



Ecological Impact Assessment (non-EIA)



Dukes Field Cottage

On behalf of Justin Rogers

April 2024

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1 Executive Summary

Report purpose	This report identifies the potential ecological impacts, mitigation, compensation and enhancement measures for residential development at Dukes Field Cottage, Riseley.
Surveys	Surveys of the site were conducted between November 2020 and March 2023 including: • A UKHab survey; • Habitat suitability index assessment of ponds for great crested newts; • Daytime building and tree assessments for bats and a bat emergence survey of the building within the site; and • Presence/likely absence surveys for dormouse.
Key findings	The site, in the village of Riseley in Berkshire, measures approx. 0.054ha comprising woodland, garden, ditch and an outbuilding. The site is within the Thames Basin Heaths linear mitigation (400m-5km) zone. Protected and priority species present or potentially present within the site include: • Building B1 which has low potential to support roosting bats; • Foraging and commuting habitat for bats within the site; • Historic presence of hazel dormouse within the woodland; • Opportunities for nesting birds within the woodland on site; • Invasive plant species three-cornered garlic and cotoneaster were recorded within the site; and • Negligible opportunities for other protected or priority species.
Potential impacts	Habitats within the site are of Parish/Neighbourhood value in terms of ecological interest. In the absence of mitigation, development within the site may result in: • Disturbance of foraging and commuting bats through altered/increased levels of lighting; • Killing and/or injury of dormouse and/or great crested newts which may be present; • Destruction of active birds' nests during vegetation clearance; and • Spread of invasive plant species into the wild through inappropriate site practices.
Measures to avoid and/or reduce impacts	• Tariffs should be paid to mitigate impacts on the Thames Basin Heaths; • Habitat creation should be included to improve the biodiversity value of the site; • Implementation of a sensitive lighting scheme to avoid disturbing bats; • Precautionary habitat measures for (historic) dormouse; • Vegetation clearance should be undertaken outside of the nesting bird season (March to August inclusive) or be preceded by a check from a suitably experienced ecologist; • Control of invasive species to prevent their spread; and • Biodiversity offsetting should be used to compensate for the loss of biodiversity on site by investing in a biodiversity offsetting service with a suitable provider.
Delivering biodiversity enhancement	• One bird box, one bat box, one insect nest box and one bee block will be integrated into the development; and • Installation of hedgehog friendly gravel boards in boundary walls/fences within the site.

2 Introduction

2.1 Background

2.1.1 Ecology by Design Ltd was commissioned by Justin Rogers to undertake an Ecological Impact Assessment (EcIA) (non- EIA) at Dukes Field Cottage, Norton Road, Riseley, Reading, RG7 1SH (SU 72164 62939). The client seeks planning permission for demolition of the existing outbuilding within the site to enable construction of a replacement residential dwelling. Initially, Ecology by Design undertook a Preliminary Ecological Appraisal (PEA) during November 2020 to inform the planning application. Due to the time elapsed and revisions to the design and site boundary, Ecology by Design undertook update surveys in 2023 to inform the planning application.

2.2 Site Description

2.2.1 The site is located in the village of Riseley in Berkshire. The site measures approximately 0.054ha in size and largely comprises an outbuilding, garden, ditch and a small section of broadleaved woodland.

2.2.2 Immediately to the south of the site is a newly completed residential development, with two ponds 15m south and 138m southeast of the site created in 2020. The site is bordered by woodland to the east, whilst there are further residential dwellings to the north and west. The wider landscape includes areas of woodland along with arable and pasture fields and Wellington Country Park to the south. There is a lake approximately 735m to the east of the site, whilst the A33 main road is located approximately 363m to the west. The River Loddon is 1.5km to the west of the site and the River Whitewater is 1.7km to the east of the site.

2.3 Proposed Works

2.3.1 Justin Rogers seeks planning permission for the demolition of the existing building within the site and construction of a single residential dwelling. The proposals will involve the removal of an area of broadleaved woodland, scattered trees, modified grassland, bare ground, arable and horticulture, native hedgerow, ditch and hardstanding.

2.4 Aims of Report

2.4.1 This report is an Ecological Impact Assessment which presents the approach and findings of the assessment of the potential ecological impacts of the proposed development works in accordance with industry standard guidance (CIEEM, 2019; BSI Standards Limited, 2013). It has been produced following a Preliminary Ecological Appraisal and further surveys for bats and

dormouse. The development does not require an Environmental Impact Assessment (EIA), therefore 'non-EIA' has been included on the title page.

2.4.2 This report will be submitted to Hart District Council to inform the planning application.

2.5 Personnel

2.5.1 The project was led by Senior Ecologist Emily Bartlett, BSc (Hons) MSc ACIEEM, who has eight years of experience in ecological consultancy and is experienced at conducting habitat and protected species assessments.

2.5.2 Project supervision and review of the report was provided by Senior Ecologist Anna Spence BSc (Hons) MSc MCIEEM who has over seven years' experience.

3 Methods

3.1 Desk Study

3.1.1 A desk study was carried out to identify:

- Internationally protected sites within the anticipated zone of influence of the site (minimum of 7km);
- Nationally protected sites within 5km of the site; and
- Non-statutory designated sites and records of protected or priority species within 2km of the site (central OS national grid reference SU 72164 62939).

3.1.2 A 2km search radius for species and non-statutory designated sites is justified due to the small size of the site and small-scale development works being undertaken. It is thought highly unlikely that species or non-statutory sites outside this search zone would be affected by the project. A larger search radius is applied for internationally and nationally designated sites as these sites are protected to a higher level and can often be more sensitive to disturbance. These search distances are also based on industry standard guidance.

3.1.3 Sources consulted include:

- Thames Valley Environmental Records Centre (TVERC; returned 26th November 2020);
- Hampshire Biodiversity Information Centre (HBIC; returned 7th December 2020);
- MAGIC (www.magic.gov.uk) (accessed 19th April 2024); and
- Local Planning Policy documents and local planning application searches (specifically 16/02989/OUT for the development immediately south of the site).

3.2 Preliminary Ecological Appraisal

3.2.1 A PEA was conducted on 27th November 2020 by Ecology by Design Ecologists Emily Bartlett and Emily Power using standard techniques and methodologies (CIEEM, 2017) and the nomenclature of Stace (2019). An update survey was conducted on 22nd March 2023, which confirmed no changes to the site condition.

3.2.2 The PEA includes a survey of the habitats utilising the standard UK Habitat Classification system (UKHab Ltd, 2023). Weather conditions during the survey were cold (3°C), still (wind 0 on

Beaufort scale¹) and cloudy (cloud 8/8²) with light fog. A baseline habitat map is included in Appendix 2.

- 3.2.3 Opportunities for or evidence of protected and priority species were also identified. Where potential impacts on features of ecological interest are identified, the PEA is extended to include an assessment of impact. Any further surveys required are outlined and recommendations are made for appropriate avoidance, mitigation, compensation and enhancement measures.

3.3 Ecological Impact Assessment (Non-EIA)

- 3.3.1 Wherever potential impacts as a result of the proposals were identified, an EclA was undertaken. The function of the EclA was to identify, quantify and evaluate the potential effects of the proposed development on designated sites, notable/protected habitats and species. The EclA was informed by the desk study, PEA and survey work described in Sections 3.4 – 3.8 below and undertaken with reference to best practice guidelines (CIEEM, 2019) whereby:

- the scope of the EclA was informed by a desk study and initial site survey;
- importance of ecological features within the site was established and ecological importance identified with reference to known criteria and geographic context where appropriate and available;
- assessment of potential impacts of the proposed development was made with reference to their significance and geographic context; and
- avoidance, mitigation, compensation and enhancement measures were identified and recommended as appropriate.

3.4 Biodiversity Impact Calculator

- 3.4.1 Data from the PEA and the proposed site plan were used to complete DEFRA's Statutory Biodiversity Metric Calculation Tool (DEFRA, February 2024a) using the published Statutory Biodiversity Metric: User Guide (DEFRA, February 2024b). The landscape scheme was used to calculate the change in biodiversity on site as a result of the proposed development.

¹ The Beaufort scale is an empirical measure from 0-12 which relates wind speed to observed conditions. 0- Calm, 1- Light air, 2- Light breeze, 3- Gentle breeze, 4- Moderate breeze, 5- Fresh breeze etc.

² Cloud cover is measured using the system called oktas. The visible sky is divided into eight and cloud presence is determined within each section. A value of one to eight is then assigned (1 okta being cloudless to 8 oktas being total cloud cover).

3.5 Ground Level Tree Roost Assessment

- 3.5.1 Several trees have been identified for removal within the proposed development plan. A ground level tree assessment was conducted of these trees by Ecologists Emily Bartlett (Level 1 Natural England licence 2019-43526-CLS-CLS) and Emily Power (Level 2 Natural England licence 2017-32544-CLS-CLS) whilst conducting the habitat survey, with an update completed by Emily Bartlett on 22nd March 2023.
- 3.5.2 The surveyor used a high-power torch (LEDLenser Lamp) and 10x42 mm binoculars to identify features of interest. Where possible, each aspect of the tree was inspected to identify features with potential to support roosting bats such as woodpecker holes, rot holes, splits, cracks, flaking bark and/or ivy cover. Where any evidence of use by bats such as droppings, staining or scratches around such features were present this was noted.
- 3.5.3 Each tree or cluster of trees was identified as having high, medium, low or negligible suitability for roosting bats based on the most up to date guidance available at the time of survey. Collins (2016) categorizes the suitability of trees for roosting bats as follows:
- Negligible = Negligible habitat features likely to be used by roosting bats.
 - Low = A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting suitability.
 - Medium = A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.
 - High = A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions a and surrounding habitat.

3.6 Preliminary Roost Assessment

- 3.6.1 An external and internal Preliminary Roost Assessment was conducted of the outbuilding to be impacted by the proposals at Dukes Field Cottage on 27th November 2020 by Ecology by Design. The assessment was based on the guidance in Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016) and government guidance (Gov.uk., 2015).
- 3.6.2 The survey was conducted by licensed bat ecologists Emily Bartlett (Level 1 Natural England licence 2019-43526-CLS-CLS) and Emily Power (Level 2 Natural England licence 2017-32544-CLS-CLS). An update inspection was completed on 22nd March 2023 by Emily Bartlett.

3.6.3 All external areas of the building were inspected as well as internal areas. Evidence searched for included the presence of free hanging bats and bats within gaps and crevices, bat droppings, urine stains, rub marks, scratch marks and feeding remains. Equipment used included:

- LEDLenser Lamp
- 10x42mm close focusing binoculars

3.7 Dusk Emergence Surveys

3.7.1 A dusk emergence survey was conducted of the building within the site in 2021, which had suitability for roosting bats to confirm presence or likely absence of roosting bats. An update survey was completed in 2024. The surveys undertaken within the site are detailed in Table 3.1.

Table 3.1: Details of bat roost survey completed in 2021

Date	Building no.	Surveyors	Type
08/06/21	B1	Emily Bartlett (Natural England Licence L1 2019-43526-CLS-CLS), and Miguel Alvarez	Dusk
08/08/24	B1	Nick Boyd and Clare John	Dusk

3.7.2 The surveys were based on the guidance included in the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), whereby a building with low potential requires one survey to confirm presence or likely absence. Bat detectors utilized included Elekon Batlogger M detectors to record any bats emerging from or re-entering the building.

3.7.3 Infra-red video cameras were used to observe and records bats during the emergence survey in 2024 including Canon XA40 infrared cameras alongside a ZL-ZT T8X15-140 pair of InfraRed lamps (powerful infrared illuminators), recording at 3840x2160 (150 Mbps) and 25p video frame rate.

3.7.4 The emergence surveys commenced approximately 15 minutes before sunset and lasted until 1.5 hours after sunset.

3.7.5 Surveyors were located on each aspect of the building, focused on features identified during the preliminary roost assessment as being suitable for roosting bats. During the surveys, emergence and/or re-entry points were mapped, species were identified (where possible) and flight lines were noted.

3.8 Dormouse Surveys

3.8.1 Surveys for dormice (*Muscardinus avellanarius*) were undertaken in the woodland to the west and east of the site in 2023 based on techniques set out in the Dormouse Conservation Handbook (Bright *et al*, 2006) and Natural England Interim Guidance Document (Natural England, 2011³). Consideration was given to the index of probability of finding dormice present in nest tubes in any one month (based on 50 tubes deployed), as per Table 3.2. All the monthly scores for the period over which the tubes were surveyed were added together. A minimum score of 20 must be reached to determine presence/likely absence.

Table 3.2: Index of probability of finding dormouse within nest tubes

Month	Index of Probability
April	1
May	4
June	.2
July	2
August	5
September	7
October	2

3.8.2 On 5th April 2023, 64 dormouse tubes and five dormouse boxes were deployed, 31 nest tubes/boxes were deployed in the most suitable habitat i.e. within the woodland to the east and west of the site. The location of the nesting tubes/boxes are shown in Figure 3 in Appendix 2. The nest tubes/boxes were inspected for dormice and/or their characteristic nests once per month throughout May to September 2023. As detailed in Table 3.3 below.

³ Whilst this 2011 guidance has been superseded by more recent [government guidance](#) (2015), the survey techniques remain the same.

Table 3.3: *Date, staff and weather conditions during dormouse surveys*

Date	Surveyors	Weather Conditions
22/05/23	Anna Kogioni and Kat Hale	14°C, cloud 6/8 ⁴ , 4 Beaufort ⁵ , no rain
13/06/23	Emily Power and Jess Botha	17°C, cloud 2/8, 4 Beaufort, no rain
12/07/23	Emily Power	16°C, cloud 5/8, 5 Beaufort, occasional rain
17/08/23	Kat Hale	18°C, cloud 2/8, 4 Beaufort, no rain
25/09/23	Kat Hale	16°C, cloud 3/8, 4 Beaufort, no rain

3.9 Limitations/Constraints

- 3.9.1 The wildlife and wider ecological interest of a site can change. The report presented here is a statement of the findings of surveys carried out between November 2020 and September 2023. For the purpose of this report the results of site visits are discussed in the present tense. Any appreciable delay in making reference to this report or changes to the proposed development boundary may necessitate a re-survey.
- 3.9.2 The species information gained from local record centres is largely derived from data submitted from members of the public and volunteers. For this reason, it should be understood that the desk study may not provide an exhaustive list of all protected species that could occur in the local area.
- 3.9.3 Weather conditions were suitable to conduct the surveys.
- 3.9.4 One off-site pond (P1) and a wet ditch (D1) within 500m of the site were not accessible for assessment during the PEA.
- 3.9.5 As part of the newly completed residential development immediately south of the site, two ponds located 15m south and 138m southeast of the site were created in 2020. These ponds are within a new residential development which is bordered to the east, south and west by roads, and urban development associated with Riseley to the north. These ponds were not

⁴ Cloud cover is measured using the system called oktas. The visible sky is divided into eight and cloud presence is determined within each section. A value of one to eight is then assigned (1 okta being cloudless to 8 oktas being total cloud cover).

⁵ The Beaufort scale is an empirical measure from 0-12 which relates wind speed to observed conditions. 0- Calm, 1- Light air, 2- Light breeze, 3- Gentle breeze, 4- Moderate breeze, 5- Fresh breeze, 6- Strong breeze, 7- Moderate gale, 8- Fresh gale, 9- Strong gale, 10- Whole gale, 11- Storm, 12- Hurricane force.

surveyed for their potential to support great crested newts as they have limited connectivity to suitable offsite aquatic habitat from which great crested newts may have migrated from to colonise these new ponds in the short time since their creation. Additionally, the closest records of great crested newt returned from the data search were 1.9km north of these two ponds separated by existing urban development. Given the lack of connectivity and distance to the nearest records of great crested newt, it was considered that great crested newts were likely absent from these two ponds and that surveys were not required. As such, these are not referred to further in this report.

4 Results and Interpretation

4.1 Designated Sites

- 4.1.1 One internationally protected site was located within 7km of the site during the desk study.
- 4.1.2 The site is situated within Harts District Council immediately bordering Wokingham Borough Council therefore impacts within both authority areas have be considered.
- 4.1.3 The Habitat Regulations Assessment of the Wokingham Borough Core Strategy (WBC, 2010a) (incorporating Appropriate Assessments) identifies three internationally designated sites which should be considered for developments within 15km of Wokingham Borough. These sites are: the Thames Basin Heaths Special Protection Area (SPA); Thursley Ash, Pirbright and Chobham Special Area of Conservation (SAC); and Windsor Forest and Great Park SAC. Information on the location and reasons for designation of these sites is given in Table 1 below.
- 4.1.4 The Thames Basin Heaths SPA is a composite site that is located across the counties of Surrey, Hampshire and Berkshire in southern England. The SPA consists of tracts of open heathland, scrub and woodland, once almost continuous, but now fragmented into separate blocks by roads, urban development and farmland. Less open habitats of scrub, acidic woodland and conifer plantations dominate, within which are scattered areas of open heath and mire. Given the intense development pressure around this SPA, specific policy has been devised to ensure that impacts from development are fully understood and minimised or avoided as necessary to protect the integrity of the SPA.
- 4.1.5 The 8,311ha SPA supports important breeding populations of Annex I species Dartford warbler *Sylvia undata*, nightjar *Caprimulgus europaeus* and woodlark *Lullula arborea*.
- 4.1.6 For developments being brought forward within Harts District the key policy is NBE3 Thames Basin Heaths Special Protection Area (Harts District Council, 2020). This policy confirms that sites between 400m and 5km from the SPA boundary are classified as being within the SPA linear mitigation zone. Only the Thames Basin Heaths site is within 5km of the site.

Table 4.1: Internationally Designated Sites Identified as at risk of impact from development within or adjacent to Wokingham Borough (Wokingham Borough Council, 2010a)

Site name and International reference	Distance and Direction	Other designations of nearest point to Site and summary of condition	Size and Interest
Thames Basin Heaths Special Protection Area (SPA ⁶)	2.2km E	Broadmoor To Bagshot Woods & Heaths SSSI Unit 10. Favourable condition being primarily managed for commercial timber production with suitable habitat for breeding woodlark and nightjar (last assessed 2009).	8,311.07ha; Supports important breeding populations of Annex I species: • Dartford Warbler <i>Sylvia undata</i> • Nightjar <i>Caprimulgus europaeus</i> • Woodlark <i>Lullula arborea</i>. There are no annex I habitats present as a qualifying feature and no other annex II species present as a qualifying feature.
Thursley Ash, Pirbright and Chobham Special Areas of Conservation (SAC ⁷)	18.7km SE	Colony Bog and Bagshot Heath - Unit 1 Unfavourable recovering. Managed as a country park with areas of open, mainly dry heath and an area of damp grassland. Suitable habitat for breeding nightjar and Dartford warbler (last assessed 2010). Forms part of Thames Basin Heaths SPA.	5,154.96ha; Annex I habitats that are a primary reason for designation: • Northern Atlantic wet heaths with <i>Erica tetralix</i> • European dry heaths • Depressions on peat substrates of the Rhynchosporion There are no other annex I habitats present as a qualifying feature and no annex II species present as a qualifying feature.
Windsor Forest and Great Park SAC ³	23.0km NW	Windsor Forest And Great Park - Unit 5 Unfavourable recovering. Broadleaved, mixed and yew woodland – unit being restored to open, broadleaved woodland from dense woodland with high cover of conifers and other exotics. Key feature of interest is the frequent occurrence of veteran trees scattered through the woodland (last assessed 2009).	1,685.67ha; Annex I habitats that are a primary reason for designation: • Old acidophilous oak woods with <i>Quercus robur</i> on sandy plains Annex I habitats present as a qualifying feature, but not a primary reason for selection of this SAC: • Atlantic acidophilous beech forests with <i>Ilex</i> and sometimes also <i>Taxus</i> in the shrub layer (<i>Quercion robori-petraeae</i> or <i>Ilici-Fagenion</i>) Annex II species that are a primary reason for designation: • Violet click beetle (<i>Limoniscus violaceus</i>)

⁶ Special Protection Areas (SPAs) are strictly protected sites classified in accordance with Article 4 of the EC Birds Directive (79/409/EEC), which came into force in April 1979. They are classified for rare and vulnerable birds (as listed on Annex I of the Directive), and for regularly occurring migratory species

⁷ Special Areas of Conservation (SACs) are strictly protected sites designated under the EC Habitats Directive. Article 3 of the Habitats Directive requires the establishment of a European network of important high-quality conservation sites that will make a significant contribution to conserving the 189 habitat types and 788 species identified in Annexes I and II of the Directive (as amended). The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds).

4.1.7 Two nationally notified sites were located within 5km of the site boundary and five non-statutory designated sites within 2km of the site, as detailed in Table 2.

Table 4.2: *Statutory notified sites within 5km and non-statutory designated sites within 2km of the site*

Site name & reference	Distance & direction	Size and interest
Stanford End Mill and River Loddon SSSI (1000474)	1.4km NW	11.8ha notified for lowland neutral grassland and notable plant species including snake's-head fritillary (<i>Fritillaria meleagris</i>) and Loddon pondweed (<i>Potamogeton nodosus</i>).
Hazeley Heath SSSI (1000635)	3.9km SE	180.8ha which is notified for lowland dry heath.
Coldharbour Wood SINC ⁸ (HA0025)	0.2km W	2.15ha including ancient semi-natural woodland.
St. Leger's Copse, Collin's Copse LWS ⁹ (SU76B05)	0.3km NW	14.88ha incorporating ancient woodland with areas of planted conifer (<i>Pinophyta</i> sp.) and oak (<i>Quercus</i> sp.).
New Inn Copse, Heckfield SINC (HA0024)	0.4km SW	2.31ha which includes ancient semi-natural woodland.
Birchen Copse & Mill Wood SINC (HA0053)	0.6km SE	34.77ha designated for ancient semi-natural woodland.
Wellington Country Park Lakes SINC (HA0054)	0.6km E	26.60ha designated for unimproved grassland and wetland habitats which support thread-leaved water-crowfoot (<i>Ranunculus trichophyllus</i>), blunt-leaved pondweed (<i>Potamogeton obtusifolius</i>), lesser pondweed (<i>Potamogeton pusillus</i>) and six-stamened waterwort (<i>Elatine hexandra</i>).
Highgrove Copse LWS (SU76B04)	0.9km NW	5.27ha including hazel (<i>Corylus avellana</i>) and oak (<i>Quercus</i> sp.) woodland with an area of wet woodland.
South of Birchen Copse SINC (HA0046)	1.1km SE	4.29ha designated for unimproved grassland and supporting tawny sedge (<i>Carex hostiana</i>).
The Marshes LWS (SU76G01)	1.2km E	0.24ha with wet woodland and grazed grassland.
The Plantation, Heckfield SINC (HA0017)	1.4km SW	37.24ha designated for supporting hobby (<i>Falco subbuteo</i>)

⁸ SINC = Site of Importance for Nature Conservation

⁹ LWS = Local Wildlife Site

Site name & reference	Distance & direction	Size and interest
River Loddon & Lower Mill Fen SINC (BD0662)	1.5km W	31.16ha designated for semi-improved woodland and wetland areas which support brown trout (<i>Salmo trutta</i> subsp. <i>fario</i>).
Stratfield Saye Lake SINC (BD0745)	1.5km W	13.46ha designated for supporting gadwall (<i>Anas strepera</i>)
River Whitewater SINC (HA0060)	1.6km E	12.52ha noted for its wetland habitats.
Loddon Valley (South) BOA ¹⁰	1.6km N	Includes areas of lowland meadow, wet woodland, parkland and lowland mixed deciduous woodland.
Wiggins Copse & Heckfield Place Park (East) SINC (HA0057)	1.9km SE	19.94ha noted for ancient woodland and unimproved grassland habitats which support opposite-leaved pondweed (<i>Groenlandia densa</i>), trailing tormentil (<i>Potentilla anglica</i>), toothwort (<i>Lathraea squamaria</i>), lily-of-the-valley (<i>Convallaria majalis</i>) and royal fern (<i>Osmunda regalis</i>).
Wood and Ditch/Moat LWS (SU76C07)	2.0km NW	1.52ha of semi-natural woodland surrounded by a moat.

Conclusion

- 4.1.8 Given the site is within 0.4-5km of the Thames Basin Heaths SPA proponents are required to consult with Natural England on any proposal for one or more dwellings (net). A tariff will need to be paid to mitigate for potential impacts of the development.
- 4.1.9 The closest statutory site, Stanford End Mill and River Loddon SSSI, is located 1.4km north west of the site and is designated for its lowland neutral grassland and which supports notable plant species. The closest of the non-statutory sites, Coldharbour Wood SINC, is located 0.2km west of the site and is noted for woodland habitat including areas of ancient woodland.
- 4.1.10 Natural England defines Impact Risk Zones (IRZs) around SSSI's and categories of development for local authorities to determine if they need to consult Natural England in regard to potential impacts upon them. The IRZ which the site lies within is considered to apply to the category of planning application proposed at the site and as such, the potential for impacts on the SSSIs should be considered.
- 4.1.11 It is considered that the notable features of these sites will not be impacted by the proposed change of use due to the relatively small scale and nature of the proposals along with the

¹⁰ BOA = Biodiversity Opportunity Area

distance from the designated sites. In terms of the potential for increased recreation it is considered that, due to closer alternatives within the vicinity and the small scale of the proposals, there will be no negative impact on the notable features of Stanford End Mill and River Loddon SSSI.

4.2 Habitats

4.2.1 At the time of the survey (November 2020), the following habitats were recorded on site. The update survey undertaken on 22nd March 2023 recorded no changes to the site condition. Recorded habitats are described in Table 3 below; Photographs are included in Appendix 1 and a baseline habitat map is included in Appendix 2.

Table 4.3: *Habitat types identified during the UKHab survey*

Habitat type	Description
Other woodland; broadleaved (w1g)	The east of the site supports a small strip of semi-natural broadleaved woodland, including frequent pedunculate oak (<i>Quercus robur</i>) with an understorey of holly (<i>Ilex aquifolium</i>), which forms the edge of a larger area of woodland further east. The woodland has occasional sycamore (<i>Acer pseudoplatanus</i>), ash (<i>Fraxinus excelsior</i>), hazel (<i>Corylus avellana</i>), honeysuckle (<i>Lonicera periclymenum</i>) willow (<i>Salix</i> sp.), common beech (<i>Fagus sylvatica</i>), leylandii (<i>Cupressus × leylandii</i>), ivy (<i>Hedera helix</i>), elder (<i>Sambucus nigra</i>), bramble (<i>Rubus fruticosus</i> agg.), privet (<i>Ligustrum</i> sp.) and common hawthorn (<i>Crataegus monogyna</i>). Ground flora includes honesty (<i>Lunaria annua</i>), common nettle (<i>Urtica dioica</i>), herb Robert (<i>Geranium robertianum</i>), cow parsley (<i>Anthriscus sylvestris</i>), wood sedge (<i>Carex sylvatica</i>) broadleaved dock (<i>Rumex obtusifolius</i>) and forget-me-not (<i>Myosotis</i> sp.).
Modified grassland (g4)	In the centre and to the west of the site is an area of lawn with fairly patchy grassland which includes dandelion (<i>Taraxacum officinale</i> agg.), selfheal (<i>Prunella vulgaris</i>), perennial rye-grass (<i>Lolium perenne</i>), fescue (<i>Festuca</i> sp.), common daisy (<i>Bellis perennis</i>), common cat's-ear (<i>Hypochaeris radicata</i>). The grass has a sward height of approximately 2cm or less.
Scattered trees	Within the area of modified grassland are scattered broadleaved and coniferous trees including leylandii, silver birch (<i>Betula pendula</i>) and yew (<i>Taxus baccata</i>) with DBHs ¹¹ of approximately 10cm to 30cm.
Other standing water and canal; ditch (r1g(50))	In the north of the site is a small, shallow, wet ditch which runs along the boundary. The ditch is approximately 60cm across and between 3cm to 6cm deep. There is little aquatic vegetation within the ditch.
Arable and horticulture, (c1)	In the northwest of the site is a small area of disturbed ground containing vegetation indicative of a herb garden / vegetable patch. Within this area is frequent raspberry (<i>Rubus idaeus</i>) with occasional rosemary (<i>Salvia rosmarinus</i>), sage (<i>Salvia officinalis</i>), spurge (<i>Euphorbia</i> sp.), iris (<i>Iridaceae</i> sp.), allium (<i>Allium</i> sp.) and herb Robert.

¹¹ DBH = Diameter at Breast Height

Habitat type	Description
Bare ground (s510)	In the north of the site and adjacent to the wet ditch is an area of bare ground, of which vegetation cover is limited to small patches of holly (<i>Ilex aquifolium</i>).
Buildings (u1b5)	There is a large outbuilding (B1) within the east of the site which is currently in use for storage. The walls are constructed from single skin concrete blocks and breeze blocks with some wooden cladding on the south elevation. There is a pitched corrugated asbestos type roof over the main structure with a pitched felt roof on the southern section. On the west elevation is a lean-to constructed from a timber frame with single skin corrugated Perspex and breeze block walls with a sloping corrugated Perspex and corrugated asbestos type roof. The north of the structure is partly overgrown with ivy and there are cotoneaster and pyracantha plants growing up the western elevation. There are a couple of holes in the corrugated Perspex and a gap under the corrugated asbestos roof on the west and east elevations of the building. The north elevation has a slightly raised barge board with is highly cobwebbed and cluttered with vegetation. Internally in the main structure there is a suspended ceiling with fiberglass type insulation above. Within the lean-to structure there is no lining under the Perspex roof. No bats or evidence of bats was recorded during the inspection of the building. The building was assessed as having low potential to support roosting bats.
Hardstanding (u1b)	There are a number of paved areas and pathways in the west of the site around the amenity lawn.

Target Notes

- 4.2.2 During the survey, a target note denoting a log pile (TN1) within the woodland in the east of the site was recorded.

Habitat Summary

- 4.2.3 The deciduous woodland within the site meets the criteria as a habitat of principal importance (HPI) (Maddock, 2011), therefore making it a material consideration in the planning process. The remainder of the site is largely amenity in nature and of lower value in terms of biodiversity and value to local wildlife.

Conclusion

- 4.2.4 According to the proposed plans, the area of broadleaved woodland, scattered trees, modified grassland, bare ground, arable and horticulture, ditch and hardstanding will be removed to facilitate the construction of the new dwelling and create access.
- 4.2.5 The habitats are considered to be of value at Parish/Neighbourhood level as they are relatively common and widespread, includes HPI and have an intrinsic value to local wildlife, see Appendix 5.

4.3 Species

4.3.1 The results of the PEA and desk study are presented together in Table 4 below. Relevant legislation and policy is referred to as appropriate.

4.3.2 One wet ditch is located within the north of the site, with no further watercourses within 500m of the site. The ditch is considered unsuitable for white-clawed crayfish (*Austropotamobius pallipes*), otter (*Lutra lutra*) and water vole (*Arvicola amphibius*), therefore they are considered unlikely to be affected by the proposals. As such, they are not discussed further within this report.

Table 4.4: Presence of or potential for protected / notable / invasive species within the site and local area

Species	Protection or Status *	Presence/potential at the site
Bats	EPS ¹² . Some species are also SPIs ¹³ . W&CA 1981 ¹⁴ Sch5 ¹⁵	TVERC and HBIC returned 101 records of at least five bat species within 2km of the site including serotine (<i>Eptesicus serotinus</i>), noctule (<i>Nyctalus noctula</i>), common pipistrelle (<i>Pipistrellus pipistrellus</i>), soprano pipistrelle (<i>Pipistrellus pygmaeus</i>) and brown long-eared (<i>Plecotus auritus</i>) bats. Surveys of the area to the south of the site also recorded one barbastelle bat (<i>Barbastella barbastellus</i>) pass during bat activity surveys. The site is situated within the core sustenance zones¹⁶ of all bat species recorded in the desk study and individuals are likely to forage around the site. Building B1 is assessed as having low potential to support roosting bats. See <i>Dusk Emergence Survey</i> below (section 4.3.7). Of the trees identified for removal, T1 to T3, all were assessed as having negligible potential to support roosting bats. The woodland on site is likely to support foraging and commuting bats. Potential adverse impacts possible, further consideration required.
Dormouse (<i>Muscardinus avellanarius</i>)	EPS. SPI. W&CA 1981 Sch5	No records of the species were returned within the desk study however, surveys of the area to the south of the site in 2014 and 2015 recorded a dormouse nest 100m west on the edge of the adjacent woodland and a further dormouse nest 150m to the south west of the site boundary. The woodland on site is considered suitable for dormouse and a likely dormouse nest was located in a dormouse nest box within the adjacent

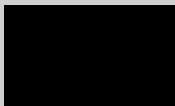
¹² European Protected Species under the provisions of the Conservation of Habitats and Species Regulations 2017 (as amended)

¹³ Species of Principal Importance under Section 41 of the NERC Act 2006

¹⁴ Wildlife and Countryside Act 1981 (as amended)

¹⁵ Schedule 5 Animals which are Protected (W&CA 1981)

¹⁶ Core sustenance zone refers to the area surrounding a communal bat roost within which habitat availability and quality have a significant influence on the resilience and conservation status of the colony using the roost. See Appendix 7.

Species	Protection or Status *	Presence/potential at the site
		woodland to the east of the site in November 2020. See <i>Dormouse Assessment</i> below. Potential adverse impacts possible, further consideration required.
Great crested newt (<i>Triturus cristatus</i>)	EPS. SPI. W&CA 1981 Sch5	Four records of the species were located within 2km of the site in the desk study dating from 2014 to 2015. Waterbodies within 500m of the site include a pond (P1) 390m northeast and a ditch (D1) 255m east (see Figure 2). These waterbodies could provide suitable breeding habitat while the woodland on site provides suitable terrestrial habitat for great crested newts. Potential adverse impacts possible, further consideration required.
	Protection of  Act 1992.	Twenty records of badger were located within 2km of the site during the desk study dating from 1995 to 2018. The closest record is located approximately 250m south west of the site. No evidence of  such as runs, setts or latrines were recorded during the survey. No potential adverse impacts likely.
Nesting birds	W&CA 1981 Sch1 ¹⁷ / Sch5	1,093 records of 64 bird species were returned in the desk study, comprising a mix of species typical of arable, wetland and woodland habitat. There are opportunities for foraging and nesting birds within the site. Nesting opportunities include the woodland within the site. Potential adverse impacts possible, further consideration required.
Western European hedgehog (<i>Erinaceus europaeus</i>)	SPI	One record of the species was located in the desk study. There is suitable habitat for resting and foraging hedgehog on site in the form of woodland, grassland and wood piles (TN1). Potential adverse impacts possible, further consideration required.
Common toad (<i>Bufo bufo</i>)	SPI	No records of the species were returned in the desk study. The habitats on site may be used by foraging and resting individuals. P1 and D1 provide suitable aquatic habitat for common toad within 500m of the site. Potential adverse impacts possible, further consideration required.
Invertebrates	SPIs	80 records of 22 protected or notable invertebrate species were returned in the desk study. There are opportunities for stag beetle (<i>Lucanus cervus</i>), beaded chestnut (<i>Agrochola lychnidis</i>) and white ermine (<i>Spilosoma lubricipeda</i>). The log pile (TN1) within the woodland may provide limited habitat within the site, however more suitable habitat is likely located within the adjacent woodland habitats. Potential adverse impacts possible, further consideration required.

¹⁷ Schedule 1 Birds which are Protected by Special Penalties (W&CA 1981)

Species	Protection or Status *	Presence/potential at the site
Reptiles	W&CA 1981 Sch5	One reptile record, a grass snake (<i>Natrix helvetica</i>), was returned within the desk study dating from 2010 and located 1.5km north west of the site boundary. The habitat on site is considered suboptimal due to the highly managed nature of the grassland and the dense shade of the woodland therefore the risk of encountering a reptile is considered to be low. No potential adverse impacts likely.
Brown Hare (<i>Lepus europaeus</i>)	SPI	Five records of the species were returned in the desk study dating from 2006 to 2014. The habitat on site is considered unsuitable for brown hare and it is considered that the species is likely absent from the site. No potential adverse impacts likely.
Protected plants	W&CA 1981 Sch8 ¹⁸ . SPIs	Five records of bluebell (<i>Hyacinthoides non-scripta</i>) were returned within the desk study, however none were identified within the site. No potential adverse impacts likely.
Invasive species	W&CA 1981 Sch9 ¹⁹	53 records of nine invasive plant species, were returned within the desk study including giant hogweed (<i>Heracleum mantegazzianum</i>) and Indian balsam (<i>Impatiens glandulifera</i>). During the survey, three-cornered garlic (<i>Allium triquetrum</i>) and cotoneaster (<i>Cotoneaster</i> sp.) were recorded within the site. Cotoneaster is a difficult plant group in terms of identification within excess of one hundred species being naturalised in Britain. The fruits produced by the genus are eaten by birds which spread the seeds into the wild. Identification to species is only possible by examination of the seeds. Five Cotoneaster species are listed on Schedule 9. It is not possible to confirm which species is present on the site so as a precautionary measure we suggest that the plant is treated as a Schedule 9 species in terms of control. 512 records of sixteen invasive animal species were returned within the desk study including grey squirrel (<i>Montiacus reevesi</i>) and muntjac (<i>Sciurus carolinensis</i>) none of which could occur within the site. Potential adverse impacts possible, further consideration required.

¹⁸ Schedule 8 Plants which are Protected (W&CA 1981)

¹⁹ Schedule 9 Animals and Plants to which Section 14 Applies (W&CA 1981)

Bat Assessment

Preliminary Ground Level Tree Roost Assessment

- 4.3.3 Preliminary ground level tree roost assessments were completed in November 2020 and updated in March 2023 for all trees within the site boundary. All of the trees identified within the site boundary were concluded to have negligible potential to support roosting bats.

Preliminary Roost Assessment

- 4.3.4 There is a large outbuilding (B1) immediately west of the site boundary which is currently in use for storage. The building was initially considered for demolition therefore surveys were completed to assess its potential to support roosting bats. The walls are constructed from single skin concrete blocks and breeze blocks with some wooden cladding on the south elevation. There is a pitched corrugated asbestos type roof over the main structure with a pitched felt roof on the southern section. On the west elevation is a lean-to constructed from a timber frame with single skin corrugated Perspex and breeze block walls with a sloping corrugated Perspex and corrugated asbestos type roof. The north of the structure is partly overgrown with ivy and there are cotoneaster and pyracantha plants growing up the western elevation. There are a couple of holes in the corrugated Perspex and a gap under the corrugated asbestos roof on the west and east elevations of the building. The north elevation has a slightly raised barge board with is highly cobwebbed and cluttered with vegetation. Internally in the main structure there is a suspended ceiling with fiberglass type insulation above. Within the lean-to structure there is no lining under the Perspex roof. No bats or evidence of bats was recorded during the inspection of the building. The building was assessed as having low potential to support roosting bats.

Dusk Emergence Surveys

- 4.3.5 The survey timings and weather conditions for the dusk emergence surveys of building B1 are detailed in Table 4.5 below.

Table 4.5: Survey weather conditions

Date	Sunset/ Sunrise	Start	End	Weather
08/06/21	21:18	21:03	22:48	18°C to 15°C, Cloud 1/8 ²⁰ , 2 Beaufort ²¹
08/08/24	20:38	20:23	22:08	18°C to 19°C, Cloud 8/8, 4 Beaufort

Dusk Emergence Survey 8th June 2021

- 4.3.6 No bats were recorded emerging from or returning to building B1 during the survey.
- 4.3.7 Relatively high levels of bat activity were recorded starting at 21:36 and continuing to the end of the survey at 22:47. Continuous common pipistrelle (*Pipistrellus pipistrellus*) activity was recorded from 21:38 until 22:30, including bats observed forging within the woodland and commuting through the site. Sixteen soprano pipistrelle (*Pipistrellus pygmaeus*) bat passes were recorded between 21:36 and 22:26 along with ten myotis species (*Myotis* sp.) of bat from 21:55 to 22:47, four brown long-eared bats (*Plecotus auritus*) from 22:05 to 22:37 and one barbastelle bat (*Barbastella barbastellus*) pass at 22:26.

Dusk Emergence Survey 8th August 2024

- 4.3.8 No bats were recorded emerging from or returning to building B1 during the survey.
- 4.3.9 Bat activity started with occasional soprano pipistrelle passes from around 20:28 until 20:36. Moderately high levels of foraging activity by common pipistrelle were recorded from 20:39 until 21:12. A single *Myotis* sp pass was recorded at around 21:20. Two further soprano pipistrelle passes were noted and confirmed between 21:41 and 21:42. A distant noctule (*Nyctalus noctula*) call was recorded at 21:43.

Dormouse Assessment

- 4.3.10 No records of hazel dormouse were located within 2km of the site during the desk study. Surveys of the land immediately to the south of the site were completed by Aspect Ecology in 2014 and 2015 in relation to a separate planning application during which evidence of dormouse, in the form of two nests, were located (Aspect Ecology, 2016).

²⁰ Cloud cover is measured using the system called oktas. The visible sky is divided into eight and cloud presence is determined within each section. A value of one to eight is then assigned (1 okta being cloudless to 8 oktas being total cloud cover).

²¹ The Beaufort scale is an empirical measure from 0-12 which relates wind speed to observed conditions. 0- Calm, 1- Light air, 2- Light breeze, 3- Gentle breeze, 4- Moderate breeze, 5- Fresh breeze, 6- Strong breeze, 7- Moderate gale, 8- Fresh gale, 9- Strong gale, 10- Whole gale, 11- Storm, 12- Hurricane force.

4.3.11 During the PEA of Dukes Field Cottage completed by Ecology by Design in November 2020, two existing dormouse boxes were located in the woodland to the east of the site and one further dormouse box was located in the woodland to the west. The boxes were checked during the PEA and one of the dormouse boxes was found to contain nesting material comprising a woven ball of dead leaves and grass which is considered likely to have been created by hazel dormouse.

4.3.12 It is considered that, should the woodland have historically supported dormice, the residential development immediately to the south of the site is likely to have impacted the population through increased levels of anthropogenic disturbance and increased predation by cats. Therefore, dormouse may no longer be present within the site.

Presence / Likely Absence Surveys

4.3.13 Due to the time elapsed and changing conditions resulting from the new development to the south, update surveys were deemed necessary and were completed between May and September 2023. During the update surveys, no evidence of dormouse was located. Nesting birds were recorded using several of the dormouse boxes.

Great Crested Newt Assessment

4.3.14 There are four ponds and a ditch located within 500m of the site, see Figure 2 in Appendix 2. There is suitable terrestrial habitat within the site to support great crested newts in the form of woodland. Following the initial habitat survey, it was recommended that eDNA surveys were undertaken of the pond (P1) and ditch (D1) within 250m of the site boundary. The other two ponds (P2 and P3) had not been created by this time. The landowners were contacted in April 2021 to request permission to access the pond and ditch and undertake the surveys, however no response was received and therefore eDNA surveys could not be completed. Pond P4 is located 495m from the site boundary.

4.3.15 A search of MAGIC returned no records of European Protected Species Licences for great crested newts or records of great crested newts within 1km of the site boundary. Data from TVERC and HBIC included four records of the species within 2km of the site dating from 2014 to 2015, the closest of which is located at least 1.9km from the site boundary.

4.3.16 If the closest waterbody (P1) is assumed to support great crested newts, Natural England's Rapid Risk Assessment Tool indicates that the risk involved in loss of suitable habitat of this scale is considered as 'offence highly unlikely', see Table 4.6.

Table 4.6: Natural England – Rapid Risk Assessment

Component	Likely effect (select one for each component; select the most harmful option if more than one is likely; lists are in order of harm, top to bottom)	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	No effect	0
Land >250m from any breeding pond(s)	0.01 - 0.1 ha lost or damaged	0.001
Individual great crested newts	No effect	0
	Maximum:	0.001
Rapid risk assessment result:	GREEN: OFFENCE HIGHLY UNLIKELY	

- 4.3.17 It is therefore concluded that great crested newts are likely absent from the site and that there will be no negative impact on the favourable conservation status of the species as a result of the proposals.

Conclusion

- 4.3.18 The woodland habitats are suitable for commuting and foraging bats.
- 4.3.19 There is historic evidence of dormice within or adjacent to the site and the woodland provides suitable habitat, although it is suboptimal due to the limited size and poor connectivity. The development to the south of the site may have impacted any local dormouse population and no recent evidence for the presence of dormouse has been recorded within the site boundary.
- 4.3.20 The woodland habitat within the site provides opportunities for nesting birds.
- 4.3.21 Invasive plant species three-cornered garlic and cotoneaster were located within the site during the PEA.
- 4.3.22 The site is considered to be of District/Borough importance to species (see Appendix 6).

4.4 Biodiversity

- 4.4.1 The site includes the edge of an area of woodland, a ditch, a building and areas of garden including grassland and planting. The site has baseline biodiversity value of 0.12 habitat units and 0.07 watercourse units. There are no hedges within the site. The proposals include creation of a house and garden and will result in a decrease in habitat biodiversity units of -0.07 habitat units, equivalent to a decrease of -58.24% and an increase in watercourse units of 0.02 habitat units, equivalent to an increase of +33.77%. The metric also shows that trading rules have not been met in relation to habitats resulting from the loss of higher distinctiveness habitats including Other Broadleaved Woodland and an Individual (Rural) Tree. See summary in Table 4.7 below.

Table 4.7: Statutory Biodiversity Metric Summary

On-site baseline	<i>Habitat units</i>	0.12
	<i>Hedgerow units</i>	0.00
	<i>Watercourse units</i>	0.07
On-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	0.05
	<i>Hedgerow units</i>	0.00
	<i>Watercourse units</i>	0.09
On-site net change (units & percentage)	<i>Habitat units</i>	-0.07
	<i>Hedgerow units</i>	0.00
	<i>Watercourse units</i>	0.02
Off-site baseline	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>Watercourse units</i>	0.00
Off-site post-intervention (Including habitat retention, creation & enhancement)	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>Watercourse units</i>	0.00
Off-site net change (units & percentage)	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>Watercourse units</i>	0.00
Combined net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	-0.07
	<i>Hedgerow units</i>	0.00
	<i>Watercourse units</i>	0.02
Spatial risk multiplier (SRM) deductions	<i>Habitat units</i>	0.00
	<i>Hedgerow units</i>	0.00
	<i>Watercourse units</i>	0.00
FINAL RESULTS		
Total net unit change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	-0.07
	<i>Hedgerow units</i>	0.00
	<i>Watercourse units</i>	0.02
Total net % change (Including all on-site & off-site habitat retention, creation & enhancement)	<i>Habitat units</i>	-58.24%
	<i>Hedgerow units</i>	0.00%
	<i>Watercourse units</i>	33.77%
Trading rules satisfied?	No - Check Trading Summaries ▲	

5 Potential Impacts and Recommendations

5.1 Introduction

5.1.1 This section presents the potential impacts and subsequent recommendations for the proposed development at the site. Further detailed mitigation strategies or method statements, as required, can be secured through suitably worded planning conditions, Section 106 agreements or similar frameworks in accordance with best practice guidelines (BSI Standards Limited, 2013).

Exclusions from Further Assessment

5.1.2 Species/groups and other ecological features for which potential impacts are not considered likely to occur as a result of the proposals are outlined alongside justification in Table 4.4 above; these are excluded from further assessment. The following sections focus on those ecological features likely to be significantly impacted (adverse or beneficial impacts) only.

Adoption of the Mitigation Hierarchy

5.1.3 In accordance with the National Planning Policy Framework (NPPF) (see Section 6) and British Standard 42020:2013 'Code of Practice for Planning and Development' (BSI Standards Limited, 2013), the 'Mitigation Hierarchy' has been adopted at the site with regards to the potential ecological impacts of the proposals. The mitigation hierarchy outlines a stepwise process as follows:

- **Avoidance** – as a first option, adverse impacts should be avoided through good design, such as retaining and safeguarding important ecological features wherever practicable;
- **Mitigation** – where unavoidable, adverse impacts should be reduced as much as possible, such as reducing land-take of important habitats;
- **Compensation** – where residual effects remain, compensation should be secured to offset adverse impacts, such as through compensatory habitats creation; and
- **Enhancement** – opportunities for net gains in biodiversity should be explored and included wherever appropriate.

5.2 Designated sites

5.2.1 The "zone of influence" for the Thames Basin Heaths is set between 400m and 5km linear distance from the SPA boundary. Where net new residential development is proposed within the zone of influence, avoidance measures must be delivered prior to occupation of new dwellings and provided in perpetuity. Measures must be based on a combination of Strategic Access Management and Monitoring (SAMM) and the provision and/or improvement and/or

maintenance of Suitable Alternative Natural Greenspace (SANG). Alternative greenspace, in the form of Wellesley Water Meadow, is located approximately 1.4km to the south east of the site.

- 5.2.2 Given the small scale of the development (one additional residential unit), the client does not propose to provide their own bespoke SANG. They will pay a tariff to secure SANG mitigation from the Council's strategic SANGs (subject to available capacity). Money collected through the SANG tariff will be ring-fenced for the delivery, maintenance and management of SANGs. The SAMM tariff will be collected through a s106 agreement.

5.3 Habitats

Potential Impacts

- 5.3.1 The proposal will result in the loss of scattered trees, modified grassland, bare ground, arable and horticulture, ditch, hardstanding and a small area of broadleaved woodland, which is a HPI. The loss of this habitat is likely to result in a net loss in biodiversity if appropriate mitigation and habitat enhancement/creation are not incorporated within the landscaping plan for the site. The proposals for the site are at an early stage in terms of design therefore the proposed landscaping for the has yet to be defined.

Recommendation R1: Biodiversity offsetting should be used to compensate for the loss of biodiversity on site by investing in a biodiversity offsetting scheme. It is recommended that an offsetting provider is engaged to provide offsite biodiversity offsetting, primarily of woodland habitat, through a recognised scheme which the client can invest in to ensure net gains for biodiversity. This should be conditioned and the Biodiversity Offsetting provider and the precise specification for offsetting secured through a section 106 agreement.

- 5.3.2 To achieve a 10% net gain in biodiversity, 0.08 habitat units would be required. In line with guidance for loss of high distinctiveness habitat, "*losses must be replaced with area units of the same habitat type*" (DEFRA, 2023b) therefore the offsetting for habitat units should include creation of lowland mixed deciduous woodland.

5.4 Protected Species

- 5.4.1 Species for which potential impacts are not considered likely to occur as a result of the proposed development are outlined alongside justification in Table 4.4 above; these are excluded from further assessment. The following sections focus on those ecological features likely to be significantly affected (adverse or beneficial) only.

Bats

- 5.4.2 The site provides some foraging and commuting opportunities for bats with at least five species of bat recorded within the site during the survey. Increased levels of artificial light can cause disturbance to bats. Though several bat species can take advantage of artificial lighting systems for foraging, feeding off the insects they attract, other species avoid them as foraging within an illuminated area increases the risk of predation by nocturnal birds of prey or even domestic cats. If lighting is intensive and widespread, particularly lighting from lamps, which emit UV light (such as mercury vapour); it can deter some bats from utilising the site and in some instances can act as a barrier across commuting lines. Research has also shown that certain types of artificial lighting have been proven to disturb the emergence patterns of bats when they are placed within the vicinity of entrances to a bat roost.

Recommendation R2: Any lighting for the development will be designed sensitively in accordance with industry standard guidance (BCT & ILP, 2023) and the following principles will be adopted:

- Maintaining dark corridors along the site boundaries;
- Not illuminating retained trees and woodland on site or adjacent to the site;
- Where lighting is required, ensuring:
- Light levels are less than 3 Lux;
 - LED luminaires with a warm white spectrum ideally <2700 Kelvin (to avoid blue / UV elements);
 - Bollard or low-level downward directional luminaires are used and mounted on the horizontal (with no upward tilt); and
 - Security lighting, if required, is motion-activated with short (1 minute) timers.

Hazel Dormouse

- 5.4.3 It is considered that dormice were historically present within the site however, due to changes within the local area dormouse may no longer be present within the site. It is considered that, due to the size of the site and quality of the woodland within and adjacent to the site alongside the results of the dormouse survey, the site is likely to have historically supported a relatively small population of dormouse (Bright *et al.*, 2006).

- 5.4.4 **Recommendation R3:** A precautionary approach will be adopted given the historic records. This approach will entail:

- Enhancing the southern boundary of the site with hedge planting to provide habitat connectivity for dormice between parcels of woodland and provided foraging opportunities. Hedging will include a mix of native species such as hazel, hawthorn, honeysuckle, hornbeam (*Carpinus betulus*), elder, wayfaring tree (*Viburnum lantana*), blackthorn (*Prunus spinosa*), dogwood (*Cornus sanguinea*), yew and/or field maple (*Acer campestre*).
- Vegetation clearance will be immediately preceded by a check by a suitably experienced ecologist and clearance will be completed under ecological supervision.

Nesting Birds

The trees to be removed as part of the proposals could support several nesting bird species. Clearance could therefore result in the destruction of active bird nests.

Recommendation R4: Any birds' nests are protected whilst in use. If any active birds' nests are found prior to the works within any vegetation to be affected, then these must be left alone until they cease to be in use. Ideally, works to suitable nesting habitat/features should be scheduled to avoid the bird nesting season (March to August inclusive). Should such works take place during March-August inclusive, they must be immediately preceded by a check for any active nests by a suitably qualified ecologist. Any active nests identified during works (regardless of time of year) would need to be protected and left with a suitable buffer (to be defined by the ecologist) until the nest is no longer active.

Invasive Species

- 5.4.5 Invasive non-native three-cornered garlic and cotoneaster were recorded within the site. Inappropriate site management practices could lead to the spread of these species into the wild.
- 5.4.6 **Recommendation R5:** It is recommended that three-cornered garlic and cotoneaster are dug out, best done in early spring when plants are most visible, and all bulbs and associated soil should be disposed of as controlled waste. No Schedule 9 plants should be included within any proposed landscaping for the site.

5.5 Other species

Potential Impacts

- 5.5.1 There is suitable habitat for hedgehogs, common toad and stag beetle within the site. These species could be killed or injured during site clearance or construction.
- 5.5.2 **Recommendation R6:** Detailed proposals should include measures to safeguard wild animals should they enter the site during construction works, and to discourage wild animals from

entering the site. This can be achieved by implementing the following standard mitigation measures:

- the creation of temporary brash or log piles within the site should be avoided as these may be adopted by wild animals for shelter;
- any log piles should be carefully dismantled by hand to avoid disturbing any animals which may be taking refuge;
- any newly discovered mammal entrances within the site should be safeguarded and left in-situ until reported to a suitably qualified ecologist, who will advise on appropriate steps if needed for works to resume;
- trenches or pits left overnight should be provided with a means of escape for wild animals should they enter such as a collapsed edge or a flat roughened stable plank (no steeper than 45°) acting as a ramp to the surface;
- pipes should be capped off overnight to prevent animals entering and becoming trapped;
- all trenches, pits and open pipes will be inspected each morning to ensure no wild animals have become trapped overnight. Should a badger become trapped in a trench it will likely dig itself into the side of the trench. Should a trapped badger be encountered, a suitably qualified ecologist should be contacted immediately for further advice;
- the prolonged storage of uncontained and uncovered topsoil in piles on site should be carefully considered and possibly fenced-off if needed as these are readily adopted by burrowing animals such as foxes (*Vulpes vulpes*) for dens;
- chemicals should be contained in such a way that wild animals cannot access or knock them over;
- fires should be avoided altogether within the site; and
- loose litter and food should not be left in accessible areas of the site overnight.

5.6 Biodiversity Statement

- 5.6.1 It has been identified that the proposed development is not exempt from the Biodiversity Net Gain (BNG) requirements of 10%, therefore a BNG assessment has been completed to identify the biodiversity losses and gains as a result of the proposals. Appendix 3 includes the baseline

habitat condition assessment tables and the Statutory Biodiversity Metric has been submitted alongside the application.

- 5.6.2 The metric identifies that the proposals will result in less than 10% gain and the trading rules are not satisfied. Given the context, size and location of the site, financial contribution to a biodiversity offsetting scheme would be the most appropriate mechanism to achieving a net gain in biodiversity as a result of the proposals. Since the baseline biodiversity value of the site is measured as 0.12 habitat units, and the post development value of the site is measured as 0.05 habitat units, a biodiversity offset of 0.08 habitat units would be required to achieve a 10% net gain.

5.7 Ecological Enhancements

- 5.7.1 In line with planning policy, which requires developments to enhance the site for wildlife, a number of enhancements should be included within the design plans.

- 5.7.2 **Recommendation R7:** To enhance the site for wildlife, ecological features could be created around the site such as:

- One bird box will be integrated into the design of the new building or installed on the new building or retained mature trees within the site to provide an additional nesting opportunity. Specified boxes should target local notable species which were recorded within the area such as house sparrow (*Passer domesticus*), spotted flycatcher (*Muscicapa striata*) or starling (*Sturnus vulgaris*). Example specifications are provided in Appendix 8.
- One bat box to be integrated into the design of the new building or installed on the new building or retained trees within the site to provide roosting opportunities for bats. Examples bat boxes are shown in Appendix 8.
- One insect nest box will be installed on a wall or tree in a sheltered location within the site to enhance the site for invertebrates. See example in Appendix 8.
- One bee block will be integrated into the design of the new building or installed on an external wall on a southern or western elevation. Example specifications are provided in Appendix 8.
- Any fences or walls to include hedgehog friendly gravel boards with holes 13cm x 13cm in the base to prevent habitat fragmentation for hedgehog.

6 Relevant Legislation and Policy

6.1 Exit from European Union

- 6.1.1 The Conservation of Habitats and Species Regulations 2017 (as amended), referred to as the '2017 Regulations,' are one of the pieces of domestic law that transposed the land and marine aspects of the Habitats Directive (Council Directive 92/43/EEC) and certain elements of the Wild Birds Directive (Directive 2009/147/EC) (known as the Nature Directives). Changes to the 2017 Regulations have been made by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 (referred to as the '2019 Regulations') to transfer functions from the European Commission to the appropriate authorities in England and Wales.
- 6.1.2 The amendments prescribed by the 2019 Regulations allow existing protections afforded by current wildlife legislation and transposed EC Council Directives to be operable from 01 January 2021.
- 6.1.3 The 2019 Regulations protect rare and vulnerable birds and the habitats that they depend upon. This is achieved in part through the classification of Special Protection Areas (SPAs). The Habitats Directive aims to protect plants, habitats and animals other than birds. This is achieved in part through the creation of Special Areas of Conservation (SACs). SPAs and SACs are collectively referred to as the 'National Site Network'.
- 6.1.4 Designated Wetlands of International Importance (known as Ramsar sites) do not form part of the National Site Network, however, all Ramsar sites remain protected in the same way as SACs and SPAs.

6.2 National Planning Policy Framework

- 6.2.1 The National Planning Policy Framework (NPPF) was updated in December 2023 (DLUHC, 2023) thereby replacing the older version of September 2023. The new framework sets out in section 15 that planning policies and decisions should contribute to and enhance the natural and local environment by ... (d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures (Para 180).
- 6.2.2 To protect and enhance biodiversity and geodiversity (Para 185), plans should:
- identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and

areas identified by national and local partnerships for habitat management, enhancement, restoration or creation and

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

6.2.3 When determining planning applications, local planning authorities should apply the following principles (Para 186):

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

6.2.4 The following should be given the same protection as habitats sites (Para 187):

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

6.2.5 The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site (Para 188).

6.3 Natural Environment and Rural Communities (NERC) Act 2006

- 6.3.1 Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 places a statutory duty on Local Planning Authorities (LPAs) to consider the effects upon biodiversity when exercising their functions in England and Wales. In addition, Section 41 of the Act makes for the provision of a list of habitats and species of principal importance for the conservation of biodiversity.

6.4 Biodiversity 2020

- 6.4.1 In 2013, the UKBAP Priority Habitats and Priority Species, and the Section 41 Species and Habitats of Principal Importance for Conservation under the NERC Act 2006, were rationalised. This rationalisation occurred under the 'Post-2010 Biodiversity Framework'. As a result, a new list of Priority Species and Priority Habitats is now in operation at the UK level. These new lists supersede the former UKBAP; they are the new 'Biodiversity Indicators' that are used to monitor the status of biodiversity at the UK level. Each of the four devolved countries of the UK also has a similar list. Within England, the new rationalised lists of 24 Priority Habitats and 213 Priority Species are provided in Biodiversity 2020 which is the national biodiversity policy for England.

6.5 Local Planning Policy

- 6.5.1 Below is relevant information taken from the Hart Local Plan (Strategy and Sites) 2032 which was adopted in April 2020 (Hart District Council, 2020).

Policy NBE3 Thames Basin Heaths Special Protection Area

- 6.5.2 New development which is considered to have a likely significant effect on the ecological integrity of the Thames Basin Heaths Special Protection Area (TBHSPA) will be required to demonstrate that adequate measures will be put in place to avoid or mitigate any potential adverse effects.
- 6.5.3 When considering development proposals for residential or similar forms of development the following principles will apply:
- a) there is an 'exclusion zone' set at 400m linear distance from the TBHSPA boundary. Permission will not be granted for development that results in a net increase in residential units within this zone unless it can be demonstrated through an Appropriate Assessment that there will be no adverse effect on the integrity of the TBHSPA;
 - b) there is a "zone of influence" set at between 400m and 5km linear distance from the TBHSPA boundary. Mitigation measures will be required for all net new dwellings and

must be delivered prior to occupation and in perpetuity. Measures must be based on a combination of Strategic Access Management and Monitoring (SAMM) and the provision and maintenance of Suitable Alternative Natural Greenspace (SANG).

- c) Residential development of over 50 net new dwellings that falls between five and seven kilometres from the TBHSPA may be required to provide mitigation measures. This will be assessed on a case-by-case basis in consultation with Natural England and where appropriate an appropriate assessment maybe required to ascertain whether the proposal could have an adverse effect on the SPA.

6.5.4 The provision of SANG will meet the following standards and arrangements:

- i. a minimum of 8 hectares of SANG land (after discounting to account for current access and capacity) should be provided in perpetuity per 1,000 new occupants;
- ii. developments must fall within the catchment of the SANG that provides mitigation, except developments of fewer than 10 net new residential units.

6.5.5 Where further evidence demonstrates that the integrity of the TBHSPA can be protected using different linear thresholds or with alternative mitigation measures these must be agreed with the Council and Natural England.

Policy NBE4 Biodiversity

6.5.6 In order to conserve and enhance biodiversity, new development will be permitted provided:

- a) It will not have an adverse effect on the integrity of an international, national or locally designated site including the Thames Basin Heaths Special Protection Area (SPA), Sites of Special Scientific Interest (SSSIs), Sites of Importance for Nature Conservation (SINCs) and National and Local Nature Reserves (NNRs and LNRs). The level of protection afforded to these sites is commensurate with their status within this hierarchy and gives appropriate weight to their importance and contribution to wider ecological networks.
- b) It does not result in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss;
- c) Opportunities to protect and enhance biodiversity and contribute to wildlife and habitat connectivity are taken where possible, including the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations. All development proposals will be expected to avoid negative impacts on existing biodiversity and provide a net gain where possible.

- 6.5.7 If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, or, in the case of European Protected sites does not comply with the Conservation of Habitats and Species Regulations 2017, then planning permission will be refused.

6.6 Protected Species

European Protected Species (EPS)

- 6.6.1 The Conservation of Habitats and Species Regulations 2017 (as amended) transpose the EC Habitats Directive on the Conservation of Natural Habitats and of Wild Fauna and Flora (Council Directive 92/43/EEC) into national law.
- 6.6.2 “European protected species” (EPS) of animal are those which are shown on Schedule 2 of The Conservation of Habitats and Species Regulations 2017 (as amended). They are subject to the provisions of Regulation 43 of those Regulations. All EPS are also protected under the Wildlife and Countryside Act 1981 (as amended). Taken together, these pieces of legislation make it an offence to:
- a) intentionally or deliberately capture, injure or kill any wild animal included amongst these species;
 - b) possess or control any live or dead specimens or any part of, or anything derived from these species;
 - c) deliberately disturb wild animals of any such species;
 - d) deliberately take or destroy the eggs of such an animal; or
 - e) intentionally, deliberately or recklessly damage or destroy a breeding site or resting place of such an animal, or obstruct access to such a place.
- 6.6.3 For the purposes of paragraph (c), disturbance of animals includes in particular any disturbance which is likely—
- a) to impair their ability—
 - i. to survive, to breed or reproduce, or to rear or nurture their young; or
 - ii. in the case of animals of a hibernating or migratory species, to hibernate or migrate;
 or
 - b) to affect significantly the local distribution or abundance of the species to which they belong.

6.6.4 Although the law provides strict protection to these species, it also allows this protection to be set aside (derogated) through the issuing of licences. The licences in England are currently determined by Natural England (NE) for development works. In accordance with the requirements of The Conservation of Habitats and Species Regulations 2017 (as amended), a licence can only be issued where the following requirements, known as the “Three Tests”, are satisfied:

1. The proposal is necessary ‘to preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment’;
2. ‘There is no satisfactory alternative’; and
3. The proposals ‘will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.

Bats

6.6.5 All species of bats are protected under The Conservation of Habitats and Species Regulations 2017 (as amended) with additional protection provided under the Wildlife and Countryside Act 1981 (as amended). This makes it illegal to injure or kill a bat, to disturb, damage, destroy or obstruct a bat roost.

Hazel Dormouse

6.6.6 Hazel dormice and their nest sites are protected by UK legislation.

6.6.7 The Wildlife and Countryside Act 1981 (as amended) makes it an offence to intentionally or recklessly disturb a dormouse while it is occupying a structure or place which it uses for that purpose.

6.6.8 Additionally, The Conservation of Habitats and Species Regulations 2017 (as amended) make it an offence to:

- Deliberately capture or kill a dormouse;
- Deliberately disturb a dormouse;
- Damage or destroy a breeding place or resting site of a dormouse; and
- Keep, transport, sell or exchange or offer for sale or exchange alive or dead hazel dormouse or any part of a hazel dormouse.

Birds

6.6.9 All nesting birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take,

damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition to this, for some rarer species (listed on Schedule 1 of the Act), it is an offence to disturb them whilst they are nest building or at or near a nest with eggs or young, or to disturb the dependent young of such a bird.

6.6.10 The Conservation of Habitats and Species Regulations 2017 (as amended) places duties on competent authorities (including Local Authorities and National Park Authorities) in relation to wild bird habitat. These provisions relate back to Articles 1, 2 and 3 of the EC Directive on the conservation of wild birds (2009/147/EC, 'Birds Directive') (Regulation 10 (3)) requires that the objective is the 'preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat, as appropriate, having regard to the requirements of Article 2 of the new Wild Birds Directive...' Regulation 10 (7) states: 'In considering which measures may be appropriate for the purpose of security or contributing to the objective in [Regulation 10 (3)] Paragraph 3, appropriate account must be taken of economic and recreational requirements'.

6.6.11 In relation to the duties placed on competent authorities under the 2017 Regulations (as amended), Regulation 10 (8) states: 'So far as lies within their powers, a competent authority in exercising any function [including in relation to town and country planning] in or in relation to the United Kingdom must use all reasonable endeavours to avoid any pollution or deterioration of habitats of wild birds (except habitats beyond the outer limits of the area to which the new Wild Birds Directive applies).'

Wild mammals in general

6.6.12 The Wild Mammals (Protection) Act 1996 (as amended) makes provision for the protection of wild mammals from certain cruel acts, making it an offence for any person to intentionally cause suffering to any wild mammal. In the context of development sites, for example, this may apply to rabbits in their burrows.

Invasive non-native species

6.6.13 An invasive non-native species is any non-native animal or plant that has the ability to spread causing damage to the environment.

6.6.14 Under the Wildlife and Countryside Act 1981 (as amended) it is an offence to release, or to allow to escape into the wild, any animal which is not ordinarily resident in and is not a regular visitor to Great Britain in a wild state or is listed under Schedule 9 of the Act.

- 6.6.15 It is an offence to plant or otherwise cause to grow in the wild invasive non-native plants listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended).

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Appendix 1 – Photographs



Photo 1: Scattered trees within the modified grassland



Photo 2: TN1 – Woodpile within the woodland



Photo 3: Arable – area with fruit and herb plants



Photo 4: Modified grassland with scattered trees



Photo 5: Ditch in north of the site



Photo 6: East elevation of building B1



Photo 7: West elevation of building B1



Photo 8: Gap under corrugated roof of building B1



Photo 9: Interior of building B1

Appendix 2 – Figures

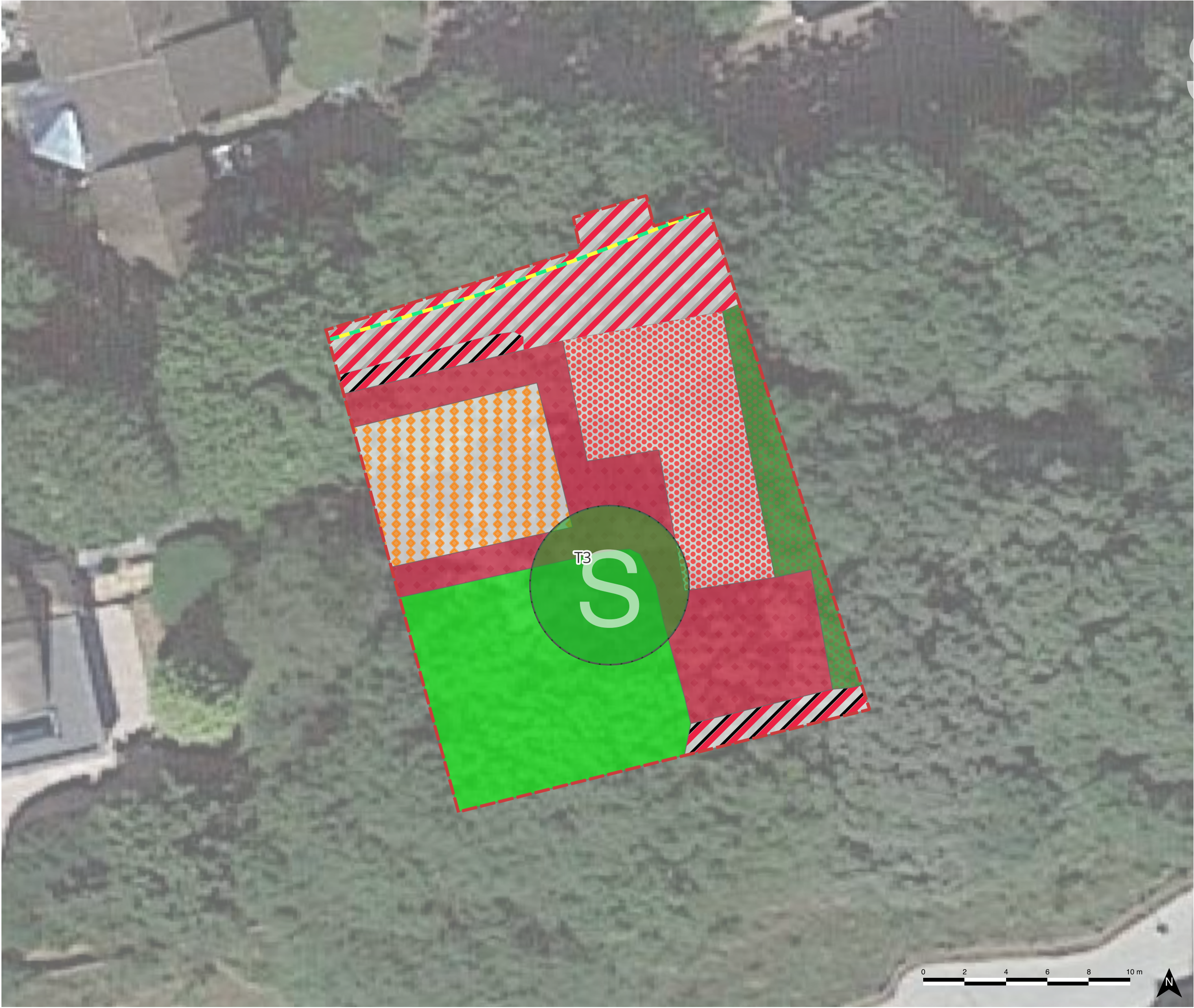
Figure 1: Baseline habitat map (Ref: EBD_1634_DR001)

Figure 2: Map of waterbodies (Ref: EBD_1634_DR002)

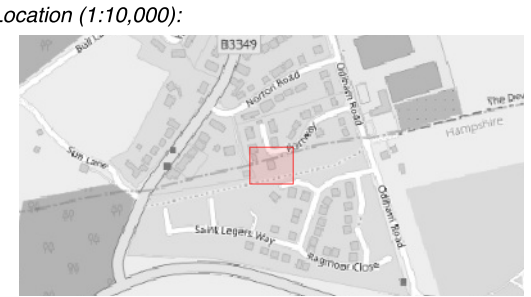
Figure 3: Dormouse survey plan (Ref: EBD_1634_DR003E_V3)

Figure 4: Proposed habitats (Ref: EBD_1634_DR003)

(Next pages)



- LEGEND
- Site Boundary (0.05 ha)
 - r1(191) - Ditches (0.1 km)
 - Urban tree, small (3 trees)
 - c1f - horticulture (0.0064 ha)
 - g4 - modified grassland (0.0127 ha)
 - u(510) bare ground (0.0073 ha)
 - u1(847) - introduced shrub (0.0021 ha)
 - u1b5 - buildings (0.0078 ha)
 - u1b6 - hardstanding (0.0109 ha)
 - w1g - other woodland
-broadleaved (0.0028 ha)



Project:
Dukes Field Cottage - School House
Client:
Justin Rogers
Drawing Title:
Baseline Habitats

Drawing No.:	Scale (@A3):
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472166, 162936	19/07/2024
Drawn by:	Approved by:
EB	BG

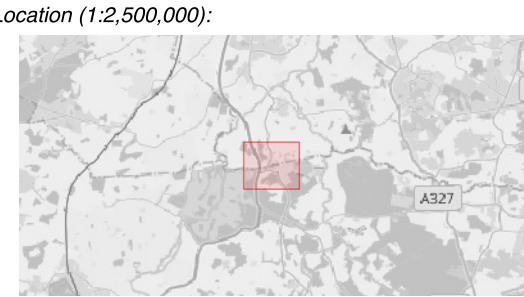
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LEGEND

- Site Boundary (0.05 ha)
- Ponds
- r1(191) - Ditches (0.1 km)



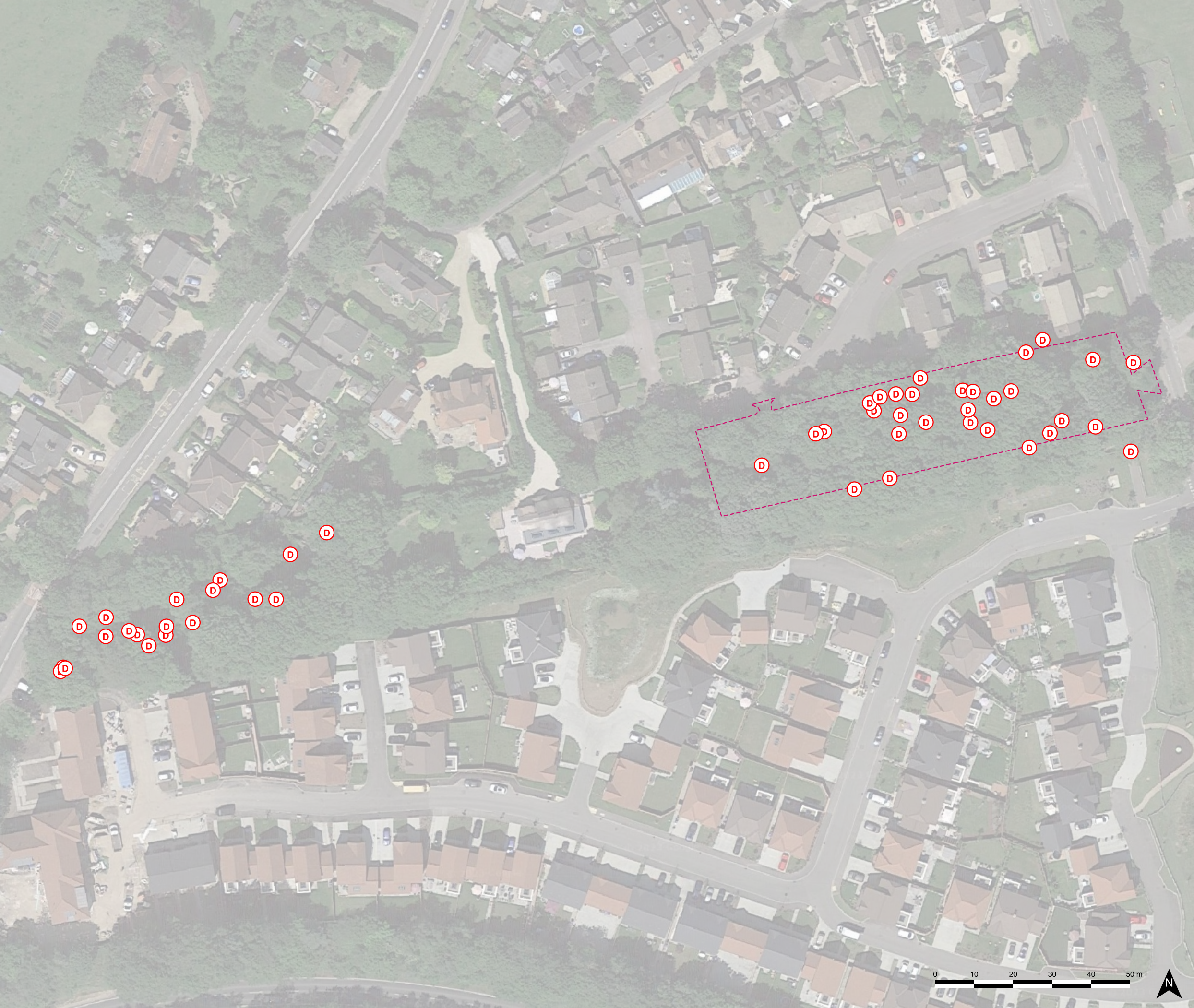
Project:
Dukes Field Cottage - School House
Client:
Justin Rogers

Drawing Title:
Pond Map

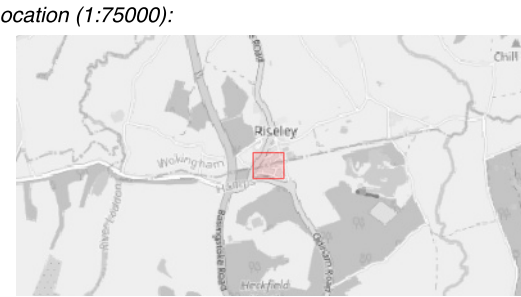
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472166, 162936	18/07/2024
Drawn by:	Approved by:
EB	BG

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- LEGEND
- Site Boundary
 - Dormouse Tube/Nest Box



Project:
Dukes Field Cottage East

Client:
Justin Rogers

Drawing Title:
Dormouse Survey Plan 2023

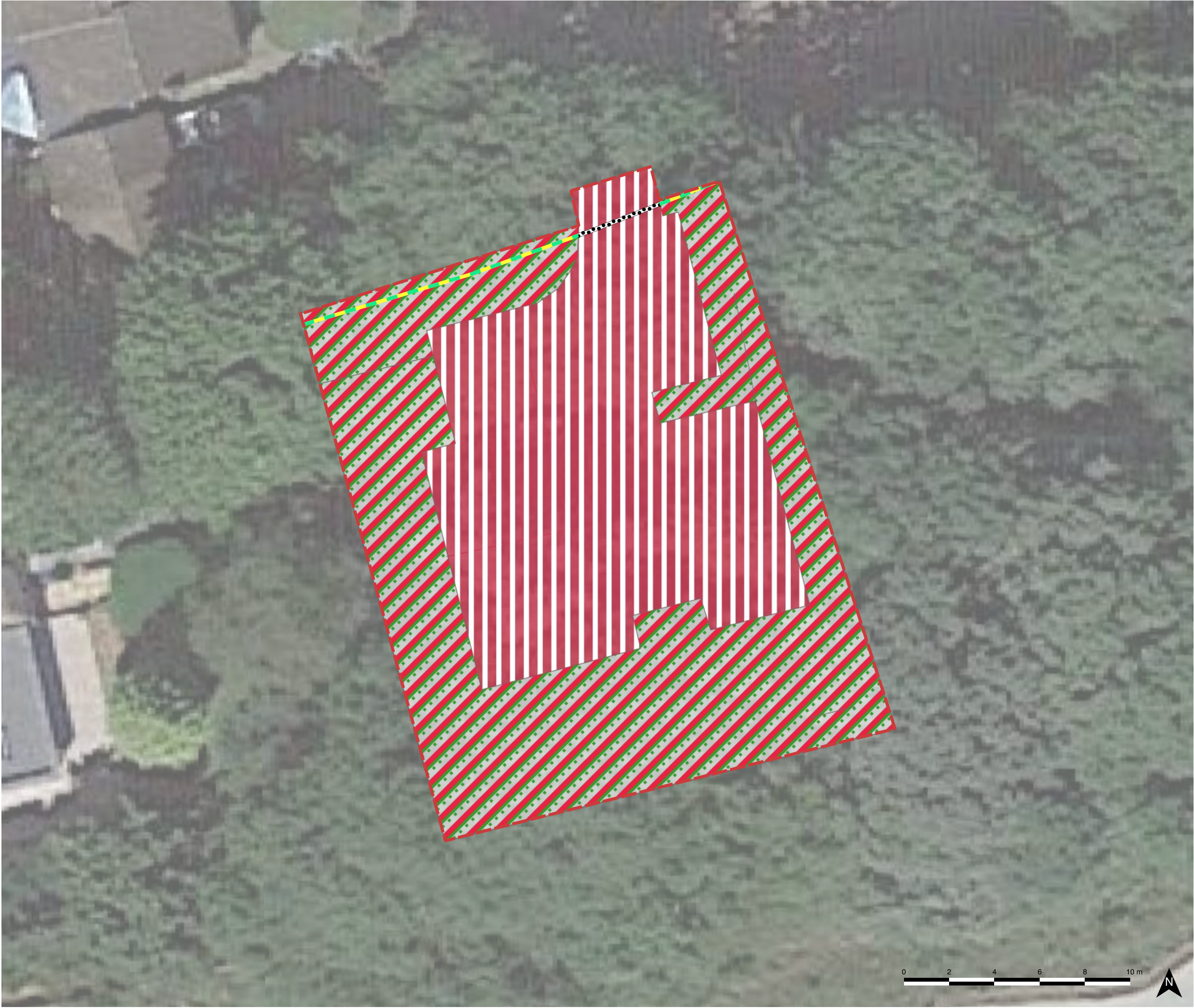
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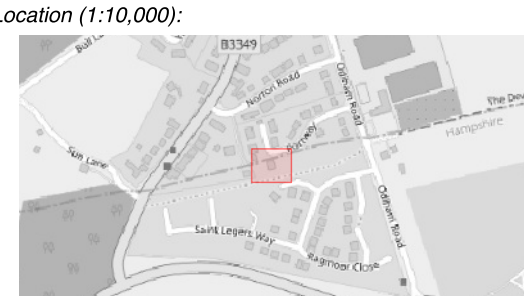
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- LEGEND
- Site Boundary (0.05 ha)
 - r1(191) - Ditches (0.1 km)
 - Culvert (0 km)
 - Developed land; sealed surface (0.0233 ha)
 - Vegetated garden (0.0267 ha)



Project:
Dukes Field Cottage - School House
Client:
Justin Rogers

Drawing Title:
Proposed Habitats

Drawing No.:	Scale (@A3):
EBD_1634_DR007	1:160
Central Eastings, Northings:	Date Drawn:
472166, 162936	19/07/2024
Drawn by:	Approved by:
EB	BG

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Appendix 3 – Baseline Condition Assessment Tables

Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)			
UK Habitat Classification (UKHab) Habitat Type			
Grassland - Modified grassland			
On-site or off-site, site name and location	On site	Survey date and Surveyor name	
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference	SU 72163 62928	Habitat parcel reference	
Habitat Description			
In the centre and to the west of the site is an area of lawn with fairly patchy grassland which includes dandelion (<i>Taraxacum officinale</i> agg.), selfheal (<i>Prunella vulgaris</i>), perennial ryegrass (<i>Lolium perenne</i>), fescue (<i>Festuca</i> sp.), common daisy (<i>Bellis perennis</i>), common cat's-ear (<i>Hypochaeris radicata</i>). The grass has a sward height of approximately 2cm or less.			
ukhab – UK Habitat Classification			
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	There are 6-8 vascular plant species per m ² present, including at least 2 forbs (these may include those listed in Footnote 1). Note - this criterion is essential for achieving Moderate or Good condition. Where the vascular plant species present are characteristic of medium, high or very high distinctiveness grassland, or there are 9 or more of these characteristic species per m ² (excluding those listed in Footnote 1), please review the full UKHab description to assess whether the grassland should instead be classified as a higher distinctiveness grassland. Where a grassland is classed as medium, high, or very high distinctiveness, please use the relevant condition sheet.	No	Less than 6 species per m2.
B	Sward height is varied (at least 20% of the sward is less than 7 cm and at least 20% is more than 7 cm) creating microclimates which provide opportunities for vertebrates and invertebrates to live and breed.	No	Short sward height 2cm or less
C	Any scrub present accounts for less than 20% of the total grassland area. (Some scattered scrub such as bramble <i>Rubus fruticosus</i> agg. may be present). Note - patches of scrub with continuous (more than 90%) cover should be classified as the relevant scrub habitat type.	Yes	No scrub present.
D	Physical damage is evident in less than 5% of total grassland area. Examples of physical damage include excessive poaching, damage from machinery use or storage, erosion caused by high levels of access, or any other damaging management activities.	No	No damage noted.
E	Cover of bare ground is between 1% and 10%, including localised areas (for example, a concentration of rabbit warrens) ² .	No	Several areas of bare ground present.
F	Cover of bracken <i>Pteridium aquilinum</i> is less than 20%.	Yes	No bracken present.
G	There is an absence of invasive non-native plant species ³ (as listed on Schedule 9 of WCA ⁴).	Yes	None present.
Essential criterion achieved (Yes or No)			No
Number of criteria passed			3
Condition Assessment Result (out of 7 criteria)	Condition Assessment Score	Score Achieved x/✓	
Passes 6 or 7 criteria including passing essential criterion A	Good (3)		
Passes 4 or 5 criteria including passing essential criterion A	Moderate (2)		
Passes 3 or fewer criteria; OR Passes 4 - 6 criteria (excluding criterion A)	Poor (1)	3	

Condition Sheet: INDIVIDUAL TREES Habitat Type															
Habitat Types															
Individual trees – Urban trees															
Individual trees – Rural trees															
Complete a condition sheet for each tree or block of trees.															
Please see the separate Line of trees condition sheet for a line of rural trees. You should only use the Line of trees condition assessment and record that habitat type in rural locations.															
Habitat Description															
Within the area of modified grassland are scattered broadleaved and coniferous trees including leylandii, silver birch (<i>Betula pendula</i>) and yew (<i>Taxus baccata</i>) with DBHs of approximately 10cm to 20cm.															
Individual trees (description applied to the urban or rural environment): Young trees over 7.5 cm in diameter at breast height whose canopies are not touching.															
Urban Perimeter / Linear Blocks and Groups (description applied to the urban environment only): Groups or stands of trees (size requirement as defined above) within and around the perimeter of urban land. This includes those along urban streets, highways, railways and canals, and also former field boundary trees incorporated into developments. Canopies should predominantly overlap continuously. Groups of urban trees that don't match the descriptions for woodland may be assessed within this category.															
On-site or off-site, site name and location		On site		Survey date and Surveyor name											
				Survey reference (if relating to a wider survey)											
Limitations (if applicable)				Habitat parcel reference											
Grid reference															
Condition Assessment Criteria				Criterion passed (Yes or No)									Notes (such as justification)		
A	The tree is a native species (or at least 70% within the block are native species).	No													
B	The tree canopy is predominantly continuous, with gaps in canopy cover making up <10% of total area and no individual gap being >5 m wide (individual trees automatically pass this criterion).	Yes													
C	The tree is mature (or more than 50% within the block are mature) ¹ .	Yes													
D	There is little or no evidence of an adverse impact on tree health by human activities (such as vandalism, herbicide or detrimental agricultural activity). And there is no current regular pruning regime, so the trees retain >75% of expected canopy for their age range and height.	Yes													
E	Natural ecological niches for vertebrates and invertebrates are present, such as presence of deadwood, cavities, ivy or loose bark.	No													
F	More than 20% of the tree canopy area is oversailing vegetation beneath.	Yes													
Number of criteria passed			4												
Condition Assessment Result (out of 6 criteria)		Condition Assessment Score		Score Achieved x/✓											
Passes 5 or 6 criteria		Good (3)													
Passes 3 or 4 criteria		Moderate (2)		Yes											
Passes 2 or fewer criteria		Poor (1)													
Note that 'Fairly Good and Fairly Poor' condition categories are not available for this broad habitat type.															

Condition Sheet: WOODLAND Habitat Type						
UK Habitat Classification (UKHab) Habitat Types						
Woodland and forest - Lowland beech and yew woodland						
Woodland and forest - Lowland mixed deciduous woodland						
Woodland and forest - Native pine woodlands						
Woodland and forest - Other coniferous woodland						
Woodland and forest - Other Scot's pine woodland						
Woodland and forest - Other woodland; broadleaved						
Woodland and forest - Other woodland; mixed						
Woodland and forest - Upland birchwoods						
Woodland and forest - Upland mixed ashwoods						
Woodland and forest - Upland oakwood						
Woodland and forest - Wet woodland						
Habitat Description						
BASELINE - The east of the site supports a small strip of semi-natural broadleaved woodland, including frequent pedunculate oak (<i>Quercus robur</i>) with an understorey of holly (<i>Ilex aquifolium</i>), which forms the edge of a larger area of woodland further east. The woodland has occasional sycamore (<i>Acer pseudoplatanus</i>), ash (<i>Fraxinus excelsior</i>), hazel (<i>Corylus avellana</i>), honeysuckle (<i>Lonicera periclymenum</i>) willow (<i>Salix</i> sp.), common beech (<i>Fagus sylvatica</i>), leylandii (<i>Cupressus × leylandii</i>), ivy (<i>Hedera helix</i>), elder (<i>Sambucus nigra</i>), bramble (<i>Rubus fruticosus</i> agg.), privet (<i>Ligustrum</i> sp.), common hawthorn (<i>Crataegus monogyna</i>).						
ukhab – UK Habitat Classification						
This condition sheet is based on the England Woodland Biodiversity Group (EWBG) Woodland Condition Survey Method, available here:						
Woodland Wildlife Toolkit (sylva.org.uk)						
IMPORTANT: This biodiversity metric woodland condition assessment must be used to assess woodland being input into the biodiversity metric. The outputs of this condition assessment are not equivalent to, nor are they comparable with the scores from the EWBG condition assessment, because the EWBG assessment has been adapted for the biodiversity metric, including the removal of EWBG Indicator 7 (Proportion of favourable land cover around woodland) and Indicator 14 (Size of woodland), and minor changes to other indicators.						
On-site or off-site, site name and location		On site	Survey date and Surveyor name			
Limitations (if applicable)			Survey reference (if relating to a wider survey)			
Grid reference		SU 72179 62939	Habitat parcel reference			
Condition Assessment Criteria						
Indicator		Good (3 points)	Moderate (2 points)	Poor (1 point)	Score per indicator	Notes (such as justification)
A	Age distribution of trees	Three age-classes ¹ present.	Two age-classes ¹ present.	One age-class ¹ present.	2	
B	Wild, domestic and feral herbivore damage	No significant browsing damage evident in woodland ² .	Evidence of significant browsing pressure is present in less than 40% of whole woodland ² .	Evidence of significant browsing pressure is present in 40% or more of whole woodland ² .	3	
C	Invasive plant species	No invasive species ³ present in woodland.	<i>Rhododendron</i> <i>Rhododendron ponticum</i> or cherry laurel <i>Prunus laurocerasus</i> not present, and other invasive species ³ <10% cover.	<i>Rhododendron</i> or cherry laurel present, or other invasive species ³ ≥10% cover.	2	
D	Number of native tree species	Five or more native tree or shrub species ⁴ found across woodland parcel.	Three to four native tree or shrub species ⁴ found across woodland parcel.	Two or less native tree or shrub species ⁴ across woodland parcel.	3	
E	Cover of native tree and shrub species	>80% of canopy trees and >80% of understory shrubs are native ⁵ .	50 - 80% of canopy trees and 50 - 80% of understory shrubs are native ⁵ .	<50% of canopy trees and <50% of understory shrubs are native ⁵ .	3	
F	Open space within woodland	10 - 20% of woodland has areas of temporary open space ⁶ . Unless woodland is <10ha, in which case 0 - 20% temporary open space is permitted ⁷ .	21 - 40% of woodland has areas of temporary open space ⁶ .	<10% or >40% of woodland has areas of temporary open space ⁶ . But if woodland <10ha has <10% temporary open space, please see Good category ⁷ .	3	

G	Woodland regeneration	All three classes present in woodland ⁸ ; trees 4 - 7 cm Diameter at Breast Height (DBH), saplings and seedlings or advanced coppice regrowth.	One or two classes only present in woodland ⁸ .	No classes or coppice regrowth present in woodland ⁸ .	2	
H	Tree health	Tree mortality 10% or less, no pests or diseases and no crown dieback ⁹ .	11% to 25% tree mortality and or crown dieback or low-risk pest or disease present ⁹ .	Greater than 25% tree mortality and or any high-risk pest or disease present ⁹ .	2	
I	Vegetation and ground flora	Recognisable NVC plant community ¹⁰ at ground layer present, strongly characterised by ancient woodland flora specialists.	Recognisable woodland NVC plant community ¹⁰ at ground layer present.	No recognisable woodland NVC plant community ¹⁰ at ground layer present.	1	
J	Woodland vertical structure	Three or more storeys across all survey plots, or a complex woodland ¹¹ .	Two storeys across all survey plots ¹¹ .	One or less storey across all survey plots ¹¹ .	2	
K	Veteran trees	Two or more veteran trees ¹² per hectare.	One veteran tree ¹² per hectare.	No veteran trees ¹² present in woodland.	1	
L	Amount of deadwood	50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, branch stubs and stumps, or an abundance of small cavities ¹³ .	Between 25% and 50% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	Less than 25% of all survey plots within the woodland parcel have deadwood, such as standing and fallen deadwood, large dead branches and or stems, stubs and stumps, or an abundance of small cavities ¹³ .	2	
M	Woodland disturbance	No nutrient enrichment or damaged ground evident ¹⁴ .	Less than 1 hectare in total of nutrient enrichment across woodland area, and or less than 20% of woodland area has damaged ground ¹⁴ .	1 hectare or more of nutrient enrichment, and or 20% or more of woodland area has damaged ground ¹⁴ .	2	
Total Score (out of a possible 39)					28	
Condition Assessment Result				Condition Assessment Score	Result Achieved	
Total score >32 (33 to 39)				Good (3)	28	
Total score 26 to 32				Moderate (2)		
Total score <26 (13 to 25)				Poor (1)		

Condition Sheet: URBAN Habitat Type			
Habitat Types			
Sparsely vegetated land - Ruderal/Ephemeral Sparsely vegetated land - Tall forbs Urban - Allotments Urban - Biodiverse green roof Urban - Bioswale Urban - Cemeteries and churchyards Urban - Facade-bound green wall Urban - Ground based green wall Urban - Intensive green roof Urban - Open mosaic habitats on previously developed land Urban - Rain garden Urban - Sustainable drainage system (SuDS) Urban - Vacant or derelict land Urban - Bare ground			
Habitat Description			
BASELINE - Bare Ground			
See the Statutory Biodiversity Metric User Guide for green roofs and UK Habitat Classification (UKHab) for other habitats:			UKHab – UK Habitat Classification
On-site or off-site, site name and location	On site	Survey date and Surveyor name	
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference	SU 72162 62933	Habitat parcel reference	
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
Core Criteria - must be assessed for all urban habitat types :			
A	Vegetation structure is varied, providing opportunities for vertebrates and invertebrates to live, eat and breed. A single structural habitat component or vegetation type does not account for more than 80% of the total habitat area.	No	No vegetation present.
B	The habitat parcel contains different plant species that are beneficial for wildlife, for example flowering species providing nectar sources for a range of invertebrates at different times of year.	No	None present.
C	Invasive non-native plant species (listed on Schedule 9 of WCA ¹) and others which are to the detriment of native wildlife (using professional judgement) ² cover less than 5% of the total vegetated area ³ . Note - to achieve Good condition, this criterion must be satisfied by a complete absence of invasive non-native species (rather than <5% cover).	Yes	No invasive species present in this habitat.
Additional Criterion - must be assessed for Open mosaic habitat on previously developed land only:			
D	The parcel shows spatial variation and forms a mosaic of bare substrate PLUS: - At least four early successional communities (a) to (i); Communities: (a) annuals; (b) mosses/liverworts; (c) lichens; (d) ruderals; (e) inundation species; (f) open grassland; (g) flower-rich grassland; (h) heathland, (i) pools.		
Additional Criteria - must be assessed for Bioswale and SuDS habitat types only:			
E1	Plant species are mostly native. If non-native species are present, they should not be detrimental to the habitat or native wildlife ⁴ .		

E2	The vegetation is comprised of plant species suited to wetland or riparian situations.		
Additional Criterion - must be assessed for Intensive green roofs only:			
F	The roof has a minimum of 50% native and non-native wildflowers. 70% of the roof area is soil and vegetation (including water features).		
Additional Criterion - must be assessed for Biodiverse green roofs only:			
G	The roof has a varied depth of 80 – 150 mm; at least 50% is at 150 mm and is planted and seeded with wildflowers and sedums or is pre-prepared with sedums and wildflowers. Note – to achieve Good condition some additional habitat, such as sand piles, stones, logs etc. are present.		
Essential criteria relevant for habitat type achieved (Yes or No)			No
Number of criteria passed			1
Condition Assessment Result		Condition Assessment Score	Score Achieved x/✓
Results for habitats requiring assessment of 3 core criteria only (all listed urban habitats except Open mosaic habitat on previously developed land, Bioswale, SuDS and Green roofs) :			
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C.		Good (3)	
• Passes 2 of 3 core criteria; OR • Passes 3 of 3 core criteria but does not meet the requirements for Good condition within criterion C.		Moderate (2)	
• Passes 0 or 1 of 3 core criteria.		Poor (1)	1
Results for Green roofs and Open mosaic habitat on previously developed land (requiring assessment of 4 criteria only - core criteria plus additional criterion specified for habitat type):			
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C; AND • Passes additional criterion relevant to specific habitat type (D, F or G).		Good (3)	
• Passes 2 or 3 of 4 criteria; OR • Passes 4 of 4 criteria but does not meet the requirements for Good condition within criterion C.		Moderate (2)	
• Passes 0 or 1 of 4 criteria.		Poor (1)	
Results for Bioswale or SuDS (requiring assessment of 5 criteria - core criteria plus additional criteria specified for habitat type):			
• Passes all 3 core criteria; AND • Meets the requirements for Good condition within criterion C; AND • Passes all additional criteria relevant to specific habitat type (Group E)		Good (3)	
• Passes 3 or 4 of 5 criteria; OR • Passes 5 of 5 criteria but does not meet the requirements for Good condition within criterion C.		Moderate (2)	
• Passes 2 or fewer of 5 criteria.		Poor (1)	

Condition Sheet: DITCH Habitat Type			
Habitat Type			
Watercourses - Ditches			
Habitat Description			
See the Statutory Biodiversity Metric User Guide.			
BASELINE - In the north of the site is a small shallow ditch/stream which runs along the boundary. The stream is approximately 60cm across and between 3cm to 6cm deep. There is little aquatic vegetation within the stream.			
On-site or off-site, site name and location	On site	Survey date and Surveyor name	
Limitations (if applicable)		Survey reference (if relating to a wider survey)	
Grid reference	SU 72167 62946	Habitat parcel reference	
Condition Assessment Criteria		Criterion passed (Yes or No)	Notes (such as justification)
A	The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Yes	
B	A range of emergent, submerged and floating-leaved plants are present. As a guide >10 species of emergent, floating or submerged plants present in a 20 m ditch length.	No	No vegetation present
C	There is less than 10% cover of filamentous algae and or duckweed <i>Lemna</i> spp. (these are signs of eutrophication).	Yes	None present.
D	A fringe of aquatic marginal vegetation is present along more than 75% of the ditch.	No	No marginal vegetation present.
E	Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities.	Yes	
F	Sufficient water levels are maintained - as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.	No	
G	Less than 10% of the ditch is heavily shaded.	No	
H	There is an absence of non-native plant and animal species ¹ .	Yes	
Number of criteria passed		4	
Condition Assessment Result (out of 8 criteria)	Condition Assessment Score	Score Achieved ✕/✓	
Passes 8 criteria	Good (3)		
Passes 6 or 7 criteria	Moderate (2)		
Passes 5 or fewer criteria	Poor (1)	4	

Condition Sheet: DITCH Habitat Type			
Habitat Type			
Watercourses - Ditches			
Habitat Description			
See the Statutory Biodiversity Metric User Guide.			
PROPOSED			
On-site or off-site, site name and location		On site	Survey date and Surveyor name
Limitations (if applicable)			Survey reference (if relating to a wider survey)
Grid reference		SU 72167 62946	Habitat parcel reference
Condition Assessment Criteria			Criterion passed (Yes or No) Notes (such as justification)
A	The ditch is of good water quality, with clear water (low turbidity) indicating no obvious signs of pollution.	Yes	Passes in Baseline
B	A range of emergent, submerged and floating-leaved plants are present. As a guide >10 species of emergent, floating or submerged plants present in a 20 m ditch length.	Yes	Planting will achieve this
C	There is less than 10% cover of filamentous algae and or duckweed Lemna spp. (these are signs of eutrophication).	Yes	Passes in Baseline
D	A fringe of aquatic marginal vegetation is present along more than 75% of the ditch.	Yes	Planting will achieve this
E	Physical damage is evident along less than 5% of the ditch, with examples of damage including: excessive poaching, damage from machinery use or storage, or any other damaging management activities.	Yes	Passes in Baseline
F	Sufficient water levels are maintained - as a guide a minimum summer depth of approximately 50 cm in minor ditches and 1 m in main drains.	No	Fails in Baseline and not realistic to address
G	Less than 10% of the ditch is heavily shaded.	No	lremoval of conifers will achieve this
H	There is an absence of non-native plant and animal species 1.	Yes	Passes in Baseline
Number of criteria passed		6	
Condition Assessment Result (out of 8 criteria)	Condition Assessment Score	Score Achieved x/✓	
Passes 8 criteria	Good (3)		
Passes 6 or 7 criteria	Moderate (2)	Yes	
Passes 5 or fewer criteria	Poor (1)		

Appendix 4 – Plant Species List

Common Name	Latin
Allium	<i>Allium</i> sp.
Ash	<i>Fraxinus excelsior</i>
Bellflower	<i>Campanula</i> sp.
Bramble	<i>Rubus fruticosus</i> agg.
Broadleaved dock	<i>Rumex obtusifolius</i>
Camelia	<i>Camelia</i> sp.
Common beech	<i>Fagus sylvatica</i>
Common cat's-ear	<i>Hypochaeris radicata</i>
Common daisy	<i>Bellis perennis</i>
Common hawthorn	<i>Crataegus monogyna</i>
Common nettle	<i>Urtica dioica</i>
Cotoneaster	<i>Cotoneaster</i> sp.
Cow parsley	<i>Anthriscus sylvestris</i>
Dandelion	<i>Taraxacum officinale</i> agg.
Elder	<i>Sambucus nigra</i>
Fern	<i>Polypodiopsida</i> sp.
Fescue	<i>Festuca</i> sp.
Forget-me-not	<i>Myosotis</i> sp.
Hazel	<i>Corylus avellana</i>
Herb Robert	<i>Geranium robertianum</i>
Holly	<i>Ilex aquifolium</i>
Honesty	<i>Lunaria annua</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Iris	<i>Iridaceae</i> sp.
Ivy	<i>Hedera helix</i>
Leylandii	<i>Cupressus × leylandii</i>
Pedunculate oak	<i>Quercus robur</i>
Perennial rye-grass	<i>Lolium perenne</i>
Privet	<i>Ligustrum</i> sp.
Pyracantha	<i>Pyracantha</i> sp.
Raspberry	<i>Rubus idaeus</i>
Rosemary	<i>Salvia rosmarinus</i>
Sage	<i>Salvia officinalis</i>
Selfheal	<i>Prunella vulgaris</i>

Common Name	Latin
Silver birch	<i>Betula pendula</i>
Spurge	<i>Euphorbia</i> sp.
Sycamore	<i>Acer pseudoplatanus</i>
Three-cornered garlic	<i>Allium triquetrum</i>
Willow	<i>Salix</i> sp.
Wood avens	<i>Geum urbanum</i>
Wood sedge	<i>Carex sylvatica</i>
Yew	<i>Taxus baccata</i>

Appendix 5 – Definitions of the level of Habitat Value

Geographic level of Value	Examples
International value	Ramsar Sites, Special Protection Areas, Biosphere Reserves, Special Areas of Conservation. Sites supporting populations of internationally important species.
National value	SSSIs or non-designated Sites meeting SSSI selection criteria, NNRs, Marine Nature Reserves, NCR Grade 1 Sites. Sites containing viable areas of key habitats identified in the UK Biodiversity Action Plan.
Regional value	Sites containing viable areas of threatened habitats listed in a Regional BAP (or some Natural Areas), comfortably exceeding SINC criteria, but not exceeding SSSI criteria.
County / Metropolitan	Sites meeting the criteria for county or metropolitan designation (SINC, CWS, etc.). Ancient semi-natural woodland, LNRs or viable areas of key habitat types listed in county BAPs/Natural Areas.
District / Borough	Undesignated Sites or features considered to appreciably enrich the habitat resource in the District or Borough.
Parish / Neighbourhood	Undesignated Sites or features which appreciably enrich the habitat resource within the Parish or Neighbourhood.
Negligible value	Low grade and widespread habitats.

Appendix 6 – Definitions of the level of Species Value

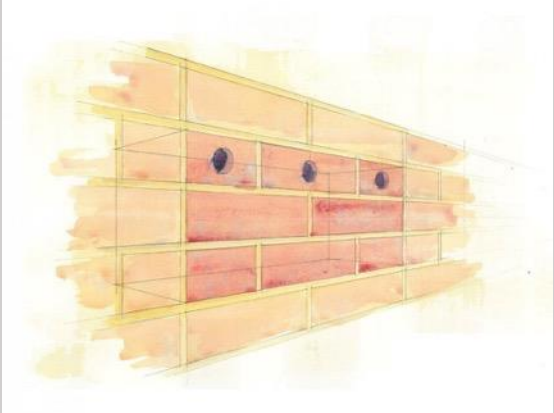
Geographic level of Value	Examples
International	Any regularly occurring population of an internationally important species, which is threatened or rare in the UK. i.e. it is a UK Red Data Book species or listed as occurring in 15 or fewer 10km squares in the UK (categories 1 and 2 in the UK BAP) or of uncertain conservation status or of global conservation concern in the UK BAP. A regularly occurring, nationally significant population/number of any internationally important species.
National	Any regularly occurring population of a nationally important species which is threatened or rare in the region or county (see local BAP). A regularly occurring, regionally or county significant population/number of any nationally important species.
Regional	Any regularly occurring, locally significant population of a species listed as being nationally scarce which occurs in 16-100 10km squares in the UK or in a Regional BAP or relevant Natural Area on account of its regional rarity or localisation; A regularly occurring, locally significant number of a regionally important species.
County/ Metropolitan	Any regularly occurring, locally significant population of a species which is listed in a County/Metropolitan “red data book” or BAP on account of its regional rarity or localisation; A regularly occurring, locally significant number of a County/Metropolitan important species.
District / Borough	A population of a species that is listed in a District/Borough BAP because of its rarity in the locality or in the relevant Natural Area profile because of its regional rarity or localisation; A regularly occurring, locally significant number of a District / Borough important species during a critical phase of its life cycle.
Parish / Neighbourhood	Species that are not threatened but are valued at a local level on intrinsic appeal.
Negligible	Common or widespread species.

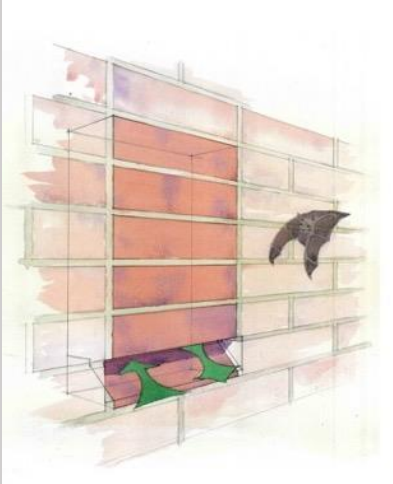
Appendix 7 – Bat Core Sustenance Zones

Table adapted from Table 3.5 of the Bat Survey Guidelines (Collins, 2016)

Core Sustenance Zones	Species
1 km	Whiskered/Brandt's bat (<i>Myotis mystacinus/brandtii</i>), Bechstein's bat (<i>Myotis bechsteinii</i>)
2 km	Lesser horseshoe (<i>Rhinolophus hipposideros</i>), Daubenton's bat (<i>Myotis daubentonii</i>), common pipistrelle (<i>Pipistrellus pipistrellus</i>)
3 km	Greater horseshoe (<i>Rhinolophus hipposideros</i>), Leisler's bat (<i>Nyctalus leisleri</i>), soprano pipistrelle (<i>Pipistrellus pygmaeus</i>), Nathusius' pipistrelle (<i>Pipistrellus nathusii</i>), brown long-eared bat (<i>Plecotus auritus</i>), grey long-eared bat (<i>Plecotus austriacus</i>)
4 km	Natterer's bat (<i>Myotis nattereri</i>), noctule (<i>Nyctalus noctula</i>), serotine (<i>Eptesicus serotinus</i>)
6 km	Barbastelle (<i>Barbastella barbastellus</i>)

Appendix 8 – Proposed Enhancements

Products	Description
	Habibat Terraced Sparrow Box Three-chambered box designed for sparrows that can be integrated into a wall and faced with the same material as the wall to leave only small holes for bird access. http://www.habibat.co.uk/category/bird-boxes/habibat-terraced-sparrow-box
	Schwegler Bird Box 1B (or similar) The 1B nest box will attract a wide range of species and is available with different entrance hole sizes to prevent birds from competing with each other for the boxes. https://www.nhbs.com/1b-schwegler-nest-box
	3S Schwegler Starling Nest Box (or similar) A versatile box that attracts other species such as woodpeckers, nut hatches and pied flycatchers. http://www.nhbs.com/title/177925/3s-schwegler-starling-nest-box

Products	Description
 	Habibat Bat Box The Habibat Bat Box is a solid box made of insulating concrete with an internal roost space, which can be incorporated into the fabric of a building as it is built or renovated. A variety of facings can be fitted to suit any building. The box is suitable for Pipistrelle bats and other common UK species. https://www.nhbs.com/habibat-bat-box-plain-for-rendering
	Beaumaris Woodstone bat Box Suitable for hanging on trees or external walls/fences and made of long lasting woodstone, this bat box has a narrow internal cavity favoured by crevice-roosting species such as soprano pipistrelle. With an entrance hole at the bottom, this box is self-cleaning and requires little-no maintenance. https://www.nhbs.com/beaumaris-woodstone-bat-box

Products	Description
	Schwegler Clay and Reed Insect Nest (or similar) A woodcrete / woodstone surrounded insect nest suitable for sunny, sheltered locations. The different sections provide a range of habitats to suit varying types of invertebrates. http://www.nhbs.com/title/181090/schwegler-clay-and-reed-insect-nest
	Bee Block Can either be integrated into the walls of a structure or left free standing as a feature. Cavities provide solitary bees places to lay their eggs. https://www.nhbs.com/search?q=bee%20brick&hPP=60&idx=titles&p=0&fR%5Bdoc_s%5D%5B0%5D=false&fR%5Bhide%5D%5B0%5D=false&fR%5Blive%5D%5B0%5D=true&q&qtview=221097
	Hedgehog gravel boards A gravel board for use with slotted posts to allow hedgehogs free passage between gardens. Holes 13cm x 13cm could be installed at the base of any gravel board. https://www.jacksonsfencing.co.uk/product/sc_667610/hedgehog-gravel-board-for-use-with-slotted-posts-1.83m-x-150-x-28mm-incl.1-x-end-packer-1-x-length-packer-jakcured