



**Land to the East of
Longwater Road,
Finchampstead**

Ecological Appraisal

Prepared by:
**The Environmental Dimension
Partnership Ltd**

On behalf of:
**Catesby Strategic Land Ltd and
Stonebond Properties (Guildford)
Ltd**

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PLANS

Plan EDP 1: Extended Phase 1 Habitat Survey (edp4070_d025b 06 June 2024 GYo/JSn)
Plan EDP 2: Designated Sites Plan (edp4070_d032b 06 June 2024 PDr/JSn)
Plan EDP 3: Breeding Bird Survey Plan (edp4070_d026b 07 June 2024 PDr/JSn)
Plan EDP 4: Bat Activity Survey – May (edp4070_d027b 06 June 2024 PDr/JSn)
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(edp4070_d029b 06 June 2024 PDr/JSn)

Plan EDP 7: Great Crested Newt Survey
(edp4070_d030b 06 June 2024 PDr/JSn)

Plan EDP 8: Reptile Survey
(edp4070_d031b 06 June 2024 PDr/JSn)

Plan EDP 9: Pre-development Habitat Plan
(edp4070_d036a 22 April 2024 GYo/JSn)

Plan EDP 10: Post-development Habitat Plan
(edp4070_d037a 24 May 2024 VMs/JSn)

Section 1 Introduction

- 1.1 This Ecological Appraisal has been prepared by The Environmental Dimension Partnership Ltd (EDP) on behalf of Catesby Strategic Land Ltd and Stonebond Properties (Guildford) Ltd (hereafter referred to as “the Applicant”). This Appraisal considers the ecological implications of proposed development at Land to the East of Longwater Road, Finchampstead (hereafter referred to as “the Site”).
- 1.2 This report has been prepared with reference to the following key guidance:
- Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal¹;
 - CIEEM Guidelines for Ecological Impact Assessment²; and
 - British Standard: Biodiversity - Code of Practice for Planning and Development³.
- 1.3 EDP is an independent environmental planning consultancy with offices in Cirencester, Cardiff and Cheltenham. The practice provides advice to private and public sector clients throughout the UK in the fields of landscape, ecology, archaeology, cultural heritage, arboriculture, rights of way and masterplanning. Details of the practice can be obtained at our website (www.edp-uk.co.uk).

SITE CONTEXT

- 1.4 The Site is centred approximately at Ordnance Survey Grid Reference (OSGR) SU 796 627. The Local Planning Authority (LPA) is Wokingham Borough Council. The location and extents of the Site are illustrated on **Plan EDP 1** and described in the material supporting the planning application, particularly the Design and Access Statement.
- 1.5 The Site measures c.2.29 hectares (ha) and is located at the southern extent of the village of Finchampstead to the east of Longwater Road.
- 1.6 The Site comprises a field of species-poor grassland bordered to the north by a public footpath and residential curtilages; to the west by a mature treeline and Longwater Road; to the south by a ditch and a mature plantation hedgerow with wet gravel pits beyond; and to the east by grassland and mature trees. Land uses in surrounding landscape are largely urban to the north and north-west, there are allotments and woodland to the west

¹ CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester

² CIEEM (2018). *Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine version 1.2*. Chartered Institute of Ecology and Environmental Management, Winchester

³ BSI (2013) *Biodiversity - Code of Practice for Planning and Development*. BS 42020:2013. British Standards Institute

DEVELOPMENT PROPOSALS

- 1.7 In brief, the proposed development comprises the erection of 40 residential dwellings, (Use Class C3), together with associated outdoor space and landscaping, drainage infrastructure, hard and soft landscaping, parking, access, and associated works
- 1.8 The proposals are to be the subject of a detailed planning application and the Site Layout is provided as **Appendix EDP 1** to this report.
- 1.9 The ecological sensitivities of the Site have influenced the final layout through an iterative design process. Thus, the masterplan incorporates a degree of 'inherent' mitigation to avoid or reduce the severity of potential ecological impacts.

SCOPE OF THE ASSESSMENT

- 1.10 This Ecological Appraisal describes the current ecological interest within and around the Site, which has been identified through standard desk- and field-based investigations. It then considers the potential ecological impacts and opportunities for ecological enhancement based on the final masterplan (incorporating inherent mitigation) in the context of relevant legislation and planning policy. Finally, this Appraisal identifies the necessary additional measures to avoid, mitigate or provide compensation for potential impacts, and the mechanisms for securing such measures.
- **Section 2** summarises the methodology employed in determining the baseline ecological conditions within and around the Site (with further details provided within Appendices and on Plans where appropriate);
 - **Section 3** summarises the baseline ecological conditions (with further details also provided within Appendices and on Plans where appropriate) and identifies and evaluates any pertinent ecological features/receptors; and
 - **Section 4** describes how the development design has responded to the ecological constraints and any embedded/inherent mitigation, and then considers the potential impacts of the proposals on pertinent ecological features;
 - **Section 5** proposes mitigation and enhancement measures for the current and possible future planning stages, in the context of relevant legislation and planning policy, and mechanisms to secure their delivery; and
 - **Section 6** summarises the Mitigation and Enhancement Strategy for the Site and provides the overall conclusions of the Appraisal.

Section 2

Baseline Methodology

- 2.1 This section of the Ecological Baseline summarises the methodologies employed in determining the baseline ecological conditions within and around the Site. This has been undertaken by appropriately qualified ecologists using relevant best practice methodologies wherever possible. Reasons for any departure from best practice methodology are given and normally relate to the timing of EDP's commission and/or the availability of access to parts of the Site or wider study area. Full details of the techniques and process adopted are, where appropriate, provided within Appendices and on Plans to the rear of this report.

DESK STUDY

- 2.2 The desk study is an important element of undertaking an initial ecological appraisal of a site proposed for development, which entails the initial collation and review of contextual information, such as designated sites, together with known records of important habitats or species.
- 2.3 The desk study involved collating biodiversity information from the following sources:
- Existing Ecological Appraisal (report reference edp4070_r003 (June 2017);
 - Thames Valley Environnemental Records Centre (TVERC);
 - Hampshire Biodiversity Information Centre (HBIC); and
 - Multi-Agency Geographic Information for the Countryside (MAGIC) website⁴.
- 2.4 The desk study was undertaken during November 2023 and involved obtaining the following information:
- International statutory designations (10km radius around site);
 - National statutory designations and non-statutory local sites (2km radius);
 - Annex II bat species⁵ records (6km radius);
 - All other protected, priority and notable species records (2km radius); and
 - All other notable habitat records (500m radius).
- 2.5 These search areas are considered sufficient to cover the potential zones of influence (Zoi)⁶ of the proposed development in relation to designated sites, habitats and species.

⁴ www.magic.gov.uk

⁵ Bat species listed in Annex II of the EC Habitats Directive, namely Greater horseshoe, Lesser horseshoe, Barbastelle and Bechstein's bats

⁶ Zone of Influence - the areas and resources that may be affected by the proposed development

- 2.6 The adopted Wokingham Borough Local Development Framework and Finchampstead Neighbourhood Plan was also reviewed as part of the desk study to understand local priorities with regard to protection of ecological features/biodiversity.
- 2.7 In addition to the above, previous survey information for the Site, collected by EDP in 2017, was reviewed to obtain further contextual information and attain any material changes in the habitats present and likelihood of presence, or confirmed presence, of protected, priority or other notable wildlife species. Due to the time elapsed since this ecological appraisal an updated suite of ecology surveys was undertaken.

EXTENDED PHASE 1 HABITAT SURVEY

- 2.8 The main habitats within the Site, together with their dominant/characteristic plant species, were identified by undertaking an Extended Phase 1 Habitat survey on 30 March 2023. An update walkover was undertaken on 29 January 2024 to confirm if there had been any material changes to the habitats present.
- 2.9 During the survey, habitat type and condition were also recorded to meet the Defra Biodiversity Metric data requirements for calculating biodiversity net gain/loss. This was undertaken with reference to the Metric user guide⁷ and UK Habitat Classification System⁸ which underpins the Metric.
- 2.10 Full details of the habitat survey methodology are provided within **Appendix EDP 2**.

DETAILED (PHASE 2) SURVEYS

- 2.11 The scope of Phase 2 surveys undertaken within the Site was defined following the initial studies described above.
- 2.12 The surveys 'scoped in' based upon the findings of the Extended Phase 1 Habitat survey are summarised in turn below, with reference to sources of further detailed information where applicable.

Breeding Bird Survey

- 2.13 While the Site contains several habitats which are suitable for nesting birds, including the boundary hedgerow, woodland and mature trees, these are limited in extent, confined to the Site boundaries and likely to support an assemblage dominated by common and widespread species. As such, a pilot breeding bird survey was completed to confirm this assumption and to identify if further survey effort would be required. The survey was undertaken in June 2023 with reference to standard methodology, entailing a modified Common Bird Census (CBC)⁹ 'territory mapping' approach.

⁷ Natural England Joint Publication JP039. The Biodiversity Metric 4.0 User Guide. March 2023

⁸ UKHAB LTD. (2022) UK Habitat Classification [online]. Available from: <http://ukhab.org>

⁹ Marchant, J. (1983). *Common Bird Census Method*. BTO

- 2.14 Full details of the breeding bird survey methodology, and any limitations encountered, are provided in **Appendix EDP 3**.

Bat Surveys

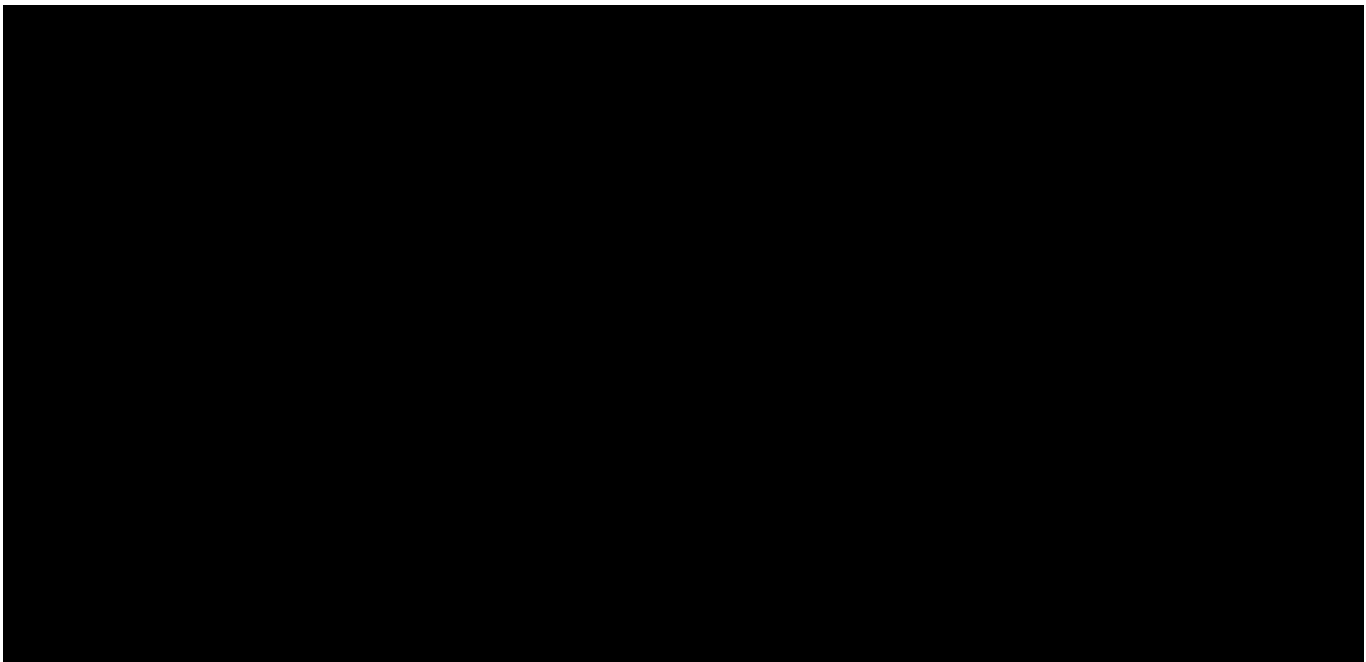
- 2.15 During the Extended Phase 1 Habitat survey, mature trees present within, or immediately adjacent to, the Site were identified as having potential to support roosting bats. In addition, a number of habitats present within the Site, including the grassland field, hedgerows and woodland edge were identified as being of moderate suitability to support foraging and commuting bats. The following surveys for bats were therefore undertaken, with reference to best practice guidelines¹⁰ at the time of survey:

Bat Roost Inspection Surveys - Trees

- Preliminary ground-level roost assessment of trees for bat roosting suitability, undertaken on 30 March 2023; and
- Update Ground Level Tree Assessment (GLTA) of trees for bat roosting suitability, undertaken on 05 May 2024 to determine the suitability of all trees on-site.

Bat Activity Surveys

- Manual transect surveys conducted in May, July and September 2023; and
 - Automated detector surveys conducted monthly between May and September 2023, inclusive.
- 2.16 Full details of the bat survey methodologies, and any limitations encountered, are provided in **Appendix EDP 4**.



¹⁰Collins, J. (ed.) (2016). *Bat Surveys: for Professional Ecologists: Good Practice Guidelines (3rd edition)*. The Bat Conservation Trust, London

Great Crested Newt Survey

- 2.21 An initial assessment of the Site's suitability to support great crested newt (*Triturus cristatus*) was undertaken during the Extended Phase 1 Habitat survey and with reference to desk study records as described above. There are no ponds within the boundaries of the Site though there are nine waterbodies located within a 500m radius of the Site, of which five are within 250m.
- 2.22 Access was requested for all ponds located within 250m of the Site that were not separated from the Site by significant dispersal barriers. Access was not granted to ponds **P1**, **P2**, **P3** or **P4**. Pond **P5** was fully accessible. Ponds **P1** and **P4** were subject to a Habitat Suitability Index (HSI) Assessment¹¹ from adjacent accessible land and pond **P5** was subject to a detailed HIS assessment as well as Environmental DNA (eDNA) sampling¹². Surveys were completed in accordance with relevant best practice guidance.
- 2.23 Waterbodies more than 250m from the Site were not surveyed as the likelihood of great crested newts dispersing over this distance to the Site is much reduced, in particular given the lack of suitable waterbodies present within the Site.
- 2.24 Full details of the great crested newt survey methodology, and any limitations encountered, are provided in **Appendix EDP 5**. The location of the water bodies surveyed is shown on **Plan EDP 7**.

Reptile Survey

- 2.25 Suitable habitat for an assemblage of common and widespread reptile species is present across the Site, including the grassland covering the majority of the Site, as well as the boundary hedgerows and scrub, particularly along the northern site boundary. The habitats present provide opportunities for basking, foraging and dispersal, though with hibernation potential confined to the Site boundaries. A detailed refugia-based reptile survey was therefore

¹¹Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10 (4), 143-155

¹²As approved by Natural England. <http://www.freshwaterhabitats.org.uk/wordpress/wp-content/uploads/2013/09/eDNA-water-sample-methods-FHT.pdf>

undertaken to confirm the presence and distribution, or likely absence, of reptiles within the Site with reference to best practice guidelines¹³.

- 2.26 A total of 66 artificial refugia were deployed in all suitable habitats across the Site on 19 May 2023 and surveyed on seven subsequent occasions between June and September (inclusive) 2023.
- 2.27 Full details of the reptile survey methodology, and any limitations encountered, are provided in **Appendix EDP 7**.

BIODIVERSITY NET GAIN

- 2.28 If the application is granted planning permission, this development is not exempt from Biodiversity Gain Requirement as set out in the Environment Act 2021 (and associated secondary legislation).
- 2.29 As required by the Environment Act 2021 (and associated secondary legislation), the baseline habitat information is presented within this report (**Section 3** and detailed in **Appendix EDP 8**). The pre-development biodiversity value of the Site is accurate as of the 24 January 2024, which is the date of the latest habitat survey prior to submission of this assessment.
- 2.30 As with any application, the mandatory 10% Biodiversity Net Gain (BNG) will be secured and proven through a Biodiversity Gain Plan which will be submitted to and approved by the LPA as per the general biodiversity gain condition under the granted Planning Permission. As set out in the Environment Act, a BNG assessment is not required during the planning determination and the condition is only required to be discharged pre-commencement.
- 2.31 A BNG assessment has been undertaken to measure the net biodiversity impacts of the proposed development and to assess the scheme's ability to deliver net biodiversity gain. The assessment has been undertaken using the Department for the Environment Farming and Rural Affairs (DEFRA) Statutory Biodiversity Metric (the latest version of 'the Metric', released in February 2024). The assessment has been undertaken by an ecological consultant suitably experienced in these types of assessment, and with reference to current best practice guidance.

ECOLOGICAL SURVEYS SCOPED OUT

- 2.32 **Table EDP 2.1** summarises other survey types which, whilst occasionally required to inform a planning submission for development sites, are not deemed to be necessary/appropriate in this case.

¹³Froglife (1999) *Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10, Froglife, Halesworth

Table EDP 2.1: Ecology Surveys Scoped Out.

Survey Type	Reasons for Scoping Out
Full Breeding Bird Surveys	The pilot survey confirmed that the breeding bird assemblage present within the Site was dominated by common and widespread species, with only a small number of red list and priority species. The suitable habitat for breeding birds is predominantly confined to the Site boundary habitats which are primarily retained within the scheme, as such any impacts are anticipated to be minimal.
Dormouse	No records returned from desk study and only limited habitat suitability bounding the Site. This habitat will be retained as part of the development proposals, it is very unlikely there will be a significant impact on dormouse even if present.
Otter and Water Vole	The ditch habitats within the Site are provide no suitable aquatic habitats for either of these species, they are both considered likely absent.
Invertebrates	Paucity of suitable habitat within the Site though those more valuable habitats are confined to the Site boundaries and retained as part of the development proposals.

Section 3

Baseline Results

- 3.1 This section of the Ecological Baseline summarises the baseline ecological conditions determined through the course of desk- and field-based investigations described in **Section 2**. In particular, this section identifies and evaluates those ecological features/receptors that lie within the Site's potential Zol, and which are pertinent in the context of the proposed development. Further technical details are, where appropriate, provided within Appendices and on Plans to the rear of this report.
- 3.2 Where a particular ecological feature/receptor has been confirmed to be present, or presence is inferred based on habitat suitability, its ecological importance is assessed. The level of ecological importance assigned to each ecological feature is based upon established geographical value systems and the uses the following scale: International and European (highest) > National > Regional > County > District > Local > Negligible (lowest). Any features assessed as being important at a less than Local level though, which have a greater than negligible ecological importance have been assessed as being of Site level ecological importance.

DESIGNATED SITES

- 3.3 Information regarding designated sites was obtained during the desk study. Statutory designations (those receiving legal and planning policy protection) and non-statutory designations (those receiving planning policy protection only) are discussed in turn below.

Statutory Designations

- 3.4 Statutory designations represent the most significant ecological receptors. Internationally important statutory designations include Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Ramsar sites (including potential SPAs, possible SACs and proposed Ramsar). These designations are protected under the Conservation of Habitats and Species Regulations 2017 (as amended) (the Habitats Regulations). These designations are referred to as 'habitats sites' in the National Planning Policy Framework (NPPF, December 2023) and development which would adversely affect a habitats site (alone or in combination) cannot benefit from the NPPF presumption in favour of sustainable development.
- 3.5 Nationally important statutory designations include Sites of Special Scientific Interest (SSSIs) and National Nature Reserves (NNRs). NNRs are also SSSIs, both of which are protected under the Wildlife and Countryside Act 1981 (as amended). The NPPF states that development which would adversely affect as SSSI should not normally be permitted.
- 3.6 With respect to local planning policy, Wokingham Borough Council (WBC) adopted a Core Strategy Development Plan Document in January 2010. This document sets out the vision for how the Borough will develop in the period to 2026 and includes policy for the protection of statutory sites under policy CP7 Biodiversity which states that:

"Sites designated as of importance for nature conservation at an international or national level will be conserved and enhanced and inappropriate development will be resisted. The degree of protection given will be appropriate to the status of the site in terms of its international or national importance."

- 3.7 Additional policies and detail are found within the Wokingham Borough Managing Development Delivery Document (Local Plan) – Adopted 21 February 2014. Specifically, TB23: Biodiversity and Development which states that:

"...b) Provide appropriate buffer zones between development proposals and designated sites as well as habitats and species of principle importance for nature conservation"

- 3.8 In addition, specific protection of the Thames Basin Heaths Special Protection Area (SPA) is provided under Policy CP8:

"Development which alone or in combination is likely to have a significant effects on the Thames Basin Heaths Special Protection Area will be required to demonstrate that adequate measures to avoid and mitigate any potential adverse effects are delivered."

- 3.9 Local level statutory designations include Local Nature Reserves (LNR) and are generally considered to be of importance at the County level or lower. LNRs are designated under the National Parks and Access to the Countryside Act 1949, however protection of LNRs is given via local planning policies and/or by-laws.
- 3.10 Statutory designations are also recognised as key natural assets within the Wokingham Borough Core Strategy and within the Finchampstead Neighbourhood Plan. No part of the Site is covered by any statutory designations. However, there is one internationally important designation within 10km of the Site, 10 nationally important designations within 2km of the Site. These sites are summarised in **Table EDP 3.1** and illustrated on **Plan EDP 2**.

Table EDP 3.1: Statutory Designations Within the Site's potential Zone of Influence.

Designation	Approx. distance from Site	Interest Feature(s)
Internationally Important Statutory Designated Sites (within 10km of the Site)		
Thames Basin Heath SPA	2.7km south	A composite site in southern England encompassing a number of SSSI. Comprises heathland, scrub and woodland that supports breeding populations of ground nesting birds including Nightjar (<i>Caprimulgus europaeus</i>), Woodlark (<i>Lullula arborea</i>) and Dartford warbler (<i>sylvia undata</i>) which are the qualifying species. Other species of interest include Hen harrier (<i>Circus cyaneus</i>), merlin (<i>Falco columbarius</i>), short-eared owl (<i>Asio flammeus</i>) and kingfisher (<i>Alcedo atthis</i>).

Designation	Approx. distance from Site	Interest Feature(s)
Nationally Important Statutory Designated Sites (within 5km of the Site)		
Longmoor Bog SSSI	2.6km north	One of a few examples in Berkshire of a base-poor valley mire, including well-developed carr of alder, downy birch, and alder. It is an important site for insect, especially species associated with the wet heathland.
Castle Bottom to Yateley and Hawley Commons SSSI	2.7km south	Forms part of Thames Basin Heath SPA. Notified for its heathland and young conifer plantation which supports an internationally important population of Dartford warbler. The scrub/heathland interface supports a rich invertebrate fauna and dragonfly assemblage.
Castle Bottom NNR	2.8km south	Large valley bog with associated heathland habitats, forms part of Thames Basin Heath SPA.
Bramshill SSSI	2.8km south-west	Forms part of Thames Basin Heath SPA. notified for a series of shallow acid ponds and associated mire, which support a rich assemblage of dragonfly and damselfly, and rotationally felled conifer plantation, which provides habitat for internationally important populations of nightjar, woodlark and Dartford warbler.
Wellington College Bog SSSI	3.4km east	Comprises a valley bog or mire, with associated areas of wet heath and marsh grazing into dry heath and secondary woodland. The bog is one of the richest in the county, in terms of bryophyte (mosses and liverworts) and flowering plants, containing several species which are uncommon or rare in southern Britain. Structurally diverse habitats are important for insect and other invertebrates.
Heath Lake SSSI	3.7km north-east	Comprises a small shallow lake supporting specialist communities of rare aquatic plants.
Sandhurst to Owlsmoor Bogs and Heaths SSSI	3.9km east	Forms part of Thames Basin Heath SPA. forms the largest and most important area of heathland remaining in east Berkshire. A shallow, spring-fed valley mire of outstanding importance which supports plants which are rare in the county, as well as populations of rare and localised insects.
Blackwater Valley SSSI	4.4km south-east	Unimproved alluvial meadows, swamp and wet valley alderwood, supporting a number of species associated with ancient grassland sites. The site supports a very rich wetland insect fauna including a number of uncommon species.
West Minley Meadow SSSI	4.7km south	Best example of wet, grazed acid grassland in north-east Hampshire. The lightly-grazed sward is surprisingly rich in flowering plants.

Designation	Approx. distance from Site	Interest Feature(s)
Broadmoor to Bagshot Woods and Heaths SSSI	5.0km north-east	Forms part of Thames Basin Heath SPA. A mosaic of broadleaved woodland, coniferous plantation, dry and wet heathland, valley mire, a series of base-poor ponds and a scarce breeding invertebrate assemblage. supports internationally important populations of woodlark, nightjar and Dartford warbler, and have a nationally important dragonfly and damselfly population.

Non-statutory Designations

- 3.11 Non-statutory designations are also commonly referred to in planning policies as 'local sites', although such designations are typically considered to be of importance at a County level. In Berkshire, such designations are termed Local Wildlife Sites (LWS) etc. Additional sites such as non-designated nature reserves (e.g. Wildlife Trust nature reserves) and Ancient Semi-natural Woodland (ASNW) are considered here when not covered by other designations. The importance of a LWS is recognised in the NPPF. in the Wokingham Borough Core Strategy, specifically Policy CP7 – Biodiversity. LWS are also recognised in the Finchampstead Neighbourhood Plan: Made Version (September 2023), specifically Policy IRS5 Ecologically important areas and Biodiversity. Policies CC03: Green Infrastructure, Trees and Landscaping and TB23: Biodiversity and Development, found within Wokingham Borough Managing Development Delivery Document sets out criteria to provide for or enhancing green/wildlife corridors to the wider network.
- 3.12 In addition to LWS, within Berkshire, the Berkshire Local Conservation Partnership has identified landscape scale areas where the greatest opportunities for habitat creation and restoration lie, enabling the efficient focusing of resources to where they will have the greatest positive conservation impact. These are known as Biodiversity Opportunity Areas (BOA).
- 3.13 The Site is covered by Blackwater Valley BOA, in addition there are five LWS and one BOA located within 2km of the Site, as summarised in **Table EDP 3.2** and shown on **Plan EDP 2**.

Table EDP 3.2: Non-Statutory Designations Within 2km of the Site.

Designation	Approx. distance from Site	Interest Feature(s)
Blackwater Valley BOA	Overlaps with the Site	Berkshire Conservation Target Area totalling 529ha. Includes the gravel pits of Moor Green Lakes Nature Reserve located 800m east of the Site. Targets are for grassland re-creating, management of gravel pits and associated habitats.
Longwater Lane Meadow LWS	0.2km west	Rank grassland and lowland meadow.
Fleet Copse LWS	0.4km west	ASNW includes a number of ancient woodland ground flora indicator species.

Designation	Approx. distance from Site	Interest Feature(s)
Thames Basin Heaths BOA	0.7km east	Berkshire Conservation Target Area including the SAC and SSSIs. Targets are for heathland and bog restoration and management.
Moor Green Lakes LWS	0.7km east	Two gravel pits, important for wintering and breeding wildfowl.
East Court Woods LWS	0.7km north	Ancient woodland of oak and ash, with layer of hazel coppice.
Finchampstead Ridges LWS	0.8km north-east	Birch and pine woodland with open areas of heathland.

HABITATS

3.14 There are several mechanisms by which habitats that lie outside of statutory and non-statutory designations are protected, or by which their importance is recognised at a national level. This includes the following:

- 'Important' hedgerows are protected from removal (out with the planning process) by the Hedgerows Regulations 1997;
- Certain habitats are listed as priority habitats, the conservation of which public authorities in England must have due regard to as part of policy or decision making under Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006. The NPPF states that plans should promote the conservation, restoration and enhancement of Priority Habitats;
- Paragraph 186 of the NPPF encourages development to secure measurable net gains for biodiversity. Part 6 of the Environment Act 2021 introduces a mandatory minimum 10% BNG requirement for all new developments that are not exempt under The Biodiversity Gain Requirements (Exemptions) Regulations 2024;
- Paragraph 188 of the NPPF includes a presumption against development which results in significant harm to biodiversity (including habitats), or results in the loss of irreplaceable habitat¹⁴. This paragraph also encourages development to secure measurable net gains for biodiversity;
- The importance of protecting habitats, and networks of habitats, is reflected in the Wokingham Borough Core Strategy, specifically Policy CP7 – Biodiversity;
- Wokingham Borough Managing Development Delivery Document (Local Plan), specifically Policy CC03 Green Infrastructure, Trees and Landscaping and Policy TB23: Biodiversity and Development: and

¹⁴Irreplaceable habitats are technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed. They include ancient woodland, ancient and veteran trees, blanket bog, limestone pavement, sand dunes, salt marsh and lowland fen.

- Finchampstead Neighbourhood Plan: Made Version (September 2023), specifically Policy IRS5 Ecologically important areas and Biodiversity.

- 3.15 There are no Irreplaceable Habitats present within or immediately adjacent to the Site.
- 3.16 The habitat survey nor a review of historic aerial imagery of the Site did not identify any evidence that the biodiversity value of the Site has degraded since 31 January 2020.
- 3.17 The distribution of different habitat types the Site is illustrated on **Plan EDP 1**. The habitats are further described in **Appendix EDP 2** alongside illustrative photographs and species lists.
- 3.18 A summary and qualitative assessment of the existing habitats, using both JNCC Phase 1 and DEFRA Statutory Biodiversity Metric terminology, is provided in **Table EDP 3.3**. Further details of the habitat condition assessment, with reference to the criteria contained within the Technical Annexes of the Biodiversity Metric, are provided within **Appendix EDP 8**.
- 3.19 As noted within **Table EDP 3.3**, the majority of the habitats within the Site are of negligible to Site level importance, though with the mature trees and hedgerow having intrinsic ecological importance at a Local level. Furthermore, a number of the habitats, including those which are of limited intrinsic importance, also require consideration in relation to their importance in maintaining populations of protected, priority or other notable species. This is discussed further below.

Table EDP 3.3: Summary of Habitats within the Site.

JNCC Phase 1 Habitat Type	DEFRA Metric Habitat Classification	Distribution within the Site	Intrinsic Ecological Importance
Semi-improved grassland	Other neutral grassland	Site consisted of a grassland field, cut for hay, with mown footpaths crossing the Site.	Site
Dense Scrub	Bramble scrub	Dominated by bramble, located along the north boundary of the Site, adjacent to the Public Right of Way (PRoW).	Negligible
Scattered Scrub	Bramble scrub	Dominated by bramble, located along the north boundary of the Site, bounding residential gardens.	Negligible
Intact species poor hedge with trees	Native hedgerow with trees	Delineating the west boundary and a short section in the south-east corner.	Local
Mature trees	Rural tree	Three mature oak trees in grassland field.	Local
Offsite Habitats			
Broad-leaved plantation woodland	N/A	Adjacent, south of the Site.	Local
Wet Ditch	Ditches	Adjacent, south of the Site.	Local

PROTECTED, PRIORITY OR OTHER NOTABLE SPECIES

- 3.20 Certain species receive legal protection in the UK and are commonly known as ‘protected species’. In reality, the level of protection for different species varies considerably, from protection solely against ‘killing and injury’ to full protection of the species and their places of refuge. Where pertinent, details of legal protection afforded to species/species-groups are provided below.
- 3.21 In addition to protected species there are other species/species-groups that do not receive legal protection, but which are notable owing to their conservation status. This includes priority species, the conservation of which public authorities in England must have due regard to under the NERC Act (2006). The NPPF recognises species as an important component of biodiversity, as does the Wokingham Borough Core Strategy, specifically Policy CP7 – Biodiversity and Finchampstead Neighbourhood Plan, specifically Policy IRS5 Ecologically important areas and Biodiversity.
- 3.22 The likelihood of presence, or confirmed presence, of protected, priority or other notable¹⁵ wildlife species within the Site is summarised below with reference to desk study records, habitat suitability and detailed surveys where relevant. Further details are made available within the appendices and plans where referenced.

Breeding Birds

- 3.23 All wild birds, their nests and eggs are protected under the Wildlife and Countryside Act 1981 (as amended) (WCA). This makes it an offence to:
- Intentionally kill, injure or take any wild bird;
 - Take, damage or destroy the nest of any wild bird while it is in use or being built;
 - Take, damage or destroy the egg of any wild bird; or
 - To have in one's possession or control any wild bird (dead or alive) or egg, or any part of a wild bird or egg.
- 3.24 In addition, further protection is afforded to those wild bird species listed on Schedule 1 of the WCA, prohibiting any intentional or reckless disturbance to these species while it is nest building, or at a nest containing eggs or young, or to recklessly disturb the dependent young of such a bird. A number of species are also included as priority species.
- 3.25 The desk study returned records of 127 different species bird species including 51 WCA Schedule 1 species, 29 priority species and 44 species included on the latest Red lists of Birds of Conservation Concern¹⁶. The vast majority of records received relate to species that would not normally breed in habitats found within the Site. Records of the species with possible

¹⁵ Notable species are those which are not legally protected but are formally identified as being of conservation concern

¹⁶ Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. 2021. *The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain*. British Birds 114: 723-747.

suitable breeding habitats on-site include bullfinch (*Pyrrhula pyrrhula*), mistle thrush (*Turdus viscivorus*), song thrush (*Turdus philomelos*), starling (*Sturnus vulgaris*) and barn owl (*Tyto alba*).

- 3.26 The full results of the pilot breeding bird survey are provided in **Appendix EDP 3** and on **Plan EDP 3**. In summary, a total of 20 bird species were recorded on-site or adjacent. This includes two WCA Schedule 1 species, one priority species and seven other species of conservation concern. Those species of note include: barn owl, dunnoek, house sparrow, song thrush, stock dove, wood pigeon and wren.
- 3.27 During the breeding bird survey, a barn owl was observed foraging over the grassland was observed roosting in a dilapidated barn/stable adjacent to the Site c.75m from the boundary.
- 3.28 During the update survey in January 2024 a flock of c.50 Canada Geese were observed in the field south-west of the Site.
- 3.29 The boundary woodland habitat has the potential to support specialist woodland bird species, whilst mature trees associated with hedgerows may provide suitable features for nesting birds. Additionally, the hedgerows delineating the field boundaries provide suitable foraging and nesting resource for use by a range of bird species.
- 3.30 The grassland that comprises the majority of the Site is not considered to afford breeding opportunities for ground nesting species present in the locality such as skylark, owing to its enclosed nature, the presence of a public footpath with associated dog walking disturbance and the relatively regular management of the field.
- 3.31 Overall, the assemblage of breeding bird species recorded on-site is relatively low in diversity and abundance, comprising common and widespread generalist species. The breeding bird assemblage on-site is therefore judged to be of no more than Local level importance.

Bats

- 3.32 All species of British bat are listed as European Protected Species (EPS) on Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended) (referred to as the 'Habitats Regulations'). This affords strict protection to bats and their roosts, and makes it an offence to:
- Deliberately capture, injure or kill a wild animal of an EPS;
 - Deliberately disturb wild animals of an EPS wherever they are occurring, in particular, any disturbance which is likely to impair their ability to survive, to breed or reproduce, to significantly affect the local distribution or abundance of the species to which they belong, or in the case of hibernating or migratory species, to hibernate or migrate; or
 - Damage or destroy a breeding site or resting place of a wild animal of an EPS.
- 3.33 Additional protection for bats is also afforded under the WCA, making it an offence to intentionally or recklessly disturb bats whilst they are occupying a structure or place which is used for shelter or protection, or to obstruct access to this structure or place. In addition, soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared bat (*Plecotus auritus*), greater

horseshoe bat (*Rhinolophus ferrumequinum*), barbastelle bat (*Barbastella barbastellus*), Bechstein's bat (*Myotis bechsteinii*), noctule (*Nyctalus noctula*), and lesser horseshoe bat (*Rhinolophus hipposideros*) are also listed as priority species.

- 3.34 The desk study returned a number of records for bats within the 2km search radius around the Site. These records relate to at least five different species, including confirmed bat roosting for soprano pipistrel in a residential house located immediately north of the Site and brown long eared bat, located approximately 900m from the Site. No records of Annex II species were returned within 2km of the Site.
- 3.35 Four records relating to European Protected Species Mitigation Licences (EPSML) issued for bats were returned from the data search on MAGIC. The closet was related to Nathusius pipistrelle in 2019, located approx. 250m north of the Site.

Tree Roost Surveys

- 3.36 With respect to trees, in 2023 a total of six trees were identified with suitable features for bat roosting, with three having Moderate and three having Low suitability for bat roosting. Full details are provided within **Appendix EDP 4** with tree locations shown on **Plan EDP 1**.
- 3.37 In 2017 a total of five trees with suitability for bat roosting was identified. Tree T6 is newly recorded.
- 3.38 A total of seven trees were identified during the GLTA as requiring further assessment or having Potential Roosting Features (PRF) in the 2024 update survey. The additional tree was all located along the west boundary and following a PRF inspection survey, the tree was classified as having PRF for individual bats (PRF-I)

Bat Foraging/Commuting Activity

- 3.39 Overall, the habitats present within the Site were assessed as being of Moderate suitability for foraging and commuting bats.
- 3.40 The findings of the manual transect, and automated detector surveys are provided in detail within **Appendix EDP 4** and the approximate distribution and diversity of bat species recorded during the transect surveys are illustrated on **Plan EDP 4 to 6**.
- 3.41 In summary, levels of bat activity recorded during the manual transects were generally low and comprised four species/species groups (Myotis and long-eared bat species were not identified to species level), with common and soprano pipistrelle accounting for the vast majority of registrations though with *Myotis* sp. and long-eared bat species also recorded. Activity was generally concentrated along the southern boundary of the Site.
- 3.42 The levels of bat activity recorded during the automated detector surveys were generally moderate and comprised eight bat species/species groups (Myotis and long-eared bat species were not identified to species level). Relatively higher levels of activity were recorded in October and relatively lower levels recorded in June, August and September 2023. The number of calls recorded was highest at the detector located along the southern boundary of the Site, adjacent to the off-site woodland edge.

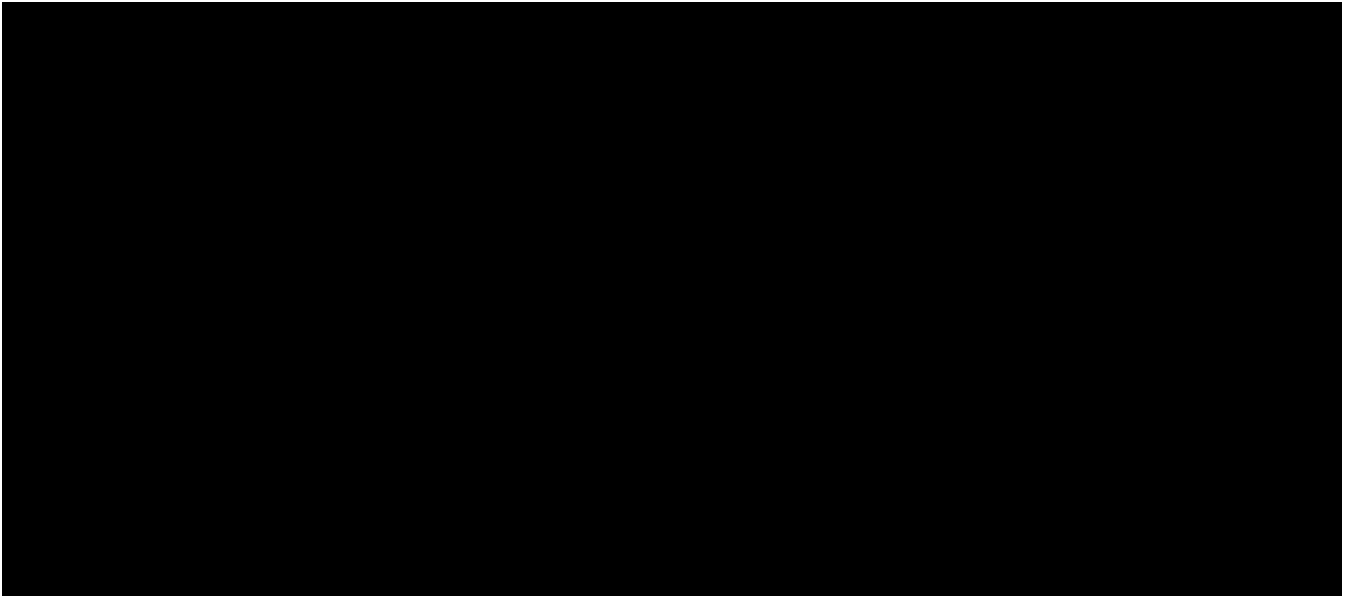
- 3.43 The assemblage recorded was dominated by common and soprano pipistrelle (91.2% overall). *Myotis* sp (4.4%) noctule (2.0%) serotine (0.8%) and long-eared bat (0.7%), barbastelle (0.4%) and Nathusius's pipistrelle (0.3%) were recorded rarely. Of note is the presence of barbastelle.
- 3.44 Barbastelle and Nathusius's pipistrelle were recorded in very low numbers across the survey periods, likely representing very low numbers of bats commuting over the Site. Neither barbastelle or Nathusius's pipistrelle are considered likely to be using the Site as a key foraging resource, with sporadic recordings suggesting opportunist presence or irregular commuting within the Site. In relation to barbastelle, whilst the urban edge habitats within the Site are not optimal the hedgerows and woodland edge provide linear commuting corridors between sections of higher value off-site woodlands.
- 3.45 In comparison to 2017 the species diversity was the same, apart from the addition of Nathusius's pipistrelle recorded in 2023. Across both survey years common and soprano pipistrelle accounted for the vast majority of activity, with others comprising a small percentage of the overall registrations. In both survey years higher levels of activity were associated with the southern boundary.
- 3.46 Taking into account the diversity of bat species utilising the Site and the extent of their roosting, foraging and commuting activity, the overall bat species assemblage using the Site is considered to be of Local importance.

Otter and Water Vole

- 3.47 Otter (*Lutra lutra*.) is an EPS receiving strict protection under the Habitats Regulations as summarised above in respect of bats. Additional protection is also afforded to this species under the WCA as summarised above in respect of bats. This species is also listed as a priority species.
- 3.48 Water vole (*Arvicola amphibius*) and their burrows receive protection under Schedule 5 of the WCA, Water vole is also listed as a priority species. This makes it an offence to:
- Intentionally kill, injure or take (capture) a water vole;
 - Intentionally or recklessly damage, destroy or obstruct access to any structure or place that a water vole uses for shelter or protection; and
 - Intentionally or recklessly disturb water voles while they are in a place of shelter or protection.
- 3.49 Three records of otter were returned within 2km of the Site, the closest record being 250m south from the Site, associated with Blackwater River, the other records were associated with More Green Lakes east of the Site. No records for Water vole were returned within the data search.
- 3.50 The ditch channel is heavily shaded from the tree canopy, resulting in no aquatic vegetation associated with the water course and limited bankside vegetation of suitability for water vole foraging or refuge. The ditch has a shallow profile, c.1m deep banks and 1-2m wide and, whilst wet during the Phase 1 survey in 2023 was identified as dry in 2017. The ditch was noted too

dry across the 2023 survey season, and it is considered likely that this water course only holds water ephemerally.

- 3.51 The ditch itself does not support abundant food sources for otter, and the adjacent riparian zone offers limited features suitable for otter holts such as sufficient dense vegetation cover or hollows. Furthermore, the ditch itself supports limited aquatic vegetation and only small, isolated pockets of marginal vegetation suitable for water vole. No evidence of otter or water vole was observed during the Extended Phase 1 survey. Due to these factors, in combination with low water levels, with an average depth of 5cm, the ditch is considered generally unsuitable for otters and water vole though otter could use the water course for occasional dispersal across the landscape between off-site lakes.
- 3.52 Given the lack of any evidence of water vole during the survey and the limited suitability of the habitats within the Site, water vole are presumed absent and are not considered further within this report.
- 3.53 No signs of otter were recorded during the survey and the habitats present are of very low suitability for this species however, they do provide some, albeit low value, aquatic connectivity between two off-site water bodies and as such there is low potential for minor, indirect disturbance effects on otter. Therefore, considered to be of Site level value.



Other Mammal Species

- 3.62 A single record for European hedgehog (*Erinaceus europaeus*)¹⁷ was returned within 2km of the Site. This species is a Priority mammal species.
- 3.63 The Site encompasses a range of suitable foraging and breeding habitats for hedgehog and droppings were recorded incidentally during other surveys. The population of hedgehog potentially occurring on the Site are only considered to be of Site level importance.

Great Crested Newt

- 3.64 Great crested newt is an EPS receiving strict protection under the Habitats Regulations as summarised above in respect of bats. Additional protection is also afforded to this species under the WCA as summarised above in respect of bats. This species is also listed as a priority species.
- 3.65 No records of great crested newt were returned within 2km of the Site, and no nearby records relating to EPSMLs issued for great crested newt were returned from the data search on MAGIC. The search on MAGIC revealed the closest Great Crested Newt Class Survey Licence Returns to be over 1.6km from the Site, in 2016.
- 3.66 The full results of the great crested newt surveys are detailed in **Appendix EDP 5**. The locations of the surveyed waterbodies are illustrated on **Plan EDP 7**.
- 3.67 The Site does not support any ponds, however, there are five waterbodies within 250m of the Site. The HSI identified pond **P5** as having 'Below Average' suitability to support great crested newts, and this was supported by a negative eDNA survey. Ponds **P1** and **P4** (gravel pit lakes), both located south of the Site were assessed as providing good suitable habitat to support great crested newts.
- 3.68 In terms of terrestrial habitats, the Site contains hedgerows, bramble scrub, tussocky grassland and adjacent woodland, which are of moderate suitability to support great crested newts in the

¹⁷ Hedgehogs are also protected from capture or killing by specific methods under Schedule 6 of the WCA

terrestrial phase of their annual life cycle, and which are therefore have potential to be used for foraging and dispersal.

- 3.69 In 2017 Pond **P1** and **P5** were surveyed, both returned negative eDNA results.
- 3.70 Even though there are no water bodies present within the Site which can provide aquatic/breeding habitat for great crested newt, the habitats do provide foraging and dispersal potential. Further, the off-site ponds to the south, have been assessed to have 'Good' suitability to support great crested newts and could support a breeding meta population between the lakes. Whilst the desk study returned no local records of great crested newts making it unlikely the species are present within the locally vicinity of the Site, in the absence of recent survey data of these ponds it will be assumed that a population of great crested newts could be present. Mitigation for great crested newts should be provided unless likely absence can be confirmed through appropriate surveys.
- 3.71 Therefore, great created newts are considered to be of at least Site level ecological value.

Other Amphibian Species

- 3.72 Other legally protected amphibians are rare and have a very restricted distribution¹⁸, however common toad (*Bufo bufo*) is a widespread species which is listed as a priority species.
- 3.73 Records for other common toad, common frog and smooth newt were returned within the 2km data search radius.
- 3.74 Given the presence of suitable terrestrial habitats on-site including a hedgerow bases, grassland, adjacent woodland and a series of waterbodies within the vicinity of the Site there is potential for common toad and other amphibian species to use the terrestrial habitats within the Site. The population of other amphibian species potentially occurring on the Site are only considered to be of Site level importance.

Reptiles

- 3.75 All species of common reptile, namely common lizard (*Zootoca vivipara*), slow-worm, grass snake (*Natrix helvetica*) and adder (*Vipera berus*), receive at least limited protection from harm under the WCA, making it an offence to cause intentional killing and injuring of these species. In addition, these species are also listed as priority species.
- 3.76 A total of 50 reptile records were returned within 2km of the Site, relating to grass snake, slow-worm and adder, the closet records are in relation to Manor Green Lakes LWS, located 800m east of the Site.
- 3.77 The reptile survey recorded small populations of slow worm (peak adult count of nine), grass snake (peak count two) and common lizard (peak count one). The survey findings are detailed in **Appendix EDP 6** and illustrated on **Plan EDP 8**.

¹⁸Natterjack toad (*Epidalea calamita*) and Northern pool frog (*Pelophylax lessonae*) are EPS, protected under WCA and priority species

- 3.78 All records were associated with the ranker field edge habitat, in particular the northern boundary dominated by bramble scrub and public footpath, and the south-east corner or the grassland adjacent to wet ditch and woodland habitat. The grassland which forms the majority of the Site is subject to a hay cutting management regime, therefore, its suitability to support reptiles will vary throughout the year. No reptiles were recoded within the field and the habitat is considered to be of lower value as a result of occasional mowing.
- 3.79 In comparison to 2017 the population size of grass snake and slow worms remains the same as does the general distribution of recordings between survey years. Common lizards were not recorded during reptile survey undertaken in 2017.
- 3.80 Slow worms and grass snakes are relatively common and widespread across the county, given the number of records returned in the data search. The small populations are therefore considered to be of no more than Local level value. Common lizards were only recorded in individual numbers on a two survey visits, therefore, are considered be of no more than Local level value.

SUMMARY OF KEY SURVEY FINDINGS

- 3.81 The key ecological features/receptors pertinent to the development proposals, based on the survey findings described above, are set out in **Table EDP 3.4**.

Table EDP 3.3: Summary of Ecological Features

Feature	Key Attributes	Ecological Importance
Statutory Designated Sites		
Thames Base Heath SPA and SAC	Located 2.7km south of the Site, four SSSIs that make up the designated area are within 5km of the Site.	International
SSSIs and NNR	There are 10 such designations located between 2 and 5km of the Site. The closet of which is Logmore Bog SSSI.	National and County
Non-Statutory Designated Sites		
Blackwater Valley BOA	Area overlaps with the Site, the Berkshire Conservation Target Area Targets are for grassland re-creating, management of gravel pits and associated habitats.	County
LWS	Five LWS within 1km of the Site, Longwater Lane Meadows is located c.200m west.	County
Habitats		
Semi-improved grassland	Grassland field forms the Site.	Site
Mature trees	Three individual trees along the east boundary and associated with boundary hedgerow.	Local

Feature	Key Attributes	Ecological Importance
Hedgerow	Delineating the west boundary with mature trees.	Local
Woodland	Located off-site, adjacent to the south running through the parcel of woodland.	Local
Wet Ditch	Immediately south of the Site.	Local
Species		
Breeding Birds	Common and widespread species recorded on-site, potential to nest within boundary feature hedgerow and woodland.	Local
Barn Owl	Foraging across the Site and roosting within the vicinity.	Local
Bats - Roosting	Seven trees with bat roost potential.	Local
Bats – Commuting/Foraging	Common and widespread assemblage of Local value, associated with boundary features.	Local
Otter and Water Vole	Potential to commute along the ditch between off-site waterbodies.	Site
Other mammals	Hedgehog present in low numbers, foraging and/or commuting across the Site.	Site
Great Crested Newt	Potential to be present in their terrestrial phase for foraging and dispersal.	Site
Reptiles	Small populations of slow worm, grass snake and common lizard.	Local

Section 4

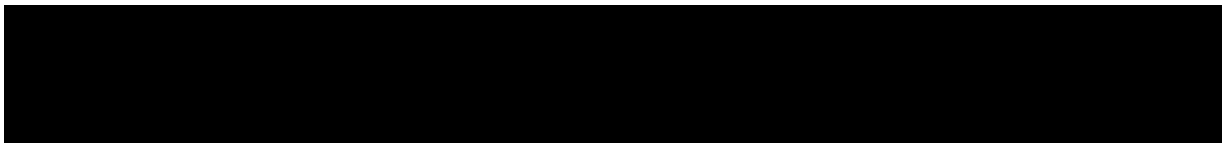
Impact Assessment

- 4.1 This section of the Ecological Appraisal first considers any avoidance/mitigation which is embedded within development design, as represented by the Site Layout provided as **Appendix EDP 1**. It then considers the likely impacts of the development proposals on the pertinent ecological features identified in **Section 3** in the absence of additional mitigation.

EMBEDDED MITIGATION

- 4.2 EDP has provided input throughout the iterative design process so the development layout, reflects some important measures to avoid, mitigate or compensate for ecological impacts as well as other measures designed to provide long-term ecological enhancements. This embedded mitigation comprises the following:

- Open spaces for recreation to minimise impacts on off-site designations around the development parcel and retention of an existing PRow delineating the northern boundary of the Site;



- Retention and buffering of boundary habitats and valuable mature trees where possible, in order to maintain habitat connectivity;
- Inclusion of natural/informal greenspace within the development where the creation or enhancement of ecologically valuable/biodiverse habitat is proposed; and
- Inclusion of a sustainable drainage feature to maintain run-off rates and to maintain or improve the quality of surface water discharging into nearby watercourses.

IMPACTS ON DESIGNATED SITES

Statutory Designations

- 4.3 As described in **Section 3**, there are eleven statutory designations within the potential Zol of the Site. The potential impacts on these designations, in the absence of additional mitigation, are discussed below.

International Designations

Thames Basin Heath SPA

- 4.4 Thames Basin Heath SPA (and SSSI's of which it comprises), are considered to be the only statutory designations potentially at risk of impacts associated with the development.

- 4.5 Thames Basin SPA lies approximately 2.7km south and west of the Site. It has been designated for the ground nesting birds it supports (nightjar and woodlark) and associated heathland habitat. These habitats and species are considered to be sensitive to recreational disturbance and as such all residential development proposals within up to 7km of the SPA are considered to be at risk of resulting in indirect recreational impacts, as identified in Policy CP8 of the Core Strategy.
- 4.6 The Site is located within the 5km Mitigation Zone. It has been identified that any new housing within 5km of the SPA may harm the rare bird populations, however, as the development is under 50 dwellings it is not likely to contribute to significant effects on the designated features of the SPA.
- 4.7 Owing to the scale of the proposals and spatial separation from this designation any impacts are anticipated to be minor. However, in order to avoid and mitigate for any such impacts on the integrity of the SPA and be in accordance with Policy CP8 of the Core Strategy, developers are required to make a financial contribution towards the provision of Suitable Alternative Natural Greenspace (SANG) and Strategic Access Management and Monitoring (SAMM).

National Designations

- 4.8 All of the other statutory designations are considered to be sufficiently separated from the Site for there to not be at risk of any direct or indirect impacts arising owing to the species and habitats for which they have been designated and/or lack of receptor pathways in the context of the small scale of the proposals.

Non-statutory Designations

- 4.9 As described in **Section 3**, there are five non-statutory designations and one BOA within the potential Zol of the Site. The potential impacts on these designations, in the absence of additional mitigation, are discussed below.

Blackwater Valley Biodiversity Opportunity Area (BOA)

- 4.10 Blackwater Valley BOA covers a significant area (c.48,000ha) identified for its potential for biodiversity restoration and enhancement owing to its concentration of Priority Habitats and Species. As discussed subsequently, the development proposals would primarily result in the loss of species-poor semi-improved grassland which is not a Priority Habitat or considered to provide any significant ecological value. The loss of less than c.1.9ha of such habitat would therefore not detract from the BOA. The Site is situated at the northern extent of the BOA and as such would not result in increased fragmentation of the designation which extends over a considerable area to the south, encompassing the nearby gravel pits.
- 4.11 While the grassland does have some scope for restoration and enhancement, under its current hay cutting management regime its condition is very unlikely to improve and may deteriorate further. It is considered that the development proposals are capable of compensating for this loss of grassland and contributing to the targets of the BOA through habitat restoration and creation around the Site's boundaries, including the creation of meadow flower grassland, new hedgerow and tree planting, strengthening and enhancing existing boundary corridors (particularly the southern boundary) and the creation of a new attenuation feature. It is recommended that this attenuation feature is designed according to wildlife friendly principles.

Longwater Lane Meadow LWS

- 4.12 Longwater Lane Meadow LWS is linked directly to the Site via the local footpath network, with a c.500m walk from the entrance to the proposed development. The existing footpath tracks along Longwater Lane located to the north of the meadow. The LWS appears to be inaccessible for recreation and as such is unlikely to be adversely affected by increased footfall from the proposed development. Furthermore, the development proposals include new areas of green open space around the Site boundaries allowing for a circular walking route within the Site.
- 4.13 Additional areas of open space are present within the local landscape that would provide attractive areas for recreation, and which would reduce the potential for disturbance to local wild habitats. Of note is Burnmoor Meadow located just to the north of the Site, as well as approved restoration of the gravel pits to the south of the Site to create a wildlife reserve. The gravel pits would be restored in collaboration with the RSPB and includes allowing for and encouraging public access. There will therefore be a substantial provision of accessible green open space in close proximity to the Site.
- 4.14 In light of the above, it is considered that the development proposals would not result in any significant adverse impacts on either Blackwater Valley BOA or Longwater Lane Meadow LWS. Furthermore, a sensitively landscaped and managed development could assist with contributing towards the biodiversity targets of the BOA.
- 4.15 All other non-statutory designations are considered to be sufficiently separated from the Site for there to be no direct or indirect impacts arising from the relatively small-scale development proposals; owing to the species and habitats for which they have been designated and/or lack of receptor pathways.

IMPACTS ON HABITATS

- 4.16 As described above with respect to embedded mitigation, the development design has sought to retain important habitats within the layout as far as possible. However, some habitat loss is unavoidable to make way for the proposed development. The assumed habitat losses during construction have been quantified within the Statutory Biodiversity Metric and are described in the BNG Assessment provided in **Appendix EDP 8**. A full copy of the Biodiversity Metric spreadsheet (report ref: edp4070_r011) has also been submitted to the LPA with the planning application.
- 4.17 The Site comprises a field of species-poor semi-improved grassland which is considered to be of Site level ecological value, such that development in these areas would have a minimal impact on biodiversity however, the hedgerow and plantation woodland along the eastern and southern boundary and mature trees are considered to be of Local ecological value. These locally valuable habitats do not pose an 'in principle' constraint to the development though the development design has sought to retain these wherever possible.
- 4.18 As a result of an iterative design process in which ecological sensitivities were considered, the majority of valuable boundary tree and hedgerow habitats have been retained and buffered from development (see **Appendix EDP 1**). Although, to facilitate access to the development and provide suitable road-junction visibility, a 27m section of hedgerow with mature trees along the western boundary will need to be removed to create access to the Site via Longwater Road.

- 4.19 Based on the Site layout and associated landscape proposals, assumptions can be made regarding the habitats present post-development, made up of habitats retained in their current state (with no change), habitats retained and enhanced, and newly created habitats. These assumptions have been quantified within the Statutory Biodiversity Metric and details of target habitat condition are set out within the BNG Assessment provided in **Appendix EDP 8**.
- 4.20 The net effect of all habitat retention, enhancement and creation is described fully within **Appendix EDP 8** and is summarised in **Table EDP 4.1**.

Table EDP 4.1: Net Impact on Habitats

	Habitat Units	Hedgerow Units	River Unites
Total net unit change	-12.07	0.48	1.17
Total net % change	-56.50%	+55.93%	0.00%
Trading Rules Satisfied	No	Yes	N/A

- 4.21 Based on the Biodiversity Metric calculations described above the net impact on habitats, following implementation and maturation of the proposed landscaping, is predicted to be negative. In the absence of further mitigation measures, there is a risk of the following:
- Damage/deterioration/pollution of retained habitats from adjacent construction activities; and
 - Not achieving target condition for retained and new habitats due to inappropriate management.

IMPACTS ON PROTECTED, PRIORITY OR OTHER NOTABLE SPECIES

Breeding Birds

- 4.22 The Site is considered to be sub-optimal for ground nesting species such as skylark or lapwing given its small size, enclosed nature and presence of a public footpath. However, common and widespread bird species within the Site have the opportunity to use the boundary hedgerow and woodland located to the south as nesting habitats, these are proposed for retention and buffering as part of the development proposals.
- 4.23 The proposed development will require the loss of 27m hedgerow along the western boundary to facilitate access into the Site. The loss of hedgerows is kept to an essential minimal and is unlikely to result in the displacement of any territories given the scale of losses.
- 4.24 During construction, in the absence of mitigation, any removal of vegetation could result in the loss of, or damage or disturbance to, active bird nests if these works occur within the nesting bird season (April–August inclusive).

Bats

Impacts on Roosting Bats

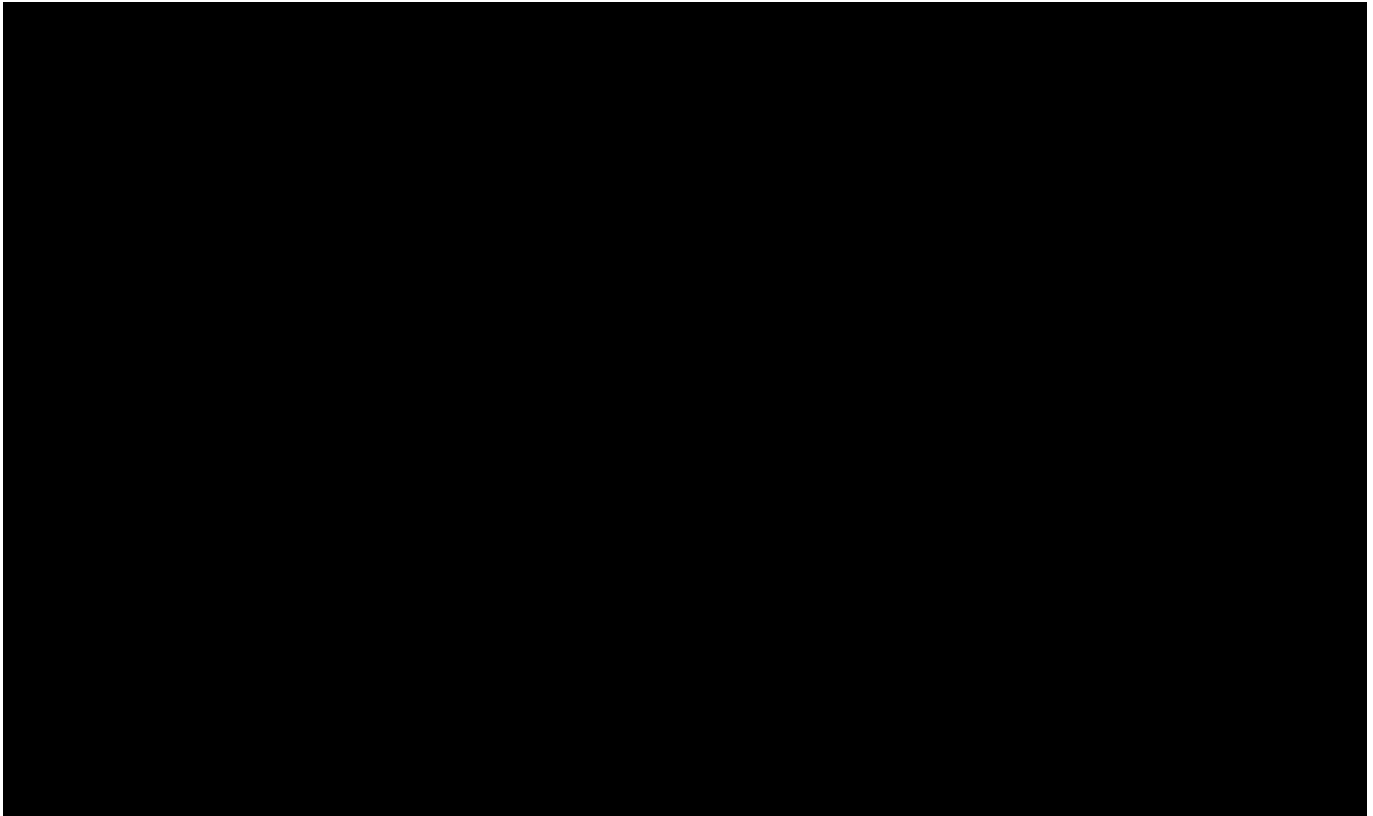
- 4.25 Seven trees were identified as having bat roosting potential within the Site. One tree with potential features suitable for roosting bats have to be removed in order to facilitate access and visibility to the Site. **T23** was subject to Further Assessment for roosting bats to establish the suitability of the PRFs observed from the ground and the feature was classified as a PRF-I.
- 4.26 All other trees with suitable features and to be retained and buffered from development. Due to location within/proximity to the development, there is potential for impacts associated with increased noise and lighting during the construction and operation phase of development.
- 4.27 The roosting potential of trees can vary over time as a result of natural decay and storms. As such, should the requirement for any additional felling or pruning works be identified, an update tree assessment should be undertaken by a suitably experienced ecologist prior to these works to ensure that there have been no changes to the suitability of the tree(s) and to advise on required further survey/mitigation if required.

Impacts on Foraging/Commuting Bats

- 4.28 Commuting/foraging behaviour was largely concentrated along the woodland edge on the southern boundary which will be retained and buffered from the development, with a 10m buffer, with the exception of the pumping station, from development in order to minimise impacts to this corridor.
- 4.29 The proposed development requires the loss of 27m of hedgerow along the western boundary to facilitate access to the Site and associated visibility splays, which could disrupt connectivity and reduce the suitability of the Site for use by commuting bats. Although, given the proximity of the road to the east and residential development to the north, it is considered that the loss of this section of hedgerow would not result in significant severance impacts.
- 4.30 Given the limited distribution and relatively low number of bats recorded within the Site, particularly those of conservation importance, it is not considered likely that the Site provides a key foraging and commuting habitat in the local landscape. In light of this, the extent of habitat loss potentially required for development would likely not result in a significant impact to the local bat assemblage.
- 4.31 Night working is unlikely to take place during the construction phase, however, the illumination of any compounds, with light spill onto suitable commuting/foraging habitats for bats, could prevent small areas of the Site being suitable in the short-term and cause temporary fragmentation.
- 4.32 Post-development, the introduction of artificial lighting around designated areas of open green space or along access roads could prevent some species of bats from utilising the available habitat for foraging/commuting and the assemblage of bats could be restricted to those more commonly associated with urban environments such as common and soprano pipistrelle bats.

Otter and Water Vole

- 4.33 Otter and water vole both have the potential to opportunistically commute along the ditch within the woodland parcel located south of the south.
- 4.34 Inherent mitigation includes a minimum 5m buffer of the woodland edge from the development along its length. This will reduce the level of indirect impacts and ensure that habitat connectivity is maintained.



Other Mammals

- 4.39 Vegetation clearance/construction could result in harm to hedgehogs, which may be utilising the Site for foraging, dispersal, refuge, and hibernation.
- 4.40 Dispersal and foraging of hedgehogs will not be impacted as a result of the proposed development, given the ecological buffers present around the edge of the development footprint, which will maintain connectivity across the Site for terrestrial mammals.

Great crested newt

- 4.41 During construction, in the absence of mitigation, any removal of vegetation could result in the killing and injury of great crested newts (if present) during vegetation clearance and following increased levels of traffic movements by vehicles, machinery and plant throughout the construction and operational phases of development.
- 4.42 The proposed site access will result in the breach of the hedgerow along the western boundary. This could result in the temporary fragmentation of commuting routes.

- 4.43 The waterbodies within 250m of the Site which have suitability to support great crested newts in their breeding phase are all located to the south, with no requirement to enter the Site during dispersal between waterbodies. Inherent mitigation includes a minimum 5m buffer along the southern boundary of the Site, where more favourable habitat for great crested newt dispersal, foraging and refuge is present.

Reptiles

- 4.44 The reptile surveys recorded a small population of slow worm (peak count nine), grass snake (peak count of two) and common lizard (peak count one) of local value. The majority of records were along the northern Site boundary associated with the more rank field margin and residential gardens. A minimum 5m buffer from the development proposals is provided along the northern boundary that will retain and add considerably to this habitat. [REDACTED]
- [REDACTED]

- 4.45 No reptiles were recorded within the grassland field where direct development impacts are anticipated and as such direct development impacts are considered to be restricted in magnitude and extent. However, in the absence of appropriate mitigation, the habitat removal and construction work across the Site could result in the disturbance, injury or killing of reptiles.
- 4.46 In addition, there is a risk of indirect impacts from encroachment and degradation of suitable habitats along the northern and south-eastern boundaries by construction vehicles and an increased risk of predation by pets following residential occupation.

Section 5

Mitigation and Enhancement Strategy

- 5.1 This section of the Ecological Appraisal considers the impacts set out in **Section 4** and puts forward additional measures to firstly avoid any ecological impact, and if this is not possible then to minimise the likely impacts of the proposed development to insignificant levels, to comply with relevant planning policy and avoid any infringement of relevant legislation.
- 5.2 This section also sets out proposed ecological enhancements for the Site, in line with the wording within the NPPF, requiring developments to contribute to and enhance the natural and local environment.

DESIGNATED SITES

Statutory Designations

Thames Basin Heath SPA

- 5.3 In order to avoid and mitigate for any such impacts on the integrity of the SPA and be in accordance with Policy CP8 of the Core Strategy, developers are required to make a financial contribution towards the provision of SANG and the SAMM.
- 5.4 Subject to financial SAMM and SANG contribution, which will be discussed with officers during the course of determination, the development proposals will be in accordance with Policy CP8 of the Core Strategy and the risk of any indirect potential recreational impacts upon Thames Basin Heath SPA would be appropriately mitigated.

Non-statutory Designations

- 5.5 As described in **Section 3**, there are ten statutory designations within the potential Zol of the Site.
- 5.6 A sufficient quantum of POS has been included within the Site layout to provide for recreation and dog walking. The on-site provision will aim to provide attractive, accessible green open space with a variety of footpaths. As a result, direct impacts relating to increased recreational pressures on the designated sites are considered unlikely to be significant.
- 5.7 Subject to the implementation, impacts on non-statutory designations will be avoided or reduced to insignificant levels, such that the development can be delivered in accordance with relevant planning policy.

HABITATS

- 5.8 Measures will be required to protect the retained habitats described in **Section 4** from damage and disturbance during the construction phase. This can be achieved through a combination of the following:
1. Tree protection measures (for woodland, trees and hedgerows), to be detailed within an Arboricultural Method Statement (AMS) or an equivalent document;
 2. Additional physical protection for wider habitats such as grasslands and water courses, to be detailed within a Construction Environmental Management Plan (CEMP) or an equivalent document. The CEMP will define Ecological Protection Zones (EPZ), in which construction activities will be excluded or carefully controlled in order to avoid or minimise harm to habitats; and
 3. General environmental protection measures, including control of dust and other pollutants, to be detailed in a CEMP.
- 5.9 The AMS and CEMP are standard documents which are capable of being secured by planning conditions.
- 5.10 The following compensatory and ecological enhancement measures are proposed:
- Retention of 0.3ha of grassland around the Site boundaries to create meadow flower grassland within areas of POS;
 - New native hedgerow and tree planting, to strengthen existing habitat corridors and increase habitat diversity; and
 - Provision of an attenuation feature designed to benefit biodiversity through appropriate profiling, planting and management, including permanent water.
- 5.11 Detailed specifications for new planting and other habitat creation are provided within the detailed Soft Landscaping Scheme, see **Appendix EDP 9**. In addition, measures to restore and enhance existing habitats, to ensure successful establishment of new habitats, and to maintain the value of all ecological features in the long-term will be delivered through a Landscape and Ecology Management Plan (LEMP), or an equivalent document, which can be secured by planning condition.
- 5.12 Subject to the implementation of the measures summarised above, impacts on retained habitats will be avoided and the net gains in biodiversity predicted within the BNG Assessment (see **Appendix EDP 8**) will be achieved in accordance with relevant planning policy.

PROTECTED, PRIORITY OR OTHER NOTABLE SPECIES

Breeding Birds

- 5.13 The habitat protection measures described above will avoid harm to breeding birds present with retained habitats. However, to facilitate the development 20m of hedgerow with mature trees

would need to be removed. As the hedgerow habitat has suitability to support nesting birds any removal should be undertaken between September and February inclusive to avoid the bird breeding season. Any habitat removed outside of this period should be inspected by a suitably qualified ecologist/Ecological Clerk of Works (ECOW) prior to removal. These measures can be delivered through the CEMP.

- 5.14 The provision of EPZs around the retained hedgerows and trees, as discussed previously, will protect any birds that are using these habitats during construction.
- 5.15 The proposed planting of new native hedgerow, tree and scrub habitat; the creation of species-rich and structurally diverse grassland, and the creation of new wetlands in the Sustainable urban Drainage System (SuDS) basins will together significantly enhance opportunities for foraging and nesting birds post-development.
- 5.16 Furthermore, the new garden habitats would likely increase the nesting and foraging resources within the Site for breeding birds, including conservation concern species recorded locally such as dunnock, house sparrow, starling and song thrush.
- 5.17 Bird nesting opportunities can be enhanced through installation of woodcrete bird boxes/bricks on retained trees and/or on new buildings. These measures/specifications can be delivered through the LEMP.

Bats

Roosting Bats

- 5.18 Seven trees were identified as having bat roosting potential from the GLTA. Of these one (**T23**) will be removed in order to facilitate access into the Site. Therefore, further assessment was undertaken to accurately determine the suitability of each feature to support roosting bat and was classified as having a single PRF-I feature.
- 5.19 **T23** will be subject to a pre-commencement check immediately prior to felling. In addition, one woodcrete bat roost box will be installed on a retained mature tree per feature to be lost.
- 5.20 If a roost or roosts are confirmed then bat exclusion and felling will take place under a Natural England licence and under supervision of a licensed bat ecologist. If no evidence of roosting bats is uncovered, works may proceed using a 'soft felling' technique to remove any tree identified as having potential to support roosting bats, These measures can be delivered through the CEMP.
- 5.21 All retained trees will be suitably protected by fencing prior to construction to minimise potential for impacts during the construction phase. This can be achieved through the installation of tree protection fencing or similar to be detailed within the AMS, to be secured via a planning condition.
- 5.22 The roosting suitability of trees can vary over time as a result of storms and natural decay. As such, should the proposals change or the requirement for any felling/pruning works be identified, an update tree assessment should be undertaken by a suitably experienced ecologist prior to these works to ensure there have been no changes to the suitability of the tree(s), and to advise on required further survey/mitigation if required.

- 5.23 Enhancement of bat roosting opportunities can be achieved through installation of bat boxes/bricks on retained trees and/or on new buildings. These measures/specifications can be delivered through the LEMP.

Foraging/Commuting Bats

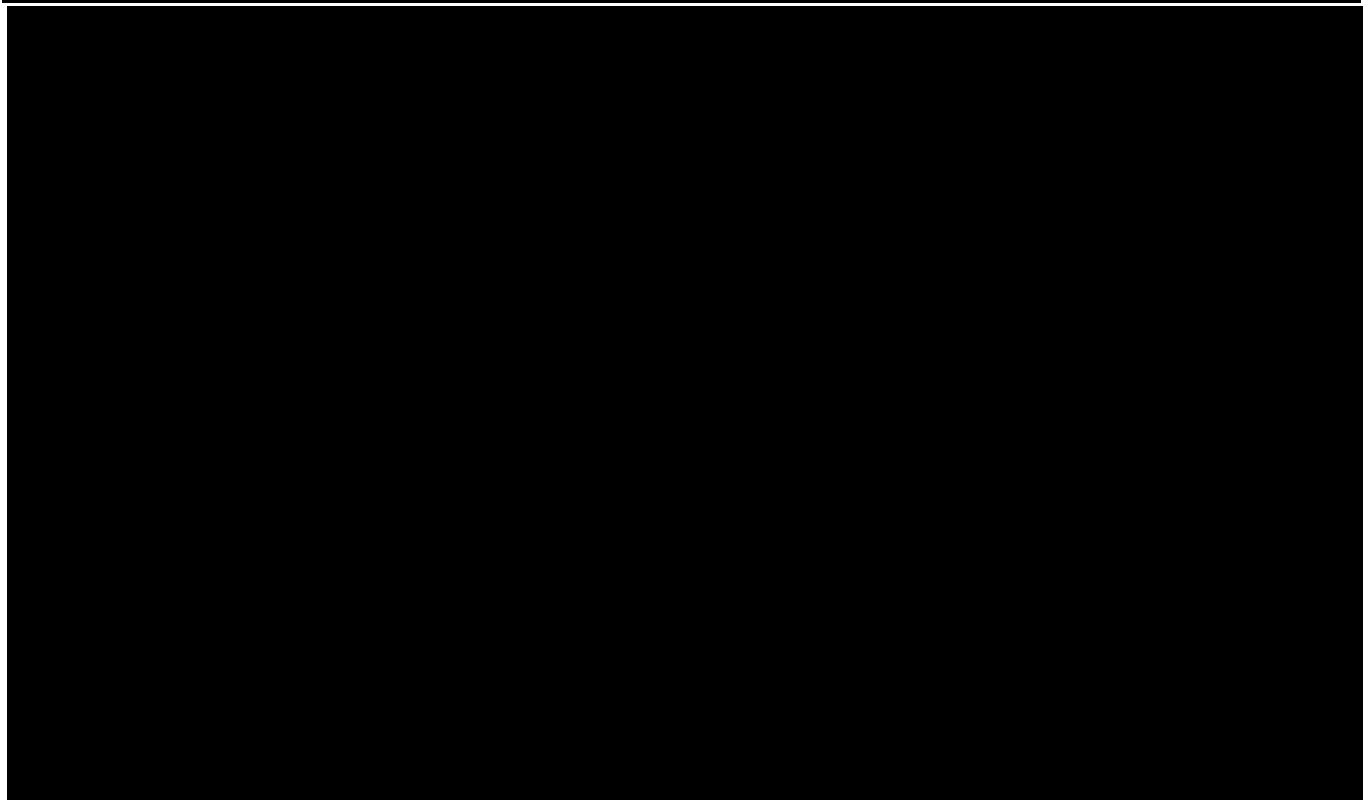
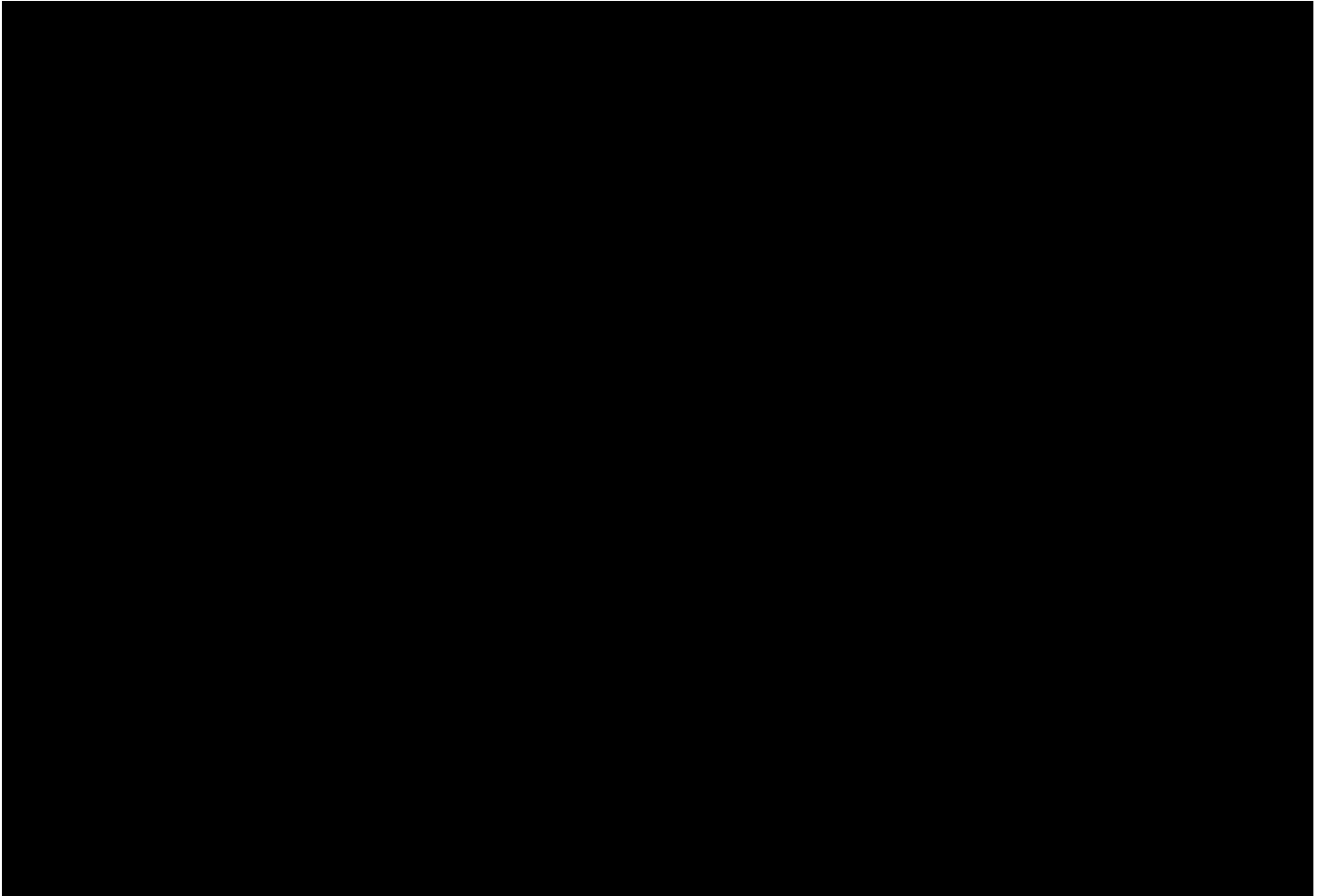
- 5.24 The habitat protection measures discussed previously, are considered sufficient to ensure that all retained habitats suitable for foraging/commuting bats will be suitably protected to prevent accidental damage during construction.
- 5.25 Inherent mitigation includes the retention and buffering of the woodland to the south of the Site and the mature trees, identified as being of higher value for bat foraging and commuting.
- 5.26 The scheme will provide new native hedgerow planting, to improve overall connectivity across the Site and provide new commuting opportunities post-development. Enhancement of bat foraging opportunities will be provided through the creation of species-rich meadow grassland, native scrub and provision of SuDS features. Overall, it is anticipated that the development will deliver a net gain in suitable habitat and hedgerows.
- 5.27 To reduce the impact of artificial light spillage on the ecological features of interest on the Site, namely the retained mature trees and the southern boundary, which will be used by foraging/commuting bats, a sensitive lighting strategy is to be adopted throughout the construction phase of the development. Where required, the times that lights are on should be controlled to avoid lights illuminated between and including dusk and dawn hours, to allow some dark periods for bats and other wildlife.
- 5.28 Within the final development layout, a wildlife-sensitive lighting scheme will be adopted to avoid or minimise light spill from street lighting onto retained bat foraging habitat, namely the south boundary woodland edge. A 'dark corridor' should be created along the woodland edge in the south of the Site, which was identified as a key commuting and foraging corridor for bats during the activity surveys, as well as the location of very low numbers of the rare barbastelle bat which is a particularly 'light-shy' species. A lighting strategy should be designed with reference to advice provided in the Bat Conservation Trust Guidance Note 08/23¹⁹ and secured by planning condition.

Otter and Water Vole

- 5.29 During construction working hours the use of artificial lighting should be minimised in proximity to the ditch and woodland edge to minimise disturbance.
- 5.30 Protection of the ditch will be demarcated during the construction phase by protective fencing and included within an Ecological Protection Zone (EPZ) and industry-standard pollution prevention measures will be implemented during construction which will avoid impacts to the water course relating to poor water quality. It is recommended that details of the EPZ and pollution prevention measures are delivered through a CEMP.

¹⁹ Bat Conservation Trust and the Institute of Lighting Professionals (2023) Guidance Note 08/23 - Bats and Artificial Lighting at Night

- 5.31 The SuDS should be appropriately designed to provide new opportunities for biodiversity through the provision of aquatic habitats in addition to flood attenuation; this could include seasonally wet wildflower grassland habitat and open-water habitats.



Other Mammals

- 5.39 As hedgehogs hibernate within piles of dead vegetation, removal of any such material should be completed outside of November to February inclusive. During the construction phase, it is also recommended that materials should not be stored near areas of retained habitat or should be hand-searched prior to removal.

Great crested newt

- 5.40 Inherent mitigation in the design layout includes the retention and buffering of favourable habitats including the areas of woodland, hedgerows, grassland and scrub, which amphibians could access in the long-term, should they be present in the locality. Furthermore, on-site aquatic provision through the creation of the SuDS features will increase the pond network and availability of breeding habitat in the locality and potentially increase the species range. The provision of wildflower meadows in areas of open space, as well as the provision of log piles will serve to enhance the Site's overall suitability for long-term use by amphibians, including great crested newts. These measures/specifications can be delivered through a LEMP.
- 5.41 A section of hedgerow will be removed to facilitate access into the Site. Hedgerow will provide some suitability for amphibian dispersal and so a precautionary method of work will need to be adopted for this, and any other above ground vegetation removal. Clearance should take place when amphibians are active and between March and October when temperatures are generally mild. As a precaution, this should be a phased clearance under the supervision of a suitably qualified ecologist to ensure no amphibians are present or to ensure any active individuals can be safely displaced without harm.
- 5.42 Details of the precautionary clearance measures detailed will mitigate the risk to great crested newts and other amphibian species which may be utilising the Site. This can be detailed within

a CEMP prepared for the Site, and will include controls over timing of site clearance, ecological supervision, and the use of a sensitive (phased) vegetation clearance methodology.

- 5.43 If great crested newts are identified at any point all works will cease and a Natural England licence will be obtained before works continue.

Reptiles

- 5.44 Given that the field is already subject to regular cuts in the summer, it is recommended the sward continues to be managed in this way so that reptiles do not colonise the interior of the field. Inherent mitigation in the design layout includes the retention and buffering of favourable habitats including the scrub and grassland in the north and woodland edge, which reptiles could access in the long-term.
- 5.45 A section of hedgerow will be removed to facilitate access into the Site and visibility splays. The hedgerow will provide some suitability for reptile dispersal and so a precautionary method of work will need to be adopted for this, and any other above ground vegetation removal. Clearance should take place when reptiles are active and between March and October when temperatures are generally mild. As a precaution, this should be a phased clearance under the supervision of a suitably qualified ecologist to ensure no reptiles are present or to ensure any active individuals can be safely displaced without harm.
- 5.46 Prior to clearance commencing site personnel should be provided with a 'tool box' talk to make them aware of reptile interests and the ecologist to contact should they encounter any.
- 5.47 This precautionary method of can be detailed within a method statement as part of the CEMP prepared for the Site, and will include controls over timing of site clearance, ecological supervision, and the use of a sensitive (phased) vegetation clearance methodology.
- 5.48 *At least* one amphibian/reptile hibernaculum should be incorporated into areas of open green space along the north boundary, comprising a mixture of log wood, brick rubble and vegetation dug into the ground and topped with soil and turf. Details and location of the hibernaculum should be agreed, and measures/specifications can be delivered through the LEMP.
- 5.49 Habitats within the open space around the development should be managed for the benefits of ecology, including the management of grassland habitats to create a rough, tussocky sward to provide opportunities for breeding, sheltering, foraging and dispersal.
- 5.50 Subject to these recommendations being fulfilled no significant impacts upon reptiles are anticipated to arise as a result of the development.

Section 6

Summary and Conclusions

6.1 **Table EDP 6.1** provides an overview of Mitigation and Enhancement Strategy described in **Section 5**.

Table EDP 6.1: Summary of Proposed Mitigation and Enhancement

Mitigation Type	Key Principles	Mechanism(s) to Secure Delivery
Avoid by design	Retention of habitats with appropriate development buffers: • 0.30ha of semi-improved grassland; • All trees, apart from 4; • 0.08km hedgerows; • 0.06ha bramble scrub; and • Minimum 5m buffer of off-site woodland and ditch.	Habitat retention embedded in the Site Layout, which will be an 'approved plan' to which future detailed designs must align.
Avoid or minimise construction impacts	Sensitive methods of operation during enabling and construction works: • Control of working hours; • Minimise noise and vibration; • Air quality measures/dust suppression; • Surface water management; • Storage of fuels/chemicals; and • Sensitive lighting.	Construction Environmental Management Plan (CEMP) secured via pre-commencement planning condition.
	Protection of retained habitats • Fencing and signage to create development exclusion zones.	AMS and CEMP, secured via pre-commencement planning condition.

Mitigation Type	Key Principles	Mechanism(s) to Secure Delivery
	Methods to avoid harming individuals or interfering with breeding of protected species prior to/during habitat destruction: • Pre-commencement checks/surveys; • Avoidance of trapping animals in excavations; • Timings to avoid sensitive periods/breeding seasons; • Phased vegetation clearance/draining of water bodies; • Maintaining dispersal routes; • Destructive searches; and • Supervision by ECoW.	CEMP secured via pre-commencement planning condition.
Mitigate or compensate for habitat loss and deliver net gains	Habitat creation: • Meadow grassland; • Mixed scrub; • SuDS, attenuation feature; • Hedgerow creation; and • Individual tree planting	Space for new habitat embedded in Site Layout and Landscape Strategy. LEMP to be secured by planning condition.
	Habitat features to be provided in suitable locations: • Bat boxes and/or bat bricks; • Bird boxes; and • Reptile hibernacula.	LEMP to be secured by planning condition.
	Lighting strategy to avoiding disturbance of nocturnal species, in particular foraging/commuting bats.	Detailed lighting design to be secured by planning condition.
Maintenance, Monitoring and Management post-construction	Habitat-specific, namely measures to: • Enhance retained habitat, and to ensure new habitat becomes established, to achieve target condition; and • Monitor and maintain habitats in good ecological condition once enhanced/established.	LEMP to be secured by planning condition.
	Species-specific, namely measures to: • Maintain habitat features (boxes etc.) in good condition or replace as necessary.	LEMP to be secured by planning condition.

- 6.2 EDP concludes that, in light of the embedded mitigation and subject to the full implementation of the additional measures summarised above, the proposed development is capable of compliance with relevant planning policy and legislation and can deliver net benefits for wildlife and biodiversity.

Appendix EDP 1

Site Layout



Romsey	T:01794 367703	Rev	Description	Date	Au	Ch
Portishead	T:01275 407000	A	Issued for Planning	31.05.24	MK	
London	T:01794 367703					

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Project	Land at Longwater Road, Finchampstead		
Drawing	Site Layout		
Client	Catesby Estates PLC & Stonebond Properties (Guildford) Limited		
Job no.	CATE230603	Date	26.03.24
Dwg no.	SL01	Rev.	A
Author	MK	Checked	
Status	PLANNING	Scale	1:500 at A1
Client ref.		Office	Romsey



Appendix EDP 2

Extended Phase 1 Habitat Survey

METHODOLOGY

- A2.1 The survey technique adopted for the Extended Phase 1 Habitat survey was at a level intermediate between a standard Phase 1 survey technique, involving habitat mapping and description, and a Phase 2 survey, based on detailed habitat and species surveys. The survey involved identifying and mapping the main habitat types (including priority habitats) and scoping any potential protected or priority species populations. This level of survey is not intended to compile a complete floral and faunal inventory for the Site.
- A2.2 The Extended Phase 1 Habitat Survey was undertaken by a suitably experienced surveyor on 30 March 2023, during which the weather was overcast, 12 degrees centigrade and with light wind. It rained immediately prior to and after the survey, although there was no rain during the survey.
- A2.3 The survey was updated on 24 January 2024 to confirm there had been no material changes to the habitats on site.

Limitations

- A2.4 The Phase 1 survey was undertaken outside of the optimum time for this type of survey which commences in April, however, in 2017 the Phase 1 survey and additional botanical survey were undertaken in May and June, respectively. The habitats that constitute the Site have not significantly changed since this survey and due to the proximity to the optimal survey periods the results are not considered to be constrained.

RESULTS

- A2.5 The principal habitats within the Site together with their dominant/characteristic plant species identified during the survey are discussed in turn below. The following should be read in conjunction with **Plan EDP 1** and illustrative photographs provided where appropriate.

Semi-improved Grassland

- A2.6 The landowner has confirmed that the grasslands within the Site are subject to hay-cuts twice each summer, a management practice which has been in place for several years.
- A2.7 The field parcel supports a sward that is overwhelmingly dominated by grasses. At the time of survey, the sward height was 10-30cm tall but progressed to around 50cm as the season progressed. There were mown pathways bisecting the field, with the sward was reduced to less than 5cm.
- A2.8 Common bent (*Agrostis capillaris*), Yorkshire fog (*Holcus lanatus*), false oat-grass (*Arrhenatherum elatius*) and sweet vernal-grass (*Anthoxanthum odoratum*) were fairly constant across the vegetation community (albeit with variable cover values). Indeed, significant areas

of the field supports a sward with abundant common bent and frequent Yorkshire fog. Cock's-foot (*Dactylis glomerata*), red fescue (*Festuca rubra*) and perennial rye-grass (*Lolium perenne*) were also found across much of the sward, although cover values were more variable.

- A2.9 Herb species were typically sparse with all species recorded as rare. Indeed, the overall cover of herb species was also rare within this grass dominated sward. The most common herb species was germander speedwell (*Veronica chamaedrys*), with scattered hairy tare (*Vicia hirsuta*), common vetch (*Vicia sativa*), creeping buttercup (*Ranunculus repens*), meadow buttercup (*Ranunculus acris*), common sorrel (*Rumex acetosa*) and white clover (*Trifolium repens*). Only single patches of red clover (*Trifolium pratense*), meadow vetchling (*Lathyrus pratensis*) and greater bird's-foot-trefoil (*Lotus pedunculatus*) were recorded.
- A2.10 In summary, the vegetation in general was relatively species poor, particularly in relation to herb species. Indeed, no species of note or conservation importance was recorded. The vegetation community recorded on site displays some characteristics of an impoverished lowland acid grassland but few forb species indicative of this habitat type persist. Indeed, a large number of the species are indicative of a grassland of more mesotrophic character.
- A2.11 The grassland along the northern boundary associated with the footpath is ranker in composition and includes a higher prevalence of wayside grasses such as cock's-foot and ruderal species such as nettles (*Urtica dioica*) and cleavers (*Galium aparine*). This is considered likely to reflect lower levels of management and nutrient enrichment from dog fowling.
- A2.12 The semi-improved grassland is considered to be of Site level ecological value due to the lack of any notable forb assemblage and limited structural diversity.



Image EDP A2.1: Looking east over the semi-improved grassland sward.

SCRUB

- A2.13 An area of dense scrub, dominated by bramble (*Rubus fruticosus*) delineates the northern Site boundary, adjacent to the public right of way (PRoW).
- A2.14 The scrub is considered to be of no more than Site level ecological value due to its limited extent and species poor nature.



Image EDP A2.2: Bramble scrub along northern Site boundary.

HEDGEROW AND TREES

- A2.15** The western boundary of the Site along Long Water Road is delineated by a species-poor unmanaged and leggy hawthorn (*Crataegus monogyna*) dominated hedgerow, it is over 8m tall and 2m wide, with mature English oak (*Quercus robur*) trees along its length. Bramble and common ruderal species such as common nettle, ivy, cleavers and hogweed (*Heracleum sphondylium*) dominate the field edge ground flora. The hedgerow has limited ground flora diversity.
- A2.16 The south-eastern boundary hedgerow is gappy, characterised by mature oaks with a hedgerow understorey of silver birch, holly (*Ilex aquifolium*) and bramble.
- A2.17 Three mature oak trees are located along the east boundary of the site, further details and illustrative photos are provided in **Appendix EDP 4** in relation to roosting bats.



Image EDP A2.3: Looking south along western boundary hedgerow.

A2.18 The hedgerows offer connectivity across the wider landscape, as well as providing habitats suitable to support a range of protected and notable species. Additionally, Hedgerows are Habitats of Principal Importance (Priority Habitats) included under Section 41 (England) of the Natural Environment and Rural Communities (NERC) Act 2006. Therefore, they are considered to be of Local level ecological value.

WET DITCH

A2.19 Delineating the southern and south-eastern Site boundary is a wet ditch. The channel is c.0.5-1m deep and c.1-2m wide with 45° earthen banks. The water was shallow at the time of survey, c.5cm and heavily shaded by the woodland. It has been recorded that the ditch seasonally dries out.

A2.20 The ditch is assessed as being of Local ecological value, as it forms part of connective habitats to the wider landscape.



Image EDP A2.4: Section of wet ditch between the Site and woodland.

WOODLAND

- A2.21 Off-site but adjacent to the southern boundary is a 10m wide belt of deciduous plantation woodland which is understood to have been planted in c.20 years ago, possibly in association with the gravel extraction works to the south of the Site. Species include alder (*Alnus glutinosa*), hazel (*Corylus avellana*) goat willow (*Salix caprea*) hawthorn, silver birch (*Betula pendula*), Rosa sp, holly and honeysuckle. The ground flora is largely dominated with common grasses and ruderals though greater stitchwort (*Stellaria holostea*) and lords and ladies (*Arum maculatum*), Ancient Woodland Indicator species, were also recorded. Bracken and bramble dominate the understory field edge, separating the woodland from the grassland field along the southern boundary.
- A2.22 The off-site woodland is considered to be of up to Local value owing to its position in the ecological network, as it has the potential to provide habitats suitable to support a range of protected and Priority Species and provides wildlife corridors connecting to the wider landscape.



Image EDP A2.5: Dense bracken along south boundary of the Site.

Appendix EDP 3 Breeding Bird Survey

METHODOLOGY

- A3.1 As the likelihood of a significant breeding bird assemblage being present was judged to be low, a single-visit pilot survey was undertaken to confirm whether a full breeding bird survey should then be undertaken. Based on the results of the initial survey (as described further below) it was not deemed necessary to undertake a full breeding bird survey.
- A3.2 The survey was undertaken on 02 June 2023. The visit started within half an hour from dawn and timed to ensure it was completed prior to 11 a.m. to cover the peak activity period. The weather conditions encountered, were low wind levels, high cloud cover and no rainfall with good visibility across the Site.
- A3.3 During the survey the Site was walked at a slow pace to enable all birds detected to be identified and located. Frequent stops were made to scan suitable habitats and to listen for singing and calling birds. All areas of suitable breeding habitat within the Site boundary and immediately adjacent areas were approached to within 50m.
- A3.4 During the survey the location and activity of each bird detected (including those seen or heard) was recorded and mapped using standard two-letter British Trust for Ornithology (BTO) species codes. The breeding status of each bird species identified at the Site was determined according to the nature and frequency of the behavioural elements recorded, as set out in **Table EDP A3.1**.

Table EDP A3.1: Field evidence used to determine bird breeding status

Breeding Status	Examples of Behaviour Exhibited
Confirmed	• Distraction display; • Nest building; • Nest with eggs; • Nest with young; • Used nest; • Recently fledged young; and • Adult carrying faecal sac/food.
Probable	• Pair observed in suitable nesting habitat in breeding season; • Permanent territory presumed through registration of territorial behaviour (song, etc.) on at least two different occasions, a week or more apart at the same place; • Courtship and display; • Visiting a probable nest site; • Agitated behaviour or anxiety calls from adults; • Brood patch on adult examined in the hand; and • Nest building or excavating nest-hole.

Breeding Status	Examples of Behaviour Exhibited
Possible	- Species observed in breeding season in possible nesting habitat; - Male in song; and - Adult giving alarm call.
Non-breeder	- Feeding birds only; - Birds flying over only; and - Lack of suitable breeding habitat.

A3.5 To inform the assessment in this report, the numbers of potential territories identified, the abundance of species at the County and National level, the quality of the habitat present and the geographical range of the birds concerned have been considered, based on national and regional accounts.

A3.6 The conservation status of each species of bird was also taken into account and the following lists were considered:

- Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) – affords greater protection to certain breeding species that are considered appropriately at risk nationally and are listed additional legal protection accordingly;
- Priority species;
- Birds of Conservation Concern²⁰ - under this approach UK bird populations are assessed, using quantitative criteria, to determine the population status of each species and then placed on one of three lists; Red, Amber or Green; and
- Local conservation status as listed in The Berkshire List²¹.

Limitations

A3.7 As with all breeding bird surveys following this technique, the process is open to some subjectivity in interpretation except where active nests are located. Therefore, recorded locations indicate the 'centre' of a territory and not necessarily the breeding location.

A3.8 Following best practice, the survey visit was timed to start around first light, to coincide with the period of peak activity for birds, most particularly passerine songbird species. They were also undertaken during suitable weather conditions, i.e. days/periods with strong winds and heavy or persistent rain were generally avoided. The results are therefore not significantly limited by seasonal or climatic factors.

²⁰Stanbury, A., Eaton, M., Aebischer, N., Balmer, D., Brown, A., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. 2021. *The status of our bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man and second IUCN Red List assessment of extinction risk for Great Britain*. British Birds 114: 723-747.

²¹<https://www.berksbirds.co.uk/berkslist.asp>

RESULTS

- A3.9 A total of 20 bird species were recorded during the surveys. Full details of each species recorded, including their breeding status on-site and their conservation status, are provided in **Table EDP A3.2**.
- A3.10 Of the 20 bird species that were recorded as breeding or probably breeding on-site, ten are species of nature conservation importance, namely being listed on Schedule 1 of the WCA, being a priority species and/or being species included on the latest Red and Amber lists of Birds of Conservation Concern. The distribution of these species recorded within the Site is shown on **Plan EDP 5**.
- A3.11 Of the species recorded nine were recorded outside the site boundary, although it is considered that there is potential for those species to utilise the Site for foraging and/or nesting, excluding greylag and Canada goose.
- A3.12 All of the notable bird species recorded on-site are either abundant, relatively common and widespread, despite suffering national declines. Apart from Wren, whose breeding population has seen an increase in density.
- A3.13 The abundance and diversity of bird species recorded on-site was consistent with the extent and diversity of nesting habitats present. The majority of species recorded were associated with the boundary features of hedgerows, mature trees and woodland edge. The limited extent, or absence, of other suitable habitats such as wetland and woodland, limits the ability of the Site to support large breeding populations of habitat specialist species. For this reason, the breeding bird assemblage is judged to be of no greater than Local ecological importance.

Table EDP A3.2: Protected/Notable Bird Species Recorded

Species	UK Status	Berkshire Status ²²	Distribution On-site	Abundance (max count)
Barn Owl (<i>Tyto alba</i>)	WCA	Scarce	Roosting in stable building east of the Site and recorded foraging over the grassland.	One
Red Kite (<i>Milvus milvus</i>)	WCA	Fairly Common	Observed flying over the Site.	One
Black-headed Gull (<i>Chroicocephalus ridibundus</i>)	Amber	Very Common	Observed flying over the Site.	One
Dunnock (<i>Prunella modularis</i>)	Amber	Very Common	Along boundary, in bramble scrub.	One
Greylag Goose (<i>Anser anser</i>)	Amber	Fairly Common	Recorded on the waterbody south-east of the Site.	Over ten
House Sparrow (<i>Passer domesticus</i>)	Red Priority species	Very Common	Recorded offsite to the north-east, it is likely this species uses the Site for foraging.	Five

Species	UK Status	Berkshire Status ²²	Distribution On-site	Abundance (max count)
Song Thrush (<i>Turdus philomelos</i>)	Amber	Very Common	Recorded c.100m east of the boundary associated with a hedgerow with mature trees. it is likely this species uses the Site for foraging.	One
Stock Dove (<i>Columba oenas</i>)	Amber	Common	Recorded c.100m east of the boundary associated with a hedgerow with mature trees. it is likely this species uses the Site for foraging.	One
Woodpigeon (<i>Columba palumbus</i>)	Amber	Abundant	Observed along the south of the Site and in off-site woodland to the east.	Three
Wren (<i>Troglodytes troglodytes</i>)	Amber	Abundant	Associated with boundary features in the north-west and south boundary.	Two

A3.14 The remaining records related to non-priority species, as listed in **Table EDP A3.3** below.

Table EDP A3.3: Non-priority Bird Species Recorded

Species	Scientific Name	Location
Blackbird	<i>Turdus merula</i>	Associated with mature trees along west boundary.
Blue Tit	<i>Cyanistes caeruleus</i>	West and south boundary.
Canda Goose	<i>Branta canadensis</i>	Offsite associated with on the waterbody south-east of the Site.
Carrion Crow	<i>Corvus corone</i>	Observed off-site.
Goldfinch	<i>Carduelis carduelis</i>	Offsite c.100m east, likely to utilise the Site as a foraging resource.
Great tit	<i>Parus major</i>	Observed in south-east corner.
Long tailed tit	<i>Aegithalos caudatus</i>	Observed in south-east corner.
Magpie	<i>Pica pica</i>	Observed off-site.
Pheasant	<i>Phasianus colchicus</i>	Observed off-site.
Robin	<i>Erithacus rubecula</i>	Observed in south-east corner.

Appendix EDP 4 Bat Surveys

METHODOLOGY

- A4.1 The scope of bat surveys undertaken at the Site was determined following completion of the Extended Phase 1 Habitat Survey and review of relevant desk study findings and with reference to best practice guidelines published by the Bat Conservation Trust²³ at the time of survey.

Bat Roost Surveys

Preliminary Roost Assessment of Trees

- A4.2 Owing to the presence of suitably mature trees within or adjacent to the Site, a preliminary ground level roost assessment of these trees was undertaken to record any external evidence of roosting bats or any features capable of supporting roosting bats.
- A4.3 The survey was completed on 30 March 2023 by a suitably experienced ecologist in accordance with the best practice guidelines at the time survey. The survey was updated on 07 May 2024 in line with the latest best practice guidelines²⁴.
- A4.4 The trees were searched as thoroughly as possible from ground level with all elevations covered where these could be accessed.
- A4.5 Suitable features for roosting bats recorded (where present) include the following:
- Loss/peeling/fissured bark;
 - Natural holes e.g., rot holes, cavities and wounds from fallen limbs;
 - Woodpecker holes;
 - Cracks/splits or hollow tree trunks/limbs;
 - Bat, bird or dormouse boxes; and
 - Crevices formed by thick-stemmed ivy.
- A4.6 Signs of roosting bat presence recorded (where present) include the following:
- Bat/s roosting *in situ*;
 - Bat droppings within, around or beneath a potential roost feature;

²³Collins, J. (ed.) (2016). *Bat Surveys: for Professional Ecologists: Good Practice Guidelines (3rd edition)*. The Bat Conservation Trust, London

²⁴ Collins, J. (ed.) (2023). *Bat Surveys: for Professional Ecologists: Good Practice Guidelines (4th edition)*. The Bat Conservation Trust, London

- Staining around or beneath a feature;
- Audible squeaking from the roost at dusk or during warm weather; and
- Large/regularly used roosts or may produce a distinctive odour.

A4.7 Based upon the evidence/features identified, each tree was assigned to one of the following categories:

- None - Either no PRFs in the tree or highly unlikely to be any;
- Further Assessment Required (FAR) - Tree is of a size, age or condition that is likely to have PRFs, further assessment is therefore required to establish if PRFs are present in the tree;
- PRF - Tree supports at least one PRF which is visible from the ground; and
- Confirmed roost - Signs of roosting bat presence were found within or around a PRF.

A4.8 For those trees categorised as having a 'PRF', an estimate was made as to whether each PRF visible from the ground was likely to be suitable for individual bats (PRF-I) or multiple bats (PRF-M). It should be noted that this categorisation from ground level is an estimate only, as it is often not possible to establish the internal extent of a tree feature from ground level.

PRF Inspection Survey

A4.9 A PRF inspection survey was undertaken on 05 May 2024 of tree **T23** which will be impacted by the proposals and was identified during the GLTA as having PRFs present or requiring further survey. The purpose of the inspection was to comprehensively assess the tree and any identified PRFs in detail, to more accurately determine the suitability of each feature to support roosting bats in addition to searching internally for evidence of past or present bat use.

A4.10 The inspection survey was undertaken by a bat licensed ecologist and assistant, using a combination of ladders to access each potential roost features. An endoscope (Rigid CA-300 inspection camera with extension cable), torches and mirrors were utilised, where necessary, to internally inspect each feature.

A4.11 Physical details and measurements of each PRF were recorded during the survey, in addition to any evidence of bats, and each feature confirmed as one of the following suitability categories:

- PRF-I - A Potential Roost Feature that is suitable to support individual (I) or very small numbers of bats; and
- PRF-M - A Potential Roost Feature that is suitable to support multiple (M) bats and could therefore be used as a maternity roost.

Limitations

A4.12 As with any ground level assessments of trees, certain features may not be visible or fully visible from the ground. Assessment is best undertaken in early spring when visibility into the crown of

the tree is improved due to the absence of leaves, therefore, the survey was not constrained by timings.

- A4.13 All PRFs present on the trees identified for survey were accessible and able to be fully inspected by the surveyors. There were therefore no access or health and safety limitations to the aerial inspection survey.
- A4.14 Bats are mobile animals and will move between a series of different tree roost sites, frequently establishing and occupying different potential roost features, depending on seasonal requirements and resources available locally. Furthermore, existing potential roost features on trees can be transient and new features formed regularly. This survey, therefore, only provides a snapshot of the conditions present at the Site at the time of survey.
- A4.15 It should be noted that this type of assessment is based on features visible from ground level and is not considered to be a definitive bat roosting survey. Additional survey work should therefore be undertaken to establish if any bats are roosting within the trees to be impacted.

Bat Activity Surveys

- A4.16 During the Extended Phase 1 Habitat Survey, an initial assessment was undertaken of suitability of the habitats within and immediately adjacent to the Site for foraging and commuting bats. In reference to the best practice guidelines referred to above, the Site was assigned to one of the following categories:
- High suitability – Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, treelined watercourses and grazed parkland. Site is close to and connected to known roosts;
 - Moderate suitability - Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water;
 - Low suitability - Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub; and
 - Negligible suitability - Negligible habitat features on-site likely to be used by commuting or foraging bats.
- A4.17 Having determined that the habitats within the Site are of moderate suitability overall, a proportionate level of survey effort was expended in terms of the number and frequency of manual transect surveys and automated detector surveys. These are described in further detail below.

Transect Surveys

- A4.18 Manual transect surveys were undertaken across the Site with the objective of identifying important foraging areas and/or commuting routes used by bats. A total of three dusk surveys were undertaken over the course of the active bat season in 2023.
- A4.19 Details of the survey type, date, timing, and weather conditions during each of the transect surveys are given in **Table EDP A4.1**. All visits were completed in weather conditions that were generally suitable for such surveys.

Table EDP A4.1: Date, Timing and Weather Conditions during Transect Surveys.

Survey Date	Sunset/ Start Time	Finish Time	Weather Conditions			
			Temp (°c)	Cloud Cover (%)	Wind (Beaufort Scale)	Precipitation
31.05.23	21:09	23:09	15-17	90	2-4	Nil
06.07.23	21:21	23:21	14-15	0-10	0-1	Nil
12.09.23	19:26	21:26	19-22	100	1-3	Started to drizzle 21:10

- A4.20 During each survey a single transect route was walked by a pair of surveyors, with the route designed to provide coverage of the most suitable foraging or commuting habitats on the Site; namely woodland edge, hedgerows, scrub and grassland. The transect route was walked by an experienced bat surveyor and an assistant at a slow and steady pace for two hours after sunset. All bats were recorded, and their behaviour marked on survey maps, in order to characterise the value of the Site and its component habitats for foraging and commuting bats.
- A4.21 The transect surveys were conducted using Elekon Batlogger M bat detectors. Observations of the time, location, and activity of all bats seen or heard were noted. Bats were identified on the basis of their characteristic echolocation calls, which were recorded and analysed using computer sonogram analysis (BatExplorer) to confirm species identification. Species of Myotis bat and long-eared bat are difficult to tell apart solely from their echolocation calls and were therefore grouped as such.

Limitations

- A4.22 Light rain was experienced within the last 15 minutes of the September transect. This is after the peak activity recorded during the survey and therefore is not considered to have impacted the results significantly.
- A4.23 Due to the small extent of the Site the transect involved multiple loops of the field, this could result in double counting the same individuals. The transect route was extended to include the habitats to the east which forms part of the same field parcel.
- A4.24 Transect surveys were undertaken seasonally rather than monthly. This has been offset by an increased effort in automate detector surveys, with monthly surveys between May and October as well as deployment of three units instead of one as reference within best practice guidelines.

Automated Detector Surveys

- A4.25 To supplement the bat transect survey data, bat activity within the Site was also sampled using Anabat Express detectors (hereafter referred to as 'automated detectors'), which are deployed in fixed locations to automatically trigger and record bat echolocation calls over multiple nights at a time. In May 2023 the automated detectors were deployed at three locations within the Site during each survey, along the east, west and south boundary, which were judged to be representative of the habitats within the Site. However, in June and all subsequent survey months in 2023 the detector was moved from the eastern to the northern Site boundary to assess the assemblage of bats which might be affected by the proposed construction of an access point on this boundary. The western and southern detectors were retained in the same locations during all surveys.
- A4.26 The automated detectors were fixed in secure locations, with an external microphone attached c.1-2m above ground, where possible, and directed away from the boundary vegetation to maximise detection sensitivity. In total six surveys were completed over the course of the active bat season in 2023, each comprising sampling by three automated detectors for at least five consecutive nights. Details of dates, sampling locations and weather conditions during each of the surveys are given in **Table EDP A4.2**.

Table EDP A4.2: Automated Detector Survey Details.

Sampling Period Dates	Location (Reference number and OS grid reference)	Microphone		Weather (max, min temp at sunset/rainfall/max, min wind speed)
		Height	Direction	
19.05 – 23.05	East - SU 79752 62658	1.5	N	Temperature (°C): 16 - 17 Wind: Light winds Rain: Nil
	West - SU 79532 62706	1.5	N	
	South - SU 79638 62651	2	NE	
01.06 - 05.06	North - SU 79639 62747	1.25	S	Temperature (°C): 13-19 Wind: Light winds Rain: Nil
	West - SU 79532 62706	2	SE	
	South - SU 79638 62651	1.5	NW	
06.07 – 10.07	North - SU 79639 62747	1	S	Temperature (°C): 16-18 Wind: Light winds Rain: Scattered showers during some days
	West - SU 79532 62706	2	E	
	South - SU 79638 62651	2	N	
02.08 – 07.08	North - SU 79639 62747	1.5	S	Temperature (°C): 13-18 Wind: Light wind Rain: Scattered showers on one day
	West - SU 79532 62706	2	E	
	South - SU 79638 62651	1.5	N	
13.09 – 17.09	North - SU 79639 62747	1.6	S	Temperature (°C): 15-19 Wind: Light wind Rain: Nil
	West - SU 79532 62706	2	SE	
	South - SU 79638 62651	1.75	NW	
05.10 – 09.10	North - SU 79639 62747	1.5	S	Temperature (°C): 14-20 Wind: Light wind
	West - SU 79532 62706	2	SE	

Sampling Period Dates	Location (Reference number and OS grid reference)	Microphone		Weather (max, min temp at sunset/rainfall/max, min wind speed)
		Height	Direction	
	South - SU 79638 62651	1.75	NW	Rain: Nil

A4.27 The sound files recorded by the automated detectors were filtered for each of the UK's bat species/species groups using Analook software's filter function. The parameters for the species filters are based on those proposed by Chris Corben and Kim Livengood²⁵ and have been fine-tuned using known call parameters for each of the species. All files passing the various filters were checked manually using sonogram analysis in accordance with published guides to confirm the species identification of each bat call.

Limitations

A4.28 The identification of calls and species using Analook software is dependent upon the quality of the recording made which can be influenced by the following factors, which may limit levels of activity and species recorded:

- Weather conditions - rainfall and wind;
- Distance of bat from the detector's microphone;
- Presence of obstructions through which the noise must pass i.e., trees/leaves; and
- Proximity of other noise sources such as roads.

A4.29 In June the automated detector located along the south boundary only recorded bats on one of the five nights of deployment. The number detector units deployed and the frequency of surveys more that offsets this minor equipment failure. This is not considered likely to result in a significant misrepresentation of the assemblage present.

RESULTS

Bat Roost Surveys

Preliminary Roost Assessment of Trees

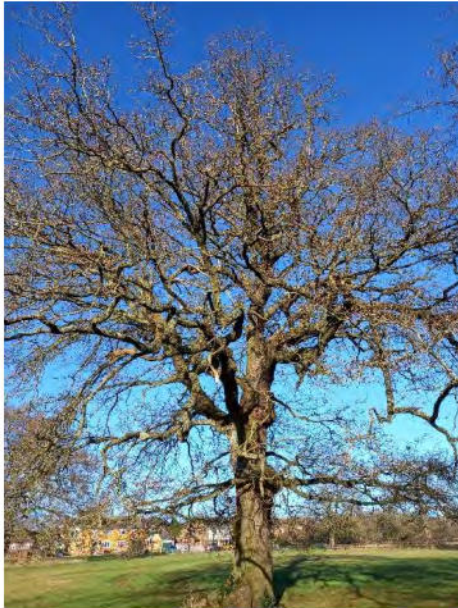
A4.30 The preliminary ground level roost assessment of trees in 2023 identified a total of six trees with suitable features for bat roosting. The 2024 update survey identified a total of seven trees with suitable features. The horizontal wound is approx. 30cm in length but narrow, the max height was 5cm and 10cm at the widest point. Internally the space was damp and filled with slugs and woodlice. Due to the size and condition of the feature it is unlikely to support roosting bats, however, as the tree will be lost, the feature has been classified as a PRF-I as a precaution.

²⁵ Taken from Analook W training course and workshop, September 2013

- A4.31 Of these, one (**T23**) will be affected by the development proposals and was subject to a PRF inspection survey. The inspection survey categorised the tree as having one feature of PRF-I suitability. The PRF is a wound at 1.5m height and south-west facing.
- A4.32 Further details on each of these trees are provided in **Table EDP A4.3** and their locations are shown on **Plan EDP 1**. The tree references are in line with the reference provided on the Tree Constraints Plan (plan reference: edp4070_d033).
- A4.33 All other trees were found to be of negligible suitability for roosting bats and have not been mapped/described.

Table EDP A4.3: Details of Trees with Bat Roost Suitability

Tree Ref	Photograph	Tree Species	Potential Roost Features	Roosting Suitability
T1		Oak (mature)	Various tear outs and broken limbs, creating cracks and crevices. Woodpecker holes present. Most are exposed and would experience water ingress. due to its large size and age, there could be features higher up the tree.	PRF-M
T2		Oak (mature)	Long vertical fissure down trunk on north aspect. Unable to determine depth or if leads to crevices of ground level. Hazard beam on south aspect with long vertical fissure on north. Some flaking bark and fluting on west aspect.	PRF-M

Tree Ref	Photograph	Tree Species	Potential Roost Features	Roosting Suitability
T5		Oak (mature)	Hole on canker on north aspect at 5m. Hazard beam at 7m on south aspect with small cracks but no large crevices or cavities. Two woodpecker holes on north aspect at 7m and 11m.	PRF-M
T8		Oak (mature)	Knot hole on west aspect at 5m. Only accessed from one side. Due to its large size and age, there could be features higher up the tree.	PRF-I

Tree Ref	Photograph	Tree Species	Potential Roost Features	Roosting Suitability
T17		Oak (mature)	Multiple squirrel/woodpecker holes on north aspect. Some flaking bark.	PRF-M
T15		Oak (mature)	Age and size where likely to support PRFS. Heavy ivy cover obscuring trunk, Only accessed from one side.	PRF-I

Tree Ref	Photograph	Tree Species	Potential Roost Features	Roosting Suitability
T23		Oak	Tear out with healed wound creating small gap. Small knot hole on east aspect at 3m. Some flaking bark present.	FAR PRF-I

Bat Activity Surveys

A4.34 As noted above in relation to the scope/design of the bat activity surveys, the initial habitat assessment of the Site found the Site to be of Moderate suitability for foraging and commuting bats. This is due to the grassland field offering suitable foraging habitat, with the hedgerows and woodland edge providing commuting features though the landscape.

A4.35 The results of the transect surveys are illustrated on **Plan EDP 4** to **6** and results of the automated detector surveys are provided, in detailed and summary form, within **Tables EDP A4.4** to **A4.11**. These results are also described below for the assemblage as whole and on a species-by-species basis. The species accounts also draw upon information collated during the desk study, published data on national conservation status²⁶ and Berks & South Bucks Bat Group²⁷.

Table EDP A4.4: Transect Results 2023. Number of Bat Registrations Recorded per Species.

Bat Species	May	July	September
Common pipistrelle	121	69	83
Soprano pipistrelle	46	70	72
Myotis sp	1	2	6
Long-eared bat sp	0	0	1
Total	168	141	162

Table EDP A4.5: Monthly Summary of Automated Detector Surveys.

Survey Month	Species	Number of Passes	% of Month Total
May	Common pipistrelle	1641	55.3
	Soprano pipistrelle	1197	40.3
	Myotis sp	93	3.1
	Noctule	17	0.6
	Long eared bat	11	0.4
	Serotine	6	0.2
	Barbastelle	1	<0.1
	Nathusius's pipistrelle	1	<0.1
	Total	2967	
June	Soprano pipistrelle	622	53.9
	Common pipistrelle	416	36.0
	Myotis sp	63	5.5
	Noctule	21	1.8
	Long eared bat	20	1.7

²⁶ <https://www.bats.org.uk/our-work/national-bat-monitoring-programme/reports/nbmp-annual-0.8report>

²⁷ Andrews, C. (2021). Review of the Status of Bats in Berkshire 2020. A report by CA Ecology on 0.2 Behalf of Wokingham Borough Council

Survey Month	Species	Number of Passes	% of Month Total
	Serotine	9	0.8
	Nathusius's pipistrelle	2	0.2
	Total	1153	
July	Soprano pipistrelle	1740	58.4
	Common pipistrelle	971	32.6
	Myotis sp	163	5.5
	Noctule	52	1.7
	Long eared bat	20	0.7
	Serotine	15	0.5
	Nathusius's pipistrelle	12	0.4
	Barbastelle	4	0.1
	Total	2977	
August	Common pipistrelle	835	57.8
	Soprano pipistrelle	373	25.8
	Noctule	104	7.2
	Myotis sp	87	6.0
	Serotine	23	1.6
	Long eared bat	17	1.2
	Barbastelle	5	0.3
	Total	1444	
September	Soprano pipistrelle	997	60.1
	Common pipistrelle	543	32.8
	Myotis sp	56	3.4
	Serotine	26	1.6
	Noctule	16	1.0
	Nathusius's pipistrelle	13	0.8
	Barbastelle	4	0.2
	Long eared bat	3	0.2
	Total	1658	
October	Soprano pipistrelle	1584	46.9
	Common pipistrelle	1516	44.8
	Myotis sp	117	3.5
	Noctule	55	1.6
	Barbastelle	38	1.1
	Serotine	30	0.9
	Long eared bat	27	0.8
	Nathusius's pipistrelle	14	0.4

Survey Month	Species	Number of Passes	% of Month Total
	Total	3381	

Overall Diversity, Abundance and Distribution

- A4.36 A total of eight bat species/species groups (Myotis and long-eared bat species were not identified to species level), were confirmed to be present foraging and/or commuting within the Site during the transect and/or automated detector surveys.
- A4.37 Levels of bat activity recorded during the automated detector surveys were generally moderate, with relatively high levels recorded in October and relatively lower levels recorded in June, August and September. The number of calls recorded was highest at the detector located along the southern boundary of the site, adjacent to the off-site woodland edge.

Species/Species Groups Recorded

Pipistrelle Bats (Common, Soprano and Nathusius's)

- A4.38 Common and soprano pipistrelle bats are common and widespread across the UK, representing the most and second most abundant species in the UK respectively. Both species are widespread within the county of Berkshire²⁸.
- A4.39 Nathusius's pipistrelle are relatively rare across the UK, with a range which is primarily restricted towards the south of England, in Berkshire they are considered widespread across the county.
- A4.40 Combined common and soprano pipistrelle account for a total of 91.3% of all recording across the automated detector surveys. This was reflected in the transect surveys, with these species account for the highest numbers of overall registrations.
- A4.41 Nathusius's pipistrelle were recorded sporadically across the survey months and detector locations, with none of this species recorded in August and no recordings during the walked transect surveys. Overall, Nathusius's pipistrelle were consistently recorded in low numbers across the survey period and accounted for the lowest number of total registrations of all species recorded on the Site, with a total of 0.3%
- A4.42 Nathusius's pipistrelle preferred habitat is riparian or over lakes, there is not optimal habitat present on site. Based on the low number of registrations and the habitats present within the Site it is considered likely that this species only uses the site on an occasional basis for commuting to more optimal habitat within the wider landscape.
- A4.43 The common and soprano pipistrelle assemblage is considered to be of up to Local value. Based on relative abundance and the local conservation status, Nathusius's pipistrelle are of no more than Site level importance.

²⁸Andrews, C. (2021). Review of the Status of Bats in Berkshire 2020. A report by CA Ecology on Behalf of Wokingham Borough Council.

Myotis Bat Species.

- A4.44 *Myotis* bat species occur throughout most of the UK, their populations considered to be either stable or increasing with the exception of Bechstein's bat (*Myotis bechsteinii*), which is listed in Annex II of the EC Habitats Directive, and considerably rarer.
- A4.45 *Myotis* sp. were recorded during each of the survey months and were also recorded during the transect surveys. However, the number of registrations indicate that these species used the Site for foraging and commuting at a relatively low level, accounting for only 4.4% of the total automated detector recordings across the surveys.
- A4.46 Only two records of Bechstein's bat are known across Berkshire and the species is primarily associated with ancient broadleaved woodland, therefore, it is highly unlikely that the registrations of *myotis* sp. are attributed to Bechstein's bat.
- A4.47 The recorded *Myotis* sp. assemblage is considered to be of no more than Local value.

Noctule, and Serotine Bats

- A4.48 Noctule bat is widespread across the UK with the exception of northern Scotland, with its population and range considered to be stable across the UK. Within Berkshire the records of Noctule are relatively common but localised. With respect to Serotine bats are restricted to southern England and Wales where they are widespread but scarce, the species widespread across Berkshire.
- A4.49 The grassland and woodland edge habitats are considered to be optimal for noctule given their tendency to forage in a range of habitats including out in the open, or over trees. Noctules were not recorded during the manual transect surveys which is unusual given their tendency to emerge in the early evening, suggesting that either no roosts are present in the local landscape or more likely that there are significantly higher value foraging habitats in the local landscape for this species. During the automated detector surveys noctule accounted for 2.0% of the total registrations across the survey months, with inconsistent levels of recording across the detector locations and survey months suggesting that the site does not provide a key foraging or commuting resource for this species in the context of the wider landscape.
- A4.50 Serotine are known to forage across a range of habitats, although with preference for cattle grazed pasture. This species account for only 0.8% of the total registrations across the automated detector surveys and was not recorded on the transect surveys. The percentage of Serotine registrations was highest in August and September. The low and inconsistent levels of recording suggest the site does not provide a key foraging or commuting resource for this species.
- A4.51 Given the low levels of activity recorded for both species, the Site is considered unlikely to form part of their core foraging and commuting habitat and likely utilises the Site to commute towards more favoured foraging habitats off-site. The assemblage identified for Noctule and Serotine is considered to be of no more than Site level importance.

Long-eared Bats

- A4.52 Brown long-eared bats are considered to be widespread and common across the UK with national populations considered stable. In contrast, populations of grey long-eared bats

(*Plecotus austriacus*) are largely limited to the south coast of England, although this species is typically under recorded. Brown long eared are a widespread breeding species within Berkshire.

- A4.53 Only a single long-eared bat pass was recorded during the September manual transect survey. This is consistent with the findings of the automated detector surveys, with long eared bats accounting for 0.7% of total registrations and were not consistently recorded every night of deployment across the detector locations.
- A4.54 The Site is located outside of the known range for grey long-eared bats, and as such it is considered highly unlikely that these calls were from grey long-eared bats. Given that brown long-eared bats are locally widespread it is considered more likely that this is the species of long-eared bat recorded.
- A4.55 Based on the low levels of long-eared activity recorded the Site is not considered to be of significant value to this species for foraging and commuting purposes. As such, the long-eared assemblage is considered to be of Site value only.

Barbastelle

- A4.56 Barbastelle bat is listed in Annex II of the EC Habitats Directive and is considered widespread across England and Wales, but rare at a national and county level. Within the county of Berkshire records are biased towards the West Berkshire and heavily associated with woodland.
- A4.57 Only very low levels of barbastelle activity have been recorded within the Site, the species account for only 0.4% of the total automated detector registrations, which equates to just 52 registrations in comparison to over 5,000 common pipistrelle registrations. The species was detected in all recording months except June. Barbastelle were not recorded during any of the transect surveys. Generally, the numbers of barbastelle using the site were low, in single figures, a peak count of 38 registrations was recorded in October.
- A4.58 The site does have some suitable woodland habitats present along the southern site boundary for foraging barbastelle, however, the narrow belt is not considered to provide optimal conditions for this species. Furthermore, the local landscape contains a significant extent of suitable woodland, stream and lakeside habitat which will provide varied and optimal foraging for this species. The higher numbers recorded in October is considered more likely to represent opportunist foraging by single or low numbers of barbastelle rather than the Site providing a key foraging ground for this species, in particular as 29 of these registrations were recorded at a single detector on the southern boundary. However, the habitats within the Site do provide some suitable commuting habitat given their linear nature and location between sections of higher value off-site woodlands.
- A4.59 Whilst the conservation status of barbastelle at the national level is categorised as rare, given the low number of echolocation calls recorded during the automated detector deployment, it is considered that only a few individual(s) of the species were using the Site for opportune foraging or commuting through the landscape to more optimal habitat. The site is not considered a significant resource used by this species.
- A4.60 The barbastelle population using the Site is considered to be of no more than County level Importance.

Evaluation of Overall Bat Assemblage

- A4.61 There are no known bat roosts on or immediately adjacent to the Site, although a total of six trees with suitability to support roosting bats are present around the Site boundaries.
- A4.62 The Site offers suitable foraging and commuting habitat to a range of bat species. The abundance and diversity of bat species recorded on-site is considered to be typical of a rural-edge site in Berkshire. However, the rarer species barbastelle was recorded, and the population is considered to be of up to County level value.
- A4.63 In comparison to 2017 the species diversity has slightly increased, although in both years common and soprano pipistrelle accounted for the vast majority of activity, with others comprising a small percentage of the overall registrations. In both survey years higher levels of activity were associated with the southern boundary.
- A4.64 Based on the overall extent of foraging and commuting activity, the overall bat assemblage using the Site is judged to be of Local importance.

Bat Activity Data Tables

Table EDP A4.6: Automated Detector Survey Results May 2023.

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		19.05	20.05	21.05	22.05	23.05		
East Boundary	Common pipistrelle	288	264	221	245	87	1105	67.7
	Soprano pipistrelle	131	95	85	123	42	476	29.2
	Myotis sp	11	7	3	3	4	28	1.7
	Noctule	2	2	2	1	5	12	0.7
	Long eared bat	0	0	4	0	1	5	0.3
	Serotine	1	1	0	1	0	3	0.2
	Barbastelle	0	1	0	0	0	1	0.1
	Nathusius's pipistrelle	0	1	0	0	0	1	0.1
	Total	433	371	316	373	139	1632	
West Boundary	Soprano pipistrelle	66	66	131	91	67	421	55.0
	Common pipistrelle	72	50	70	70	42	304	39.7
	Myotis sp	8	10	4	5	8	35	4.6
	Long eared bat	1	2	0	0	1	4	0.5
	Noctule	1	0	0	0	1	2	0.3
	Total	148	128	205	166	119	766	
South Boundary	Soprano pipistrelle	45	46	66	65	78	300	52.6
	Common pipistrelle	44	39	47	58	44	232	40.7
	Myotis sp	12	5	2	4	7	30	5.3
	Serotine	1	0	1	1	0	3	0.5
	Long eared bat	1	0	1	0	0	2	0.4

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		19.05	20.05	21.05	22.05	23.05		
	Noctule	1	0	0	1	1	3	0.5
	Total	104	90	117	129	130	570	

Table EDP A4.7: Automated Detector Survey Results June 2023

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		01.06	02.06	03.06	04.06	05.06		
North Boundary	Common pipistrelle	22	14	43	62	19	160	63.5
	Soprano pipistrelle	11	5	19	15	6	56	22.2
	Myotis sp	3	2	6	3	1	15	6.0
	Noctule	3	0	4	2	2	11	4.4
	Long eared bat	0	0	2	3	0	5	2.0
	Serotine	1	0	0	0	0	1	0.4
	Total	40	21	76	86	29	252	
West Boundary	Soprano pipistrelle	No data		51	No data		51	47.7
	Common pipistrelle			49			49	45.8
	Myotis sp			4			4	3.7
	Serotine			3			3	2.8
	Total	0	0	107	0	0	107	
South Boundary	Soprano pipistrelle	76	62	92	117	38	515	56.6
	Common pipistrelle	25	29	57	25	34	207	22.7
	Myotis sp	7	9	7	8	7	44	4.8
	Long eared bat	4	3	4	1	1	15	1.6

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		01.06	02.06	03.06	04.06	05.06		
	Noctule	0	0	3	4	3	10	1.1
	Serotine	1	0	1	2	1	5	0.5
	Nathusius's pipistrelle	0	1	1	0	0	2	0.3
	Total	143	107	168	163	95	910	

Table EDP A4.8: Automated Detector Survey Results July 2023

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		06.07	07.07	08.07	09.07	10.07		
North Boundary	Common pipistrelle	10	57	11	7	8	93	50.5
	Soprano pipistrelle	8	21	9	7	6	51	27.7
	Myotis sp	3	10	3	4	2	22	12.0
	Noctule	1	0	4	2	3	10	5.4
	Long eared bat	2	1	2	1	0	6	3.3
	Nathusius's pipistrelle	0	1	0	0	0	1	0.5
	Serotine	1	0	0	0	0	1	0.5
	Total	25	90	29	21	19	184	
West Boundary	Common pipistrelle	20	62	33	29	44	188	50.9
	Soprano pipistrelle	15	27	23	18	27	110	29.8
	Myotis sp	4	11	7	4	3	29	7.9
	Noctule	3	0	11	4	8	26	7.0
	Serotine	1	4	0	2	1	8	2.2
	Nathusius's pipistrelle	0	0	0	0	4	4	1.1

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		06.07	07.07	08.07	09.07	10.07		
	Long eared bat	0	0	1	2	0	3	0.8
	Barbastelle	0	0	1	0	0	1	0.3
	Total	43	104	76	59	87	369	
South Boundary	Soprano pipistrelle	122	149	102	220	986	1579	62.6
	Common pipistrelle	56	84	38	82	430	690	27.4
	Myotis sp	20	16	16	25	35	112	4.4
	Noctule	5	2	3	2	4	16	0.6
	Long eared bat	2	2	2	4	1	11	0.4
	Nathusius's pipistrelle	0	0	1	1	5	7	0.3
	Serotine	2	2	0	1	1	6	0.2
	Barbastelle	0	1	2	0	0	3	0.1
	Total	210	298	190	338	1486	2522	

Table EDP A4.9: Automated Detector Survey Results August 2023

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		02.08	03.08	04.08	05.08	06.08		
North Boundary	Common pipistrelle	0	40	10	3	32	85	46.2
	Soprano pipistrelle	0	20	18	4	16	58	31.5
	Noctule	1	3	6	0	6	16	8.7
	Myotis sp	0	5	3	0	3	11	6.0
	Serotine	0	4	1	0	5	10	5.4
	Long eared bat	0	1	2	0	1	4	2.2

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		02.08	03.08	04.08	05.08	06.08		
	Total	1	73	40	7	63	184	
West Boundary	Common pipistrelle	3	66	40	16	53	178	45.8
	Soprano pipistrelle	1	30	21	29	11	92	23.7
	Noctule	46	2	7	3	6	64	16.5
	Myotis sp	0	7	11	1	6	25	6.4
	Serotine	0	3	2	1	7	13	3.3
	Long eared bat	0	0	5	0	7	12	3.1
	Barbastelle	0	0	1	3	1	5	1.3
	Total	50	108	87	53	91	389	
South Boundary	Soprano pipistrelle	119	146	188	65	54	572	65.7
	Common pipistrelle	62	68	63	14	16	223	25.6
	Myotis sp	6	17	19	9	0	51	5.9
	Noctule	10	7	7	0	0	24	2.8
	Long eared bat	0	1	0	0	0	1	0.1
	Total	197	239	277	88	70	871	

Table EDP A4.10: Automated Detector Survey Results September 2023

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		13.09	14.09	15.09	16.06	17.09		
North Boundary	Common pipistrelle	32	7	15	114	11	179	69.4
	Soprano pipistrelle	3	9	3	26	9	50	19.4
	Myotis sp	1	4	5	4	2	16	6.2

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		13.09	14.09	15.09	16.06	17.09		
	Noctule	2	0	0	1	1	4	1.6
	Serotine	1	1	2	0	0	4	1.6
	Nathusius's pipistrelle	0	0	1	2	0	3	1.2
	Barbastelle	0	0	1	0	0	1	0.4
	Long eared bat	0	0	1	0	0	1	0.4
	Total	39	21	28	147	23	258	
West Boundary	Common pipistrelle	8	7	13	59	23	110	53.9
	Soprano pipistrelle	8	9	9	17	22	65	31.9
	Myotis sp	0	6	2	0	4	12	5.9
	Serotine	1	1	4	3	1	10	4.9
	Nathusius's pipistrelle	0	1	0	1	1	3	1.5
	Noctule	0	0	1	0	2	3	1.5
	Barbastelle	0	0	1	0	0	1	0.5
	Total	17	24	30	80	53	204	
South Boundary	Soprano pipistrelle	114	183	163	293	129	882	73.7
	Common pipistrelle	20	104	21	62	47	254	21.2
	Myotis sp	5	9	6	4	4	28	2.3
	Serotine	4	2	1	2	3	12	1.0
	Noctule	1	1	3	4	0	9	0.8
	Nathusius's pipistrelle	1	3	0	2	1	7	0.6
	Barbastelle	0	1	1	0	0	2	0.2
	Long eared bat	0	0	1	0	1	2	0.2
	Total	145	303	196	367	185	1196	

Table EDP A4.11: Automated Detector Survey Results October 2023

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		05.10	06.10	07.10	08.10	09.10		
North Boundary	Common pipistrelle	18	33	27	30	19	127	56.7
	Myotis sp	2	2	14	9	6	33	14.7
	Soprano pipistrelle	1	6	9	5	5	26	11.6
	Noctule	2	3	3	8	2	18	8.0
	Serotine	0	3	3	3	3	12	5.4
	Long eared bat	1	1	1	1	0	4	1.8
	Barbastelle	0	1	0	0	1	2	0.9
	Nathusius's pipistrelle	1	0	0	1	0	2	0.9
	Total	25	49	57	57	36	224	
West Boundary	Soprano pipistrelle	35	78	60	39	38	250	49.7
	Common pipistrelle	18	54	70	23	13	178	35.4
	Myotis sp	4	8	8	2	4	26	5.2
	Noctule	3	2	5	12	1	23	4.6
	Long eared bat	2	1	2	4	3	12	2.4
	Barbastelle	1	3	1	1	1	7	1.4
	Serotine	3	4	0	0	0	7	1.4
	Total	66	150	146	81	60	503	
South Boundary	Soprano pipistrelle	273	602	186	136	111	1308	49.3
	Common pipistrelle	639	395	99	58	20	1211	45.6
	Myotis sp	14	16	14	7	7	58	2.2
	Barbastelle	10	16	2	1	0	29	1.1
	Noctule	4	3	4	2	1	14	0.5

Location	Bat Species	Number of Bat Passes Recorded per Night					Total	%
		05.10	06.10	07.10	08.10	09.10		
	Nathusius's pipistrelle	4	6	0	1	1	12	0.5
	Long eared bat	2	5	3	1	0	11	0.4
	Serotine	0	5	3	3	0	11	0.4
	Total	946	1048	311	209	140	2654	

Appendix EDP 5

Great Crested Newt Survey

METHODOLOGY

HSI Assessment of Waterbodies

- A5.1 A Habitat Suitability Index (HSI) assessment is a standardised method²⁹ which uses a range of criteria, such as water quality, fish/waterfowl presence and surrounding terrestrial habitat quality, to derive a suitability score or 'index'. Waterbodies with high scores are more likely to support great crested newt compared to those with lower scores. HSI scores and the associated suitability categories for great crested newts are set out within **Table EDP A5.1**.

Table EDP A5.1: HSI Scores and Waterbody Suitability Categories

HSI Score	Suitability of Waterbody to Support Great Crested Newts
<0.5	Poor suitability
0.5–0.59	Below average suitability
0.6–0.69	Average suitability
0.7–0.79	Good suitability
>0.8	Excellent suitability

- A5.2 A HSI assessment was undertaken of all waterbodies on Site, and those within 250m of the Site (but not separated from the Site by significant dispersal barriers) to which access was granted. With reference to **Plan EDP 7**, The assessment was undertaken by a suitably experienced ecologist on 02 June 2023. Illustrative photographs of the assessed waterbodies are shown on **Image EDP A5.1** to **A5.4**.

Limitations

- A5.3 The waterbodies assessed was **P5**. Pond **P1** and **P4** were viewed from afar and a HSI assessment made to the surveyor's best ability. No access was granted for Pond **P2** and **P3** and were not viewable from the Site or public roads.

Environmental DNA Sampling of Waterbodies

- A5.4 Environmental DNA (eDNA) is DNA that is collected from the environment in which an organism lives. In aquatic environments, animals including amphibians shed cellular material into the water via their saliva, urine, faeces, skin cells, etc. This eDNA may persist for several weeks, and can be collected through a water sample, and analysed to determine if the target species of interest is/has been present in the water body. eDNA sampling of waterbodies between 15 April and 30 June (inclusive) gives a highly reliable indication of the presence or likely absence of great crested newt.

²⁹Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10 (4), 143-155

A5.5 eDNA sampling was undertaken of all waterbodies within 250m of the Site (but not separated from the Site by significant dispersal barriers) to which access was granted. With reference to **Plan EDP 7**, the waterbodies sampled are P5. The sampling was undertaken by a suitably experienced ecologist on 02 June 2023, using sampling kits obtained from SureScreen Scientifics and following a standard protocol set out by the Freshwater Habitats Trust³⁰ which is approved by Natural England. Briefly, this protocol involves (per pond):

- Collecting 20 water samples from selected areas evenly spread around the accessible perimeter of the waterbody, including both open water and vegetated areas;
- Collecting a ladle of water at each sampling location, stirring the water column without stirring up sediment during collection;
- Shaking and inverting the combined samples thoroughly once all 20 ladles are collected; and
- Extracting 15ml of this mixed sample into six conical tubes, each containing preservative fluid, a shaking thoroughly to homogenize the sample.

A5.6 The water samples were then sent to SureScreen Scientifics be analysed for great crested newt eDNA, using real-time Polymerase Chain Reaction (PCR). The report was returned on the 12 June 2023.

Limitations

A5.7 Pond P5 was only accessible around 60% of the perimeter edge. This could reduce the detection rate, with detection percentage decreasing the decreasing areas of the pond margin that is sampled.

RESULTS

A5.8 The results of the surveys of waterbodies are set out in **Table EDP A5.2** and **A5.3**. A copy of the eDNA analysis report is provided separately as **Appendix EDP 6**.

A5.9 Waterbodies located south of the Site form part of an active quarry site. As a result, the location and extent of waterbodies has varied over the past five years and the habitats immediately surrounding them would have been subject to significant disturbance.

A5.10 In summary, the one pond subject to eDNA survey within 250 m of the Site returned a negative result. Pond P5 also tested negative for eDNA in 2017.

A5.11 Due to the restricted access to all waterbodies within a 250m radius of the Site, the protentional for great crested newts to be presenting within their terrestrial phase cannot be rules out.

³⁰ Biggs J, Ewald N, Valentini A, Gaboriaud C, Griffiths RA, Foster J, Wilkinson J, Arnett A, Williams P and Dunn F 2014. Analytical and methodological development for improved surveillance of the Great Crested Newt. Appendix 5. Technical advice note for field and laboratory sampling of great crested newt (*Triturus cristatus*) environmental DNA. Freshwater Habitats Trust, Oxford.

Table EDP A5.2: Habitat Suitability Assessment Results.

Pond Reference	HSI Score	Pond Suitability
P1	0.725	Good
P4	0.737	Good
P5	0.520	Below Average

Table EDP A5.3: eDNA Survey Results.

Pond Reference	Sample Integrity	Inhibition	Great Crested Newt Detection
P5	Pass	Pass	Negative



Image EDP A5.1: Pond P5.



Image EDP A5.2: Pond P5.



Image EDP A5.3: Pond P1.



Image EDP A5.4: Pond P4.

Appendix EDP 6

Great Crested Newt eDNA Analysis Report

Folio No: E17842
Report No: 1
Purchase Order: edp4070
Client: EDP LTD
Contact: EDP

TECHNICAL REPORT

ANALYSIS OF ENVIRONMENTAL DNA IN POND WATER FOR THE DETECTION OF GREAT CRESTED NEWTS (TRITURUS CRISTATUS)

SUMMARY

When great crested newts (GCN), *Triturus cristatus*, inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analysing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

RESULTS

Date sample received at Laboratory: 06/06/2023
Date Reported: 12/06/2023
Matters Affecting Results: None

Lab Sample No.	Site Name	O/S Reference	SIC	DC	IC	Result	Positive Replicates
1468	Longwater Road - A	SU 79501 629106	Pass	Pass	Pass	Negative	0

If you have any questions regarding results, please contact us: ForensicEcology@surescreen.com

Reported by: Chris Troth

Approved by: Jackson Young



METHODOLOGY

The samples detailed above have been analysed for the presence of GCN eDNA following the protocol stated in DEFRA WC1067 'Analytical and methodological development for improved surveillance of the Great Crested Newt, Appendix 5.' (Biggs et al. 2014). Each of the 6 sub-sample tubes are first centrifuged and pooled together into a single sample which then undergoes DNA extraction. The extracted sample is then analysed using real time PCR (qPCR), which uses species-specific molecular markers to amplify GCN DNA within a sample. These markers are unique to GCN DNA, meaning that there should be no detection of closely related species.

If GCN DNA is present, the DNA is amplified up to a detectable level, resulting in positive species detection. If GCN DNA is not present then amplification does not occur, and a negative result is recorded.

Analysis of eDNA requires scrupulous attention to detail to prevent risk of contamination. True positive controls, negative controls and spiked synthetic DNA are included in every analysis and these have to be correct before any result is declared and reported. Stages of the DNA analysis are also conducted in different buildings at our premises for added security.

SureScreen Scientifics Ltd is ISO9001 accredited and participate in Natural England's proficiency testing scheme for GCN eDNA testing. We also carry out regular inter-laboratory checks on accuracy of results as part of our quality control procedures.

INTERPRETATION OF RESULTS

- SIC:** **Sample Integrity Check** [Pass/Fail]
When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results.
- DC:** **Degradation Check** [Pass/Fail]
Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.
- IC:** **Inhibition Check** [Pass/Fail]
The presence of inhibitors within a sample are assessed using a DNA marker. If inhibition is detected, samples are purified and re-analysed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.
- Result:** **Presence of GCN eDNA** [Positive/Negative/Inconclusive]
Positive: GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.
Positive Replicates: Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.
Negative: GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.



Appendix EDP 7 Reptile Survey

METHODOLOGY

- A7.1 A total of 66 artificial refugia were deployed in all suitable habitats across the Site on 19 May 2023. This equates to c.28 refugia per hectare, which is significantly greater than the recommended 5 to 10 refuges per hectare as set out in the guidelines for 'general survey purposes'³¹. Survey visits were undertaken on seven subsequent occasions in suitable weather conditions and involved two techniques:
1. Visual encounter surveys - entailing a walked transect across the Site to undertake a visual search for basking animals in suitable habitat or evidence of animals (e.g. sloughed skin); and
 2. Checking of the artificial refugia for sheltering or basking animals to establish the presence/likely absence of reptiles.
- A7.2 This ensured that all areas were represented in the survey, and that the survey was not biased towards those reptiles more likely to use refugia, such as slow-worm (*Anguis fragilis*).
- A7.3 During each survey visit, the following information was recorded: species, number of animals observed, and sex where possible, location (refugia or visual encounter), date, start and finish times, and weather. A summary of the survey dates, times and weather conditions are presented in **Table EDP 7.1**. The locations of the artificial refugia are shown on **Plan EDP 8**.

Table EDP A7.1: Reptile Survey Dates, Timings and Weather Conditions.

Date	Start Time	End Time	Wind Speed (Beaufort Scale)		Temperature (°C)		Cloud Cover (%)		Precipitation
			Min	Max	Min	Max	Min	Max	
01.06.23	11:00	11:45	2	2	17	17	100	100	Nil
06.06.23	09:30	10:30	2	3	13	14	90	100	Nil
02.08.23	09:40	10:55	4	6	17	18	30	90	Heavy Showers
04.09.23	08:45	09:55	0	1	17	18	0	20	Nil
13.09.23	08:00	08:30	2	3	15	15	60	80	Dry during the survey, showers prior
19.09.23	10:00	11:00	4	5	16	17	100	100	Nil
28.09.23	09:45	11:00	1	2	15	16	100	100	Dry during the survey, showers prior

³¹Froglife (1999) *Reptile survey: an introduction to planning, conducting and interpreting surveys for snake and lizard conservation*. Froglife Advice Sheet 10, Froglife, Halesworth

- A7.4 Where reptiles were recorded, peak survey counts were then used to estimate approximate population size class for each species. Estimates of population size class followed the approach given in the guidelines referred to above, and are summarised with respect to widespread reptiles in **Table EDP A7.2**.

Table EDP A7.2: Reptile Population Size Class Categories

Species	Population Size Class Category		
	Small	Medium	Large
Slow-worm	< 10	10 - 40	> 40
Common lizard	< 5	5 - 20	> 20
Grass snake	< 5	5 - 10	> 10
Adder	< 5	5 - 10	> 10

Limitations

- A7.5 The refuge located across the centre of the grassland had to be relocated to the boundaries in July to allow for a hay cut to be taken from the field.
- A7.6 All surveys were undertaken within appropriate weather conditions and optimal months for reptile surveys with the exception of survey three on 02 August 2023 which experienced heavy rain showers. Although heavy rain showers were recorded, these were intermittent with warm clear spells in-between, and the survey results show that the short showers did not impact the recording of reptiles.

RESULTS

- A7.7 The full results of the reptile survey are shown in **Table EDP A7.3** and displayed on **Plan EDP 8**. In summary, the Site supports small populations of slow worm, grass snake and common lizard.
- A7.8 During the reptile checks there was a peak adult count of one for grass snake. In addition, on 06 June 2023 there was an incidental recording of two adult female grass snakes by a surveyor visiting the Site. They were recorded in the same location, along the north boundary. The temperature was a high of 24 degrees Celsius at the time of the observation. A grass snake slough was also observed.
- A7.9 All records were associated with the boundary features, in particular the northern boundary and south-east corner.
- A7.10 In comparison to 2017 the populations size of grass snake and slow worms remains the same. Common lizards were not recorded during reptile survey undertaken in 2017. The distribution of recordings is similar between survey years.

Table EDP A7.3: Reptile Survey Results.

Survey Visit	Grass Snake		Slow worm			Common Lizard	
	Adult Male	Adult Female	Adult Male	Adult Female	Juvenile	Adult Male	Adult Female
1	0	0	1	3	5	0	0
2	0	0	0	1	1	0	0
3	1	0	1	4	0	0	0
4	0	0	1	3	1	0	0
5	0	0	0	0	1	0	0
6	0	1	2	7	2	0	1
7	0	0	0	6	5	1	0
Peak Adult Count	1		9			1	

Appendix EDP 8

Biodiversity Net Gain Assessment

- A8.1 A Biodiversity Net Gain (BNG) assessment has been undertaken to objectively measure the net biodiversity impacts of the proposed development and to assess the scheme's ability to deliver net biodiversity gain. The assessment has been undertaken using the Department for the Environment Farming and Rural Affairs (DEFRA) Statutory Biodiversity Metric (the latest version of 'the Metric', released in February 2024). The assessment has been undertaken by an ecological consultant suitably experienced in these types of assessment, and with reference to current best practice guidance.
- A8.2 The Biodiversity Metric uses habitat as a proxy for wider biodiversity with different habitat types scored according to their relative biodiversity potential. There are three different types of biodiversity unit which can be measured in the Metric, namely Habitat Units; Hedgerow Units and Watercourse Units. Habitat Units relate to two-dimensional areas measured in hectares (and are referred to as Area Units in the Metric User Guide³²) whereas Hedgerow and Watercourse Units relate to one-dimensional lengths measured in kilometres.
- A8.3 Factors such as distinctiveness, size, condition, and location, affect the unit score, and in the case of newly created/ enhanced habitats the risk (time and difficulty) to reach target habitat condition affects the resulting score. The total number of 'biodiversity units' pre- and post-development are calculated in the Metric and used to calculate the total net change.
- A8.4 The Metric is a simple assessment tool and only considers direct impacts on biodiversity through impacts on habitats. Indirect impacts are not included, and the Metric does not take account of any other protected species enhancement measures such as the provision of habitat features such as bird and bat boxes, basking sites (e.g. log piles) and hibernaculum. The Metric is intended to be used alongside professional judgement as part of the decision-making process. The User Guide states that:

"The metric and its outputs should be used alongside ecological expertise as part of the evidence that informs plans and decisions."

METHODOLOGY

- A8.5 The following sections break down the various components of the BNG Assessment to provide further clarity on how individual elements have been entered into the Metric. The following should be read in conjunction with the Statutory Biodiversity Metric (Report ref: edp4070_r011), a copy of which has been submitted to the LPA alongside the planning application and is available on request.

On-site Baseline

- A8.6 The pre-development (baseline) biodiversity value of the Site was calculated using the information derived from the habitat surveys completed in March 2023 and January 2024 as

³² Department for Environment, Food and Rural Affairs. The Statutory Biodiversity Metric User Guide. February 2024

described within **Appendix EDP 2**. The main habitats present within the Site were classified in accordance with the UK Habitat Classification System and their current condition was assessed with reference to the habitat-specific criteria³³.

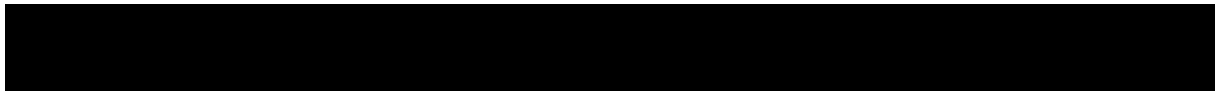
- A8.7 There is a ditch located outside of the Site running parallel with the south and south-eastern boundary and part of the 5m riparian zone falls within the Site
- A8.8 GIS software using Natural England's QGIS Template was used to accurately measure the area/length of existing habitats. The measured habitat areas/lengths were entered into the Metric as illustrated on **Plan EDP 9**. The detailed condition assessments of the baseline habitats are set out within **Tables EDP 8.3** at the rear of this Appendix.

On-site Post-Intervention

- A8.9 The post-development biodiversity value of the Site has been calculated based on the Site Layout (**Appendix EDP 1**) and associated landscape proposals shown on the Landscape Strategy (as provided within **Appendix EDP 9**).
- A8.10 The predicted post-development habitats were entered into the Biodiversity Metric as illustrated on **Plan EDP 10**. Further details regarding the predicted habitats are set out below.

Retained Habitats

- A8.11 Retained habitats have been entered into the metric as follows:



- 0.08km (72%) of the total hedgerow network (0.11km) is to be retained;
- 0.06ha of bramble scrub (medium distinctiveness) retained north of the PRow;
- 0.03ha of bare ground, the existing PRow pathway; and
- 0.23ha of rural trees, three mature oak trees in the east of the Site.

Habitat Creation

- A8.12 Newly created habitats have been entered into the metric as follows:
- Built linear features, to comprise the proposed extent of the primary road and pump station;
 - The ratio of 'developed land sealed surface' to 'vegetated garden' within the residential development area has been calculated as 70% 'urban-developed land, sealed surface' and 30% 'urban –vegetated garden', in line with best practice guidance;

³³ Department for Environment, Food and Rural Affairs. The Statutory Biodiversity Metric – Technical Annex 1: Condition Assessment Sheets and Methodology. November 2023

³⁴ Figure rounded up to two decimal places for clarity

- Sustainable urban drainage features designed to maximise biodiversity benefits, and achieve 'moderate' condition, through sensitive design and planting with diverse mix of native aquatic and semi-aquatic flora;
- A native wildflower grassland mix will be used for the areas of wildflower grassland. These have been included as 'other neutral grassland' in 'moderate' condition, which could be achieved with the careful placement of these areas away from public footpaths to minimise impacts from trampling and the implementation of an appropriate management regime to maintain structural and botanical diversity;
- Several new habitats are to be created on the Site including areas of POS. It has been assumed the POS will be split into 70% modified grassland moderate condition, 25% modified grassland poor condition and 5% mixed scrub. The assumptions for these habitats are outlined below:
 - Modified grassland of 'poor condition', predominantly in areas associated with more formal uses, due to its amenity use and potentially greater levels of disturbance;
 - Modified grassland of moderate condition and assumes a diverse flowering lawn, tolerant of regular mowing, is created (e.g. using Emorsgate EL1 'flowering lawn mixture'), which will achieve 'moderate' condition. These areas will be managed without the application of fertilisers, herbicides or pesticides; and
 - Mixed scrub planting will comprise of at least three native scrub species from a range of age groups. The scrub could conservatively achieve 'moderate' condition with the careful selection of species and the implementation of an appropriate management regime.
- Street trees to be planted throughout the road network and within the POS. Details regarding the number, locations and/or specification of street trees is unknown at this stage. For the purpose of the Biodiversity Metric calculations, estimations have been made based on the Landscape Strategy to include five small urban trees of poor condition planted along the street, and 32 rural trees of moderate condition planted within POS; and
- Planting of 0.29km of native hedgerow, of which 0.06km will be with trees, delineating the development parcel and to be subject to an appropriate management regime. The proposed condition for the hedgerow has been precautionary input as 'poor' to reflect its proximity to the development and the potential for anthropogenic impacts.

A8.13 The target condition for newly created habitats is provided within **Tables EDP A8.3 – A8.9** at the rear of this Appendix, along with justification for the target condition and the anticipated delivery mechanism.

NET BIODIVERSITY IMPACT

A8.14 The predicted overall net change in biodiversity units, taking into account all proposed habitat retention, enhancement and creation, is summarised in **Table EDP A8.1**.

Table EDP A8.1: Biodiversity Metric Headline Results

	Habitat Units	Hedgerow Units	River Units
On-site Baseline	21.36	0.86	1.17
On-site Post-intervention	9.29	1.33	1.17
On-site Net Unit Change	-12.07	+ 0.48	+0.00
On-site Net % Change	-56.50%	+55.93%	+0.00%
Trading Rules Satisfied	No	Yes	N/A

A8.15 The Metric has demonstrated a net loss in habitat units, and a significant net gain in linear units. Mindful of the legislative requirement for developments to achieve a 10% biodiversity net gain, the Applicant will commit to delivering a net gain in biodiversity via an off-site solution to create/enhance habitats to generate the unit shortfall. The offsetting scheme will be submitted and approved as part of the BNG Plan (that is required as a standard pre-commencement condition to any applicable planning application) to be determined by the LPA.

A8.16 The riparian zone within the Site boundary will be buffered from the proposed development and as such will not be negatively impacted. Areas within the 5m riparian zone, that fall within the Site, will be subject to landscape planting. Although this will not consist of aquatic vegetation, which is not considered appropriate given the dry conditions, it will provide a benefit to the existing ditch via diversifying the ground flora to help with water infiltration and protecting the water quality by reducing the impacts of pollution run off. The proposed landscape planting will aim to increase species diversity and structure within the riparian zone, offering opportunities for a range of other species e.g. invertebrates, foraging and commuting bats.

A8.17 To meet a 10% net gain, as required by legislation, a further 14.20 habitat units will need to be secured. The scheme has followed both the mitigation hierarchy and the Biodiversity Gain Hierarchy, although due to the existing habitats within the Site, the development footprint will impact habitats of medium distinctiveness, namely other neutral grassland. Through an iterative design process, the habitats within the POS have been designed to be both attractive for recreational purposes whilst also benefiting biodiversity and wildlife. This includes the creation of wildflower grassland, scrub plating, native hedgerows with trees and a SuDS feature. Given the size of the Site and nature of scheme, it has not been possible to provide sufficient habitat creation and enhancement within the red line boundary for a 10% net gain, therefore off-site habitat enhancement and creation will be provided as compensation.

A8.18 The mitigation hierarchy has been followed through the sensitive design process which will be set out with a Biodiversity Gain Plan, which will be secured by a planning condition.

HABITAT CONDITION ASSESSMENT TABLES

Baseline Habitats

Table EDP A8.2: Summary of Condition Assessment for On-site Baseline Habitats

Baseline	Area	Assessment Criteria Passed	Condition Assessment Result	Condition Assessment Score
Habitats				
Other neutral grassland	Main field	A (good habitat representation), B (varied sward height), D (bracken and scrub cover) and E (limited physical damage and sub-optimal conditions).	Passes 4 of 6 criteria, excluding essential criterion A and additional criterion F.	Moderate
Other neutral grassland	North of PRow	A (good habitat representation), B (varied sward height), D (bracken and scrub cover) and E (limited physical damage and sub-optimal conditions).	Passes 4 of 6 criteria, excluding essential criterion A and additional criterion F.	Moderate
Bramble Scrub	North of PRow	N/A	N/A	N/A
Bare earth	PRow path	N/A	Passes 0 of 3 criteria.	Poor
Rural Tree	T1, T2, T5	A (native), B (continuous canopy), C (mature), D (limited adverse impacts), E (ecological niches) and F (>20% oversailing vegetation).	Passes 6 of 6 criteria.	Good
Rural Tree	T25 and T23	A (native), B (continuous canopy), D (limited adverse impacts), E (ecological niches) and F (>20% oversailing vegetation).	Passes 5 of 6 criteria.	Good
Rural Tree	T24	A (native), B (continuous canopy), D (limited adverse impacts) and F (>20% oversailing vegetation).	Passes 4 of 6 criteria.	Moderate

Hedgerows				
Native hedgerow with trees	West hedgerow	A1, A2, C1, D1, D2 and E2.	No more than 4 failures in total; Does not fail both attributes in more than one functional group.	Moderate
Native hedgerow with trees	East hedgerow	A1, A2, C1, D1, D2, E1 and E2.	No more than 3 failures in total; Does not fail both attributes in more than one functional group.	Moderate
Watercourse				
Ditch	Offsite ditch	A (water quality), C (<10% algae or duckweed), E (<5% physical damage), H (absence of non-natives).	Passes 4 of 8 criteria.	Poor

Habitat Creation

Modified Grassland

Table EDP A8.3: Target Condition for Modified Grassland

Condition Assessment Criteria*		Criteria to be Met? (Y/N)	How Criteria will be Met
A	6-8 species per m ² , including at least 2 forbs (Essential for achieving Moderate or Good condition).	N	This habitat will be laid with hard wearing species poor turf and is unlikely to meet 6-8 species per m ² .
B	Varied sward height (at least 20% <7cm and at least 20% >7cm).	N	The sward will be regularly mown to a uniform structure and maintained below 7cm.
C	<20% scrub cover.	Y	Any encroaching scrub will be managed and removed as detailed within the LEMP produced.
D	Physical damage evident in <5% of total area.	N	Excessive physical damage is likely to occur through human activity such as creating informal walking paths, %, therefore this criterion has precautionary been failed.

Condition Assessment Criteria*		Criteria to be Met? (Y/N)	How Criteria will be Met
E	Cover of bare ground between 1% and 10%, including localised areas.	N	It can be reasonably expected that rabbit warrens will occur naturally to create areas of bare ground as well as damage from human activities such as creating informal walking paths which will likely exceed 10%, therefore this criterion has precautionary been failed.
F	<20% bracken cover.	Y	Bracken cover will be controlled to <20% to be detailed within an LEMP.
G	Invasive non-native plant species absent.	Y	The presence of invasive non-native species will be controlled as detailed within the LEMP.
Condition Assessment Result:		Passes 3 of 7 criteria excluding essential criterion A.	Condition Assessment Score: Poor

*Abridged from 'Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)'

Modified Grassland

Table EDP A8.4: Target Condition for Modified Grassland

Condition Assessment Criteria*		Criteria to be Met? (Y/N)	How Criteria will be Met
A	6-8 species per m ² , including at least 2 forbs (Essential for achieving Moderate or Good condition).	Y	This habitat will be sown with a flowering lawn mixture (e.g. Emorsgate Flowering Lawn Mixture EL1) which will comprise >9 species per m ² , however given the likely management of these areas, it is presumed that 6-8 species per m ² is more realistic in the long-term.
B	Varied sward height (at least 20% <7cm and at least 20% >7cm).	N	The sward will be regularly mown to a uniform structure and maintained below 7cm.
C	<20% scrub cover.	Y	Any encroaching scrub will be managed and removed as detailed within the LEMP.
D	Physical damage evident in <5% of total area.	N	Excessive physical damage is likely due to damage from human activities such as creating informal walking paths, therefore this criterion has precautionarily failed.

Condition Assessment Criteria*		Criteria to be Met? (Y/N)	How Criteria will be Met
E	Cover of bare ground between 1% and 10%, including localised areas.	N	It can be reasonably expected that rabbit warrens will occur naturally to create areas of bare ground and damage from human activities such as creating informal walking paths, therefore this criterion has precautionarily failed.
F	<20% bracken cover.	Y	Bracken cover will be controlled to <20% to be detailed within an LEMP.
G	Invasive non-native plant species absent.	Y	The presence of invasive non-native species will be controlled as detailed within the LEMP.
Condition Assessment Result:		Passes 4 of 7 criteria including essential criterion A.	Condition Assessment Score: Moderate

*Abridged from 'Condition Sheet: GRASSLAND Habitat Type (low distinctiveness)'

Other Neutral Grassland

Table EDP A8.5: Target Condition for Other Neutral Grassland

Condition Assessment Criteria*		Criteria to be Met? (Y/N)	How Criteria will be Met
A	Appearance and composition closely matches UK Habitat Classification (UKHab) description. (Essential for achieving Moderate or Good condition).	Y	The sward will closely meet the characteristics of UKHab 'other neutral grassland'. Management of the sward will ensure that perennial rye grass is present at <30%, and this habitat will be sown with a species-rich wildflower seed mixture with will ensure that >9 species per m ² are present after 30 years.
B	Varied sward height (at least 20% <7cm and at least 20% >7cm).	Y	The sward height will be managed to ensure a varied sward height is created, to be detailed within an LEMP.
C	Between 1% and 5% bare ground cover, including localised areas, e.g. rabbit warrens.	Y	Bare ground scrapes can be created to cover between 1-5% of the total area, to be detailed within an LEMP. In addition, it can be reasonably expected that rabbit warrens will occur naturally to create areas of bare ground.
D	<20% bracken cover and <5% scrub cover.	Y	Bracken cover will be controlled to <20% and scrub encroachment (including bramble) will be managed to ensure <5%, to be detailed within an LEMP.

Condition Assessment Criteria*		Criteria to be Met? (Y/N)	How Criteria will be Met
E	<5% cover of suboptimal species and physical damage. Invasive non-native plant species absent.	N	Although undesirable species will be managed within the LEMP and attempts to minimise physical damage will be made through installation of signage and limiting access for recreational activities, it is expected that this criterion may be failed due to the nature of the location of these habitats within a residential area.
Additional Criterion			
F	≥10 species/m ² (Essential for achieving Good condition for non-acid grassland types).	N	The species mix to be sown will be a species-rich wildflower grassland mix such as Emorsgate Standard General Purpose Meadow Mixture EM2, there is unlikely to be at least 9 species per square metre over the habitat whole area.
Condition Assessment Result:		Passes 4 of 6 criteria, including essential criteria A.	Condition Assessment Score: Moderate

*Abridged from 'Condition Sheet: GRASSLAND Habitat Type (medium, high and very high distinctiveness)'

Sustainable Drainage Systems

Table EDP A8.6: Target Condition for SuDS

Condition Assessment Criteria*		Criteria to be Met? (Y/N)	How Criteria will be Met
Core Criteria– Applicable to all Urban Habitat Types			
A	Varied vegetation structure with no single structural habitat component or vegetation type covering >80% of total area	N	The habitat present will comprise a SuDS basin which although planted with aquatic flora will only comprise a single ecotone.
B	Diverse range of flowering plants species that are beneficial for wildlife.	Y	The aquatic planting will comprise a diverse range of species, including species of value to insects and include native species only. The control of non-native species will be included within the LEMP.
C	<5% cover of invasive non-native species and other detrimental species.	Y	The control of non-native species will be included within the LEMP to ensure that these species remain absent.

Condition Assessment Criteria*		Criteria to be Met? (Y/N)	How Criteria will be Met
Additional Criterion - Only Applicable to Bioswale and SuDS Habitat Types			
E1	Plant species are mostly native, and if non-native they should not be detrimental to the habitat or native wildlife.	Y	Appropriate selection and planting of native species.
E2	Vegetation comprised of plant species suited to wetland or riparian situations.	N	To guarantee the habitats are suitable to support wetland or riparian species would require further understanding of the hydrology of the Site.
Condition Assessment Result:		Passes 3 of 5 criteria.	Condition Assessment Score: Moderate

*Abridged from 'Condition Sheet: URBAN Habitat Type'

Mixed Scrub

Table EDP A8.7: Target Condition for Mixed Scrub

Condition Assessment Criteria*		Criteria to be Met? (Y/N)	How Criteria will be Met
A	Scrub good representation of the habitat type based on its UKHab definition. >80% is native and at least three native woody species.	Y	At least three native scrub species will be planted in equal proportion. Implementation of an appropriate management regime will ensure diversity is maintained. Details will be provided in an LEMP to be conditioned.
B	Seedlings, saplings, young and mature shrubs present.	N	Planting of scrub habitat at the same point in time, likely to be all same age class whips.
C	Invasive non-native species absent.	Y	The presence of invasive non-native species will be controlled as detailed within the LEMP to be produced.
D	Well-developed edges.	Y	Implementation of an appropriate management regime will aim to maintain a diverse scrub edge as detailed within an LEMP.
E	Clearings, gales or rides present.	N	Due to the small extents of scrub unlikely to create sufficient clearings/rides.

Condition Assessment Criteria*		Criteria to be Met? (Y/N)	How Criteria will be Met	
Condition Assessment Result:	Passes 3 of 5 criteria.		Condition Assessment Score:	Moderate

*Abridged from 'Condition Sheet: SCRUB

Urban Trees - Street Trees

Table EDP A8.8: Target Condition for Urban Trees - Street Trees

Condition Assessment Criteria*		Criteria to be met? (Y/N)	How criteria will be met
A	Individual tree (or >70% within the block) are native species.	Y	All trees will be native species, or more than 70% will be.
B	Gaps in canopy cover <10% with no gaps >5m wide. (Individual trees automatically pass this criterion)	Y	All street trees will be planted as individual trees which automatically pass this criterion.
C	Individual tree is mature (or >50% within block are mature).	N	Given the ages of the trees they are not likely to qualify as mature or veteran at 30 years.
D	Little/no evidence of an adverse impact on tree health (e.g. from activities such as vandalism or herbicides), and no regular pruning regime so trees retain >75% of expected canopy.	N	Given the trees location, adverse impacts occurring from anthropogenic activities may occur. This criterion has been failed precautionarily.
E	Micro-habitats for birds, mammals and insects are present.	N	Given the age, size, and structure of the tree 30 years after planting, micro-habitats are unlikely to occur.
F	>20% of tree canopy is oversailing vegetation beneath.	N	This criterion has been failed precautionarily on the basis that street trees are often planted within tree pits, and the canopy will oversail areas of roads/pavements/hard surfaces.

Condition Assessment Criteria*		Criteria to be met? (Y/N)	How criteria will be met	
Condition Assessment Result:	Passes 2 of 6 criteria		Condition Assessment Score:	Poor

*Abridged from 'Condition Sheet: INDIVIDUAL TREES'

Rural Trees - POS

Table EDP A8.9: Target Condition for Urban Trees - POS

Condition Assessment Criteria*		Criteria to be met? (Y/N)	How criteria will be met
A	Individual tree (or >70% within the block) are native species.	Y	All trees will be native species.
B	Gaps in canopy cover <10% with no gaps >5m wide. (Individual trees automatically pass this criterion)	Y	All POS trees will be planted as individual trees which automatically pass this criterion.
C	Individual tree is mature (or >50% within block are mature).	N	Given the ages of the trees they are not likely to qualify as mature or veteran at 30 years.
D	Little/no evidence of an adverse impact on tree health (e.g. from activities such as vandalism or herbicides), and no regular pruning regime so trees retain >75% of expected canopy.	N	Given the trees location, adverse impacts occurring from anthropogenic activities may occur. This criterion has been failed precautionarily.
E	Micro-habitats for birds, mammals and insects are present.	N	Given the age, size, structure of the tree 30 years after planting, micro-habitats are unlikely to occur.
F	>20% of tree canopy is oversailing vegetation beneath.	Y	The surrounding habitat is likely to occur beneath the oversailing tree canopy.
Condition Assessment Result:		Passes 3 of 6 criteria	Condition Assessment Score: Moderate

*Abridged from 'Condition Sheet: INDIVIDUAL TREES'

Appendix EDP 9
Landscape Strategy
(edp4070_d005e 13 June 2024 GYo/HEI)



- Site Boundary
- Existing Tree
- Proposed Tree
- Proposed Native Hedgerow
- Existing Bramble Scrub to be Retained and Enhanced
- Proposed Species-rich Meadow Grassland to Form Semi-natural Green Space
- Proposed Amenity Grass
- Existing Grassland to be Retained
- Proposed Attenuation Basin
- Proposed Informal Footpath Link
- Existing Public Right of Way (PRow)
- Opportunity of a Future Link to the Moor Green Lakes Nature Reserve Extension
- Proposed Play
- Proposed Underground Pumping Station

client
Catesby Estates Limited and Stonebond Properties (Guildford) Limited

project title
Longwater Road, Finchampstead, Berkshire

drawing title
Landscape Strategy

date	13 JUNE 2024	drawn by	GYo
drawing number	edp4070_d005e	checked	HEI
scale	1:1,000 @ A3	QA	JFr

edp the environmental dimension partnership

Registered office: 01285 740427 - www.edp-uk.co.uk - info@edp-uk.co.uk

Plans

Plan EDP 1: Extended Phase 1 Habitat Survey
(edp4070_d025b 06 June 2024 GYo/JSn)

Plan EDP 2: Designated Sites Plan
(edp4070_d032b 06 June 2024 PDr/JSn)

Plan EDP 3: Breeding Bird Survey Plan
(edp4070_d026b 07 June 2024 PDr/JSn)

Plan EDP 4: Bat Activity Survey – May
(edp4070_d027b 06 June 2024 PDr/JSn)

Plan EDP 5: Bat Activity Survey – July
(edp4070_d028b 06 June 2024 PDr/JSn)

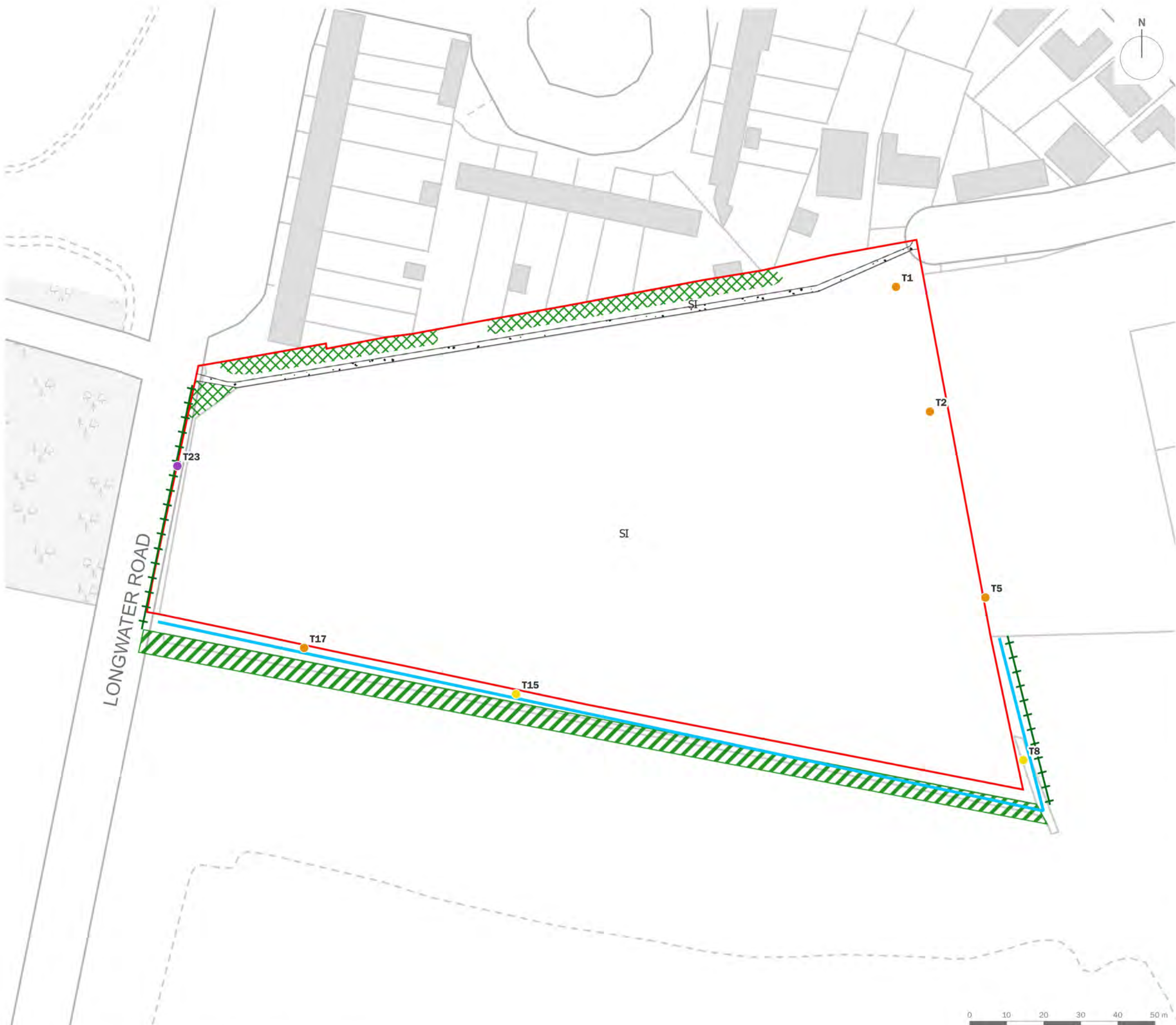
Plan EDP 6: Bat Activity Survey – September
(edp4070_d029b 06 June 2024 PDr/JSn)

Plan EDP 7: Great Crested Newt Survey
(edp4070_d030b 06 June 2024 PDr/JSn)

Plan EDP 8: Reptile Survey
(edp4070_d031b 06 June 2024 PDr/JSn)

Plan EDP 9: Pre-development Habitat Plan
(edp4070_d036a 22 April 2024 GYo/JSn)

Plan EDP 10: Post-development Habitat Plan
(edp4070_d037a 24 May 2024 VMs/JSn)



Site Boundary

Broadleaved Plantation Woodland

Dense Continuous Scrub

SI

Poor Semi-improved Grassland

Bare Ground

Intact Species-poor Hedgerow and Trees

Wet Ditch

Tree Bat Roost Potential

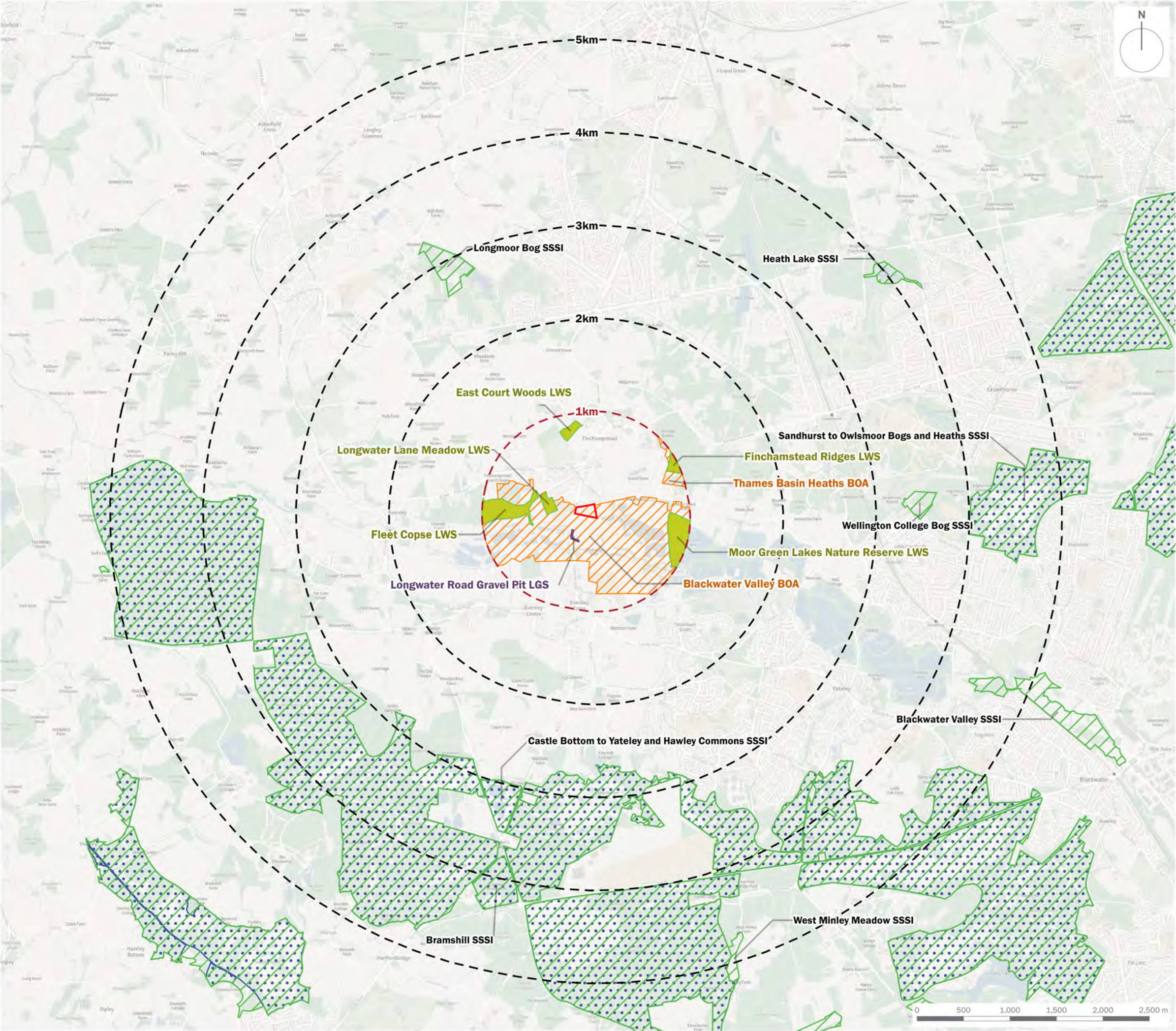
Further Assessment Confirmed PRF-I

Potential Roost Feature - For Multiple Bats (PRF-M)

Potential Roost Feature - For Individual Bats (PRF-I)

PRF type estimated from the ground. A close inspection survey of any trees to be affected would be required to confirm PRF type. PRF shown is the maximum level for any PRF on a tree.

client			
Catesby Strategic Land Ltd and Stonebond Properties (Guildford) Ltd			
project title			
Land to the East of Longwater Road, Finchampstead			
drawing title			
Extended Phase 1 Habitat Survey			
date	06 JUNE 2024	drawn by	GYo
drawing number	edp4070_d025b	checked	JSn
scale	1:1,000 @ A3	QA	RBa



- Site Boundary
- 1km Study Area
- Range Rings (1km Intervals)
- Local Wildlife Site (LWS)
- Local Geological Site (LGS)
- Biodiversity Opportunity Area (BOA)
- Site of Special Scientific Interest (SSSI)
- Thames Basin Heaths Special Protection Area (SPA)

client			
Catesby Strategic Land Ltd and Stonebond Properties (Guildford) Ltd			
project title			
Land to the East of Longwater Road, Finchampstead			
drawing title			
Designated Sites Plan			
date	06 JUNE 2024	drawn by	PDr
drawing number	edp4070_d032b	checked	JSn
scale	1:40,000 @ A3	QA	RBa



Site Boundary

Conservation Status

☆

Schedule 1

△

Species of Principal Importance

○

Not Listed as Schedule 1 or SPI

Birds of Conservation Concern

Red List

Amber List

BTO Code

Common Name

Proper

BH

Black-headed Gull

D.

Dunnock

GJ

Greylag Goose

HS

House Sparrow

SD

Stock Dove

ST

Song Thrush

WP

Woodpigeon

WR

Wren

NB. Points shown are an indicative point within a bird's territory and not necessarily the exact breeding location.

client

Catesby Strategic Land Ltd and Stonebond Properties (Guildford) Ltd

project title

Land to the East of Longwater Road, Finchampstead

drawing title

Breeding Bird Survey

date

07 JUNE 2024

drawn by

PDr

drawing number

edp4070_d026b

checked

JSn

scale

1:1,500 @ A3

QA

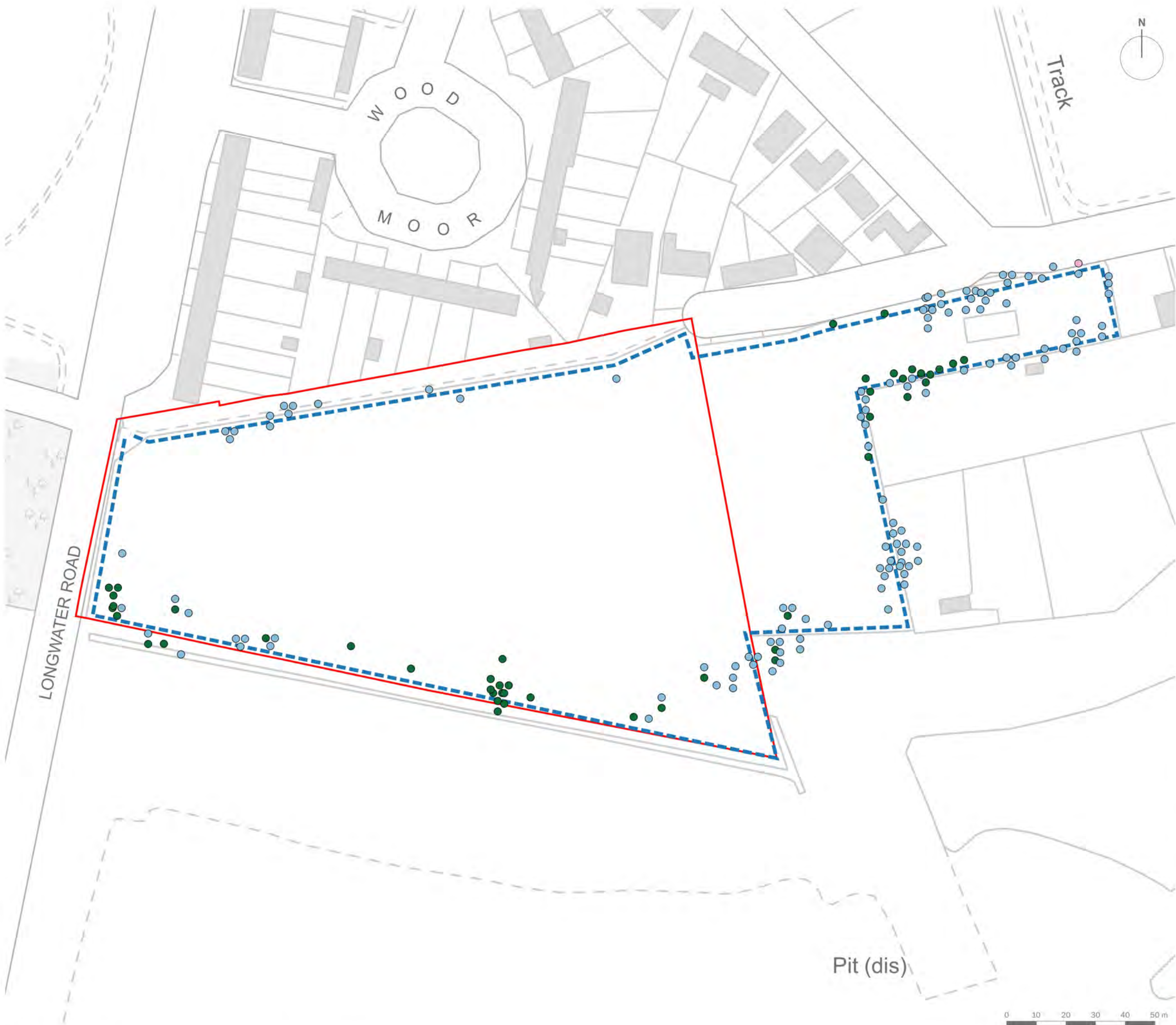
RBa

edp

the environmental dimension partnership

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- Site Boundary
- Transect Route
- Common Pipistrelle
- Soprano Pipistrelle
- Myotis spp.

client
Catesby Strategic Land Ltd and Stonebond Properties (Guildford) Ltd

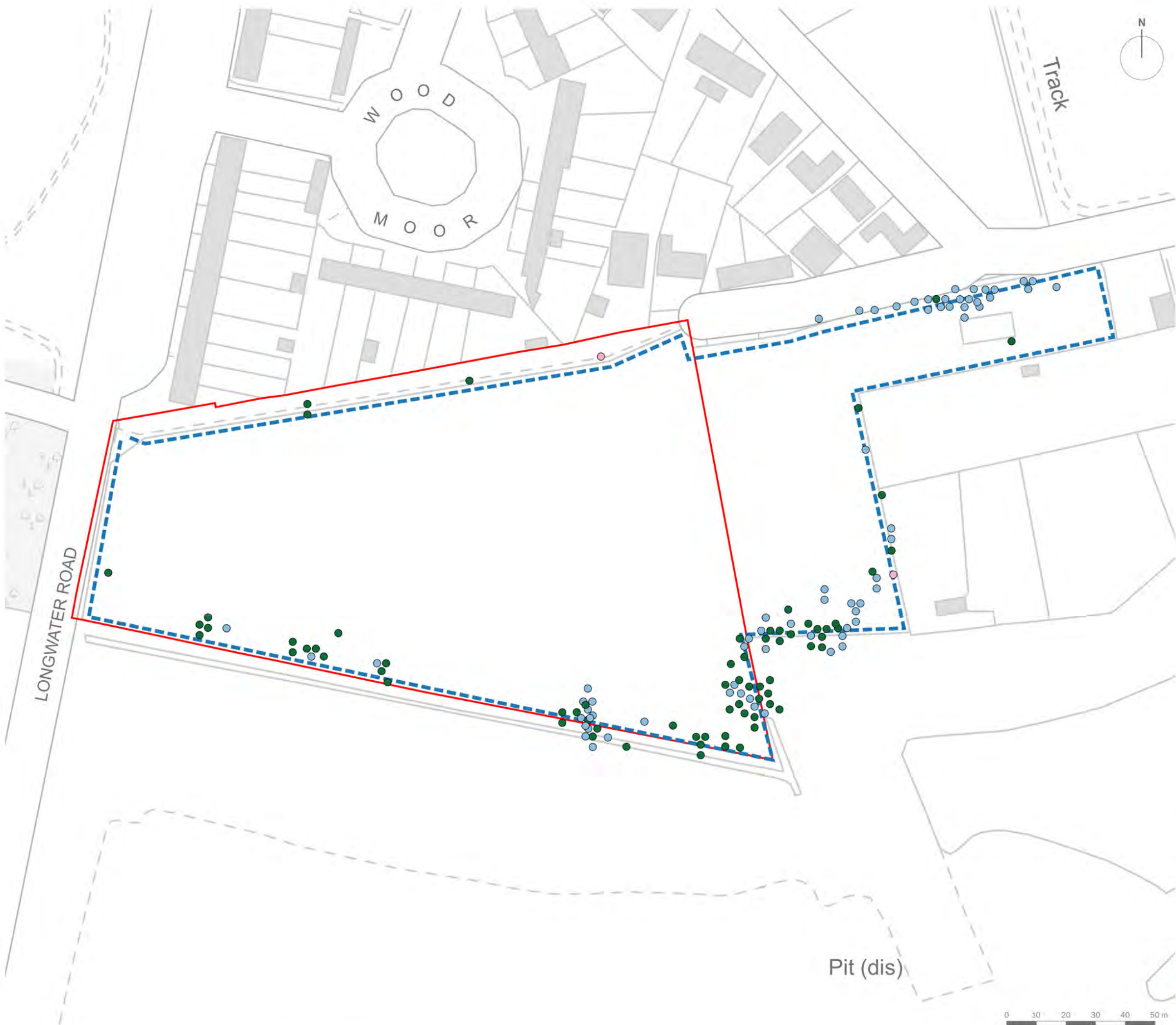
project title
Land to the East of Longwater Road, Finchampstead

drawing title
Bat Activity Survey – May

date	06 JUNE 2024	drawn by	PDr
drawing number	edp4070_d027b	checked	JSn
scale	1:1,250 @ A3	QA	RBa



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- Site Boundary
- Transect Route
- Common Pipistrelle
- Soprano Pipistrelle
- Myotis spp.

client
Catesby Strategic Land Ltd and Stonebond Properties (Guildford) Ltd

project title
Land to the East of Longwater Road, Finchampstead

drawing title
Bat Activity Survey – July

date	06 JUNE 2024	drawn by	PDr
drawing number	edp4070_d028b	checked	JSn
scale	1:1,250 @ A3	QA	RBa



- Site Boundary
- Transect Route
- Common Pipistrelle
- Soprano Pipistrelle
- Myotis spp.
- Long-eared spp.

client			
Catesby Strategic Land Ltd and Stonebond Properties (Guildford) Ltd			
project title			
Land to the East of Longwater Road, Finchampstead			
drawing title			
Bat Activity Survey – September			
date	06 JUNE 2024	drawn by	PDr
drawing number	edp4070_d029b	checked	JSn
scale	1:1,250 @ A3	QA	RBa



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- Site Boundary
- 250m Site Radius
- GCN Absent
- No Access

client			
Catesby Strategic Land Ltd and Stonebond Properties (Guildford) Ltd			
project title			
Land to the East of Longwater Road, Finchampstead			
drawing title			
Great Crested Newt Survey			
date	06 JUNE 2024	drawn by	PDr
drawing number	edp4070_d030b	checked	JSn
scale	1:3,000 @ A3	QA	RBa



- Site Boundary
- Reptile Mat Location
- Grass Snake - Adult
- Slow Worm - Adult
- Slow Worm - Juvenile
- Common Lizard - Adult

client
Catesby Strategic Land Ltd and Stonebond Properties (Guildford) Ltd

project title
Land to the East of Longwater Road, Finchampstead

drawing title
Reptile Survey

date	06 JUNE 2024	drawn by	PDr
drawing number	edp4070_d031b	checked	JSn
scale	1:900 @ A3	QA	RBa



- Site Boundary
- Other Neutral Grassland
- Bramble Scrub
- Bare Ground
- Native Hedgerow with Trees
- Existing Tree
- Tree Number

client
Catesby Strategic Land Ltd and Stonebond Properties (Guildford) Ltd

project title
Land to the East of Longwater Road, Finchampstead

drawing title
Pre-development Habitat Plan

date	13 JUNE 2024	drawn by	GYo
drawing number	edp4070_d036a	checked	JSn
scale	1:1,000 @ A3	QA	DJo



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- Site Boundary**
- Retained Habitats**
- Bare Ground (Poor Condition)
 - Bramble Scrub
 - Other Neutral Grassland (Moderate Condition)
 - Native Hedgerow with Trees
 - Tree (Good Condition)
- Created Habitats**
- Built Linear Features
 - 70% Developed Land; Sealed Surface, 30% Vegetated Garden
 - 70% Modified Grassland Moderate Condition, 25% Modified Grassland Poor Condition, 5% Mixed Scrub
 - Modified Grassland (Poor Condition)
 - Other Neutral Grassland (Moderate Condition)
 - Sustainable Drainage System (Moderate Condition)
 - Native Hedgerow (Poor Condition)
 - Native Hedgerow with Trees (Poor Condition)
 - Proposed Tree (Moderate Condition)
 - Proposed Tree (Poor Condition)
- Lost Habitats**
- Lost Hedgerow
 - Lost Tree

client
Catesby Estates Limited and Stonebond Properties (Guildford) Limited

project title
Longwater Road, Finchampstead, Berkshire

drawing title
Post-development Habitat Plan

date	24 MAY 2024	drawn by	VMS
drawing number	edp4070_d037a	checked	JSn
scale	1:1,000 @ A3	QA	DJo



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PRACTICE



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