



# PRELIMINARY ECOLOGICAL APPRAISAL AND GROUND LEVEL TREE ASSESSMENT REPORT

Client: Craig Mortimer-Zhika

Site: Highwood House, Arborfield

05.03.2024

Version 001



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| Report                              | This report remains valid for 12 to 18 months from date of issue.<br>The report, conclusions and recommendations are valid for current development plans only. Should this change, the report should be reviewed and, if necessary, further survey work and desk study review undertaken. |                                                                                                                                                                                                                                                                                                                                                   |                   |
| Survey Data                         | Survey data are valid for 12 to 18 months from the date the survey was undertaken.                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                   |                   |

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The information which we have prepared and provided is true and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.

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## 1. Summary

| Site Details                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>Site Address: Highwood House, Church Lane, Arborfield, Reading, RG2 9JA.</li> <li>OS grid reference: SU 7551 6764.</li> <li>Approximate Area of Site: 10,000 m<sup>2</sup> (1.0 ha).</li> <li>Approximate Area to be Affected by Development: 400 m<sup>2</sup> (0.04 ha).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Scope of Works                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| <ul style="list-style-type: none"> <li>aLyne Ecology Ltd was commissioned by Craig Mortimer-Zhika to undertake a Preliminary Ecological Appraisal (PEA), comprising an online data search and field survey to assess the baseline ecological conditions of the site and its potential to support protected species and species of conservation concern.</li> <li>aLyne Ecology Ltd. was also commissioned to carry out a Ground Level Tree Assessment (GLTA), comprising an inspection of the trees on site to inform an assessment of the suitability for summer roosting and hibernating bats.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Development Proposals                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| <ul style="list-style-type: none"> <li>The development proposals are for the construction of new single storey outbuilding of a similar construction to the existing buildings on site, which will serve as a pool house and gym. The proposed outbuilding will be situated adjacent to the existing main house and garage. Modified grassland, other developed land, and artificial unvegetated, unsealed surface habitats will be lost to facilitate the development (see Approximate Development Boundary on Figure 1).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Evaluation and Potential Impacts Assessment                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| <ul style="list-style-type: none"> <li>The habitats recorded on site are as follows: modified grassland, other standing water, buildings, other developed land, artificial unvegetated, unsealed surface, non-native and ornamental hedgerow, line of trees (w1g 33) and line of trees (w2c, 33) (see Figure 1).</li> <li>Thames Basin Heaths Special Protection Area (SPA) is located approximately 4.3 km to the south of the site. SPAs are European designated sites protected in the UK by Conservation of Habitats and Species Regulations 2017 (as amended) (HM Government, 2017).</li> <li>There are seven types of Priority Habitats located within 1 km of the site, namely deciduous woodland, ponds, rivers/streams, woodpasture &amp; parkland, traditional orchards, lowland fens and coastal and floodplain grazing marsh. Priority Habitats are listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006 (HM Government, 2006). Under the NERC Act, 2006, Local Planning Authorities are required to give due regard to biodiversity.</li> <li>There are six parcels of semi-natural ancient woodland located within 1 km of the site, the closest being approximately 135 m to the north-west. There is also one parcel of replanted ancient woodland, which is located approximately 850 m to the south-west. Ancient woodland is afforded protection through national and local planning policy.</li> </ul> |

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <ul style="list-style-type: none"> <li>• There is one pond on site which could support the great crested newt. The great crested newt and its habitats are fully protected under the Wildlife and Countryside Act, 1981 (as amended) (HM Government, 1981), and the Conservation of Habitats and Species Regulations 2017 (as amended) (HM Government, 2017). The pond could also support the common toad, which is a Priority Species listed on Section 41 of the NERC Act, 2006 (HM Government, 2006).</li> <li>• The hedgerow and tree habitats could support nesting birds, including birds of conservation concern. Under the Wildlife and Countryside Act, 1981 (as amended) (HM Government, 1981), it is illegal to take, damage or destroy the nests of wild birds whilst being built or in use.</li> <li>• Bats, their roosts, and their habitats are strictly protected under the Wildlife and Countryside Act (1981) as amended (HM Government, 1981) and the Conservation of Habitats and Species Regulations 2017 (as amended) (HM Government, 2017).</li> <li>• <b>All trees on site were surveyed for their suitability to support roosting bats. This resulted in three individual trees being assessed as PRF-M (Potential Roosting Feature-Multiple) (see Figure 2 and Figure 3), indicating the presence of at least one potential roosting feature for bats. This includes man-made features (bat boxes).</b></li> <li>• The garden habitats on site have potential to support hedgehogs. The hedgehog is a Priority Species, listed on Section 41 of the NERC Act, 2006 (HM Government, 2006).</li> </ul> |
| <p><b>Recommendations for Avoidance, Mitigation, and Enhancement</b></p> <ul style="list-style-type: none"> <li>• Trees should be retained and protected. Should any trees assessed as having suitability for roosting bats need removal, further survey will be required.</li> <li>• An Ecological Clerk of Works (ECoW) should be present on site during any site clearance activities, which are likely to involve the removal/disturbance of any vegetation. This removal of vegetation should be carried out carefully by hand, to ensure any common toads or hedgehogs, which may be present, can escape unharmed.</li> <li>• Any removal of vegetation should be undertaken outside of the bird breeding season (March to August inclusive) to avoid destruction/disturbance of nesting birds.</li> <li>• A Construction and Environmental Management Plan (CEMP) should be prepared, demonstrating how features of ecological value will be retained and protected during construction, particularly the buildings and trees that have suitability to support roosting/foraging/commuting bats.</li> <li>• A sensitive lighting plan should be adopted, to ensure that outside lighting does not adversely affect adjacent habitats and wildlife, particularly bats when foraging and commuting.</li> <li>• The pond on site should be retained, protected, and enhanced.</li> </ul>                                                                                                                                                                                                                                   |
| <p><b>Further Survey Requirements</b></p> <ul style="list-style-type: none"> <li>• Great crested newts (already commissioned).</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                      |

## 2. Introduction

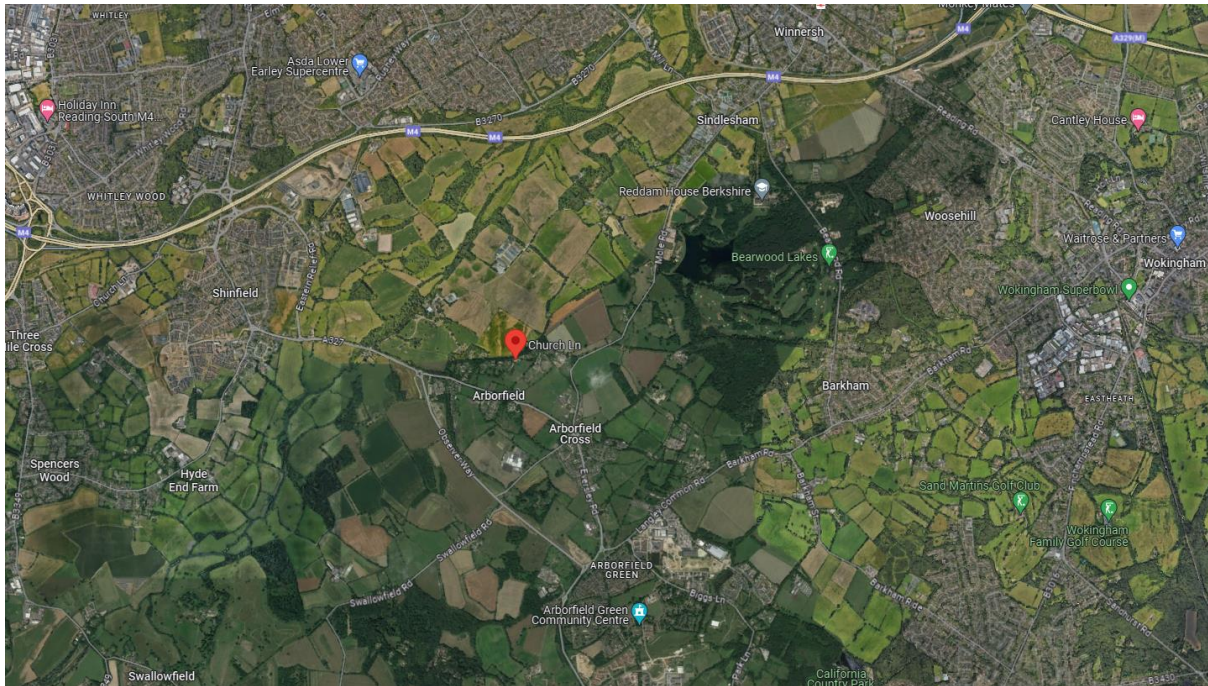
### 2.1 Site Details

Table 1 provides details of the site, intended as a summary of key features, derived from the online data search using Magic (Natural England, 2013). The habitats recorded on site during the field survey are shown on Figure 1. Photographs of the site are provided in Appendix 1. A full species list, with target notes, is provided in Appendix 2.

**Table 1. Site Details**

|                                                              |                                                                                                                                                                                                                                                                                                                   |
|--------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Site Name</b>                                             | Highwood House, Arborfield                                                                                                                                                                                                                                                                                        |
| <b>Site Address</b>                                          | Highwood House, Church Lane, Arborfield, Reading, RG2 9JA                                                                                                                                                                                                                                                         |
| <b>OS Grid Reference</b>                                     | SU 7551 6764                                                                                                                                                                                                                                                                                                      |
| <b>Approximate Total Area of Site</b>                        | 1 ha (10,000 m <sup>2</sup> )                                                                                                                                                                                                                                                                                     |
| <b>Approximate Area to be Affected by Development</b>        | 400 m <sup>2</sup> (0.04 ha)                                                                                                                                                                                                                                                                                      |
| <b>Landowner and Local Authority</b>                         | Craig Mortimer-Zhika, Wokingham Borough Council                                                                                                                                                                                                                                                                   |
| <b>Geology and Soils</b>                                     | Loamy soils with naturally high groundwater                                                                                                                                                                                                                                                                       |
| <b>Hydrology</b>                                             | Naturally wet                                                                                                                                                                                                                                                                                                     |
| <b>Nature Conservation Designations</b>                      | None on site                                                                                                                                                                                                                                                                                                      |
| <b>Other Designations</b>                                    | None on site                                                                                                                                                                                                                                                                                                      |
| <b>The Woodland Trust Ancient and Notable Tree Inventory</b> | None on site                                                                                                                                                                                                                                                                                                      |
| <b>Biodiversity Opportunity Area</b>                         | None on site                                                                                                                                                                                                                                                                                                      |
| <b>National Habitat Network</b>                              | None on site                                                                                                                                                                                                                                                                                                      |
| <b>Current Land Use</b>                                      | Occupied dwelling                                                                                                                                                                                                                                                                                                 |
| <b>Surrounding Habitats and Land Use</b>                     | Rural location, comprising a mixture of arable and grazed fields, hedgerows, and woodland. Numerous waterbodies are located within 1 km of the site, including one on site. The wider landscape is characterised by scattered residential and light industrial buildings, farmland, and further areas of woodland |
| <b>Urban Context / Locality</b>                              | The site is located off Church Lane on the northern edge of Arborfield village, which is located between Arborfield Cross and Shinfield. The M4 motorway is located approximately 1.8 km to the north of the site                                                                                                 |
| <b>Connectivity to Wider Landscape</b>                       | The site had good connectivity via existing lines of trees to areas of woodland to the north-east and north-west, and the River Loddon located approximately 850 m to the north-west, which are likely to be key foraging habitat for bats                                                                        |

An aerial plan showing the location of the site is provided below.



Site Location (© Google Earth Pro, accessed 23<sup>rd</sup> February 2024).

## 2.2 Proposed Development

The development proposals are for the construction of new single storey outbuilding of a similar construction to the existing buildings on site, which will serve as a pool house and gym. The proposed outbuilding will be situated adjacent to the existing main house and garage. Modified grassland, other developed land, and artificial unvegetated, unsealed surface habitats will be lost to facilitate the development (see Approximate Development Boundary on Figure 1).

## 2.3 Brief and Objectives

### 2.3.1 PEA

The purpose of the PEA was to:

- Map and identify the existing habitats within the survey area, using the UK Habitat Classification (UKHab) system (UK Habitat Working Group, 2023).
- Check for evidence of protected species and assess the potential for protected species to be present on site.
- Check for evidence of invasive species.
- Identify potential ecological impacts and constraints relating to the proposed works.
- Make recommendations for further survey work, as appropriate.
- Propose mitigation measures to avoid, mitigate or compensate for ecological impacts, as appropriate.

### 2.3.2 GLTA

The objective of the GLTA was to:

- Assess the suitability of the trees on site to support bat roosts, including those used by hibernating bats.

- Record evidence of roosting bats in trees.
- Identify the ecological impacts of the development on roosting bats in trees.
- Provide recommendations for avoidance, mitigation, enhancement, and compensation, where applicable.

### 3. Relevant Legislation and Planning Policy

This section provides a summary of legislation and planning policy for designated sites, Priority Habitats, ancient woodland, trees, and protected species, which are assessed to be present or potentially present on site, as detailed in Table 12, Section 6.

The legislation and planning policy detailed in this section is intended to be a summary only. The relevant pieces of legislation and planning policy should be referred to for full information. Legislation and planning policy pertaining to protected habitats and species can be found at the following websites:

- The Birds Directive 2009/147/EC (European Commission, 2009):  
[https://environment.ec.europa.eu/topics/nature-and-biodiversity/birds-directive\\_en](https://environment.ec.europa.eu/topics/nature-and-biodiversity/birds-directive_en)
- The Habitats Directive 1992/43/EEC (European Commission, 1992):  
[https://environment.ec.europa.eu/topics/nature-and-biodiversity/habitats-directive\\_en](https://environment.ec.europa.eu/topics/nature-and-biodiversity/habitats-directive_en)
- Water Framework Directive (European Commission, 2000):  
[https://ec.europa.eu/environment/water/water-framework/info/intro\\_en.htm](https://ec.europa.eu/environment/water/water-framework/info/intro_en.htm)
- Wildlife and Countryside Act, 1981 (as amended) (HM Government, 1981):  
<http://www.legislation.gov.uk/ukpga/1981/69>
- Conservation of Habitats and Species Regulations, 2017 (as amended) (HM Government, 2017): [http://www.legislation.gov.uk/uksi/2010/490/pdfs/uksi\\_20100490\\_en.pdf](http://www.legislation.gov.uk/uksi/2010/490/pdfs/uksi_20100490_en.pdf)
- Countryside Rights of Way Act, 2000 (HM Government, 2000):  
<http://www.legislation.gov.uk/ukpga/2000/37/contents>
- Natural Environment and Rural Communities Act, 2006 (HM Government, 2006):  
<http://www.legislation.gov.uk/ukpga/2006/16/contents>
- National Planning Policy Framework, 2023 (HM Government, 2023):  
[https://www.gov.uk/government/uploads/system/uploads/attachment\\_data/file/6077/2116950.pdf](https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/6077/2116950.pdf)
- OPDM Circular 06/2005 Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System (HM Government, 2005):  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/7692/147570.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/7692/147570.pdf)
- Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services (DEFRA, 2020):  
[https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment\\_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf](https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/69446/pb13583-biodiversity-strategy-2020-111111.pdf)
- Wokingham Borough Local Development Framework, Adopted Core Strategy Development Plan Document, January 2010 (Wokingham Borough Council, 2010):  
<https://www.wokingham.gov.uk/planning-policy/planning-policy-information/local-plan-and-planning-policies>.

The valued ecological receptors, which could be impacted on by development are highlighted in blue in Table 2 and further details on relevant legislation and planning policy are provided in Appendix 3. A list of abbreviations is provided in Appendix 4.

### 3.1 Legislation and Planning Policy Relating to Valued Ecological Receptors

**Table 2. Legislation and Planning Policy Relating to Valued Ecological Records**

| Key Ecological Receptor                    | Legislation and Planning Policy                                       |                                                                       |                                        |                                                                    |                                                                        |                                         |                                     |                |      |                                   |                                                                                      |
|--------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------|-------------------------------------|----------------|------|-----------------------------------|--------------------------------------------------------------------------------------|
|                                            | Annex I (Habitats) Habitats Directive, EC Council Directive 92/43/EEC | Annex II (Species) Habitats Directive, EC Council Directive 92/43/EEC | Annex I of Birds Directive 2009/147/EC | Conservation of Habitats and Species Regulations 2017 (as amended) | The Wildlife and Countryside Act, 1981 (as amended), Schedules 1, 5, 9 | Countryside and Rights of Way Act, 2000 | The Protection of Badgers Act, 1996 | NERC Act, 2006 | NPPF | Relevant Regional Planning Policy | Relevant Planning Policy; Policy CP7, Wokingham Borough Local Development Framework. |
| Statutory Designated Sites – SACs and SPAs | ✓                                                                     | ✓                                                                     |                                        | ✓                                                                  |                                                                        |                                         |                                     |                | ✓    |                                   | ✓                                                                                    |
| Statutory Designated Sites – SSSIs         |                                                                       |                                                                       |                                        |                                                                    | ✓                                                                      | ✓                                       |                                     |                | ✓    |                                   | ✓                                                                                    |
| Statutory Designated Sites – LNRs          |                                                                       |                                                                       |                                        |                                                                    |                                                                        |                                         |                                     |                | ✓    |                                   | ✓                                                                                    |
| Non-Statutory Designated Sites – SINCs     |                                                                       |                                                                       |                                        |                                                                    |                                                                        |                                         |                                     | ✓              | ✓    |                                   | ✓                                                                                    |
| Priority Habitats                          |                                                                       |                                                                       |                                        |                                                                    |                                                                        |                                         |                                     | ✓              | ✓    |                                   | ✓                                                                                    |
| Ancient Woodland                           |                                                                       |                                                                       |                                        |                                                                    |                                                                        |                                         |                                     |                | ✓    |                                   | ✓                                                                                    |
| Trees                                      |                                                                       |                                                                       |                                        |                                                                    |                                                                        |                                         |                                     |                |      |                                   | ✓                                                                                    |

| Key Ecological Receptor                           | Legislation and Planning Policy                                       |                                                                       |                                        |                                                                    |                                                                        |                                         |                                     |                |      |                                   |                                                                               |
|---------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------|-------------------------------------|----------------|------|-----------------------------------|-------------------------------------------------------------------------------|
|                                                   | Annex I (Habitats) Habitats Directive, EC Council Directive 92/43/EEC | Annex II (Species) Habitats Directive, EC Council Directive 92/43/EEC | Annex I of Birds Directive 2009/147/EC | Conservation of Habitats and Species Regulations 2017 (as amended) | The Wildlife and Countryside Act, 1981 (as amended), Schedules 1, 5, 9 | Countryside and Rights of Way Act, 2000 | The Protection of Badgers Act, 1996 | NERC Act, 2006 | NPPF | Relevant Regional Planning Policy | Relevant Planning Policy; CP7, Wokingham Borough Local Development Framework. |
| Priority Species – Plants                         |                                                                       |                                                                       |                                        |                                                                    |                                                                        |                                         |                                     | ✓              |      |                                   | ✓                                                                             |
| Invasive Plant Species                            |                                                                       |                                                                       |                                        |                                                                    | ✓ (Schedule 9)                                                         |                                         |                                     |                |      |                                   | ✓                                                                             |
| Priority Species – Invertebrates                  |                                                                       |                                                                       |                                        |                                                                    |                                                                        |                                         |                                     | ✓              | ✓    |                                   | ✓                                                                             |
| Great Crested Newts ( <i>Triturus cristatus</i> ) |                                                                       | ✓                                                                     |                                        | ✓                                                                  | ✓ (Schedule 5)                                                         |                                         |                                     | ✓              | ✓    |                                   | ✓                                                                             |
| Common Toads ( <i>Bufo bufo</i> )                 |                                                                       |                                                                       |                                        |                                                                    |                                                                        |                                         |                                     | ✓              | ✓    |                                   | ✓                                                                             |
| Reptiles                                          |                                                                       |                                                                       |                                        |                                                                    | ✓                                                                      |                                         |                                     | ✓              | ✓    |                                   | ✓                                                                             |
| Breeding Birds                                    |                                                                       |                                                                       |                                        |                                                                    | ✓                                                                      |                                         |                                     |                | ✓    |                                   | ✓                                                                             |
| Priority Species – Birds                          |                                                                       |                                                                       |                                        |                                                                    |                                                                        |                                         |                                     | ✓              | ✓    |                                   | ✓                                                                             |

| Key Ecological Receptor                            | Legislation and Planning Policy                                       |                                                                       |                                        |                                                                    |                                                                        |                                         |                                     |                |      |                                   |                                                                               |
|----------------------------------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------|-------------------------------------|----------------|------|-----------------------------------|-------------------------------------------------------------------------------|
|                                                    | Annex I (Habitats) Habitats Directive, EC Council Directive 92/43/EEC | Annex II (Species) Habitats Directive, EC Council Directive 92/43/EEC | Annex I of Birds Directive 2009/147/EC | Conservation of Habitats and Species Regulations 2017 (as amended) | The Wildlife and Countryside Act, 1981 (as amended), Schedules 1, 5, 9 | Countryside and Rights of Way Act, 2000 | The Protection of Badgers Act, 1996 | NERC Act, 2006 | NPPF | Relevant Regional Planning Policy | Relevant Planning Policy; CP7, Wokingham Borough Local Development Framework. |
| Protected Bird Species                             |                                                                       |                                                                       |                                        |                                                                    | ✓ (Schedule 1)                                                         |                                         |                                     |                | ✓    |                                   | ✓                                                                             |
| Roosting, Foraging and Commuting Bats              |                                                                       | ✓                                                                     |                                        | ✓                                                                  | ✓ (Schedule 5)                                                         |                                         |                                     | ✓              | ✓    |                                   | ✓                                                                             |
| Hazel Dormouse ( <i>Muscardinus avellanarius</i> ) |                                                                       | ✓                                                                     |                                        | ✓                                                                  | ✓ (Schedule 5)                                                         |                                         |                                     | ✓              | ✓    |                                   | ✓                                                                             |
| Badger ( <i>Meles meles</i> )                      |                                                                       |                                                                       |                                        |                                                                    | ✓                                                                      |                                         | ✓                                   |                |      |                                   | ✓                                                                             |
| European Hedgehog ( <i>Erinaceus europaeus</i> )   |                                                                       |                                                                       |                                        |                                                                    |                                                                        |                                         |                                     | ✓              | ✓    |                                   | ✓                                                                             |
| Brown hare ( <i>Lepus europaeus</i> )              |                                                                       |                                                                       |                                        |                                                                    |                                                                        |                                         |                                     | ✓              |      |                                   | ✓                                                                             |
| European Otter ( <i>Lutra lutra</i> )              |                                                                       | ✓                                                                     |                                        | ✓                                                                  | ✓ (Schedule 5)                                                         |                                         |                                     | ✓              | ✓    |                                   | ✓                                                                             |

| Key Ecological Receptor                  | Legislation and Planning Policy                              |                                                              |                                        |                                                                    |                                                                        |                                         |                                     |                |      |                                   |                                                        |
|------------------------------------------|--------------------------------------------------------------|--------------------------------------------------------------|----------------------------------------|--------------------------------------------------------------------|------------------------------------------------------------------------|-----------------------------------------|-------------------------------------|----------------|------|-----------------------------------|--------------------------------------------------------|
|                                          | Annex I (Habitats) Directive, EC Council Directive 92/43/EEC | Annex II (Species) Directive, EC Council Directive 92/43/EEC | Annex I of Birds Directive 2009/147/EC | Conservation of Habitats and Species Regulations 2017 (as amended) | The Wildlife and Countryside Act, 1981 (as amended), Schedules 1, 5, 9 | Countryside and Rights of Way Act, 2000 | The Protection of Badgers Act, 1996 | NERC Act, 2006 | NPPF | Relevant Regional Planning Policy | Relevant Planning Policy; Local Development Framework. |
| Water Vole ( <i>Arvicola amphibius</i> ) |                                                              |                                                              |                                        |                                                                    | ✓ (Schedule 5)                                                         |                                         |                                     | ✓              | ✓    |                                   | ✓                                                      |

## 4. Survey Methods

This report has been produced with reference to current guidelines for Preliminary Ecological Appraisals (CIEEM, 2017) and BS42020:2013: Biodiversity – Code of Practice for Planning and Development.

### 4.1 PEA

#### 4.1.1 Online Data Search

The following published materials were consulted:

- The Multi-Agency Geographical Information for the Countryside (Magic (Natural England, 2013)) (accessed 19<sup>th</sup> February 2024).
- Section 41: Priority Species in England (NERC Act, 2006) (HM Government, 2006) (accessed 19<sup>th</sup> February 2024).
- Wokingham Borough Local Development Framework, Adopted Core Strategy Development Plan Document (Wokingham Borough Council, 2010) (accessed 19<sup>th</sup> February 2024).

#### 4.1.2 Field Survey

A field survey, using the UKHab system was undertaken of the site by Martin Roche BSc (Hons) ACIEEM on 19<sup>th</sup> February 2024 (aLyne Ecology Limited, Senior Ecologist). The weather conditions during the survey were 12°C, wind force 1, and 100% cloud and dry. The site boundary and survey area are shown in Figure 1.

The field survey technique used is detailed in the UK Habitat Classification User Manual, Version 2.0 (UK Habitat Working Group, 2023). The principle aim of the UKHab system is to provide a rapid system for recording and classifying habitats, which can be used for both earth-based and field-based surveys. The system comprises a principal hierarchy (the Primary Habitats), which include ecosystems, broad habitats, Priority Habitats and Annex 1 habitats, and non-hierarchical Secondary Codes.

The UKHab 'Professional Edition' has been used, with the use of Level 5 Primary Habitats and Secondary Codes, as detailed in the UK Habitat Classification-V2.0 (UK Habitat Working Group, 2023) Excel workbook. Primary Habitats and Secondary Codes follow the UK Habitat Classification – Habitat Definitions – V2.0 (UK Habitat Working Group, 2023). The Secondary Codes selected are appropriate to the site and habitats recorded. The Minimum Mapping Unit used is 25 m<sup>2</sup> and 5 m in length.

Where possible, prior to carrying out the field survey, habitats on site were identified using [www.magic.gov.uk](http://www.magic.gov.uk), Google Earth Pro, 2020 and previous surveys reports, if available. Pre-survey maps were compiled using 3.28.13 'Firenze'. Evidence of habitat management was also noted.

During the field survey, habitat types were recorded using QField on a tablet (Samsung Galaxy Tab S6). GIS symbology used is as recommended in the UK Habitat Classification symbology files for QGIS, presented as Level 4 Primary Habitat, with Level 5 labelled as a code.

A full plant species-list is provided in Appendix 2. All plants have been assigned an assessment of abundance according to the DAFOR scale:

- D – Dominant.
- A – Abundant.
- F – Frequency.
- O – Occasional.
- R – Rare.

#### 4.1.3 Protected Species Assessment

As part of the PEA, the site was assessed for its potential to contain protected or notable species. The assessment was made based on the habitats present within the site and their suitability for protected species (information on the legislation of protected species can be found in Section 3 and Appendix 3). Protected species assessed for, but not limited to, were:

- Plants of conservation concern.
- Invertebrates of conservation concern.
- Great crested newts.
- Common toad.
- Reptiles.
- Breeding birds.
- Bats.
- Hazel dormice.
- Badgers.
- European hedgehog.
- Brown hare.
- Otters.
- Water voles.

In addition, a search was undertaken for evidence of non-native, invasive species.

## 4.2 GLTA

### 4.2.1 Tree Inspections

The assessment of trees was carried out on 19<sup>th</sup> February 2024 by Martin Roche BSc (Hons) ACIEEM (Accredited Agent under Bat Class Licence WML-CL18, Class Registration Number: 2017-32546-CLS-CLS).

The assessment was carried out following current best practice guidance, published by the Bat Conservation Trust (Collins, 2023).

The survey comprised a ground level assessment of all trees for the presence of potential roosting features that could be used by bats. The survey was conducted using binoculars and a high-powered torch during daylight hours and all aspects of the trees were assessed. An endoscope and thermal imaging scope were also used where necessary. Photos were taken of any potential roosting features observed. The locations of trees is provided in **Error! Reference source not found.** and photos of trees with bat suitability are provided in **Error! Reference source not found.**, which includes trees assessed as either PRF or Further Assessment Required (FAR) only (see Table 3).

The following potential bat roosting features, as noted in the Bat Tree Habitat Key (BTHK, 2018), were sought and details on their number, location and quality noted:

- Woodpecker and squirrel holes.
- Knot-holes.
- Pruning-cuts.
- Tear-outs.
- Wounds, cankers, compression-forks, and butt-rots.
- Lighting-strikes, hazard-beams, subsidence-cracks, shearing-cracks, and frost cracks.
- Transverse-snaps, welds, and desiccation fissures.
- Lifted bark, fluting and ivy.

Where possible, features were inspected for signs of current or historic use by roosting bats, including:

- Bats in situ.
- Bat droppings.
- Staining.
- Scratch marks.

The tree location in terms of surrounding habitat type, quality, and connectivity was also taken into consideration when assessing a potential roosting feature. The type and quality of the roosting feature observed also determines the type of roost (maternity, summer/transitional, hibernation) that it could potentially support.

Following the assessment, the trees were categorised as either NONE, FAR, or PRF (Collins, 2023). The categories were based on the observations and information set out in Table 3.

**Table 3. Guidelines for Assessing Suitability of Trees on Proposed Development Sites for Bats**

| Suitability | Description                                                                  |
|-------------|------------------------------------------------------------------------------|
| NONE        | Either no PRF's in tree or highly unlikely to be any                         |
| FAR         | Further assessment required to establish if PRF's are present in the tree    |
| PRF         | A tree with at least one feature that could support roosting bats is present |

Following the assessment, each individual PRF identified was also assigned a category based on the observations and information set out in Table 4, where possible from the ground (Collins, 2023).

**Table 4. Guidelines for Categorising the Potential Suitability of PRFs for Bats on Trees**

| Potential Suitability | Rationale                                                                                                                                                                |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| PRF-I                 | Suitable for individual numbers of bats either due to the size or lack of suitable surrounding habitats/other suitable PRFs.                                             |
| PRF-M                 | Suitable for multiple bats and may therefore be used by a maternity colony. Trees or woodland with surrounding suitable habitats for bats or within/near a CSZ for bats. |

### 4.3 Evaluation of Ecological Features

A valuation of ecological features (designated sites, species, and habitats) was undertaken in accordance with CIEEM guidance (CIEEM, 2019). Valuation is determined using the geographic framework provided in Table 5.

The value of an ecological feature is based on a professional ecologist's judgement and takes into consideration various characteristics including any site designations, species records, priority species and habitats, species rarity, the quality of the resources (e.g., habitat diversity, species population size), and location within the landscape context.

Sometimes it is not possible to provide a valuation of ecological features in the absence of data, which would have to be provided by further ecological surveys. Important ecological features, which may pose a constraint to the proposed development, are those with an ecological value which could be impacted by the development. These are the features which may require further survey work and mitigation.

**Table 5. Framework for Assessing the Value of Ecological Features**

| Geographic Scale | Example of Ecological Feature                                                                                                                                                                                                                                                          |
|------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| International    | An internationally designated site, i.e., SPAs, SACs and Ramsar sites. Regularly occurring populations of internationally important species.                                                                                                                                           |
| National         | Site of national importance, i.e., SSSIs, NNRS. Regularly occurring populations of nationally important species.                                                                                                                                                                       |
| Regional         | Non-statutory site e.g., LWSSs, Key Wildlife Site (KWS), Country Wildlife Site (CWS) supporting a regionally significant area of Priority Habitat or regionally significant population of legally protected/priority species.                                                          |
| County           | Non-statutory site e.g., LWSSs, KWSSs, CWSSs, ancient woodland, site supporting Priority Habitats, Priority Species, and/or legally protected species of significance for the county.                                                                                                  |
| Local            | Habitats which enhance the local habitat resource e.g., old species-rich hedgerow, deciduous woodland, ponds, small areas of Priority Habitat or areas supporting small populations of legally protected/Priority Species which are not rare within the region, county, or nationally. |
| Site             | Habitats of limited ecological importance e.g., scattered trees, hedgerows, woodland plantations, small areas of non-priority habitats that are of value for wildlife. Species of limited ecological importance.                                                                       |
| Negligible       | Hardstanding, bare ground, built environment, and other areas with negligible biodiversity value, including for priority and legally protected species.                                                                                                                                |

#### 4.4 Survey Limitations

The data search should not be taken as a definitive list of the protected species and species of conservation concern that occur within the search area.

The site was visited over the period of one day, as such seasonal variations cannot be observed and only a selection of all species that potentially occur within the site have been noted. Therefore, the survey provides a general assessment of potential nature conservation value.

There were no limitations to the survey in terms of the following:

- The site could be fully accessed.
- Weather conditions (dry and sunny).
- Personal competence (qualifications, training, skills, and experience).
- Time spent surveying.

The field survey was undertaken at a sub-optimal time of year; however, this is not considered to be a significant limiting factor as the habitats present on site are common and widespread and, therefore, easily identifiable at any time of year.

Many bat roosts in trees have no external evidence of occupation meaning the absence of the signs of roosting bats is not considered definitive when assessing a tree's bat roosting suitability. A single tree may have multiple potential roosting features, yet the tree has been categorised according to the highest suitability roosting feature present.

## 5. Results

### 5.1 PEA

#### 5.1.1 Online Data Search

##### Designated Sites

Thames Basin Heaths SPA is located approximately 4.3 km to the south of the site. Thames Basin Heaths SPA is classified under Article 4.1 of EC Directive 79/409 on the Conservation of Wild Birds (Birds Directive) (European Commission, 2009) as it is regularly used by 1% or more of the Great Britain populations of the following species listed in Annex 1 in any season: nightjar (*Caprimulgus europaeus*); 7.8% Great Britain population, woodlark (*Lullula arborea*); 9.9% Great Britain population, Dartford warbler (*Sylvia undata*); 27.8% Great Britain population.

There are no statutory designated sites located within 1 km of the site.

##### Ancient Woodlands

The site is not located within an area of ancient woodland or plantation on ancient woodland. There are six parcels of semi-natural ancient woodland located within 1 km of the site, the closest being approximately 135 m to the north-west. There is also one parcel of replanted ancient woodland, which is located approximately 850 m to the south-west.

##### Priority Habitats

Seven types of Priority Habitats are located within 1 km of the site, as detailed in Table 6.

**Table 6. Priority Habitats within 1 km of the Site**

| Habitat Type                         | Number of Land Parcels | Nearest Land Parcel to Site (m) |
|--------------------------------------|------------------------|---------------------------------|
| Pond                                 | 13                     | 65                              |
| Deciduous woodland                   | 15                     | 135                             |
| Traditional orchards                 | 3                      | 200                             |
| River/stream                         | 1                      | 790                             |
| Coastal and Floodplain Grazing Marsh | 1                      | 800                             |
| Lowland fen                          | 1                      | 825                             |
| Woodpasture and parkland             | 1                      | 930                             |

##### Granted EPSLs within 2 km of the Site

The following EPSLs, were recorded within 2 km of the site:

- Destruction of a resting place for common pipistrelles (*Pipistrellus pipistrellus*), soprano pipistrelles (*Pipistrellus pygmaeus*), and brown long-eared bats (*Plecotus auritus*), for the main house on site.
- Destruction of a resting place for common pipistrelles and soprano pipistrelles, located approximately 1 km to the south.
- Damage to a breeding site for Daubenton's (*Myotis daubentonii*) and soprano pipistrelles, located approximately 1.8 km to the north.
- Five destructions of resting places for common pipistrelles, soprano pipistrelles, and brown long-eared bats, located approximately 1.8 km to the north-west.

- Destruction of a resting place for common pipistrelles and brown long-eared bats, located approximately 2 km to the north-west.
- Five destructions of resting places for common pipistrelles, soprano pipistrelles, Daubenton's, noctules (*Nyctalus noctula*), and brown long-eared bats, located approximately 2 km to the north-east.

#### Great Crested Newt Licence Returns and Pond Surveys within 2 km of the Site

The following great crested newt licence returns, and pond surveys were recorded within 2 km of the site:

- One pond survey for great crested newts was conducted 1.4 km to the west, which proved great crested newts were present.
- One pond survey for great crested newts was conducted 1.5 km to the south, which proved great crested newts were present.
- One pond survey for great crested newts was conducted 1.6 km to the south-west, which proved great crested newts were present.
- One pond survey for great crested newts was conducted 1.7 km to the west, which proved great crested newts were present.

#### Great Crested Newt Risk Zones

The site is situated within the NatureSpace Wokingham Borough Amber Impact Risk Zone (NatureSpace, 2018).

### 5.1.2 Field Survey – Habitats

The results of the field survey undertaken on 19<sup>th</sup> February 2024 are presented in map form on Figure 1 and described in Table 7. Priority Habitats are in bold. Photographs of the site are provided in Appendix 1 and a full list of species, with scientific names, is provided in Appendix 2. The following habitats (Level 5 Primary Habitat labels and codes, where applicable) were recorded on site.

- Modified grassland – g4.
- Other standing water – r1g.
- Buildings – u1b5.
- Other developed land – u1b6.
- Artificial unvegetated, unsealed surface – u1c.
- Non-native & ornamental hedgerow – h2b.
- Line of trees – w1g 33.
- Line of trees – w2c 33.

**Table 7. Results of Field Survey – Habitats**

| Primary Habitat            | Approximate Area (ha) / Length (km) | Location in Site                  | Main Common Plant Species                                  | Essential Secondary Code                                                  | Additional Secondary Code                                                                                         | Evidence of and Potential for Protected Species                                     |
|----------------------------|-------------------------------------|-----------------------------------|------------------------------------------------------------|---------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| Modified grassland – g4    | 0.9 ha                              | Present throughout the site       | Annual meadow-grass, perennial rye-grass, and common daisy | Scattered scrub (10)<br>Scattered trees (32)<br>Ruderal or ephemeral (81) | Frequently mown (108)<br>Wet (503)<br>Recent management (517)<br>Native (522)<br>Non-native (523)<br>Garden (827) | Potential for great crested newts in their terrestrial phase and foraging hedgehogs |
| Other standing water – r1g | 0.01 ha                             | Located in the centre of the site | Pointed spear-moss, yellow flag iris, and yucca            | Ornamental lakes or pond (46)                                             | Native (522)<br>Non-native (523)                                                                                  | Potential for great crested newts and common toads                                  |

| Primary Habitat                                | Approximate Area (ha) / Length (km) | Location in Site                                                                                                                                     | Main Common Plant Species                                           | Essential Secondary Code | Additional Secondary Code                                             | Evidence of and Potential for Protected Species                                                                             |
|------------------------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|--------------------------|-----------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------|
| Buildings – u1b5                               | 0.04 ha                             | Three buildings on site. The main house and garage are located in the centre of the site and the outbuilding is located on the western site boundary | N/A                                                                 | N/A                      | Residential building (818)                                            | Confirmed roost for common pipistrelles, soprano pipistrelles, and brown long-eared bats<br><br>Potential for nesting birds |
| Other developed land – u1b6                    | 0.07 ha                             | Located on the northern aspect of the site, associated with the buildings                                                                            | N/A                                                                 | N/A                      | N/A                                                                   | None recorded                                                                                                               |
| Artificial unvegetated, unsealed surface – u1c | 0.02 ha                             | Located in the centre of the site, associated with the buildings and other developed land                                                            | Box, St. John's wort, and yucca                                     | N/A                      | Non-native (523)<br><br>Flowerbed (846)<br><br>Introduced shrub (847) | None recorded                                                                                                               |
| Non-native & ornamental hedgerow – h2b         | 0.08 km                             | Located on the eastern site boundary                                                                                                                 | Garden privet, mahonia, and red robin                               | N/A                      | Flailed hedgerow (116)<br><br>Non-native (523)                        | Potential for nesting birds, hedgehogs, and foraging/commuting bats                                                         |
| Line of trees – w1g 33                         | 0.1 km                              | Located on the western site boundary and adjacent to the eastern site boundary                                                                       | Sycamore, cherry, hazel, garden privet, honeysuckle, ivy, and holly | Line of trees (33)       | Young trees – planted (201)<br><br>Native (522)                       | Potential for nesting birds, hedgehogs, and foraging/commuting bats                                                         |
| Line of trees – w2c 33                         | 0.25 km                             | Located on the northern, eastern, southern, and western site boundaries                                                                              | Leyland Cypress                                                     | Line of trees (33)       | Mature tree (203)<br><br>Non-native (523)                             | Potential for nesting birds, hedgehogs, and foraging/commuting bats                                                         |

### 5.1.3 Field Survey – Species

The following fauna was recorded during the survey:

Invertebrates:

- Leaf hopper.
- Seven-spot ladybird.

Birds:

- Blue tit.
- Carrion crow.
- Great tit.
- Jackdaw.
- Long-tailed tit.
- Red kite.
- Robin.
- Wood pigeon.
- Wren.

## 5.2 GLTA

### 5.2.1 Tree Inspections

The location of the trees is provided in Figure 2. The results of the GLTA are provided in Table 8 and Figure 3.

All trees on site were surveyed for their suitability to support roosting bats. This resulted in three individual trees being assessed as PRF, indicating the presence of at least one potential roosting feature for bats. This includes man-made (bat boxes) features. Only trees assessed as PRF or FAR have been included in Table 8.

**Table 8. Results of GLTA**

| Tree No. | Location (Longitude, Latitude) | Tree Species | Tree Age | PRFs Present (PRF-I/PRF-M)    | Location of PRF (Stem or Limb) | PRF Height (m) | PRF Orientation* | Signs of Bats |
|----------|--------------------------------|--------------|----------|-------------------------------|--------------------------------|----------------|------------------|---------------|
| T1       | 475493.0, 167658.0             | Pine sp.     | Mature   | 1FF Schwegler Bat Box (PRF-M) | Stem                           | 3.5            | S                | None recorded |
| T2       | 475487.0, 167635.0             | Pine sp.     | Mature   | 1FF Schwegler Bat Box (PRF-M) | Stem                           | 3.5            | S                | None recorded |
| T3       | 475517.0, 167593.0             | Silver birch | Mature   | 1FF Schwegler Bat Box (PRF-M) | Stem                           | 3.5            | S                | None recorded |

\*S – South.

### 5.2.2 Foraging and Commuting Habitats

Table 9 details the habitats, which were recorded on site, which could potentially support foraging and commuting habitats.

**Table 9. Foraging and Commuting Habitats**

| Habitat / Feature Description                                                   | Connectivity to Potential Roost                                    | Connectivity to Wider Landscape                                                                                          |
|---------------------------------------------------------------------------------|--------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------|
| Garden Habitats: Modified grassland (lawns), ornamental shrubs, scattered trees | Located adjacent to the main house, which is a confirmed bat roost | Via adjacent gardens and lines of trees to nearby woodland. Adjacent properties are also likely to support roosting bats |

### 5.2.3 Categorisation of Summer Roosting and Hibernation Suitability

Table 10 details the categorisation of summer roosting and hibernation suitability for the trees.

**Table 10. Categorisation of Summer Roosting and Hibernation Suitability**

| Tree No. | Roosting Suitability (PRF-I/PRF-M) | Justification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------|------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| T1       | PRF-M                              | <p>Numerous areas of deciduous woodland located within 1 km of the site, including seven areas of ancient woodland. There have been six granted EPSLs for roosting bats within 2 km of the site.</p> <p>A 1FF Schwegler Bat Box is installed on the southern aspect of the tree, which could potentially support multiple roosting bats.</p> <p>The PRF could also be used by a small number of hibernating bats. The feature will likely offer stable temperature and humidity conditions.</p> |
| T2       | PRF-M                              | <p>Numerous areas of deciduous woodland located within 1 km of the site, including seven areas of ancient woodland. There have been six granted EPSLs for roosting bats within 2 km of the site.</p> <p>A 1FF Schwegler Bat Box is installed on the southern aspect of the tree, which could potentially support multiple roosting bats.</p> <p>The PRF could also be used by a small number of hibernating bats. The feature will likely offer stable temperature and humidity conditions.</p> |
| T3       | PRF-M                              | <p>Numerous areas of deciduous woodland located within 1 km of the site, including seven areas of ancient woodland. There have been six granted EPSLs for roosting bats within 2 km of the site.</p> <p>A 1FF Schwegler Bat Box is installed on the southern aspect of the tree, which could potentially support multiple roosting bats.</p> <p>The PRF could also be used by a small number of hibernating bats. The feature will likely offer stable temperature and humidity conditions.</p> |

#### 5.2.4 Categorisation of Foraging and Commuting Suitability

Table 11 details the categorisation of habitats within/adjoining the site for their suitability to support foraging and commuting habitats for bats.

**Table 11. Categorisation of Bat Foraging and Commuting Suitability**

| Habitat / Feature                                                         | Categorisation of Suitability | Justification                                                                                                                                                                   |
|---------------------------------------------------------------------------|-------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Garden Habitats: Modified grassland (lawns), hedgerows and lines of trees | Moderate                      | Hedgerows and lines of trees on and adjacent to site, could provide flight-lines for bats to key areas for foraging, such as ancient woodland and ponds in the wider landscape. |

## 6. Evaluation and Potential Impacts Assessment

Table 12 sets out known and potential ecological constraints to development, and potential impacts assessment (in the absence of avoidance and mitigation measures), derived from the data search and field survey, including designated sites, ancient woodland, Priority Habitats, and protected species/species of conservation concern. Where a potential ecological constraint has been identified, further survey work and/or appropriate avoidance, mitigation, and compensation (as appropriate) is likely to be required to address the issue. **Further survey and/or mitigation measures are required for the valued ecological receptors highlighted in blue.**

**Table 12. Evaluation and Potential Impacts Assessment**

| Ecological Receptor and Value | Potentially Present / Known to be Present on Site | Assessment and Justification for Potential/Likely Impacts of Development on Value Ecological Receptor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
|-------------------------------|---------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Designated Sites (N/A)        | One SPA is located within 5 km of the site        | <p>The site is not located within a designated site for nature conservation and there are no statutory designated sites within 1 km of the survey area. However, Thames Basin Heaths SPA is located approximately 4.3 km to the south of the site.</p> <p>The development should not result in significant adverse impacts on statutory designated sites for nature conservation for the following reasons:</p> <ul style="list-style-type: none"> <li>• The proposed development does not include the net increase of dwellings on site.</li> <li>• The proposed development will be confined to the development boundary, which is not located within a site designated for nature conservation.</li> <li>• The proposed development will comply with legislation relevant to reducing the impacts of construction, namely the Control of Pollution Act, 1974 (HM Government, 1974), the Environmental Protection Act, 1990 (HM Government, 1990), The Clean Air Act, 1993 (HM Government, 1993), The Environment Act, 1995 (HM Government, 1995), and the Pollution Prevention and Control Act, 1999 (HM Government, 1999).</li> <li>• The proposed development will conform to British Standards on noise and vibration (BS 5228-2009. Code of Practice for Noise and Vibration Control on Construction and Open Sites).</li> </ul> <p>For the above reasons, statutory designated sites for nature conservation should not be impacted upon by the development and further survey and avoidance/mitigation measures are not required in relation to the proposed development and statutory designated sites.</p> |

| Ecological Receptor and Value | Potentially Present / Known to be Present on Site | Assessment and Justification for Potential/Likely Impacts of Development on Value Ecological Receptor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
|-------------------------------|---------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Priority Habitats (N/AI)      | None on site                                      | <p>Priority Habitats are located within 1 km of the site. The development should not result in significant adverse impacts on Priority Habitats within 1 km of the site for the following reasons:</p> <ul style="list-style-type: none"> <li>• The proposed development and associated impacts will be confined to the development boundary, which lacks Priority Habitats.</li> <li>• The ornamental pond on site was assessed as not being a Priority Habitat owing to fish being present and non-native species planted around the pond. However, if great crested newts are proven to be present in the pond, then the ornamental pond will be assessed as a Priority Habitat due to supporting a European protected species.</li> <li>• The site is separated from the nearest Priority Habitat by 65 m of existing dwellings, roads, and agricultural fields.</li> <li>• The proposed development will comply with legislation relevant to reducing the impacts of construction, namely the Control of Pollution Act, 1974 (HM Government, 1974), the Environmental Protection Act, 1990 (HM Government, 1990), The Clean Air Act, 1993 (HM Government, 1993), The Environment Act, 1995 (HM Government, 1995), and the Pollution Prevention and Control Act, 1999 (HM Government, 1999).</li> <li>• The proposed development will conform to British Standards on noise and vibration (BS 5228-2009. Code of Practice for Noise and Vibration Control on Construction and Open Sites).</li> </ul> <p>Therefore, further survey and avoidance/mitigation measures are not required in relation to the proposed development and Priority Habitats.</p> |

| Ecological Receptor and Value                                                                                                                             | Potentially Present / Known to be Present on Site | Assessment and Justification for Potential/Likely Impacts of Development on Value Ecological Receptor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Ancient woodland (N/A)                                                                                                                                    | Seven parcels within 1 km of the site             | <p>There are seven parcels of ancient woodland located within 1 km of the site. The development should not result in significant adverse impacts on ancient woodlands within 1 km of the site for the following reasons:</p> <ul style="list-style-type: none"> <li>The proposed development and associated impacts will be confined to the development boundary, which lacks ancient woodlands.</li> <li>The site is separated from the nearest parcel of ancient woodland by 135 m of existing dwellings, roads, and agricultural fields.</li> <li>The proposed development will comply with legislation relevant to reducing the impacts of construction, namely the Control of Pollution Act, 1974 (HM Government, 1974), the Environmental Protection Act, 1990 (HM Government, 1990), The Clean Air Act, 1993 (HM Government, 1993), The Environment Act, 1995 (HM Government, 1995), and the Pollution Prevention and Control Act, 1999 (HM Government, 1999).</li> <li>The proposed development will conform to British Standards on noise and vibration (BS 5228-2009. Code of Practice for Noise and Vibration Control on Construction and Open Sites).</li> </ul> <p>Therefore, further survey and avoidance/mitigation measures are not required in relation to the proposed development and ancient woodlands.</p> |
| Trees (Site)                                                                                                                                              | Present on site                                   | Mature native trees are located on site. In the absence of avoidance and mitigation measures, construction and development operation activities could result in significant adverse effects on trees. Recommendations for avoidance and mitigation measures relating to trees have, therefore, been provided in Section 7.1.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
| Plants of conservation concern (N/A)                                                                                                                      | Negligible potential                              | No protected or notable rare plant species were noted during the survey. The areas of the site, which will be affected by the proposed works have negligible potential to support plants of conservation concern (modified grassland, other developed land, and artificial unvegetated, unsealed surface). Therefore, plants of conservation concern are concluded to be absent from the site and further survey and avoidance/mitigation measures are not required in relation to the proposed development and plants of conservation concern.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| Invasive plant species such as rhododendron, Japanese knotweed ( <i>Reynoutria japonica</i> ) and giant hogweed ( <i>Heracleum mantegazzianum</i> ) (N/A) | None recorded                                     | Plant species listed under Schedule 9 of the Wildlife and Countryside Act, 1981 (as amended) (HM Government, 1981) were not recorded on site. Therefore, further survey and avoidance/mitigation measures are not required in relation to the proposed development and invasive plant species.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |

| Ecological Receptor and Value                                                                                                                                             | Potentially Present / Known to be Present on Site | Assessment and Justification for Potential/Likely Impacts of Development on Value Ecological Receptor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Invertebrates of conservation concern (N/A)                                                                                                                               | Negligible potential                              | No invertebrates of conservation concern were noted during the survey. The areas of the development boundary, which will be affected by the proposed works have negligible potential to support invertebrates of conservation concern (modified grassland, other developed land, and artificial unvegetated, unsealed surface). Therefore, invertebrates of conservation concern are concluded to be absent from the site, and further survey and avoidance/mitigation measures are not required in relation to the proposed development and invertebrates of conservation concern.                                                                                                                                                                         |
| Great crested newts (Site)                                                                                                                                                | Potentially present on site                       | There is one pond on site and 12 further ponds located within 1 km of the site, which have the potential to support great crested newts. The site is situated within the NatureSpace Amber Impact Zone and great crested newts have been confirmed to be present in four ponds within 2 km of the site. The modified grassland habitat on site could potentially support great crested newts during their terrestrial phase. Great crested newts and the pond adjacent to the development boundary could potentially be impacted during the construction and operation activities of the development.<br><br>A great crested newt eDNA analysis of the pond has been commissioned by the client, which will be carried out in April 2024 (see Section 8.1). |
| Common toads (Site)                                                                                                                                                       | Potentially present                               | For the same reasons given for great crested newts, it is concluded possible that common toads are present within the site. Recommendations for avoidance and mitigation measures relating to common toads have, therefore, been provided (see Section 7.2).                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| Reptiles (such as slow worms- <i>Anguis fragilis</i> , common lizards - <i>Zootoca vivipara</i> , and grass snakes- <i>Natrix helvetica</i> ) (Site)                      | Negligible potential                              | The areas of the development boundary, which will be directly affected by the proposed works have negligible potential to support reptiles (modified grassland, other developed land, and artificial unvegetated, unsealed surface). Therefore, reptiles are concluded to be absent from the site and further survey and avoidance/mitigation measures are not required in relation to the proposed development and reptiles.                                                                                                                                                                                                                                                                                                                               |
| Nesting birds (Site)                                                                                                                                                      | Potentially present                               | The trees and hedgerows within the site boundary and the shrubs within the development boundary could support common species of nesting birds. As nesting birds are protected, recommendations to avoid disturbing nesting birds are provided in Section 7.3.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Birds of conservation concern (such as barn owl – <i>Tyto alba</i> , peregrine falcon – <i>Falco peregrinus</i> and black redstart – <i>Phoenicurus ochruros</i> ) (Site) | Potentially present                               | Birds of conservation concern recorded during the field survey (wren) could potentially breed within the development boundary. Avoidance measures for breeding birds are provided in Section 7.3, which also relate to birds of conservation concern. Measures to retain and protect the trees, as detailed in Section 7.1, will also ensure that nesting bird habitats are avoided and protected.                                                                                                                                                                                                                                                                                                                                                          |

| Ecological Receptor and Value | Potentially Present / Known to be Present on Site                                                                                                                                                                                                                      | Assessment and Justification for Potential/Likely Impacts of Development on Value Ecological Receptor                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            |
|-------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bats (Site)                   | <p>The main house on site is a confirmed roost for common pipistrelles, soprano pipistrelles, and brown long-eared bats.</p> <p>Three trees on site were assessed as having PRF-M features.</p> <p>Adjacent habitats are likely to support foraging/commuting bats</p> | <p>The main house on site is a confirmed roost for common pipistrelles, soprano pipistrelles, and brown long-eared bats. Three individual trees on site were categorised as PRF-M, owing to the bat boxes present. The trees and hedgerows on site have suitability to support foraging/commuting bats.</p> <p>Under current proposals, all buildings and trees on site are proposed to be retained and will therefore, not be directly impacted on by the development proposals and further survey for roosting/foraging/commuting bats will be avoided. Recommendations relating to the retention and protection of trees have been provided in Section 7.1, which includes the trees with PRF-M features.</p> <p>However, the buildings and trees could potentially be indirectly impacted on through the construction activities of the development. Therefore, recommendations for avoidance and mitigation measures relating to bats have, therefore, been provided (see Section 7.4).</p> |
| Badger (N/A)                  | Negligible potential                                                                                                                                                                                                                                                   | No signs of badgers were recorded during the survey. The areas of the development boundary, which will be directly affected by the proposed works have negligible potential to support badgers (modified grassland, other developed land, and artificial unvegetated, unsealed surface). Therefore, badgers are concluded to be absent from the site and further survey and avoidance/mitigation measures are not required in relation to the proposed development and badgers.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| Hazel dormouse (N/A)          | Negligible potential                                                                                                                                                                                                                                                   | The areas of the development boundary, which will be directly affected by the proposed works have negligible potential to support hazel dormice (modified grassland, other developed land, and artificial unvegetated, unsealed surface). Therefore, it is concluded that hazel dormice are absent from the site, and further survey and avoidance/mitigation measures are not required in relation to the development and hazel dormice.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Brown hare (N/A)              | Negligible potential                                                                                                                                                                                                                                                   | The site does not contain any habitats, which could support the brown hare, i.e., agricultural fields and open pasture. Therefore, the brown hare is concluded to be absent from the site, and further survey and avoidance/mitigation measures are not required in relation to the proposed development and brown hares.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |
| Water vole and otter (N/A)    | Negligible potential                                                                                                                                                                                                                                                   | The site does not contain any habitats, which could support the water vole and otter, i.e., rivers and streams. Therefore, the water vole and otter are concluded to be absent from the site, and further survey and avoidance/mitigation measures are not required in relation to the proposed development and water voles and otters.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |

| Ecological Receptor and Value | Potentially Present /<br>Known to be Present on<br>Site | Assessment and Justification for Potential/Likely Impacts of Development on Value Ecological<br>Receptor                                                                                                                                                                                                                                                                                                        |
|-------------------------------|---------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Hedgehog (Site)               | Potentially present                                     | The habitats within the development boundary and within adjacent properties could support hedgehogs, which is a Priority Species. As hedgehogs could be present in areas of the site, which would be impacted on by the proposals, avoidance measures for hedgehogs have been recommended in Section 7.2, in accordance with the duty placed on Local Planning Authorities to have due regard for biodiversity. |

## 7. Avoidance, Mitigation, and Compensation

### 7.1 Trees

Native trees should be retained, where possible and any trees lost as a result of the proposed development, should be replaced with equivalent numbers of native species.

To prevent damage to retained trees during development, a buffer zone should be put in place to protect the rooting area (Root Protection Area, which is calculated in accordance with British Standard 5837, 'Trees in Relation to Construction'), in which no construction activities should be permitted.

### 7.2 Common Toads and Hedgehogs

An ECoW should be present on site during any site clearance activities, which are likely to involve the removal/disturbance of any vegetation. Clearance activities should be undertaken carefully by hand, and any common toads or hedgehogs found, should be moved away unharmed offsite into the adjacent scrub habitats to the south.

### 7.3 Nesting Birds

Nesting bird habitat within the trees and hedgerow on site should be retained, as detailed in Section 7.1. Any removal of vegetation should be undertaken outside of the bird breeding season (March to August inclusive) to avoid destruction/disturbance of nesting birds. However, if works which are likely to damage bird nests need to be carried out during the nesting period, there is potential that nesting birds could be harmed and disturbed. To ensure legal compliance, a check should be undertaken by an ecologist within 48 hours of works commencing, to confirm the presence/absence of nest sites. If nests sites are identified, works to that feature should be delayed until the nest site becomes inactive (species specific, but approximately 4-6 weeks maximum).

### 7.4 Bats

A CEMP should be prepared for the site and subject to an appropriate planning condition in order to avoid and mitigate any potential impact on roosting/foraging/commuting bats. The CEMP should include, but not be limited to, the following:

- Site description, description of development and ecological background.
- Defining ecological features.
- Brief and objectives.
- Relevant legislation and planning policy.
- Defining the Ecological Clerk of works.
- Biodiversity protection zones and signage.
- Responsible persons and lines of communication.
- Ecological risk assessments.
- Practical measures to avoid ecological risks (Method Statements).
- Ecological clerk of works timing schedule.
- References.
- Figures.
- Appendices.

Recommendations to minimise the potential impacts of artificial external lighting on bat activity, are provided below (Bat Conservation Trust, 2023):

- Avoid prolonged use of outside lighting during the period dusk to dawn, particularly during the bat active season (April to October).
- Security lighting should be on a motion sensor and short duration timer (1 minute).
- Lighting that is required for security or safety reasons, should use a lamp of no greater than 2000 lumens (150 Watts) and should comprise sensor activated lamps.
- Red light bulbs should be used, where possible, particularly along the southern and northern boundaries, as light-phobic species like great horseshoes, lesser horseshoes, and barbastelles, were recorded foraging/commuting in these areas of the site.
- LED luminaires with a warm white spectrum (<2700 Kelvin) are the preferred option and should be used where possible. Luminaires should feature peak wavelengths higher than 550 nm to minimise disturbance to bats. All luminaires should lack UV elements, metal halide and fluorescent sources should not be used.
- Lighting should be directed to where it is needed with minimal light spillage. This can be achieved by limiting the height of the lighting columns and by using as steep a downward angle as possible and/or a specialist bollard that directs the light below the horizontal plane (<90°).
- Internal luminaires should be recessed where installed in proximity to windows to reduce glare and light spill.
- Waymarking inground markers with a low output and with cowls should be used to delineate path edges.
- Artificial lighting should not directly illuminate any potential bat roosting features or habitats of value to foraging bats, i.e., trees, hedgerows, and line of trees.

## 8. Recommendations for Further Ecological Surveys

### 8.1 Great Crested Newts

Further survey for great crested newts has been commissioned by the client of the pond on site. Following a set protocol (Biggs, et al., 2014), 20 water samples will be collected from around each of the ponds, using a kit (one per pond) provided by a laboratory approved by Natural England (i.e., ADAS or fera). The samples will then be sent to the laboratory for analysis. The samples will be collected on one visit in April 2024. Should great crested newt DNA be identified in any of the ponds, further survey to confirm population status will be required, in accordance with current best practice guidelines.

## 9. Biodiversity Enhancements

Below are a set of biodiversity enhancement measures, which should be implemented on site. These measures are in addition to avoidance measures for habitats, as detailed in Section 7.

- The enhancement of existing hedgerows, by planting native trees, shrubs, and climbers such as English oak, blackthorn (*Prunus spinosa*), hawthorn (*Crataegus monogyna*), field maple (*Acer campestre*), spindle (*Euonymus europaeus*), and honeysuckle (*Lonicera periclymenum*).
- The inclusion of at least one biodiverse roof (where possible), which can help to enhance habitat linkage across the site, particularly for invertebrates and birds.
- Open spaces should include a wildflower mix suitable for the geology of the site, is available from Emorsgate Seeds (Emorsgate Seeds, 2024).
- The installation of log piles along site boundaries, to provide habitat for invertebrates and reptiles.
- The installation of Improved Crevice Bat Box (or similar) on trees and buildings, would be beneficial to common and widespread bat species that are confirmed present on site, which can be purchased from NHBS (NHBS, 2024).
- The installation of Improved Cavity Bat Box (or similar) on trees and buildings, would be beneficial to common and widespread bat species that are confirmed present on site, which can be purchased from NHBS (NHBS, 2024).
- The installation of Vivara Pro Barcelona WoodStone Open Nest Box on buildings and trees would be beneficial to garden bird species. These nest boxes can be purchased from NHBS (NHBS, 2024).
- The installation of Vivara Pro Seville 28mm WoodStone Nest Box on buildings and trees would be beneficial to garden bird species. These nest boxes can be purchased from NHBS (NHBS, 2024).
- The installation of Vivara Pro WoodStone Starling Nest Box on buildings and trees would be beneficial to garden bird species. These nest boxes can be purchased from NHBS (NHBS, 2024).
- The installation of swift bricks or house martin nests which can be purchased from NHBS (NHBS, 2024).
- The installation of bee bricks, which can be purchased from NHBS (NHBS, 2024).
- The installation of a Hedgehog Nest Box, which can be purchased from NHBS (NHBS, 2024).
- The installation of a hibernacula for invertebrates, such as the National Trust Apex Insect House, which can be purchased from NHBS (NHBS, 2024).
- The enhancement of the existing pond, by planting native aquatic plant species.

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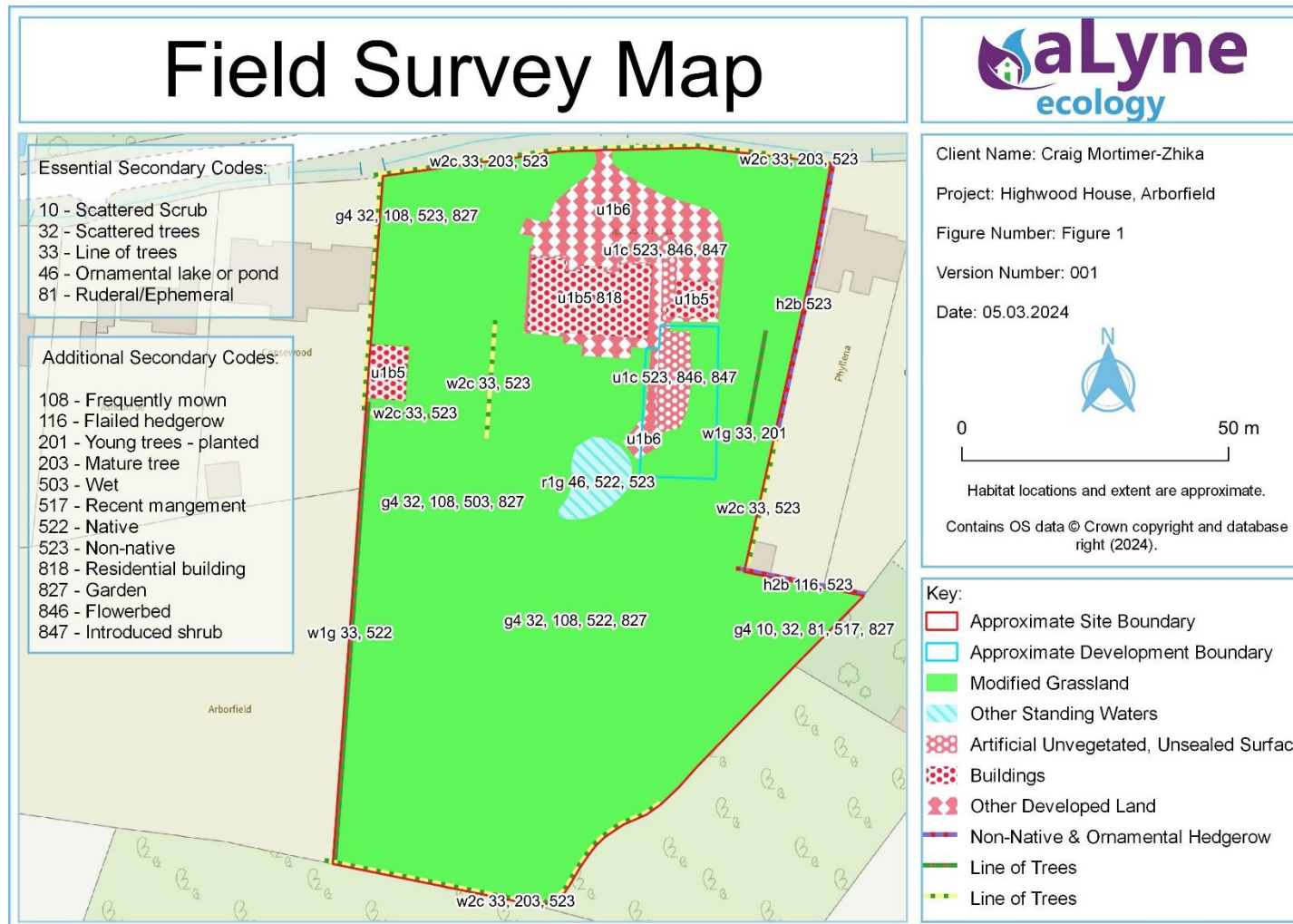
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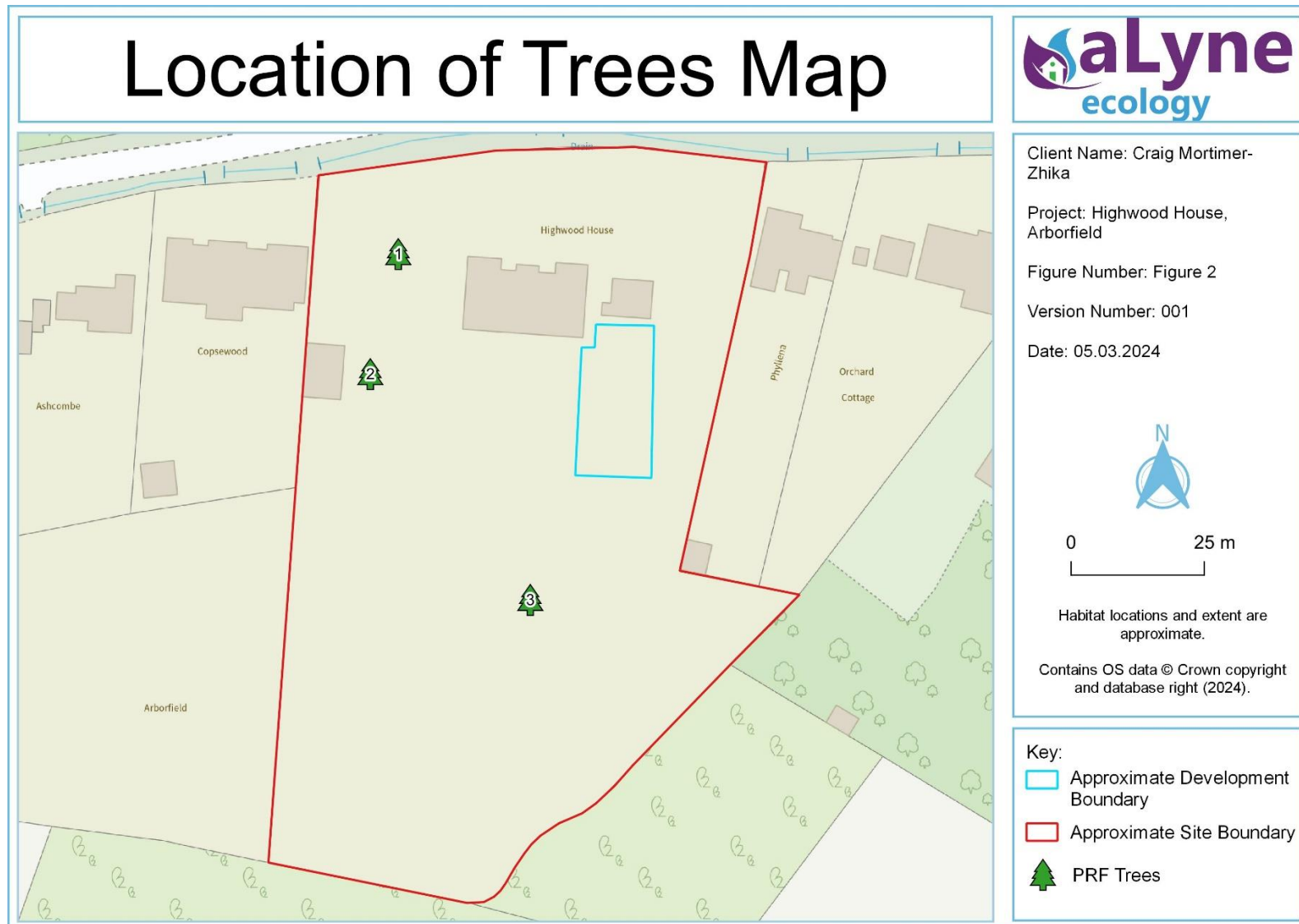
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## 11. Figures

### 11.1 Figure 1: Results of Field Survey



## 11.2 Figure 2: Location of Trees



11.3 Figure 3: Results of GLTA



Tree T2 — PRF-M



**KEY:**

|                                                                                     |                       |
|-------------------------------------------------------------------------------------|-----------------------|
|  | 1FF Schwegler Bat Box |
|-------------------------------------------------------------------------------------|-----------------------|

|                                                                                       |  |                                                               |  |
|---------------------------------------------------------------------------------------|--|---------------------------------------------------------------|--|
|  |  | London & South East<br>Tel: 01372 602372<br>Mob: 07443 652988 |  |
| Client                                                                                |  | Craig Mortimer-Zhika                                          |  |
| Project                                                                               |  | Highwood House, Arborfield                                    |  |
| Figure Number - Version                                                               |  | Date                                                          |  |
| Figure 3b, 001                                                                        |  | 20.02.2024                                                    |  |
| Title                                                                                 |  | Results of GLTA                                               |  |
|                                                                                       |  | Photographs taken on 19.02.2024                               |  |

Tree T3 — PRF-M



KEY:

**1** 1FF Schwegler Bat Box

|                                                                                                                                                     |                    |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------------|
|  London & South East<br>Tel: 01372 602372<br>Mob: 07443 652988 |                    |
| Client<br>Craig Mortimer-Zhika                                                                                                                      |                    |
| Project<br>Highwood House, Arborfield                                                                                                               |                    |
| Figure Number, Version<br>Figure 3c, 001                                                                                                            | Date<br>20.02.2024 |
| Title<br>Results of GLTA                                                                                                                            |                    |
| Photographs taken on 19.02.2024                                                                                                                     |                    |

## 12. Appendix 1 – Site Photographs



Photograph 1 — The main house is surrounded by other developed land in the form of a drive.



Photograph 2 — Location of new outbuilding. Artificial unvegetated, unsealed surface is located adjacent to the main house and garage, along with modified grassland in the form of a closely mown lawn.



Photograph 3 — Just south of the artificial unvegetated unsealed surface, exists an ornamental pond. To the west of the pond is a line of coniferous trees.



Photograph 4 — In the eastern corner of the site, lies a parcel of ruderal vegetation.



Photograph 5 — A broadleaved line of trees meets a coniferous line of trees along the western boundary of the site.



Photograph 6 — Ornamental hedgerow exists along the majority of the eastern boundary of the site.



Photograph 7 — Integrated bat boxes present within the main house. Likely a result of the recorded EPSL for roosting brown long-eared, common pipistrelle, and soprano pipistrelle bats on site.

## 13. Appendix 2 – Full Species List

| Habitats                   | Common Name             | Species Name                     | DAFOR |
|----------------------------|-------------------------|----------------------------------|-------|
| Modified Grassland – g4    | Annual meadow-grass     | <i>Poa annua</i>                 | F     |
|                            | Beech                   | <i>Fagus sylvatica</i>           | R     |
|                            | Bittercress             | <i>Cardamine</i> sp.             | O     |
|                            | Bramble                 | <i>Rubus fruticosus</i> agg.     | O     |
|                            | Bristly oxtongue        | <i>Helminthotheca echinoides</i> | O     |
|                            | Broad-leaved dock       | <i>Rumex obtusifolius</i>        | O     |
|                            | Cleavers                | <i>Galium aparine</i>            | O     |
|                            | Colt's foot             | <i>Tussilago farfara</i>         | O     |
|                            | Common cat's-ear        | <i>Hypochaeris radicata</i>      | F     |
|                            | Common daisy            | <i>Bellis perennis</i>           | F     |
|                            | Common groundsel        | <i>Senecio vulgaris</i>          | O     |
|                            | Common nettle           | <i>Urtica dioica</i>             | O     |
|                            | Common sedge            | <i>Carex nigra</i>               | O     |
|                            | Creeping thistle        | <i>Cirsium arvense</i>           | F     |
|                            | Cut-leaved crane's-bill | <i>Geranium dissectum</i>        | F     |
|                            | Daffodil                | <i>Narcissus</i> sp.             | O     |
|                            | Dandelion               | <i>Taraxacum officinale</i> agg. | O     |
|                            | Germander speedwell     | <i>Veronica chamaedrys</i>       | F     |
|                            | Green alkanet           | <i>Pentaglottis sempervirens</i> | R     |
|                            | Herb-Robert             | <i>Geranium robertianum</i>      | O     |
|                            | Ivy                     | <i>Hedera helix</i>              | O     |
|                            | Lords-and-ladies        | <i>Arum maculatum</i>            | O     |
|                            | Monkey puzzle           | <i>Araucaria araucana</i>        | R     |
|                            | Norway maple            | <i>Acer platanoides</i>          | R     |
|                            | Perennial rye-grass     | <i>Lolium perenne</i>            | F     |
|                            | Pine sp.                | <i>Pinus</i> sp.                 | R     |
|                            | Pointed spear-moss      | <i>Calliergonella cuspidata</i>  | A     |
|                            | Ragwort                 | <i>Jacobaea vulgaris</i>         | F     |
|                            | Red deadnettle          | <i>Lamium purpureum</i>          | O     |
|                            | Silver birch            | <i>Betula pendula</i>            | R     |
|                            | Snowdrop                | <i>Galanthus nivalis</i>         | R     |
|                            | Spear thistle           | <i>Cirsium vulgare</i>           | R     |
|                            | Speedwell               | <i>Veronica</i> sp.              | F     |
|                            | Sun spurge              | <i>Euphorbia helioscopia</i>     | O     |
|                            | Sweet gum               | <i>Liquidambar styraciflua</i>   | R     |
|                            | Sweet violet            | <i>Viola odorata</i>             | O     |
|                            | Sycamore                | <i>Acer pseudoplatanus</i>       | R     |
|                            | Weeping willow          | <i>Salix babylonica</i>          | R     |
|                            | White clover            | <i>Trifolium repens</i>          | O     |
|                            | Willowherb              | <i>Epilobium</i> sp.             | O     |
|                            | Yarrow                  | <i>Achillea millefolium</i>      | O     |
|                            | Yorkshire-fog           | <i>Holcus lanatus</i>            | F     |
| Other Standing Water – r1g | Bittercress             | <i>Cardamine</i> sp.             | R     |
|                            | Bramble                 | <i>Rubus fruticosus</i> agg.     | O     |
|                            | Grey willow             | <i>Salix cinerea</i>             | O     |
|                            | Marsh marigold          | <i>Caltha palustris</i>          | O     |
|                            | Pointed spear-moss      | <i>Calliergonella cuspidata</i>  | F     |
|                            | Shrubby honeysuckle     | <i>Lonicera</i> sp.              | R     |
|                            | Speedwell               | <i>Veronica</i> sp.              | O     |
|                            | St. John's-wort         | <i>Hypericum</i> sp.             | R     |
|                            | Yellow-flag             | <i>Iris pseudacorus</i>          | F     |
|                            | Yucca                   | <i>Yucca</i> sp.                 | F     |

| Habitats                                              | Common Name         | Species Name                          | DAFOR |
|-------------------------------------------------------|---------------------|---------------------------------------|-------|
| <b>Artificial Unvegetated, Unsealed Surface – u1c</b> | Azalea              | <i>Azalea</i> sp.                     | R     |
|                                                       | Box                 | <i>Buxus sempervirens</i>             | F     |
|                                                       | Broad-leaved dock   | <i>Rumex obtusifolius</i>             | O     |
|                                                       | Cleavers            | <i>Galium aparine</i>                 | O     |
|                                                       | Common broom        | <i>Cytisus scoparius</i>              | R     |
|                                                       | Common daisy        | <i>Bellis perennis</i>                | O     |
|                                                       | Creeping thistle    | <i>Cirsium arvense</i>                | O     |
|                                                       | Herb-Robert         | <i>Geranium robertianum</i>           | O     |
|                                                       | Ivy                 | <i>Hedera helix</i>                   | F     |
|                                                       | Japanese skimmia    | <i>Skimmia japonica</i>               | O     |
|                                                       | Stinking iris       | <i>Iris foetidissima</i>              | O     |
|                                                       | St. John's-wort     | <i>Hypericum</i> sp.                  | O     |
|                                                       | Yucca               | <i>Yucca</i> sp.                      | A     |
| <b>Non-Native &amp; Ornamental Hedgerow – h2b</b>     | Garden privet       | <i>Ligustrum ovalifolium</i>          | D     |
|                                                       | Mahonia             | <i>Mahonia</i> sp.                    | R     |
|                                                       | Red robin           | <i>Photinia x fraseri</i> 'Red Robin' | D     |
| <b>Line of Trees – w1g 33</b>                         | Apple               | <i>Malus x domestica</i> spp.         | O     |
|                                                       | Blue atlas cedar    | <i>Cedrus atlantica</i>               | R     |
|                                                       | Cypress             | <i>Cupressus</i> sp.                  | O     |
|                                                       | Garden privet       | <i>Ligustrum ovalifolium</i>          | R     |
|                                                       | Hazel               | <i>Corylus avellana</i>               | O     |
|                                                       | Holly               | <i>Ilex aquifolium</i>                | F     |
|                                                       | Honeysuckle         | <i>Lonicera periclymenum</i>          | O     |
|                                                       | Ivy                 | <i>Hedera helix</i>                   | F     |
|                                                       | Lords-and-ladies    | <i>Arum maculatum</i>                 | R     |
|                                                       | Sycamore            | <i>Acer pseudoplatanus</i>            | F     |
|                                                       | Wild cherry         | <i>Prunus avium</i>                   | F     |
| <b>Line of Trees – w2c 33</b>                         | Cherry blossom      | <i>Prunus</i> sp.                     | R     |
|                                                       | Cherry laurel       | <i>Prunus laurocerasus</i>            | F     |
|                                                       | English oak         | <i>Quercus robur</i>                  | R     |
|                                                       | Holly               | <i>Ilex aquifolium</i>                | O     |
|                                                       | Honeysuckle         | <i>Lonicera periclymenum</i>          | F     |
|                                                       | Ivy                 | <i>Hedera helix</i>                   | F     |
|                                                       | Leyland Cypress     | <i>Cupressus x leylandii</i>          | D     |
|                                                       | Lords-and-ladies    | <i>Arum maculatum</i>                 | R     |
|                                                       | Pine                | <i>Pinus</i> sp.                      | R     |
|                                                       | Red robin           | <i>Photinia x fraseri</i> 'Red Robin' | R     |
|                                                       | Spruce              | <i>Picea</i> sp.                      | R     |
|                                                       | Stinking iris       | <i>Iris foetidissima</i>              | R     |
| <b>Invertebrates</b>                                  | Leaf hopper         | <i>Cicadellidae</i> sp.               | N/A   |
|                                                       | Seven-spot ladybird | <i>Coccinella septempunctata</i>      | N/A   |
| <b>Birds</b>                                          | Blue tit            | <i>Cyanistes caeruleus</i>            | N/A   |
|                                                       | Carrion crow        | <i>Corvus corone</i>                  | N/A   |
|                                                       | Great tit           | <i>Parus major</i>                    | N/A   |
|                                                       | Jackdaw             | <i>Corvus monedula</i>                | N/A   |
|                                                       | Long-tailed tit     | <i>Aegithalos caudatus</i>            | N/A   |
|                                                       | Red kite            | <i>Milvus milvus</i>                  | N/A   |
|                                                       | Robin               | <i>Erithacus rubecula</i>             | N/A   |
|                                                       | Woodpigeon          | <i>Columba palumbus</i>               | N/A   |
|                                                       | Wren                | <i>Troglodytes troglodytes</i>        | N/A   |

## 14. Appendix 3 – Legislation and Planning Policy

### 14.1 Habitats Directive, EC Council Directive 92/43/EEC

The following information has been taken from [ec.europa.eu](http://ec.europa.eu).

Natura 2000 is a network of sites selected to ensure the long-term survival of Europe's most valuable and threatened species and habitats. How a site is chosen depends on what it aims to protect.

Under the Habitats Directive (Art. 3 and 4), Member States designate Special Areas of Conservation (SACs) to ensure the favourable conservation status of each habitat type and species throughout their range in the EU. Under the Birds Directive (Art. 4), the network must include Special Protection Areas (SPAs) designated for 194 particularly threatened species and all migratory bird species.

Member States designate Special Protection Areas (SPAs) according to scientific criteria such as '1% of the population of listed vulnerable species' or 'wetlands of international importance for migratory waterfowl'.

The choice of sites is based on scientific criteria specified in the directive, to ensure that the natural habitat types listed in the directive's Annex I and the habitats of the species listed in its Annex II are maintained or, where appropriate, restored to a favourable conservation status in their natural range.

### 14.2 The Birds Directive 2009/147/EC

The following information has been taken from [ec.europa.eu](http://ec.europa.eu).

The Birds Directive aims to protect all of the 500 wild bird species naturally occurring in the European Union. The 500 wild bird species naturally occurring in the European Union are protected in various ways:

- **Annex 1:** 194 species and sub-species are particularly threatened. Member States must designate Special Protection Areas (SPAs) for their survival and all migratory bird species.
- **Annex 2:** 82 bird species can be hunted. However, the hunting periods are limited, and hunting is forbidden when birds are at their most vulnerable: during their return migration to nesting areas, reproduction, and the raising of their chicks.
- **Annex 3:** overall, activities that directly threaten birds, such as their deliberate killing, capture or trade, or the destruction of their nests, are banned. With certain restrictions, Member States can allow some of these activities for 26 species listed here.
- **Annex 4:** the directive provides for the sustainable management of hunting, but Member States must outlaw all forms of non-selective and large scale killing of birds, especially the methods listed in this annex.
- **Annex 5:** the directive promotes research to underpin the protection, management and use of all species of birds covered by the Directive, which are listed in this annex.

### 14.3 Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

Under these Regulations, the UK Government and Devolved Administrations are required to establish a network of important high-quality conservation sites that will make a significant contribution to conserving the habitats and species identified in Annexes I and II, respectively, of European Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora, known as the Habitats Directive. The listed habitat types and species are those considered to be most in need of conservation at a European level (excluding birds). Of the Annex I habitat types, 78 are believed to occur in the UK. Of the Annex II species, 43 are native to, and normally resident in, the UK

([www.JNCC.gov.uk](http://www.JNCC.gov.uk)). Special Areas of Conservation (SACs), together with Special Protection Areas (SPAs), are the UK's contribution to the Bern Convention's Emerald Network of protected areas, known as Areas of Special Conservation Interest (ASCIs).

## **14.4 The 1949 National Parks and Access to the Countryside Act**

Section 21 of the National Parks and Access to the Countryside Act, 1949 provides discretionary powers to enable local authorities to establish and manage Local Nature Reserves (LNRs). Under the Conservation of Habitats and Species (Amendment) (EU Exit) 2019 Regulations, these powers have been extended from preserving flora and fauna to include enabling or facilitating its recovery or increase.

## **14.5 The Wildlife and Countryside Act, 1981 (As Amended)**

The following information was taken from [www.jncc.gov.uk](http://www.jncc.gov.uk) and [www.ukwildlife.com](http://www.ukwildlife.com).

The Wildlife and Countryside Act, 1981 (as amended) is the primary national legislation, which protected animals, plants, and habitats in the UK. The act contains four parts and 17 schedules, which cover:

- Part 1: Wildlife (includes protection of birds, animals, and plants; and measures to prevent the establishment of non-native species which may be detrimental to native wildlife).
- Part 2: Nature conservation, the countryside, and National Parks (including the designation of protected areas).
- Part 3: Public rights of way.
- Part 4: Miscellaneous provisions of the act.

All naturally occurring wild birds in Great Britain are protected from persecution. It is illegal to kill, injure or 'take' any wild bird, take, or damage the nest of any wild bird whilst in use or being built. The eggs of all wild birds are also protected. If you have in your possession any live wild birds, egg(s) or any part of a wild bird you are committing an offence. The birds listed in Schedule 1 of the Wildlife and Countryside Act 1981 are further protected by Special Penalties all year round for those in Part 1 and during a specified closed season for those listed in Part 2.

Schedule 5 lists Animals Species that are protected under Section 9. Section 9 prohibits the intentional killing, injuring, or taking of the species listed in Schedule 5 and also prohibits their possession and the trade in the wild animals listed. The species listed are also further protected from disturbance by prohibiting actions that affect places they use for shelter.

Animals listed in Schedule 6 are protected from being killed or taken by certain methods under Section 11(1) of the Wildlife and Countryside Act 1981. The methods listed are: self-locking snares, bows, crossbows, explosives (other than ammunition for a firearm), or live decoys. The species listed are also protected from the following activities: trap, snare or net, electrical device for killing or stunning, poisonous, poisoned or stupefying substances or any other gas or smoke, automatic or semi-automatic weapon, device for illuminating a target or sighting device for night shooting, artificial light, mirror or other dazzling device, sound recording, and mechanically propelled vehicle in immediate pursuit.

Under the Wildlife and Countryside Act 1981 (as amended), the country nature conservation bodies have a duty to notify any area of land which in their opinion is 'of special interest by reason of any of its flora, fauna, or geological or physiographical features' – these areas are known as Sites of Special Scientific Interest (SSSIs).

## 14.6 Countryside & Rights of Way Act, 2000

The CRoW Act gives a public right of access to land mapped as 'open country' (mountain, moor, heath and down) or registered common land. The protection of Sites of Special Scientific Interest (SSSIs) is strengthened in this legislation. The CRoW Act also allows for the prosecution of third parties that damage or destroy a SSSI.

## 14.7 Hedgerow Regulations 1997

These regulations fall under the local authority and are intended to protect important hedgerows from removal. Owners and managers must request permission from their local authority before removing a hedgerow, and permission may not be granted if it supports a diverse range or protected species.

## 14.8 The Protection of Badgers Act, 1992

Badgers are fully protected in the UK by the Protection of Badgers Act, 1992 and by Schedule 6 of the Wildlife and Countryside Act, 1981 (as amended). This makes it an offence (amongst other things) to:

- Wilfully kill, injure, take, possess, or cruelly treat a badger.
- Intentionally or recklessly damage, destroy or obstruct access to a badger sett.
- Disturb a badger while it is occupying a sett.

## 14.9 Natural Environment and Rural Communities (NERC) Act, 2006

The site comprises deciduous woodland, which is a Priority Habitat. Priority Habitats are listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006. Section 40 (1) of the NERC Act, 2006 imposes a duty to conserve biodiversity:

- *"Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity."*

Section 40(3) of the Act explains that:

- *"Conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat".*

The duty applies to all local authorities and extends beyond just conserving what is already there to carrying out, supporting and requiring actions that may also restore or enhance biodiversity.

## 14.10 National Planning Policy Framework (NPPF) 2023

The National Planning Policy Framework sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally prepared plans for housing and other development can be produced. So that sustainable development is pursued in a positive way, at the heart of the Framework is a presumption in favour of sustainable development.

Section 15 of the NPPF (paragraphs 174 to 188) considers the conservation and enhancement of the natural environment including habitats and biodiversity. Paragraph 174 states that planning and decisions should contribute to and enhance the natural and local environment by:

- "Protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);

- Recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland; and
- Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures”.

Paragraph 175 states that plans should distinguish between the hierarchy of international, national, and locally designated sites; allocate land with the least environmental or amenity value; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement of natural capital at a catchment or landscape scale across local authority boundaries.

Paragraph 179 states that in order to protect and enhance biodiversity and geodiversity, plans should:

- “Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and steppingstones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and
- Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.”

When determining planning applications, Paragraph 180 states that local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

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

As stated in paragraph 181 the following should be given the same protection as habitats sites:

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

Paragraph 182 states that the presumption in favour of sustainable development does not apply where the planned project is likely to have a significant effect on a habitat site (alone or in combination with other plans or projects) unless an appropriate assessment has concluded the plan or project will not adversely affect the integrity of the habitats site.

### **14.11 Water Framework Directive**

The Water Framework Directive (Directive 2000/60/EC) became law in England and Wales in 2003 via the Water Environment (WFD) (England and Wales) Regulations. The Water Framework Directive has four main goals: (1) to prevent deterioration in water status, (2) all water bodies achieve good ecological status, good chemical status and good groundwater status (or potential), (3) reduce and eliminate sources of pollution and (4) contribute to achieving objectives of sites protected by other EU legislation.

### **14.12 Bern Convention**

The Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention) was ratified by the UK Government in 1982. The principal aims of the Convention are to ensure conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix III. To this end, the Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1,000 wild animal species.

## 15. Appendix 4 – List of Abbreviations

|       |                                               |
|-------|-----------------------------------------------|
| BAP   | Biodiversity Action Plan                      |
| CSZ   | Core Sustenance Zone                          |
| CWS   | County Wildlife Site                          |
| EclA  | Ecological Impact Assessment                  |
| EPSL  | European Protected Species Licence            |
| GCN   | Great Crested Newt                            |
| NERC  | Natural Environment and Rural Communities Act |
| NPPF  | National Planning Policy Framework            |
| PEA   | Preliminary Ecological Appraisal              |
| SSSI  | Site of Special Scientific Interest           |
| SAC   | Special Area of Conservation                  |
| SINC  | Site of Importance for Nature Conservation    |
| SNCI  | Site of Nature Conservation Importance        |
| SPA   | Special Protection Area                       |
| UKHab | UK Habitat Classification System              |