hamlet of Start Hill is to the east. To the south lies open countryside consisting of arable fields bound by hedgerows.

1.3. Ecological Assessment

1.3.1. This document assesses the ecological interest of the site. The importance of the habitats within the site are evaluated with due consideration given to the guidance published by the Chartered Institute of Ecology and Environmental Management (CIEEM)[1].

1.3.2. Where necessary, mitigation measures are recommended so as to safeguard any significant existing ecological interest within the site and, where appropriate, potential enhancement measures are put forward and reference made to both Priority Species and Priority Habitats (formerly National and Local Biodiversity Habitat Plans).

[1] CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine.* Version 1.1 – Updated September 2019. Chartered Institute of Ecology and Environmental Management, Winchester.

2. SURVEY METHODOLOGY

2.1. The methodology utilised for the survey work can be split into three areas, namely desk study, habitat survey and faunal survey. These are discussed in more detail below.

2.2. Desk Study

2.2.1. In order to compile background information on the site, and the surrounding area, Ecology Solutions contacted Essex Field Club, Essex Wildlife Trust Biological Records Centre (EWTBRC), Essex Bat Group and Herts and Middlesex Wildlife Trust (HMWT). This data is referenced in this report where relevant.

2.2.2. Further information on designated sites from a wider search area was obtained from the online Multi-Agency Geographic Information for the Countryside (MAGIC)[2] database, which uses information held by Natural England and other organisations.

2.2.3. This information is reproduced at Appendix 1 and, where appropriate, on Plan ECO1.

2.3. Habitat Survey

2.3.1. Habitat surveys were carried out by Ecology Solutions in April 2020 in order to ascertain the general ecological value of the site and to identify the main habitats and associated plant species. Further checks were undertaken between May and September 2020, in conjunction with survey work for protected species during 2020. Additional walkover surveys were undertaken in January 2021 and most recently in December 2021.

2.3.2. The site was surveyed based around extended Phase 1 habitat survey methodology[3], as recommended by Natural England, whereby the habitat types present are identified and mapped, together with an assessment of the species composition of each habitat. This technique provides an inventory of the basic habitat types present and allows identification of areas of greater potential which require further survey. Any such areas identified can then be examined in more detail.

2.3.3. Using the above method, the site was classified into areas of similar botanical community types, with a representative species list compiled for each habitat identified.

2.3.4. All the species that occur in each habitat would not necessarily be detectable during survey work carried out at any given time of the year, since different species are apparent in different seasons. Observations were undertaken during the various additional survey work completed across the optimum survey season within the site, ensuring a robust assessment was made of the botanical value of the site.

[2] http://www.magic.gov.uk
[3] Joint Nature Conservation Committee (2010). *Handbook for Phase 1 Habitat Survey – a Technique for Environmental Audit*. England Field Unit, Nature Conservancy Council, reprinted JNCC, Peterborough.

2.4. **Faunal Survey**

2.4.1. Obvious faunal activity, such as birds or mammals observed visually or by call during the course of the surveys, was recorded. Specific attention was paid to any potential use of the site by protected species, Priority Species (formerly Biodiversity Action Plan (BAP) species), or other notable species.

2.4.2. In addition to general observations of faunal activity, specific surveys were completed for Badgers *Meles meles*, bats, Dormice *Muscardinus avellanarius*, Otters *Lutra lutra*, Water Voles *Arvicola amphibius* and reptiles.

2.4.3. The survey methodologies for the various species and groups are set out below.

Badgers

2.4.4. For reasons on animal welfare, information on Badgers is not published in the version of the report to be made available to the general public. The results of the Badger survey are contained in the confidential report at Appendix 6.

Bats

2.4.5. All trees within the site were assessed for their potential to support roosting bats. Features typically favoured by bats were searched for, including:

- Obvious holes, e.g. rot holes and old Woodpecker holes;
- Dark staining on the tree, below the hole;
- Tiny scratch marks around a hole from bat claws;
- Cavities, splits and or loose bark from broken or fallen branches, lightning strikes etc.; and
- Very dense covering of mature Ivy *Hedera helix* over trunk.

2.4.6. Field surveys were undertaken with regard to best practice guidelines issued by Natural England (2004[4]), the Joint Nature Conservation Committee (2004[5]) and the Bat Conservation Trust (2016[6]).

2.4.7. A single static SM4BAT bat detector was placed within the site for a minimum of five nights in each of May, June and August 2020 to record any foraging or commuting activity throughout the night. This detector was programmed to record from half an hour before sunset to half an hour after sunrise.

2.4.8. To ascertain the level of bat activity, the site was subject to bat activity surveys in May, June and August 2020 (see Plans ECO3.A to ECO3.C). The surveys have regard to the guidelines issued by the Bat Conservation Trust.

[4] Mitchell-Jones, A. J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.
[5] Mitchell-Jones, A.J. & McLeish, A.P. (Eds.) (2004). *Bat Workers' Manual*. 3rd edition. Joint Nature Conservation Committee, Peterborough.
[6] Collins, J. (2016). *Bat Surveys for Professional Ecologists: Good Practice Guidelines*. 3rd Edition. The Bat Conservation Trust, London.

2.4.9. The activity surveys were undertaken across a set transect route which covers the majority of the site, especially the features that were more likely to attract bat activity. The transects commenced at sunset and continued for approximately two hours in order to maximise the encounter rate of bats i.e. both early and late emerging species. This survey method aimed to identify any bats using the site for foraging.

2.4.10. The echolocation calls of bats was recorded using iPads combined with Echo Meter Touch 2 PRO bat detectors to record the data, which together with direct observation were used to identify the species present and record the number of bat passes. If bats were detected walking stopped and observations were made on the bats' behaviour i.e. foraging or commuting, species identification and numbers present.

2.4.11. Following completion of the surveys the recorded data was subsequently analysed using the Kaleidoscope Pro bat sound analysis software.

2.4.12. Surveys were conducted when the night-time temperature was above 10°C. The insectivorous diet of bats means there is little or no food available when temperature falls below this level and consequently levels of activity are low and may not accurately reflect the value of the application site for bats. The weather conditions for the surveys were recorded and any limitations noted.

Dormice

2.4.13. A nest tube and nest box survey for Dormouse was undertaken in respect of suitable areas of woodland within the site. Monitoring surveys were completed monthly between May and September 2020.

2.4.14. Features of importance to Dormice include diverse, well-structured hedgerows offering a range of food sources throughout the year. Good arboreal links through the canopy layer of hedgerows / woodlands are required along with suitably dense cover for nest sites and good hibernation sites. Typical indicator tree / plant species include Hazel *Corylus avellana*, Honeysuckle *Lonicera periclymenum* and Bramble *Rubus fruticosus*; however a mix of other species (such as Oak *Quercus* sp., Ash *Fraxinus excelsior*, Sycamore *Acer pseudoplatanus*, Blackthorn *Prunus spinosa* and Hawthorn *Crataegus monogyna*) can prove equally important and the presence of food sources throughout the active period for Dormice, coupled with the presence of suitable hibernation sites, is of more importance than the presence / absence of any one key indicator species.

2.4.15. The survey technique involves the installation and checking of nest tubes and nest boxes within all habitats within the considered to be species-rich or of potential value to Dormice.

2.4.16. The Dormouse nest tubes and boxes utilised were those approved as standard by the Mammal Society. In total, fifty nest tubes and two nest boxes were installed (see Plan ECO4).

2.4.17. Nest tubes and boxes were placed in accordance with the guidance provided by the Mammal Society and Natural England[7]. Typically, tubes are placed within the woodland approximately every 20m, where suitable locations can be identified. Nest boxes are placed at lower densities but in similarly selected locations as for nest tubes. The nest tubes were attached with wire ties underneath suitably sturdy horizontal branches and positioned approximately 1.5m above ground level on average.

2.4.18. The survey has been scored for effort according to the method developed from the South West Dormouse Project and carried through in the second edition of *The Dormouse Conservation Handbook* (English Nature, 2006)[8]. The system used provides an overall score that reflects the chances of Dormice being discovered if present, and thus provides an indicator of the 'thoroughness' of a survey. This score is based on the number of tubes used and the number of months the tubes were in place.

2.4.19. The months of the year are weighted according to the likelihood of recording Dormice, as set out in Table 2.1 below.

Month	Weighting
April	1
May	4
June	2
July	2
August	5
September	7
October	2
November	2

Table 2.1. Monthly Score Weighting for Dormouse surveys (Chanin & Woods, 2003).

2.4.20. Generally speaking, the index of effort is calculated based on the use of 50 nest tubes as a standard minimum. The total number of nest tubes deployed was fifty, with a further two nest boxes. Tubes were deployed in suitable habitats at the recommended frequency of approximately every 20m, and therefore this is considered to be reasonable survey effort.

2.4.21. A score of 20 (or above) is deemed a thorough survey and a score of 15 to 19 may be regarded as adequate where circumstances do not permit more time or more tubes (particularly if other survey methods have also given negative results).

2.4.22. The number of tubes and boxes used was 50, checked between May and September 2020 inclusive. This results in a score of (50/50) x (4+2+2+5+7) = 20. This figure is considered to represent a robust assessment of the survey area.

[7] Chanin, P. & Woods, M. (2003). *Surveying Dormice Using Nest Tubes – Results & Experiences from the South West Dormouse Project.* Research Report 524. English Nature, Peterborough.
[8] English Nature (2006). *The Dormouse Conservation Handbook*. English Nature, Peterborough.

2.4.23. The site does not contain areas dominated by Hazel and therefore hazelnut searches were not employed as part of the Dormouse survey effort.

2.4.24. In addition to traditional nest tube and box surveys, footprint tunnel surveys were undertaken within the site in May, June and July 2020. The application of these tunnels follows the recommendations of the Suffolk Wildlife Trust[9].

2.4.25. Footprint tunnels comprise 65mm square drainpipe tubing containing a plywood insert lined with a sheet of high-quality white card. A non-toxic ink, made from a mix of olive oil and pharmaceutical grade charcoal powder, is applied to ink pads at both entrances, which when passed over will transfer ink from the mammal's feet to the white card. A total of fifty tunnels were deployed along a transect within areas of suitable habitat at approximately 15 to 20m apart, and at a height of approximately 1 to 1.5m off the ground, depending on the habitat present. Tunnels should be checked every two weeks to re-ink the pads and change the white card if required.

2.4.26. Dormice have a distinctive footprint compared to those of other small mammals that may use the tunnels, with Dormice displaying three obvious triangles when a good print is captured.

2.4.27. Currently, footprint tunnel surveys are only used as a presence / likely absence technique and must be used in combination with at least one other verified survey method. Despite this, footprint tunnels have been shown to have a higher detection rate than nest tube and box surveys alone.

2.4.28. Footprint tunnel surveys should be completed for at least three months, typically between May and October, though the tunnels can be installed as early as late March. As April has a low detection rate, if there are no results recorded for this period then this month should be excluded from the three-month survey period. For areas that are primarily considered to be dispersal corridors, as opposed to permanently occupied by Dormice, the months of September and October should be included.

Otters

2.4.29. Otters, being a large mammalian predator, are present in watercourses of varying sizes ranging from small lakes to rivers, estuaries and coasts.

2.4.30. An Otter survey was undertaken in April 2020 by a suitably qualified ecologist to identify any characteristic signs of Otters with a check survey undertaken in December 2021. The following signs were searched for:

- Spraint – irregular, sometimes short, rounded segments containing fish bones, scales or crayfish parts;
- Footprints of Otters in soft substrates along the watercourse typically 8cm wide and 10cm long;
- Holts and couches on the banks of the watercourse; and

[9] Bullion, S., Looser, A. and Langton, S. (2018). An Evaluation of the Effectiveness of Footprint Tracking Tunnels for Detecting Hazel Dormice. *In Practice*, (101), pp.36-41.

- Slides on the banks of the watercourse.

Water Voles

2.4.31. The site and immediate vicinity were subject to specific surveys for Water Voles in April 2020, having been identified as supporting suitable habitats for Water Vole.

2.4.32. As Water Voles are rarely seen, the survey was based around the identification of characteristic signs. The survey followed guidance by Natural England and consisted of a close examination of all the ditches on site and banks up to two metres from the water's edge.

2.4.33. The following signs were sought:

- Faeces – 8 to 12mm long and 4 to 5mm wide with blunt ends;
- Latrines – Water Voles will deposit the majority of their droppings at points of their territory boundary;
- Feeding Stations – Water Voles often bring pieces of cut vegetation to favoured feeding stations close to the water's edge;
- Burrows – Typically 4 to 8cm in diameter and found in the river / ditch bank;
- Footprints of Water Vole in soft substrates along the ditches; and
- Animals / Water Voles that may be observed directly.

2.4.34. While outside of the optimum survey season for Water Voles, a check survey was undertaken in December 2021 on the watercourses within or adjacent to the site with specific attention to areas subject to proposed drainage work.

Reptiles

2.4.35. On account of the site supporting some areas of suitable reptile habitats, specific surveys for reptiles were carried out during suitable weather conditions in April, May and June 2020. The methodology utilised principally derived from guidance given in Froglife Advice Sheet 10[10], the *Herpetofauna Workers' Manual*[11], the Herpetofauna Groups of Britain and Ireland's (HGBI) advisory note[12] and Natural England's Standing Advice for Reptiles[13].

2.4.36. Areas of suitable habitat were surveyed for the presence of reptiles using artificial refugia ("tins"). Seventy 0.5m x 0.5m roofing felt tins were placed within areas of suitable reptile habitat in the site (see Plan ECO6).

2.4.37. The tins provide shelter and heat up quicker than the surroundings in the morning and can remain warmer than the surroundings in the late afternoon. Being ectothermic (cold blooded), reptiles use them to bask

[10] Froglife (1999). *Reptile Survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10. Froglife, Halesworth.
[11] Gent, T and Gibson, S. (2003). *Herpetofauna Workers' Manual*. JNCC, Peterborough.
[12] Herpetofauna Groups of Britain and Ireland (HGBI). (1998). *Evaluating Local Mitigation / Translocation Programmes: Maintaining Best Practice and Lawful Standards*.
[13] Natural England (2011). Standing Advice for Reptiles.
http://www.naturalengland.org.uk/Images/Reptile%20feb11_tcm6-21712.pdf

under and raise their body temperature which allows them to forage earlier and later in the day.

2.4.38. To determine presence / absence the tins are checked for reptile activity over seven visits at appropriate times of the day (avoiding the middle of the day when the ambient air temperature is at its highest) in accordance with Natural England guidance. Optimum weather conditions for reptile surveying are temperatures between 10°C and 17°C, intermittent or hazy sunshine and little or no wind.

3. ECOLOGICAL FEATURES

3.1. An initial extended Phase 1 habitat survey was undertaken in April 2020 and subsequent checks were made during separate survey work carried out through 2020, whilst further walkover surveys were undertaken in January and December 2021.

3.2. The site is dominated in the centre by a mosaic of recolonising semi-improved grassland alongside areas dominated by ephemeral / short perennial and tall ruderal species. Areas of broadleaved woodland are present in the northeast and along the southern boundary of the site. Areas of the site were cleared of small portions of woodland and dense scrub prior to the extended Phase 1 habitat survey. A shallow stream is present adjacent to each of the western and southern boundaries of the site.

3.3. The following main habitat / vegetation types were identified within the site during the survey undertaken:

- Semi-improved grassland and ephemeral / short perennial;
- Tall ruderal;
- Scrub;
- Hedgerows;
- Trees;
- Woodland;
- Off-site stream; and
- Invasive non-native species.

3.4. The locations of these habitats are shown on Plan ECO2.

3.5. Semi-improved Grassland and Ephemeral / Short Perennial

3.5.1. The majority of the centre of the site comprises a mosaic of semi-improved grassland and ephemeral / short perennial vegetation. The semi-improved grassland is of greater dominance in the west of the site where the sward was short, as a result of the evident Rabbit *Oryctolagus cuniculus* population and ongoing regular management of the grassland. A greater dominance of ephemeral / short perennial species was recorded within the centre of the site and gradually progresses eastwards (see Photograph 1). Clearance of trees and scrub was evident at the fringes of this area, with opportunistic species growing upon the resulting areas of bare earth.

3.5.2. Annual Meadow-grass *Poa annua* is the dominant grass species within the grassland, with occasional Cock's-foot *Dactylis glomerata*, Perennial Rye Grass *Lolium perenne* and Yorkshire Fog *Holcus lanatus* also being recorded. The forb element of this habitat comprises Perforate St John's Wort *Hypericum perforatum*, Creeping Thistle *Cirsium arvense*, Cow Parsley *Anthriscus sylvestris*, Bittercress *Cardamine* sp., Ground Ivy *Glechoma hederacea*, Broadleaved Dock *Rumex obtusifolius*, Curled Dock *Rumex crispus*, Ragwort *Senecio jacobaea,* Yarrow *Achillea millefolium*, Cleavers *Galium aparine*, Cranesbill *Geranium* spp., Bramble, Dog's Mercury *Mercurialis perennis*, Red Dead-nettle *Lamium purpureum*, Common Nettle *Urtica dioica*, White Dead-Nettle *Lamium album*, Creeping Buttercup *Ranunculus repens* and Ribwort Plantain *Plantago lanceolata*.

A small area of grassland in the northeast of the site is subject to flooding and supports small areas of Hard Rush *Juncus inflexus*.

3.6. Tall Ruderal

3.6.1. Distinctive areas of tall ruderal vegetation are present in several areas of the site, such as adjacent to the woodland in the north as well as in areas associated with new tree planting (see Photograph 2). Cow Parsley, Common Nettle, Creeping Thistle and Hogweed *Heracleum sphondylium* are the dominant species, alongside occasional Red Dead-nettle, Lesser Celandine *Ficaria verna*, Wavy Bittercress *Cardamine flexuosa*, Willowherb *Epilobium* sp., Garlic Mustard *Alliaria petiolata* and Ground Ivy.

3.7. Scrub

3.7.1. Scrub is largely associated with areas of tall ruderal in the north and southeast of the site. Smaller elements of scrub are also associated with the fringes of the woodland parcels (see Photograph 3). Bramble is the dominant species, alongside occasional Rose *Rosa* sp. and Pendulous Sedge *Carex pendula*.

3.8. Hedgerows

3.8.1. A small length of hedgerow remains adjacent to the site entrance in the east of the site. The hedgerow is approximately 20m in length, gappy in nature and was noted to contain Hawthorn, Oak *Quercus robur* and Elm *Ulmus procera*.

3.9. Trees

3.9.1. A number of young trees have recently been planted in small groups in an area totalling approximately 0.5ha (see Photograph 2). Species include Oak, Hazel, Aspen *Populus tremula*, Field Maple *Acer campestre*, Hornbeam *Carpinus betulus*, Wild Cherry *Prunus avium* and Wild Service Tree *Sorbus torminalis*.

3.10. Woodland

3.10.1. Two large pockets of woodland are present: one in the northeast of the site (W1), whilst the other is present along the southern boundary, adjacent to a shallow stream (W2).

3.10.2. W1 contains a mix of broadleaved and coniferous tree species including include Oak *Quercus robur*, Sycamore, Elder *Sambucus nigra*, Silver Birch *Betulus pendula*, Hawthorn, Yew *Taxus baccata*, Blackthorn, Field Maple, Cherry Laurel *Prunus laurocerasus*, Hazel, Bay *Laurus nobilis*, Cherry Plum *Prunus cerasifera*, Willow *Salix* sp. and Holly *Ilex aquifolium*. Ivy was also observed upon several of the tree stems. The vegetation along the western boundary of W1 is a mixture of Bramble scrub and tall ruderal vegetation.

3.10.3. The understorey of the woodland varies in density, consisting of Box *Buxus sempervirens* and Box-leaved Honeysuckle *Lonicera pileata*. The ground flora within the woodland consists of areas dense with Common Nettle, alongside frequent Cleavers, Dog's Mercury *Mercurialis perennis*

and occasional Lords-and-Ladies *Arum maculatum*. Daffodil *Narcissus pseudonarcissus subsp. pseudonarcissus* was also noted within the woodland, close to the edges. Piles of wood cuttings and dead wood were noted within the woodland, thought to be the result of recent vegetation clearance.

3.10.4. Woodland W2 is dominated by Hawthorn alongside frequent Oak, Elder, Goat Willow *Salix caprea*, Blackthorn, Hornbeam, Midland Hawthorn *Crataegus laevigata* and Silver Birch (see Photograph 4). The ground flora is dominated by Common Nettle, alongside Cleavers, Dog's Mercury, Ground Ivy, Comfrey *Symphytum officinale* and occasional Lords-and-Ladies.

3.11. **Off-site Stream**

3.11.1. Two shallow streams, each approximately 1 to 1.5m wide and with a gentle flow, run adjacent to the western and southern boundaries of the site and connecting in the southwest corner (see Photograph 5). Common Nettle dominates the banks, alongside Comfrey, Lesser Celandine, Pendulous Sedge, Broad-leaved Dock, Cleavers, Willowherb *Epilobium* sp., Meadowsweet *Filipendula ulmaria* and Garlic Mustard. Scrub species, such as Bramble, Dog Rose *Rosa canina*, Hawthorn and Elder, are all also present along the banks.

3.11.2. During the most recent survey in December 2021, the section of the stream along the western boundary contained a significant level of pollution with oil slicks evident on the surface (see Photograph 6). Additionally, the western bank had been subject to recent vegetation clearance work potentially tied to adjacent farming practices.

3.12. **Non-native Invasive Species**

3.12.1. Variegated Yellow Archangel *Lamiastrum galeobdolon* subsp. *argentatum*, a species listed on Schedule 9 of the Wildlife & Countryside Act 1981 (as amended), was observed within two areas within Woodland W1 during the most recent survey (see Photograph 7).

3.13. **Background Records**

3.13.1. No records of invasive species or other notable species were returned by the data search.

4. WILDLIFE USE OF THE SITE

4.1. General observations were made during the surveys of any faunal use of the site, with specific attention paid to the potential presence of protected species.

4.2. Badgers

4.2.1. For reasons on animal welfare, information on Badgers is not published in the version of the report to be made available to the general public. The results of the Badger survey are contained in the confidential report at Appendix 6. This report is not to be published on the council's website.

4.3. Bats

4.3.1. The habitats within the site are likely to be of interest for foraging and dispersing bats, with mature trees, woodland margins and the streams adjacent to the western and southern boundaries providing such opportunities. The grassland, ephemeral / short perennial and tall ruderal will also likely be of some interest for foraging bats.

4.3.2. The site is ecologically linked to open countryside to the south which is likely to provide good opportunities for bats. Flitch Way LWS and Country Park runs adjacent to the southern boundary and also acts as a potential commuting and foraging corridor to the nearby Hatfield Forest Site of Special Scientific Interest (SSSI) / National Nature Reserve (NNR).

4.3.3. The prevailing weather conditions for each of the bat activity surveys undertaken at the site are presented in Table 4.1 below.

Survey Date	Weather	Temp (°C)	Cloud Cover (%)
20.05.20	No cloud cover, warm, dry.	24 - 20	0
11.06.20	Gentle breeze, dry and warm.	13 - 13	25
17.08.20	Partly cloudy, warm and dry.	18 - 17	25

Table 4.1. Prevailing weather conditions for bat surveys.

Transect Surveys

4.3.4. A moderate level of bat activity was recorded during the survey rounds completed, as illustrated on Plans ECO3.A to ECO3.C. Species recorded include Common Pipistrelle *Pipistrellus pipistrellus*, Soprano Pipistrelle *Pipistrellus pygmaeus*, *Pipistrellus* sp., Brown Long-eared Bat *Plecotus auritus*, Noctule Bat *Nyctalus noctula* and Leisler's Bat *Nyctalus leisleri*.

4.3.5. The majority of registrations recorded across the surveys were attributed to Common Pipistrelles, with Soprano Pipistrelle, *Pipistrellus* sp., Brown Long-eared Bat, Noctule and Leisler's Bat registrations being recorded less frequently.

4.3.6. As shown on Plans ECO3.A to ECO3.C, activity recorded was centred on the woodland edges in the northeast and south of the site, although

registrations were consistently recorded along almost the entire transect route.

Activity Transect Survey 20.05.20

4.3.7. The results of the activity survey undertaken on 20 May 2020 are summarised below and in Table 4.2 below[14]. The results are also illustrated on Plan ECO3.A.

4.3.8. The survey recorded a low to moderate level of bat activity, with the majority of the registrations recorded along the woodland / stream edge in the south of the site. Most registrations were attributed to Common Pipistrelle (80%), with Soprano Pipistrelles being recorded less frequently alongside occasional Leisler's Bat.

Species	Number of Registrations	First Registration after sunset
Ppip	263	13 mins
Ppyg	11	46 mins
Psp	49	56 mins
Nl	4	1 h 53 mins
Total	**327**	

Table 4.2. Activity transect survey results 20.05.20.

Activity Transect Survey 11.06.20

4.3.9. The results of the activity transect survey undertaken on 11 June 2020 are summarised below and in Table 4.3. The results are also illustrated on Plan ECO3.B.

4.3.10. The survey recorded a relatively low level of bat activity, with a lower level of activity being recorded when compared to the activity levels during the previous survey (see Table 4.2). The majority of the registrations were recorded along the woodland / stream edge in the south of the site. In contrast to the survey undertaken the month prior, all of the registrations were attributed to Common Pipistrelle, with the earliest registration recorded approximately nine minutes after sunset at 21:26.

Species	Number of Registrations	First Registration after sunset
Ppip	167	9 mins
Total	**167**	

Table 4.3. Activity transect survey results 11.06.20.

[14] In all cases the following abbreviations are used: Bb/Barbastelle *Barbastella barbastellus*; Es/Serotine *Eptesicus serotinus*; Myo/*Myotis* species; Nn/Noctule *Nyctalus noctula*; Nl/Leisler's Bat *Nyctalus leisleri*; Pa/Brown Long-eared Bat *Plecotus auritus*; Psp/Pipistrelle species; Ppip/Common Pipistrelle; *Pipistrellus pipistrellus;* Ppyg/Soprano Pipistrelle *Pipistrellus pygmaeus* and Pn/Nathusius' Pipistrelle *Pipistrellus nathusii*.

Activity Transect Survey 17.08.20

4.3.11. The results of the activity survey undertaken on 17 August 2020 are summarised below and in Table 4.4. The results are also illustrated on Plan ECO3.C.

4.3.12. The survey recorded a low level of bat activity, with a lower level of activity being recorded when compared to the previous two survey (see Tables 4.2 and 4.3). Most of the registrations were recorded along the woodland edge in the west of the site and along the northwestern boundary. As recorded during previous surveys, the majority of the registrations were attributed to Common Pipistrelle (90%), with Leisler's Bat being recorded less frequently, alongside the occasional Soprano Pipistrelle, Noctule and Brown Long-eared Bat.

Species	Number of Registrations	First Registration after sunset
Ppip	135	25 mins
Ppyg	1	1 h 39 mins
Pa	3	1 h 8 mins
Nn	2	1 h 55 mins
Nl	8	41 mins
Total	**149**	

Table 4.4. Activity transect survey results 17.08.20.

Static Detector Surveys

4.3.13. For each night of survey, the total number of bat registrations per species was calculated. This gives an impression of the overall level of bat activity on a given survey night, as well as the proportion of activity attributed to a given species or group of species (*Myotis* species are not generally separated).

4.3.14. Secondly, for each night of survey the bat registrations were calculated on a minute-by-minute basis for each species, allowing data to be presented for an entire survey night.

4.3.15. This method allows conclusions to be drawn as to whether particular species or groups are recorded early and late in the survey night which might suggest that they are commuting through the site to foraging grounds elsewhere, or whether they are recorded throughout the entire night which might suggest that the site itself is a foraging ground. The distinction is important to inform the evaluation of use of the site by bats and any mitigation measures that might be recommended.

4.3.16. The results of the static detector surveys are summarised below. The location of the SM4BAT bat detectors are shown on Plans ECO3.A, ECO3.B and ECO3.C.

Static Detector Surveys 15.05.20 to 20.05.20

4.3.17. A static bat detector was deployed along the edge of the woodland in the south of the site for five nights (see Plan ECO3.A). The results of the survey are summarised in Table 4.5 below.

Night	Pa	Ppip	Ppyg	Psp	Pn	Nn	Nl	Es	Myo	Total
15.05.20	0	35	0	0	0	0	2	0	0	37
16.05.20	0	46	1	0	0	0	1	0	0	48
17.05.20	1	102	5	1	1	0	5	0	1	116
18.05.20	1	59	2	5	0	0	4	2	0	73
19.05.20	0	28	1	2	1	4	1	0	0	37
Total	**2**	**270**	**9**	**8**	**2**	**4**	**13**	**2**	**1**	**311**

Table 4.5. Static bat detector results May 2020.

4.3.18. A total of 311 registrations were recorded over the course of the five-night period. The majority of registrations recorded were attributed to Common Pipistrelle (87%). Other species recorded less frequently were Soprano Pipistrelle, *Pipistrelle* sp., Nathusius' Pipistrelle *Pipistrellus nathusii*, Noctule, Leisler's Bat, Serotine Bat *Eptesicus serotinus*, *Myotis* sp. and Brown Long-eared Bat. Pipistrelle social calls were also recorded.

4.3.19. The timings of the registrations suggest that bats are using the site for both foraging and commuting, as calls were recorded at a consistent rate throughout the nights the detector was deployed. The earliest registration recorded was attributed to a Common Pipistrelle, recorded 16 minutes after sunset on 15 May. The closest registration to sunrise was recorded 27 minutes prior to sunrise on 18 May and was again attributed to a Common Pipistrelle.

Static Detector Surveys 11.06.20 to 17.06.20

4.3.20. A static bat detector was deployed along the edge of the woodland in the south of the site for six nights in June 2020 (see Plan ECO3.B). The results of the survey are summarised in Table 4.6 below.

Night	Ppip	Ppyg	Psp	Nn	Nl	Total
11.06.20	658	3	11	0	0	672
12.06.20	743	4	1	0	1	749
13.06.20	419	0	2	0	0	421
14.06.20	265	1	0	1	2	269
15.06.20	220	0	2	0	0	222
16.06.20	235	2	0	0	1	238
Total	**2540**	**10**	**16**	**1**	**4**	**2571**

Table 4.6 Static bat detector results June 2020.

4.3.21. A total of 2571 registrations were recorded over the course of the six-night period. The majority of registrations recorded were attributed to Common

Pipistrelle (99%). Other species recorded less frequently include Soprano Pipistrelle, *Pipistrelle* sp., Noctule Bat and Leisler's Bat. Pipistrelle social calls were also recorded.

4.3.22. The results show a marked increase in the number of registrations recorded within the site, when compared to the remote survey undertaken in May 2020. The earliest registration was attributed to a Common Pipistrelle, recorded two minutes after sunset on 11 June. The closest registration to sunset was recorded 22 minutes prior to sunrise on 17 June and attributed to a Soprano Pipistrelle.

Static Detector Surveys 11.08.20 to 17.08.20

4.3.23. A static bat detector was deployed along the edge of a woodland in the north of the site for six nights in August 2020 (see Plan ECO3.C); however, due to errors with the detector, the static deployed stopped recording during the fourth night, and failed to record the remaining two nights. The results of the survey are summarised in Table 4.7 below.

Night	Pa	Ppip	Ppyg	Psp	Nn	Nl	Myo	Bb	Total
11.08.20	2	310	11	7	2	2	5	0	339
12.08.20	4	279	7	1	0	4	2	1	298
13.08.20	0	236	1	1	0	0	3	0	241
14.08.20	0	92	0	0	0	3	0	0	95
Total	**6**	**917**	**19**	**9**	**2**	**9**	**10**	**1**	**973**

Table 4.7 Static bat detector results August 2020.

4.3.24. A total of 973 registrations were recorded over the course of the four-night period. The majority of registrations recorded were attributed to Common Pipistrelle (94%). Other species recorded less frequently include Soprano Pipistrelle, *Pipistrelle* sp., Noctule Bat, Leisler's Bat, Myotis sp. and Brown Long-eared Bat. A single Barbastelle *Barbastella barbastellus* was also recorded on the second night. Pipistrelle social calls were also recorded.

4.3.25. The results show a marked decrease in the number of registrations recorded within the site when compared to the remote survey undertaken in June 2020; however, the number of registrations is higher when compared to the remote survey undertaken in May 2020. The earliest registration was attributed to a Common Pipistrelle, recorded one minute after sunset on 13 August. The closest registration to sunrise was recorded 22 minutes prior to sunrise on 12 August and also attributed to a Common Pipistrelle.

Background Records

4.3.26. Several bat records were returned by the data search, including those from Essex Bat Group.

4.3.27. Twenty-six records for Common Pipistrelle were returned. The closest record relates to a location approximately 0.7km east of the site and dates from 2014, whilst the most recent record was observed approximately 2.8km from the site boundary in 2018.

4.3.28. Fourteen records of Soprano Pipistrelle were returned by the data search. The closest record relates to a location approximately 0.7km east of the site and dates from 2014, whilst the most recent record was observed approximately 1.5km from the site boundary in 2017.

4.3.29. Three records were returned for Brown Long-eared Bat; the closest record relates to a location approximately 3km from the site boundary and dates from 2015, whilst the most recent record was observed approximately 3.4km from the site boundary in 2016.

4.3.30. Six records for Daubenton's Bat were returned by the data search. The closest, and most recent, record relates to a location approximately 2.5km from the site and dates from 2015.

4.3.31. Two records for Leisler's Bat were returned by the data search. The closer, and more recent, record relates to a location approximately 2.5km from the site and dates from 2015.

4.3.32. Seven records of Natterer's Bat *Myotis nattereri* were returned by the data search; the closest record relates to a location approximately 2.9km from the site boundary and dates from 2013, whilst the most recent record was observed approximately 3.4km from the site boundary in 2016.

4.3.33. Three records were returned for Noctule. The closest, and most recent, record relates to a location approximately 2.8km from the site and dates from 2018.

4.3.34. Three records were returned for Barbastelle Bat. All three records date from 2015, with the closest recorded approximately 2.5km from the site boundary.

4.3.35. Natural England European Protected Species (EPS) licences have been granted to allow the damage / destruction of a bat roosting place at several locations in the vicinity of the site and are detailed as follows:

- The closest licence granted was located approximately 0.7km east of the site in 2013 in respect of Common Pipistrelle;
- A licence for Soprano Pipistrelle was granted in respect of a site approximately 1.9km southwest of the site in 2017;
- A licence in respect of Brown Long-eared Bat was granted for a location approximately 2km southwest of the in 2017;
- A licence was granted for Common Pipistrelle and Brown Long-eared Bat in 2013, for location approximately 2.1km to the west of the site; and
- A licence was granted for Brown Long-eared Bat in 2015 for a site approximately 2.8km to the west.

4.4. **Dormice**

4.4.1. The woodland habitats within the site are considered to be suitable for Dormice. A Dormouse population is present within Hatfield Forest and is connected to the site by the treelined Flitch Way LWS and Country Park, providing a potential dispersal path on to site for this species.

Nest Tube and Box Survey

4.4.2. Nest tube and box surveys for Dormice were completed between May and September 2020. The distribution of the Dormouse tubes is shown on Plan ECO4. No Dormice were recorded during the checks undertaken, and no further evidence was recorded across the whole survey area.

Footprint Tracking Tunnel Survey

4.4.3. Footprint tunnel surveys were undertaken in May, June and July 2020.

4.4.4. No evidence of Dormouse presence was recorded within the site when using the footprint tunnels. The distribution of the footprint tunnels is shown on Plan ECO4.

4.4.5. No records for Dormice were returned by the data search.

4.5. Otters

4.5.1. The survey carried out on the off-site streams in April 2020 recorded no evidence of Otters. While the shallow streams along the western and southern boundaries of the site could be suitable for Otter dispersal, it is not considered that this would be significant given the lack of evidence for this species. The streams do not support any food resource for Otters.

4.5.2. A single record of an Otter was returned by the data search; dating from 2015, the Otter was observed at a location approximately 1.2km north of the site boundary.

4.6. Water Voles

4.6.1. The off-site streams were subject to Water Vole surveys on 15 April 2020, the results of which are set out below and depicted on Plan ECO5.

4.6.2. Signs of Water Vole were recorded along the length of the stream on the southern boundary of the site. Evidence recorded included a single Water Vole footprint, eight burrows, five latrines and six feeding stations, the majority of which were recorded along the eastern portion of the stream (see Photograph 8). No evidence of Water Vole was recorded along the banks of the stream along the western boundary of the site.

4.6.3. A check survey in December 2021 recorded similar levels of activity within the southern stream. Owing to the level of pollution within the western watercourse no evidence was recorded and it is unlikely that any Water Voles are currently using this stretch of the watercourse.

4.6.4. The data search did not return any records for Water Vole in the vicinity of the site in the last ten years.

4.7. Hedgehogs

4.7.1. The site contains suitable habitat for Hedgehog *Erinaceus europaeus* foraging and dispersal, including the woodland, tall ruderal, scrub and the

semi-improved grassland. Log piles across the site may also provide potential refugia and hibernation opportunities.

4.7.2. A single Hedgehog record was returned by the data search; the record lies approximately 1km east of the site and dates from 2012.

4.8. Other Mammals

4.8.1. The site contains suitable opportunities for a variety of other small common mammals with the woodland likely to be of greatest interest. A heavy presence of Rabbit was recorded on site within the tall ruderal and semi-improved grassland.

4.9. Birds

4.9.1. Several species of bird were noted within or flying over the site during survey work, including Robin *Erithacus rubecula*, Blackbird *Turdus merula*, Wood Pigeon *Columba palumbus*, Great Tit *Parus major*, Magpie *Pica pica*, Pheasant *Phasianus colchicus*, Mallard *Anas platyrhynchos*, Goldfinch *Carduelis carduelis* and Blackcap *Sylvia atricapilla*. Buzzard *Buteo buteo* and Red Kite *Milvus milvus* were recorded flying over the site during survey work.

4.9.2. The woodland, small length of hedgerow and elements of scrub within the site are likely to provide nesting and foraging opportunities for birds.

4.9.3. Records of a number of species protected under Annex I of the Birds Directive or Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) were returned by the data search. These include records for Barn Owl *Tyto alba*, Black Tern *Chlidonias niger*, Black-necked Grebe *Podiceps nigricollis*, Brambling *Fringilla montifringilla*, Black-tailed Godwit *Limosa limosa*, Fieldfare *Turdus pilaris*, Goldeneye *Bucephala clangula*, Green Sandpiper *Tringa ochropus*, Greenshank *Tringa nebularia*, Greylag Goose *Anser anser*, Hobby *Falco Subbuteo*, Kingfisher *Alcedo atthis*, Little Ringed Plover *Charadrius dubius*, Osprey *Pandion haliaetus*, Peregrine *Falco peregrinus*, Red Kite, Redwing *Turdus iliacus* and Whimbrel *Numenius phaeopus*.

4.9.4. Of the Schedule 1 birds, the closest records were those for Fieldfare, Peregrine and Redwing; all were recorded in 2017 at a location within a 1km grid square which encompassed the site itself. The most recent records were recorded in 2018 and include observations of Barn Owl, Brambling, Fieldfare, Greylag Goose, Hobby, Kingfisher, Peregrine, Red Kite and Redwing; the closest of these records were Greylag Goose and Red Kite, which were recorded at a location within a 1km grid square as close as 2.1km from the site boundary.

4.9.1. In addition, the desk study returned thirty-six records of five bird species listed as Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, including Lapwing *Vanellus vanellus*, Hawfinch *Coccothraustes coccothraustes*, Reed Bunting *Emberiza schoeniclus*, Spotted Flycatcher *Muscicapa striata*, and House Sparrow *Passer domesticus*. Of these, House Sparrow was the closest species recorded to site at a location within the 1km grid square which encompasses the site.

4.9.2. Additional records of notable species were also returned in the search area, although none of these were recorded within or immediately adjacent to the site.

4.10. **Reptiles**

4.10.1. Suitable habitat for common reptiles is present in the form the woodland margins in the north and south of the site. Off-site scrub to the northwest may also present opportunities for reptiles. During the course of the surveys, the tall ruderal and semi-improved grassland were cut and the wood debris and log piles leftover from the previous vegetation removal were removed, limiting the suitable on-site refugia and hibernation opportunities for common reptile species within the site boundary. Management of the grassland has continued maintaining a short sward height across the site.

4.10.2. The results of the reptile surveys undertaken are summarised in Table 4.8 below. The distribution of reptile survey tins is shown on Plan ECO6.

Date	Survey	Temp. (°C)	Cloud Cover (%)	Reptiles recorded
15.04.20	1	12	0	-
20.04.20	2	14	0	-
24.04.20	3	12	10	-
05.04.20	4	14	0	2 juvenile Slow Worms
20.05.20	5	17	0	3 juvenile Slow Worms
28.05.20	6	17	0	4 juvenile Slow Worms
01.06.20	7	16	0	1 Common Lizard, 1 female Slow Worm, 2 juvenile Slow Worms

Table 4.8. Reptile presence / absence survey results.

4.10.3. A single Common Lizard *Zootoca vivipara* was recorded close to the southeastern boundary of the site on one occasion. A female Slow Worm *Anguis fragilis* was recorded in the east of the site on the same occasion, whilst juvenile Slow Worms were recorded in the west of the site on more than one occasion. These results indicate that there is a low population of Common Lizard and a low population of Slow Worm present within the site.

4.10.4. Nine records of Common Lizard were returned by the local records centre; the closest, and most recent, record was returned in 2017 at a location approximately 0.4km from the site boundary.

4.10.5. Twelve records of Slow Worm were returned by the local records centre; the closest record was returned in 2013 at a location approximately 1.9km from site boundary, whilst the most recent sighting was approximately 3km south of the site boundary in 2016.

4.11. **Amphibians**

4.11.1. There are no waterbodies within the site to offer breeding opportunities for Great Crested Newts *Triturus cristatus*. Woodland, areas of scrub, tall ruderal and more tussocky areas of grassland at the boundary could offer suitable terrestrial habitat, superficially at least, for Great Crested Newts and other amphibians. During the Phase 1 survey, Ecology Solutions sought to review all ponds within 250m of the site that were not separated by significant dispersal barriers. These are discussed in detail below.

4.11.2. Pond P1 is an off-site drainage pond, approximately 430m^2 in size, located approximately 10m northwest of the site boundary and separated from the site by Bramble scrub. Access to the pond was sought, although could not be obtained. Viewed from an adjacent track at the time of the extended Phase 1 habitat survey, the pond was seen to be almost dry and remained as such during the other protected species survey work; therefore conditions would not allow for further amphibian surveys to be carried out even if access were obtained. Owing to the nature of the pond it is considered unlikely that it would support Great Crested Newts.

4.11.3. A small pond (P2) is present approximately 0.2km southeast of the site boundary and located within a residential garden. Access to complete an eDNA survey was sought in April 2020, but admission was not granted and no further survey work could be undertaken. The intervening land between the site and the pond includes managed amenity grassland (gardens) and arable fields which would be considered as sub-optimal terrestrial habitats, alongside hedgerows and treelines. A flowing stream also separates Pond P2 from the site.

4.11.4. No amphibians were recorded beneath the artificial refugia during the reptile presence / absence surveys and given the absence of Great Crested Newt records within close proximity to the site, it not considered that this species presents a constraint to the development of this site.

4.11.5. No records of Great Crested Newt, recorded in the search area within the last 10 years, were returned by the data search exercise; the most recent records date from 2007 and were recorded 0.8km from the site boundary.

4.11.6. An EPS licence for Great Crested Newt was granted in 2016 to allow the damage of a breeding site and damage / destruction of a resting place, at a location approximately 1.1km east of the site. This appears to correspond to a location close to Hatfield Forest, therefore it is clear that the species is active in the locality, notwithstanding the lack of records returned by the data search. This licensed site is separated from the current site by the hamlet of Start Hill, although Flitch Way LWS and Country Park tenuously connects the two sites. A further licence was granted at a location approximately 0.9km south of the site boundary, in 2015, and is separated from the site by open arable fields and a flowing stream.

4.11.7. Seven records of Smooth Newt *Lissotriton vulgaris* were returned by the data search. All records date from 2017, however a single record was returned within a 100m grid square approximately to the east of the site. A single record of Common Toad *Bufo bufo* was returned by Essex Field

Club county records from within the last 10 years. This record relates to a location approximately 3km from the site and dates from 2016.

4.12. **Invertebrates**

4.12.1. Owing to the habitats present it is likely an assemblage of common invertebrate species would be present within the site. During the surveys, Cinnabar *Tyria jacobaeae*, Small Tortoiseshell *Aglais urticae*, Green-veined White *Pieris napi*, Comma *Polygonia c-album*, Red Admiral *Vanessa atalanta*, Meadow Brown *Maniola jurtina* and Skipper *Hesperiidae* were noted within the site. Glow-worms *Lampyris noctiluca* were also observed during the July bat activity transect survey within the site.

4.12.2. The data search returned a large data set of invertebrates. Two invertebrate species listed under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) were recorded in the search area, including Purple Emperor *Apatura iris* and White-letter Hairstreak *Satyrium w-album*; the latter is also listed as a Species of Principal Importance under Section 41 of the NERC Act 2006.

4.12.3. Nine White-letter Hairstreak records were returned by Essex Field Club. The closest record was observed at a location approximately 1.1km from the site boundary and was recorded in 2016, whilst the most recent record was observed in 2019 at a location approximately 2.4km from the site boundary. This species is also listed under the IUCN Red list and as a UK BAP Priority Species.

4.12.4. Twenty-five Purple Emperor records were returned by Essex Field Club. The closest record was observed at a location approximately 2.1km from the site boundary and was recorded in 2015, whilst the most recent record was observed in 2019 at a location approximately 2.3km from the site boundary. Like the White-letter Hairstreak, this species is also listed under the IUCN Red list.

4.12.5. In addition to the White-letter Hairstreak, the desk study returned a further ninety records of fifteen invertebrate species listed as Species of Principal Importance under Section 41 of the NERC Act 2006 in the last ten years. These species include Blood-vein *Timandra comae*, Brown-spot Pinion *Agrochola litura*, Cinnabar *Tyria jacobaeae*, Ghost Moth *Hepialus humuli humuli*, Figure of Eight *Diloba caeruleocephala*, Latticed Heath *Chiasmia clathrate*, Minor Shoulder-knot *Brachylomia viminalis*, Pretty Chalk Carpet *Melanthia procellata*, Mottled Rustic *Caradrina morpheus*, Shaded Broad-bar *Scotopteryx chenopodiata*, Small Emerald *Hemistola chrysoprasaria*, Small Heath *Coenonympha pamphilus pamphilus*, Small Phoenix *Ecliptopera silaceata*, White Admiral *Limenitis camilla* and White Ermine *Spilosoma lubricipeda*.

5. ECOLOGICAL EVALUATION

5.1. The Principles of Ecological Evaluation

5.1.1. The guidelines for ecological evaluation produced by CIEEM propose an approach that involves professional judgement, but makes use of available guidance and information, such as the distribution and status of the species or features within the locality of the project.

5.1.2. The methods and standards for site evaluation within the British Isles have remained those defined by Ratcliffe[15]. These are broadly used across the United Kingdom to rank sites so priorities for nature conservation can be attained. For example, current SSSI designation maintains a system of data analysis that is roughly tested against Ratcliffe's criteria.

5.1.3. In general terms, these criteria are size, diversity, naturalness, rarity and fragility, while additional secondary criteria of typicalness, potential value, intrinsic appeal, recorded history and the position within the ecological / geographical units are also incorporated into the ranking procedure.

5.1.4. Any assessment should not judge sites in isolation from others, since several habitats may combine to make it worthy of importance to nature conservation.

5.1.5. Further, relying on the national criteria would undoubtedly distort the local variation in assessment and therefore additional factors need to be taken into account, e.g. a woodland type with a comparatively poor species diversity, common in the south of England, may be of importance at its northern limits, say in the border country.

5.1.6. In addition, habitats of local importance are often highlighted within a local Biodiversity Action Plan (BAP). The Essex BAP has been considered as part of this assessment and is referenced where relevant.

5.1.7. Levels of importance can be determined within a defined geographical context from the immediate site or locality through to the international level.

5.1.8. The legislative and planning policy context are also important considerations and have been given due regard throughout this assessment.

5.2. Habitat Evaluation

Designated Sites

5.2.1. **Statutory Sites.** There are no statutory designations of nature conservation value within the site or immediately adjacent to it. The closest statutory designated site is Hatfield Forest SSSI, which lies approximately 1.2km east of the site and also incorporates Hatfield Forest NNR.

5.2.2. Hatfield Forest is the only Royal Hunting Forest to remain virtually intact in character and composition. Approximately 403.2ha in size, Hatfield Forest

[15] Ratcliffe, D A (1977). *A Nature Conservation Review: The Selection of Biological Sites of National Importance to Nature Conservation in Britain*. Two Volumes. Cambridge University Press, Cambridge.

contains mixed ancient coppice woodland, scrub, unimproved grassland chases and plains with ancient pollards, and herb-rich marshland bordering a large lake. The woodland is predominantly wet Ash-Maple and the Ash-Maple variant of Oak-Hornbeam. Over four hundred species of higher plants have been recorded, including thirty trees and shrubs, and many county rarities with Stinking Hellebore *Helleborus foetidus* and Oxlip *Primula elatior* of national importance. It is comparatively rich in bryophytes and lichens and has locally important insect populations and breeding bird communities, including Nightingale *Luscinia megarhynchos*, Grasshopper Warbler *Locustella naevia*, Water Rail *Rallus aquaticus* and Snipe *Gallinago gallinago*.

5.2.3. It is not considered that development of the site would have a significant adverse effect on the above designated sites due to the nature of the proposal and the intervening distance involved.

5.2.4. **Non-statutory Sites.** The nearest non-statutory designation is Flitch Way LWS and Country Park, which lies adjacent to the southern boundary, separated from the site by a shallow stream. Flitch Way is in the process of being declared a Local Nature Reserve (LNR).

5.2.5. This disused railway line is now used as a bridleway / footpath which also acts as a valuable wildlife corridor throughout the south of the district. At almost 34ha, the site is one of the largest woodland, scrub and grassland mosaic habitats of high nature conservation value in the district. Many Nationally Scarce species of insect have been recorded along its length, including the Hornet Moth *Sesia apiformis*, the Pimpinel Pug Moth *Eupithecia pimpinellata* and the Digger Wasp *Crossocerus distinguendus*.

5.2.6. The presence of Flitch Way LWS and Country Park adjacent to the site's southern boundary forms a constraint on the boundary habitats in this area, although the constraint is one that can be addressed through mitigation measures rather than one that would prevent the development from proceeding.

5.2.7. Adherence to best practice measures for the construction industry and the implementation of a Construction Environmental Management Plan (CEMP) would ensure that such potentially adverse effects are avoided. Potential measures would include the erection of temporary fencing, restriction of refuelling and dust-generating operations and the storage of potentially harmful substances at an appropriate distance would all aid in reducing impacts upon the Flitch Way LWS and Country Park.

5.2.8. The development will be focused on the centre of the site retaining vegetation along the southern boundary, buffering the LWS from any potential adverse impacts during the operational phase of the development. New native planting along the southern boundary will be provided to act as an additional screen to the non-statutory site preventing disturbance, such as noise and light pollution, and bolstering the current wildlife corridor presented by the LWS.

5.2.9. A number of additional statutory and non-statutory sites are located in the wider area as identified on Plan ECO1, but no significant adverse effects are anticipated given the intervening distances involved.

Habitats

5.2.10. The areas of woodland are of relatively greater interest in the context of the site and will be retained. The overwhelming majority of the site, and those to be lost, consists of a mosaic of semi-improved grassland, ephemeral / short perennial and tall ruderal vegetation, all of which comprise common and widespread species, which are of limited nature conservation interest.

5.2.11. The loss of some encroaching scrub and trees as a result of a past felling licence has been mitigated through the agreed planting tied to this licence. This includes native perimeter woodland belt buffer planting which connects the two areas of retained woodland, providing replacement woodland areas in time. Additionally, supplementary native woodland and tree planting will be provided on internal margins and divisions within the site to bolster the existing woodland parcels and promote green infrastructure through the developed area. The new planting will be based around native species and species of known wildlife value to maximise biodiversity.

5.2.12. It is recommended that further enhancements be provided through the seeding of a shade tolerant wildflower meadow mix, such as Emorsgate EW1 or similar, in areas of new woodland and tree planting providing further enhancements to biodiversity whilst also offering new opportunities for wildlife.

Invasive Non-native Species

5.2.13. Variegated Yellow Archangel, a species listed on Schedule 9 of the Wildlife & Countryside Act 1981 (as amended), is located in the north of the site within Woodland W1. It is an offence to cause any plant listed on the schedule to grow in the wild. Any clearance works taking place in this area will be required to remove specimens carefully and dispose of these at an approved facility. A specialised contractor should be contacted to remove or treat this species prior to any site clearance in this area.

5.3. Faunal Evaluation

Badgers

5.3.1. For reasons on animal welfare, information on Badgers is not published in the version of the report to be made available to the general public. The results of the Badger survey are contained in the confidential report at Appendix 6.

Bats

5.3.2. **Legislation.** All bats are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and included on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (“the Habitats Regulations”). These include provisions making it an offence to:

- Deliberately kill, injure or take (capture) bats;
- Deliberately disturb bats in such a way as to significantly affect:-

(i) be likely to impair their ability to survive, to breed or rear or nurture their young; or to hibernate or migrate; or
(ii) to affect significantly the local distribution or abundance of the species to which they belong;

- Damage or destroy any breeding or resting place used by bats;
- Intentionally or recklessly obstruct access to any place used by bats for shelter or protection (even if bats are not in residence).

5.3.3. The words deliberately and intentionally include actions where a court can infer that the defendant knew that the action taken would almost inevitably result in an offence, even if that was not the primary purpose of the act.

5.3.4. The offence of damaging (making it worse for the bat) or destroying a breeding site or resting place is an absolute offence. Such actions do not have to be deliberate for an offence to be committed.

5.3.5. In accordance with the Habitats Regulations the licensing authority (Natural England) must apply the three derogation tests as part of the process of considering a licence application. These tests are that:

1. the activity to be licensed must be for imperative reasons of overriding public interest or for public health and safety;
2. there must be no satisfactory alternative; and
3. the favourable conservation status of the species concerned must be maintained.

5.3.6. Licences can usually only be granted if the development is in receipt of full planning permission.

5.3.7. **Site Usage.** The woodland, scrub, grassland areas and adjacent streams offer good foraging opportunities for bats; a reasonable complement of species was recorded during survey work.

5.3.8. A single Barbastelle bat registration was recorded by the static bat detector deployed along the edge of a woodland in the north of the site. While important to highlight this presence, the singular registration recorded suggests that there is not any significant reliance of the site by this species, nor is it expected that there would be any decrease in use as a result of the proposals, which are expected to retain and bolster the existing woodland and vegetation along the boundaries of the site.

5.3.9. **Mitigation and Enhancements.** The habitat features of greatest interest for bats are to be retained and enhanced with additional native planting.

5.3.10. Given the provision of woodland planting to be established, there will be considerable new opportunities for bats available post-development. The recently planted native perimeter woodland belt buffer planting, which in time will connect the two areas of retained woodland, will increase foraging and commuting resources for bats within the site. Further woodland and tree planting will be provided throughout the site, both across the footprint of the development, as well as on the fringes of the existing woodland parcels. This will be seen as an enhancement for any bats utilising the site by bolstering existing flight lines and providing addition foraging opportunities.

5.3.11. Additional habitat enhancements could be provided to improve the foraging resource for bats within the site. This could be achieved through the seeding of new areas of shade tolerant wildflower meadow seed mix within areas of new tree and woodland planting thereby increasing the potential invertebrate presence.

5.3.12. To provide additional roosting opportunities for bats within the site post-development, a series of bat boxes, such as Schwegler 1FF Bat Box and Schwegler 2FN Bat Box or similar (see Appendix 2), could be provided within the retained areas of woodland.

5.3.13. As part of the lighting design, consideration will be given to the lighting of woodland and edge habitats, which have been shown to be of some value to locally present bat species. Specifically, the lighting design should incorporate lighting types and designs to limit any light spillage allowing habitats, such as the woodland and adjacent Flitch Way LWS and County Park, to remain dark.

Dormice

5.3.14. **Legislation.** Dormice are subject to the same level of legislative protection as bats (see above).

5.3.15. **Site Usage.** The woodland habitats within the site are considered to be suitable for Dormice, together with similar habitats present in the wider local area.

5.3.16. Surveys for Dormice were completed across all potential Dormouse habitat within the site between May and September 2020. This consisted of using the standard tubes and boxes methodology in combination with the footprint tunnel technique. No evidence of this species was recorded using either methodology.

5.3.17. **Mitigation and Enhancements.** It is considered that the work completed provides a good assessment of the habitats present, and it is reasonable to conclude that Dormice are absent from the site.

5.3.18. As shown in the figure below, reproduced from Bullion *et al.* (2018), the footprint tunnel method has been shown to be much more effective than tubes and boxes alone, therefore it is considered that the use of footprint tunnels within the site provides further certainty that this species is not present in the site.

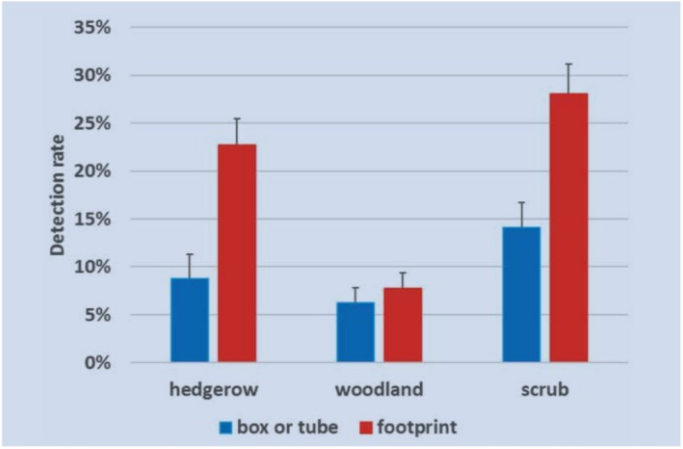


Figure 5. Comparison between hazel dormouse detection rates using either nest boxes or nest tubes and using footprint tunnels in three different habitat types. Bars are upper 95% confidence limits. Data were collected over an 8-month period and represent 868 detection events.

5.3.19. As such, no mitigation is considered necessary for this species.

5.3.20. New supplementary woodland and tree planting are proposed throughout the site and along the fringes of the existing woodland which, once established, will represent gains in suitable Dormouse habitat. New native woodland planting will include species of known value for Dormice to ensure that opportunities for this species are enhanced post-development.

Water Voles

5.3.21. **Legislation.** Water Voles are fully protected under the Wildlife & Countryside Act 1981 (as amended). This makes it an offence to:

- Intentionally kill, injure or take (capture) a Water Vole;
- Possess or control a live or dead Water Vole, or any part of a Water Vole;
- Sell, offer for sale or advertise for live or dead Water Voles;
- Intentionally or recklessly damage, destroy, or obstruct access to any structure or place which Water Voles use for shelter or protection or disturb them while they are using such a place.

5.3.22. The words deliberately and intentionally include actions where a court can infer that the defendant knew that the action taken would almost inevitably result in an offence, even if that were not the primary purpose of the act.

5.3.23. As of January 2016, *The Water Vole Mitigation Handbook*[16] specifies that operations where Water Voles are to be trapped or displaced require a conservation licence from Natural England. This may be in the form of a Class Licence or a site-specific licence dependent on whether the proposals meet particular criteria. To obtain either licence the project must deliver a net benefit for Water Voles.

5.3.24. **Site Usage.** Evidence for this species was recorded within the off-site stream along the southern boundary of the site, while there is an absence from the connecting stream along the western boundary. Evidence

[16] Dean, M., Strachan, R., Gow, D. and Andrews, R. (2016). *The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series)*. Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.

recorded included a single Water Vole footprint, eight burrows, five latrines and six feeding stations.

5.3.25. **Mitigation and Enhancements.** Owing to the location of the built form of the proposals, it is expected that limited impacts will occur on the off-site stream, but a small discharge point within the southwest corner of the site will be required as part of the drainage strategy. It is expected that a small section of the western part of the stream running along the south of the site would be subject to the construction of a small concrete bagwork headwall at the point of the discharge of run-off water into the stream. Given that no burrows were recorded in the area proposed for the outfall during both the initial survey and the check of this area in December 2021, it is not expected that a conservation licence from Natural England will be required to facilitate this work.

5.3.26. As a precautionary approach, a check survey should be carried out prior to any works, to ensure that no new burrows have been established in the area to be impacted since the previous surveys. If new burrows are found, or other evidence is recorded to suggest that the proposed works will impact upon new burrows, then a licensed displacement exercise will be required.

5.3.27. The licensed displacement exercise should only be undertaken between 15 February and 15 April and would include an initial survey to identify any burrows. Once all burrows have been flagged the systematic removal of all vegetation subject to development works is undertaken in addition to 3m either side of the working area. This can be undertaken using a strimmer until only bare earth remains. The strimmed area is then left intact for five days to allow animals time to relocate outside of the area subject to work. An additional check is then made for any fresh signs of Water Voles. Any burrows previously identified are then removed by hand, followed by a scrapping of the area with an excavator using a toothed bucket. It would be expected that the vegetation outside of headwall be allowed to re-establish once works are done so that impacts to Water Voles are minimal.

5.3.28. The drainage strategy for the site has been designed to ensure that any discharge of water into the stream will be judged against the Environment Agency minimum standards minimising any adverse impact on Water Voles as a result of pollution.

5.3.29. To ensure the quality of water discharged into any adjacent waterbody is protected during and following construction, a detailed construction method statement will be provided and strictly adhered to so that potential deleterious effects such as surface run-off (contaminated with chemicals or a high silt level) are avoided. Such measures would be captured and addressed in a CEMP.

5.3.30. In keeping with best-practice methodologies, the construction method statement will set out the specific safeguards to be employed to limit any likely pollution event for example including:

- Establish a works site compound well away from the streams around the site and ensure that run-off from the compound cannot enter the watercourses. Use temporary bunding to

control run off and plan for exceptionally wet weather occurring during the works.

- Any fuel or oil storage shall be kept well away from water and all tanks and storage containers shall be fully bunded over an impermeable base. Waste shall be managed to ensure that it remains contained at all times and will be regularly collected / removed from the development site to ensure that capacity remains available at all works times.

- Materials for the works including cements, mortars, chemicals and solvents shall be stored securely in dry conditions at all times and away from the watercourse margins.

- Refuelling of vehicles and plant shall be restricted to a designated location with impermeable base, well away from the southern and western boundaries of the site. A spill kit with dry sand, earth or commercial products shall be kept at all times at the refuelling location for immediate use if a spillage occurs.

- Operations that create dust shall be undertaken using machinery, equipment and techniques that minimise emissions at all times. During dry periods, works areas and roads shall be dampened down to reduce dust arising from site works and vehicle movements. Damping down shall be undertaken carefully and in a controlled manner to ensure that no runoff occurs into adjoining standing water.

- To maximise the retention of existing desirable watercourse vegetation, areas immediately adjoining approved areas of development will be managed to limit the extent of disturbance by development operations. Prior to development operations commencing, temporary fencing shall be erected to protect areas falling beyond the actual development area and adjoining area necessary for safe undertaking of building operations. Building operations will be controlled to ensure that subsequent disturbance is limited to the unprotected areas. This will allow greater areas of existing habitat to be conserved, reducing the impact of new development.

- Installation of a temporary silt barrier as required between the works area and the watercourses. To prevent silt dispersal into the ditches, a temporary bund of straw bales or similar shall be used to collect and trap surface run-off as required to avoid siltation of the watercourse.

5.3.31. As an enhancement, new native tree planting will be provided along the southern boundary of the site providing a natural buffer to any operational phase activities that have the potential to disturb any wildlife using the stream.

Hedgehogs

5.3.32. **Legislation.** Hedgehog is a Species of Principal Importance for the Conservation of Biodiversity under Section 41 (England) of the NERC Act 2006.

5.3.33. The NERC Act 2006 requires the Secretary of State to:

…take such steps as appear… to be reasonably practicable to further the conservation of the living organisms and types of habitat included in any published under this section, or…promote the taking by other of such steps.

5.3.34. **Site Usage.** No evidence of Hedgehogs was recorded during the survey work undertaken. The woodland, scrub, tall ruderal and semi-improved grassland present on site offer suitable opportunities for foraging and dispersing Hedgehogs.

5.3.35. **Mitigation and Enhancements.** It is recommended that ground cover be cleared outside the winter hibernation period (October to April inclusively). The retention and enhancement of the woodland areas and boundary features will provide continued opportunities for commuting and foraging Hedgehogs.

Birds

5.3.36. **Legislation.** Section 1 of the Wildlife and Countryside Act 1981 (as amended) is concerned with the protection of wild birds, while Schedule 1 lists species that are protected by special penalties. All species of birds receive general protection while nesting.

5.3.37. **Site Usage.** The site supports a mosaic of suitable nesting and foraging habitats for a number of bird species centred around the areas of woodland, hedgerow and scrub.

5.3.38. A small assemblage of varied yet common bird species were recorded on site across the survey work undertaken.

5.3.39. **Mitigation and Enhancements.** The majority of habitats of interest to bird species, including the areas of woodland in the northeast and along the southern boundary, are to be retained as part of the proposed development. Newly planted woodland along with tree and shrub planting on internal margins within the site will provide new opportunities for foraging and nesting birds post-development.

5.3.40. The landscape scheme will incorporate species known to benefit bird species to ensure the previous loss of part of the encroached woodland is offset, and foraging opportunities for bird species are enhanced post-development. Species have been selected with consideration to limit the attraction of species known to increase risk of bird strike.

5.3.41. Appropriate management of the new planting will be undertaken as part of a strict Bird Hazard Management Plan to reduce the likelihood of bird strike occurring.

5.3.42. During the site preparation phase, it is recommended that any suitable bird nesting habitat be cleared outside of the nesting season (typically March to July inclusive) to avoid a potential offence under the legislation. Where this cannot be achieved a check survey for nesting birds should be undertaken by an ecologist, with any confirmed nests left in situ until the young have fledged.

5.3.43. Further enhancements for nesting birds could be provided through the installation of bird boxes, such as Schwegler 1B Bird Box, 2GR Nest Box, 2H or 1ZA Roundhouse Wren Box, or similar (see Appendix 3), within the retained woodland areas post-development.

Reptiles

5.3.44. **Legislation.** All six British reptile species receive a degree of legislative protection that varies depending on their conservation importance.

5.3.45. Rare, endangered or declining species receive 'full protection' under the Wildlife and Countryside Act 1981 (as amended) as well as protection under the Conservation of Habitats and Species Regulations 2017 (as amended). Species that are fully protected are Smooth Snake *Coronella austriaca* and Sand Lizard *Lacerta agilis*. These receive the following protection from:

- Killing, injuring, taking;
- Possession or control (of live or dead animals, their parts or derivatives);
- Damage to, destruction of, obstruction of access to any structure or place used for shelter or protection;
- Disturbance of any animal occupying such a structure or place; and
- Selling, offering for sale, possession or transport for purposes of sale (live or dead animal, part or derivative).

5.3.46. Owing to their abundance in Britain, Common Lizard, Slow Worm, Grass Snake *Natrix helvetica* and Adder *Vipera berus* are only 'partially protected' under the Wildlife and Countryside Act 1981 (as amended) and as such only receive protection from:

- Deliberate killing and injuring;
- Being sold or other forms of trading.

5.3.47. Therefore, if reptiles are present within a site, a scheme of translocation can be implemented to avoid the offence of killing / injury.

5.3.48. **Site Usage.** Areas of woodland and adjacent field margins offer suitable habitat to support reptiles. The areas of tall ruderal and grassland are subject to regular management creating a low sward height and limited opportunities for reptiles across the large majority of the site.

5.3.49. Presence / absence surveys of the site recorded a low population of Common Lizard and a low population of Slow Worm along the edges of the site, specifically in the northwest and southeast.

5.3.50. **Mitigation and Enhancements.** It is understood that the impact on suitable reptile habitats is to be minimal and given the low numbers of reptiles recorded during the survey work, it is not anticipated that a full translocation exercise will be required.

5.3.51. Where removal of suitable habitats is required, a precautionary approach will be undertaken, to avoid a possible offence. This would involve the directional clearance of suitable reptile habitat, using a two-stage habitat manipulation strategy under the supervision of an Ecological Clerk of Works. An initial cut will be undertaken down to approximately 200mm, followed by a second cut down to ground level.

5.3.52. This work will need to be completed during the reptile active season (April to September / October inclusive) and during favourable weather conditions. This method will ensure that the area to be developed will be unsuitable for reptiles prior to any construction, while actively encouraging any reptiles present within the site to disperse into the adjacent retained suitable habitat at the fringes of the site. Any potential refugia, such as wood piles, should be inspected and removed during this time with any reptiles found moved to the retained habitat on the fringes of the site.

5.3.53. The areas of woodland within the site are to be retained and bolstered through the planting of native species. To promote the use of the site for reptiles, it is recommended that the new areas of woodland planting be seeded with a shade tolerant wildflower meadow seed mix. The grassland could be subject to a beneficial management to promote conditions typically favoured by the known reptile species recorded within the site.

5.3.54. As a further enhancement, log piles and hibernacula (see Appendix 4) could be provided within the retained woodland areas to improve suitable shelter / hibernation opportunities for common reptiles and constructed using existing material on site and from any post-development tree management.

Invertebrates

5.3.55. Given the habitats present, it is likely an assemblage of common invertebrate species would be supported by the site.

5.3.56. New native woodland and tree planting within the site will be of known benefit to invertebrates, which should in turn benefit local bat and bird populations. Further enhancements could be achieved through the provision of shade tolerant wildflower meadow seed mix sown beneath the woodland planting. The inclusion of a disease resistant Elm within the tree planting scheme could offer benefits for White-letter Hairstreak, a notable species that has been recorded within the local area.

5.3.57. Additional invertebrate provisions could be provided through the installation of invertebrate boxes of a variety of designs, such as the Schwegler Clay and Reed Insect Nest, Schwegler Woodcrete Insect Nest or Insect Tower, on retained trees (see Appendix 5) and within the proposed native species planting, in addition to the establishment of log piles for saproxylic species.

6. PLANNING POLICY CONTEXT

6.1. The planning policy framework that relates to nature conservation at the site is issued at two main administrative levels: nationally through the National Planning Policy Framework (NPPF), and locally through the planning policies of Uttlesford District Council.

6.2. Any proposed development will be judged in relation to the policies contained within these documents.

6.3. National Policy

National Planning Policy Framework (July 2021)

6.3.1. Guidance on national policy for biodiversity and geological conservation is provided by the National Planning Policy Framework (NPPF), published in March 2012, revised on 24 July 2018, 19 February 2019 and again on 20 July 2021. It is noted that the NPPF continues to refer to further guidance in respect of statutory obligations for biodiversity and geological conservation and their impact within the planning system provided by Circular 06/05 (DEFRA / ODPM, 2005) accompanying the now-defunct Planning Policy Statement 9 (PPS9).

6.3.2. The key element of the NPPF is that there should be *"a presumption in favour of sustainable development"* (paragraphs 10 to 11). It is important to note that this presumption *"does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site"* (paragraph 182). 'Habitats site' has the same meaning as the term 'European site' as used in the Habitats Regulations 2017.

6.3.3. Hence, the direction of Government policy is clear. That is, the presumption in favour of sustainable development is to apply in circumstances where there is potential for an effect on a European site, if it has been shown that there will be no adverse effect on that designated site as a result of the development in prospect.

6.3.4. A number of policies in the NPPF are comparable to those in PPS9, including reference to minimisation of impacts to biodiversity and provision of net gains to biodiversity where possible (paragraph 174).

6.3.5. The NPPF also considers the strategic approach that Local Authorities should adopt with regard to the protection, maintenance and enhancement of green infrastructure, priority habitats and ecological networks, and the recovery of priority species.

6.3.6. Paragraphs 179 to 181 of the NPPF comprise a number of principles that Local Authorities should apply, including encouraging opportunities to incorporate biodiversity in and around developments; provision for refusal of planning applications if significant harm cannot be avoided, mitigated or compensated for; applying the protection given to European sites to potential Special Protected Areas (SPA), possible Special Areas of Conservation (SAC), listed or proposed Ramsar sites and sites identified (or required) as compensatory measures for adverse effects on European

sites; and the provision for the refusal for developments resulting in the loss or deterioration of 'irreplaceable' habitats – unless there are 'wholly exceptional reasons' (for instance, infrastructure projects where the public benefit would clearly outweigh the loss or deterioration of habitat) and a suitable compensation strategy exists.

6.3.7. National policy therefore implicitly recognises the importance of biodiversity and that with sensitive planning and design, development and conservation of the natural heritage can co-exist and benefits can, in certain circumstances, be obtained.

6.4. Local Policy

Uttlesford Local Plan 2005 (Adopted 2005)

6.4.1. The Uttlesford Local Plan was adopted on 20 January 2005 and is the principal development plan document guiding development in Uttlesford. It updates and replaces the "Uttlesford Futures" Community Plan which was adopted in 2003 and covered the period up to 2007. Policies relevant to nature conservation are set out below.

6.4.2. **Policy GEN7: Nature Conservation** states that developments will not be permitted which have a harmful effect on wildlife, unless the need for the development outweighs the importance of the feature to nature conservation. In addition, a nature conservation survey is required where the site includes protected species or habitats suitable for protected species. Mitigation will be required, and habitat creation as an enhancement will be required.

6.4.3. **Policy ENV7: The Protection of the Natural Environment – Designated Sites** is concerned with the adverse effects upon areas of nationally important nature conservation concern or local areas of nature conservation significance, as development proposals will not be permitted unless the need for the development outweighs the particular importance of the nature conservation value of the site or reserve or the local significance of the site to the biodiversity of the District.

6.4.4. **Policy ENV8: Other Landscape Elements of Importance for Nature Conservation** is concerned with developments which may have an adverse impact on hedgerows, linear tree belts, semi-natural grasslands, orchards, ponds, reservoirs, river corridors, larger semi-natural or ancient woodlands or other landscape elements. Developments which do affect these elements will only be permitted where the need outweighs the need to retain the elements for their importance to wild fauna and flora or mitigation measures are provided.

Emerging New Local Plan

6.4.5. Uttlesford District Council withdrew the draft Local Plan early in 2020 following significant concerns raised by the Inspector during an examination of the documents. To adhere to the Government's requirement to have up-to-date Local Plans in place by December 2023, Uttlesford District Council are now focused on providing a new Local Plan. A programme of works and timetable setting out the steps to deliver this has yet to be provided.

6.5. **Discussion**

6.5.1. There are no statutory designated sites within or adjacent to the site, though the Flitch Way LWS lies close to the site boundary. The LWS will not be directly affected by development proposals, and suitable mitigation measures will be put into place to avoid possible indirect impacts upon the wildlife corridor.

6.5.2. The potential for protected species to be present has been identified, with surveys undertaken confirming the presence of some species, and mitigation measures and enhancements set out in this report will ensure that significant adverse effects are avoided. It is considered these provide a robust assessment of the likely impacts, and required mitigation, to allow for determination of the planning application.

6.5.3. The site is dominated by species-poor grassland and tall ruderal, which is of negligible nature conservation interest, and those habitats of relatively greater interest are to be largely retained and enhanced through a comprehensive landscape strategy designed according to the principles of green infrastructure. Overall, it is considered that the proposals for development would be in line with the planning policies summarised above.

7. SUMMARY AND CONCLUSIONS

7.1. Ecology Solutions was commissioned in January 2020 by FKY Limited to undertake an ecological assessment of land at Tilekiln Green, Stansted, Essex.

7.2. The proposals for the site are for the development of an open logistics facility with associated new access, parking areas and ancillary office and amenity facilities.

7.3. The site was subject to an extended Phase 1 habitat survey in April 2020, with a walkover survey undertaken in January 2021; a desk-based study was also undertaken to inform this assessment. Protected species surveys were carried out in April, May, June, July, August and September 2020. An updated walkover was undertaken in December 2021 to ensure that no material changes had occurred since the previous surveys.

7.4. **Statutory Sites.** There are no statutory designations of nature conservation value within the site or immediately adjacent to it. The nearest statutory designated site is Hatfield Forest SSSI, which lies approximately 1.2km east of the site and also incorporates Hatfield Forest NNR/NCR. It is not considered that the development of the site would have a significant adverse effect on the statutory site due to the nature of the development (non-residential) and the intervening distances.

7.5. **Non-statutory Sites.** The nearest non-statutory designation is the Flitch Way LWS and Country Park, situated less than 10m south of the site. The disused railway line is now used as a bridleway / footpath, which also acts as a valuable wildlife corridor throughout the south of the district.

7.6. No direct impacts are expected on the LWS as a result of the development. Best practice measures for the construction industry and the implementation of a Construction Environmental Management Plan (CEMP) will ensure that potentially indirect adverse effects are avoided. New native planting along the southern boundary will act as an additional buffer preventing operational phase disturbance, such as noise and light pollution, and bolster the current wildlife corridor presented by Flitch Way LWS and Country Park.

7.7. There are a number of further non-statutory sites located in the wider area, but no significant adverse effects are anticipated as a result of the proposals for the site.

7.8. **Habitats.** The habitats within the site consist of common and widespread species, but habitats such as the areas of woodland are of relatively greater interest in the context of the site. The overwhelming majority consists of species-poor grassland, ephemeral / short perennial and tall ruderal vegetation, which is of negligible nature conservation interest.

7.9. Planting proposals such as the perimeter woodland belt buffer planting will connect the two areas of retained woodland and provide replacement woodland areas for those cleared prior to the habitat surveys. Supplementary woodland and tree planting on internal margins and divisions within the site will also bolster and increase the green infrastructure. The new planting is based around native species and species of known wildlife value. Further enhancements could be provided with the establishment of a shade tolerant wildflower meadow seed mix sown beneath new tree planting.

7.10. **Invasive Non-native Species.** Variegated Yellow Archangel, a species listed under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is present within the woodland in the north of the site. It is an offence to promote the spread of this species and therefore its removal or treatment should be undertaken by a specialised contractor prior to site preparation.

7.11. **Badgers.** For reasons on animal welfare, information on Badgers is not published in the version of the report to be made available to the general public.

7.12. **Bats.** Bat activity surveys were undertaken in May, June and August 2020. A static remote bat detector was deployed to provide further survey information for five-day periods in May, June and August 2020. All trees within the site were assessed for their potential to support roosting bats.

7.13. Evidence of use of the site by an assemblage of bat species was recorded, with habitats of interest being the boundary vegetation. A single Barbastelle Bat registration was recorded during survey work; however, it is not expected to be reliant on the habitats within the site. There is no evidence of any roosts being present within the site. Woodland within the site will be retained and enhanced with new native woodland and tree planting, with supplementary tree planting through the development will also increase foraging and dispersal opportunities. The provision of bat boxes, such as Schwegler 1FF Bat Box and Schwegler 2FN Bat Box or similar, could offer new roosting opportunities.

7.14. **Dormice.** Survey work was undertaken between May and September for Dormice, utilising nest tubes, boxes and footprint tunnels. No evidence for this species was recorded within the site boundary, and it is considered the survey effort undertaken to date is robust enough to conclude that the species is absent from the site.

7.15. **Otters.** No evidence of Otter was recorded during the survey work. It is not considered likely that any significant use of the off-site streams occurs by this species and no further consideration is necessary.

7.16. **Water Voles.** Evidence of Water Vole was recorded in the off-site stream along the southern boundary of the site. While the development of the site is focused away from the stream, thereby avoiding impacts, there is a requirement to construct a small headwall in the southwest corner of the stream for the discharge of water. Given that all evidence of Water Voles was recorded upstream of the area to be impacted, there will be no impact upon the observed burrows and therefore no requirement for a conservation licence from Natural England to facilitate the work.

7.17. As a precautionary measure, it is recommended that a check survey be carried out prior to the commencement of any works to ensure that no new Water Vole burrows have been excavated since the initial surveys. If new burrows are found or other evidence is recorded to suggest that the proposed works will impact upon new burrows, then a licensed displacement exercise will be required.

7.18. Protective measures during development of the site should be detailed within in a CEMP to avoid any potential indirect effects that could affect habitats of potential Water Vole interest. Existing vegetation along the southern boundary between the stream and the proposed development will be retained and

bolstered with new native tree planting to buffer any potential disturbance from activities during the operation phase.

7.19. **Hedgehogs.** No Hedgehogs were recorded during the course of the survey work. Nevertheless, the woodland, scrub and grassland habitats recorded across the survey areas provide suitable opportunities for foraging and hibernating Hedgehogs.

7.20. It is recommended that any ground cover is cleared outside of the winter hibernation period (October to April), and that the boundaries of the site should be permeable for Hedgehogs to facilitate dispersal. The provision of the native planting will help to offset any losses of suitable habitat.

7.21. **Birds.** An assemblage of common species was recorded using the site during survey work, though no species that would be classed as rare. The woodland, hedgerow and elements of scrub represent suitable nesting and foraging habitats for a number of bird species. Landscaping of the proposed development will include areas of new woodland planting to ensure the loss of part of the site is offset. Species have been chosen to lower the likelihood of attracting flocking species known to increase bird strike and management of habitats will adhere to a strict Bird Hazard Management Plan.

7.22. During the site preparation phase, it is recommended that any suitable bird nesting habitat be cleared outside of the nesting season (typically March to July inclusive) to avoid a potential offence under the legislation. Where this cannot be achieved a check survey for nesting birds should be undertaken by an ecologist, with any confirmed nests left in situ until the young have fledged.

7.23. A series of bird boxes, such as Schwegler 1B Bird Box, 2GR Nest Box, 2H or 1ZA Roundhouse Wren Box or similar, could be installed within the retained woodland areas post-development to provide nesting opportunities for non-flocking species.

7.24. **Reptiles.** Suitable habitat for common reptiles is present in the form the woodland margins in the north and south of the site. Off-site scrub to the northwest may also present opportunities for reptiles. The tall ruderal and semi-improved grassland are subject to regular management resulting in a short sward height that provides limited opportunities for reptiles. The site was subject to presence / absence surveys between April and June 2020.

7.25. Low populations of Common Lizard and Slow Worm were recorded within the site. As a precaution, to avoid a possible offence, it is recommended that suitable habitat be systematically cleared of suitable reptile habitat using a two-stage habitat manipulation strategy under the supervision of an Ecological Clerk of Works. This work will need to be completed during the reptile active season (April to October inclusive) and in favourable weather conditions. This method will actively encourage any reptiles present within the site to disperse into the adjacent suitable habitat in the north and south of the site. A full translocation exercise is not considered to be necessary. Any potential refugia within the site, such as wood piles, should be inspected and removed during this time with any reptiles found moved to the retained habitat on the fringes of the site.

7.26. It is recommended that new areas of wildflower grassland be established on the fringes of the site within the new woodland and tree planting to improve the conditions for the reptiles recorded on site. The new grassland areas could be

beneficially managed to promote the characteristics typically favoured by reptile species. Additional log piles and hibernacula could be installed within the woodland areas as a further enhancement.

7.27. **Amphibians.** The majority of the site would be considered to be suitable for Great Crested Newt during its terrestrial phase, superficially at least. Two ponds are present within 500m of the site. The closest, to the north, was not considered to be suitable for Great Crested Newts given its evident ephemeral nature, while access to the pond to the south was sought but not granted. Owing to the lack of records within 500m of the site and that no amphibians were recorded during the reptile surveys, Great Crested Newts are considered to be absent from the site.

7.28. **Invertebrates.** It is likely that an assemblage of common invertebrate species is present within the site. The new tree planting will comprise of native species rather than non-native species, as native species are known to support a greater assemblage of invertebrates which should in turn benefit local bat and bird populations. Further enhancements could be achieved through the provision of a shade tolerant wildflower meadow seed mix sown beneath the woodland planting and the installation of invertebrate boxes on retained trees and within the proposed native species planting. The inclusion of disease resistant Elm within the tree planting scheme would also benefit locally present White-letter Hairstreak.

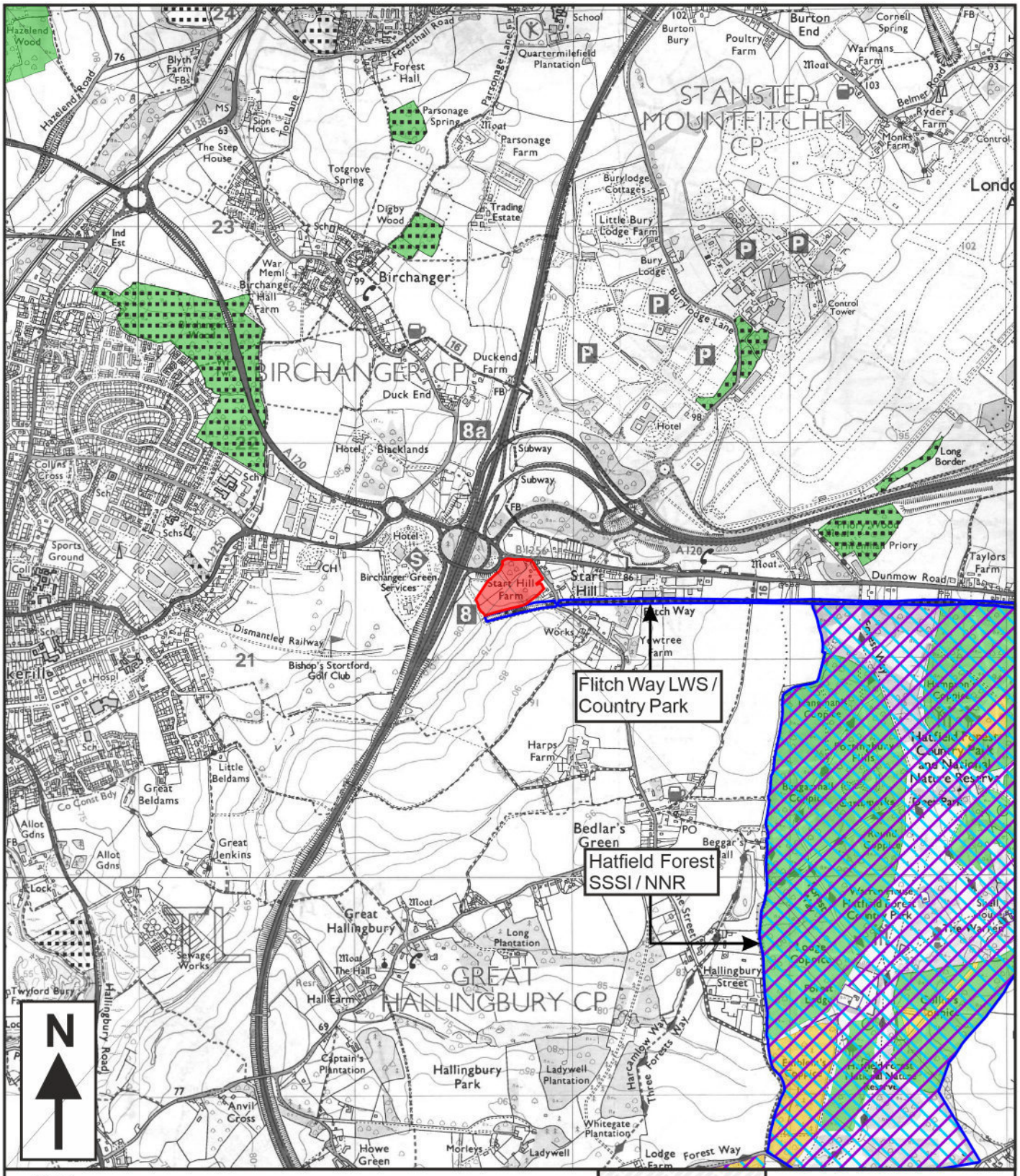
7.29. The mitigation measures proposed in this report will ensure that all significant adverse effects on these species are avoided. It is anticipated that the landscape and ecological enhancement scheme for the site will result in net gains for all species and groups identified.

7.30. In conclusion, on the basis of the current evidence, there is no overriding ecological reason why the site could not be developed. The proposals are in accordance with all relevant ecological planning policy, and the mitigation strategies proposed ensure no significant adverse effect on the notable habitats and protected species identified. The landscape strategy proposed has been designed with ecological and green infrastructure principles in line with local priorities for biodiversity. There is therefore no ecological justification to refuse planning permission.

PLANS

PLAN ECO1

Site Location and Ecological Designations



KEY:

- SITE LOCATION
- SITE OF SPECIAL SCIENTIFIC INTEREST (SSSI)
- NATIONAL NATURE RESERVE (NNR)
- LOCAL WILDLIFE SITE (LWS)
- ANCIENT AND SEMI-NATURAL WOODLAND
- ANCIENT REPLANTED WOODLAND
- COUNTRY PARK

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8723: LAND AT TILEKILN GREEN, STANSTED

PLAN ECO1: SITE LOCATION AND ECOLOGICAL DESIGNATIONS

Rev: A

Jul 2020

PLAN ECO2

Ecological Features

KEY:

- SITE BOUNDARY
- SEMI-IMPROVED GRASSLAND / EPHEMERAL / SHORT PERENNIAL
- TALL RUDERAL / SCRUB
- BROADLEAVED WOODLAND
- PLANTED TREES
- HEDGEROW
- OFF-SITE STREAM
- VARIEGATED YELLOW ARCHANGEL
- FLITCH WAY LOCAL WILDLIFE SITE AND COUNTRY PARK

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PLAN ECO2: ECOLOGICAL FEATURES

Rev: C

Jan 2022

PLAN ECO3.A

Bat Activity Survey Results 20.05.20

B 1256

85.0m

DUNMOW R

Stane Street

The Old Elm

Pond

Ppg Sta

Brookside

Track

Track

KEY:

- SITE BOUNDARY
- TRANSECT
- COMMON PIPISTRELLE REGISTRATION
- COMMON PIPISTRELLE FLIGHT PATH
- SOPRANO PIPISTRELLE REGISTRATION
- PIPISTRELLE SP. REGISTRATION
- LEISLER'S BAT REGISTRATION
- STATIC DETECTOR

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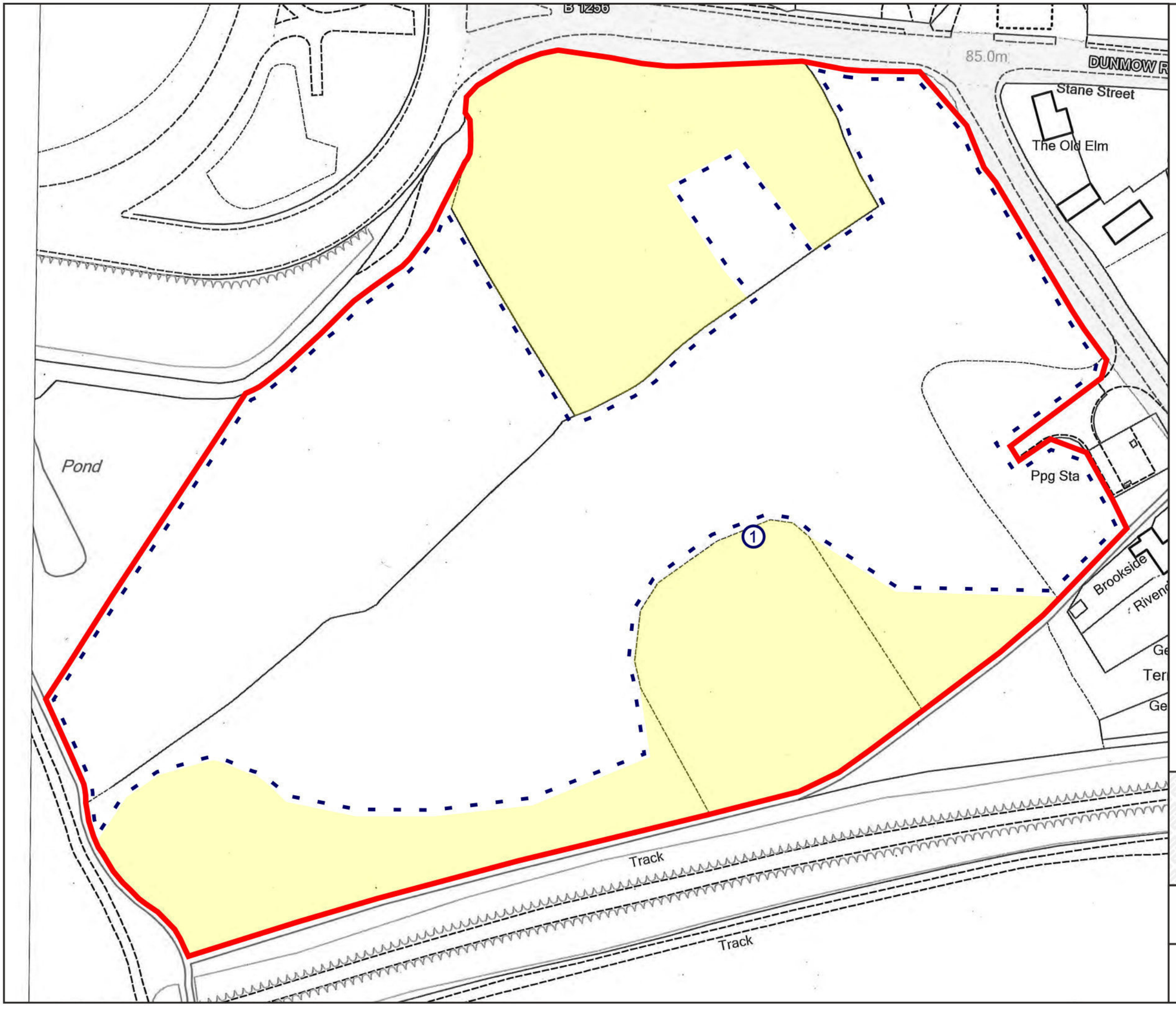
PLAN ECO3.A:
BAT ACTIVITY SURVEY RESULTS
20.05.20

Rev: A

Jun 2020

PLAN ECO3.B

Bat Activity Survey Results 11.06.20



KEY:

- SITE BOUNDARY
- TRANSECT
- COMMON PIPISTRELLE REGISTRATION
- COMMON PIPISTRELLE FLIGHT PATH
- SOPRANO PIPISTRELLE REGISTRATION
- SOPRANO PIPISTRELLE FLIGHT PATH
- *PIPISTRELLE* SP. REGISTRATION
- BROWN LONG-EARED BAT REGISTRATION
- NOCTULE REGISTRATION
- *MYOTIS* SP. REGISTRATION
- STATIC DETECTOR-POSITION 1

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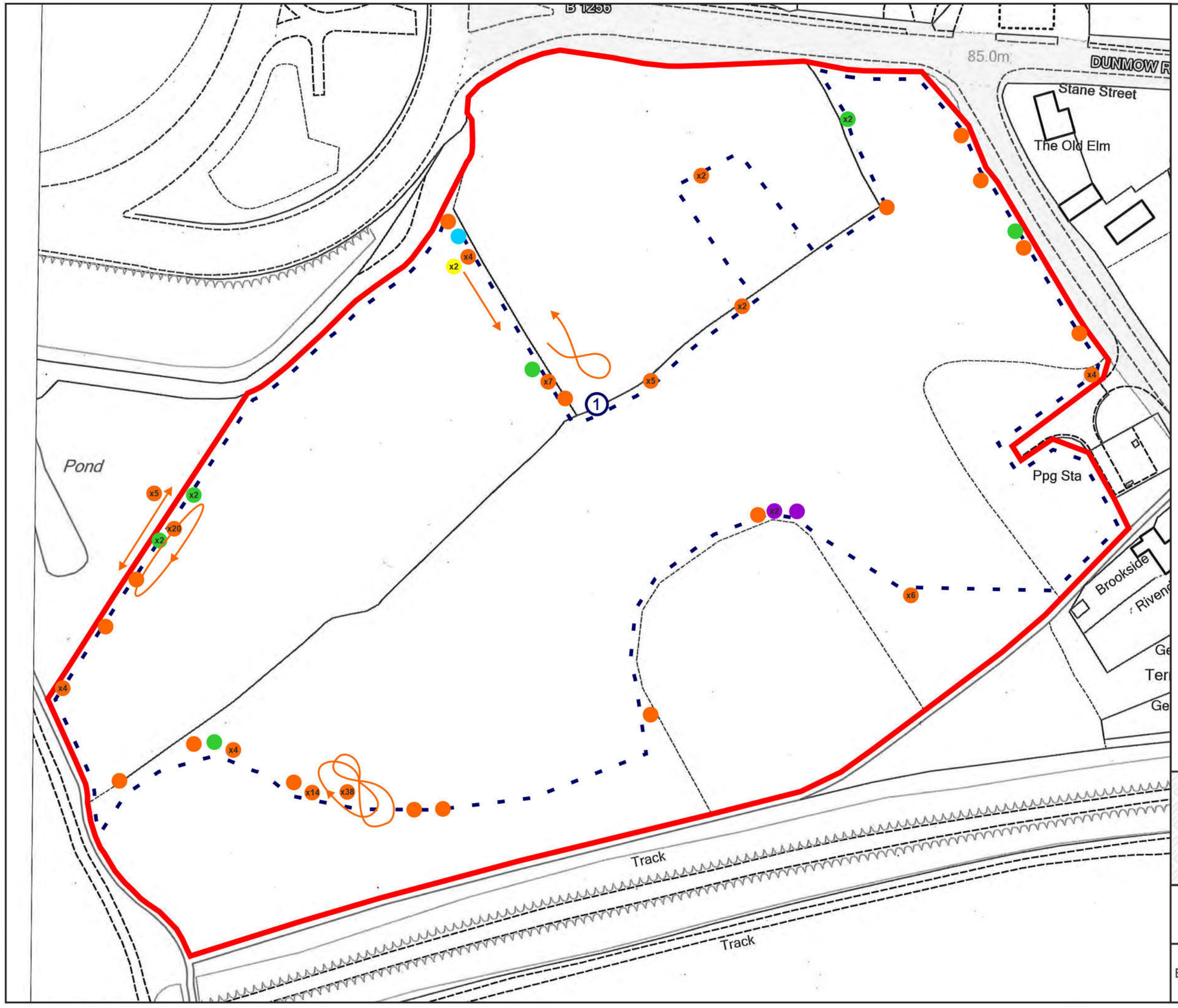
PLAN ECO3.B:
BAT ACTIVITY SURVEY
11.06.2020

Rev: A

Jun 2020

PLAN ECO3.C

Bat Activity Survey Results 17.08.20



KEY:

- SITE BOUNDARY
- TRANSECT
- COMMON PIPISTRELLE REGISTRATION
- COMMON PIPISTRELLE FLIGHT PATH
- SOPRANO PIPISTRELLE REGISTRATION
- BROWN LONG-EARED BAT REGISTRATION
- NOCTULE REGISTRATION
- LEISLER'S BAT REGISTRATION
- STATIC DETECTOR- POSITION 1

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8723: LAND AT TILEKILN GREEN, STANSTED

PLAN ECO3.C:
BAT ACTIVITY SURVEY RESULTS
17.08.2020

Rev: A

Nov 2020

PLAN ECO4

Dormouse Tube, Nest Box and Footprint
Tunnel Locations

B 1256

85.0m

DUNMOW R

Stane Street

The Old Elm

Pond

Ppg Sta

Brookside

Track

Track

KEY:

- SITE BOUNDARY
- 1 NEST TUBE
- 1 FOOTPRINT TUNNEL
- X NEST BOX

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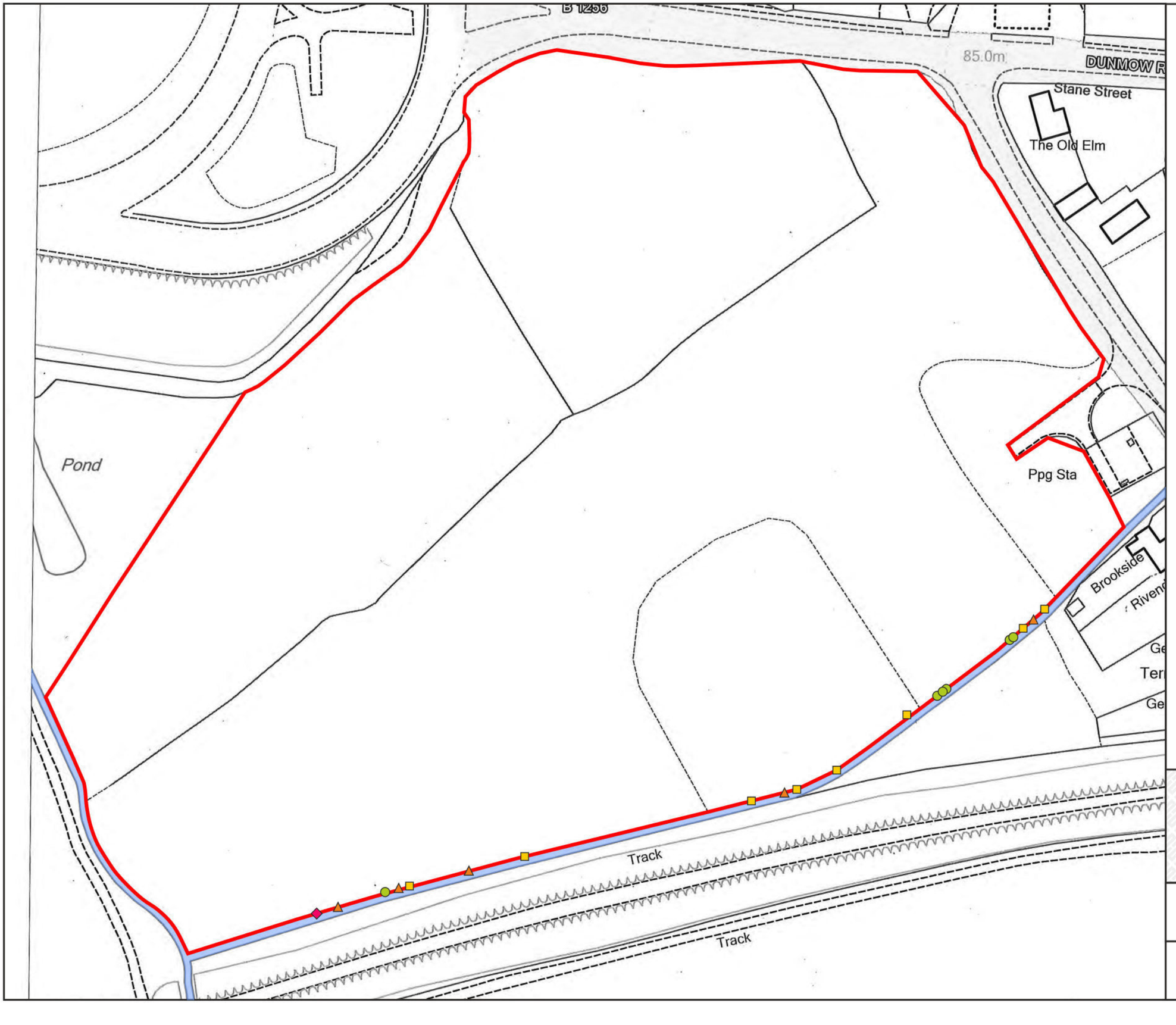
PLAN ECO4: DORMOUSE TUBE, NEST BOX AND FOOTPRINT TUNNEL LOCATIONS

Rev: A

May 2020

PLAN ECO5

Water Vole Survey Results



KEY:

- SITE BOUNDARY
- OFF-SITE STREAM
- WATER VOLE FOOTPRINT
- BURROW
- LATRINE
- FEEDING STATION

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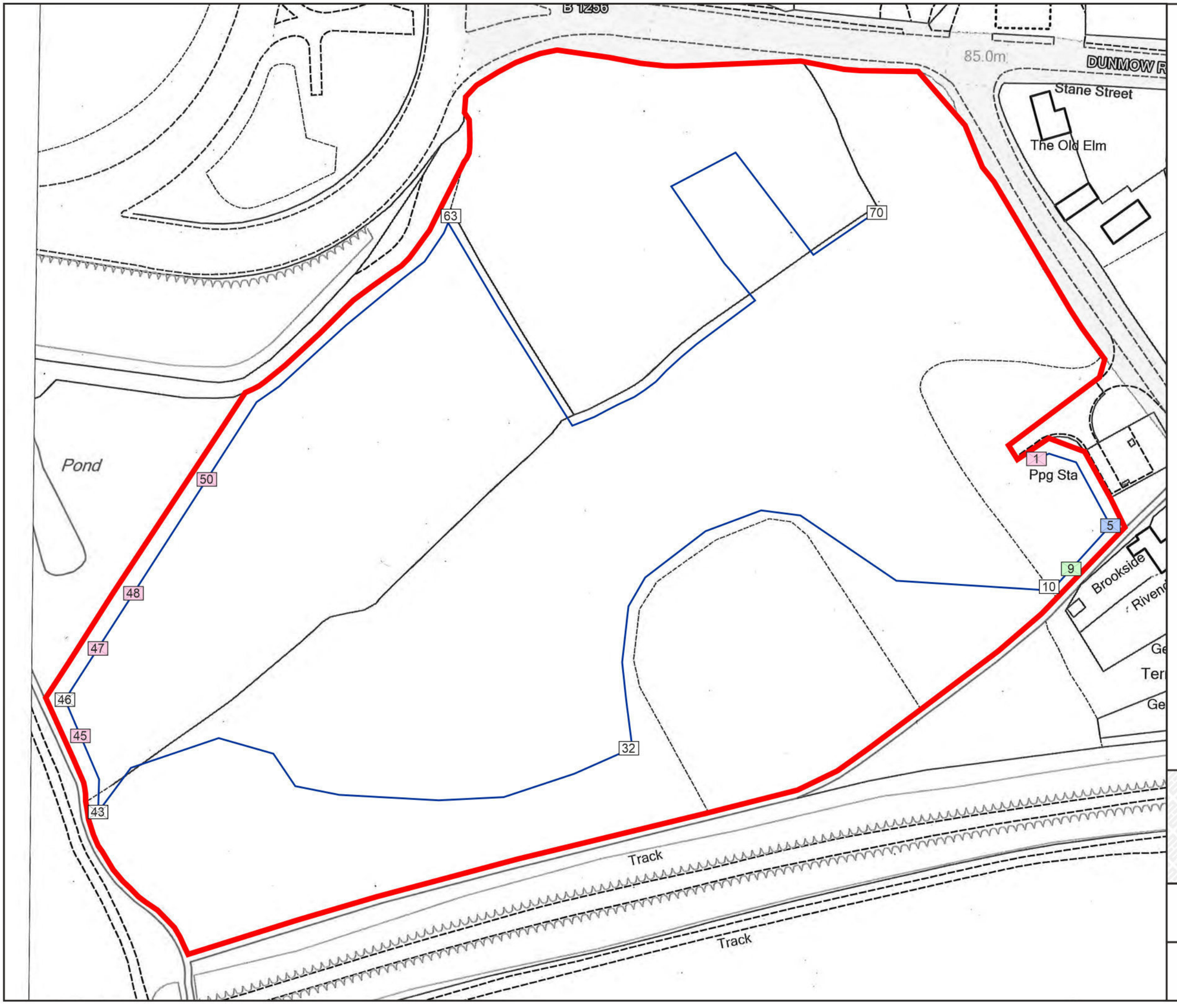
PLAN ECO5: WATER VOLE SURVEY RESULTS

Rev: A

Jun 2020

PLAN ECO6

Reptile Survey Results



KEY:

- SITE BOUNDARY
- 1 — TIN LOCATION
- 1 — ADULT FEMALE COMMON LIZARD
- 1 — ADULT FEMALE SLOW WORM
- 1 — JUVENILE SLOW WORM

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8723: LAND AT TILEKILN GREEN, STANSTED

PLAN ECO6:
REPTILE SURVEY RESULTS

Rev: A

Jun 2020

PHOTOGRAPHS

PHOTOGRAPH 1: Semi-improved grassland mosiac

PHOTOGRAPH 2: Tall ruderal vegetation and tree planting in west

PHOTOGRAPH 3: Scrub

PHOTOGRAPH 4: Broadleaved woodland

PHOTOGRAPH 5: Off-site stream to the south

PHOTOGRAPH 6: Off-site stream to the west

PHOTOGRAPH 7: Variegated Yellow Archangel

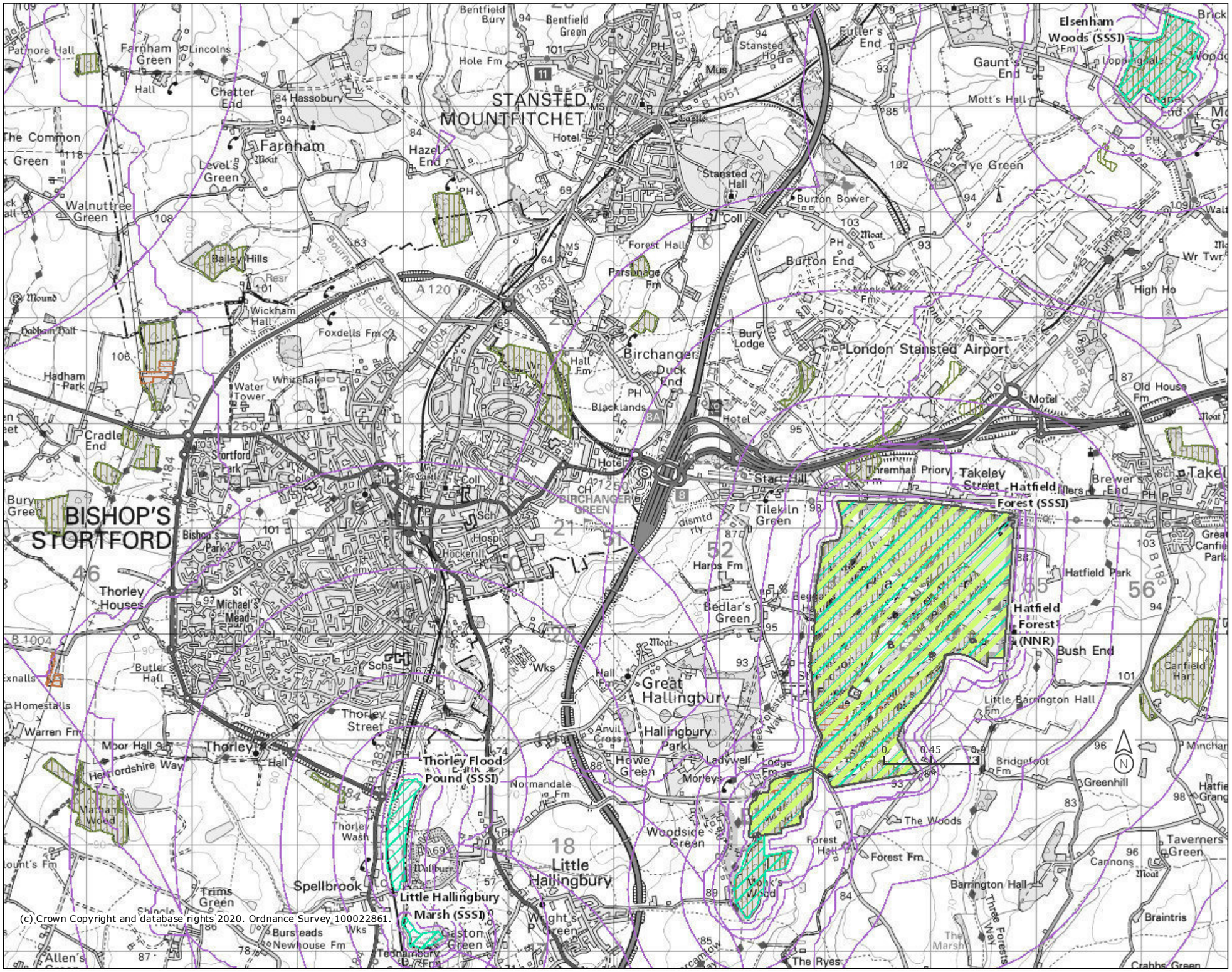
PHOTOGRAPH 8: Water Vole droppings

APPENDICES

APPENDIX 1

Information downloaded from the Multi-Agency Geographic Information for the Countryside (MAGIC) website

8723: Land at Tilekiln Green, Stansted



Legend

- Local Nature Reserves (England)
- National Nature Reserves (England)
- Ramsar Sites (England)
- Ramsar Sites (Scotland)
- Sites of Special Scientific Interest (England)
- SSSI Impact Risk Zones - to assess planning applications for likely impacts on SSSIs/SACs/SPAs & Ramsar sites (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)

Ancient Woodland (England)

- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland

Projection = OSGB36
xmin = 541800
ymin = 216900
xmax = 560300
ymax = 225900

0 0.7 1.4
km

Map produced by MAGIC on 18 June, 2020.

APPENDIX 2

Bat Box Specifications

Bat Boxes

Schwegler bat boxes are made from ‘woodcrete’ and have the highest rates of occupation of all types of box.
The 75% wood sawdust, clay and concrete mixture is ideal, being durable whilst allowing natural respiration and temperature stability. These boxes are rot and predator proof and extremely long lasting.
Boxes can be hung from a branch near the tree trunk or fixed using ‘tree-friendly’ aluminum nails.

1FF Bat Box

The rectangular shape makes the 1FF suitable for attaching to the sides of buildings or in sites such as bridges, though it may also be used on trees. It has a narrow crevice-like internal space to attract Pipistrelle and Noctule bats.

Woodcrete (75% wood sawdust, concrete and clay mixture)
Width: 27cm
Height: 43cm
Weight: 8.3kg

2FN Bat Box

A large bat box featuring a wide access slit at the base as well as an access hole on the underside. Particularly successful in attracting Noctule and Bechstein’s bats.

Woodcrete construction, 16cm diameter, height 36cm.

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APPENDIX 3

Bird Box Specifications

Bird Boxes

Schwegler bird boxes have the highest rates of occupation of all types of box. They are designed to mimic natural nest sites and provide a stable environment with the right thermal properties for chick rearing and winter roosting. Boxes are made from woodcrete. This 75% wood sawdust, clay and concrete mixture is breathable and very durable making these bird boxes extremely long lasting.

1B Bird Box

This is the most popular box for garden birds and appeals to a wide range of species. The box can be hung from a branch or nailed to the trunk of a tree with a 'tree-friendly' aluminium nail.

Available in four colours and three entrance hole sizes (26mm for small Tits, 32mm standard size, and oval for Redstarts).

2GR Nest Box

Owing to the special design of the large nesting area and front panel, this box is especially well protected against predators.

Available with a single oval entrance hole or as shown with three 27mm holes for small Tits. Nesting area: 14cm x 19cm.

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Bird Boxes

2H Bird Box

This box is attractive to robins, pied wagtails, spotted flycatcher, wrens and black redstarts.

Schwegler boxes have the highest occupation rates of all box types. They are carefully designed to mimic natural nest sites and provide a stable environment for chick rearing and winter roosting. They can be expected to last 25 years or more without maintenance.

1ZA Roundhouse Wren Box

This nest box provides an enclosed space preferred by wrens. The box is made from long-lasting, breathable Schwegler Woodcrete that provides excellent protection from nest predators. This nest box also provides a sheltered place for wrens over winter.

Entrance hole 30 mm x 27 mm.
Nesting area 185mm diameter.

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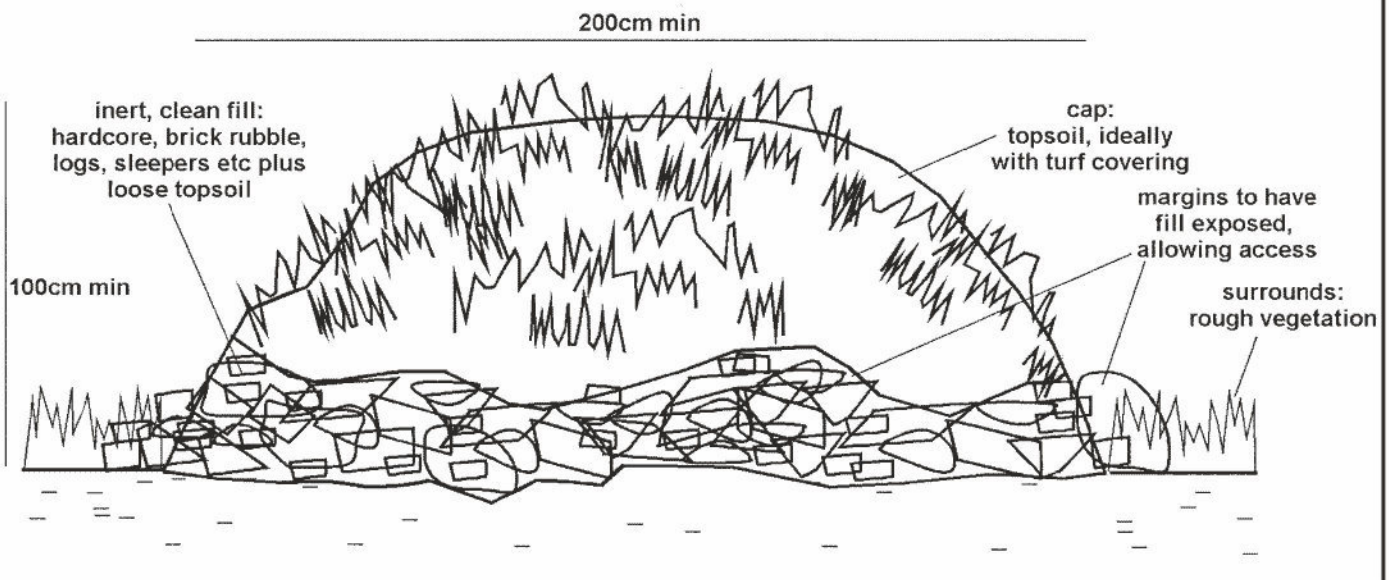
APPENDIX 4

Hibernacula Specification



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HIBERNACULA SPECIFICATION

APPENDIX 5

Insect Box Specifications

Insect Boxes

Schwegler Clay and Reed Insect Nest

An attractive insect nest which can be hung in any sunny, sheltered spot. Reeds on either side of a clay central section provide a range of environments to suit different insects (designed to attract only harmless insects).

Dimensions: 290 x 225 x 205 mm
Weight: 5.7 kg
Schwegler woodcrete, clay, and reeds

Schwegler Woodcrete Insect Nest

An insect nest made from long-lasting, insulating, woodcrete, with holes of different sizes providing homes for a variety of beneficial insects such as bees and solitary wasps.

Dimensions 140 x 80 x 260 mm
Weight 3.65 kg
Woodcrete

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Insect Boxes

Insect Tower

An attractive insect nest for a variety of insect species. The tubes, vertical slots, openings and crevices within the pine cones provide a variety of habitats for solitary bees, butterflies, ladybirds and lacewings, amongst other insect species.

Dimensions: 210 x 65 x 125 mm
Weight: 3 kg
Wood, wire mesh, reeds and pine cones

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APPENDIX 6

Badger Survey Report [Confidential]

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