

**HOGWOOD FARM, FINCHAMPSTEAD**

**ECOLOGICAL ASSESSMENT – LAND SOUTH OF PARCEL 15**

**Prepared for CALA Homes Thames Ltd**

**by**

**Hankinson Duckett Associates**

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**hankinson duckett associates**

**f** 01491 838175 **f** 01491 838997 **e** [consult@hda-enviro.co.uk](mailto:consult@hda-enviro.co.uk) **w** [www.hda-enviro.co.uk](http://www.hda-enviro.co.uk)  
The Stables, Howbery Park, Benson Lane, Wallingford, Oxfordshire, OX10 8BA

Hankinson Duckett Associates Limited Registered in England & Wales 3462810 Registered Office: The Stables, Howbery Park, Benson Lane, Wallingford, OX10 8BA

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# **1 INTRODUCTION**

## **1.1 Site location and summary description**

1.1.1 This document describes an Ecological Assessment of proposed development within Land South of Parcel 15 of the development of approximately 110ha of land at Hogwood Farm, Finchampstead. The Land South of Parcel 15 development area comprises approximately 2ha of land, hereinafter referred to as 'the site'. The site centre is located by National Grid Reference SU 776 641. The study was commissioned by CALA Homes Thames Ltd in September 2023.

1.1.2 The Land South of Parcel 15 site is located to the north-west of the village of Finchampstead, Berkshire. In general terms, it comprises part of a modified grassland field and a soil bund dominated by recently established scrub and tall ruderal vegetation. The field is bordered to the east by a non-native ornamental hedgerow and beyond the western site boundary is a ditch with scattered Bramble scrub and trees and a track. The Land South of Parcel 15 site is bordered to the north by Parcels 14 and 15 of the wider development which is currently under construction; to the west and south by a future development parcel which currently comprises modified grassland and scrub; and to the east by buildings and grassland. The location and boundary of the Land South of Parcel 15 site is shown in *Figure 1*.

1.1.3 The Land South of Parcel 15 site is part of a larger area covering a total of 110ha, hereinafter referred to as the 'wider site'. The wider site includes residential properties associated with Parcel 1 and a construction site associated with Parcel 2 in the north-west and a SANG in the south which comprises a mix of wetland, species-rich grassland, scrub and woodland habitats. In general terms, the western area of the wider site is comprised of three fields of disturbed ground dominated by short ruderal vegetation with scattered areas of tall ruderal vegetation and large spoil heaps bordered by mature trees and woodland with scrub field margins. The central and eastern areas of the wider site are comprised of areas of hardstanding and construction/disturbed ground bordered by mature treelines and woodland. The south-eastern area of the wider site comprise two fields of semi-improved grassland intersected by a ditch with associated scrub and scattered trees. A species-rich hedgerow with trees adjacent to Park Lane is present along the southern boundary. Woodland shaws and copses are located in the northern, western and central areas of the wider site, including mixed, broadleaved and broadleaved plantation woodland types, some of which are included on Natural England's Inventory of Ancient Woodland. Wetland habitats within the wider site include drainage ditches and small streams associated with the field boundaries and several ponds in poor condition are located across the wider site. The wider site is bordered to the north by a construction site, the Bohunt

School and the Hogwood Industrial Estate; to the east by Park Lane beyond which lie residential dwellings and park homes; to the south by Park Lane and farmland; and to the west by A327 Reading Road and Sheerlands Road beyond which lie farmland and woodland. The wider area is dominated by agricultural land interspersed with woodland and residential properties.

- 1.1.4 The location and boundary of the site and wider site are shown in *Figure 1*. A more detailed description of the habitats present within the site is given in *Section 3* below.

## **1.2 Development proposals**

- 1.2.1 Planning permission (O/2014/2179 and 140764) was granted in January 2017 for a hybrid application. This comprises:

- Outline permission for demolition of all existing buildings on site; up to 1,500 new dwellings; employment floor space; a Neighbourhood Centre; a primary school; sports pitches and associated pavilion building; highways infrastructure; associated landscaping, public realm, open/green space and sustainable urban drainage systems; and
- Full permission for a 29.7ha Suitable Alternative Natural Greenspace (SANG) in the south of the site.

The hybrid planning permission was subsequently amended by a Section 73 application (181194) which was approved in November 2018.

- 1.2.2 Following proactive engagement with Officers at Wokingham Borough Council (WBC) an opportunity to deliver the sport and community facilities earlier, enabled by the delivery of 48 new homes was identified. The Land South of Parcel 15 site will subsequently be subject to a full planning application for the construction of 48 new residential dwellings and associated access and landscaping. The location and boundary of the site are shown in *Figure 1*.

- 1.2.3 The location and extent of the development proposals are shown on the *Site Layout* (Omega Architects, 2024).

## **1.3 Scope and purpose of the report**

- 1.3.1 This study brings together the results of all ecological survey work carried out at the site in the context of the development proposals described in *Section 1.2* above.

- 1.3.2 Specifically, the aims of this study are:

1. To assess the nature conservation value of habitats associated with the site and the site surrounds;
2. To assess the likely presence of protected or notable species;
3. To identify constraints to development due to the above, and to identify the likely ecological effects of development; and
4. To identify appropriate measures to avoid or minimise the ecological effects of development, and where effects are unavoidable, to develop proposals to mitigate or compensate for these effects in accordance with planning policy and nature conservation legislation.

## **2 METHODOLOGY**

### **2.1 Desk study**

2.1.1 Existing ecological and nature conservation data relevant to the site was collated from various sources including the MAGIC online database and Thames Valley Environmental Records Centre (TVERC). Protected species records were obtained for an area of approximately 2km around the site and a check for designated sites was extended to an area of up to 10km from the site boundary. The desk study is summarised in *Section 3.2* below and plans and citations are given in *Appendix A*.

### **2.2 Field surveys**

2.2.1 A suite of ecological surveys have been conducted at the Hogwood Farm site since 2008, including an ecological desk study, extended Phase 1 habitat survey, invasive plant species walkover survey and specialist surveys for the following species/species groups:

- Bats;
- Water Voles;
- Otters;
- Dormice;
- Badgers;
- Breeding birds;
- Reptiles; and
- Great Crested Newts.

2.2.2 The methodologies, habitat descriptions and results of the surveys conducted to inform the Environmental Statement are detailed in the *Chapter 7: Biodiversity, Flora and Fauna* (Royal Haskoning DHV, 2014). Where appropriate, additional surveys have subsequently been undertaken by HDA between 2017 and 2024 to update the earlier surveys and to inform ongoing development design works.

2.2.3 The results of the surveys are summarised in this report and where applicable full copies of the assessments are given in the accompanying appendices/figures<sup>1</sup>. These include:

- HDA (2024a) *Hogwood Farm, Finchampstead: Phase 1 Habitat Survey and Target Notes*. Hankinson Duckett Associates, Wallingford – *Figure 1*;
- HDA (2023a) *Hogwood Farm, Finchampstead: Summary of Parcels 14 and 15 Invasive Species Walkover Survey Findings*. Hankinson Duckett Associates, Wallingford – *Appendix B*;
- HDA (2023b) *Hogwood Farm, Finchampstead: 2022 Bat Survey Report*. Hankinson Duckett Associates, Wallingford – *Appendix C*;
- HDA (2018) *Hogwood Farm, Finchampstead: Water Vole and Otter Survey Report*. Hankinson Duckett Associates, Wallingford;
- HDA (2024b) *Hogwood Farm, Finchampstead: 2024 Badger Survey Report and Badger Protection Plan*. Hankinson Duckett Associates, Wallingford – *Appendix D*;
- HDA (2024c) *Hogwood Farm, Finchampstead: 2023 Reptile Survey Report and Site-wide Outline Mitigation Strategy*. Hankinson Duckett Associates, Wallingford – *Appendix E*;
- HDA (2024d) *Hogwood Farm, Finchampstead: 2023 Great Crested Newt HSI and eDNA Survey Report*. Hankinson Duckett Associates, Wallingford – *Appendix F*.

In addition to update the information detailed within these ecology reports, an ecological walkover survey including an updated Phase 1 habitat survey, Phase 1 bat scoping survey and Badger survey was carried out on the 14<sup>th</sup> August 2023 by Fiona Muir of HDA. The results of this survey are summarised below and, where applicable, updated Figures are included.

## 2.3 Evaluation Criteria

2.3.1 The evaluation of the site, and the habitats within it, is based on the results of the field surveys described above, any designations pertaining to the site and existing ecological information collected during the desk study.

2.3.2 Each ecological resource (site, habitat, species or feature) was assigned a value at the following geographic scales (CIEEM, 2018):

- International
- National (England/Scotland/Wales/Northern Ireland)
- Regional
- County/Metropolitan
- District/Borough

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<sup>1</sup> More recent reports for updated surveys reference earlier survey findings where these remain relevant.

- Local/Parish
- Within immediate zone of influence only (Site/Negligible)

2.3.3 Assigning value is relatively straightforward in the case of designated sites, and undesignated sites meeting designation criteria. However, in most cases evaluation of ecological resources is not straightforward and requires a degree of knowledge, training, experience and professional judgement (Usher, 1986; Spellerberg, 1992). Evaluation of an ecological resource was based on a number of criteria (Ratcliffe, 1977; CIEEM, 2018). These are summarised in *Appendix G*.

2.3.4 The potential for protected species and Habitats and Species of Principal Importance identified under Section 41 of the 2006 NERC Act to be present within the site has been assessed on the basis of the specialist ecological surveys, habitats and features present and the results of the desk study.

### **3 BASELINE CONDITIONS**

#### **3.1 Introduction**

3.1.1 The following section summarises the findings of the desk study and extended Phase 1 habitat survey, and outlines the findings of specialist surveys carried out at the site. The full findings of these studies are provided in *Figures 1-2* and *Appendices A-F*.

#### **3.2 Desk study**

3.2.1 The following section summarises the findings of the desk study most recently undertaken by HDA in September 2024. Plans showing the locations of designated sites are given in *Appendix A*.

##### Designated sites

3.2.2 No statutory or non-statutory nature conservation designations pertain to the site or adjacent land. This is confirmed by information from the MAGIC online database and TVERC.

##### *Statutory designated areas*

3.2.3 One internationally designated area is located within 10km of the site boundary, this is Thames Basin Heaths Special Protection Area (SPA) the closest unit of which is located approximately 1.9km to the south-west of the site. This 8309.5ha SPA comprises open heathland, scrub and woodland supporting internationally important numbers of ground nesting birds (Nightjar, Woodlark and Dartford Warbler).

3.2.4 One National Nature Reserves (NNRs) is located within 5km of the site. This is Castle Bottom NNR which is located approximately 4.5km to the south of the site. This 30.82ha NNR comprises a large valley bog associated with heathland habitats. NNRs have been established to protect some of England's most nationally important habitats in addition to providing opportunities for research.

3.2.5 Three Sites of Special Scientific Interest (SSSIs) are located within 5km of the site. These are:

- Longmoor Bog SSSI located approximately 870m north-east of the site. This 14.03ha SSSI comprises a base-poor valley mire supporting well-developed Alder, Grey Willow, Downy Birch and Alder Buckthorn carr and wet heathland. In addition, the SSSI supports an area of secondary mixed woodland.
- Bramshill SSSI (also forming part of the Thames Basin Heaths SPA described in *Section 3.2.3*) located approximately 1.9km south-west of the site. This 673.27ha SSSI comprises extensive areas of conifer plantation together with a series of shallow acidic ponds within relic wet heathland and a small unimproved grassland area adjacent which provides habitat for the nationally rare Small Fleabane *Pulicaria vulgaris*. The SSSI supports a rich assemblage of dragonfly and damselfly and provides habitat for internationally important populations of Nightjar, Woodlark and Dartford Warbler.
- Castle Bottom to Yateley and Hawley Commons SSSI (also forming part of the Thames Basin Heaths SPA described in *Section 3.2.3* and the Castle Bottom NNR described in *Section 3.2.4*) located approximately 4.5km south of the site. This 922.74ha SSSI comprises one of the largest remnants of lowland heathland in the Thames Basin. This SSSI is notified for its heathland and young conifer plantation which supports an internationally important population of Dartford Warbler and populations of two other internationally important species, Woodlark and Nightjar. The scrub/heathland interface supports a particularly rich invertebrate fauna including a number of nationally scarce species. It also supports an outstanding dragonfly assemblage.

3.2.6 Impact Risk Zones (IRZs) are used by Natural England to identify development activities in the vicinity of SSSIs, SPAs and Special Areas of Conservation (SACs) which, in the absence of avoidance or mitigation measures, may adversely affect designated features, thereby requiring planning authorities to consult with Natural England where potentially damaging activities are proposed.

**Table 1:** Areas of the site falling within IRZs.

| Area of site         | Associated IRZs                                                                                                                                                                 | Potentially damaging activities relevant to the site                                                                                                                                                                                                 |
|----------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Eastern area of site | <ul style="list-style-type: none"> <li>• 500m-1km IRZ for the Longmoor Bog SSSI</li> <li>• 2-3km IRZ for the Thames Basin Heaths SPA (and associated Bramshill SSSI)</li> </ul> | <ul style="list-style-type: none"> <li>• <b>Residential:</b> Residential development of 100 units or more.</li> <li>• <b>Rural Residential:</b> Any residential development of 50 or more units outside existing settlements/urban areas.</li> </ul> |
| Central area of site | <ul style="list-style-type: none"> <li>• 1-2km IRZ for the Longmoor Bog SSSI</li> <li>• 2-3km IRZ for the Thames Basin Heaths SPA (and associated Bramshill SSSI)</li> </ul>    | Residential development, on any scale, is not identified as being a potentially damaging activity for the IRZs in which this area of the site is located.                                                                                            |
| Western area of site | <ul style="list-style-type: none"> <li>• 1-2km IRZ for the Longmoor Bog SSSI</li> <li>• 1-2km IRZ for the Thames Basin Heaths SPA (and associated Bramshill SSSI)</li> </ul>    | <ul style="list-style-type: none"> <li>• <b>Residential:</b> Residential development of 50 units or more.</li> <li>• <b>Rural Residential:</b> Any residential development of 50 or more units outside existing settlements/urban areas.</li> </ul>  |

The development proposals are to construct 48 residential dwellings on the site and as such the proposed development falls below the criteria for potentially damaging activities relevant to the protected sites in the vicinity of the site. As such Natural England would not be expected to be consulted by the planning authority on proposals for residential development at the site in this regard.

- 3.2.7 One Local Nature Reserve (LNRs) is located within 2km of the site. This is Longmoor Bog LNR (also forming part of the Longmoor Bog SSSI described in *Section 3.2.5*) is located approximately 970m to the north-east of the site. This 11.75ha LNR supports lowland valley mire and wet (bog) woodland.

#### *Non-statutory designated areas*

- 3.2.8 TVERC provided details of 11 Berkshire Local Wildlife Sites (LWS) and 1 BBOWT Reserve within 2km of the site. The closest of which is Shepperlands Copse LWS (which is also Shepperlands Farm BBOWT reserve) located approximately 160m to the east of the site. This 9.42ha LWS comprises mixed woodland, a heathland restoration area and two unimproved wet meadows. The next closest LWS is Woodlands Near Banisters Farm LWS located approximately 500m to the south-west of the site. This LWS comprises two areas of ancient semi-natural woodland linked by a boundary hedge and recently planted stands of Oak, Ash, Field Maple and Wild Cherry.
- 3.2.9 No areas of woodland listed on Natural England's Inventory of Ancient Woodland are located within the site. 32 units of ancient woodland listed on Natural England's Inventory

of Ancient Woodland are located within 2km of the site. The closest unit to the site is located approximately 160m east of the site, associated with Shepperlands Copse LWS (as described in *Section 3.2.8*).

### **Biodiversity Action Plan (BAP) and 2006 NERC Act Habitats and Species of Principal Importance**

- 3.2.10 The UK Biodiversity Action Plan (BRIG, 2011) lists habitats and species which have undergone significant declines in recent years and for which conservation is a priority in order to preserve biodiversity in the UK. The BAPs provide a list of actions to be implemented to halt or reverse these declines.
- 3.2.11 These habitats and species are identified as Habitats and Species of Principal Importance for the conservation of biological diversity in England under Section 41 of the 2006 Natural Environment and Rural Communities (NERC) Act. Together with the 2023 NPPF and underpinning guidance (ODPM, 2005), Section 40 of the 2006 NERC Act requires that these species are a material consideration in the planning process.
- 3.2.12 The Berkshire Local Nature Partnership has developed a spatial approach to biodiversity action planning in the county through Biodiversity Opportunity Area's (BOAs), which identify the most important areas for wildlife conservation in Berkshire, where targeted conservation action will have the greatest benefit. Berkshire has 29 BOAs. The site is not located within any of the BOAs, and the closest to the site is the Blackwater Valley BOA located approximately 1.3km to the south. This BOA includes the Blackwater Valley from Eversley in the west to Camberley in the east. Key habitats identified for the BOA include lowland meadows, purple moor grass and rush pasture, standing water, woodland and gravel pits with marginal fen, woodland, scrub and grassland areas. Targets and opportunities for the BOA identified include:
- Management and re-creation of grassland habitats.
  - Management of gravel pits and associated habitats
- 3.2.13 Berkshire Local Nature Partnership also lists Habitats and Species of Principal Importance within the county. Priority species listed include Polecat, Brown Hare, Adder, farmland birds, Great Crested Newt, Desmoulin's Whorl Snail and the Small Blue butterfly. Priority habitats listed for Berkshire include:
- *Freshwater* – eutrophic standing water, ponds and rivers;
  - *Wetlands* – reedbeds, lowland fen and coastal and floodplain grazing marsh;

- *Grassland* – lowland calcareous grassland, lowland dry acid grassland, lowland meadow;
- *Woodland* - lowland mixed deciduous woodland, wood pasture and parkland and wet woodland;
- *Arable* – traditional orchard and hedgerows;
- *Heathland* – lowland heathland; and
- *Inland rock* - open mosaic habitats on previously developed land.

### **Protected and Notable Species**

3.2.14 Data provided by TVERC has shown that there no records directly associated with the site but there are records of protected and notable species occurring in the vicinity of the site including bats, Dormouse, Water Vole, Badger, Great Crested Newt, birds, reptiles, invertebrates and plant species.

#### **3.2.15 *Bats***

TVERC provided 623 records of bats within 2km of the site including records of Brown Long-eared bat, Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, Serotine, Noctule, Leisler's, Natterer's bat, Daubenton's, Barbastelle and *Myotis*, *Pipistrellus* and *Plecotus* species and unidentified species of bat. The closest records relate to a high-level 1km grid reference at least 320m to the south-east of the site associated with 21 records dating from 2007 to 2021 for aural bat detector recordings and droppings of Common Pipistrelle, Soprano Pipistrelle, Brown Long-eared bats and *Pipistrellus* and *Plecotus* species.

All UK bat species are protected as European Protected Species (EPS) under the 2017 Conservation of Habitats and Species Regulations (as amended). In relation to EPS, the 2017 Regulations make it an offence to:

- Deliberately capture, injure or kill any wild animal of an EPS;
- Deliberately disturb wild animals of any such species, in particular any disturbance which is likely to: (i) impair their ability to survive, to breed or reproduce, or to rear or nurture their young; or to hibernate or migrate; (ii) affect significantly the local distribution or abundance of the species to which they belong;
- Damage or destroy a breeding site or resting place of such an animal; and/or
- To: (i) be in possession of, or to control; (ii) to transport any live or dead animal or any part of an animal; (iii) to sell or exchange; or (iv) offer for sale or exchange any live or dead animal or part of an animal of an EPS.

In addition, all UK bats are protected under the 1981 Wildlife and Countryside Act (as amended). All species are listed on Schedule 5 of the Act and are subject to the provisions of Sections 9.4b and 9.4c, which make it an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection; and/or
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a bat.

If works are planned that are likely to result in an offence under the current legislation, the works should be carried out under an appropriate Natural England licence.

Seven species of bat (Barbastelle, Bechstein's, Noctule, Soprano Pipistrelle, Brown Long-eared, Greater Horseshoe and Lesser Horseshoe) are also included as Species of Principal Importance identified under Section 41 of the 2006 NERC Act.

#### 3.2.16 *Dormouse*

TVERC provided one record of Dormouse for the desk study area. This relates to feeding signs located approximately 1.7km to the west of the site, dating from 2023.

The Dormouse is protected through its inclusion on Schedule 5 of the 1981 Wildlife and Countryside Act (as amended) and is an EPS through the 2017 Conservation of Habitats and Species Regulations (as amended) (see *Section 3.2.15*). It is also a priority species on the UKBAP and identified as a Species of Principal Importance under Section 41 of the 2006 NERC Act.

#### 3.2.17 *Water Vole*

TVERC provided four records of Water Vole for the desk study area, all associated with waterbodies to the north-east of the site dating from 1996 to 1998. The closest record pertains to a location approximately 1.2km to the north-east of the site.

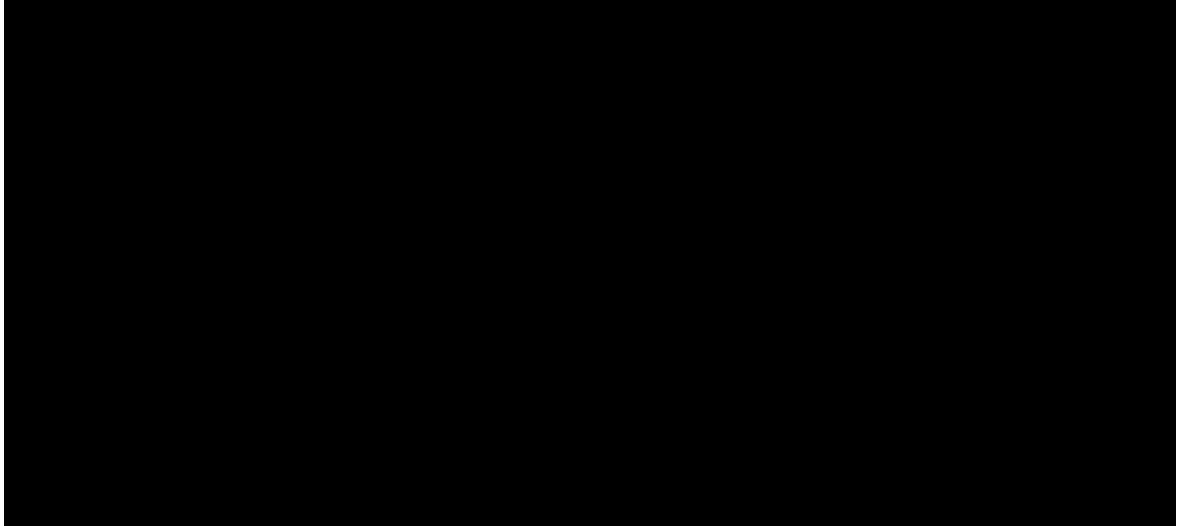
The Water Vole is protected through its inclusion on Schedule 5 of the 1981 Wildlife and Countryside Act (as amended). Unless permitted under a licence issued by Natural England this makes it an offence to:

- Intentionally or recklessly kill, injure or take Water Voles;
- Possess or control live or dead specimens or anything derived from a Water Vole;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place which Water Voles use for shelter or protection; and/or

- Intentionally or recklessly disturb Water Voles while they are using such a place.

The Water Vole is also a priority species on the UKBAP and listed as a Species of Principal Importance under Section 41 of the 2006 NERC Act.

3.2.18



3.2.19

#### Birds

TVERC provided records of 1791 bird species occurring within the desk study area. All nesting birds are afforded a basic level of protection under the 1981 Wildlife and Countryside Act (as amended). Species included on Schedule 1 of the Act are afforded additional protection against disturbance when breeding. *Table 2* below details the notable bird species recorded within 2km of the site:

**Table 2:** Notable bird species recorded within the desk study area

| Common Name        | Scientific Name                   | Annex<br>1 <sup>1</sup> | WCA 1 <sup>2</sup> | NERC<br>41 <sup>3</sup> | BOCC5<br>(2021) <sup>4</sup> |
|--------------------|-----------------------------------|-------------------------|--------------------|-------------------------|------------------------------|
| Barn Owl           | <i>Tyto alba</i>                  |                         |                    |                         | Green                        |
| Barnacle Goose     | <i>Branta leucopsis</i>           |                         |                    |                         | Amber                        |
| Black Redstart     | <i>Phoenicurus ochruros</i>       |                         |                    |                         | Amber                        |
| Black-headed Gull  | <i>Chroicocephalus ridibundus</i> |                         |                    |                         | Amber                        |
| Brambling          | <i>Fringilla montifringilla</i>   |                         |                    |                         | Green                        |
| Bullfinch          | <i>Pyrrhula pyrrhula</i>          |                         |                    |                         | Amber                        |
| Cetti's Warbler    | <i>Cettia cetti</i>               |                         |                    |                         | Green                        |
| Common Gull        | <i>Larus canus</i>                |                         |                    |                         | Amber                        |
| Common Tern        | <i>Sterna hirundo</i>             |                         |                    |                         | Amber                        |
| Crossbill (Common) | <i>Loxia curvirostra</i>          |                         |                    |                         | Green                        |
| Cuckoo             | <i>Cuculus canorus</i>            |                         |                    |                         | Red                          |
| Dartford Warbler   | <i>Sylvia undata</i>              |                         |                    |                         | Amber                        |
| Dunlin             | <i>Calidris alpina</i>            |                         |                    |                         | Red                          |
| Dunnock            | <i>Prunella modularis</i>         |                         |                    |                         | Amber                        |
| Fieldfare          | <i>Turdus pilaris</i>             |                         |                    |                         | Red                          |

|                           |                                      |  |  |  |       |
|---------------------------|--------------------------------------|--|--|--|-------|
| Firecrest                 | <i>Regulus ignicapilla</i>           |  |  |  | Green |
| Gadwall                   | <i>Anas strepera</i>                 |  |  |  | Amber |
| Garganey                  | <i>Anas querquedula</i>              |  |  |  | Amber |
| Glossy Ibis               | <i>Plegadis falcinellus</i>          |  |  |  |       |
| Golden Plover             | <i>Pluvialis apricaria</i>           |  |  |  | Green |
| Goldeneye                 | <i>Bucephala clangula</i>            |  |  |  | Red   |
| Great White Egret         | <i>Ardea alba</i>                    |  |  |  | Amber |
| Green Sandpiper           | <i>Tringa ochropus</i>               |  |  |  | Amber |
| Greenfinch                | <i>Carduelis chloris</i>             |  |  |  | Red   |
| Greenshank                | <i>Tringa nebularia</i>              |  |  |  | Amber |
| Grey Partridge            | <i>Perdix perdix</i>                 |  |  |  | Red   |
| Grey Wagtail              | <i>Motacilla cinerea</i>             |  |  |  | Amber |
| Greylag Goose             | <i>Anser anser</i>                   |  |  |  | Amber |
| Hawfinch                  | <i>Coccothraustes coccothraustes</i> |  |  |  | Red   |
| Herring Gull              | <i>Larus argentatus</i>              |  |  |  | Red   |
| Hobby                     | <i>Falco subbuteo</i>                |  |  |  | Green |
| House Martin              | <i>Delichon urbicum</i>              |  |  |  | Red   |
| House Sparrow             | <i>Passer domesticus</i>             |  |  |  | Red   |
| Kestrel                   | <i>Falco tinnunculus</i>             |  |  |  | Amber |
| Kingfisher                | <i>Alcedo atthis</i>                 |  |  |  | Green |
| Lapwing                   | <i>Vanellus vanellus</i>             |  |  |  | Red   |
| Lesser Black-backed Gull  | <i>Larus fuscus</i>                  |  |  |  | Amber |
| Lesser Redpoll            | <i>Acanthis cabaret</i>              |  |  |  | Red   |
| Lesser Spotted Woodpecker | <i>Dendrocopos minor</i>             |  |  |  | Red   |
| Linnet                    | <i>Carduelis cannabina</i>           |  |  |  | Red   |
| Little Egret              | <i>Egretta garzetta</i>              |  |  |  | Green |
| Little Ringed Plover      | <i>Charadrius dubius</i>             |  |  |  | Green |
| Mallard                   | <i>Anas platyrhynchos</i>            |  |  |  | Amber |
| Meadow Pipit              | <i>Anthus pratensis</i>              |  |  |  | Amber |
| Mediterranean Gull        | <i>Larus melanocephalus</i>          |  |  |  | Amber |
| Mistle Thrush             | <i>Turdus viscivorus</i>             |  |  |  | Red   |
| Moorhen                   | <i>Gallinula chloropus</i>           |  |  |  | Amber |
| Nightingale               | <i>Luscinia megarhynchos</i>         |  |  |  | Red   |
| Osprey                    | <i>Pandion haliaetus</i>             |  |  |  | Amber |
| Oystercatcher             | <i>Haematopus ostralegus</i>         |  |  |  | Amber |
| Peregrine Falcon          | <i>Falco peregrinus</i>              |  |  |  | Green |
| Pintail                   | <i>Anas acuta</i>                    |  |  |  | Amber |
| Pochard                   | <i>Aythya ferina</i>                 |  |  |  | Red   |
| Red Kite                  | <i>Milvus milvus</i>                 |  |  |  | Green |
| Redshank                  | <i>Tringa totanus</i>                |  |  |  | Amber |
| Redwing                   | <i>Turdus iliacus</i>                |  |  |  | Amber |
| Reed Bunting              | <i>Emberiza schoeniclus</i>          |  |  |  | Amber |
| Ring Ouzel                | <i>Turdus torquatus</i>              |  |  |  | Red   |
| Ringed Plover             | <i>Charadrius hiaticula</i>          |  |  |  | Red   |
| Rook                      | <i>Corvus fruilegus</i>              |  |  |  | Amber |

|                    |                                   |  |  |  |       |
|--------------------|-----------------------------------|--|--|--|-------|
| Sandpiper (Common) | <i>Actitis hypoleucos</i>         |  |  |  | Amber |
| Sedge Warbler      | <i>Acrocephalus schoenobaenus</i> |  |  |  | Amber |
| Shelduck           | <i>Tadorna tadorna</i>            |  |  |  | Amber |
| Shoveler           | <i>Anas clypeata</i>              |  |  |  | Amber |
| Skylark            | <i>Alauda arvensis</i>            |  |  |  | Red   |
| Snipe              | <i>Gallinago gallinago</i>        |  |  |  | Amber |
| Song Thrush        | <i>Turdus philomelos</i>          |  |  |  | Amber |
| Sparrowhawk        | <i>Accipiter nisus</i>            |  |  |  | Amber |
| Spoonbill          | <i>Platalea leucorodia</i>        |  |  |  | Amber |
| Spotted Flycatcher | <i>Muscicapa striata</i>          |  |  |  | Red   |
| Starling           | <i>Sturnus vulgaris</i>           |  |  |  | Red   |
| Stock Dove         | <i>Columba oenas</i>              |  |  |  | Amber |
| Swift              | <i>Apus apus</i>                  |  |  |  | Red   |
| Tawny Owl          | <i>Strix aluco</i>                |  |  |  | Amber |
| Teal               | <i>Anas crecca</i>                |  |  |  | Amber |
| Wheatear           | <i>Oenanthe oenanthe</i>          |  |  |  | Amber |
| Whinchat           | <i>Saxicola rubetra</i>           |  |  |  | Red   |
| White Stork        | <i>Ciconia ciconia</i>            |  |  |  |       |
| Whitethroat        | <i>Sylvia communis</i>            |  |  |  | Amber |
| Wigeon             | <i>Anas penelope</i>              |  |  |  | Amber |
| Willow Warbler     | <i>Phylloscopus trochilus</i>     |  |  |  | Amber |
| Wood Sandpiper     | <i>Tringa glareola</i>            |  |  |  | Amber |
| Woodcock           | <i>Scolopax rusticola</i>         |  |  |  | Red   |
| Woodlark           | <i>Lullula arborea</i>            |  |  |  | Green |
| Woodpigeon         | <i>Columba palumbus</i>           |  |  |  | Amber |
| Wren               | <i>Troglodytes troglodytes</i>    |  |  |  | Amber |
| Yellow Wagtail     | <i>Motacilla flava</i>            |  |  |  | Red   |
| Yellowhammer       | <i>Emberiza citrinella</i>        |  |  |  | Red   |

Notes:

- 1 Species listed in Annex I of Council Directive 79/409/EEC on the conservation of wild birds.
- 2 Species specially protected under Schedule 1 of the 1981 Wildlife and Countryside Act (as amended).
- 3 Species included in the UKBAP and Species of Principal Importance under the 2006 NERC Act.
- 4 Species included in the Birds of Conservation Concern 5 Red and Amber lists (RSPB, 2021)<sup>2</sup>.

### 3.2.20 Reptiles

TVERC provided 1147 records of reptiles for the desk study area, including records of Slow-worm, Adder, Common Lizard and Grass Snake. The closest records to the site relates to 5 records of Slow-worm and Grass Snake located approximately 220m to the east of the site, dating from 2008.

<sup>2</sup>**Red Listed:** Red list species are those that are Globally Threatened according to IUCN criteria; those whose population or range has declined rapidly in recent years; and those that have declined historically and not shown a substantial recent recovery.

**Amber Listed:** Amber list species are those with an unfavourable conservation status in Europe; those whose population or range has declined moderately in recent years; those whose population has declined historically but made a substantial recent recovery; rare breeders; and those with internationally important or localised populations.

All native reptiles are protected against killing and injuring under the 1981 Wildlife and Countryside Act (as amended), are priority species on the UKBAP, and are listed as Species of Principal Importance under Section 41 of the 2006 NERC Act.

#### 3.2.21 *Great Crested Newt*

TVERC provided 7 records of Great Crested Newts for the desk study area. The closest records relates to two field records located approximately 70m to the east of the site, dating from 2014 and 2015.

The Great Crested Newt is protected through its inclusion on Schedule 5 of the 1981 Wildlife and Countryside Act (as amended) and as an EPS through the 2017 Conservation of Habitats and Species Regulations (as amended) (see *Section 3.2.15*). It is also a priority species on the UKBAP and listed as a Species of Principal Importance under Section 41 of the 2006 NERC Act.

#### 3.2.22 *Invertebrates*

TVERC provided 134 records of invertebrate species for the desk study area, none of which pertain directly to the site. These include:

- Stag Beetle which is protected against commercial exploitation under Schedule 5 of the 1981 Wildlife and Countryside Act (as amended). Stag Beetle is also included on the 1992 EC Habitats Directive: Annex II and V(a) which through the 2017 Conservation of Habitats and Species Regulations (as amended) allows the setting up of SACs where key populations exist. In addition, Stag Beetle is a Species of Principal Importance under Section 41 of the 2006 NERC Act;
- Silver-studded Blue which is protected against commercial exploitation under Schedule 5 of the 1981 Wildlife and Countryside Act (as amended). In addition, it is listed as 'Vulnerable'<sup>3</sup> on the IUCN Red List and listed as Species of Principal Importance under Section 41 of the 2006 NERC Act;
- Purple Emperor which is protected against commercial exploitation under Schedule 5 of the 1981 Wildlife and Countryside Act (as amended). In addition it is listed as 'Near Threatened'<sup>4</sup> on the IUCN Red List;

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<sup>3</sup> **Vulnerable** (IUCN Red List, 2012): A taxon is Vulnerable when it is considered to be facing a high risk of extinction in the wild in Great Britain.

<sup>4</sup> **Near Threatened** (IUCN Red List, 2012): A taxon is Near Threatened when it does not qualify for Critically Endangered, Endangered or Vulnerable now, but is close to qualifying for or is likely to qualify for a threatened category in the near future in Great Britain.

- Necklace Ground Beetle which is listed as 'Endangered'<sup>5</sup> on the IUCN Red List and listed as Species of Principal Importance under Section 41 of the 2006 NERC Act;
- Grayling and White Admiral which are listed as 'Vulnerable' on the IUCN Red List and listed as Species of Principal Importance under Section 41 of the 2006 NERC Act;
- Small Heath butterfly which is listed as 'Near Threatened' on the IUCN Red List and listed as Species of Principal Importance under Section 41 of the 2006 NERC Act; and
- September Thorn, Cinnabar, Knot Grass, Sallow, Shaded Broad-bar and Buff Ermine moth which are listed as Species of Principal Importance under Section 41 of the 2006 NERC Act.

### 3.2.23 *Plants and fungi*

TVERC provided 85 records of plants and fungi for the desk study area, none of which pertain directly to the site. These include:

- Pennyroyal which is protected under Schedule 8 of the 1981 Wildlife and Countryside Act (as amended) against commercial exploitation only. In addition, it is listed as 'Critically Endangered'<sup>6</sup> on the IUCN Red List and listed as Species of Principal Importance under Section 41 of the 2006 NERC Act;
- Bluebell which is protected under Schedule 8 of the 1981 Wildlife and Countryside Act (as amended) against commercial exploitation only;
- Lesser Spearwort which is listed as 'Vulnerable' on the IUCN Red List; and
- Bell Heather, Common Cow-wheat, Common Valerian, Cross-leaved Heath, Devil's-bit Scabious, Heath Speedwell, Hoary Plantain, Marsh Pennywort, Marsh Speedwell, Marsh-mallow, Mat-grass, Ragged-Robin, Round-leaved Sundew, Tormentil, Wild Strawberry and Wood-sorrel which are listed as 'Near Threatened' on the IUCN Red List.

Records were also provided of invasive plant species within the desk study area. This includes Buddleia, Himalayan Balsam and Rhododendron which are listed on Schedule 9 of the 1981 Wildlife and Countryside Act (as amended). It is an offence to release, plant or cause to grow in the wild any plant included on this schedule of the Act.

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<sup>5</sup> **Endangered (IUCN Red List, 2012):** A taxon is Endangered when it is considered to be facing a very high risk of extinction in the wild in Great Britain

<sup>6</sup> **Critically Endangered (IUCN Red List, 2012):** A taxon is Critically Endangered when it is considered to be facing an extremely high risk of extinction in the wild in Great Britain.

### 3.2.24 *Other species*

Other notable species for which desk study records were provided include Toad and Hedgehog which are identified as a Species of Principal Importance under Section 41 of the 2006 NERC Act. No records of other protected or notable species such as Otter were provided for the desk study area.

## **Planning Policy**

3.2.25 National and local planning policy relevant to this assessment are summarised below.

### 3.2.26 *National Planning Policy Framework*

The National Planning Policy Framework (NPPF), published in December 2023, outlines the Government's vision for sustainable development in England. Chapter 15 sets out the requirements for 'Conserving and Enhancing the Natural Environment', which states:

*"180. Planning policies and decisions should contribute to and enhance the natural and local environment by:*

- a) 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);*
- b) 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;*
- c) maintaining the character of the undeveloped coast, while improving public access to it where appropriate;*
- d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures;*
- e) preventing new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans; and*
- f) remediating and mitigating despoiled, degraded, derelict, contaminated and unstable land, where appropriate."*

*"181. Plans should: distinguish between the hierarchy of international, national and locally designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; 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."*

*"182. Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and the Broads. The scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas."*

*“183. When considering applications for development within National Parks, the Broads and Areas of Outstanding Natural Beauty, permission should be refused for major development other than in exceptional circumstances, and where it can be demonstrated that the development is in the public interest. Consideration of such applications should include an assessment of:*

- a) the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy;*
- b) the cost of, and scope for, developing outside the designated area, or meeting the need for it in some other way; and*
- c) any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.”*

*“184. Within areas defined as Heritage Coast (and that do not already fall within one of the designated areas mentioned in paragraph 182), planning policies and decisions should be consistent with the special character of the area and the importance of its conservation. Major development within a Heritage Coast is unlikely to be appropriate, unless it is compatible with its special character.”*

#### *Habitats and biodiversity*

*“185. To protect and enhance biodiversity and geodiversity, plans should:*

- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and*
- b) 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.”*

*“186. When determining planning applications, local planning authorities should apply the following principles:*

- a) 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;*
- b) 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;*
- c) 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*
- d) 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.”*

*“187. The following should be given the same protection as habitats sites:*

- a) potential Special Protection Areas and possible Special Areas of Conservation;*
- b) listed or proposed Ramsar sites; and*
- c) 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.”*

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

3.2.27 *Government Circular: Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System (ODPM, 2005)*

This provides guidance on the application of English law relating to planning and nature conservation, complementing the expression of national planning policy in the NPPF. In the context of planning applications, the circular includes guidance on the following:

- Internationally designated sites;
- Nationally designated sites;
- Conservation of habitats and species outside designated sites;
- Conservation of species protected by law;
- Environmental Impact Assessment;
- Strategic Environmental Assessment; and
- The 2000 Water Framework Directive.

3.2.28 *Local Planning Policy*

Local planning policy relating to wildlife and nature conservation is provided by the *Wokingham Borough Local Development Framework: Adopted Core Strategy Development Plan Document* (2010):

**CP7 - Biodiversity**

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

*Development:*

*A) Which may harm county designated sites (Local Wildlife Sites in Berkshire), whether directly or indirectly, or*

*B) Which may harm habitats or, species of principle importance in England for nature conservation, veteran trees or features of the landscape that are of major importance for wild flora and fauna (including wildlife and river corridors), whether directly or indirectly, or*

*C) That compromises the implementation of the national, regional, county and local biodiversity action plans,*

*will be only permitted if it has been clearly demonstrated that the need for the proposal outweighs the need to safeguard the nature conservation importance, that no alternative site that would result in less or no harm is available which will meet the need, and:*

- i) Mitigation measures can be put in place to prevent damaging impacts; or*
- ii) Appropriate compensation measures to offset the scale and kind of losses are provided.”*

**CP8 - Thames Basin Heaths Special Protection Area**

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

- 3.2.29 Relevant policies from the *Wokingham Borough Development Plan: Adopted Managing Development Delivery Local Plan (2014)* includes:

**Policy CC03: Green Infrastructure, Trees and Landscaping**

*“1. Green Routes and Green Route Enhancement Areas are defined on the Policies Map.  
2. Development proposals should demonstrate how they have considered and achieved the following criteria within scheme proposals:*

- a. Provide new or protect and enhance the Borough’s Green Infrastructure networks, including the need to mitigate potential impacts of new development*
- b. Promote accessibility, linkages and permeability between and within existing green corridors including public rights of way such as footpaths, cycleways and bridleways*
- c. Promote the integration of the scheme with any adjoining public open space or countryside*
- d. Protect and retain existing trees, hedges and other landscape features*
- e. Incorporate high quality, ideally, native planting and landscaping as an integral part of the scheme.*

*3. Development proposals which would result in the loss, fragmentation or isolation of areas of green infrastructure will not be acceptable.*

*4. Development proposals within the River Valley areas shall improve or contribute toward:*

- a. The establishment of a Loddon/ Blackwater riverside footpath and bridleway, as defined on the Policies Map, to accommodate dual use*
- b. The establishment of a riverside footpath and cycleway to accommodate dual use along the Emm Brook*
- c. Opportunities for improvements to green infrastructure to help minimise flood risk”*

**Policy TB23: Biodiversity and Development**

*“1. Sites of national or international importance are shown and sites of local importance are defined on the Policies Map.*

*2. Planning permission for development proposals will only be granted where they comply with policy CP7 – Biodiversity of the Core Strategy and also demonstrate how they:*

- a. Provide opportunities, including through design, layout and landscaping to incorporate new biodiversity features or enhance existing*
- b. Provide appropriate buffer zones between development proposals and designated sites as well as habitats and species of principle importance for nature conservation*
- c. Ensure that all existing and new developments are ecologically permeable through the protection of existing and the provision of new continuous wildlife corridors, which shall be integrated and linked to the wider green infrastructure network.”*

- 3.2.30 Relevant policies from the *Finchampstead Neighbourhood Development Plan 2022 – 2038* adopted in September 2023 includes:

**Policy IRS5 - Ecologically important areas and Biodiversity**

*“Development proposals should conserve and enhance the natural environment and green spaces of the area, specifically biodiversity areas set out in Figure 23 and the TVERC Survey 2019 (Annex M TVERC Report) wherever practicable.*

*The Plan area abuts the Thames Basin Heaths Special Protection Area (SPA), specifically Bramshill Site of Special Scientific Interest (SSSI). All development resulting in a net gain in dwellings or other recognised pathway to likely significant effects, alone or in-combination, on the Thames Basin Heaths SPA must provide sufficient information to allow assessment of the effect and demonstrate how, through secured avoidance and mitigation*

measures if required, no adverse effect will occur in accordance with saved policy NRM6 of the South-East Plan and policy CP8 from Wokingham BC's Core Strategy to 2026.

As appropriate to their scale, nature and location development proposals should demonstrate that:

- They will not have an unacceptable impact on local biodiversity or the network of sites designated as of importance for nature conservation, as evidenced through a robust specialist independent survey report, which is supported by the Borough's Ecological Adviser. The assessment should consider impacts on the site and on connections between sites important for biodiversity.
- There are no alternatives with less harmful impacts.
- They provide a net gain of at least 10% over base value using a robust metric. Where a loss of biodiversity on site is demonstrably unavoidable, development will only be acceptable if off site compensation measures are secured to ensure the creation of like-for-like or better distinctiveness habitats so a minimum 10% gain of biodiversity overall is achieved.
- All water courses and ditches are protected from any contamination or interruption to natural flow.
- Compensation through suitable alternatives of any loss of bird nesting habitat is secured.
- They take any opportunities to protect, enhance and extend wildlife corridors between existing open spaces and habitats as a means of mitigating the impacts of development on biodiversity.
- They conserve the environment for nocturnal species, through the avoidance of lighting and mitigating the impact of external lighting likely to increase night-time human presence.
- They contain measures that will help to mitigate the impacts of, and adapt to, climate change with reference and adherence to the Wokingham Borough Council Climate Change action plan.

All development which would result in a net gain in dwellings or other recognised pathway to likely significant effects, alone or in-combination, on the Thames Basin Heaths SPA must provide sufficient information to allow assessment of the effect and demonstrate that no adverse effect will occur through secured avoidance and/or mitigation measures if required."

#### **Policy IRS6 - Trees**

"1. Development proposals should seek to retain mature or important trees, groups of trees or woodland on site.

2. Proposals should clearly identify the trees, the constraints and root protection areas, any trees to be removed, and state how the health of the trees on the site and those influencing from neighbouring sites including the highway will be protected during demolition and construction, including that of installing utilities, drainage, and landscaping.

3. Where removal of a tree or group of trees of recognised importance is proposed, a replacement of similar amenity value should be provided on the site.

4. Wherever appropriate, the planting of additional trees should be included in new developments, particularly local species that are in keeping with the character of the area and appropriate to the site/ground conditions. Planting that contributes to the biodiversity of the area and supports green corridors is particularly encouraged."

### **3.3 Phase 1 habitat survey**

3.3.1 The results of the extended Phase 1 habitat survey are presented in map form with target notes in *Figure 1* of this report. A brief non-technical description of the habitats and features across the site is given below. Numbers in brackets refer to target notes.

### 3.3.2 *General description*

In general terms, the site comprises part of a modified grassland field and a soil bund dominated by recently established scrub and tall ruderal vegetation. The field is bordered to the east by a non-native ornamental hedgerow and beyond the western site boundary is a ditch with scattered Bramble scrub and trees and a track. The site is bordered to the north by Parcels 14 and 15 of the wider development which is currently under construction; to the west and south by a future development parcel which currently comprises modified grassland and scrub; and to the east by buildings and grassland. The habitats and features across the site are described below.

### 3.3.3 *Linear features and trees*

The northern half of the eastern site boundary comprises a non-native, ornamental species-poor hedgerow comprising Cherry Laurel, Leylandii Cypress and Elder, to the south of which is a wooden post and electric wire fence which is overgrown with tall grasses and ruderal vegetation (32).

Beyond the western site boundary is a dry ditch with scattered Bramble scrub and Willow and Pedunculate Oak trees, bordering a fence and dirt track. The track supports ephemeral vegetation including Scentless Mayweed, Cock's-foot, Smooth Hawksbeard, Common Yarrow, Hawthorn saplings, Common Bent and Spear Thistle. Beyond the dirt track is a 1-2m wide scrub line supporting Grey Willow, Dog-rose, Oak and Bramble scrub (34).

### 3.3.4 *Scrub and tall ruderal vegetation*

A recently established soil bund/storage pile supporting tall ruderal and scrub vegetation (31). Tall ruderal vegetation present includes Spear Thistle, Common Nettle, Broadleaved Dock and Smooth Hawksbeard and scrub species present include Bramble, Elder, Silver Birch and Dog-rose. There are also piles of deadwood near and within the scrub.

### 3.3.5 *Grassland*

Modified grassland dominates the site (31). Species include Yorkshire Fog, Perennial Rye-grass, False Oat-grass, Cock's-foot, Red Fescue, Common Bent, Creeping Buttercup, White Clover, Doves-foot Cranesbill, Common Vetch, Common Mouse-ear, Scentless Mayweed, Creeping Thistle, Spear Thistle, Common Sorrel, Ragwort, Greater Willowherb, Cleavers, Broadleaved Dock, Common Knapweed, Meadow Vetchling, Forget-me-not, Fleabane and Self-Heal.

### 3.4 Specialist surveys

#### 3.4.1 Bat survey (Figure 2 and Appendix C)

A suite of bat surveys was carried out in 2022 of the site and wider site and comprised a Phase 1 bat scoping survey to identify trees and buildings providing suitable features for roosting bats, followed by Phase 2 roost surveys comprising emergence/re-entry surveys to determine the presence/likely absence of bats within potential roosts and, where present, identify species and numbers. In addition, bat activity surveys were carried out to provide an assessment of the importance of the site and wider site for foraging and commuting bats. Further to this, in August 2023 an updated Phase 1 bat scoping survey was carried out to identify any changes in bat roosting potential of the features present within the Land South of Parcel 15 site. These surveys provided updates to bat surveys undertaken of the site and wider site by Entec in 2008, Amec in 2012, Royal Haskoning DHV in 2014 and HDA between 2017-2019.

No bat roosts have been recorded within the Land South of Parcel 15 site. *Table 3* below details the results of the updated Phase 1 bat scoping survey carried out in August 2023. The locations of the trees with bat roost potential associated with the Land South of Parcel 15 site are identified in *Figure 2*.

**Table 3:** Results of Phase I bat scoping survey

| Tree ref <sup>*,**</sup> | Species         | Findings                                                                                                                                    | Bat Roost Potential (BCT, 2016) |
|--------------------------|-----------------|---------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------|
| 2                        | Pedunculate Oak | Broken branch on northern aspect which appears hollow. Two possible openings into trunk where large branches have torn away from main stem. | High                            |
| 4                        | Pedunculate Oak | Two dead branches, one with large split and the other with a potential cavity on western aspect.                                            | Moderate                        |
| 5                        | Pedunculate Oak | Possible cavity on western aspect.                                                                                                          | Low                             |
| 7                        | Dead            | Limited features of bat roosting potential including narrow cracks in branches and a hole in trunk of limited depth.                        | Low                             |
| 9                        | Pedunculate Oak | Dead branch with a possible opening on western aspect.                                                                                      | Low                             |

*\*Tree reference numbers relate to those used for the Tree Survey (RPS, 2017).*

*\*\* Trees 28 and 29 identified as having potential to support roosting bats in 2022 (HDA, 2023) were collapsed in August 2023 and subsequently no longer had potential to support roosting bats.*

The suite of bat activity transect, automated detector and emergence/re-entry surveys confirmed the presence of at least five bat species/species groups using the site and wider site for foraging and commuting, with varying levels of activity observed throughout the surveys. The bat species/species groups recorded were: Common Pipistrelle, Soprano Pipistrelle, Noctule, *Myotis* sp. bat and Brown Long-eared bat. Bat activity within the Land

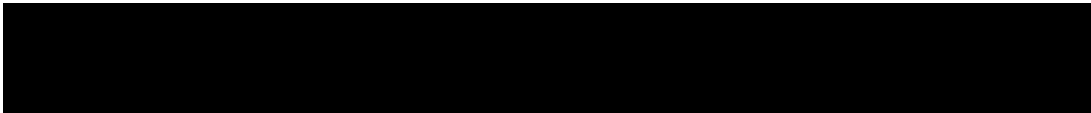
South of Parcel 15 site was limited to one pass by a Soprano Pipistrelle, however in the wider site the bat activity survey identified widespread foraging by Common and Soprano Pipistrelle, particularly in association with woodlands and hedgerows bordering the grassland and arable fields. Noctule, *Myotis* sp. bat and Brown Long-eared bat were recorded on an occasional basis within the wider site from similar habitats on a less frequent basis suggesting the site and wider site forms only a small part of a much wider foraging territory for individuals of these species/species groups.

Overall the level of bat activity recorded within the Land South of Parcel 15 site was considered to be low, relative to the size of the site, and similar and better quality foraging and commuting opportunities are relatively widespread in the wider site and wider area. Recommendations to maintain and enhance opportunities for foraging and roosting bats at the site during and following development are provided in *Section 5*.

The full findings of 2022 bat surveys undertaken at the site and wider site, and key findings of previous survey work where relevant, are given in *Appendix C* and the plan showing the updated Phase 1 bat scoping survey for the Land South of Parcel 15 site is given in *Figure 2*.

#### 3.4.2





#### 3.4.3 *Reptile survey (Appendix E)*

A reptile survey of the site and wider site was most recently undertaken between September and October 2023. The extent of the survey is shown in the plan provided in Appendix A of the 2023 *Reptile Survey Report and Site-Wide Outline Reptile Mitigation Strategy* provided in Appendix E.

Although no reptiles were recorded at the site or the wider site during the updated 2023 reptile survey, previously low numbers of Slow-worm, Grass Snake and Common Lizard have been recorded within the site and wider site. On this basis it is conceivable that very low numbers of Slow-worm, Grass Snake and Common Lizard may remain present at the site. The site is therefore considered to support very low numbers of Slow-worm, Grass Snake and Common Lizard and as such does not qualify as a SSSI, SINC or Key Reptile Site. The site is considered to be of no more than site value for Slow-worm, Grass Snake and Common Lizard.

The full findings of the reptile survey, and key findings of previous survey work where relevant, are given in Appendix E.

#### 3.4.4 *Great Crested Newt survey (Appendix F)*

Great Crested Newts typically have a maximum routine migratory range of 250m away from breeding ponds during terrestrial phases (Cresswell and Whitworth, 2004) and there are waterbodies both within the wider site and within 300m of the wider site boundary which may provide breeding habitat for Great Crested Newts. In addition, habitats within the site and wider site such as hedgerow bases, woodland, grassland and scrub provide suitable terrestrial habitat for Great Crested Newts. A Habitat Suitability Index (HSI) assessment and Great Crested Newt eDNA sampling survey of waterbodies in the vicinity of the site and wider site was most recently undertaken in June 2023, with a previous survey undertaken in 2018. The extent of the most recent survey is shown in the plan provided in Appendix A of the 2023 *Great Crested Newt HSI and eDNA Survey Report* provided in Appendix F.

The surveys indicates that it is highly unlikely that Great Crested Newts are present within the site or wider site during either breeding or terrestrial phases.

The full findings of the 2023 Great Crested Newt survey, and key findings of previous survey work where relevant, are given in *Appendix F*.

#### 3.4.5 *Plants*

No protected species of plant were recorded during the extended Phase 1 habitat surveys or other ecological site work carried out between 2017 and 2024.

During consultation with Natural England, Japanese Knotweed was identified in the wider area (Royal Haskoning, 2014). In addition during an updated Phase 1 habitat survey, Variegated Yellow Archangel was recorded approximately 470m north of the site, Rhododendron was recorded approximately 720m north-west of the site in association with Parcel 7 during an invasive species walkover survey and an unidentified Cotoneaster species was recorded approximately 200m south-west of the site in association with the proposed sports and allotments area of the wider site during an invasive species walkover survey (HDA, 2023a).

No species listed under Schedule 9 of the 1981 Wildlife and Countryside Act (as amended) were recorded during the invasive plant species walkover survey carried out in August 2023.

The full findings of the Phase 1 habitat survey are given in *Figure 1* and the findings of the invasive plant species walkover survey are given in *Appendix B*.

## **4 NATURE CONSERVATION EVALUATION**

### **4.1 Habitats**

4.1.1 The habitats within the site have been assessed with consideration given to the criteria summarised in *Appendix G* of this report (Ratcliffe 1977; CIEEM 2018). A summary of the site habitat evaluation is given in *Table 4*. Numbers in brackets refer to target notes.

**Table 4:** Site habitat evaluation

| Value           | Habitats present                                                                                                                                   |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------|
| International   | None                                                                                                                                               |
| National        | None                                                                                                                                               |
| Regional        | None                                                                                                                                               |
| County          | None                                                                                                                                               |
| District        | None                                                                                                                                               |
| Local           | <b>High:</b><br>- None<br><b>Moderate:</b><br>- None<br><b>Low:</b><br>- Network of dense scrub, hedgerows and trees (in combination) [31, 32, 34] |
| Negligible/Site | All other habitats recorded                                                                                                                        |

4.1.2 No habitats of international, national, regional, county or district nature conservation interest pertain to the site.

4.1.3 The network of hedgerows, treelines and dense scrub within and bordering the site are considered in combination to be of at most **low local value** as although in general they are individually considered to be of no more than site interest due to their limited diversity and abundance in the wider landscape, together they combine to form a network of semi-natural habitats across the site, providing habitat connectivity around the site and contributing towards that of the wider area.

4.1.4 All other habitats recorded within the site, including the modified grassland field, are regarded as being of no more interest than at the 'site' level and in a local context are considered to be of **negligible** nature conservation value in their own right.

## **4.2 Species**

### **4.2.1 Bats**

No trees with bat roost potential are located within the site, however 4 trees (Trees 2, 4, 5 & 7) with bat roost potential are located beyond the western site boundary. It is understood that all trees with bat roost potential bordering the site will be retained (RPS, 2024). Notwithstanding this, measures to maintain the integrity of retained roosting opportunities within and adjacent to the site are recommended in *Section 5* below and in the 2022 Bat Survey Report (*Appendix C*).

At least five species/species groups of bats were recorded using the site and wider site for foraging and commuting, with varying levels of activity observed throughout the surveys. Overall the level of bat activity recorded was generally considered to be low, relative to the size of the site, and similar foraging and commuting opportunities are relatively widespread

in the wider area. As a whole the site is considered to be of no more than **site value** for foraging bats. Recommendations to maintain and potentially enhance opportunities for foraging and roosting bats at the site during and following development of the site are provided in *Section 5*.

#### 4.2.2 *Dormice*

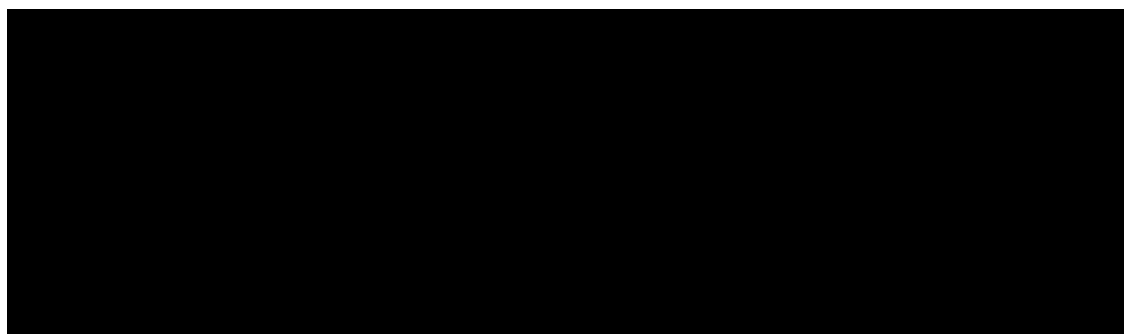
No evidence of Dormouse was recorded during a survey of the site and wider site in 2011 (Royal Haskoning DHV, 2014). However, during the desk study one record of Dormouse was obtained relating to feeding signs located approximately 1.7km to the west of the site, dating from 2023.

The Land South of Parcel 15 site of highly limited interest for Dormice, with interest limited to the species-poor ornamental hedgerow located along part of the eastern site boundary, the recently created soil bund dominated by scrub and tall ruderal vegetation in the centre of the site and the line of trees and scrub located beyond the western site boundary. These features are species-poor, with limited connectivity to suitable habitats in the surrounding area. The site is therefore considered to be of negligible value for Dormice and this species is not considered further in this assessment.

#### 4.2.3 *Water Vole and Otter*

The dry ditch located beyond the western site boundary provides highly sub-optimal habitat for Otter and Water Vole due to its small size, absence of water and lack of connectivity to more suitable waterbodies/watercourses in the surrounding area. The site is therefore considered to be of negligible value for either of these species and these species are not considered further in this assessment.

#### 4.2.4



#### 4.2.5 *Birds*

The avian habitats of greatest interest are the hedgerow, trees and scrub habitats, within and bordering the site. The habitats present within the site for breeding birds are relatively common and widespread in the surrounding area and the breeding bird assemblage at the site is likely to be typical of the site surrounds. It is however possible that common and

widespread breeding birds are nesting within the site. In view of the abundance of similar habitat in the wider area the site is unlikely to be of local ornithological significance. Notwithstanding this, all breeding birds should be afforded the basic level of protection afforded by the 1981 Wildlife and Countryside Act (as amended). This is discussed further in *Section 5* below.

#### 4.2.6 *Reptiles*

The site is considered to support very low numbers of Slow-worm, Grass Snake and Common Lizard. Habitats suitable for reptiles within the site include grassland, scrub and hedgerow bases. These habitats are however abundant in the wider site and wider area. Furthermore, Slow-worm, Grass Snake and Common Lizard are common and widespread reptile species. It is therefore considered that the site is of no higher than **site value** for reptiles. Notwithstanding this, development proposals should maintain opportunities for the local reptile population together with the protection afforded to all reptiles under the 1981 Wildlife and Countryside Act (as amended). This is considered further in *Section 5* below.

#### 4.2.7 *Great Crested Newts*

During the desk study, 7 records of Great Crested Newts were obtained for within 2km of the site. The closest records relates to two field records located approximately 70m to the east of the site, dating from 2014 and 2015. HSI and Great Crested Newt eDNA sampling surveys of waterbodies in the vicinity of the site and wider site were however carried out in 2018 and 2023 which indicated that it is highly unlikely that Great Crested Newts are present within the site or wider site during either breeding or terrestrial phases. The site is therefore considered to be of negligible value for this species and this species is not considered further in this assessment.

#### 4.2.8 *Invertebrates*

The site is likely to support an invertebrate assemblage typical of the wider area, and it is unlikely that notable populations of invertebrates are present. Notwithstanding this, habitats within and bordering the site including hedgerows, scrub, grassland and ditch habitats provide opportunities for a range of invertebrate species. Although similar and higher quality habitats are present in the wider area, the proposed development should seek to maintain opportunities for invertebrates at the site and this is discussed further in *Section 5* below.

#### 4.2.9 *Plants*

The site is likely to support a plant assemblage typical of the wider area, and it is unlikely that notable populations of plants are present. In addition, no species listed on Schedule 9 of the 1981 Wildlife and Countryside Act (as amended) have been recorded at the site.

## 5 **ASSESSMENT OF EFFECTS AND MITIGATION PROPOSALS**

### 5.1 **Introduction**

5.1.1 Advice on ecological constraints and opportunities for ecological enhancement was provided throughout the design process. Consequently, measures to avoid and minimise effects on features of ecological interest have been incorporated into the scheme design and are described below alongside any additional mitigation requirements. Ecological enhancement measures have also been incorporated into the scheme where possible in accordance with nature conservation legislation, national planning policy (NPPF, 2023) and the 2006 NERC Act and these are also described together with other potential enhancement opportunities arising from the scheme.

5.1.2 Development proposals for the site include construction of residential development with associated infrastructure. The hedgerow along the eastern site boundary and the ditch/scrub line bordering the western site boundary are proposed to be retained. The development proposals are shown on the *Site Layout* (Omega Architects, 2024) and landscape proposals are shown on the *Landscape Masterplan* (CSA, 2024).

5.1.3 The majority of land affected by the proposed development comprises modified grassland and a soil bund with recently establish scrub and tall ruderal vegetation, which are considered to be of limited nature conservation value in their own right. Furthermore, in the absence of mitigation and avoidance measures the proposals have the potential to affect local populations of protected and notable species described above. This section identifies potential impacts on features of nature conservation interest both within the site and the wider area, and measures to avoid, reduce, mitigate and compensate for such impacts, before discussing the likely residual impacts following development.

### 5.2 **Designated sites**

#### Thames Basin Heaths SPA

5.2.1 The Thames Basin Heaths SPA is located approximately 1.9km from the site and is regarded as being of international nature conservation importance on the basis of the habitats and species it supports.

5.2.2 SPAs are protected by the 2017 Conservation of Habitats and Species Regulations (as

amended) which requires decision making authorities to consider the potential effects of development on designated features both alone and in combination with other plans and projects.

#### *Potential effects*

5.2.3 Potential effects on this internationally designated area resulting from the proposed development, in combination with other plans and projects, for consideration in this assessment include an increase in recreational pressure that may have the potential to adversely affect the integrity of habitats and species for which the Thames Basin Heaths SPA is designated. In view of the size, location and nature of the application scheme, no other potentially significant effects on this designated site are likely to arise either alone or in combination with other plans or projects.

5.2.4 The proposed development will result in a net gain of up to 48 residential units within 400m-5km of the SPA boundary. In view of the limited scale of the proposed development in the context of that already present in the vicinity of the 8309ha SPA, the provision of substantial areas of public open space within the wider site as part of the consented scheme (including a Suitable Alternative Natural Greenspace (SANG)), and the ease of access from the site to other extensive areas of accessible greenspace (such as the nearby Shepperlands Farm BBOWT reserve), it is certain that the proposed development would not result in any significant effects on the integrity of the SPA in isolation. Notwithstanding this, it is conceivable that the proposed development may contribute to a cumulative increase in recreational pressure in combination with other plans or projects. Therefore, in keeping with the *Thames Basin Heaths Special Protection Area Delivery Framework* (Thames Basin Heaths JSPB, 2009) and Thames Basin Heaths SPA guidance on Wokingham Borough Council's website<sup>7</sup> mitigation will be required as detailed below.

#### *Mitigation proposals*

5.2.5 The measures outlined below will be employed to avoid the potential effects of increased recreational pressure arising from the proposed development at the Land South of Parcel 15 site, as identified above.

5.2.6 In accordance with Wokingham Borough Council's guidance, any net gain in residential development at the site will need to be accompanied by provisions towards alternative greenspace to deflect any potential increase in recreational pressure on the SPA which

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<sup>7</sup> <https://www.wokingham.gov.uk/planning-policy/advice-developers/thames-basin-heath-special-protection-area>

might otherwise arise in combination with other plans or projects. For the Land South of Parcel 15 site it is proposed that this is achieved through residual capacity of the SANG constructed within the wider site.

- 5.2.7 In addition, Wokingham Borough Council would require payment of SAMM tariffs towards the Strategic Access, Management and Monitoring of the SPA. These payments are used for management of visitors to the SPA and monitoring the efficacy of mitigation.

*Residual effects*

- 5.2.8 Subject to the provision of SANG and SAMM avoidance measures in line with Wokingham Borough Council's guidance, no impact on the Thames Basin Heaths SPA would be expected to arise as a result of the proposed development either alone or in combination with other plans or projects. An Appropriate Assessment of the proposed development can subsequently conclude that any increase in recreational pressure arising from the proposed development on the Thames Basin Heaths SPA will not result in any significant effect on this designated area, either alone or in combination with other plans or projects.

*Other designated areas*

- 5.2.9 No other statutory or non-statutory sites are considered to have potential to be adversely affected by the proposed development, either alone or in combination with other plans or projects. This is due to a combination of factors including the nature and scale of the proposed development, the distance of the site from the designated areas, mitigation and avoidance measures proposed in relation to the Thames Basin Heaths SPA described above, and accessibility and/ or robustness of the habitats for which the sites are designated.

**5.3 Grassland**

5.3.1 *Potential effects*

The proposed development will require the removal of approximately 1.93ha of improved grassland to facilitate construction of residential dwellings and associated infrastructure. The improved species-poor grassland is considered to be of negligible nature conservation value, owing to its limited species diversity and similar habitat being abundant in the wider area. The majority of the improved grassland will be lost to the proposed development. In the absence of mitigation, where these habitats are to be removed, there is likely to be a net loss of habitat as well as some loss of habitat continuity across the site and the wider area.

### 5.3.2 *Mitigation and enhancement proposals*

Approximately 0.12ha of species-rich grassland (Germinal Seeds Ltd WFG8 Hedgerow and Shaded Areas Mix (or similar)) will be created along the eastern and western boundaries of the site. Further to this, approximately 2.1ha of grassland will be enhanced to species-rich grassland within the existing SANG and managed for both wildlife and amenity purposes as indicated on the *BNG Technical Note* (HDA, 2024e). Recommendations to maximise the value of grassland resource of the site through the proposed development include:

- Long-term management of the enhanced and newly-created grassland habitats to create a species-rich meadow grassland/rough grassland mosaic to increase their floristic diversity and structure;
- Where management by cutting is employed, all arisings should be removed to prevent accumulation of nutrient levels;
- Cuts on established grassland should be carried out no more than twice annually at the end of May and the end of September and should be timed to allow seed set of target species;
- Selected areas of meadow grassland should be left uncut during each mowing period in order to provide additional refuge habitat for reptiles, small mammals and invertebrates and encourage a more diverse flora;
- Areas managed as rough grassland should be cut every 2-3 years in order to establish a tussocky sward favoured by small mammals, reptiles and hibernating invertebrates;
- If required, injurious weed species (e.g. Creeping Thistle) should be controlled, particularly whilst the grassland is becoming established. This will be achieved either through topping before flowering or using spot treatment with herbicide;
- No fertilisers, lime or manure should be added to any areas of the species rich grassland habitats, including the meadow/ rough grassland mosaic; and
- Scrub areas should be managed to maintain species diversity and prevent encroachment into the grassland areas or succession into woodland.

### 5.3.3 *Residual effects*

Although the proposed development is expected to result in a reduction in the current extent of grassland habitats within the site, it is recommended that the above measures to maximise the value of newly created and enhanced areas of grassland are undertaken. Subject to implementation of these measures across all informal grassland habitats indicated on the *Landscape Masterplan*, it is considered that the proposed development would not result in a significant impact on the grassland resource in a local context.

## **5.4 Scattered mature trees, hedgerows and scrub**

### **5.4.1 *Potential effects***

The development proposals require the removal of approximately 0.2ha of dense Bramble scrub/tall ruderal vegetation and 0.03km of non-native, ornamental hedgerow to accommodate the development. The scrub and mature tree habitats located beyond the western site will be retained.

The mature trees, hedgerows and scrub habitats provide habitat for wildlife including Badgers, bats, reptiles, invertebrates and birds. The network of trees, hedgerows and scrub also act as wildlife corridors for the movement of these species across the site. In the absence of mitigation, where these habitats are to be removed, there is likely to be a net loss of habitat as well as some loss of habitat continuity across the site and the wider area.

### **5.4.2 *Mitigation and enhancement proposals***

The development has been designed to ensure that loss of existing hedgerows, trees and scrub habitats is limited and where possible these features are retained and enhanced within areas of informal open space within the proposed development. Notwithstanding this, in line with the *Landscape Masterplan* the following measures will be implemented to minimise the effect of the loss of trees, hedgerows and scrub and to minimise the effect of the development on retained trees, scrub and hedgerow habitats:

#### **General/scrub:**

- Development design has avoided the use of retained hedgerows, mature trees and scrub as residential curtilages;
- New areas of species-rich scrub, hedgerow and tree planting will be established within areas of proposed landscape planting on the eastern, southern and western site boundaries, thereby creating new links between areas of retained and newly created habitat within and adjacent to the site;
- Further ornamental wildlife friendly tree and shrub planting will be carried out within areas of public open space and the gardens of the new development. Where appropriate this will include fruit and nut producing species and nectar and pollen rich species in order to maximise benefits for wildlife;
- Construction activities will avoid works within the Root Protection Area (RPA) of the retained mature trees and hedgerows. Where incursion is unavoidable then works will be carried out in accordance with the protocols outlined in an

agreed arboricultural method statement and supervised by a suitably qualified arboriculturalist;

- New and supplementary hedgerow, tree and scrub planting will include a mix of native species typical of the local area, sourced from stock of local provenance where available;
- Lighting will be restricted in the vicinity of new and retained scrub, trees and hedgerows during both the construction and operational phases in order to maintain their value for nocturnal wildlife. Further details are provided in *Section 5.7.2*; and
- Scrub habitats will be managed to maintain species diversity and prevent succession into woodland.

#### Hedgerows:

- Hedgerows will be managed to encourage bushier growth and increased fruiting for the benefit of birds and other wildlife;
- Approximately 0.15km of species-rich hedgerow will be established along the southern site boundary; and
- Where possible hedgerows will be complemented by a rough and/ or meadow grassland buffer of at least 3m.

#### Mature trees:

- No trees are proposed to be lost as a result of the development proposals. In addition, approximately 51 additional trees will be planted in public open space across the site, with further trees proposed within residential gardens;
- Maintenance and enhancement of standing and fallen deadwood habitats where safe to do so, including use of management techniques such as veteranisation of selected retained mature trees to promote deadwood.

Where appropriate these measures would be reflected in the detailed landscape scheme and it is recommended are subject of a Management Plan ensuring establishment and long-term management of a coherent network of semi-natural habitats across the site.

#### 5.4.3 *Residual effects*

Although it is likely that the development will result in a reduction in the current extent of hedgerow and scrub habitats within the site, subject to implementation of the measures outlined above, the proposed removal of areas of scrub and hedgerow from the site is not considered to represent significant losses in a local context and would maintain a network of habitats allowing the movement of wildlife across and around the site.

## **5.5 Ditches**

### **5.5.1 *Potential effects***

The development proposals show that the ditch located beyond the western site boundary will be supplemented by a green corridor. However, in the absence of mitigation and avoidance measures the proposed development has the potential to indirectly effect the ditch through impacts on the quality, quantity and constancy of water entering the ditch during the construction and operational phases. These considerations are described below.

### **5.5.2 *Mitigation and enhancement proposals***

The development has been designed to ensure that the ditch bordering the site is supplemented by a green corridor.

Pollution avoidance measures to be implemented in the vicinity of the ditch during the construction period should include the following:

- Workers should be fully briefed on ecologically sensitive habitats and all construction activities should be conducted in accordance with the Pollution Prevention for Businesses guidance ([www.gov.uk/guidance/pollution-prevention-for-businesses#construction-inspection-and-maintenance](http://www.gov.uk/guidance/pollution-prevention-for-businesses#construction-inspection-and-maintenance));
- The design of the surface water drainage scheme for the proposed development should also seek to maintain the quality, quantity and constancy of water entering the watercourses; and
- All hazardous liquids and chemicals should be stored and utilised in accordance with the 2002 Control of Substances Hazardous to Health (COSHH) Regulations (HSE, 2002).

Measures to maintain the value of the ditch network for nocturnal wildlife through sensitive use of lighting are provided in *Section 5.7.2*.

### **5.5.3 *Residual effects***

Although it is possible that the development could result in impacts on the quality, quantity and constancy of water entering the ditch, subject to implementation of the measures outlined above, the proposals for the site are not considered to represent significant impacts in a local context.

## **5.6 Other habitats**

**5.6.1** The proposed development provides opportunities for the enhancement of proposed built areas of the site, including formal gardens and surrounding scattered trees, shrubs and

hedgerows, for wildlife through appropriate management and new planting. This could be achieved through the implementation of the following:

- Use of native scrub or hedging as boundary features where appropriate;
- Planting of a diverse range of flowers and shrubs, including fruiting trees and shrubs, nectar and pollen-rich plants, providing possible food sources for birds, invertebrates and mammals;
- Provision of compost heaps, providing habitat for amphibians and invertebrates;
- Use of arisings from open space management to create log and brash piles within informally managed areas for sheltering amphibians, invertebrates and small mammals.

To ensure private dwellings and their gardens are of benefit to a range of wildlife, in addition to the planting proposals described and shown on the *Landscape Masterplan* (CSA, 2024), Hedgehog highways will be integrated in garden fences and walls across the site. Hedgehogs travel around 1 mile every night through a range of habitats, including gardens. Fences and walls inhibit the movement of Hedgehogs within their territory, reducing the amount of land available to them ([www.hedgehogstreet.org](http://www.hedgehogstreet.org)). In order to separate the gardens of private properties, the provision of hedgerows, fences and walls is proposed. Where possible hedgerows will be provided as these provide habitat for a range of species and do not inhibit the movement of Hedgehogs. Where fences and walls are proposed, holes in these potential barriers will be provided to allow the movements of Hedgehogs and other terrestrial species between the gardens (e.g. [www.jacksonsfencing.co.uk/product/sc\\_667610/hedgehog-gravel-board-for-use-with-slotted-posts-1.83m-x-140-x-28mm-incl.1-x-end-packer-1-x-length-packer-jakcured](http://www.jacksonsfencing.co.uk/product/sc_667610/hedgehog-gravel-board-for-use-with-slotted-posts-1.83m-x-140-x-28mm-incl.1-x-end-packer-1-x-length-packer-jakcured) or similar). These holes can be as small as 13x13cm, which are sufficient for Hedgehogs to pass through but too small for the majority of pets. These holes will be provided at a rate of one per garden fence/wall to ensure multiple routes through the residential gardens are accessible to Hedgehogs. In order to ensure these holes are not blocked by householders and to raise awareness of the issue, holes will be marked with signs to inform householders on the reason for their presence:



(Images sourced from [www.hedgehogstreet.org](http://www.hedgehogstreet.org))

The proposed location of these features is indicated in the *Ecological Proposals Plan* (Figure 3).

## **5.7 Bats**

### **5.7.1 *Potential effects***

The *Site Layout* indicates that no trees identified as having potential to support roosting bats will be lost as a result of the proposed development.

Levels of bat foraging and commuting activity recorded during the bat surveys were considered low, relative to the size of the site, and predominantly related to relatively common and widespread bat species. The development proposals show the retention of the hedgerow and tree/scrub line bordering the site. The development of the site will however result in the loss of limited areas of foraging habitat where buildings and hardstanding take the place of areas currently dominated by grassland and scrub/tall ruderal habitats. Although the field interior is currently of limited value for foraging bats, the scrub/tall ruderal soil bund is of higher interest for foraging bats and complements the grassland habitats. Although it is expected that the proposed gardens and areas of open space within the proposed development will provide new opportunities for foraging bats as these mature, recommendations to maximise future opportunities for foraging and commuting bats at the site during the construction and operational phases of the proposed development are provided below.

### **5.7.2 *Mitigation and enhancement proposals***

The measures outlined below should be implemented in order to avoid any long-term adverse effects on the favourable conservation status of the local bat population. These are based on the more detailed measures to maintain the favourable conservation status of bats provided in the *2022 Bat Survey Report* provided in *Appendix C*.

#### Roosting bats

##### ***Works to trees***

Although the development proposals indicate that no trees with potential to support roosting bats will be lost as a result of the proposed development, due to the presence of opportunities for roosting bats within a number of trees bordering the site and the highly mobile nature of bats, an approach to works affecting trees lost to development or affected by future maintenance works (e.g. for health and safety) is set out below. This involves either further survey prior to works commencing to confirm the continued absence of roosting bats or a sensitive approach to works.

In the event that retention of a tree/tree feature identified as providing opportunities for roosting bats is not possible, due to the transitory nature with which bats may use roost sites in trees, it is recommended that felling/pruning works are carried out in accordance with the following procedure<sup>8</sup>:

1. In the event that future pruning or felling works for reasons of health and safety are required to trees with moderate or higher potential to support roosting bats (PRF–M), trees should first be subject to three aerial inspection surveys between May to September, with at least two of the surveys conducted from May to August by a licensed bat worker to inspect potential roost sites for bats (BCT, 2023). If a bat roost is encountered during survey of a tree not covered under an EPS licence, then felling/works to this tree should be delayed until an EPS licence has been sought and obtained from Natural England.
2. Trees with moderate or higher potential to support roosting bats (PRF–M), which an exhaustive climbed inspection is not possible or practical, should be subject to three emergence/re-entry surveys following current BCT best practice guidelines (BCT, 2023) to confirm the absence of roosting bats prior to any works affecting the tree commencing.
3. Trees that are classified as low potential (PRF–I), should be aerial inspected immediately in advance of works to confirm the absence of roosting bats prior to any works affecting the tree commencing. Trees that are unsuitable for aerial inspections and/or have not been subject to an emergence survey immediately in advance of works should be ‘soft felled’ under the supervision of a suitably qualified ecologist. Soft felling involves progressive removal of the tree, using ropes to gently lower sections of tree potentially supporting roosting bats to the ground for inspection by a suitably qualified ecologist. Where appropriate, features should be left on the ground overnight before clearing to allow any bats present to escape.

In the event that a roosting bat is discovered during any of the above works to a tree not covered under an EPS licence, trimming/felling works must cease and Natural England contacted to agree an appropriate course of action. A licence may need to be applied for, and approved, before works can continue.

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<sup>8</sup> Please note the procedure given below differs from that given in the 2022 Bat Survey Report (HDA, 2023) due to the publication of updated good practice guidelines set out by the Bat Conservation Trust in 2023. The procedure detailed in this report accords with the current published guidelines (BCT, 2023).

### ***Maintenance of roosting opportunities***

The integrity of retained roosting opportunities within and adjacent to the site should be conserved through the maintenance of connections to commuting and foraging habitat and sensitive use of lighting throughout the construction and operational phases (see below). In addition, trees not supporting roosting bats at the time of survey have potential to support bats in the future and therefore these trees should be retained and their ability to support roosting bats maintained, where possible to do so.

### ***Further survey***

Bats may occupy roost sites on a seasonal or temporary basis and old roost sites may be abandoned and new roosts occupied within relatively short periods of time. Where appropriate, bat survey work including emergence/re-entry surveys and/or climbing inspections of trees with potential to support roosting bats affected by the proposed development should be updated in advance of development commencing. The guidance of a suitably qualified ecologist should be sought to determine if and when surveys should be updated with regard to the development programme. This would ensure that up-to-date information is available to inform the extent of any mitigation and licensing requirements relating to bats.

### ***Enhancement of roosting opportunities***

The proposed development would provide opportunity to enhance the value of the site for roosting bats in the long-term in accordance with the 2023 NPPF and the 2006 NERC Act through the provision of additional opportunities for roosting bats. CALA Homes Thames Ltd have an 'Urban Wildlife Strategy' in place for all their new developments. As part of this strategy CALA Homes Thames Ltd will incorporate at least one bat roosting features within each house and apartment block. This strategy will be implemented for the site. In order to provide a variety of bat roosting opportunities suitable for a range of bat species, roost enhancement will consist of (or similar) 48 bat boxes on buildings comprising a mix of Ibstock bat boxes, Wildcare soffit bat boxes and Beaumaris Woodstone bat boxes will be incorporated into/on the buildings (suitable for crevice dwelling bat species). These will integrate the location of suitable habitat connections with avoidance of areas with highest potential future light spill. The proposed location of these features is indicated in the *Ecological Proposals Plan (Figure 3)*.

By providing a variety of roosting opportunities in different locations and orientations within the new buildings across the site, a range of roost spaces with varied microclimates could be provided that would offer long-term roosting opportunities for bats throughout the year.

### Foraging and commuting bats

Notwithstanding the current low interest of the site for foraging and commuting bats, wherever possible development proposals should seek to maintain and enhance the value of the site for this group in accordance with 2023 NPPF and the 2006 NERC Act. The *Landscape Masterplan* show the retention and creation of hedgerows and scrub/trees bordering the site. Although it is expected that the proposed gardens and areas of open space within the development area will provide new opportunities for foraging bats as these mature, the following measures are recommended in the *2022 Bat Survey Report* provided in *Appendix C*:

- Enhancement and creation of rough/meadow grassland, woodland, scrub, hedgerows, tree planting, wetland and marginal habitats across the site to provide a variety of high quality foraging habitat for bats.
- Formal planting schemes in residential areas should seek to include pollen and nectar-rich species in order to encourage invertebrate prey for bats.
- A sensitively designed lighting scheme on the edges of the adjacent residential development to ensure minimal impact on bat commuting routes and foraging areas.

A lighting strategy for the site and wider site was prepared to assess the likely effects of the proposed development on external artificial lighting levels and includes information on the baseline lighting conditions within the site (MMA Lighting Consultancy, 2018). The lighting strategy identifies that the environment surrounding the Land South of Parcel 15 site has 'low district brightness' and is categorised as an E2 Environmental Zone in accordance with the ILP Guidance (See *Table 5* below).

**Table 5:** Environmental Zone table

| Zone | Surrounding | Lighting Environment       | Examples                                                 |
|------|-------------|----------------------------|----------------------------------------------------------|
| E0   | Protected   | Dark                       | UNESCO Starlight Reserves, IDA Dark Sky Parks            |
| E1   | Natural     | Intrinsically dark         | National Parks, Areas of Outstanding Natural Beauty etc. |
| E2   | Rural       | Low district brightness    | Village or relatively dark outer suburban locations      |
| E3   | Suburban    | Medium district brightness | Small town centres or suburban locations                 |
| E4   | Urban       | High district brightness   | Town/city centres                                        |

The integrity of roost features and retained and newly created foraging and commuting habitat, both within the proposed development area and its surrounds, should be conserved through the sensitive use of lighting throughout the construction and operational phases of the proposed development. In accordance with the Bat Conservation Trust and Institute of Lighting Professionals guidance (BCT and ILP, 2023) this could be achieved through

employment of a selection of the following measures in the vicinity of retained/newly created areas of suitable foraging habitat and in the vicinity of trees and buildings providing opportunities for roosting bats:

- Use of only the minimum amount of light required for safety and amenity, and minimise upward reflected light.
- Avoidance of bare bulbs or upward-pointing lights. The spread of light should be kept near to or below the horizontal.
- LED lighting with a correlated 'warm' colour temperature of 3000 Kelvin, which should be lowered to 2700 Kelvin (where practical).
- Avoidance of light-spill into adjacent areas through luminaire design or with accessories, such as hoods, cowls, louvres and shields to direct the light.
- Minimisation of the height of lighting columns.
- For pedestrian lighting, use of low level lighting that is as directional as possible and below 3 lux at ground level.
- Where necessary, use of embedded road lights to illuminate roadways and light only high-risk stretches of roads such as crossings and merges.
- Limiting the times that lights are on to provide some dark periods for wildlife through use of timers and/or use automatic dimmers to reduce lighting outside times of peak use.

All detailed external lighting proposals should be reviewed at appropriate design stages by a suitably qualified ecologist.

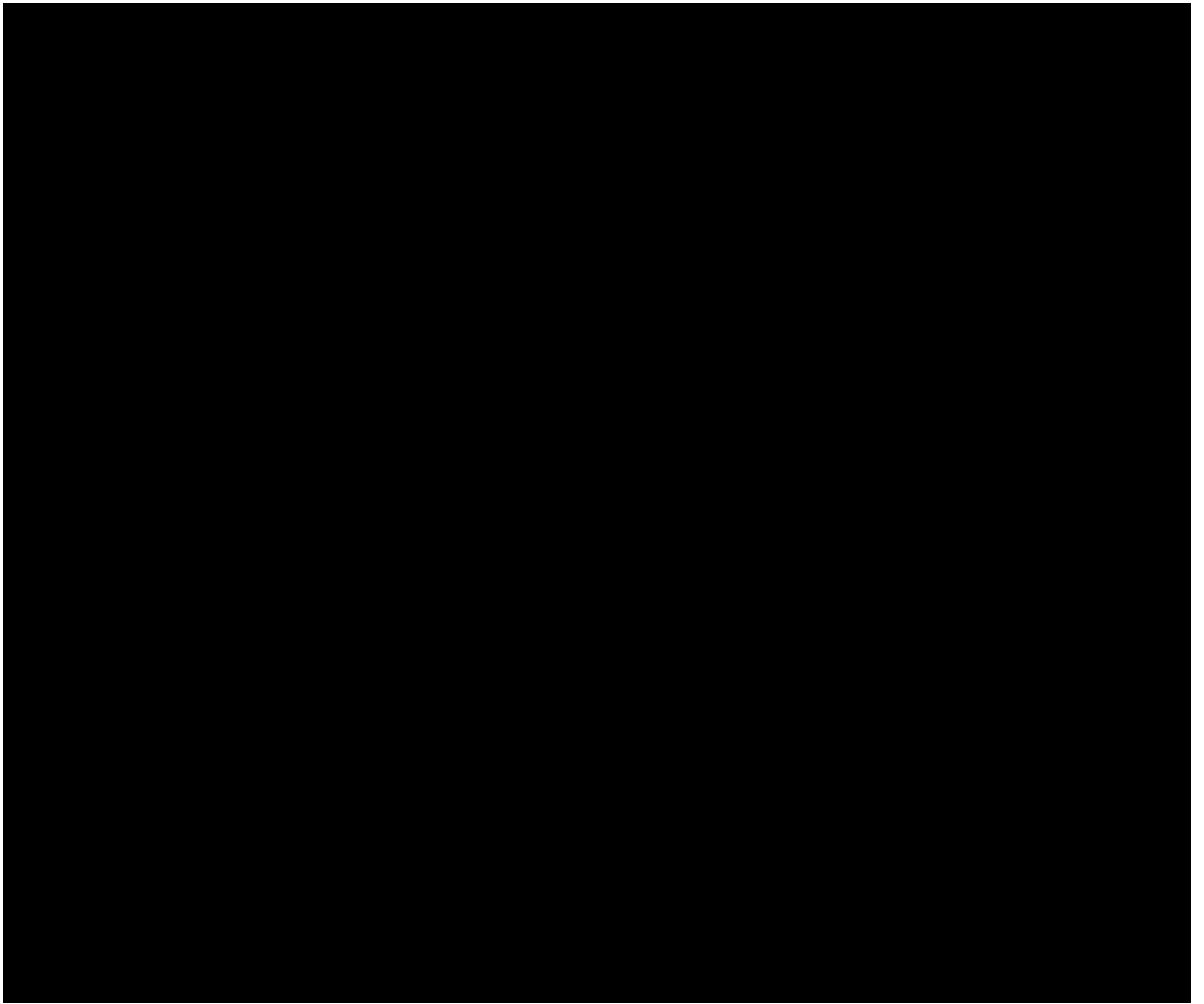
#### 5.7.3 *Residual effects*

Following implementation of the avoidance, mitigation and enhancement measures described above, current knowledge suggests that it is unlikely that the proposed development would have any adverse long-term effects on the favourable conservation status of the local bat population. Development of the site could in fact create opportunity to provide enhanced roosting, foraging and commuting opportunities for the local bat population in the long term.

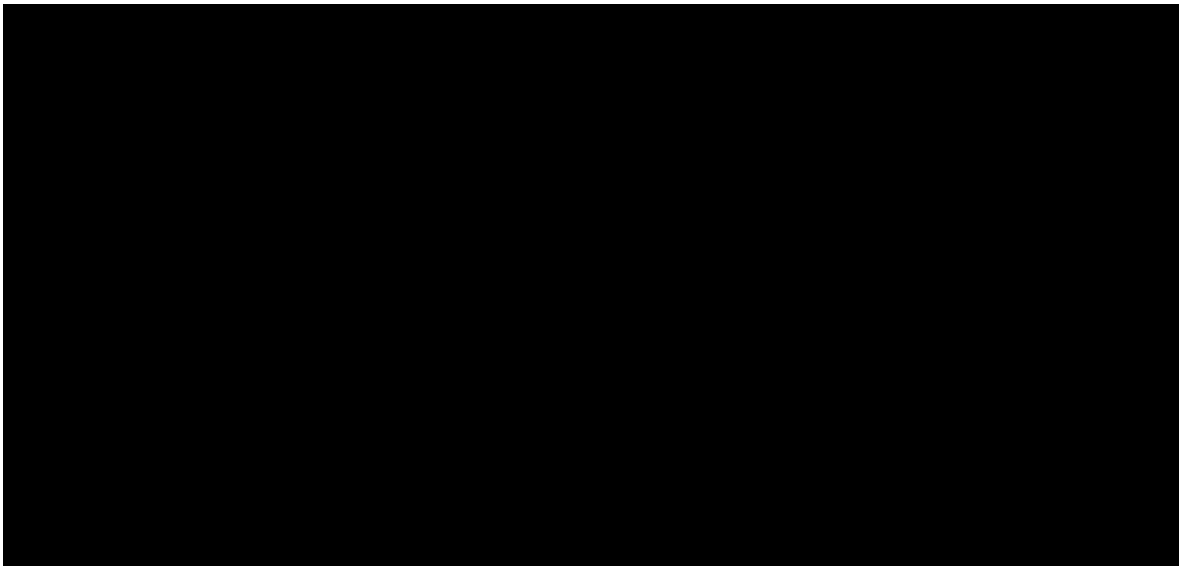
## 5.8

### 5.8.1

5.8.2



5.8.3



## 5.9 Birds

### 5.9.1 *Potential effects*

The proposed development area is currently dominated by an improved grassland field and a soil bund recently colonised with Bramble scrub and tall ruderal vegetation, which are of relatively low value to breeding birds. The *Landscape Masterplan* indicate that habitats of higher ornithological interest including hedgerows, scattered mature trees and scrub bordering the site, will be largely retained within areas of public open space, and habitats providing similar opportunities for birds are relatively abundant in the local area.

Whilst it is unlikely that the proposed works, focused on the areas of the site with relatively low value to breeding birds, would result in significant effects on birds in a local context, where possible development proposals should seek to maintain and enhance opportunities at the site for birds and have due regard to nature conservation legislation protecting nesting birds.

### 5.9.2 *Mitigation and enhancement proposals*

Wherever possible, the development proposals for the site should seek to maintain and enhance opportunities for birds of nature conservation interest recorded holding breeding territories on or over the site. The tree, hedgerow, scrub and grassland habitats indicated in the landscape proposals for the site are expected to maintain opportunities for a range of bird species in the long-term. In order to protect breeding birds at the site and maximise the value of the development for birds, it has been recommended that the following measures be implemented:

- Removal of trees, hedgerows or scrub and/or initial disturbance of open ground should be carried out outside the bird-breeding season (i.e. generally not between March and early September inclusive) unless supervised by a suitably experienced ecologist;
- Enhancement of retained and proposed habitats within proposed public open space including hedgerows, scrub and grassland habitats through the provision of replacement/complimentary species-rich native tree and scrub planting, retention of deadwood habitats where safe to do so, and sensitive management of the existing scrub and hedgerows to improve diversity;
- Use of high value plants for foraging birds within the landscape planting scheme. This should include fruit and nut producing species in addition to those with high pollen and nectar yields (attracting invertebrate prey);

- Hedgerow, scrub and tree management works should be carried out during January/February to allow the majority of fruits and nuts to be eaten prior to cutting/coppicing and to avoid impacts on nesting birds.

As part of CALA Homes Thames Ltd's 'Urban Wildlife Strategy', an average of one Swift nesting feature per house and apartment block will be incorporated. This strategy will be implemented for the site. Nest boxes will comprise 48 bird boxes on buildings comprising a mix of Manthorpe Swift Bird Nesting Brick (built in) or Woodstone Swift nesting box (or similar). These will integrate the location of suitable habitat connections with avoidance of areas with highest potential future light spill. The proposed location of these features is indicated in the *Ecological Proposals Plan (Figure 3)*.

#### 5.9.3 *Residual effects*

The proposed development is unlikely to result in any significant adverse impact on local bird populations. Subject to the implementation of the measures outlined above, it is considered that the proposed development could enhance the current value of the site for certain birds of nature conservation concern such House Sparrow, Swift and Starling.

### 5.10 **Reptiles**

#### 5.10.1 *Potential effects*

The site is considered to support very low numbers of Slow-worm, Grass Snake and Common Lizard. Proposals for the site are expected to result in loss of a proportion of the suitable reptile habitat within the site including grassland and scrub/tall ruderal habitats. In the absence of mitigation and avoidance measures there is the potential for the works to result in contravention of nature conservation legislation relating to reptiles by killing or injuring reptiles during the course of the site clearance works.

#### 5.10.2 *Mitigation and enhancement proposals*

Although very low numbers of Slow-worm, Grass Snake and Common Lizard may be present within suitable habitat across the site, in view of the limited number and distribution of reptiles recorded, and assuming that the site management remains the same (and subsequently the distribution and character of habitats on site does not change significantly prior to construction), a full reptile translocation exercise is not recommended in this instance prior to development commencing. Instead, it is recommended that a controlled approach is taken to site clearance in those areas where potential reptile habitat is to be lost such as scrub, tall ruderal vegetation or grassland in order to displace any reptiles present into areas of contiguous habitat within the site, wider site and wider area. This should be carried out in accordance with the methodology described in the *2023 Reptile*

*Survey Report and Site-Wide Outline Reptile Mitigation Strategy* provided in *Appendix E*. The procedure should be detailed within a reptile method statement to be agreed with the Local Planning Authority.

Habitat retention, creation and enhancement measures outlined above that are compatible with maintenance of opportunities for Slow-worm, Grass Snake and Common Lizard at the site following development include:

- Enhancement of hedgerow edge habitats through creation of ecotones (a gradation from hedgerow to scrub to rough grassland habitats);
- Inclusion of other high quality reptile habitats within the landscape scheme in the form of rough and meadow grassland and scrub;
- Management of semi-natural areas within areas of informal open space to prevent scrub succession into woodland and maintain a mosaic of scrub and rough/meadow grassland habitats;
- Provision of compost heaps within gardens; and
- Use of arisings from management to create log and brash piles and hibernacula around woodland and scrub edges to provide refuge and future egg-laying opportunities.

#### 5.10.3 *Residual effects*

Following implementation of the measures described above, it is unlikely that the proposed development will have a significant adverse effect on the local reptile population, and the proposals are likely to maintain the value of the site for reptiles in the long-term.

### 5.11 **Invertebrates**

#### 5.11.1 *Potential effects*

Habitats of highest, albeit limited, interest to invertebrates bordering the site include the mature trees, hedgerows, scrub and dry ditch habitats which the *Landscape Masterplan* indicate can be largely retained. Development proposals should seek to maintain and enhance the current opportunities provided by the site for invertebrates in the long-term. Measures by which this can be achieved are described below.

#### 5.11.2 *Mitigation and enhancement proposals*

Wherever possible, development proposals for the site should seek to maintain and enhance opportunities for invertebrates. The recommended planting/enhancement/management of hedgerow, scrub and grassland habitats described above and indicated

on the landscape proposals for the site are expected to maintain and provide new opportunities for a range of invertebrate species in the long-term.

As part of CALA Homes Thames 'Urban Wildlife Strategy', boundary walls to all properties that feature masonry will include bee bricks to encourage solitary bees and other invertebrates. This strategy will be implemented for the site.

#### 5.11.3 *Residual effects*

Following implementation of the measures described above, it is unlikely that the proposed development will have any adverse long-term effect on invertebrates, and the proposals could potentially increase the value of the site for some invertebrate species in the long-term.

### 5.12 **Plants**

#### 5.12.1 *Potential effects*

Habitats of highest, albeit limited, interest for plants bordering the site include the mature trees, hedgerows and scrub which the *Landscape Masterplan* indicate can be largely retained within the proposed development. Development proposals should seek to maintain and enhance the current opportunities provided by the site for plants in the long-term. Measures by which this can be achieved are described below.

#### 5.12.2 *Mitigation and enhancement proposals*

Opportunities for the diversification of plant communities at the site would be provided through enhancement and management of the existing hedgerow habitats within the site as indicated on the landscape proposals and described above. Opportunities for the enhancement of vegetation communities across the site would also be provided through new hedgerow, tree, grassland and scrub planting across the site, as described above.

#### 5.12.3 *Residual effects*

Following implementation of the measures described above, it is unlikely that the proposed development will have any adverse long-term effect on plants, and the proposals could potentially increase the value of the site for some plants species in the long-term.

### 5.13 **Management and monitoring**

#### *Management*

5.13.1 It is recommended that the habitat creation, restoration and enhancement measures outlined in this report form the basis of a detailed habitat management plan, the provision of which could be subject to a condition of planning consent. The detailed plan should be

subject to approval by Wokingham Borough Council and should include detailed prescriptions for management activities including schedules detailing the timing of management works and 'milestones' by which the implementation and success of the proposed management can be monitored. The management plan would ensure the long-term maintenance and enhancement of the ecological value of habitats within the site for wildlife, landscape and public amenity.

#### *Monitoring*

5.13.2 In order to assess the effectiveness of the mitigation described within this report during the operational phase of the proposed development, and to ensure the successful establishment of ecological enhancements across the site, it is recommended that a monitoring programme be implemented as part of the ongoing management to assess the condition of retained, enhanced and newly created habitats, and target species of nature conservation interest including bats and reptiles.

5.13.3 In addition, prior to each phase of the site preparation and construction works the advice of a suitably qualified ecologist should be sought with regard to any requirement to update ecological survey work in order to ensure that mitigation proposals reflect the current status of species occurring at the site at the time of the development works.

#### **5.14 Conditions**

5.14.1 With regards to the recommendations provided above, it is suggested that consideration be given to the inclusion of ecology-related planning conditions in any planning permission granted for the site. These should cover:

- Agreement of habitat retention, creation and enhancement works (soft landscape).
- Preparation and agreement of a Construction Ecological Management Plan (CEMP) setting out measures to avoid and mitigate effects of construction on features of ecological interest at the site during construction. This should be based on updated surveys for protected and notable species where appropriate.
- Preparation and agreement of a stand-alone Reptile Method Statement to protect and maintain the site's reptile population prior to preparation of a CEMP.
- Preparation of detailed external lighting proposals to ensure avoidance of adverse lighting on nocturnal wildlife and associated habitats.
- Preparation and agreement of a Landscape and Ecological Management Plan (LEMP), setting out measures for the establishment and long-term management of habitats across the site.

- 5.14.2 In addition, delivery of any measures required by Natural England and/or Wokingham Borough Council to ensure that any small contribution to cumulative effects of recreational pressure on the Thames Basin Heaths SPA is avoided will be secured through a Section 106 agreement.

## **6 SUMMARY AND CONCLUSION**

- 6.1 The site is located within 1.9km of the Thames Basin Heaths SPA. Current knowledge indicates that the proposed development of up to 48 dwellings could result in a small contribution towards a cumulative increase in recreational pressure in combination with other plans or projects. It is proposed that this is mitigated through the consented SANG located within the wider site and Strategic Access Management and Monitoring of the SPA in line with Wokingham Borough Council's guidance, to ensure no likely significant effect on this receptor arises as a result of the proposed development in combination with other plans and projects.
- 6.2 The proposed development area is dominated by agriculturally improved grassland habitat of negligible nature conservation importance in its own right. Where habitats of higher nature conservation interest are affected, these comprise small areas of scrub/tall ruderal vegetation. Loss of these areas are not considered to be significant in the local context. Opportunities for habitat creation, enhancement and management to maintain opportunities for wildlife at the site are described in *Section 5* above, most of which are already reflected on the emerging landscape proposals. Subject to securing these measures at the detailed design stage it is considered that development of the site would provide an opportunity to maintain and potentially enhance its long-term value for a range of wildlife.
- 6.3 In summary, subject to implementation of the recommended habitat creation, restoration and enhancement measures described above, and measures to avoid impacts on designated areas and locally recorded protected and notable species, no ecological constraints have been identified that would otherwise preclude the proposed development of the site. Furthermore, the development has the potential to provide new opportunities for locally recorded wildlife through the retention, creation, management and enhancement of habitats within the site. This is in keeping with planning policy and the 2006 NERC Act.

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| Author             | Clare Bird MCIEEM           | Associate Ecologist |
| Revised by         | Clare Bird MCIEEM           | Associate Ecologist |
| Approved for issue | Sarah Thornton-Mills MCIEEM | Principal Ecologist |

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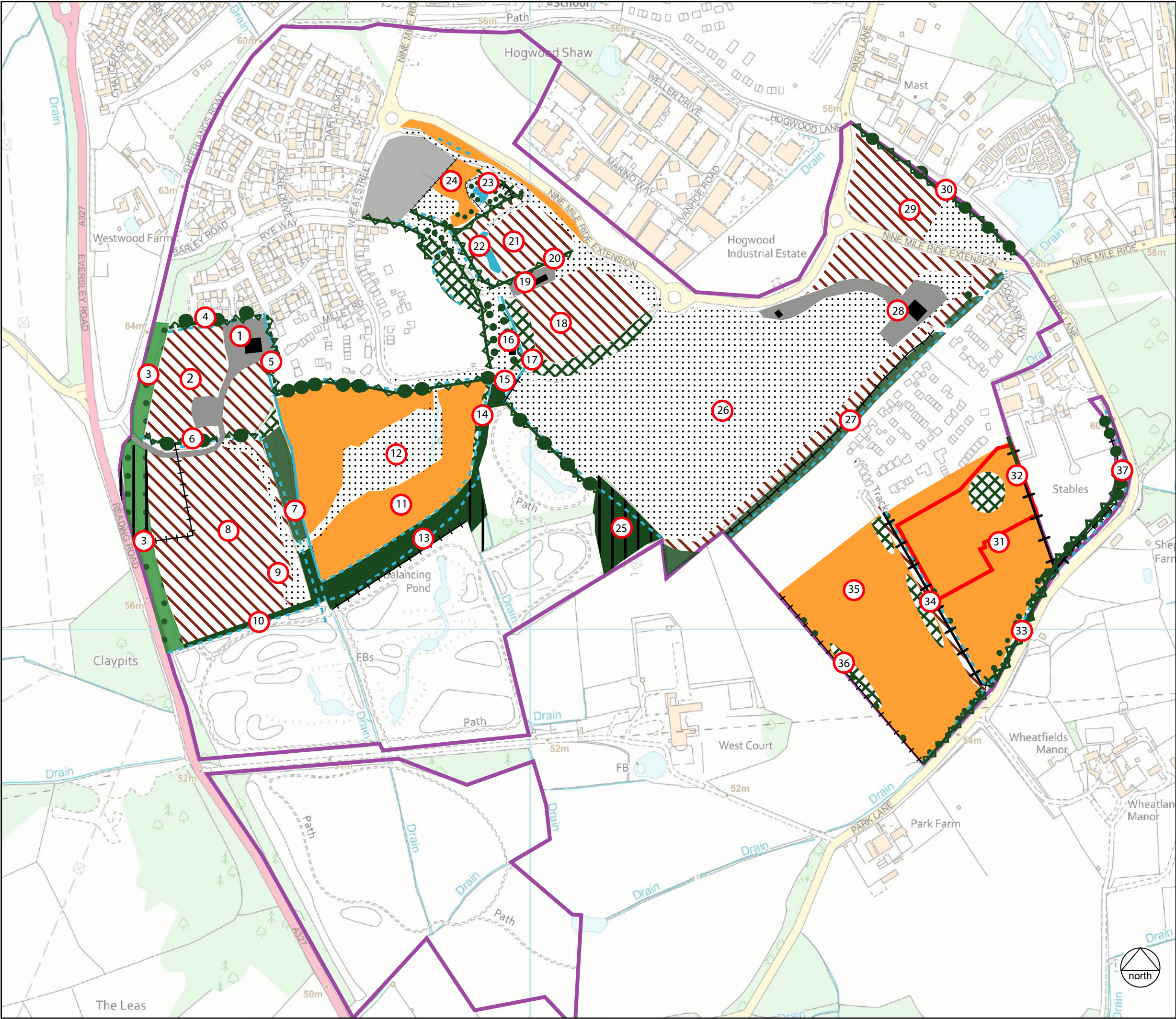
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**FIGURE 1**

**Phase 1 Habitat Plan and Target Notes**



**KEY**

- Land South of P15 site boundary
- Wider site boundary
- Lowland mixed deciduous woodland (w1f)
- Other woodland - mixed - mainly broadleaved (w1h5)
- Other woodland - mixed - mainly broadleaved (w1h5)
- Scattered trees
- Native hedgerow (h2a)
- Non-native and ornamental hedgerow (h3b)
- Mixed scrub (h3h)
- Ruderal (81)
- Modified grassland (g4)
- Standing open water (r1)
- Wet ditch / dry ditch (50)
- Fence
- Building
- Developed land - sealed surface (u1b)
- Target notes

CLIENT:  
**CALA Homes (Thames) Ltd**

PROJECT:  
**Hogwood Farm, Finchampstead**

TITLE:  
**Phase 1 Habitat Survey Plan - Land South of Parcel 15**

SCALE AT A3:  
**NTS**

DATE:  
**October 2024**

868.1/96

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The Stables, Howbery Park, Benson Lane, Wallingford, OX10 8BA  
t 01491 838175 e [consult@hda-enviro.co.uk](mailto:consult@hda-enviro.co.uk) w [www.hda-enviro.co.uk](http://www.hda-enviro.co.uk)

### **Target Notes – Arborfield**

1. Site yard comprised a hardstanding area with mobile cabins.
2. Relatively sparse ruderal vegetation dominated by Common Nettle *Urtica dioica*, Spear Thistle *Cirsium vulgare*, Common Ragwort *Senecio jacobaea*, Bristly Oxtongue *Helminthotheca echinoides* and Common Dandelion *Taraxacum officinale*. Small areas of scattered bare ground/ recently disturbed ground are present. Field margins vary between 1 – 5m and are more densely vegetation with the above species with the inclusion of Annual Meadow Grass *Poa annua*, Red Fescue *Festuca rubra*, Cleavers *Galium aparine*, Broad-leaved Dock *Rumex obtusifolius*, Cut Leaved Cranes Bill *Geranium dissectum*, Field Forget-me-not *Geranium dissectum* and Scarlett Pimpernel *Anagallis arvensis*.
3. Mixed woodland along the western boundary with species including Ash *Fraxinus excelsior*, Larch *Larix decidua*, Scots Pine *Pinus sylvestris*, Beech *Fagus sylvatica*, Pedunculate Oak *Quercus robur* and Black Poplar *Populus nigra*. Some of the trees are mature and have suitable bat roosting features. The understorey is comprised of Elder *Sambucus nigra*, Hawthorn *Crataegus monogyna*, Holly *Ilex aquifolium*, Willow *Salix* Sp. and Hazel *Corylus avellana*. The ground layer is dominated by Bramble *Rubus fruticosus* and Common Nettle with Bracken *Pteridium aquilinum*, Ground Ivy *Glechoma hederacea*, Cleavers, Wood Avens *Geum urbanum*, Herb Robert *Geranium robertianum*, White Bryony *Bryonia dioica* and Black Bindweed *Fallopia convolvulus*. Part of the southern area of this woodland is listed on Natural England's Ancient Woodland Inventory; this area is especially dominated by Larch and other introduced coniferous species.
4. Native defunct hedgerow with trees comprising a hedgerow of Field Maple *Acer campestre*, Hazel, Blackthorn *Prunus spinosa* and Ash, with Ash and Oak mature trees and a dry ditch below.
5. Newly created culvert with a small area of standing water.
6. Treeline of mature Ash and Pedunculate Oak trees with relic species rich hedgerow of Hazel, Holly, Field Maple, Hawthorn and Blackthorn. Some of the mature trees have the potential to support roosting bats. The ground layer vegetation is sparse and mostly comprised of Bramble with occasional Cowslip *Primula veris* and Creeping Thistle *Cirsium arvense*.
7. Lowland mixed deciduous woodland comprised of Pedunculate Oak and coppiced Ash with Wild Cherry *Prunus avium*, Field Maple, Hazel, Hawthorn and Blackthorn. Mature trees are present, some of which have features of bat roosting potential. The ground layer includes Bramble, Cow Parsley *Anthriscus sylvestris*, Ground Ivy, Germander Speedwell *Anthriscus sylvestris*, Common Sorrel *Rumex acetosa* and Lords-and-ladies *Arum maculatum*. A dry ditch is present along the western boundary of the parcel and a ditch that was wet at the time of the survey along the eastern boundary.
8. A field of ruderal vegetation of varying height from 10cm to 50cm in height dominated by Spear Thistle, Common Nettle and Perennial Ryegrass and White Clover *Trifolium repens* with the occasional Creeping Buttercup *Ranunculus repens*, Common

Hogweed *Heracleum sphondylium*, Ragwort and Broad Leaved Dock and Cleavers. Small areas within the parcel are sparsely vegetated with areas of bare ground with occasional ruderal species mentioned above but include Scarlett Pimpernel and Bird Foot Trefoil *Lotus corniculatus*.

9. A small depression of bare ground that had standing water at the time of the survey with occasional Yellow Flag Iris present.
10. Plantation lowland mixed deciduous woodland comprised of White Poplar, Pedunculate Oak, Ash and Field Maple. Mature trees are present, some of which have features of bat roosting potential. Understorey comprised of Holly, Dog Rose *Rosa canina*, Common Nettle, Cow Parsley, Cleavers, Curled Dock *Rumex crispus*, Bramble and Ground Ivy. A dry ditch is present along the boundary along the southern boundary of the wooded strip.
11. Species poor modified grassland of varying sward length between 5cm – 40cm comprised of Perennial Ryegrass, Cocksfoot *Dactylis glomerata*, White Clover, Oxeye Daisy *Leucanthemum vulgare*, Creeping Buttercup with occasional Broad Leaved Dock, Dandelion and Scarlett Pimpernel. Field margins are approximately 4-6m wide and are comprised of Common Nettle, Spear Thistle, Common Vetch *Vicia sativa* and Cow Parsley.
12. Area of bare ground used for storage of construction materials.
13. Lowland mixed deciduous woodland comprised of Pedunculate Oak standards and coppiced Ash with Wild Cherry *Prunus avium*, White Poplar, Field Maple, Hazel, Willow, English Elm *Ulmus procera*, Holly, Hawthorn and Blackthorn. Mature trees are present, some of which have features of bat roosting potential. The ground layer includes Bramble, Wood Avens *Geum urbanum*, Herb Robert, Common Ivy, Wood Spurge *Euphorbia amygdaloides*, Violet *Viola sp.*, Greater Stitchwort *Stellaria holostea*, Common Nettle, Remote Sedge *Carex remota*, False Brome *Brachypodium sylvaticum* and Butcher's Broom *Ruscus aculeatus* present. Standing and fallen dead wood is present throughout the woodland area. The woodland becomes increasingly wet to the west where Willow becomes dominant and dry ditches border most of the woodland edges, a further dry ditch running centrally through the southern area of woodland is also present. The eastern area of this woodland is listed on Natural England's Ancient Woodland Inventory; here the dominant tree species is White Poplar in the south and Pedunculate Oak in the north. This area is demarcated in its western boundary by a small woodbank.
14. Mixed Scrub comprised of Bramble, Blackthorn, Dog Rose and Pendulate Oak samplings over a dry ditch.  

16. A wooden bat barn set between treelines of Pendulate Oak, Ash and Hazel.
17. Mixed scrub comprised of Bramble, Elder and Holly with large amounts of deadwood above a steep-sided wet ditch. Towards the eastern end of the scrub parcel, Elder becomes the dominant species with the inclusion of ruderals in the ground layer including Common Nettle, Spear Thistle, Cleaver and Broad Leaved Dock.

18. Ruderal vegetation comprised of Perennial Rye Grass, Spear Thistle, Common poppy *Papaver rhoeas*, Cocks Foot, Rosebay Willowherb *Chamerion angustifolium*, Annual Sow Thistle *Sonchus oleraceus*, Common Nettle, and Curled Dock.
19. Listed building with multiple features with bat roost potential including lifted roof tiles and cracks in the brickwork. Situated on an area of concrete hardstanding. Surrounded by scaffolding at the time of the survey.
20. Species-rich native hedgerow comprised of Hawthorn, Hazel, Blackthorn, English Elm and Ash.
21. Ruderal vegetation similar to TN 20 with the inclusion of Oxeye Daisy at high densities and occasional Red Campion *Silene dioica*.
22. A SUDS pond within a parcel of ruderal vegetation described in TN21. Sloping earth banks with occasional Pendulous Sedge *Carex pendula*.
23. A shaded pond approximately 30cm in depth. Tussocks of Pendulous Sedge and patches of encroaching Bramble, Willow, Pedunculate Oak and Alder, border the edge of the pond. The pond area is enclosed by a chicken-wire fence.
24. Modified grassland with a short sward length of approximately 20cm in length comprised of Perennial Rye Grass, Cocks Foot, Red Fescue, Meadow Buttercup, Broadleaved Dock and Dandelion.
25. Lowland mixed deciduous woodland. Dominant species within the woodland include Ash, Pedunculate Oak and Alder with a Hawthorn and Field Maple understorey. The ground layer includes Bramble, Wood Aven, Herb Robert, Ground Ivy, and Hairy Brome *Bromopsis ramosa*. There are fallen wood and dead-wood piles throughout the woodland area and multiple trees with possible bat roosting potential. The woodland, in part, is listed on Natural England's Ancient Woodland Inventory.
26. Large parcel of bare ground with large spoil heaps. During the time of the survey, excavators were topping soil within the parcel. Field margins were sparsely vegetated with ruderal species including Bramble, Curly Dock, Spear Thistle, Ragwort and Common Nettle.
27. Lowland mixed deciduous woodland. A thin strip of broadleaved woodland plantation behind this comprised of Ash, Lombardy Poplar, Field Maple, White Willow, Grey Willow, Dogwood, Hazel, Hawthorn, Blackthorn and Bramble with Common Ivy and Cleavers dominating the ground layer. Some of the trees have features of possible bat roosting potential. A ditch that had small pools of standing water is present along the southern side of the wooded strip.
28. Site compound on hardstanding area.
29. Short ruderal vegetation within the northern end of the parcel similar in species composition to TN18 with the inclusion of Ribwort Plantain *Plantago lanceolata*, Timothy *Phleum pratense*, Musk Mallow *Malva moschata* and Bristly Oxtongue. Bare ground is present across the southern area of the parcel with small field margins

approximately 1m in width comprised of similar short ruderal species as the northern area.

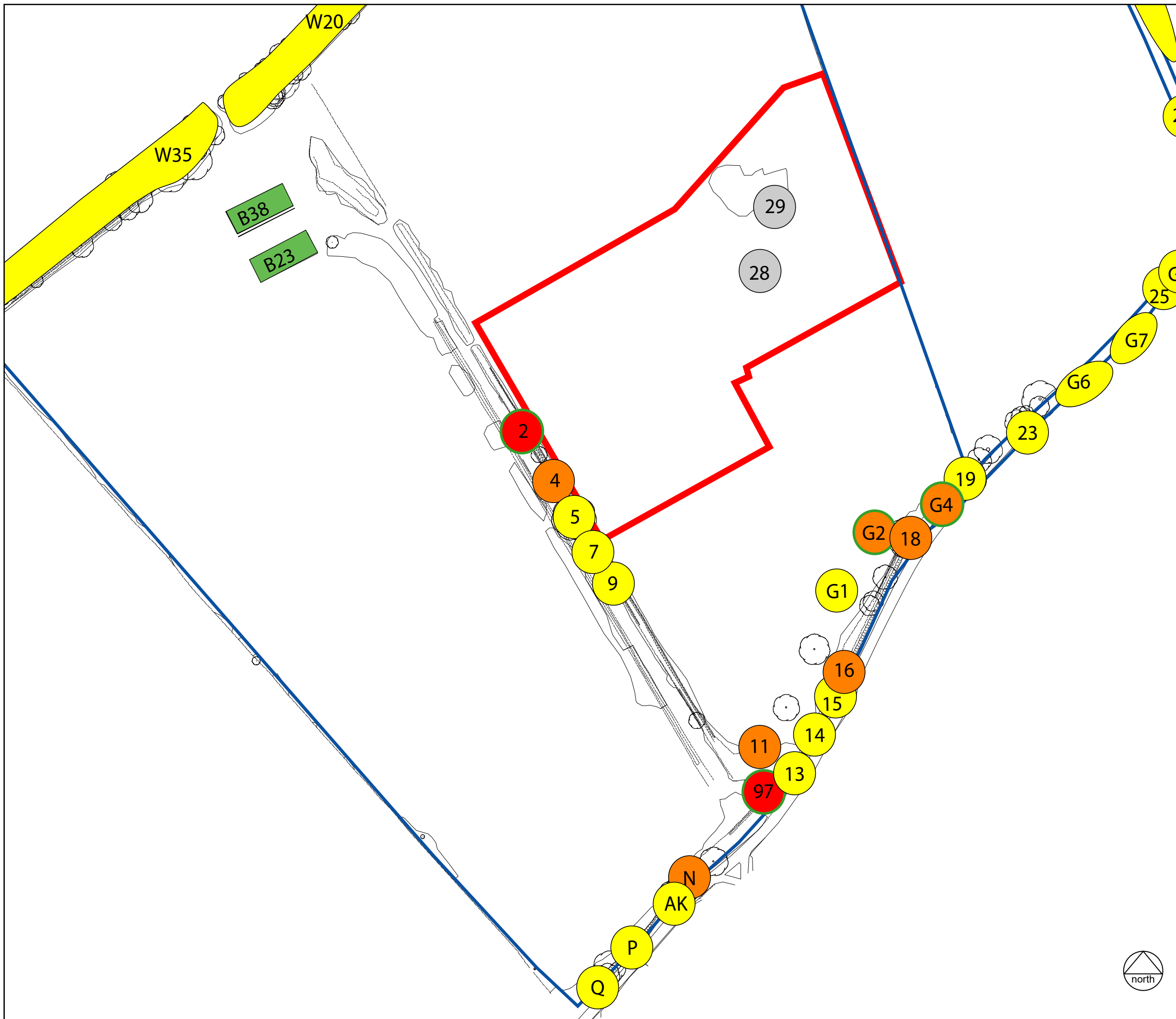
30. A dense, intact, species-rich native hedgerow with trees comprising Pedunculate Oak, Beech, Ash, Goat Willow *Salix caprea*, Black Poplar *Populus nigra*, Field Maple, Dogwood, Hazel, Holly, Bramble and Common Broom *Sarothamnus scoparius*. The hedgerow is approximately 15 years old and tree guards are present on some individual plantings with some mature trees present along the roadside, especially within the southern section of the hedgerow.
31. Modified grassland with species including Yorkshire Fog, Perennial Rye-grass, False Oat-grass *Arrhenatherum elatius*, Cock's Foot, Red Fescue, Common Bent, Creeping Buttercup, White Clover, Doves-foot Cranesbill *Geranium molle*, Common Vetch, Common Mouse-ear *Cerastium fontanum*, Scentless Mayweed *Tripleurospermum inodorum*, Creeping Thistle, Spear Thistle, Common Sorrel, Ragwort, Greater Willowherb *Epilobium hirsutum*, Cleavers, Broad-leaved Dock, Common Knapweed *Centaurea nigra*, Meadow Vetchling *Lathyrus pratensis*, Forget-me-not sp., Fleabane *Pulicaria dysenterica* and Self-Heal *Prunella vulgaris*. Along the treeline to the south, Hemp Nettle *Galeopsis tetrahit*, Lady's Thumb *Persicaria maculosa*, Scentless Mayweed, Prickly Sow-Thistle and Clustered Dock with wet flushes of Sedge and Soft Rush. There are two soil bunds/soil storage piles with tall ruderals dominated by Spear Thistle, Common Nettle, Broadleaved Dock and Smooth Hawksbeard *Crepis capillaris* with large patches of scrub within the grassland with species including Bramble, Elder, Silver Birch and Dog-rose with Common Nettle. There are also piles of deadwood near and within the scrub.
32. Non-native and ornamental species-poor hedgerow comprising Cherry Laurel *Prunus laurocerasus*, Leylandii Cypress *Cupressus x leylandii* and Elder, broken by Bramble scrub on the north-eastern edge of the grassland field (TN 31). To the south of the hedgerow, continuing along the field boundary is a wooden post and electric wire fence which is overgrown with tall grasses and ruderal vegetation.
33. An outgrown, defunct native species-rich hedgerow with trees adjacent to Park Lane, with a dry ditch below. Species within the hedgerow include Pedunculate Oak, Black Poplar, Gorse (*Ulex europaeus*), Holly, Grey Willow, Blackthorn, Bracken and Bramble. A treeline of Pedunculate Oak is present approximately 5m into the field from the hedgerow.
34. A ditch that was dry at the time of survey with scattered Bramble scrub and trees including Willow and Pedunculate Oak, some of which have possible bat roosting potential. Behind the ditch is a fence and a dirt track, used as an access route into the site. A scrub line is present along the eastern side of the track and is 1-2m wide comprised of Grey Willow, Dog Rose, Oak and Bramble scrub. Track supports ephemeral vegetation including Scentless Mayweed, Cocks Foot, Smooth Hawksbeard, Common Yarrow, Hawthorn saplings, Common Bent and Spear Thistle.
35. Modified grassland field with a similar species composition to Target Note 31, with more Bent dominant in the north and False Oatgrass and Fescue sp. dominated to the south. Occasional species include Greater Plantain, Ribwort Plantain, Greater Birds-foot Trefoil, Common Hogweed, Cleavers, Meadow Vetchling, Mouse-ear, Common Vetch, Common Fleabane, Creeping Buttercup, Red Fescue and Soft Rush.

Bramble scrub is present along many of the field boundaries, with Common Nettle also present. A wet flush is present within the west of the field and contains Common Horsetail, Common Nettle, Sow Thistle, Soft Rush and occasional Hemp Nettle.

36. Scattered semi-mature trees and scattered areas of dense scrub along fence line. Species present include Oak, Ash, Blackthorn, Dog Rose, Bramble and Common Nettle.
37. A line of scrub and trees with a dry ditch bordering Park Lane.

**FIGURE 2**

**Bat Roost Survey Summary Plan – Land South of Parcel 15**



KEY

- Wider site boundary
- Land South of P15 site boundary
- Tree/building subject to emergence/ re-entry survey in 2022 by HDA

BUILDINGS

- Negligible bat roost potential

TREES

- High bat roosting potential
- Moderate bat roosting potential
- Low bat roosting potential
- Tree collapsed in 2023

The highest bat roosting potential recorded are shown for the groups(G)/woodlands(W).

All other trees/tree groups within the survey area are regarded as having 'Negligible' potential to support roosting bats.

Roosting categories relate to roost potential in accordance with the BCT 2016 guidelines.

CLIENT:  
CALA Homes Thames Ltd.  
PROJECT:  
Hogwood Farm, Finchampstead  
TITLE:  
Bat Roost Survey Summary Plan - Land South of P15

SCALE AT A3: NTS DATE: October 2024

868.1/97

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The Stables, Howbery Park, Benson Lane, Wallingford, OX10 8BA  
t 01491 838175 e consult@hda-enviro.co.uk w www.hda-enviro.co.uk

Landscape Architecture  
Masterplanning  
Ecology



**FIGURE 3**  
**Ecological Proposal Plan**



KEY

- Land South of P15 site boundary
- Proposed bat box location\*
- Proposed bird box location\*
- Proposed Hedgehog hole location\*
- Proposed log and brash pile location\*

\* Position indicative

CLIENT:  
CALA Homes Thames Ltd  
PROJECT:  
Hogwood Farm, Finchampstead  
TITLE:  
Land South of P15 Ecological Proposals Plan  
SCALE AT A3:  
NTS  
DATE:  
October 2024

868.1 / 104

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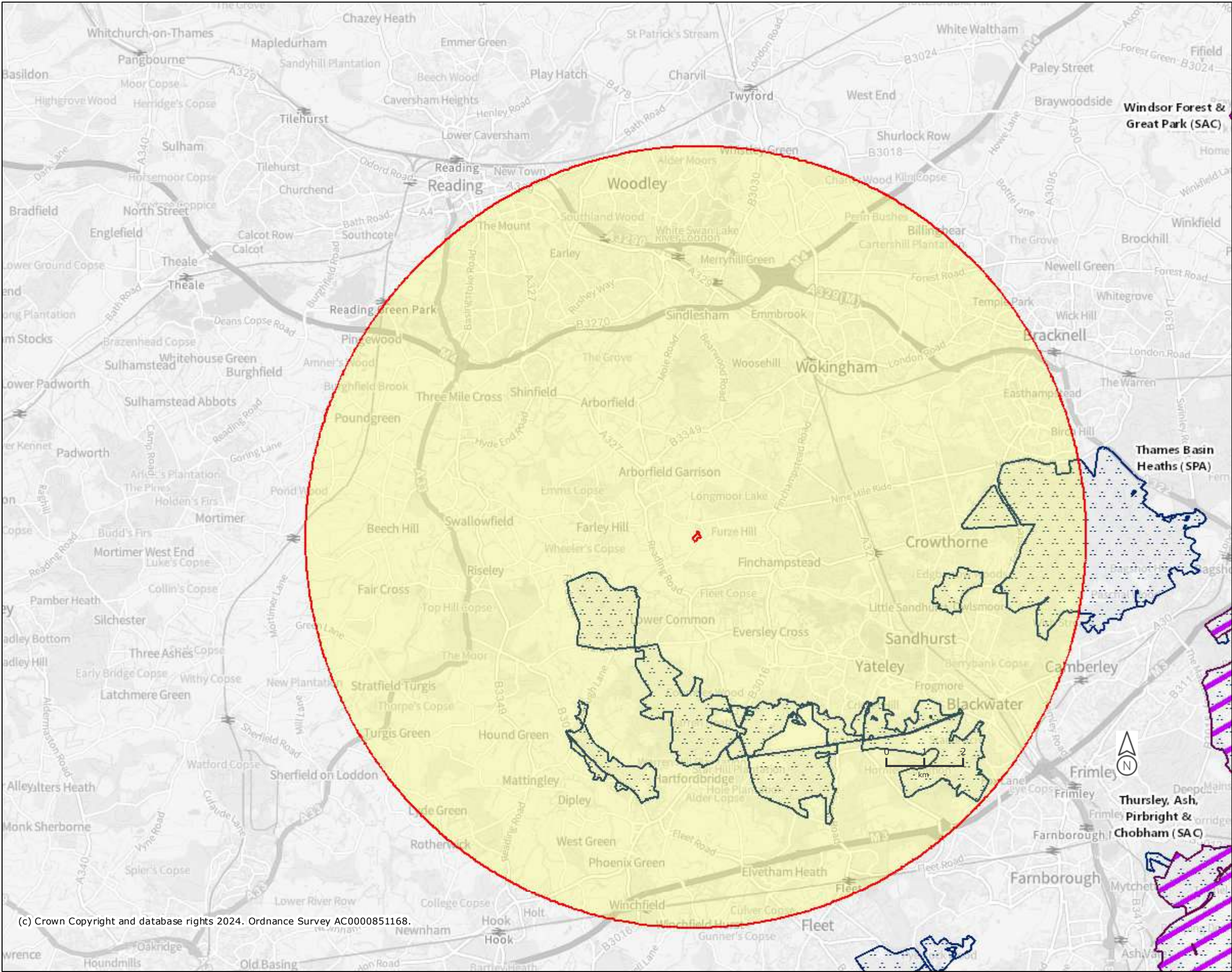
Landscape Architecture  
Masterplanning  
Ecology



## **APPENDIX A**

### **Desk Study**

10km Statutory Designated Areas



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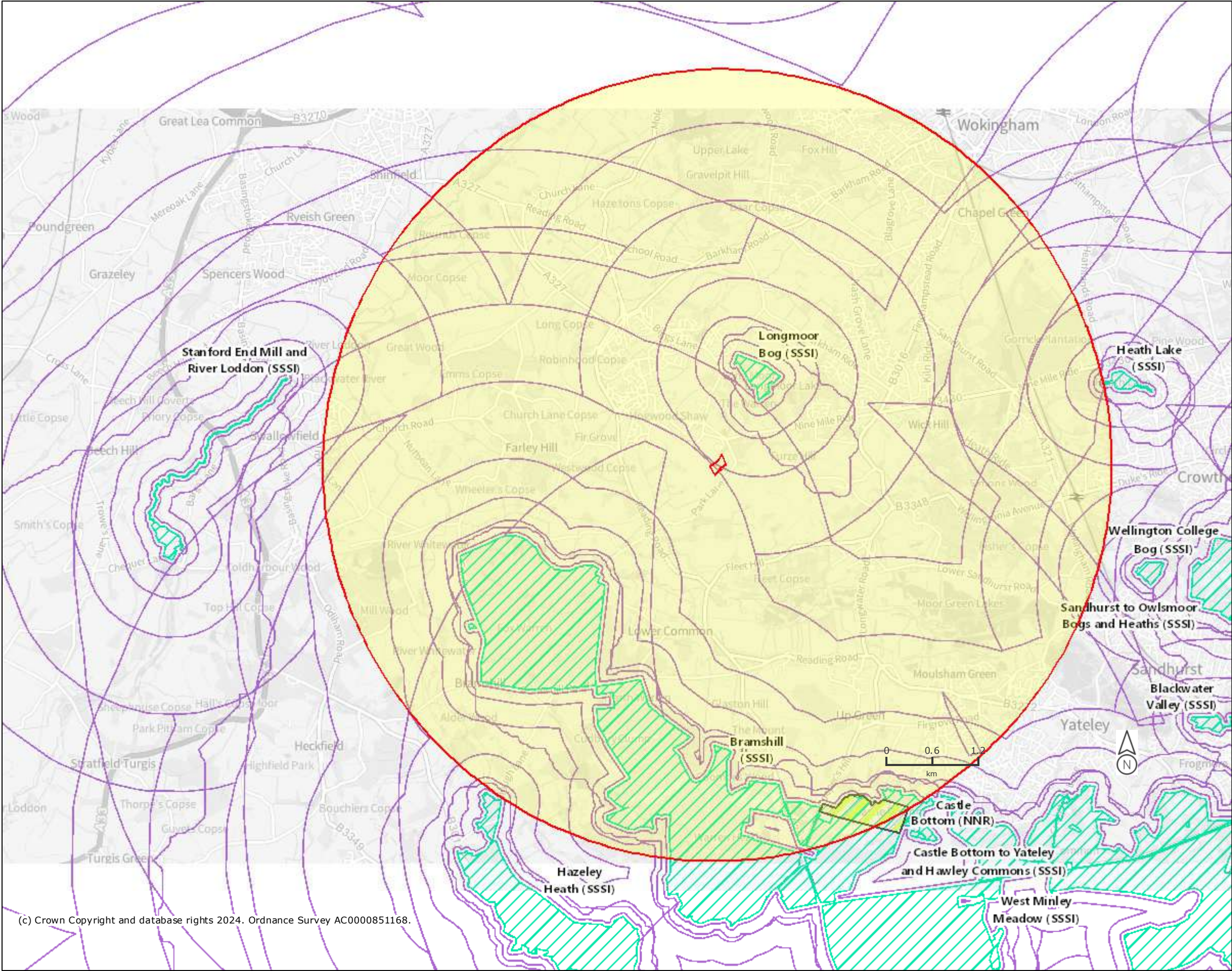
Legend

- Ramsar Sites (England)
- Special Areas of Conservation (England)
- Special Protection Areas (England)

Projection = OSGB36  
xmin = 450400  
ymin = 152800  
xmax = 500800  
ymax = 178100

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5km Nationally Designated Areas

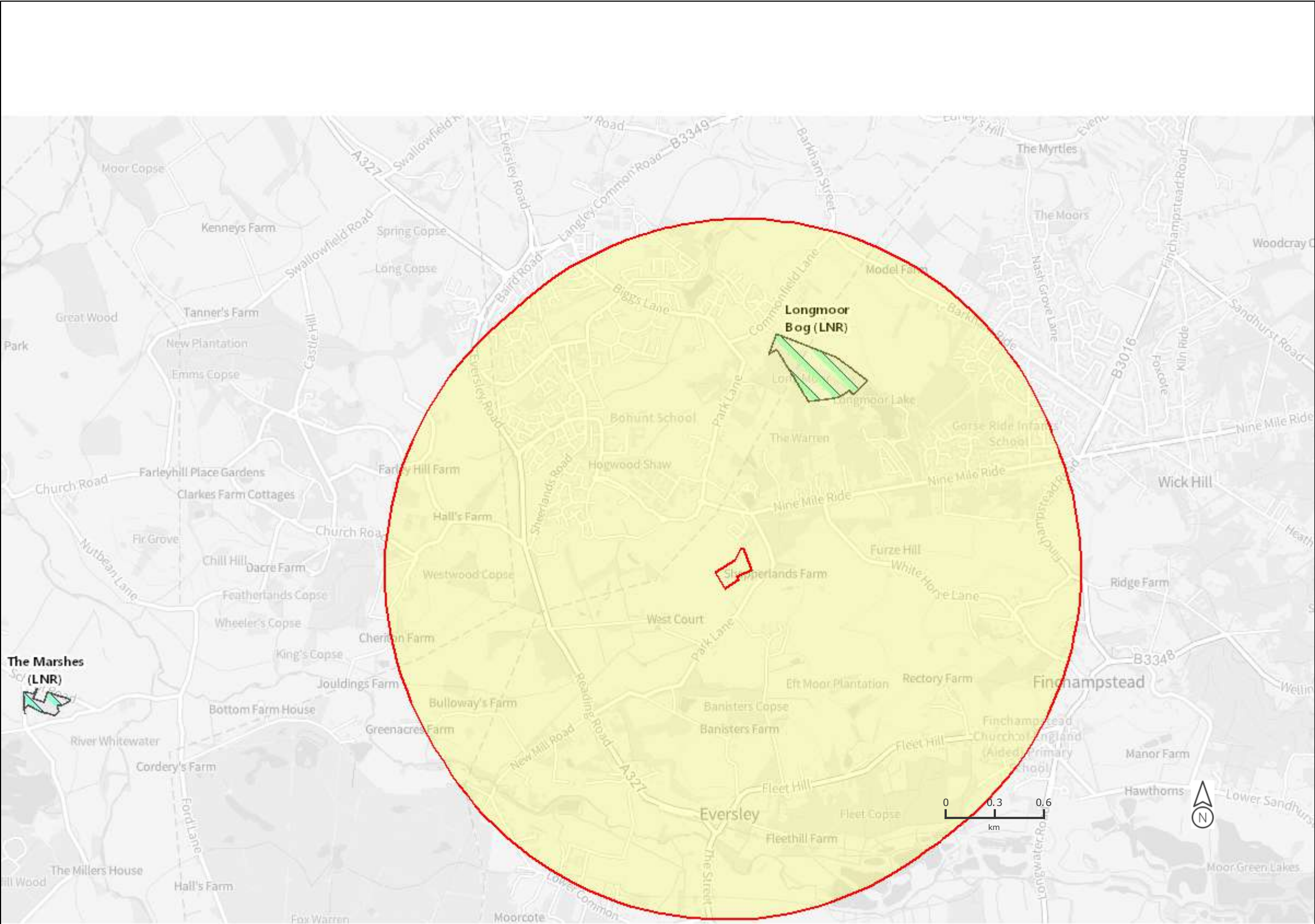


Legend

- National Nature Reserves (England)
- Sites of Special Scientific Interest (England)
- SSSI Impact Risk Zones - for LPAs to determine likely impacts on terrestrial SSSIs and when to consult Natural England

Projection = OSGB36  
xmin = 466200  
ymin = 159000  
xmax = 486500  
ymax = 168800

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Legend

 Local Nature Reserves (England)

Projection = OSGB36  
xmin = 472100  
ymin = 162000  
xmax = 482300  
ymax = 166900

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**County:** Hampshire

**Site name:** Bramshill

**Status:** Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended)

**Local Planning Authority:** Hampshire County Council, Hart District Council

**National grid reference:** SU774596

**Ordnance survey sheet: 1:50,000:** 186

**1:10,000:** SU76 SE/SW, SU75 NE

**Date notified (under 1981 Act):** 1988, 1990

**Date of last revision:** 20.10.2000

**Area:** 671.99 ha

**Date of Confirmation:** 17.7.2001

### Reasons for Notification

This site is notified for a series of shallow acid ponds and associated mire, which support a rich assemblage of dragonfly and damselfly, and rotationally felled conifer plantation, which provides habitat for internationally important populations of nightjar, woodlark and Dartford warbler.

### General Description

Bramshill comprises extensive areas of conifer plantation together with a series of shallow acidic ponds within relic wet heathland and a small unimproved grassland area adjacent which provides habitat for the nationally rare small fleabane *Pulicaria vulgaris*.

Management of the pine plantations results in a sequence of clearings and young coniferous trees which are utilised by breeding nightjar *Caprimulgus europaeus*, woodlark *Lullula arborea* and Dartford warbler *Sylvia udnata*. The site also contains small breeding populations of hobby *Falco subbuteo* and little ringed plover *Charadrius dubius*

The pond areas differ in character, the northern and middle areas occupying former gravel workings, whilst the southern series occupies a damp valley and was formed by damming a small acidic stream. The areas of open water are dominated by bog pondweed *Potamogeton polygonifolius* and very large populations of the nationally scarce pillwort *Pilularia globulifera*. The shallow, often exposed margins have a rich flora dominated by soft rush *Juncus effuses*, compact rush *J. conglomerates*, lesser spearwort *Ranunculus flammula* and reedmace *Typha latifolia*. Nationally scarce plants occurring here include the needle spike rush *Elecharis acicularis*, six stamened waterwort *Elatine hexandra* and small water-pepper *Persicaria minor*.

Within the plantations there are a few small areas of wet heath dominated by purple moor-grass *Molinia caerulea*, wet heathland with cross leaved heath *Erica tetralix* and fragments of dry heathland with heather *Calluna vulgaris*. Locally uncommon plants present include petty whin *Genista anglica* and small cudweed *Filago minima*, together with stag's horn clubmoss *Lycopodium clavatum* at its only Hampshire location. Heath communities are present alongside forest tracks and briefly recolonise after forestry clearance operations, before the

tree cover closes over again following planting. Yellow bartisia *Parentucellia viscosa* is found along some woodland rides.

The acidic ponds are fed by the surrounding heathland and are generally clear and free of pollution. At least 24 species of dragonfly and damselfly have been recorded breeding out of a total of 37 resident in Britain. The occurrence of the nationally scarce small red damselfly *Ceragrion tenellum*, downy emerald *Cordulia aenea* and brilliant emerald *Somatochlora metallica* are of particular note. The open water and heathland areas are also important for other invertebrates, including the nationally scarce horsefly *Tabanus cordiger*, woodland grasshopper *Omocestus rufipes* and a colony of the shortwinged conehead *Conocephalus dorsalis*.

Two unimproved grassland fields close to Springwater Farm lie adjacent to the northern plantation at Bramshill. Extensive grazing has created habitat for a population of the nationally rare small fleabane *Pulicaria vulgaris*, which is also vulnerable in a European context. This is the only site in Hampshire which supports this plant, outside the New Forest.

### **Other Information**

1. This site incorporates two areas previously notified as Bramshill SSSI and Warren Heath Ponds SSSI with extensions to incorporate coniferous plantation which provide habitat for Annex I birds.
2. This site includes land which has been proposed for designation as a Special Protection Area under Directive 79/409/EEC on the Conservation of Wild Birds. Nightjar, woodlark and Dartford warbler are listed on Annex 1 of the Directive.
3. Woodlark and nightjar are priority species in the UK Biodiversity Action Plan.
4. Woodlark, Dartford warbler, hobby and little ringed plover are specially protected by being listed on Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).
5. Small fleabane is a Red Data book species listed on Schedule 8 of the Wildlife and Countryside Act.

**County:** Hampshire **Site name:** **Castle Bottom to Yateley and Hawley Commons**

**Status:** Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981 (as amended after 1981)

**Local Planning Authorities:** Hampshire County Council, Hart District Council, Rushmoor Borough Council

**National grid reference:** SU834588

**Ordnance Survey sheet: 1:50,000:** 175,186 **1:10,000:** SU85 NW, SU85NE, SU86 SW, SU76 SE

**Date notified (under 1949 Act):** 1979 (Yateley Common)

**Date notified (under 1981 Act):** 1985, 1986, 1993

**Date of last revision:** 20 October 2000

**Area:** 921.41 ha

### Reasons for notification

This site is notified for its heathland and young conifer plantation which supports an internationally important population of Dartford warbler and populations of two other internationally important species, woodlark and nightjar. The scrub/heathland interface supports a particularly rich invertebrate fauna including a number of nationally scarce species. It also supports an outstanding Dragonfly assemblage.

### General description

Castle Bottom to Yateley and Hawley Commons is one of the largest remnants of lowland heathland in the Thames Basin. The majority of the site is on gently undulating plateau gravels; the valley bog at Castle Bottom is underlain by Bagshot Beds and Bracklesham Sands.

The dry heathland areas are dominated by heather *Calluna vulgaris*, bell heather *Erica cinerea* and dwarf gorse (*flex minor*, grading locally to humid heath dominated by heather, bell heather, cross-leaved heath *Erica tetralix* and purple moor-grass *Mohnia caerulea*, or acid grassland with dense bracken *Pteridium aquilinum*. Gorse *Ulex europaeus*, silver birch *Betula pendula* and pine *Pinus sylvestris* scrub form part of the mosaic. Small areas of grass heath are dominated by bristle-leaved bent grass *Agrostis curtisii*, here near the eastern limit of its distribution. The nationally scarce upright chickweed *Moenchia erecta* is found together with the largest Hampshire colony of the locally uncommon moonwort fern *Botrychium lunaria*. The locally uncommon meadow thistle *Cirsium dissectum* is found towards the south westerly end of the site.

Valley mire vegetation at the site is dominated by tussocky purple moor-grass and bog myrtle *Myrica gale*. The rich bog flora associated with the more open areas includes white

beak-sedge *Rhynchospora alba*, two species of sundew *Drosera rotundifolia* and *D. intermedia*, dodder *Cuscuta epithymum*, bog asphodel *Narthecium ossifragum* and bog pimpernel *Anagallis tenella*.

The site supports at least 19 species of dragonfly and damselfly out of a total of 37 resident species in Britain. These include two nationally scarce species, the small red damselfly *Ceragrion tenellum* and the downy emerald *Cordulia aenea*, both associated with bog. Heathland invertebrates include the nationally rare bee *Hyaeus gibbus* and a number of nationally scarce species including two native cockroaches, the dusky cockroach *Ectobius lapponicus* and lesser cockroach *E. panzeri*, and the silver-studded blue butterfly *Plebejus argus*. The nationally rare conopid fly *Myopa fasciata* is recorded from the scrub/heath interface.

The mosaic of open heath, young plantings and broad rides within coniferous plantation, and scrub provides habitat for a number of heathland birds. These include stonechat *Saxicola torquata* together with three highly vulnerable species of bird, woodlark *Lullula arborea*, nightjar *Caprimulgus europaeus* and Dartford warbler *Sylvia undata*. The site is also a regular feeding habitat for the hobby *Falco subbuteo*.

### **Other information**

1. Part of this site is a Country Park and part is registered and confirmed common land.
2. This site includes land which has been proposed for designation as a Special Protection Area under Directive 79/409/EEC on the Conservation of Wild Birds. Nightjar, woodlark and Dartford warbler are listed on Annex 1 of the Directive.
3. Woodlark and Dartford warbler are specially protected by being listed in Schedule 1 of the Wildlife and Countryside Act 1981 (as amended).
4. Woodlark, nightjar and hobby are priority species in the UK Biodiversity Action Plan.
5. Lowland heath is a priority habitat in the UK Biodiversity Action Plan.

**COUNTY:** BERKSHIRE

**SITE NAME:** LONGMOOR BOG

**Status:** Site of Special Scientific Interest (SSSI) notified under Section 28 of the Wildlife and Countryside Act 1981

**Local Planning Authorities:** Wokingham District Council, Berkshire County Council

**National Grid Reference:** SU782653

**Ordnance Survey Sheet 1:50,000:** **1:10,000:** SU76 NE/SE

**Date Notified (Under 1981 Act):** 1986 **Date of Last Revision:**

**Area:** 14.4 ha 35.5 ac

**Other information:** Part of the site is a Local Nature Reserve declared under Section 21 of the National Parks and Access to the Countryside Act 1949.

### **Description and Reasons for Notification**

Longmoor Bog is one of a few examples in Berkshire of a base-poor valley mire, its main features being a well-developed carr of alder *Alnus glutinosa*, grey willow *Salix cinerea*, downy birch *Betula pubescens* and alder buckthorn *Frangula alnus* and an area of wet heathland dominated by purple moor-grass *Molinia caerulea* and cross-leaved heath *Erica tetralix*. The remainder of the site is predominantly secondary mixed woodland.

Situated three miles south-west of Wokingham, Longmoor Bog lies in a shallow valley on sandy deposits of the Lower Bagshot beds. On higher ground there are free-draining acid soils, whilst in the valley bottom underlying clay has impeded the drainage and allowed peat to accumulate to a depth of over a metre. The peat provides a virtually unbroken pollen record for the last 7,500 years and cores taken from it have been used to demonstrate past changes in vegetation and landuse for the surrounding area. Studies suggest that some of the upper peat has been removed, possibly by medieval peat diggers.

A small stream arises from an outlet from Longmoor Lake and follows a straight course through the main area of carr woodland. The peaty soil remains waterlogged throughout the year, locally forming a 'ferruginous swamp' due to the presence of rust-coloured iron bacteria. The ground is carpeted by mosses, particularly the moderately shade-tolerant species *Sphagnum fimbriatum*, one of eight species of bog moss occurring. Other species, including the mosses *Orthotrichum lyelli* and *Ulota crispa*, grow on trees as do the liverworts *Lejeunea ulicina* and *Metzgeria fruticulosa*. Many of the mosses and liverworts occurring are uncommon or rare in east Berkshire.

Associated with the carr are a number of higher plants, particularly acid-tolerant species. Water horsetail *Equisetum fluviatile* and white sedge *Carex curta* are abundant and bottle sedge *C. rostrata* also occurs frequently. Other species include hard fern *Blechnum spicant*, narrow buckler fern *Dryopteris carthusiana*, bogbean *Menyanthes trifoliata*, common wintergreen *Pyrola minor*, marsh pennywort *Hydrocotyle vulgaris*, lesser skullcap *Scutellaria minor* and common spotted orchid *Dactylorhiza fuchsii*.

The wet heathland lies to the south of the stream and carr and is likewise characterised by the abundance of mosses, particularly *Sphagnum capillifolium*, *S. cuspidatum*, *S. recurvum* and other species of bog moss. Cross-leaved heath is the dominant dwarf shrub, but heather *Calluna vulgaris* and dwarf gorse *Ulex minor* also occur. Several species of rushes are found, including heath rush *Juncus squarrosus* and bulbous rush *J. kochii*. Common cotton-grass *Eriophorum angustifolium* and the insectivorous round-leaved sundew *Drosera rotundifolia* also occur locally.

The open heath and the carr merge into mixed woodland on the drier soils, consisting of abundant birch *Betula* spp. with pedunculate oak *Quercus robur*, Scots pine *Pinus sylvestris*, aspen *Populus tremula* and rowan *Sorbus aucuparia*. Honeysuckle *Lonicera periclymenum* is frequent and wavy hair-grass *Deschampsia flexuosa* locally abundant. Other

plants include pill sedge *Carex pilulifera*, slender rush *Juncus tenuis*, heath woodrush *Luzula multiflora*, sneezewort *Achillea ptarmica*, heath groundsel *Senecio sylvaticus*, heath spotted orchid *Dactylorhiza maculata* and broad-leaved helleborine *Epipactis helleborine*.

OVER/

The woodland and heathland support a variety of breeding birds including woodcock, great spotted and green woodpeckers, treecreeper and tree pipit.

Longmoor Bog is an important site for insects, especially species associated with the wet heathland, such as the bog bush cricket *Metrioptera brachyptera* and silver-studded blue butterfly *Plebejus argus*, a declining species in southern Britain. Dragonflies recorded include *Anax imperator*, *Aeshna cyanea*, *A. juncea*, *Cordulea aenea* and *Orthetrum cancellatum*. Waved black *Parascotia fuliginaria* and marbled white spot *Cithacodia pygarga* moths have been recorded and large nests of the wood ant *Formica rufa* are found in the drier parts of the woodland.

Fungi are well represented and include typical heathland and woodland species such as fly agaric *Amanita muscaria*, tawny grisette *A. fulva*, *Laccaria laccata*, *Lactarius tabidus*, *L. turpis* and *Tricholoma fulvum*.

## **APPENDIX B**

### **Summary of Parcels 14 and 15 Invasive Species Walkover Survey Findings**

**PROJECT:** Hogwood Farm, Finchampstead

**CLIENT:** CALA Homes (Thames) Ltd

**HDA ref:** 868.1

**Date:** 8<sup>th</sup> February 2023

## **Summary of Parcels 14 and 15 Invasive Species Walkover Survey Findings**

### **1 Introduction**

- 1.1 This technical note summarises the findings of an updated Invasive Species Walkover Survey of Parcels 14 and 15 of the development land at Hogwood Farm, Finchampstead. The study was commissioned by CALA Homes (Thames) Ltd in March 2022. The extent of survey is shown on the accompanying *Invasive Species Survey Summary Plan*.
- 1.2 The purpose of the survey was to provide an updated assessment of the presence/likely absence of invasive plant species listed under Schedule 9 of the 1981 Wildlife and Countryside Act (as amended) within the Parcels 14 and 15 development area (hereinafter referred to as 'invasive plant species'). This updates a previous invasive species walkover survey carried out by HDA in December 2021 and has been carried out in accordance with the recommendations given in the *Non-native Invasive Species Management Plan – Parcels 14 and 15* (HDA, 2022) to update the survey prior to development commencing.

### **2 Background and legislation**

- 2.1 A suite of ecological surveys has been carried out across the development land at Hogwood Farm, which included invasive species surveys and incidental observations on the presence of invasive plant species listed on Schedule 9 of the 1981 Wildlife and Countryside Act (as amended).
- 2.2 An unidentified *Cotoneaster* species was recorded in association with the Parcels 14 and 15 development area during the previous invasive species walkover survey conducted in December 2021. In addition, during consultation with Natural England Japanese Knotweed was identified in the wider area (Royal Haskoning, 2014) and during an updated Phase 1 habitat survey Variegated Yellow Archangel was recorded from the wider site boundary (HDA, 2018). Several species of *Cotoneaster* (including

Wall Cotoneaster *Cotoneaster horizontalis*, Entire-leaved Cotoneaster *Cotoneaster integrifolius*, Himalayan Cotoneaster *Cotoneaster simonsii*, Hollyberry Cotoneaster *Cotoneaster bullatus* and Small-leaved Cotoneaster *Cotoneaster microphyllus*), Rhododendron (*Rhododendron ponticum* and *Rhododendron ponticum* x *Rhododendron maximum*), Variegated Yellow Archangel *Lamiaeum galeobdolon* and Japanese Knotweed *Fallopia japonica* are all listed under Schedule 9 of the 1981 Wildlife and Countryside Act (as amended). It is an offence to release, plant or cause to grow in the wild any plant included on this schedule of the Act.

- 2.3 This updated walkover survey has been carried out to identify the presence, location and area covered by any non-native invasive species listed on Schedule 9 of the 1981 Wildlife and Countryside Act (as amended), not previously identified within Parcels 14 and 15.

### **3 Methodology**

- 3.1 The survey took the form of a walkover survey of the Parcels 14 and 15 land. This involved a walked transect with regular stop samples to ensure that plant species present were not being overlooked. The survey was carried out by Nick Chambers of Hankinson Duckett Associates on the 2<sup>nd</sup> August 2022. Weather conditions were calm and dry.

#### *Limitations*

- 3.2 The optimal season for surveys of invasive plant species listed under Schedule 9 of the 1981 Wildlife and Countryside Act (as amended) is between May and August, with the updated August 2022 survey taking place at the end of this period. Although in combination with previous site work it is considered the walkover survey allows an indication of the likely presence/absence of invasive species within the Parcels 14 and 15 development area, the survey should not be regarded as confirmation of absence. Further certainty with regards to the presence/likely absence of invasive plant species could be achieved through multiple visits across the growing season.

### **4 Results**

- 4.1 The Parcels 14 and 15 development area is dominated by fallow grassland with small areas of scrub at the time of the survey. The development areas are bordered by plantation woodland, hedgerows and ditches.

- 4.2 The survey confirmed the continued presence of a species of Cotoneaster plant identified during the previous survey within the hedgerow constituting the southern boundary of Parcel 15, adjacent to Park Lane (see *Invasive Species Survey Summary Plan*).

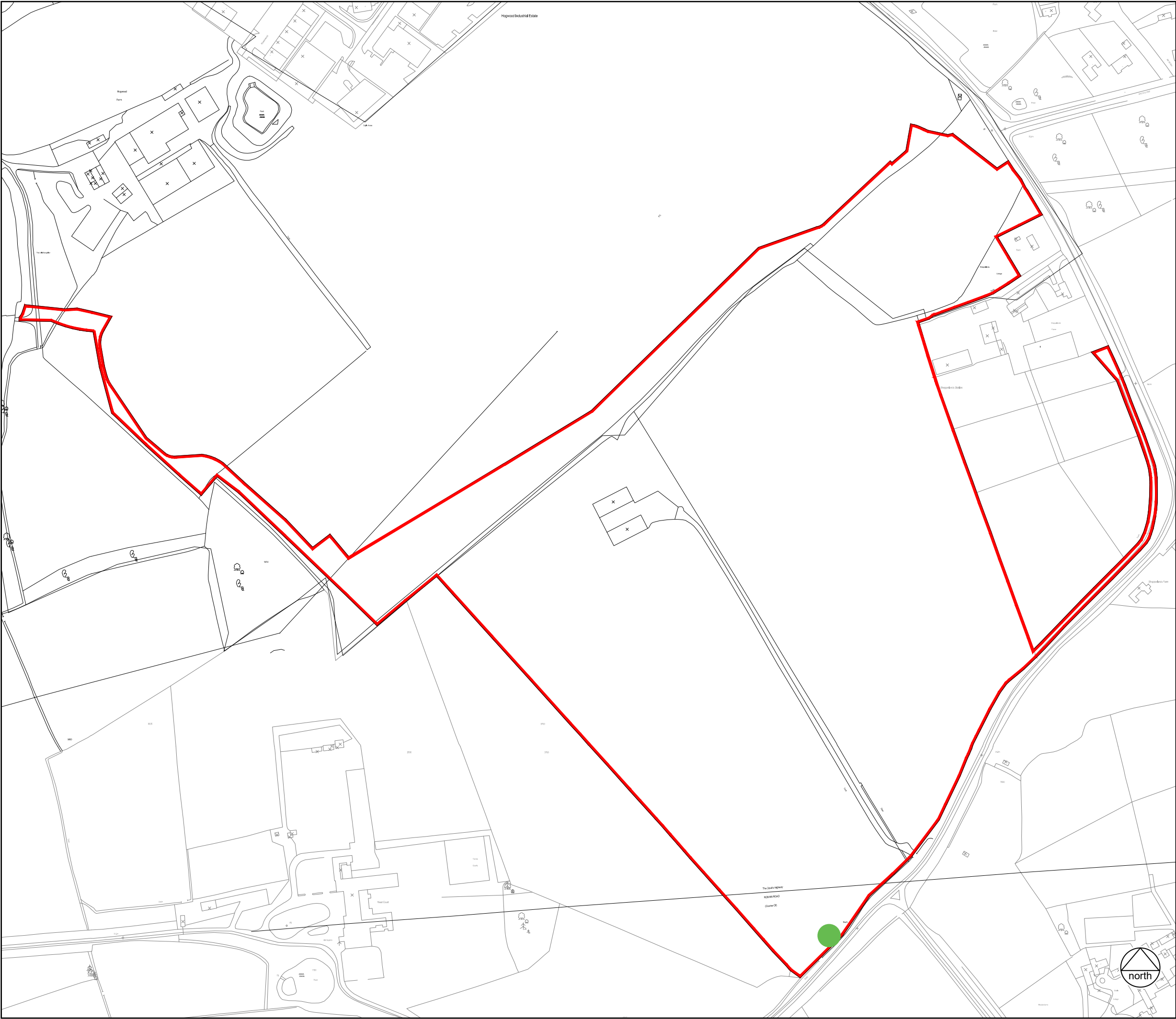
## **5 Recommendations and Conclusions**

- 5.1 Cotoneasters can be notoriously difficult to identify to a species level, often requiring observation throughout the growing season to study flower and fruit morphology. Unless further survey confirms that only non-invasive forms of Cotoneaster are present at the site, management works within the site should include the necessary control of Cotoneaster to prevent its spread within or outside of the Parcels 14 and 15 development area. This should be carried out in accordance with the methodology prescribed by a suitably qualified contractor (to ensure an effective warranty) however control measures are likely to comprise either:

1. Physical excavation of the plants and surrounding soil to ensure all plant matter and seeds are removed. Material should be chipped or burnt on site or removed to licenced landfill as control waste; or
2. Herbicide applications in the summer (June-August).

Following either method, the area should be subject to annual checks to confirm the plant has been killed as re-growth from seeds can occur.

- 5.2 With due regard to the limitation set out in *Section 3.2* above, it is considered unlikely that any further invasive plant species listed under Schedule 9 of the 1981 Wildlife and Countryside Act (as amended) are currently present within the Parcels 14 and 15 development land.



KEY



Site boundary



Cotoneaster

CLIENT:  
CALA Homes (Thames) Ltd  
PROJECT:  
Hogwood Farm, Finchampstead  
TITLE:  
Invasive Species Walkover Survey Plan  
SCALE AT A3: NTS  
DATE:  
February 2023

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The Stables, Howbery Park, Benson Lane, Wallingford, OX10 8BA  
t 01491 838175 e consult@hda-enviro.co.uk w www.hda-enviro.co.uk

Landscape Architecture  
Masterplanning  
Ecology



## **APPENDIX C**

### **2022 Bat Survey Report**

**HOGWOOD FARM, FINCHAMPSTEAD**

**2022 BAT SURVEY REPORT**

**Prepared for CALA Homes (Thames) Ltd**

**by**

**Hankinson Duckett Associates**

**HDA ref: 868.1**

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**hankinson duckett associates**

**t** 01491 838175 **f** 01491 838997 **e** [consult@hda-enviro.co.uk](mailto:consult@hda-enviro.co.uk) **w** [www.hda-enviro.co.uk](http://www.hda-enviro.co.uk)

The Stables, Howbery Park, Benson Lane, Wallingford, Oxfordshire, OX10 8BA

Hankinson Duckett Associates Limited Registered in England & Wales 3462810 Registered Office: The Stables, Howbery Park, Benson Lane, Wallingford, OX10 8BA

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# **1 INTRODUCTION**

## **1.1 Site location and summary description**

1.1.1 This report describes the results of a suite of updated bat surveys in relation to development of approximately 110ha of land at Hogwood Farm, Finchampstead hereinafter referred to as 'the site'. The area of the site subject to updated bat surveys related to approximately 58.5ha of land in the centre, east and west of the site, hereinafter referred to as 'the survey area'. The site centre is located by National Grid Reference SU 774 642. The study was commissioned by CALA Homes (Thames) Ltd in phases in February 2022 and June 2022.

1.1.2 The survey area is located to the north-west of the village of Finchampstead, Berkshire. In general terms, the survey area comprises a series of agricultural fields of mixed usage, including arable land and historically horse, cattle and sheep grazed fields bordered by mature species-rich hedgerows, treelines and ditches, some of which are currently fallow. Woodland shaws and copses are located in the south, west, east and central areas of the survey area, including mixed, broadleaved and broadleaved plantation woodland types, some of which are included on Natural England's Inventory of Ancient Woodland. Wetland habitats within the site include drainage ditches and small streams associated with the field boundaries and a pond is located within the centre of the survey area. Two buildings are located within the survey area and are comprised of two large barns in the east of the site. The survey area is bordered to the north by a construction site and the Hogwood Industrial Estate (associated with the site); to the east by Park Lane beyond which lie residential dwellings and park homes; to the south by Park Lane, farmland and the Suitable Alternative Natural Greenspace (SANG); and to the west by A327 Reading Road and Sheerlands Road beyond which lie farmland and woodland.

1.1.3 The survey area is part of a larger area covering a total of 110ha, hereinafter referred to as 'the site'. The site includes Phase 1 comprising residential dwellings and associated gardens in the north-west of the site, the Phase 2 and NMRE construction sites in the north-west and north of the site and a SANG in the south which comprises a mix of wetland, species-rich grassland, scrub and woodland habitats. The wider area is dominated by agricultural land interspersed with woodland and residential properties. The location and boundary of the survey area and site are shown in *Appendix A*.

1.1.4 Further information on the extent and composition of habitats across the survey area and site are provided in the *Phase 1 Habitat Survey and Target Notes* (HDA, 2018).

## **1.2 Legislative context**

1.2.1 All UK bat species are 'European Protected Species' (EPS) protected under the 2017 Conservation of Habitats and Species Regulations (as amended). In relation to an EPS, the 2017 Regulations make it an offence to:

- Deliberately capture, injure or kill any wild animal of an EPS;
- Deliberately disturb wild animals of any such species, in particular any disturbance which is likely to: (i) impair their ability to survive, to breed or reproduce, or to rear or nurture their young; or to hibernate or migrate; (ii) affect significantly the local distribution or abundance of the species to which they belong;
- Damage or destroy a breeding site or resting place of such an animal; and/or
- To (a) be in possession of, or to control; (b) to transport any live or dead animal or any part of an animal; (c) to sell or exchange or (d) offer for sale or exchange any live or dead animal or part of an animal of an EPS.

1.2.2 In addition, all UK bats are protected under the 1981 Wildlife and Countryside Act (as amended). All species are listed on Schedule 5 of the Act and are subject to the provisions of Sections 9.4b and 9.4c, which make it an offence to:

- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection; and/or
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a bat.

1.2.3 If works are planned that are likely to constitute an offence under the current legislation, an application for a derogation licence should be made to Natural England.

1.2.4 Seven species of bat (Barbastelle, Bechstein's, Noctule, Soprano Pipistrelle, Brown Long-eared, Greater Horseshoe and Lesser Horseshoe) are also identified as Species of Principal Importance under Section 41 of the 2006 Natural Environment and Rural Communities (NERC) Act. This requires planning authorities to regard these species as a material consideration in the planning process.

## **1.3 Development proposals and context**

1.3.1 Planning permission (O/2014/2179 and 140764) was granted in January 2017 for a hybrid application. This comprises:

- Outline permission for demolition of all existing buildings on site; up to 1,500 new dwellings; employment floor space; a Neighbourhood Centre; a primary school; sports pitches and associated pavilion building; highways infrastructure; associated landscaping, public realm, open/green space and sustainable urban drainage systems; and
- Full permission for a 29.7ha Suitable Alternative Natural Greenspace (SANG) in the south of the site.

The hybrid planning permission was subsequently amended by a Section 73 application (181194) which was approved in November 2018.

#### **1.4 Scope and purpose of the report**

1.4.1 Surveys of the site undertaken by Entec in 2008 and Amec in 2012 identified features suitable for roosting and foraging bats. During subsequent bat activity surveys, species recorded included Common Pipistrelle, Soprano Pipistrelle, Nathusius' Pipistrelle, *Myotis* sp., Brown long-eared bat, Noctule and Serotine (Royal Haskoning DHV, 2014). Further survey work was carried out between 2017-2019 by HDA to assess the suitability of buildings and trees within the survey area and site to support roosting, foraging and commuting bats. This is further supplemented by a Phase 1 bat roost scoping survey and Phase 2 bat roost survey carried out Stantec in 2020 for the construction of the Nine Mile Ride Extension (NMRE) which included updated surveys of some trees and buildings within the survey area (Stantec, 2020).

1.4.2 In recognition of the potential of the survey area to support bats, the time that has elapsed since the original surveys were undertaken and within the legislative context set out in *Section 1.2*, a updated Phase 1 bat scoping survey was carried out across the survey area to assess the potential of buildings and trees to support roosting bats. In addition, Phase 2 bat roost surveys were carried out to determine the presence/probable absence of roosting bats within trees with bat roost potential identified as potentially being impacted by the proposed development of Parcels 14 and 15 in accordance with the recommendations in the *Detailed Bat Mitigation Strategy – Parcels 14 and 15* (HDA, 2022) prepared for the proposed development of that area of the site. Updated Phase 2 bat activity surveys were also carried out across the survey area to determine the importance of habitats present for foraging and commuting bats. This information was then used to identify the need for any avoidance, mitigation or licensing measures in relation to bats in the context of the proposed development. Specifically, the aims of the updated 2022 study are:

- i) To identify potential bat roost sites provided by buildings and trees within the survey area;
- ii) To determine the presence/likely absence of roosting bats within suitable features where affected by the proposed development in association with Parcels 14 and 15 and identify species and numbers present;
- iii) To determine levels of bat foraging and commuting activity within habitats within the survey area;
- iv) To determine the requirement, if any, for licensing in respect of bats associated with Parcels 14 and 15; and
- v) To identify appropriate mitigation and/or enhancement measures to ensure that the development avoids adverse impacts on bats, and, where possible, provides enhancements to support the long-term favourable conservation status of bats in accordance with nature conservation legislation, planning policy and the 2006 NERC Act.

## **2 METHODOLOGY**

### **2.1 Introduction**

2.1.1 The methodology followed in relation to all bat survey work undertaken within the survey area is consistent with current legislation and good practice guidelines set out by the Bat Conservation Trust (BCT, 2016). The following sections detail the suite of surveys undertaken to inform the proposed development and the results of these surveys are provided in *Section 3*.

### **2.2 Phase 1 bat scoping survey**

2.2.1 The survey area was initially subject to a Phase 1 bat scoping survey by Fiona Muir of HDA over 4 days on the 1<sup>st</sup> and 7<sup>th</sup> of April, 4<sup>th</sup> May and 29<sup>th</sup> July 2022. All buildings and trees within the survey area were assessed for their potential to support roosting bats and classified according to their potential.

#### *Phase 1 building survey*

2.2.2 All buildings within the survey area were inspected externally from ground level using binoculars and a powerful torch to identify and investigate any potential entry and exit points such as missing roof tiles, loose fascias and lifted lead flashing, and to look for evidence of entry/exit in the form of staining, discolouration and/or scratch marks.

2.2.3 Internally, buildings were searched exhaustively where possible, to look for evidence of current or former occupation by bats. A powerful torch was used to investigate any accessible cavities, crevices and recesses in each building.

2.2.4 In view of the findings of the internal/external inspections, the potential of the buildings to support roosting bats ('confirmed roost', 'high', 'moderate', 'low' or 'negligible') was assessed in accordance with current best practice guidelines (BCT, 2016). Assessment of bat roosting potential requires consideration of a number of criteria, including the design and construction of the building or structure, the size and location of potential features and access points, the position of the building or structure, aspect, geographical location, surrounding land use and adjacent landscape linkages.

#### *Phase 1 tree survey*

2.2.5 All trees within the survey area were inspected from ground-level with the aid of binoculars and a powerful torch to identify potential features suitable for use by roosting bats. Potential features include splits, cracks and cavities, peeling bark, woodpecker holes, broken branches and a covering of Ivy where this is of a sufficient age to provide a suitable microclimate between the tree and Ivy stem(s).

2.2.6 In accordance with current best practice guidelines (BCT, 2016), trees were placed into one of five categories. Categorisation was based on the nature, size, location and quality of features present in each tree:

- Negligible suitability - Trees with no or negligible features for roosting bats;
- Low suitability - Trees of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential;
- Moderate suitability - Trees with one or more potential roost sites that could be used by bats but are unlikely to support roost types of high conservation status;
- High suitability - Trees with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time; or
- Known or confirmed bat roost.

## 2.3 Phase 2 roost surveys

2.3.1 Phase 2 roost surveys, comprising dusk emergence and dawn re-entry surveys, were conducted wherever trees potentially affected by the proposed development of Parcels 14 and 15 had been identified as having potential to support roosting bats (HDA, 2022). Emergence/re-entry surveys were conducted to determine presence/probable absence and, where present, identify species and numbers. The level of survey effort conducted was determined with reference to the identified bat roosting potential of the feature in accordance with best practice guidelines.

2.3.2 Surveyors with electronic bat detectors<sup>1</sup> were positioned around each feature to record bats emerging from or entering the trees. For the more complex/dark locations, surveyors were supplemented by infrared camcorders<sup>2</sup> coupled with infrared lights to illuminate the possible roost features. Potential emergences/re-entries were analysed in real-time by an ecologist the following day. Surveyors and camcorders were positioned to provide adequate coverage of all potential emergence/re-entry points on each feature surveyed. The surveyors carrying out the surveys were all experienced at carrying out bat emergence/re-entry surveys. Dusk emergence surveys generally began 15 minutes before sunset, ending approximately 1.5 hours after sunset. Dawn re-entry surveys generally began approximately 1.5 hours before sunrise and ended at sunrise or shortly thereafter. Records were made of any emergences and re-entries, and incidental records were also made of bat commuting and foraging activity in the vicinity of each surveyor.

---

<sup>1</sup> Anabat Walkabout and Anabat Express with 'Analook' recording software.

<sup>2</sup> Canon XA40 4K camcorders with infrared capability.

**Table 1:** Details of Phase 2 roost surveys

| Tree ref | Date / Time               | Sunset / Sunrise | Conditions                                                                           |
|----------|---------------------------|------------------|--------------------------------------------------------------------------------------|
| 2 & 97   | 04/05/2022<br>20.15-22.00 | 20.30            | 100% cloud cover, Beaufort Scale = 0, dry, 13-10°C                                   |
|          | 01/07/2022<br>03.21-05.04 | 04.51            | 60% cloud cover, Beaufort Scale = 1, dry, 11°C                                       |
|          | 20/07/2022<br>20.53-22.38 | 21.08            | 100% cloud cover, Beaufort Scale = 2, light rain showers between 21.30 - 22.15, 20°C |
| 91 & 93  | 04/05/2022<br>20.15-22.00 | 20.30            | 100% cloud cover, Beaufort Scale = 0, dry, 13-10°C                                   |
|          | 01/07/2022<br>03.21-05.04 | 04.51            | 60% cloud cover, Beaufort Scale = 1, dry, 11°C                                       |
|          | 29/07/2022<br>20.43-22.28 | 20.58            | 80% cloud cover, Beaufort Scale = 0, dry, 24-21°C                                    |
| G2       | 04/05/2022<br>20.15-22.00 | 20.30            | 100% cloud cover, Beaufort Scale = 0, dry, 13-10°C                                   |
|          | 14/07/2022<br>21.00-22.45 | 21.15            | 5% cloud cover, Beaufort Scale = 1, dry, 20°C                                        |
| G4 & AF  | 30/06/2022<br>21.09-22.54 | 21.24            | 90% cloud cover, Beaufort Scale = 1, dry, 19-16°C                                    |
|          | 14/07/2022<br>21.00-22.45 | 21.15            | 5% cloud cover, Beaufort Scale = 1, dry, 20°C                                        |

## 2.4 Phase 2 bat activity survey

### *Bat activity transects*

- 2.4.1 In order to provide an assessment of the importance of the survey area for foraging and commuting bats, dusk and dawn activity surveys were undertaken between May and September 2022. Due to the size of the survey area, the survey area was divided into two survey area transects. The two survey area transect locations are shown in *Appendix B*. Surveyors carrying hand-held bat detectors walked transects of the survey area, with listening stops at regular intervals for periods of up to 5 minutes. Visual observations of bats and bat call registrations were noted, recording time, location, activity and, where known, species. Recordings of foraging and/or commuting activity made using digital devices were subsequently analysed to determine the identity of any unconfirmed species recorded during the surveys. Times and dates of surveys are given in *Table 2* below, along with weather conditions.

**Table 2:** Details of bat activity surveys

| Date                            | Sunset / sunrise | Time          | Weather conditions                                                                   |
|---------------------------------|------------------|---------------|--------------------------------------------------------------------------------------|
| 04/05/2022<br>(Transects 1 & 2) | 20.30            | 20.30 - 22.30 | 100% cloud cover, Beaufort Scale = 0, dry, 13-10°C                                   |
| 14/07/2022<br>(Transect 1)      | 21.15            | 21.15 - 23.15 | 5% cloud cover, Beaufort Scale = 1, dry, 20°C                                        |
| 20/07/2022<br>(Transect 2)      | 21.08            | 21.08 - 23.08 | 100% cloud cover, Beaufort Scale = 2, light rain showers between 21.30 - 22.15, 20°C |

| Date                            | Sunset / sunrise | Time          | Weather conditions                             |
|---------------------------------|------------------|---------------|------------------------------------------------|
| 13/09/2022<br>(Transects 1 & 2) | 06.35            | 04.35 - 06.35 | 80% cloud cover, Beaufort Scale = 1, dry, 15°C |

#### *Automated surveys*

2.4.2 Automated surveys were carried out as a supplement to the activity transect surveys and to gain further information on the species and frequency of bat activity within the survey area. Two programmable electronic bat detectors<sup>3</sup> were positioned in suitable habitat and left in place on three occasions between May and October 2022. Automated bat detector deployment are provided in *Table 3* below and the location of each detector deployed is shown in *Appendix B*.

**Table 3:** Details of automated bat detector deployment

| Location          | Deployment and collection date | Sunset / Sunrise | Temp. Max. / Min. (°C) |
|-------------------|--------------------------------|------------------|------------------------|
| <b>A &amp; B*</b> | 04.04.2022 – 05.04.2022        | 19:42 / 06:30    | 13 / 9                 |
|                   | 05.04.2022 – 06.04.2022        | 19:43 / 06:28    | 11 / 8.                |
|                   | 06.04.2022 - 07.04.2022        | 19:45 / 06:26    | 9 / 7                  |
|                   | 07.04.2022 - 08.04.2022        | 19:47 / 06:23    | 7 / 4                  |
|                   | 08.04.2022 - 09.04.2022        | 19:48 / 06:21    | 8 / 2                  |
|                   | 09.04.2022 - 10.04.2022        | 19:50 / 06:19    | 9 / 2                  |
| <b>C &amp; D</b>  | 14.07.2022 - 15.07.2022        | 21:15 / 05:04    | 20 / 9                 |
|                   | 15.07.2022 - 16.07.2022        | 21:14 / 05:05    | 21 / 11                |
|                   | 16.07.2022 - 17.07.2022        | 21:13 / 05:06    | 23 / 12                |
|                   | 17.07.2022 - 18.07.2022        | 21:12 / 05:08    | 24 / 14                |
|                   | 18.07.2022 - 19.07.2022        | 21:11 / 05:09    | 28 / 18                |
| <b>E &amp; F</b>  | 28.09.2022 - 29.09.2022        | 18:48 / 07:01    | 18 / 3                 |
|                   | 29.09.2022 - 30.09.2022        | 18:46 / 07:02    | 15 / 4                 |
|                   | 30.09.2022 - 01.10.2022        | 18:44 / 07:04    | 14 / 11                |
|                   | 01.10.2022 - 02.10.2022        | 18:41 / 07:05    | 16 / 12                |
|                   | 02.10.2022 – 03.10.2022        | 18:39 / 07:07    | 17 / 5                 |

\* The static at Location B recorded one less night than the static at Location A (i.e. until the 09.04.2022).

2.4.3 The results of the updated bat activity transect and automated detector surveys have been used to support the earlier assessment of bat foraging and commuting activity made in the Ecology Chapter of the Environmental Assessment submitted in support of the planning application (Royal Haskoning, 2014) and previous bat activity surveys carried out in 2017 and 2018 by HDA.

<sup>3</sup> Anabat SD2 with remote microphone and 'Analook' software

## 2.5 Limitations of surveys

2.5.1 All surveys followed best practice guidelines (BCT, 2016) and were conducted at an appropriate time of year, under favourable weather conditions and with an appropriate level of survey effort both in terms of the number of surveyors used and number of survey visits undertaken. Although periods of rain were experienced on one of the bat emergence surveys and one of the activity surveys, this was not found to have affected levels of bat activity and is not considered a constraint to the findings of the Phase 2 surveys. The surveys are therefore considered sufficient to allow a robust assessment of the likely effects of the proposed development on bats and to inform the recommendations provided in *Section 5* of this report.

## 3 RESULTS

### 3.1 Phase 1 bat scoping survey

#### *Buildings*

3.2.1 All buildings within the survey area were inspected during the Phase 1 bat scoping survey. The results of the Phase 1 building survey are summarised in *Table 4* below and the location of the buildings are shown in *Appendix A*. Photograph references relate to the photographs provided in *Appendix C*.

**Table 4:** Results of Phase 1 bat scoping building survey<sup>4</sup>

| Building                | Description                                                                     | Findings                                                                                                                                                                                                                                                                                                          | Bat Roost Potential |
|-------------------------|---------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>B23</b><br>(Photo 1) | Farm shed with corrugated metal walls and a peaked corrugated metal roof.       | <b>External:</b><br>No suitable features for roosting bats present. The building is of single-skinned, metal construction and is likely to fluctuate in temperature.<br><br><b>Internal:</b><br>Internal survey not possible due to access constraints.<br><br><b>Evidence of bat activity:</b><br>None recorded. | <b>Negligible</b>   |
| <b>B38</b><br>(Photo 2) | Farm shed with corrugated metal walls and a peaked gable corrugated metal roof. | <b>External:</b><br>No suitable features for roosting bats present.<br><br><b>Internal:</b><br>The building is open on one elevation, single-skinned, of metal construction and is likely to fluctuate in temperature.<br><br><b>Evidence of bat activity:</b><br>None recorded.                                  | <b>Negligible</b>   |

<sup>4</sup> Buildings B1, B2, B3, B4, B11, B21, B22, B34, B35, B36 and B37 removed from site before 2022 survey.

| Building                | Description                                               | Findings                                                                                                                                                                                                                                            | Bat Roost Potential |
|-------------------------|-----------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>B39</b><br>(Photo 3) | Bat barn constructed of timber with a pitched tiled roof. | <p><b>External:</b><br/>Multiple entry points for bats within the walls and bat tiles present on the roof.</p> <p><b>Internal:</b><br/>No internal access due to access constraints.</p> <p><b>Evidence of bat activity:</b><br/>None recorded.</p> | <b>High</b>         |

### Trees

3.2.2 All trees identified as having potential to support roosting bats within the survey area are described in *Table 5* below and their locations are given in *Appendix A*.

**Table 5:** Results of Phase I bat scoping tree survey

| Tree ref* | Species         | Findings                                                                                                                                                        | Bat Roost Potential |
|-----------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| <b>2</b>  | Pedunculate Oak | Broken branch on northern aspect which appears hollow and has a cavity.<br>Two possible openings into trunk where large branches have torn away from main stem. | <b>High</b>         |
| <b>4</b>  | Pedunculate Oak | Two dead branches, one with large split and the other with a potential cavity on western aspect.                                                                | <b>Moderate</b>     |
| <b>5</b>  | Pedunculate Oak | Possible cavity on western aspect.                                                                                                                              | <b>Low</b>          |
| <b>7</b>  | Dead            | Limited features of bat roosting potential including narrow cracks in branches and a hole in trunk of limited depth.                                            | <b>Low</b>          |
| <b>9</b>  | Pedunculate Oak | Dead branch with a possible opening on western aspect.                                                                                                          | <b>Low</b>          |
| <b>11</b> | Oak             | Cavity at base of trunk.                                                                                                                                        | <b>Moderate</b>     |
| <b>13</b> | Willow          | Tree scar with possible narrow cavity on southern aspect.                                                                                                       | <b>Low</b>          |
| <b>14</b> | Oak             | Long knot hole on branch but without obvious depth, upward facing cavity and occluded wood without obvious depth on eastern aspect.                             | <b>Low</b>          |
| <b>15</b> | Poplar          | Some stem decay on northern aspect with broken limb and split wood of limited potential on southern aspect.                                                     | <b>Low</b>          |
| <b>16</b> | Poplar          | Broken branch with deadwood on northern aspect and main crown is lost with potential hidden cavities.<br>Cavity at snapped branch leading into trunk.           | <b>Moderate</b>     |
| <b>18</b> | Oak             | Mature Ivy coverage with Ivy plating that has lifted in places.<br>Branch cavity of possible depth on eastern aspect.                                           | <b>Moderate</b>     |
| <b>19</b> | Pedunculate Oak | Upward facing knot hole with possible depth on southern aspect.                                                                                                 | <b>Low</b>          |
| <b>23</b> | Pedunculate Oak | Dense Ivy coverage with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                         | <b>Low</b>          |
| <b>25</b> | Birch           | Section of occluded wood on southern aspect.<br>Ivy coverage may have obscured features from ground.                                                            | <b>Low</b>          |
| <b>26</b> | Pedunculate Oak | Knot hole with limited potential on western elevation with Ivy potentially obscuring further features from view.                                                | <b>Low</b>          |
| <b>28</b> | Hawthorn        | Multiple holes and cavities with depth in trunk on southern, eastern and western aspects.                                                                       | <b>High</b>         |
| <b>29</b> | Silver Birch    | Fallen tree that has re-rooted. At the fallen end the trunk is hollow with a hole at the end.                                                                   | <b>High</b>         |

| Tree ref* | Species         | Findings                                                                                                                                                                                                                                                                    | Bat Roost Potential |
|-----------|-----------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
| 30        | Pedunculate Oak | Hollowing at base of trunk.<br>Large Woodpecker hole on northern aspect.<br>Large knot hole with possible cavity and staining on trunk on eastern aspect.<br>Lifted bark with possible opening below and a further possible cavity in trunk, although view obscured by Ivy. | High                |
| 31        | Pedunculate Oak | Deadwood with some cracks and splits in crown.                                                                                                                                                                                                                              | Low                 |
| 35        | Wild Apple      | Trunk hollow with opening at base.<br>Large hole at 1.5m featuring scratch marks at entrance and further cavities within dead stem.                                                                                                                                         | High                |
| 47        | Pedunculate Oak | Mature tree with dense Ivy on main trunk, downward facing knot hole on branch to south and snapped branch with split wood to south-east with limited potential.                                                                                                             | Low                 |
| 85        | Ash             | Dense Ivy coverage with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                                                     | Low                 |
| 87        | Ash             | Dense Ivy coverage with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                                                     | Low                 |
| 89        | Pedunculate Oak | Bat box present.<br>Some decay to base of trunk but no obvious access points, dead branches in crown, some with knot holes and occluded wood with possible but no obvious depth.                                                                                            | High                |
| 90        | Field Maple     | Dense Ivy coverage with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                                                     | Low                 |
| 91        | Pedunculate Oak | Bat box present.<br>Mature tree with some Ivy coverage. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                               | High                |
| 92        | Field Maple     | Dense Ivy coverage with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                                                     | Low                 |
| 93        | Pedunculate Oak | Bat box present.<br>Branch with split on south-western aspect.                                                                                                                                                                                                              | High                |
| 94        | Pedunculate Oak | Dead branch with small opening on south-western aspect.                                                                                                                                                                                                                     | Low                 |
| 97        | Oak             | Main trunk is partly hollow with cavities at base and at 1.5m.<br>Further branch cavities on south-eastern aspect.                                                                                                                                                          | High                |
| 100       | Pedunculate Oak | Two branches with deadwood and cracks on northern aspect.<br>Branches with long knot holes and occluded wood on south-western aspect.                                                                                                                                       | Moderate            |
| 274       | Pedunculate Oak | Deadwood in crown, but no obvious features recorded.                                                                                                                                                                                                                        | Low                 |
| 322       | Ash             | Branch with small upward facing holes on southern aspect.                                                                                                                                                                                                                   | Low                 |
| 327       | Field Maple     | Small hole in dead stem.                                                                                                                                                                                                                                                    | Low                 |
| 331       | Ash             | Downward facing knothole on branch on eastern aspect and some deadwood with shallow knotholes in crown.<br>Features recorded have limited suitability to support roosting bats.                                                                                             | Low                 |
| 333       | Field Maple     | Long wound and long cavity on partially hollow trunk on eastern and north-eastern aspects.                                                                                                                                                                                  | Moderate            |
| 334       | Pedunculate Oak | Small holes in branches on southern aspect.                                                                                                                                                                                                                                 | Low                 |
| 335       | Pedunculate Oak | Two snapped branches with split wood on western aspect of limited bat roost potential.                                                                                                                                                                                      | Low                 |
| 336       | Field Maple     | Heavily Ivy clad tree with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                                                  | Low                 |

| Tree ref* | Species         | Findings                                                                                                                                                                                                                             | Bat Roost Potential                       |
|-----------|-----------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------|
| 337       | Field Maple     | Heavily Ivy clad tree with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                           | Low                                       |
| 338       | Pedunculate Oak | Broken branch resting on adjacent branch, with large opening where the break has occurred on northern aspect. Numerous further broken and snapped branches supporting features including splits, cracks and cavities on all aspects. | Confirmed roost for 1 Soprano Pipistrelle |
| 339       | Ash             | Heavily Ivy clad with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                | Low                                       |
| 340       | Field Maple     | Heavily Ivy clad with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                | Low                                       |
| 353       | Ash             | Upwards facing cavity on northern aspect.                                                                                                                                                                                            | Low                                       |
| 355       | Ash             | Upward facing cavity on south-eastern aspect.                                                                                                                                                                                        | Low                                       |
| 356       | Pedunculate Oak | Heavily Ivy clad with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                | Low                                       |
| 357       | Ash             | Heavily Ivy clad with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                | Low                                       |
| 362       | Pedunculate Oak | Loss of limb with split wood, deadwood and small, narrow crack.                                                                                                                                                                      | Low                                       |
| 363       | Field Maple     | Trunk is hollow with opening at base on western aspect and tree is heavily Ivy clad.                                                                                                                                                 | Moderate                                  |
| 364       | Field Maple     | Hollow stem with opening at base, with dense Ivy covering trunk.                                                                                                                                                                     | Moderate                                  |
| 367       | Pedunculate Oak | Missing branch leaving split wood and deadwood in canopy, but no obvious features recorded.                                                                                                                                          | Low                                       |
| 368       | Oak             | Trunk clad with old dead Ivy. Multiple branches with deadwood and small cracks.                                                                                                                                                      | Low                                       |
| 372       | Oak             | Deadwood in crown and peeling bark.                                                                                                                                                                                                  | Low                                       |
| 373       | Pedunculate Oak | Mature, dead Ivy on trunk.                                                                                                                                                                                                           | Low                                       |
| 374       | Pedunculate Oak | Mature tree with deadwood in canopy with no obvious features from ground level, but suitable roosting features could be concealed.                                                                                                   | Low                                       |
| 391       | Pedunculate Oak | Dead branch on south-western aspect.                                                                                                                                                                                                 | Low                                       |
| 392       | Ash             | Multiple Woodpecker holes into a likely hollow trunk. Large upward facing hole on northern aspect.                                                                                                                                   | High                                      |
| 393       | Pedunculate Oak | Dead branches with shallow cracks and potential cavities on south-western aspect.                                                                                                                                                    | Low                                       |
| 394       | Pedunculate Oak | Snapped branch on eastern aspect.                                                                                                                                                                                                    | Low                                       |
| 396       | Pedunculate Oak | Branch with split wood, crack and small hole of limited bat roost potential.                                                                                                                                                         | Low                                       |
| 398       | Oak             | Heavily Ivy clad, suitable roosting features could be concealed.                                                                                                                                                                     | Low                                       |
| 399       | Ash             | Opening at base of trunk but does not appear to lead anywhere.                                                                                                                                                                       | Low                                       |
| 400       | Ash             | Large Woodpecker holes on south-eastern aspect. Main trunk partially hollow with cavities on northern aspect.                                                                                                                        | Moderate                                  |
| 405       | Pedunculate Oak | Dead branch on south-western aspect with small Woodpecker holes and deadwood within crown. Two bat boxes present on tree.                                                                                                            | High                                      |
| 407       | Pedunculate Oak | Opening in trunk near ground level and trunk appears hollow. The rest of the trunk is heavily Ivy clad and further features could potentially be concealed.                                                                          | Probable roost of 1 silent bat            |
| 408       | Oak             | Mostly dead tree with a few small cracks within                                                                                                                                                                                      | Moderate                                  |

| Tree ref*             | Species         | Findings                                                                                                                                                                                                                                                               | Bat Roost Potential                                   |
|-----------------------|-----------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|
|                       |                 | deadwood.<br>Minor woodpecker hole.                                                                                                                                                                                                                                    |                                                       |
| 410                   | Oak             | Deadwood in canopy.                                                                                                                                                                                                                                                    | Low                                                   |
| 417                   | Oak             | Deadwood in canopy.                                                                                                                                                                                                                                                    | Confirmed roost (roost identified by Stantec in 2020) |
| 419                   | Ash             | Dense Ivy coverage and deadwood in crown. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                                        | Confirmed roost (roost identified by Stantec in 2020) |
| 426 (see 427 on plan) | Ash             | Large upward facing crack in branch of limited suitability for roosting bats.                                                                                                                                                                                          | Low                                                   |
| 427                   | Ash             | Knot hole with possible depth on southern aspect.                                                                                                                                                                                                                      | Low                                                   |
| 428 (see 427 on plan) | Ash             | Heavily Ivy clad with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                                                  | Low                                                   |
| 432                   | Oak             | Densely Ivy clad with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                                                  | Low                                                   |
| 436                   | Ash             | Large upward facing knothole with no obvious depth on western aspect.                                                                                                                                                                                                  | Low                                                   |
| 438                   | Pedunculate Oak | Bat boxes.<br>No obvious features of bat roost potential, but tree of an age where bat roosting features may be concealed.                                                                                                                                             | High                                                  |
| 439                   | Pedunculate Oak | A dead branch with a possible cavity and a snapped branch with a possible cavity on southern aspect.<br>Bat boxes.                                                                                                                                                     | High                                                  |
| 440                   | Pedunculate Oak | Mature, dense Ivy with features possibly concealed and peeling bark present on all aspects.                                                                                                                                                                            | Low                                                   |
| 441                   | Ash             | Mature, dense Ivy with features possibly concealed.<br>Dead branch with a hole of possible depth on eastern aspect.<br>Bat boxes on south-western aspect.                                                                                                              | High                                                  |
| 445                   | Pedunculate Oak | Large trunk cavity on north-western aspect.<br>Branch with deadwood and a shallow cavity on south-eastern aspect.<br>Small branch cavity on south-western aspect.<br>Dead branch with rot hole on eastern aspect.<br>Dead branch in the crown on north-eastern aspect. | High                                                  |
| 571                   | Pedunculate Oak | Snapped branch in crown, branches with deadwood with some Ivy on trunk. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                          | Low                                                   |
| 578                   | Pedunculate Oak | The tree is densely Ivy covered. No suitable features identified from ground level, but suitable roosting features could be concealed.<br>Branch on southern aspect has small knot hole.                                                                               | Low                                                   |
| 579                   | Ash             | Knot hole with possible depth on northern aspect.                                                                                                                                                                                                                      | Low                                                   |
| 580                   | Pedunculate Oak | Crack in main stem where branch has torn and a further branch has torn leaving a gap between trunk and branch on southern aspect.<br>Occluded wood on south-eastern aspect.<br>Branch with crack on northern aspect.<br>Dense Ivy on eastern aspect of trunk.          | Moderate                                              |
| AA                    | Oak             | Densely Ivy clad tree with deadwood. No suitable                                                                                                                                                                                                                       | Low                                                   |

| Tree ref* | Species           | Findings                                                                                                                                                                                                                 | Bat Roost Potential |
|-----------|-------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------|
|           |                   | features identified from ground level, but suitable roosting features could be concealed.                                                                                                                                |                     |
| AB        | Maple             | Possible trunk cavity.                                                                                                                                                                                                   | Low                 |
| AC        | Dead tree         | Large and small trunk cavities on eastern aspect.                                                                                                                                                                        | Moderate            |
| AE        | Ash               | Tree cavities and woodpecker holes on southern aspect. Bat box present.                                                                                                                                                  | High                |
| AF        | Holly             | Multi-stemmed Holly containing multiple trunk cavities.                                                                                                                                                                  | Moderate            |
| AG        | Ash               | Bat box present.                                                                                                                                                                                                         | High                |
| AH        | Pedunculate Oak   | Bird box on the southern aspect.                                                                                                                                                                                         | High                |
| AI        | Oak               | Densely Ivy clad tree with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                               | Low                 |
| AJ        | Oak               | Densely Ivy clad tree with deadwood and missing crown. Large sections of peeling bark on southern aspect and a woodpecker hole on the western aspect.                                                                    | High                |
| AK        | Ash               | Heavily Ivy clad. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                  | Low                 |
| F         | Pedunculate Oak   | Densely Ivy clad tree with deadwood. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                               | Low                 |
| G         | Dead tree         | Collapsed tree                                                                                                                                                                                                           | Negligible          |
| J         | Dead              | Dead tree with limited features of bat potential including a branch with a crack.                                                                                                                                        | Low                 |
| K         | Hawthorn          | Mature tree with two upward facing holes on trunk.                                                                                                                                                                       | Low                 |
| L         | Oak               | Mature Oak with dense Ivy coverage. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                | Low                 |
| M         | Willow            | Trunk leaning with a tear at base with possible opening.                                                                                                                                                                 | Low                 |
| N         | Oak               | Many features on branches on all aspects including hollowing, knot holes, cavities and deadwood. The tree is covered with dense Ivy, some of which is mature.                                                            | Moderate            |
| P         | Poplar            | Mature tree with dense Ivy coverage on main trunk, features could be concealed.                                                                                                                                          | Low                 |
| Q         | Oak               | Dense Ivy coverage, features could be concealed.                                                                                                                                                                         | Low                 |
| R         | Wild Service Tree | Cavity at base of trunk and dense Ivy coverage.                                                                                                                                                                          | Moderate            |
| S         | Oak               | Some Ivy coverage with dead branches within crown. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                 | Low                 |
| T         | Dead tree         | Dead tree with long hollow split along trunk, lifted bark and Woodpecker holes.                                                                                                                                          | High                |
| U         | Dead tree         | Crown lost, trunk has mature, dead Ivy coverage, with some small plates of lifted bark and a small cavity. No further suitable features identified from ground level, but suitable roosting features could be concealed. | Low                 |
| V         | Ash               | Hollow trunk.                                                                                                                                                                                                            | Moderate            |
| W         | Poplar            | Trunk cavity, knot hole with possible cavity and broken branches in crown.                                                                                                                                               | Moderate            |
| X         | Dead tree         | Broken and dead branch with an opening on eastern aspect.                                                                                                                                                                | Moderate            |
| Y         | White Poplar      | Woodpecker hole with depth on eastern aspect.                                                                                                                                                                            | Moderate            |
| Z         | Oak               | Dense Ivy coverage, possible features could be concealed.                                                                                                                                                                | Low                 |
| G1        | Oak x 2           | Deadwood with possible gap where two branches have fused together and small cavities in deadwood.                                                                                                                        | Low                 |
| G2        | Oak x 2           | Cavity with depth and occluded wood on southern aspect, possible cavity where branch has been removed.                                                                                                                   | Moderate            |
| G4        | Oak x 2           | Scar with possible cavity and branch with deadwood and possible cavity.                                                                                                                                                  | Moderate            |

| Tree ref* | Species              | Findings                                                                                                                                                                                                                                                                   | Bat Roost Potential    |
|-----------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|
| G6        | Treeline             | Treeline containing Holly and Birch. One Holly tree with an upwards facing limited crack and a Birch tree with a thick covering of Ivy. No further suitable features identified from ground level, but suitable roosting features could be concealed.                      | Low                    |
| G7        | Treeline             | Treeline containing Holly and Birch. Small, shallow knot holes within Holly on southern aspect and Birch with a thick covering of Ivy. No further suitable features identified from ground level, but suitable roosting features could be concealed.                       | Low                    |
| G8        | Group of Holly trees | Group of Holly trees with shallow knot holes present on all aspects.                                                                                                                                                                                                       | Low                    |
| G9        | Group of Holly trees | Group of multi-stemmed Holly trees. Features include hollow branch on the southern aspect, trunk cavity with slight staining present on the southern aspect, branch cavity present on the western aspect and multiple small knot holes present on all aspects.             | Moderate               |
| G10       | Group of Holly trees | Group of Holly trees forming part of treeline. Multiple trunk cavities leading into potentially hollow trunks. Some staining is present under several of the holes.                                                                                                        | Moderate-High          |
| G11       | Treeline             | Treeline containing Holly and Oak. A thick covering of Ivy where no suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                     | Low                    |
| G575      | Ash                  | Small group of Ash, densely Ivy clad. No suitable features identified from ground level, but suitable roosting features could be concealed.                                                                                                                                | Low                    |
| W4        | Woodland             | This area of woodland supports trees ranging from 'Negligible' to 'High' bat roosting potential.                                                                                                                                                                           | Negligible to High     |
| W5        | Woodland             | This woodland supports trees ranging from 'Low' to 'High' bat roosting potential.                                                                                                                                                                                          | Low to High            |
| W6        | Woodland             | Many trees are heavily Ivy clad and a very mature Poplar tree within the woodland has further features including torn branches and split wood with a possible cavity hidden beneath Ivy on the southern aspect and should be considered as 'Moderate' bat roost potential. | Low to Moderate        |
| WA        | Woodland             | Area of woodland supporting trees ranging from 'Negligible' to 'Moderate' bat roosting potential.                                                                                                                                                                          | Negligible to Moderate |
| WB        | Woodland             | Woodland strip supporting Oak, Wild Service, Ash and Poplar trees ranging from 'Negligible' to 'High' bat roosting potential. In addition to individual trees marked, mature Oak trees are present along the southern woodland boundary.                                   | Negligible to High     |
| W19       | Woodland band        | A number of trees have Ivy coverage and deadwood. No suitable features were identified from ground level, but suitable roosting features could be concealed.                                                                                                               | Low                    |
| W20       | Woodland band        | Some trees are heavily Ivy clad with a number of trees supporting features such as long knot holes on branches and deadwood.                                                                                                                                               | Low                    |
| W33       | Woodland             | Woodland range from 'Negligible' to 'High' bat roost potential.                                                                                                                                                                                                            | Negligible to High     |
| W35       | Woodland band        | Mostly negligible woodland with occasional trees with dense Ivy coverage of no more than 'low' bat roosting potential.                                                                                                                                                     | Negligible to Low      |
| W90       | Woodland band        | Band of woodland with trees of no more than 'Low' bat roosting potential. Only trees along the development edge (northern area) of this woodland were subject to survey.                                                                                                   | Low                    |
| W118      | Woodland strip       | Woodland strip ranging from 'Negligible' to 'High' bat roost potential.                                                                                                                                                                                                    | Negligible to High     |

\* Tree reference numbers relate to those used for the Tree Survey (RPS, 2017) except where additional information has been required to identify individual trees.

- 3.2.3 All other trees within and immediately adjacent to the survey area were assessed as having negligible potential to support roosting bats.

### 3.3 Phase 2 roost surveys

- 3.3.1 In view of the findings of the updated Phase 1 bat scoping survey and the development proposals for Parcels 14 and 15, in accordance with current best practise guidelines (BCT, 2016) and the recommendations in the *Detailed Bat Mitigation Strategy – Parcels 14 and 15* (HDA, 2022); seven trees/tree groups were subject to Phase 2 emergence/re-entry surveys using an appropriate number of surveyors to ensure comprehensive coverage.

- 3.3.2 *Table 6* provides a summary of the results of the Phase 2 bat roost surveys of trees proposed to be impacted by works within Parcels 14 and 15.

**Table 6:** Results of Phase 2 roost surveys

| Tree/<br>Building<br>ref | Date / Time               | Results                  | Updated Roost Status |
|--------------------------|---------------------------|--------------------------|----------------------|
| 2                        | 04/05/2022<br>20.15-22.00 | No emergences/re-entries | High                 |
|                          | 01/07/2022<br>03.21-05.04 | No emergences/re-entries |                      |
|                          | 20/07/2022<br>20.53-22.38 | No emergences/re-entries |                      |
| 91                       | 04/05/2022<br>20.15-22.00 | No emergences/re-entries | High                 |
|                          | 01/07/2022<br>03.21-05.04 | No emergences/re-entries |                      |
|                          | 29/07/2022<br>20.43-22.28 | No emergences/re-entries |                      |
| 93                       | 04/05/2022<br>20.15-22.00 | No emergences/re-entries | High                 |
|                          | 01/07/2022<br>03.21-05.04 | No emergences/re-entries |                      |
|                          | 29/07/2022<br>20.43-22.28 | No emergences/re-entries |                      |
| 97                       | 04/05/2022<br>20.15-22.00 | No emergences/re-entries | High                 |
|                          | 01/07/2022<br>03.21-05.04 | No emergences/re-entries |                      |
|                          | 20/07/2022<br>20.53-22.38 | No emergences/re-entries |                      |
| G2                       | 04/05/2022<br>20.15-22.00 | No emergences/re-entries | Moderate             |
|                          | 14/07/2022<br>21.00-22.45 | No emergences/re-entries |                      |
| G4                       | 30/06/2022<br>21.09-22.54 | No emergences/re-entries | Moderate             |
|                          | 14/07/2022<br>21.00-22.45 | No emergences/re-entries |                      |
| AF                       | 30/06/2022<br>21.09-22.54 | No emergences/re-entries | Moderate             |
|                          | 14/07/2022<br>21.00-22.45 | No emergences/re-entries |                      |

\* Reference numbers relate to the numbers given on the plans in *Appendix A*.

3.3.3 In addition to the trees/buildings subject to Phase 2 roost surveys, further high, moderate and low potential trees/groups of trees are located within the survey area. In line with current best practise guidelines (BCT, 2016), further surveys of these trees are not required at this stage, due to their retention within the scheme, their low potential to support roosting bats and/or their location within subsequent phases of the development and subsequently will be subject to Phase 2 roost surveys in future years as development progresses. However, in the event that the future retention of any of these trees is not possible, the appropriate approach to works is given in *Section 5* below.

3.3.4 All other trees and buildings within the survey area were identified as having 'negligible' potential to support roosting bats.

### 3.4 Phase 2 activity transect surveys

3.4.1 Details of the date and time of bat activity transect surveys, along with weather conditions and sunset/sunrise times, are provided in *Table 2*. The areas covered during each survey visit included all boundaries, hedgerows and woodland copses within the survey area.

3.4.2 A visual summary of bat foraging and commuting activity recorded during the surveys has been provided in *Appendix B*. In total, five species/species groups were recorded during the transect surveys: Common Pipistrelle, Soprano Pipistrelle, Noctule, Brown Long-eared bat and *Myotis* sp. bat. A summary of each species recorded, their activity and an estimation of numbers using the survey area during any one survey is provided in *Table 7* below.

**Table 7:** Summary of bat activity during transect surveys

| Species            | Activity summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | Approx. number recorded* |
|--------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Common Pipistrelle | <p>Common Pipistrelle was the most frequently recorded species during the activity surveys. The majority of Common Pipistrelle activity was recorded along woodland edge habitats in the centre and north-west of the survey area. Common Pipistrelles were also recorded on a less frequent basis using hedgerows and woodlands bordering the grassland and arable fields in the remainder of the survey area.</p> <p>It is expected that up to 4 Common Pipistrelle bats could have been using the survey area at any one time for foraging and commuting.</p> | 4                        |

| Species              | Activity summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | Approx. number recorded* |
|----------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|
| Soprano Pipistrelle  | <p>Soprano Pipistrelle was the second most frequently recorded species during the activity surveys. The majority of Soprano Pipistrelle activity was recorded along woodland belt aligned east to west in the east of the survey area. Soprano Pipistrelles were also recorded on a less frequent basis scattered across the survey area, associated with the hedgerows and woodlands bordering the grassland and arable fields in the survey area.</p> <p>It is expected that up to 3 Soprano Pipistrelle bats could have been using the survey area at any one time for foraging and commuting.</p>                                                                                                                                         | 3                        |
| Noctule              | <p>Noctule activity was scattered across the survey area, with activity focused on the line of scrub aligned east-west in the north of the survey area. Noctules were also recorded on a less frequent basis using hedgerows and woodlands bordering the grassland and arable fields in the remainder of the survey area. The remainder of recordings were largely associated with high level passes by individuals crossing the survey area.</p> <p>It is likely that the survey area was used by no more than 2 Noctule bat at any one time during the survey and that the survey area forms part of a much larger foraging range for a low number of individuals of this species.</p>                                                      | 2                        |
| Brown Long-eared bat | <p>Brown Long-eared bat was recorded on two occasions foraging along hedgerows in the east and centre of the survey area.</p> <p>It is likely that no more than 1 Brown Long-eared bat was using the survey area at any one time during the survey and that the survey area forms part of a much larger foraging range for a low number of this species. It should be noted however that Brown Long-eared bat calls are very quiet which means that they are less easily recorded by bat detectors. It is therefore possible (in particular in view of the known presence of a Brown Long-eared bat maternity roost within the site) that higher numbers of Brown Long-eared bats may have been using the survey area than were recorded.</p> | 1+                       |
| <i>Myotis</i> sp.    | <p><i>Myotis</i> sp. bat have been recorded on one occasion foraging within a grassland field in the east of the survey area.</p> <p>It is likely that no more than 1 <i>Myotis</i> sp. bat was using the survey area at any one time during the survey and that the survey area forms part of a much larger foraging range for individuals of this species group.</p>                                                                                                                                                                                                                                                                                                                                                                        | 1                        |

*\*This is an approximation of the number of bats of any one species estimated to have been using the survey area during any one visit.*

### 3.5 Phase 2 automated activity surveys

3.5.1 The dates during which the automated detector was deployed, along with sunset/sunrise times and temperatures are provided in *Table 3*. The locations in which the automated bat detector was placed during each deployment are shown on the plan in *Appendix B*.

3.5.2 The automated detector was placed in six separate locations to give an indication of the species using different areas of the survey area and relative levels of activity throughout the night. A summary of bat activity recorded during the automated surveys in each location is provided below in *Table 8*. In total, five species/species groups were recorded during the automated surveys; Common Pipistrelle, Soprano Pipistrelle, Noctule, Brown Long-eared bat and *Myotis* sp. bat.

**Table 8:** Summary of bat activity recorded by the automated detector

| Location* | Activity summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |
|-----------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| A         | <p>The automated detector at Location A recorded bat activity along a woodland belt aligned east-west in the east of the survey area.</p> <p>A total of 336 bat passes were recorded over 6 nights; an average of 56 bat recordings per night.</p> <p>Soprano Pipistrelle the most frequently recorded species (63.1% of the bat recordings), with occasional to regular foraging activity recorded during every night. Common Pipistrelle was the second most frequently recorded species (22.9% of the bat recordings), with occasional foraging activity recorded during every night.</p> <p>Occasional passes by Noctule and <i>Myotis</i> sp. bat were also recorded (12.5% and 1.5% of passes, respectively).</p>                                                                                |
| B         | <p>The automated detector at Location B recorded bat activity associated with a woodland belt aligned north-south in the west of the survey area.</p> <p>A total of 684 bat passes were recorded over 5 nights; an average of 137 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species (55.7% of the bat recordings), with occasional to regular foraging activity recorded during every night. Soprano Pipistrelle was the second most frequently recorded species (32.6% of the bat recordings) with occasional to regular foraging activity recorded during every night in which bats were recorded.</p> <p>Occasional passes by Noctule, Brown Long-eared bat and <i>Myotis</i> sp. bat were also recorded (7.9%, 2.9% and 0.9% passes, respectively).</p> |
| C         | <p>The automated detector at Location C recorded bat activity at the junction of a woodland belt and adjoining hedgerow in the east of the survey area.</p> <p>A total of 609 bat passes were recorded over 5 nights; an average of 122 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species (80.8% of the bat recordings), with occasional to regular foraging activity recorded during most night. Soprano Pipistrelle was the second most frequently recorded species (17.7% of the bat recordings), with occasional foraging activity recorded during most nights.</p> <p>Occasional passes by Brown Long-eared bat and <i>Myotis</i> sp. bat were also recorded (0.5% and 0.1% of passes, respectively).</p>                                              |

| Location* | Activity summary                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| D         | <p>The automated detector at Location D recorded bat activity along a woodland margin located in the centre of the survey area.</p> <p>A total of 1194 bat passes were recorded over 5 nights; an average of 239 bat recordings per night.</p> <p>Soprano Pipistrelle was the most frequently recorded species (69.3% of the bat recordings), with occasional to regular foraging activity recorded during most nights. Common Pipistrelle was the second most frequently recorded species (31.4% of the bat recordings), with occasional foraging activity recorded on all nights.</p> <p>Occasional passes by Brown Long-eared bat, Noctule and <i>Myotis</i> sp. bat were also recorded (0.8%, 0.3% and 0.1% of passes, respectively).</p> |
| E         | <p>The automated detector at Location E recorded bat activity associated with a tree group in the centre of the northern survey area boundary.</p> <p>A total of 49 bat passes were recorded over 5 nights; an average of 10 bat recordings per night.</p> <p>Common Pipistrelle and Soprano Pipistrelle were the most frequently recorded species (44.9 and 30.6% of the bat recordings), with occasional foraging activity recorded during most nights.</p> <p>Occasional passes by Noctule and Brown Long-eared bat were also recorded (14.3% and 10.2% of passes, respectively).</p>                                                                                                                                                      |
| F         | <p>The automated detector at Location F recorded bat activity associated with the treeline and hedgerow associated with the southern boundary of the survey area.</p> <p>A total of 46 bat passes were recorded over 5 nights; an average of 9 bat recordings per night.</p> <p>Common Pipistrelle was the most frequently recorded species (80.4% of the bat recordings) with occasional foraging activity recorded during every night. Soprano Pipistrelle being the second most frequent recorded species (17.4% of bat recordings) with occasional foraging activity recorded during most nights.</p> <p>Occasional passes by <i>Myotis</i> sp. bat were also recorded (2.2% of passes).</p>                                              |

3.5.3 In summary, the static detectors recorded Common Pipistrelle and Soprano Pipistrelle at all locations the remote detectors were deployed. *Myotis* sp. bat were recorded at all locations except Location E. Noctule bats were recorded at all locations except from Locations C and F. Brown Long-eared bats were recorded at all locations except from Locations A and F.

3.5.4 The greatest number of bat recordings was recorded at Location D and the highest diversity of bat species was recorded at Location B and D. The fewest number of bat recordings per night and lowest diversity of bat species was recorded at Location F. Soprano Pipistrelle and Common Pipistrelle were the most frequently recorded species

relating to 47.8% and 46.7% of all bat passes recorded, respectively, with all locations being used by foraging bats of these species on at least an occasional basis on each night. Noctule, followed by Brown Long-eared bat and *Myotis* sp. bats, were the next most recorded bat species/species groups (3.6%, 1.4% and 0.5% of all bat recordings, respectively), with similar patterns of activity to the Soprano and Common Pipistrelle bats however at much lower numbers.

## **4 SUMMARY AND IMPACT ASSESSMENT**

### **4.1 Bat roosting habitat**

4.1.1 No bat roosts were recorded during the Phase 2 emergence/re-entry surveys of trees 2, 91, 93, 97, G2, G4 and AF and no buildings with potential to support roosting bats are located within the Parcels 14 and 15 development area. Current knowledge therefore suggests that no bat roosts will be lost or indirectly affected as a result of the proposed development of Parcels 14 and 15. Trees subsequently proposed for felling/trimming in association with the proposed development of Parcels 14 and 15 were subsequently carried out under ecological watching brief in July and August 2022.

4.1.2 There are further trees within subsequent parcels of the development which have not been subject to Phase 2 bat roost surveys. If any of these trees have to be trimmed/felled for any future works i.e. on the grounds of health and safety and/or to facilitate development of future development parcels, an appropriate approach to works is given in *Section 5* for measures to protect any bats that might be present and to maintain roosting opportunities at the site following works.

### **4.2 Foraging and commuting activity**

4.2.1 At least five species of bat were recorded using the survey area for foraging and commuting, with varying levels of activity observed throughout the surveys. The plan in *Appendix B* provides an overview of bat activity recorded during the surveys.

4.2.2 Common Pipistrelle was the most frequently recorded species during the transect surveys, with up to 4 Common Pipistrelle bats considered to be using the survey area at any one time. The majority of Common Pipistrelle activity was recorded along woodland edge habitats in the centre and north-west of the survey area. Common Pipistrelles were also recorded on a less frequent basis using hedgerows and woodlands bordering the grassland and arable fields in the remainder of the survey area.

4.2.3 The second most frequent recorded bat species related to Soprano Pipistrelle bats, with up to 3 Soprano Pipistrelle bats considered to be using the survey area at any one time. Soprano Pipistrelle activity was scattered across the survey area and associated with the hedgerows and woodlands bordering the grassland and arable fields in the survey area.

Frequent activity relating to Noctule bats was also recorded in particular associated with hedgerows and treelines marking field boundaries in the centre and west of the site. In addition, Brown Long-eared bat and *Myotis* sp. bat were only recorded on an occasional basis during the activity surveys. Activity relating to Brown Long-eared bat and *Myotis* sp. bat consisted of brief passes by single bats foraging or commuting along hedgerows and woodland edges within and bordering the survey area, suggesting the site forms only a small part of a much wider foraging territory for individuals of these species/species groups.

4.2.4 Despite the number of species recorded and the overall number of bats expected to have been present within the survey area at any one time, overall the level of bat activity recorded was generally considered to be low, relative to the size of the survey area, and similar foraging and commuting opportunities are relatively widespread in the wider area. As a whole the survey area is therefore considered to be of no more than low local interest for foraging bats. This interest largely relates to habitats associated with the hedgerows and woodlands within and bordering the survey area, with the grassland and arable habitats dominating the survey area being of no more than site interest for foraging bats.

4.2.5 Notwithstanding the above, development proposals should seek to maintain and, where possible, enhance foraging and commuting opportunities for all species of bats using the site in accordance with nature conservation legislation, planning policy and the 2006 NERC Act. Recommendations to maintain and enhance the value of the survey area for foraging and commuting bats are provided in *Section 5* below.

## **5 SURVEY AREA OUTLINE RECOMMENDATIONS**

5.1 This section identifies measures to be implemented during development of the survey area in order to avoid, mitigate and compensate potential impacts on bats, and to maintain the favourable conservation status of the local bat population. These measures will be implemented unless otherwise agreed with Natural England and/or the local planning authority. In addition, measures for long-term maintenance and enhancement of opportunities at the site for roosting, foraging and commuting bats are included in accordance with the 2021 National Planning Policy Framework (NPPF) and the 2006 NERC Act.

5.2 The recommendations given below will be reassessed during the production of the Detailed Bat Mitigation Strategies which will be produced for each phase of the development in accordance with Condition 24:

*Prior to or concurrent with the submission of a reserved matters application for any sub phase of the development a detailed bat mitigation strategy shall be submitted to and*

*approved in writing by the local planning authority for that sub phase of the development. Each detailed bat mitigation strategy shall include an appropriate detailed lighting scheme that maintains the dark corridors as set out in Appendix 1 Recommended Dark Corridor Locations Plan of the submitted Hogwood Garden Village Bat Activity Survey Report - Revision: 02/Final (Royal Haskoning DHV, 10th September 2015) and should be in accordance with the submitted Hogwood Garden Village Bat Activity Survey Report - Revision: 02/Final (Royal Haskoning DHV, 10th September 2015). The mitigation, contingency and enhancement measures contained within each of the submitted detailed bat mitigation strategies shall be implemented in accordance with the approved plan unless otherwise approved in writing by the local planning authority."*

- 5.3 The approach taken will depend on the extent, location and distribution of the habitat affected and the status of bats in any given area. Where appropriate the approach to be taken will be based on updated surveys where more than two years has passed since bat surveys were undertaken (or Phase 2 surveys have not been carried out) and/or the extent or character of habitat within any given area has undergone significant change. The advice of a suitably qualified ecologist will be sought on the approach to updating of survey work and the approach to be taken agreed with Wokingham Borough Council.

#### **5.4 Roosting bats**

##### *Parcels 14 and 15*

- 5.4.1 No bats roosts were recorded during the Phase 2 bat emergence/re-entry surveys of trees 2, 91, 93, 97, G2, G4 and AF and no buildings with potential to support roosting bats are located within the Parcels 14 and 15 development area. Current knowledge therefore suggested that no bat roosts would be lost or indirectly affected as a result of the proposed development of Parcels 14 and 15. Trees subsequently proposed for felling/trimming in association with the proposed development of Parcels 14 and 15 were subsequently carried out under ecological watching brief in July and August 2022.

##### *Other development parcels*

- 5.4.2 Where the future retention of trees identified as providing opportunities for roosting bats is not possible e.g. to allow development or on the grounds of health and safety, it is recommended that felling works are carried out in accordance with the following procedure, including where Phase 2 roost surveys have not identified a roost as being present:
1. In the event that future pruning or felling works for reasons of health and safety are required to a tree with a confirmed/probable roosts (Trees 39, 45, 104, 105, 106, 313, 315, 338, 407, 417, 419 and 561) such works have the potential to disturb or destroy any roosts present. If it is not possible to retain the roost site associated with the tree, a European Protected Species (EPS) licence would need to be obtained from Natural

England prior to the commencement of any works affecting the roost sites associated with these trees.

2. Other trees suitable for climbing inspections should first be climbed by a licensed bat worker to inspect potential roost sites for bats. In the event that no bats (or evidence of bats) are encountered during an exhaustive search then any features should be 'soft stopped' to prevent re-occupation prior to felling. In the event that a bat (or evidence of a bat) is encountered, then felling/works should be delayed until an EPS licence has been sought and obtained from Natural England. Where bat roosts are present within any tree subject to felling, the tree should be 'soft felled' in accordance with the methodology described under point 4 below.
3. Trees with 'moderate' or higher potential to support roosting bats, where an exhaustive climbed inspection is not possible or practical, should be subject to an appropriate number of emergence/re-entry surveys to confirm the absence of roosting bats prior to the commencement of any works affecting the tree.
4. 'Low' potential trees that are unsuitable for climbing inspections and have not been subject to an emergence/re-entry survey should be 'soft felled' under the supervision of a suitably qualified ecologist. Soft felling involves progressive removal of the tree, using ropes to gently lower sections of tree potentially supporting roosting bats to the ground for inspection by a suitably qualified ecologist. Where appropriate, features should be left on the ground overnight before clearing to allow any bats present to escape.

5.4.3 Where significant loss of future roosting opportunities arises, this should be offset through alternative roost provision elsewhere within the site.

5.4.4 In the event that a roosting bat is discovered during any of the above works (or works are proposed to Trees 39, 45, 104, 105, 106, 313, 315, 338, 407, 417, 419 and 561), trimming/felling works must cease and Natural England contacted to agree an appropriate course of action. A licence may need to be applied for, and approved, before works can continue.

#### **Further survey**

5.4.5 Bats may occupy roost sites on a seasonal or temporary basis and old roost sites may be abandoned and new roosts occupied within relatively short periods of time. In view of this, where appropriate, Phase 2 bat roost surveys of buildings and trees affected by the proposed development should be updated in advance of works commencing. The guidance of a suitably qualified ecologist should be sought to determine if and when surveys should be updated with regard to the development programme. This would ensure that up-to-date information is available to inform the extent of any mitigation and licensing requirements relating to bats.

### **Maintenance of roosting opportunities**

- 5.4.6 The integrity of retained roosting opportunities within and adjacent to the survey area will be conserved through the maintenance of connections to commuting and foraging habitat and sensitive use of lighting throughout the construction and operational phases (see *Section 5.8* below). In addition, trees not supporting roosting bats at the time of survey have potential to support bats in the future and therefore, where possible, these trees will be retained and their ability to support roosting bats maintained.

### **5.7 Foraging and community bats**

- 5.7.1 The survey area is considered as a whole to be of no more than low local importance for foraging bats. The survey area is expected to comprise a significant proportion of foraging habitat for low numbers of Soprano Pipistrelle and Common Pipistrelle bats and provides foraging habitat for low numbers of at least three other species/species groups on a more occasional or infrequent basis.
- 5.7.2 A number of the bat species identified at the survey area (Soprano Pipistrelle, Noctule and Brown Long-eared bat) are listed as Species of Principle Importance under Section 41 of the 2006 NERC Act and therefore the effects of development on foraging and commuting habitat are a material consideration in the planning process.
- 5.7.3 The *Habitat Connectivity Proposals Plan* shown in *Appendix B* of the Outline Site-wide Ecological Permeability Scheme (HDA, 2018) shows the retention of key habitat corridors within the survey area, focussing on:
- The site boundaries to allow movement of wildlife around the site and permeability between the site and the wider area. These habitats comprise hedgerows, treelines and areas of woodland including ancient woodland and Hogwood Shaw Local Wildlife Site (LWS);
  - A corridor of open green space will cross the survey area from north to south, leading from treelines and Hogwood Shaw LWS in the north of the site to the proposed country-park SANG and open countryside to the south, east and west of the site. In addition to the provision of a corridor for wildlife and informal greenspace for public enjoyment, the green space provides protection to existing habitats of high ecological and landscape value including ancient woodland and watercourses together with creation of new habitats such as species-rich meadow grassland, wetland, orchard, woodland and scrub; and
  - The country-park SANG in the site, will support a mosaic of woodland and parkland habitats, supporting a diverse range of species and connect to habitats in the wider area including the adjacent West Court SANG.

5.7.4 Additional habitat corridors will also be maintained between the development parcels and generally comprise existing and proposed hedgerows, treelines, ditches/streams, and woodland shaws connecting to the more significant habitat corridors discussed in *Section 5.7.3*, thereby contributing to the network of habitats facilitating the movement of wildlife across the site.

5.7.5 The development of the survey area will however result in the loss of limited areas of foraging habitat where buildings and hardstanding takes the place of areas currently dominated by grassland and arable habitats. Although the field interiors are currently of limited value for foraging bats and it is expected that the proposed gardens and areas of open space within the development phases will provide new opportunities for roosting bats as these mature, consideration should be given to the use of pollen and nectar rich species within the formal planting schemes, enhancement of woodland edge habitats, new shrub and tree planting and inclusion of areas of rough and meadow grassland within areas of open space in order to maximise opportunities for foraging and commuting bats following development.

#### *Lighting*

5.7.6 A Lighting Strategy (MMA Lighting Consultancy, 2018) has been produced for the site which assesses that the site currently has limited light spill from off-site residential areas (MMA Lighting Consultancy assessed the site as having an E2 – Low District Brightness Areas). The lighting assessment details measures to achieve a minimum level of lighting required for public amenity and safety whilst restricting horizontal or vertical light spill into non-target areas. A lighting strategy for the external lighting design of the survey area is detailed within *Section 6* of the Outline Site-wide Ecological Permeability Scheme (HDA, 2018), which includes the provision of 'Lighting Exclusion Zones' and 'Lighting Restriction Zones'. These lighting exclusion/restriction zones will maintain key habitat corridors for bats across the site.

5.7.7 In addition to the 'Lighting Exclusion Zones' and 'Lighting Restriction Zones', where new/replacement lighting (outside of the Lighting Exclusion Zones) is proposed within the survey area, the lighting strategy identifies measures to achieve a minimum level of lighting required for public amenity and safety whilst restricting horizontal or vertical light spill into non-target areas. Measures include:

- LED lighting with a correlated 'warm' colour temperature of 4000 Kelvin, which will be lowered to 2700 Kelvin (where practical) within the Lighting Restriction Zones). LED light sources contain no UV wavelengths and the warmer colour temperatures reduce the light emitted beyond the 550 nanometer wavelengths. These requirements are consistent with the current research on the impact of

artificial lighting on bats as published by the Bat Conservation Trust and Institution of Lighting Professionals (BCT & ILP, 2018);

- The lighting columns will be 10m for the roundabouts, 8m for the prime spine road and 6m for subsidiary roads;
- Rear spill guards can be employed to focus light onto target areas;
- LED luminaires are suitable for dimming. A Remote Monitoring System will be considered for lighting in sensitive locations to allow luminaires to be dimmed to an appropriate level and then dimmed back further after a late night curfew (c. 23:00) (or switched off entirely); and
- Pedestrian only footpaths/cycleways will be unlit with the exception of bollard lighting at nodal points, fitted with LED luminaires and rear spill guards/louvres/cowls as appropriate.

5.7.8 The lighting strategy for each Phase of the development will be re-assessed during the production of the Detailed Bat Mitigation Strategies which will be produced for each phase of the development (in accordance with Condition 24). Sensitive lighting proposals would be expected to maintain opportunities for foraging and commuting bats, and maintain connectivity between roost sites in buildings and foraging habitat in the site and its surrounds.

## **5.8 Protection and enhancement of roosting, foraging and commuting opportunities**

### *Roosting bats*

5.8.1 The proposed development would provide opportunity to enhance the value of the survey area for roosting bats in the long-term in accordance with the 2021 NPPF and the 2006 NERC Act through the provision of additional opportunities for roosting bats to those described above. The detailed design and location of such features will be determined during the production of the Detailed Bat Mitigation Strategies which will be produced for each phase of the development (in accordance with Condition 24), but in addition to the mitigation measures described above, consideration should be given to inclusion of additional roosting opportunities including:

- Erection of additional bat boxes on mature trees; and/or
- Creation of additional bat roosting opportunities on new/refurbished buildings within the survey area e.g. through the use of bat bricks within the external walls of buildings, raised tiles, accessible roof voids etc.

5.8.2 These will be located away from areas most affected by construction and operational phase noise and lighting and will integrate the location of suitable retained trees and habitat connections with avoidance of areas subject to significant levels of light spill as detailed within the Outline Site-wide Ecological Permeability Scheme (HDA, 2018).

- 5.8.3 By providing a variety of roosting opportunities in different locations and orientations within the new/refurbished buildings across the survey area, a range of roost spaces with varied microclimates will be provided that will offer long-term roosting opportunities for bats throughout the year.

*Foraging and commuting bats*

- 5.8.4 In addition to the above measures to maintain opportunities for foraging and commuting bats within and adjacent to the developed areas of the site, the proposed areas of informal public open space will provide extensive opportunities to enhance these areas of the site for bats through the creation and enhancement of meadow grassland, scrub, orchard, wetland and woodland habitats. In order to maximise future opportunities for foraging and commuting bats within these areas of open space, it is recommended that the following measures are included in the landscape strategy:
- Retention of the majority of trees within the site containing suitable features to support roosting bats.
  - Enhancement and creation of rough/meadow grassland, woodland, scrub, hedgerows, tree planting, wetland and marginal habitats across the site will provide a variety of high quality foraging habitat for bats. Bat commuting routes will also be maintained.
  - Formal planting schemes in residential areas should seek to include pollen and nectar-rich species in order to encourage invertebrate prey for bats.
  - A sensitively designed lighting scheme on the edges of the adjacent residential development to ensure minimal impact on bat commuting routes and foraging areas.

## **6 CONCLUSION**

- 6.1 Measures to ensure the protection of individual bats during construction works and maintenance of opportunities for roosting bats in the long-term, including provision of a range of new bat roosting opportunities and suitable timing of activities, are described in *Section 5* of this report.
- 6.2 Measures are also described for the maintenance and enhancement of current opportunities provided by the site for foraging and commuting bats. These include sensitive lighting design and planting and habitat creation works. The site is currently dominated by farmland of limited value for foraging bats and it is likely that these measures could enhance the value of the site in the long-term for this group.
- 6.3 Subject to the implementation of the measures described in *Section 5*, it is considered that the favourable conservation status of the local bat population would be maintained and, through long-term provision of higher quality roosting and foraging habitats,

potentially enhanced. This would ensure compliance with the nature conservation objectives of the EC Habitats Directive, the 2006 NERC Act and the guidance underpinning the 2021 National Planning Policy Framework.

## 7

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Document Title: 2022 Bat Survey Report  
Commissioning Party: CALA Homes (Thames) Ltd

| Issue | Description            | Date of Issue | Signed |
|-------|------------------------|---------------|--------|
| 1     | 2022 Bat Survey Report | February 2023 |        |

|                    | Personnel         | Position            |
|--------------------|-------------------|---------------------|
| Author             | Fiona Muir        | Assistant Ecologist |
| Approved for issue | Clare Bird MCIEEM | Principal Ecologist |

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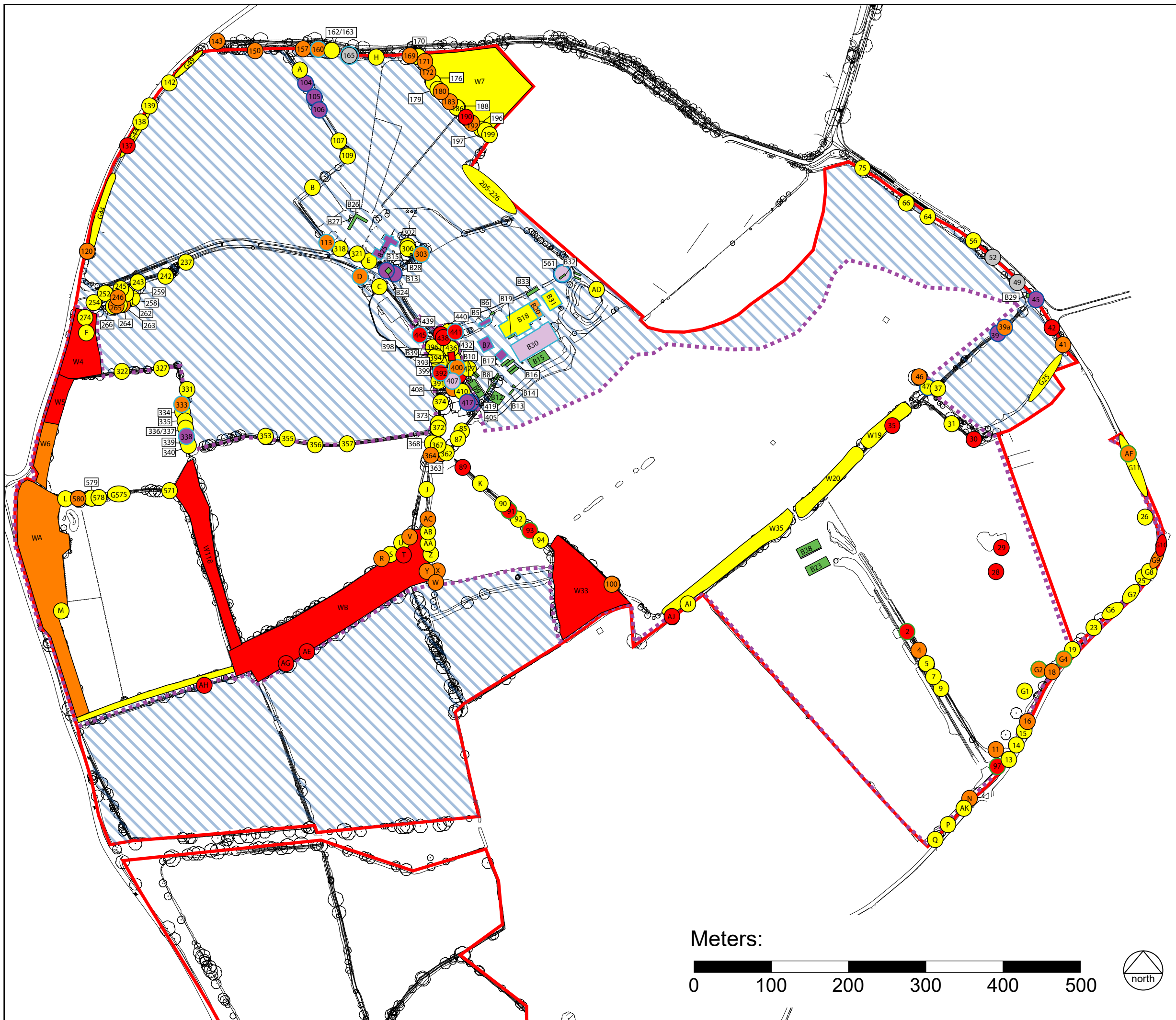
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## **APPENDIX A**

### **Bat Roost Survey Summary Plan**



**KEY**

- Site boundary
- 2022 survey area boundary
- Not subject to updated survey in 2022
- Tree/building subject to emergence/ re-entry survey in 2020 by HDA
- Tree/building subject to emergence/ re-entry survey in 2020 by Stantec
- Tree/building subject to emergence/ re-entry survey in 2022 by HDA

**BUILDINGS**

- Confirmed roost
- Probable roost
- High bat roost potential
- Moderate bat roost potential
- Low bat roost potential
- Negligible bat roost potential

**TREES**

- Confirmed roost
- Probable roost
- High bat roosting potential
- Moderate bat roosting potential
- Low bat roosting potential
- Negligible bat roosting potential
- Tree removed under bat licence (before Feb 2023)

The highest bat roosting potential recorded are shown for the groups(G)/woodlands(W).

All other trees/tree groups within the survey area are regarded as having 'Negligible' potential to support roosting bats.

Roosting categories relate to roost potential in accordance with the BCT 2016 guidelines.

CLIENT:  
CALA Homes Thames Ltd.  
PROJECT:  
Hogwood Farm, Finchampstead  
TITLE:  
Bat Roost Survey Summary Plan  
SCALE AT A3:  
See scale bar  
DATE:  
February 2023

868.1/67

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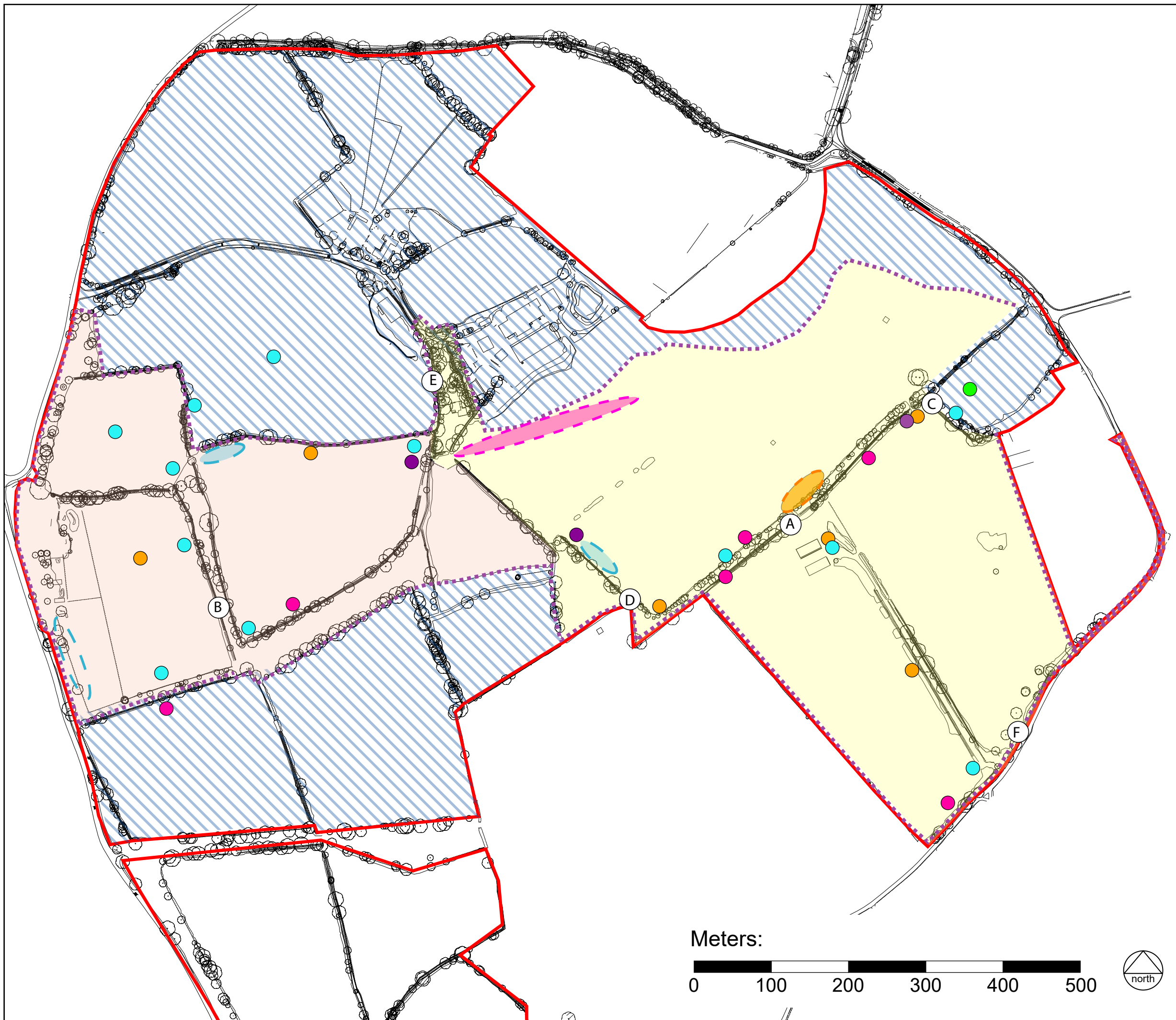
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t 01491 838175 e consult@hda-enviro.co.uk w www.hda-enviro.co.uk

Landscape Architecture  
Masterplanning  
Ecology



## **APPENDIX B**

### **Bat Activity Survey Summary Plan**



Meters:



**KEY**

- Site boundary
- 2022 survey area boundary
- Not subject to updated survey in 2022
- Automated detector location
- Transect 1
- Transect 2

**Phase 2 Activity Transect Survey Results**

- Common Pipistrelle**
- Single bat pass
  - Occasional bat pass/foraging
  - Moderate bat foraging
- Soprano Pipistrelle**
- Single bat pass
  - Moderate bat foraging
- Noctule**
- Single bat pass
  - Moderate bat foraging
- Brown Long-eared bat**
- Single bat pass
- Myotis* sp. bat**
- Single bat pass

CLIENT:  
**CALA Homes Thames Ltd**

PROJECT:  
**Hogwood Farm, Finchampstead**

TITLE:  
**2022 Bat Activity Survey Summary Plan**

SCALE AT A3:  
**See scale bar**

DATE:  
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## **APPENDIX C**

### **Building Photographs**



**Photo 1.** Northern and eastern elevations of B23.



**Photo 2.** Southern and western elevations of B38.



**Photo 3.** Southern and western elevations of B39.

## **APPENDIX D**

### **2024 Badger Survey Report and Badger Protection Plan**

**HOGWOOD FARM, FINCHAMPSTEAD**

**2024 BADGER SURVEY REPORT AND BADGER PROTECTION PLAN**

**Prepared for CALA Homes (Thames) Ltd**

**by**

**Hankinson Duckett Associates**

**HDA ref: 868.1**

**March 2024**

**hankinson duckett associates**

† 01491 838175 † 01491 838997 e [consult@hda-enviro.co.uk](mailto:consult@hda-enviro.co.uk) w [www.hda-enviro.co.uk](http://www.hda-enviro.co.uk)

The Stables, Howbery Park, Benson Lane, Wallingford, Oxfordshire, OX10 8BA

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HDA Document Control and Quality Assurance Record

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**1**

**1.1**

1.1.1

1.1.2

1.1.3

1.1.4

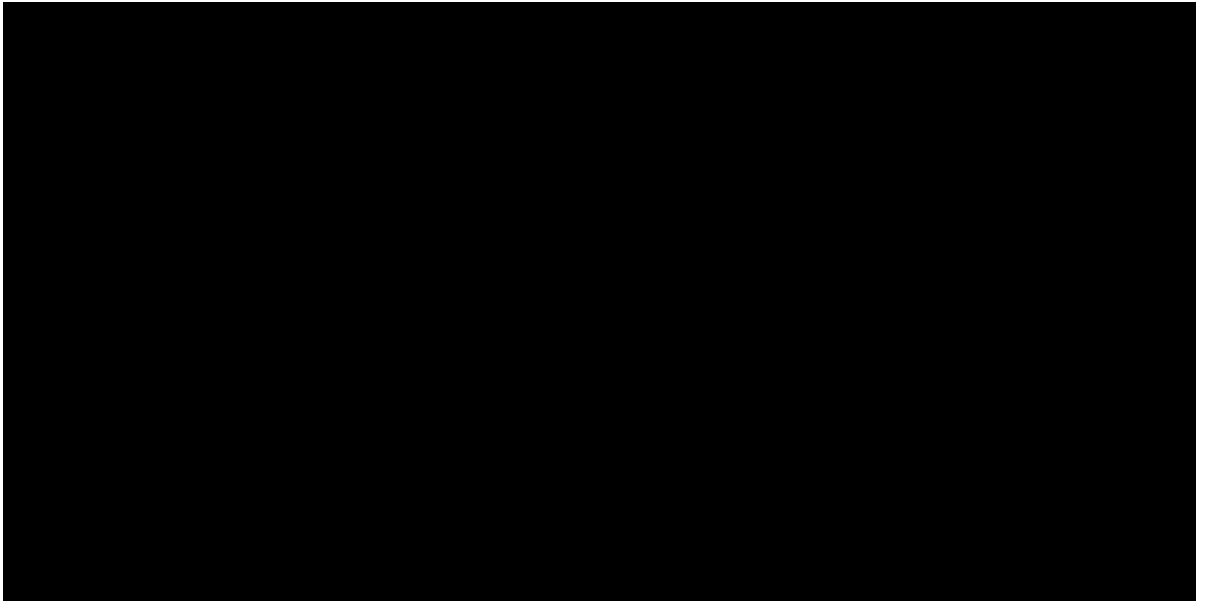
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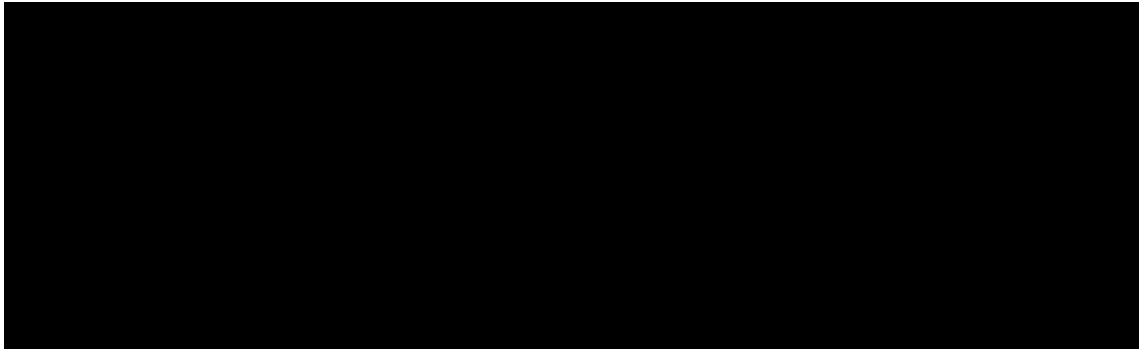
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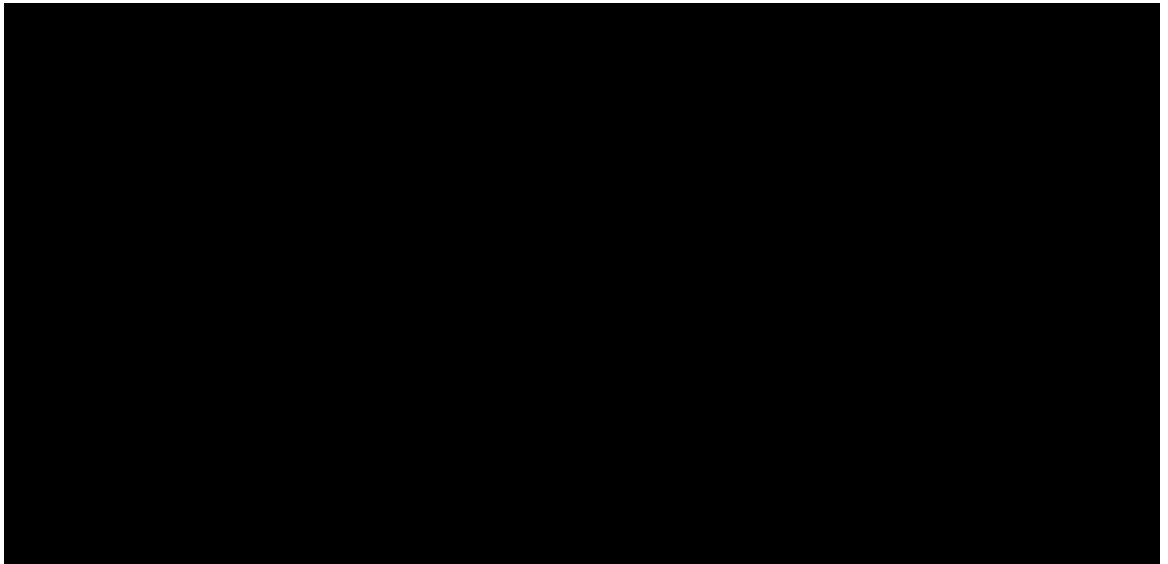
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### **1.4.2**

### **1.4.3**



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## **2.4**

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### **2.4.2**

### **2.4.3**

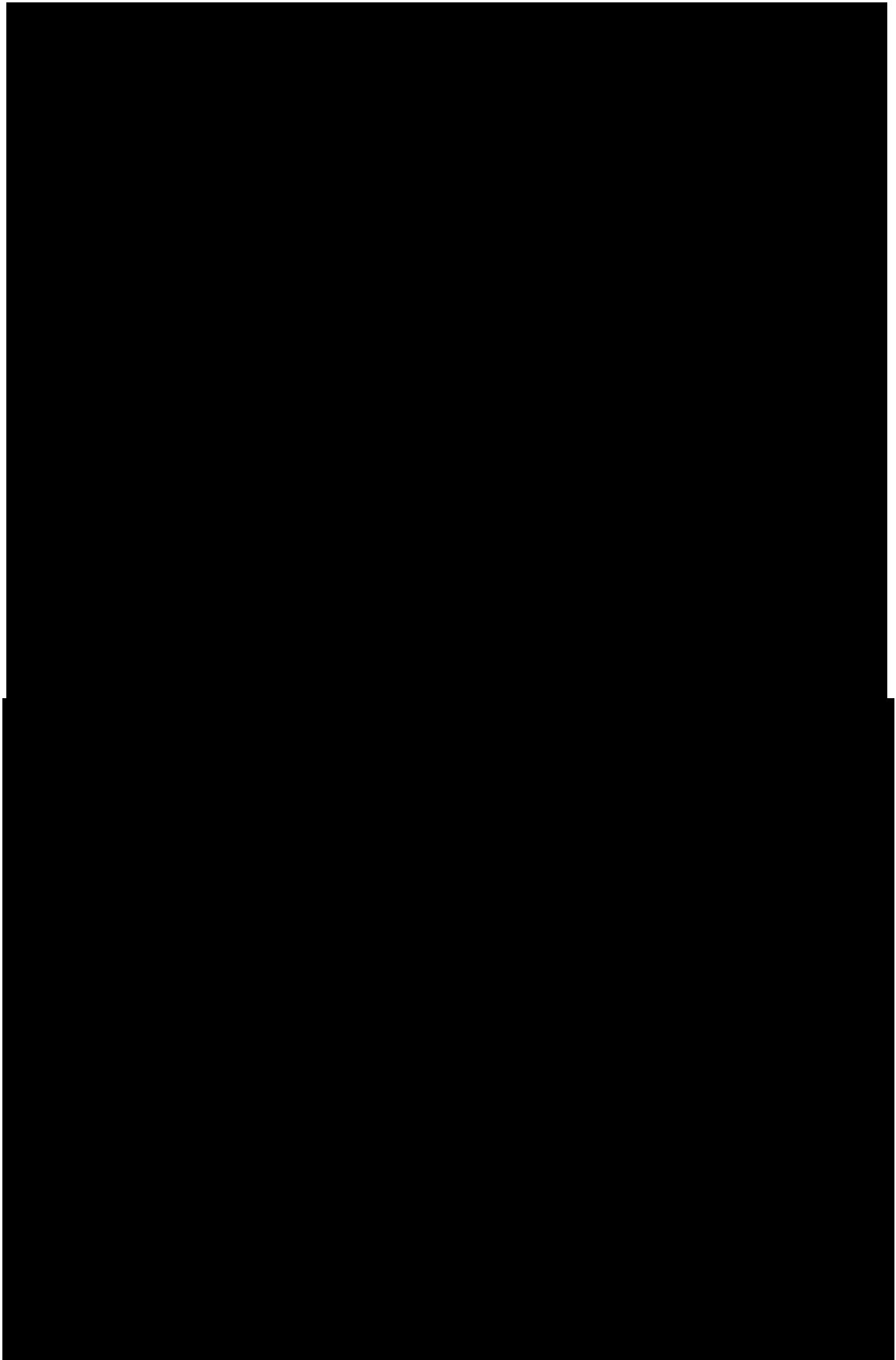
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### **3.1**

#### **3.1.1**

### **3.2**

#### **3.2.1**



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### **3.3**

#### **3.3.1**

#### **3.3.2**

### **3.4**

#### **3.4.1**

## **4**

### **4.1**

#### **4.1.1**

#### **4.1.2**

#### **4.1.3**

4.1.4

4.1.5

4.1.5

4.1.6

4.1.7

4.1.8

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<sup>1</sup> In the event that the suitably qualified ecologist considers there to be a risk of works within the stand-off zone which could result in damage to the sett or disturbance to occupying Badgers that cannot be avoided, a licence will be required.

4.1.9

4.1.10

4.1.11

4.1.12

4.1.13

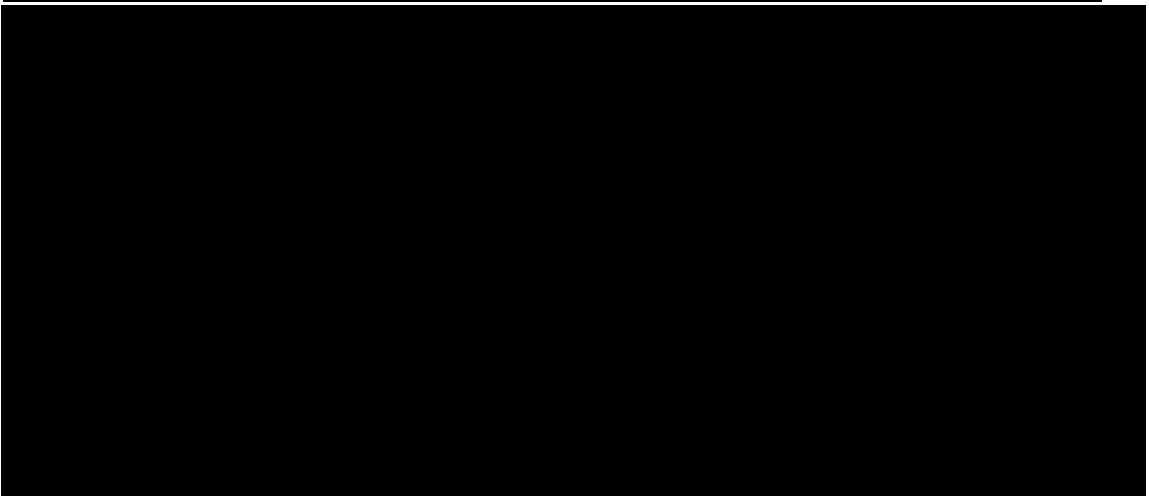
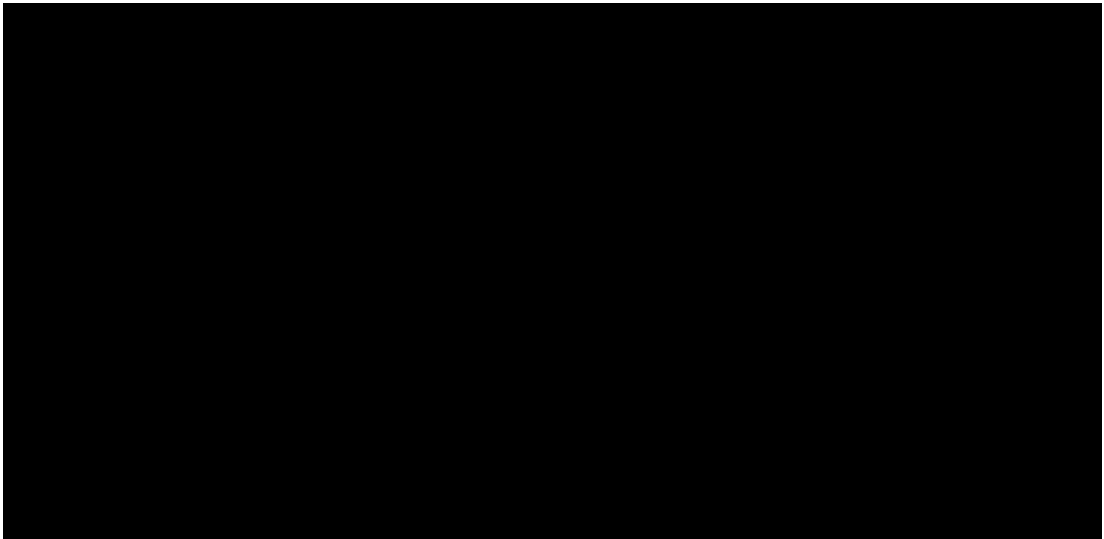
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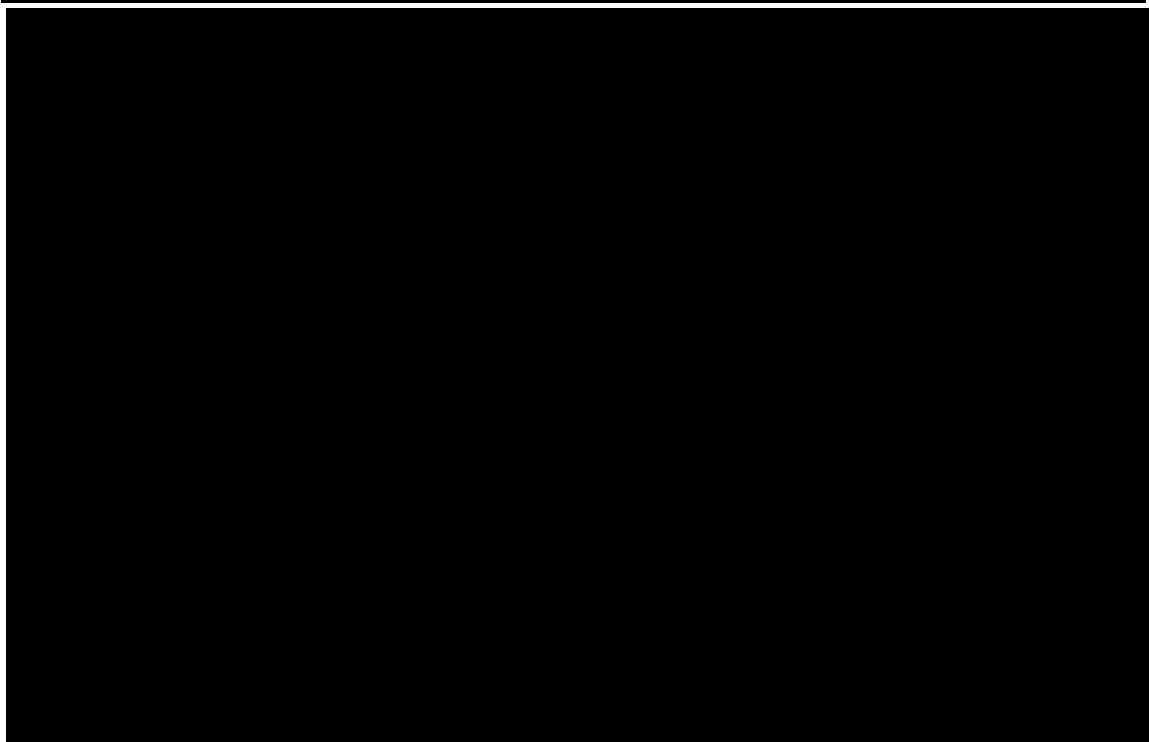
### **4.3**

#### 4.3.1



### **5**

#### 5.1



#### 5.2

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## HDA Document Control and Quality Assurance Record

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Project Reference: 868.1  
Document Title: 2024 Badger Survey Report  
Commissioning Party: Prepared for CALA Homes (Thames) Ltd

| Issue | Description               | Date of Issue | Signed |
|-------|---------------------------|---------------|--------|
| 1     | 2024 Badger Survey Report | March 2024    |        |

|                    | Personnel         | Position            |
|--------------------|-------------------|---------------------|
| Author             | Bob Goldsmith     | Assistant Ecologist |
| Approved for issue | Clare Bird MCIEEM | Associate Ecologist |

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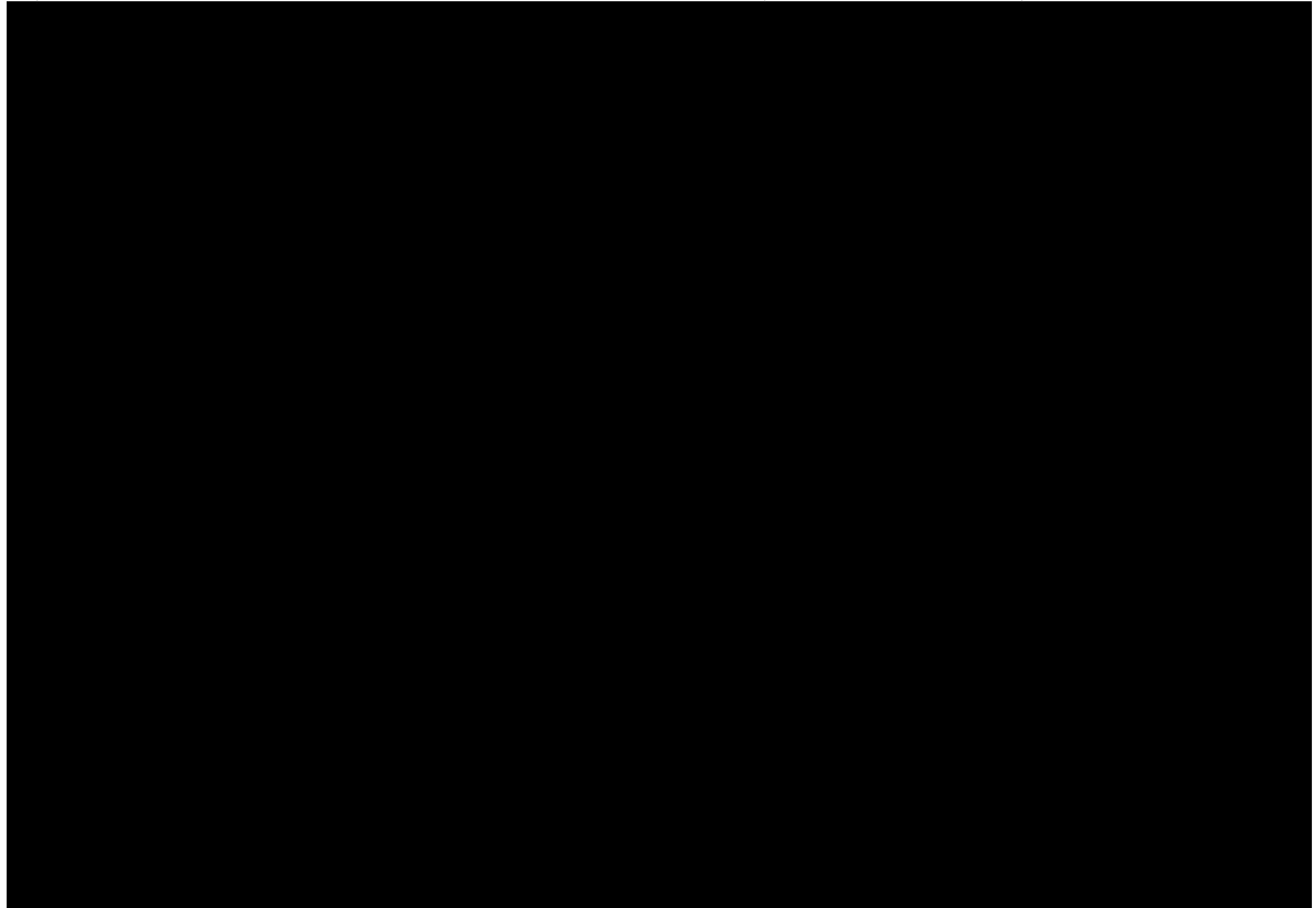
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## **APPENDIX A**

### **Badger Survey Results Plan**

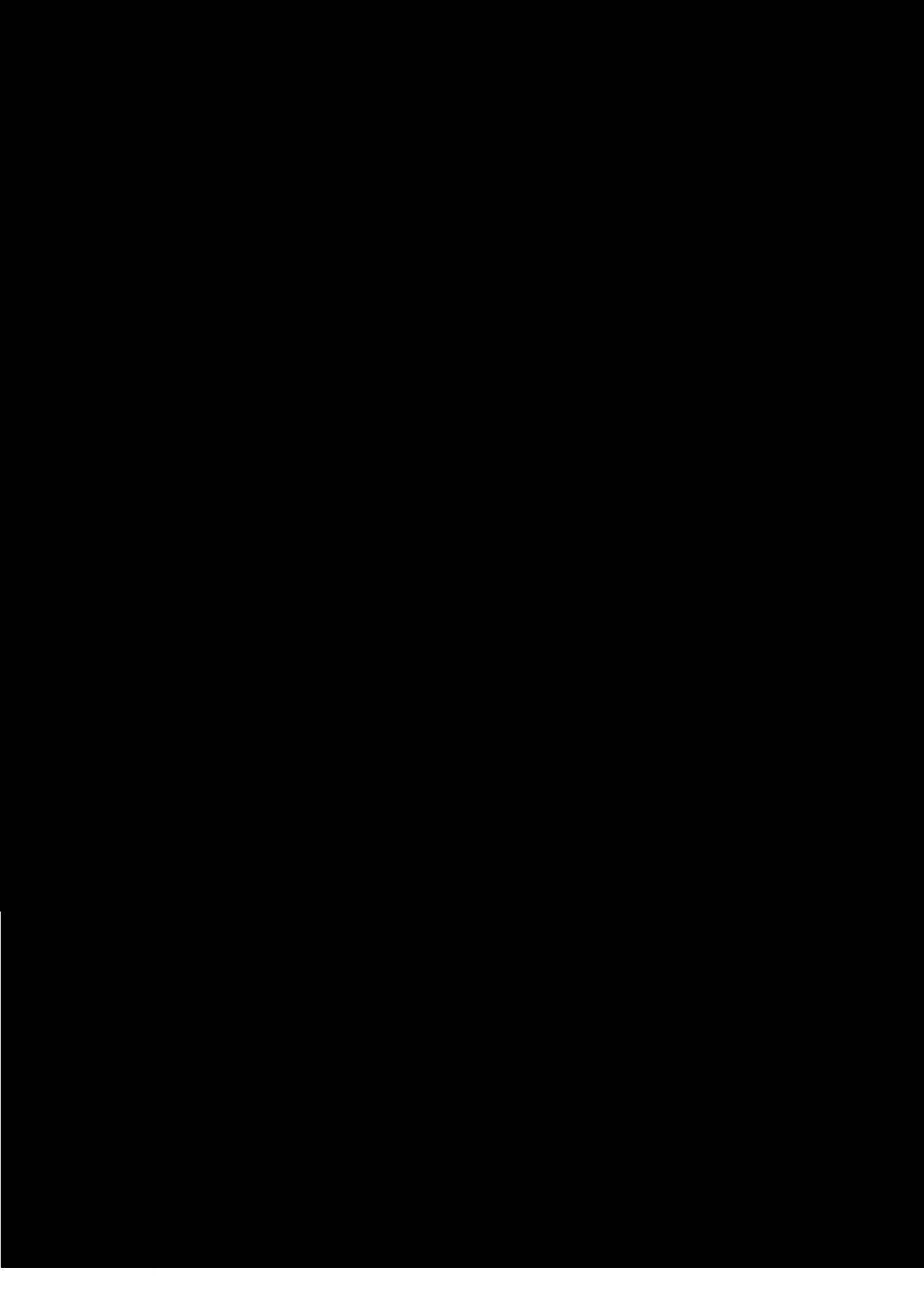


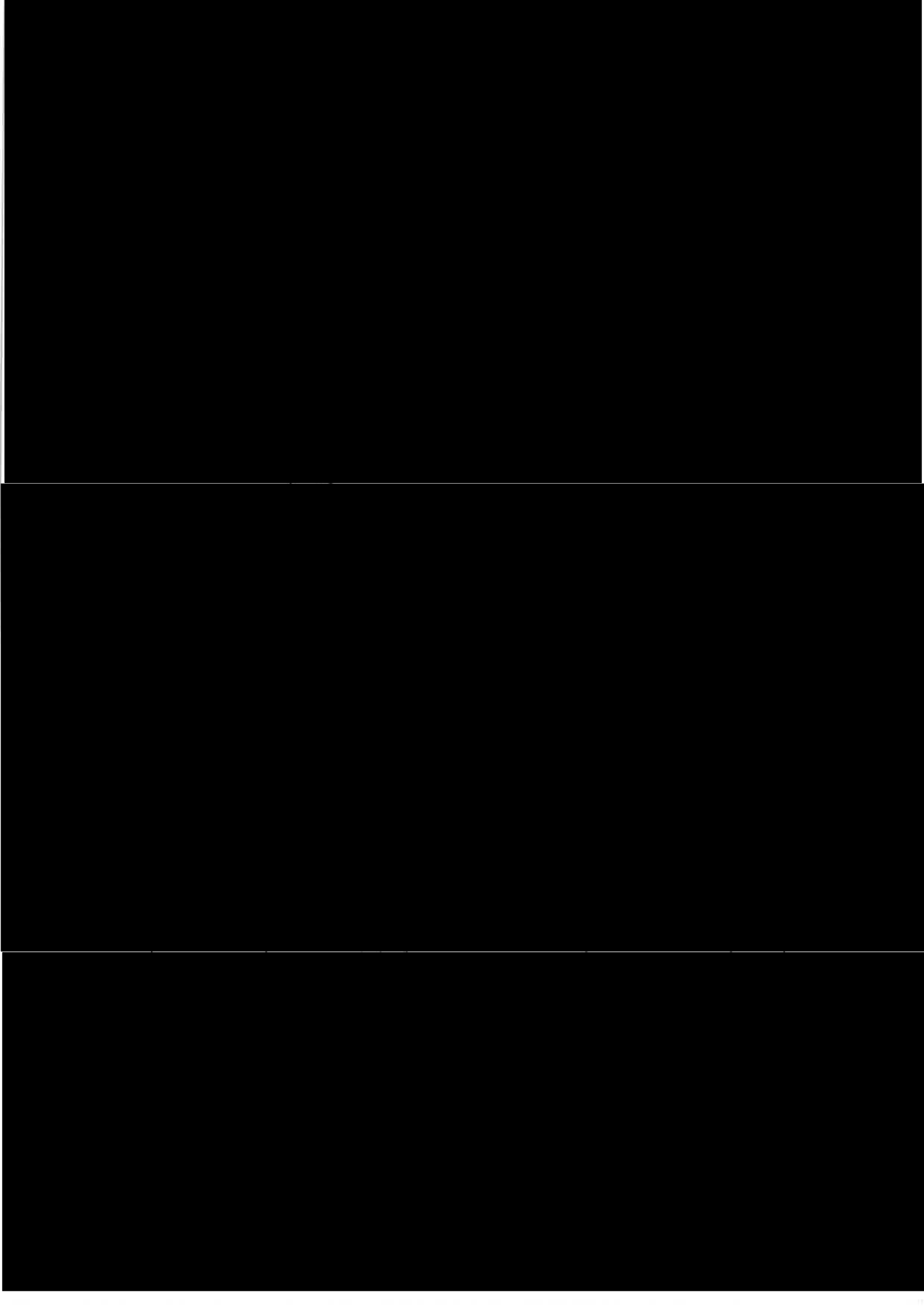
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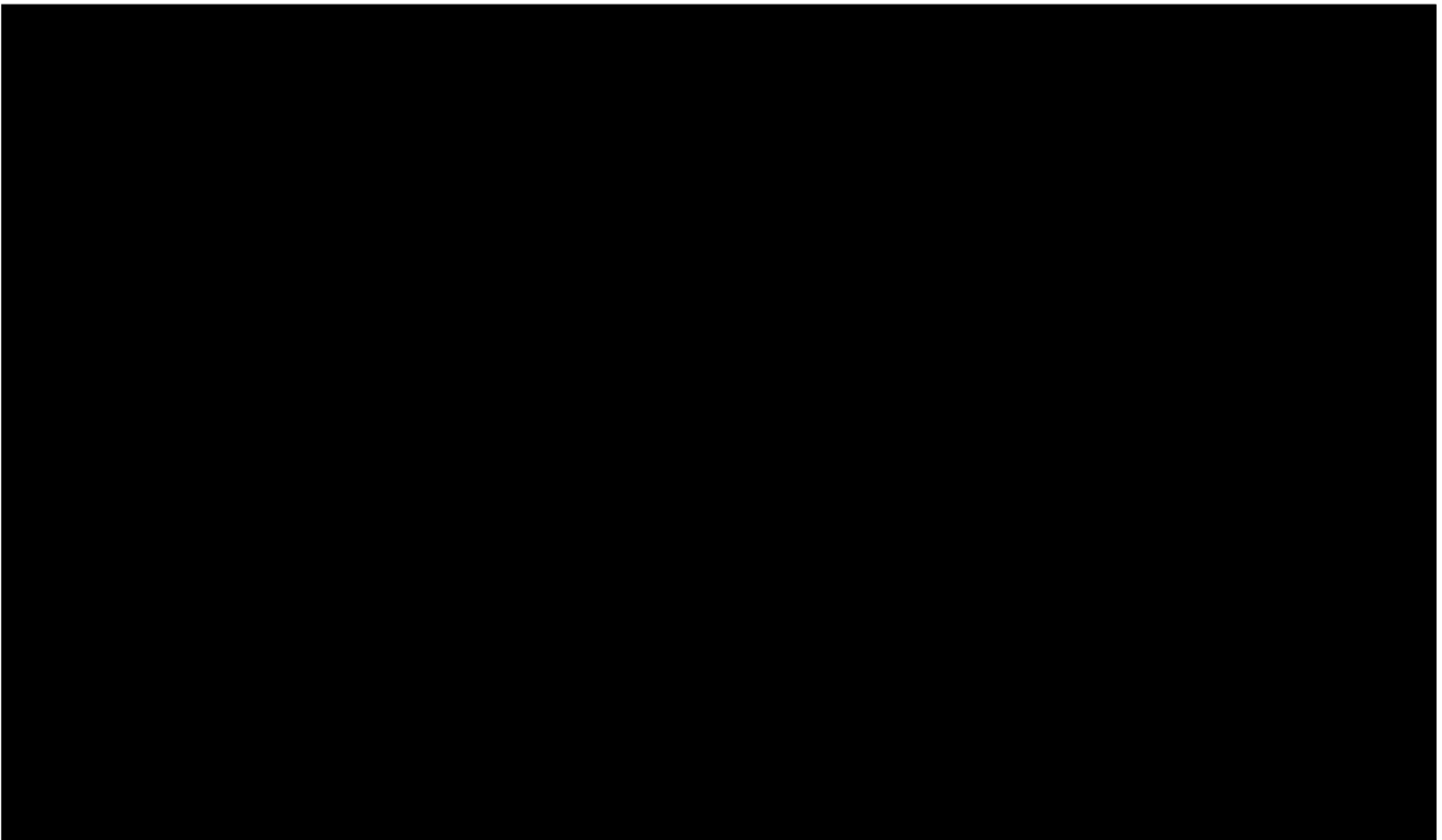
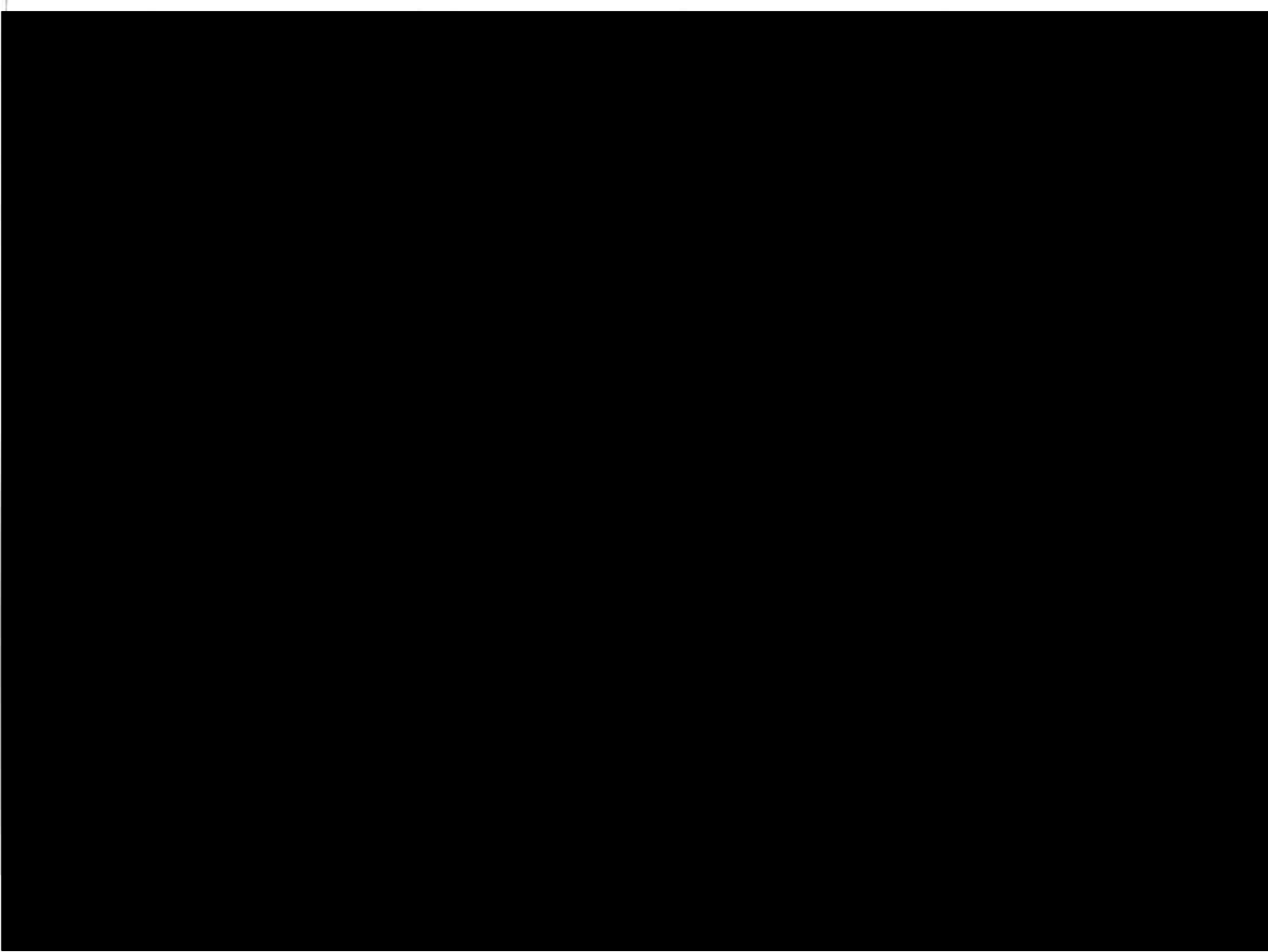
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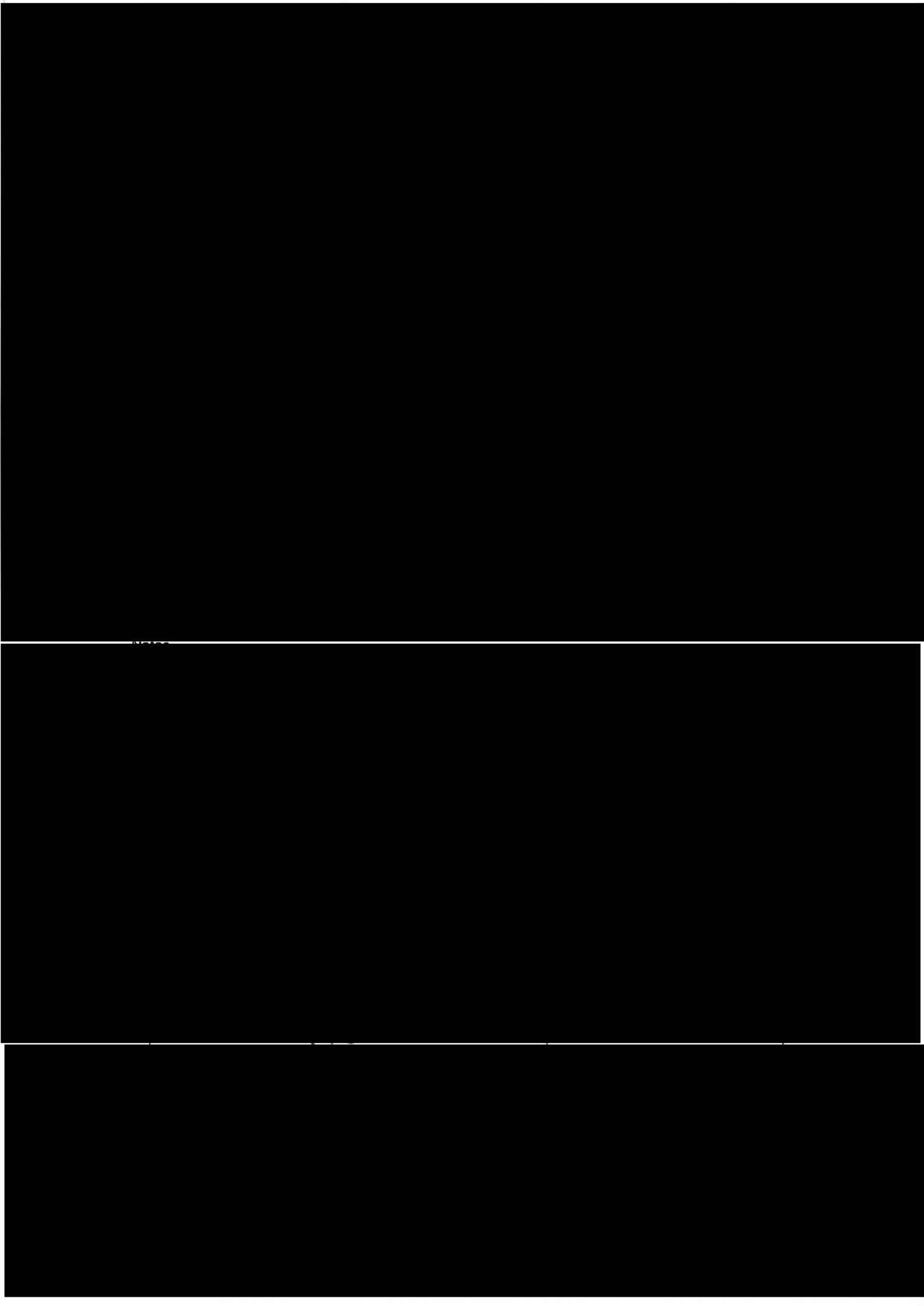








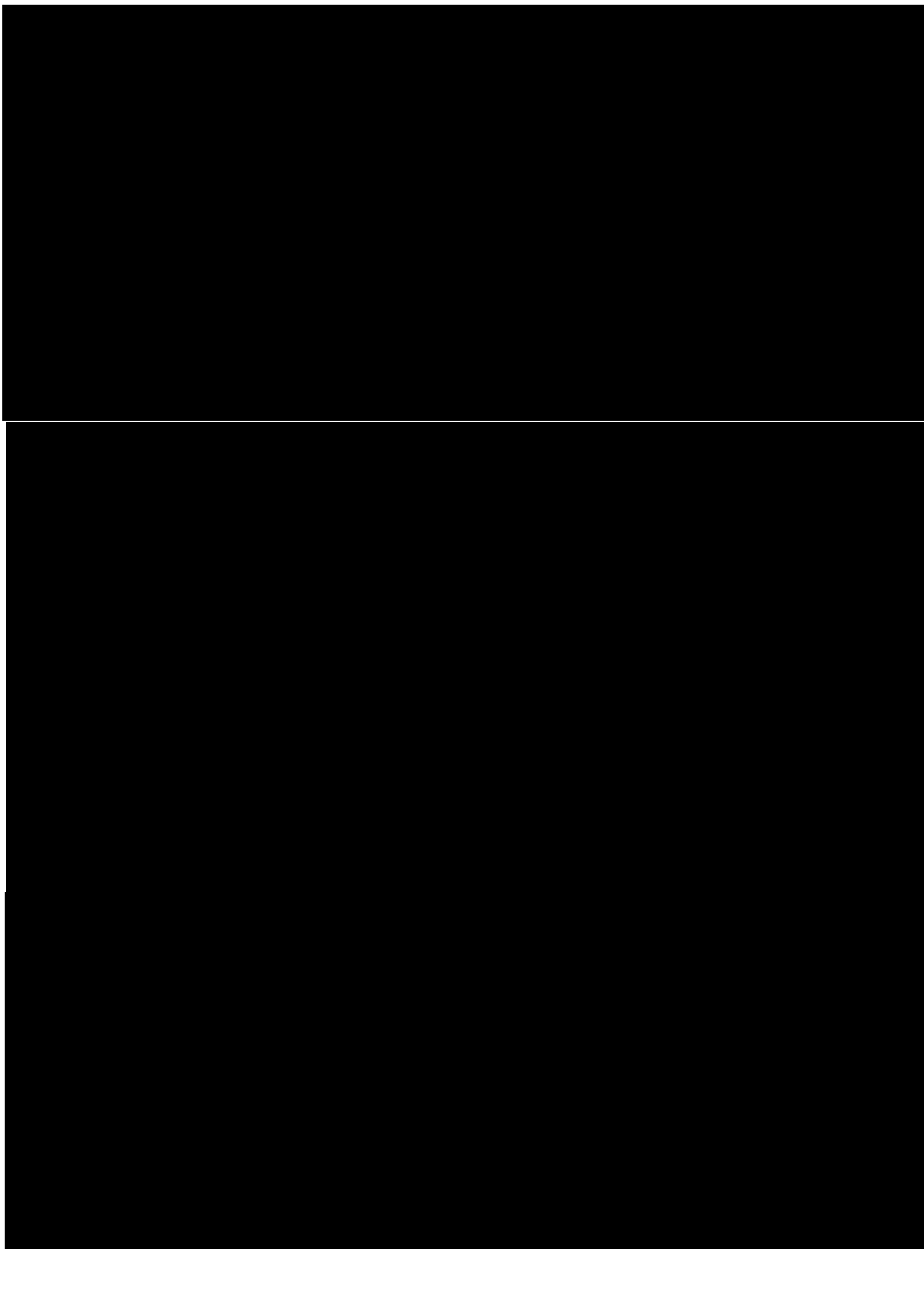






## **APPENDIX C**

### **Badger Sett Type Definitions**



## **APPENDIX E**

### **2023 Reptile Survey Report and Site-wide Outline Mitigation Strategy**

**HOGWOOD FARM, FINCHAMPSTEAD**

**2023 REPTILE SURVEY REPORT AND SITE-WIDE OUTLINE REPTILE MITIGATION STRATEGY**

**Prepared for CALA Homes (Thames) Ltd**

**by**

**Hankinson Duckett Associates**

**HDA ref: 868.1**

**May 2024**

**hankinson duckett associates**

**t** 01491 838175 **f** 01491 838997 **e** [consult@hda-enviro.co.uk](mailto:consult@hda-enviro.co.uk) **w** [www.hda-enviro.co.uk](http://www.hda-enviro.co.uk)

The Stables, Howbery Park, Benson Lane, Wallingford, Oxfordshire, OX10 8BA

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HDA Document Control and Quality Assurance Record

## **APPENDICES**

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# **1 INTRODUCTION**

## **1.1 Site location and summary description**

1.1.1 This report describes an updated reptile survey and a Site-Wide Outline Reptile Mitigation Strategy of the proposed Phase 4, 5, 6, 10, 11, 12, 13, Neighbourhood Centre and Sports Pitches/Allotment Parcels located within approximately 110ha of land at Hogwood Farm, Finchampstead hereinafter referred to as 'the site'. The centre of the site is located by National Grid Reference SU 76969 64399. The study was commissioned by CALA Homes (Thames) Ltd in May 2023.

1.1.2 The site is located to the north-west of the village of Finchampstead, Berkshire. In general terms, the western area of the site is comprised of three fields of disturbed ground dominated by short ruderal vegetation with scattered areas of tall ruderal vegetation and large spoil heaps bordered by mature trees and woodland with scrub field margins. The central and eastern areas of the site are comprised of areas of hardstanding and construction/disturbed ground bordered by mature treelines and woodland. The south-eastern area of the site comprises two fields of semi-improved grassland fields intersected by a ditch with associated scrub and scattered trees. A species-rich hedgerow with trees adjacent to Park Lane is present along the southern boundary. Woodland shaws and copses are located in the northern, western and central areas of the site, including mixed, broadleaved and broadleaved plantation woodland types, some of which are included in Natural England's Inventory of Ancient Woodland. Wetland habitats within the site include drainage ditches and small streams associated with the field boundaries and several ponds in poor condition are located across the site. Further information on the extent and composition of habitats across the site is provided in the Phase 1 Habitat Survey and Target Notes (HDA, 2024).

1.1.3 The site is part of a larger area covering a total of 110ha, hereinafter referred to as the 'wider site'. The wider site comprises residential dwellings associated with Parcels 1 and 2 in the north-west, construction sites associated with Parcels 14 and 15 in the east and the Nine Mile Ride Extension (NMRE) and the SANG which comprises a mix of wetland, grassland, scrub and woodland habitats which is located in the south of the wider site.

1.1.4 The site and wider site are bordered to the north by residential dwellings, the Bohunt School and the Hogwood Industrial Estate; to the east by Park Lane beyond which lie residential dwellings and park homes; to the south by Park Lane and farmland; and to the west by A327 Reading Road and Sheerlands Road beyond which lie farmland and woodland. The wider area is dominated by agricultural land interspersed with woodland and residential properties. The location and boundary of the site and wider site are shown in *Appendix A*.

## **1.2 Background and legislative context**

1.2.1 Four species of reptile are widespread in England: Grass Snake *Natrix helvetica*, Slow-worm *Anguis fragilis*, Common Lizard *Zootoca vivipara* and Adder *Vipera berus*. The Sand Lizard *Lacerta agilis* and Smooth Snake *Coronella austriaca* are restricted to certain sand dune and heathland sites.

1.2.2 Reptiles can be found in a range of habitats and typically require a mosaic of vegetation types. Habitat interfaces are important with reptiles requiring woodland, scrub or hedgerow for shelter, with adjacent longer vegetation for hunting and patches of sheltered short turf, bare ground or log piles for basking areas. Areas which catch the sun (i.e. those with a southerly aspect) are preferred over those where direct sunlight is absent for most of the day. In addition, Grass Snakes favour damp habitats such as those associated with still and running water, grazing marshes, mires etc.

1.2.3 All species of reptile are protected through Sections 9(1) and 9(5) of the 1981 Wildlife and Countryside Act (as amended). It is an offence to:

- Intentionally kill or injure any reptile; and/or
- Sell, offer for sale, possess or transport for the purposes of sale or publish advertisements to buy or sell any reptile.

Due to their rarity, Sand Lizards and Smooth Snakes have additional protection.

1.2.4 Reptiles across the UK have undergone significant declines in recent years and all native species of reptile are listed as priority species on the UKBAP and identified as Species of Principal Importance under Section 41 of the 2006 Natural Environment and Rural Communities (NERC) Act. Section 40 of the Act requires that these species are a material consideration in the planning process.

## **1.3 Development proposals**

1.3.1 Planning permission (O/2014/2179 and 140764) was granted in January 2017 for a hybrid application. This comprises:

- Outline permission for demolition of all existing buildings on site; up to 1,500 new dwellings; employment floor space; a Neighbourhood Centre; a primary school; sports pitches and associated pavilion building; highways infrastructure; associated landscaping, public realm, open/green space and sustainable urban drainage systems; and
- Full permission for a 29.7ha Suitable Alternative Natural Greenspace (SANG) in the south of the site.

The hybrid planning permission was subsequently amended by a Section 73 application (181194) which was approved in November 2018.

## **1.4 Scope and purpose of the report**

1.4.1 Reptile surveys of the site and wider site were conducted by HDA in 2017 (HDA, 2018a) and 2021 (HDA, 2021). During the 2021 surveys, a low number of Slow-worm were recorded within the site and the presence of Grass Snake was identified within the wider site in 2017 and 2021. This updated previous surveys of the site and wider site undertaken by Entec in 2008 and Amec in 2012 which identified 'low' populations of Common Lizard, Slow-worm and Grass Snake (Royal Haskoning DHV, 2014).

1.4.2 The Reptile Survey Report and Site-Wide Outline Reptile Mitigation Strategy (HDA, 2018a) was produced in response to Planning Condition 26, which states:

*“Prior to submission of any Reserved Matters applications other than pertaining to the Nine Mile Ride Extension South an outline reptile mitigation strategy shall be submitted to and approved in writing by the local planning authority. All sub phases of the development shall thereafter be designed to incorporate the requirements identified in the approved outline reptile mitigation strategy. All Reserved Matters applications for any sub phase of the development shall include a detailed reptile mitigation strategy that demonstrates how the relevant sub phases have been designed to incorporate the provisions of the outline reptile mitigation strategy and the detailed mitigation strategies shall be implemented in accordance with the approved details unless otherwise approved in writing by the local planning authority.”*

1.4.3 In recognition of the known reptile presence at the site and surrounding area and the time that has passed since the reptile surveys were carried out in 2017 and 2021, an updated reptile survey was conducted by HDA in 2023 to confirm the current status and distribution of reptiles within areas potentially affected by the proposed development. The survey results were also used to inform this updated version of the Site-wide Outline Reptile Mitigation Strategy. Specifically, the aims of the updated reptile survey are:

- i. To confirm the current presence/ probable absence of reptiles at the site;
- ii. To assess the relative importance of different parts of the site for reptiles; and
- iii. To provide a updated Site-Wide Outline Reptile Mitigation Strategy to ensure impact avoidance, minimisation and mitigation measures for reptiles are implemented across the overall scheme.

## **2 METHODOLOGY**

2.1 The methodology has been devised to accord with the requirements of all relevant legislation and good practice guidance, including the Herpetofauna Worker's Manual (JNCC, 1999), Reptile Survey guidance (Froglife, 1999) and Surveying for Reptiles (Froglife, 2016).

- 2.2 The site was surveyed on seven occasions by Robert Goldsmith of HDA. Surveys were generally carried out during optimum temperature and weather conditions (intermittent or hazy sunshine, temperature between 9°C and 20°C and low winds). Dates of survey visits, with survey timings and weather conditions, are shown in *Table 1* below:

**Table 1:** Survey times and weather conditions

| Survey visit | Date       | Time of Visit | Weather conditions                               | Temp (°C) |
|--------------|------------|---------------|--------------------------------------------------|-----------|
| 1            | 12/09/2023 | 9:40 - 13:30  | 100% Cloud cover, light breeze                   | 18.5      |
| 2            | 15/09/2023 | 10:00 – 12:15 | 0% Cloud cover, light breeze                     | 19.5      |
| 3            | 19/09/2023 | 09:25 – 11:35 | 100% Cloud cover, light breeze, after light rain | 17.5      |
| 4            | 21/09/2023 | 12:45 – 14:40 | 80% Cloud cover, no wind                         | 17.0      |
| 5            | 27/09/2023 | 11:25 – 13:15 | 60% Cloud cover, light breeze                    | 18.0      |
| 6            | 29/09/2023 | 14:20 – 16:20 | 0% Cloud cover, light breeze                     | 19.0      |
| 7            | 05/10/2023 | 10:10 – 13:45 | 60% Cloud cover, no wind                         | 17.0      |

- 2.3 Two methods of surveying were used. Firstly, artificial refugia (squares of roofing felt 0.5m x 0.5m) were placed, in advance of the survey commencing, at potential basking areas throughout the site. A total of 166 refugia were placed, giving a total density of 7.5 refugia per hectare for areas considered to provide suitable reptile habitat (22 ha), as much (17 ha) of the site had been stripped to bare ground at the time of the survey and was considered unsuitable for reptiles. This density is within the recommended density of 5 to 10 refugia per hectare of suitable reptile habitat. The locations of the refugia are shown on the plan in *Appendix A*.
- 2.4 During each of the seven subsequent visits, each refugium was inspected for any reptiles basking on the upper side, then lifted and checked for sheltering animals before being carefully replaced. A different route was taken for each of the survey visits to ensure that there was no bias due to the time of survey.
- 2.5 The second survey method involved transect searches across suitable habitats within the site. This ensured that all areas were represented in the survey, and that the survey was not biased towards those reptiles more likely to use refugia. Transect searches involve walking slowly around the site, visually searching potential basking areas and marking the locations of any reptiles observed on a map. Potential reptile refuges already present on the site such as dead logs and building material were also lifted to check for the presence of animals.

- 2.6 The following information was recorded for each reptile survey: species seen, number of animals seen, location (refugium number), date, start and finish times, temperature and weather.

## **2.7 Limitations**

- 2.7.1 The reptile surveys were carried out at a time of year when reptiles are active during suitable weather conditions. It is therefore considered that no significant limitations were encountered during the survey and the survey findings form a robust basis for an assessment of the impact of the proposed development on reptiles and the identification of recommendations for impact avoidance, minimisation and mitigation.

## **3 RESULTS**

### **3.1 Habitat assessment**

- 3.1.1 The majority of the western section of the site consists of disturbed ground with short ruderal vegetation and the southern section of the site consists of semi-improved rough grassland which provides low to moderate quality habitat for reptiles. Higher quality habitat for reptiles is provided by the tall ruderal vegetation, scrub and hedgerow field margins, and woodland edge habitat. The majority of the central and eastern sections of the site consist of disturbed bare ground which was considered to be unsuitable for reptiles.

### **3.2 Refugia and visual searches**

- 3.2.1 Despite the presence of suitable habitat within the site, no reptiles were recorded during the 2023 reptile surveys or incidentally on other site visits for ecological surveys carried out at the site in 2023/2024.

## **4 SITE EVALUATION**

- 4.1 A number of guidelines are used to evaluate the importance of a site for reptiles, based on both the population density and number of species present, in addition to historical factors.

- 4.2 The Guidelines for Biological Selection of SSSIs (JNCC, 2022) identifies that for the more common and widespread species of reptile (Adder, Grass Snake, Common Lizard and Slow-worm) the following criteria should be considered for candidate SSSIs:

- The best 5 locations supporting established populations of Adder in any area of search; and/ or
- The best localities in which three or more common and widespread reptile species occur.

The presence of populations of one or two common and widespread reptile species, should also count positively in the evaluation of potential SSSIs chosen largely on other grounds, especially where populations are large, located in areas where the species concerned is rare or at the geographical limits of its range.

- 4.3 The Herpetofauna Workers' Manual (JNCC, 1998) suggests that sites falling outside of the SSSI selection criteria should be designated as Sites of Importance for Nature Conservation (SINCs) if they meet the following criteria:
- Any site with a large population of a single species;
  - Any site with a moderate population of two species;
  - Any site at the edge of the geographical range of a species; and
  - Any site with a long documented history.
- 4.4 The Key Reptile Site register is a mechanism designed to promote the safeguard of important reptile sites. To qualify for the register, the site in question must meet at least one of the following criteria (Froglife, 1999):
- Supports three or more reptile species;
  - Supports two snake species;
  - Supports an exceptional population of at least one species (*Table 3*);
  - Supports an assemblage of species scoring at least 4 (*Table 3*); and
  - Does not satisfy the above criteria but is of particular regional importance due to local rarity (e.g. in the East Midlands, Adders are very rare so even "low" populations should be designated as Key Sites).

The criteria for scoring populations of the four common reptile species for the purposes of the Key Reptile Register are given in *Table 3* below.

**Table 3:** Population parameters for the Key Reptile Sites register

| Reptile species | Low population<br>Score 1 | Good population<br>Score 2 | Exceptional population<br>Score 3 |
|-----------------|---------------------------|----------------------------|-----------------------------------|
| Adder           | <5                        | 5-10                       | >10                               |
| Grass Snake     | <5                        | 5-10                       | >10                               |
| Common Lizard   | <5                        | 5-20                       | >20                               |
| Slow-worm       | <5                        | 5-20                       | >20                               |

*Figures in the table refer to maximum number of adults seen by observation and/or under tins (placed at a density of up to 10 per hectare) by one person in one day.*

- 4.5 Despite the presence of suitable habitat within the site, no reptiles were recorded during the 2023 reptile surveys.
- 4.6 Notwithstanding this, the presence of Slow-worm and Grass Snake were identified within the site and/or wider site in 2021 (HDA, 2021) and Grass Snake was recorded in 2017 (HDA, 2018a). In addition, low numbers of Slow-worm, Grass Snake and Common Lizard were identified in 2017 (Royal Haskoning DHV, 2014). On this basis, it is conceivable that the site and wider site may support very low populations of Slow-worm, Grass Snake and

Common Lizard on at least an occasional or transitory basis. Although this would mean that the site supports three species of reptile, due to the apparent very low populations and density of all three species it is considered highly unlikely that the site would qualify as a SSSI, SINC or Key Reptile Site on the basis of its reptile assemblage. Slow-worm, Grass Snake and Common Lizard are all common and widespread species in Southern England and suitable habitat for these species is abundant in the wider area, including in the recently established SANG which lies immediately to the south-west of the site. The site is therefore considered to be of no more than low local value for Grass Snake and Slow-worm and site value for Common Lizard.

- 4.7 Notwithstanding the limited reptile interest of the site, nature conservation legislation afforded to all reptiles will apply which includes the protection of individuals and consideration of reptile populations in the planning process. Measures to safeguard individual reptiles and maintain and enhance the reptile interest of the site through the proposed development are therefore identified in the updated Site-Wide Outline Mitigation Strategy described in *Section 5* below.

## **5 SITE-WIDE OUTLINE REPTILE MITIGATION STRATEGY**

- 5.1 This section describes the methodology that will be carried out to ensure that the proposed development maintains compliance with nature conservation legislation afforded to reptiles and maintains the favourable conservation status of the local reptile population. This methodology will be employed during construction of the proposed development unless otherwise agreed with the Local Planning Authority.
- 5.2 Although no reptiles were recorded at the site during the updated 2023 reptile surveys, previously low numbers of Slow-worm, Grass Snake and Common Lizard have been recorded within the site and wider site. On this basis it is conceivable that very low numbers of Slow-worm, Grass Snake and Common Lizard remain present at the site. The site is therefore considered to support a very low number of Slow-worm, Grass Snake and Common Lizard and as such does not qualify as a SSSI, SINC or Key Reptile Site. The site is considered to be of no more than low local value for Slow-worm and Grass Snake and site value for Common Lizard. Notwithstanding this, the legal protection afforded to all reptiles still applies.
- 5.3 Although only very low numbers of Grass Snake, Slow-worm and Common Lizard are likely to be present within suitable habitat throughout the majority of the site, in view of the size of the reptile populations recorded, the retention of habitat corridors around the site (including in the areas where reptiles were formally recorded) a full translocation exercise is unlikely to be required, however this should be reassessed during the production of the Detailed Reptile Mitigation Strategies which will be produced for each phase of the

development in accordance with Condition 26. The detailed reptile mitigation strategy for each phase of the development will either implement a precautionary approach to vegetation clearance (detailed in *Section 5.4* below) or implement a full translocation exercise (detailed in *Section 5.5* below). The approach taken will depend on the extent, location and distribution of the habitat affected and the status of reptiles in any given area. Where appropriate the approach to be taken will be based on updated surveys where more than two years has passed since the 2023 survey was undertaken and/or the extent or character of habitat within any given area has undergone significant change. The advice of a suitably qualified consultant will be sought on the approach to updating of survey work and the approach to be taken agreed with Wokingham Borough Council.

## **5.4 Habitat manipulation**

5.4.1 If only relatively small areas of suitable reptile habitat will be impacted by the works, which are connected to suitable reptile habitat in the wider site or wider area, or the likelihood of encountering reptiles is limited then a cautious approach to site clearance will be employed. Suitable reptile habitat includes areas of scrub and ruderal vegetation, rough grassland, pond margins, hedgerow bases and woodland and refuge opportunities such as rubble piles. This cautious approach will involve manipulation of habitats to displace reptiles present into areas of contiguous and improved habitats, following the stages set out below:

### Stage 1: Creation/enhancement of reptile receptor habitat and maintenance of long-term opportunities for reptiles following development

A SANG supporting a mix of wetland, grassland, scrub and woodland habitats has been created in the south of the wider site which comprises the main area of reptile receptor habitat within the site. Further areas of suitable reptile habitat will however be created in other areas of public open space within the site, especially where these have good habitat connectivity to the SANG or suitable habitat elsewhere within the site or wider area. The prescriptions for creation/enhancement of reptile habitats within the site and the management of these areas are detailed within the *Outline Site-wide Landscape and Ecological Management Plan* (HDA, 2018b) and shown on the *SANG Masterplan* (RPS, 2018a) and *Overarching Landscape Strategy* (RPS, 2018b). The following habitat enhancement works include:

#### *Meadow, rough and wet grassland*

Areas of meadow and rough grassland with a species-rich native sward have been established within the SANG and Phase 1 and 2 of the development and will be established in other areas of informal open spaces. In addition, the margins of ponds and ditches and seasonally wet areas associated with the attenuation basins and swales will be sown with a native species-rich wet grassland mix. Prescriptions of benefit to reptiles include:

- Some of the grass cuttings will be used to create 'habitat piles' which will provide further opportunities for egg laying Grass Snakes;
- On rotation, selected areas of the grassland will be left uncut during each mowing period in order to provide additional refuge habitat for reptiles; and
- The rough grassland areas will only be cut every 2 – 3 years (cutting no more than 50% in any one year). This will allow a rough tussocky sward to establish as refuge for reptiles and benefiting other groups, such as invertebrates.

### *Scrub*

Areas of native species-rich scrub species have/will be planted adjacent to hedgerows and along woodland edges to create ecotones which provide a gradation from woodland/hedgerow to scrub to rough and meadow grassland habitats which are noted for the high diversity of species and biomass they support, including reptiles. Scalloped edges along south, west and east facing margins will provide ideal basking opportunities.

### *Hedgerows*

As part of the development proposals, the majority of existing hedgerows have/will be retained and enhanced, and new lengths of hedgerow have/will be established. These will contribute towards maintenance of habitat connectivity across the site in addition to providing suitable reptile habitat in their own right. Arisings from hedgerow management have/will be used in the creation of refugia and hibernacula (see below). The number of crossing points across hedgerows and other linear habitat features (e.g. treelines) will be minimised and where appropriate measures such as reptile/amphibian underpasses and dropped kerbs have/will be provided to maximise connectivity and reduce risk of mortality.

### *Waterbodies*

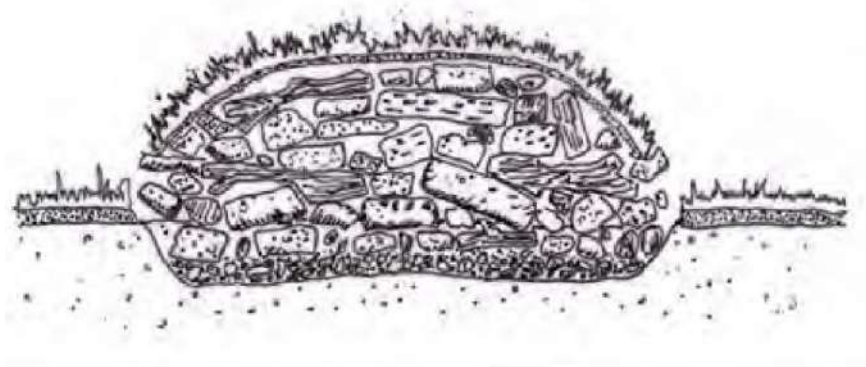
A number of waterbodies will be enhanced or created within the site as part of the drainage strategy and as stand-alone features. These will provide habitat favoured by Grass Snakes, which include fish and amphibians within their diet.

### *Refugia and Hibernacula*

A minimum of 5 hibernacula have/will be constructed within areas of rough grassland, scrub, hedgerows and woodland within the SANG and other areas of informal open space to provide refuge and hibernation opportunities for reptiles. Construction measures will include:

- Each hibernaculum will have a minimum area of 200cm x 250cm.
- Each hibernaculum will be constructed on elevated ground to prevent flooding, with a thin layer of gravel along the base to aid drainage.
- A pit will be excavated and filled with rocks, logs, dead wood and other suitable rubble to an above ground height of 50-100cm.

- The mound will be capped with a layer of topsoil, turf or moss at a thickness of 510mm.
- The addition of a geotextile membrane beneath the capping layer may be used to prevent soil or other loose material from collapsing into the void below.
- Gaps will be left in the capping material at ground level to allow reptile access.



**Figure 1:** Example cross-section through hibernaculum

In addition, a minimum of thirty log and brash piles have/will be created within the SANG and other areas of public open space, using arisings from site clearance works. These will be maintained by adding the arisings from ongoing site maintenance, and piles of grass clippings from the mowing regime will provide further opportunities for egg laying Grass Snakes.

#### *Connectivity*

The development proposals have been designed to maintain a network of habitats suitable for the movement of wildlife, including reptiles, across the site.

The number of crossing points across hedgerows and other linear habitat features such as woodland shaws and treelines have been minimised and where appropriate measures such as wildlife underpasses and dropped kerbs have/will be provided to maximise connectivity and reduce risk of mortality. This is discussed further in the *Outline Site-wide Ecological Permeability Scheme* (HDA, 2018c).

#### Stage 2: Habitat manipulation

Following the initial enhancement of areas of suitable reptile habitat within areas of public open space associated with each Phase, detailed in Stage 1 above, where appropriate the following habitat manipulation measures will be undertaken under an ecological watching brief by a suitably experienced ecologist. The habitat manipulation measures will be undertaken where suitable habitat is to be lost/damaged, in order to encourage the movement of reptiles into suitable habitats in the surrounding area, including the newly

created and enhanced habitats within the receptor site and other open space described above. The extent of habitat manipulation works associated with any given phase of development will be identified within the Detailed Mitigation Strategies described in *Section 5.3*.

- Firstly, vegetation cover will be reduced to minimum height of 150mm. This will ideally take place at a time avoiding the bird breeding season (typically between March and September inclusive) or otherwise be preceded by a check of suitable habitat for active nests immediately prior to commencement of works by a suitably qualified ecologist or appropriate other.
- Where potential for reptiles to be present remains, a minimum period of 5 days with daytime temperatures of >12°C will then be allowed to pass prior to the second stage of vegetation clearance (see below).
- The second stage will involve clearance of all suitable vegetation to ground level (i.e. <75mm) by hand during mild temperatures (>14°C) at a suitable time of year when reptiles are likely to be active (generally mid-March to early October inclusive). At this time any potential hibernacula or refugia encountered will be carefully dismantled by hand. This stage of clearance will be undertaken under the supervision of a suitably qualified ecologist who would capture and relocate any reptiles encountered to areas of retained habitat on the margins of the development phase or the pre-established refugia in the reptile receptor area or other established informal open space as appropriate.
- Where potential for reptiles to be present remains, a further 5 days with daytime temperatures of >12°C will then be allowed to elapse to enable any remaining reptiles to disperse from the area of works, prior to the destructive search.
- Following clearance of vegetation to ground level and removal of any refugia by hand, no suitable reptile habitat would remain and it is expected that any remaining reptiles would disperse from the area of works into adjacent habitat on their own accord.
- In order to be certain that no reptiles are present within the area of works, topsoil will then be progressively stripped from the area of works under the supervision of a suitably qualified ecologist, if required.
- In the event that the destructive search is delayed, vegetation will be maintained at ground level until the destructive search is carried out. Similarly, following the destructive search, the land will be maintained as unsuitable for the recolonisation of reptiles prior to and throughout the proposed works.

## **5.5 Reptile translocation**

5.5.1 Translocation of reptiles may be required for phases of development where it is not possible to displace reptiles through habitat manipulation due to: (i) loss of extensive areas of suitable reptile habitat; (ii) the absence of connective habitats between the development

phase and suitable retained reptile habitat in the wider site or wider area; and/or (iii) the future presence of higher numbers of reptiles to those currently recorded at the site. In such instances, in order to protect individual reptiles in accordance with nature conservation legislation and to conserve the populations of reptiles present it may be necessary to translocate reptiles to the receptor area prior to the commencement of works. This would follow the procedure outlined below.

Stage 1: Initial creation/enhancement of reptile receptor habitat and maintenance of long-term opportunities for reptiles following development

This will follow the same methodology as detailed within Stage 1 of the precautionary approach detailed above. The receptor area will be established in a timely manner before translocation commences in order to ensure that appropriate habitat is present into which reptiles can be transferred.

Stage 2: Capture and exclusion

- Temporary reptile-proof fencing would be installed around the perimeter of the development phase (or associated reptile habitat) under the supervision of a suitably qualified ecologist and maintained until completion of works.
- Where necessary, to prevent reptiles climbing over the fencing and recolonising the development phase, the vegetation adjacent to the fencing, both inside and outside the development phase, should be kept short either by strimming or herbicide application.
- Once the fencing is installed, refugia would be laid out at an average density of 50-100 refugia/ha across the development phase. Trapping would then commence, to be carried out between the months of March and September/early October, until results indicate that all reptiles have been excluded (i.e. a minimum of 5 successive trapping days having been completed with no captures, depending on capture record and time of year).
- If removal of scrub is required to facilitate this work, this should avoid the bird breeding season (typically between March and September inclusive) or otherwise be preceded by a check of suitable habitat for active nests immediately prior to commencement of works by a suitably qualified ecologist.
- During the trapping period, artificial refugia and any existing refuges on site would be searched in suitable weather conditions i.e. temperatures between 9°C and 20°C and low winds. All captured reptiles would be relocated to the receptor area described above.
- Once capture rates have declined, the remaining vegetation and reptile habitat within the development area to be lost would be progressively removed. This would be carried out in stages using hand held tools, successively lowering the height and reducing vegetation to displace any reptiles present. Ground level vegetation

removal would be carried out under the supervision of a suitably qualified ecologist and should commence with the careful removal of naturally occurring refugia, such as brash and log piles, by hand followed by the removal of scrub, and then successive lowering of herbaceous vegetation to a height of 75mm. Trapping of reptiles should continue whilst this takes place. Once vegetation has been removed to approximately 75mm, this height would be maintained to keep the habitat unsuitable for reptiles.

- Once all necessary vegetation has been reduced to 75mm and at least 5 successive trapping days have occurred without any reptiles being captured, a destructive search of former areas of reptile habitat would be undertaken. Where appropriate, this would involve the careful stripping of topsoil under the supervision of a suitably qualified ecologist during conditions where reptiles are likely to be active. Topsoil would be stored away from the perimeter fencing and any areas of retained reptile habitat to reduce the likelihood of it forming suitable reptile refugia. All vegetation would be cleared and removed from the fenced area. Removed vegetation may be used in enhancement works for the receptor area.
- In the event that the destructive search is delayed, the vegetation would be maintained at ground level until the destructive search is carried out. Similarly, following the destructive search, the land would be maintained as unsuitable for the recolonisation of reptiles prior to and throughout the proposed works and the perimeter fencing maintained until all works potentially affecting reptiles have been completed.

#### *Other works*

- 5.5.2 Where certain works which affect only small areas of suitable reptile habitat are proposed within a development phase subject to a wider translocation exercise (e.g. provision of services), due to the low risk of reptiles being encountered it may be appropriate for such works to be carried out in accordance with a precautionary approach to clearance as opposed to full translocation in order to ensure that reasonable measures to avoid contravention of legislation protecting common and widespread reptile species (i.e. protection against injury and killing) are employed. This would follow the habitat manipulation methodology detailed in *Section 5.4* above. This would need to be assessed on a case by case basis at an appropriate stage and documented in the Detailed Reptile Mitigation Strategy for that development phase.

## **6 ONGOING MAINTENANCE**

- 6.1 The ongoing maintenance of the SANG and other areas of public open space is detailed within the *Outline Site-Wide Landscape and Ecological Management Plan* (HDA, 2018b) to ensure the integrity of the newly created and enhanced areas of habitat for reptiles will be

maintained in the long-term. Detailed LEMPs will also be prepared for each development phase to reflect detailed design in any given area.

## **7 CONCLUSION**

- 7.1 Through implementation of the mitigation measures outlined above the development would avoid injury or killing of any reptiles present.
- 7.2 Although the loss of reptile habitat as a result of the outline development proposals is unlikely to be significant within a local context, measures for the creation and enhancement of new areas of reptile habitat within the site are included as part of the informal open space proposals for the wider site. These include the creation of a 29ha SANG, dominated by suitable reptile habitat, within an area of the wider site currently of limited value for this group. Through the implementation of these measures, it would be expected that current reptile interest of the site could be maintained and increased.
- 7.3 It is therefore concluded that subject to employment of the approach outlined above, the development would protect individual reptiles currently occurring within the site and ensure that the favourable conservation status of the local reptile population is maintained.

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Document Title: 2023 Reptile Survey Report and Site-wide Outline Reptile Mitigation Strategy  
Commissioning Party: CALA Homes (Thames) Ltd

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|-------|------------------------------------------------------------------------------|---------------|--------|
| 1     | 2023 Reptile Survey Report and Site-wide Outline Reptile Mitigation Strategy | May 2024      |        |

|                    | Personnel         | Position            |
|--------------------|-------------------|---------------------|
| Author             | Robert Goldsmith  | Assistant Ecologist |
| Approved for issue | Clare Bird MCIEEM | Associate Ecologist |

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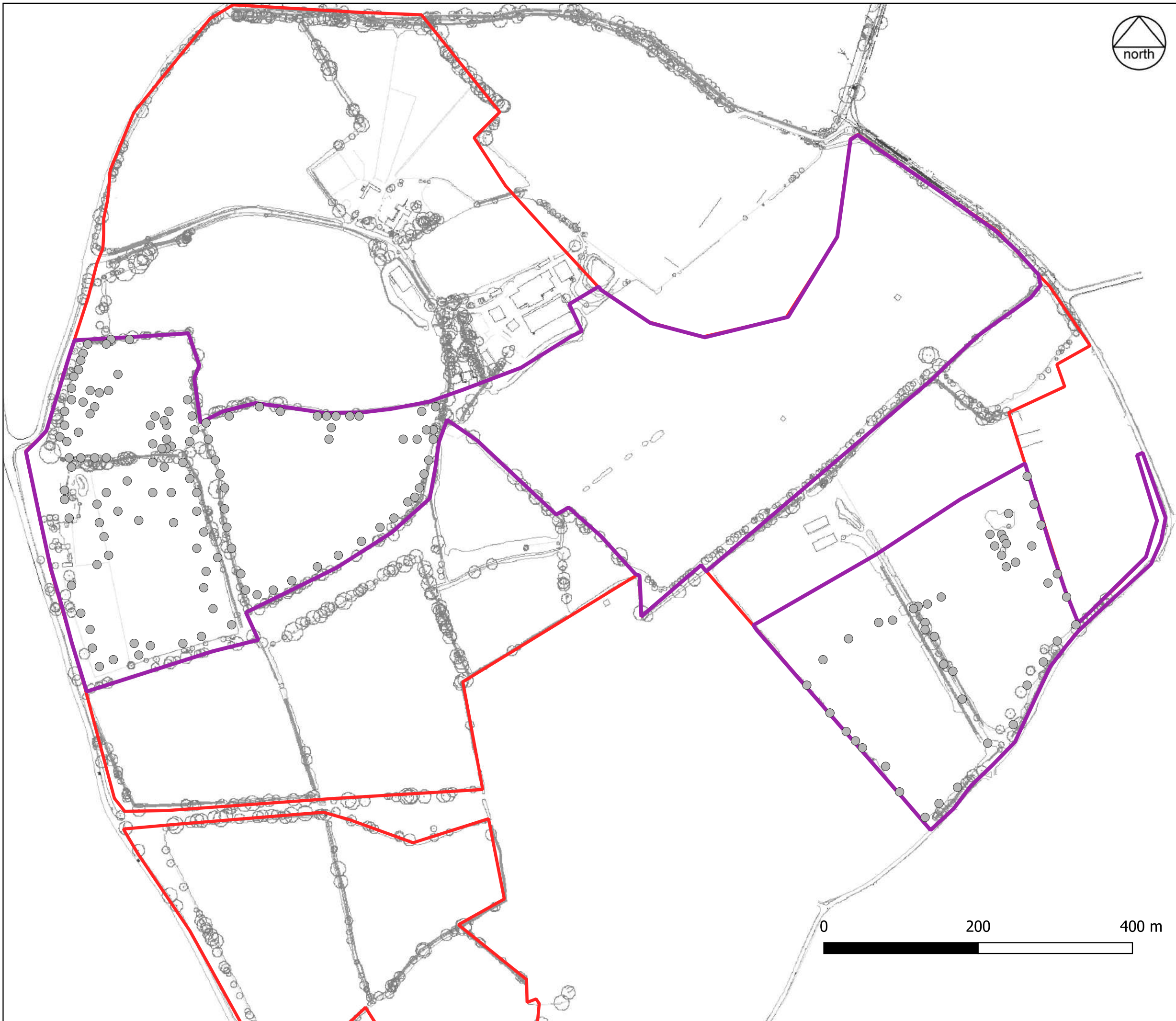
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## **APPENDIX A**

### **2023 Reptile Survey Summary Plan**



- KEY**
- Wider site boundary
  - Site Boundary
  - Reptile refugia location\*

\*No reptiles recorded

CLIENT:  
CALA Homes Thames Ltd.

PROJECT:  
Hogwood Farm, Finchampstead

TITLE:  
2023 Reptile Survey Summary Plan

SCALE AT A3:  
1:7,500

DATE:  
May 2024

868.1/80

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The Stables, Howbery Park, Benson Lane, Wallingford, OX10 8BA  
t 01491 838175 e consult@hda-enviro.co.uk w www.hda-enviro.co.uk

Landscape Architecture  
Masterplanning  
Ecology



## **APPENDIX F**

### **2023 Great Crested Newt HSI and eDNA Survey Report**

**HOGWOOD FARM, FINCHAMPSTEAD**

**2023 GREAT CRESTED NEWT HSI AND eDNA SURVEY REPORT**

**Prepared for CALA Homes Thames Ltd**

**by**

**Hankinson Duckett Associates**

**HDA ref: 868.1**

**May 2024**

**hankinson duckett associates**

† 01491 838175 † 01491 838997 e [consult@hda-enviro.co.uk](mailto:consult@hda-enviro.co.uk) w [www.hda-enviro.co.uk](http://www.hda-enviro.co.uk)

The Stables, Howbery Park, Benson Lane, Wallingford, Oxfordshire, OX10 8BA

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## **APPENDICES**

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| B | Full HSI assessment results                         |
| C | eDNA sampling analysis results                      |
| D | Waterbody photographs                               |

# **1 INTRODUCTION**

## **1.1 Site location and summary description**

1.1.1 This report describes a updated Habitat Suitability Index (HSI) assessment and eDNA sampling survey of waterbodies located in the vicinity of the proposed Parcels 4, 5, 6, 10, 11, 12, 13 and Neighbourhood Centre located within approximately 110ha of land at Hogwood Farm, Finchampstead hereinafter referred to as 'the site'. The centre of the site is located by National Grid Reference SU 76969 64399. The study was commissioned by CALA Homes (Thames) Ltd in May 2023.

1.1.2 The site is located to the north-west of the village of Finchampstead, Berkshire. In general terms, the western area of the site is comprised of three fields of disturbed ground dominated by short ruderal vegetation with scattered areas of tall ruderal vegetation and large spoil heaps bordered by mature trees and woodland with scrub field margins. The central and eastern areas of the site are comprised of areas of hardstanding and construction/disturbed ground bordered by mature treelines and woodland. The south-eastern areas of the site comprise two fields of semi-improved grassland fields intersected by a ditch with associated scrub and scattered trees. A species-rich hedgerow with trees adjacent to Park Lane is present along the southern boundary. Woodland shaws and copses are located in the northern, western and central areas of the site, including mixed, broadleaved and broadleaved plantation woodland types, some of which are included on Natural England's Inventory of Ancient Woodland. Wetland habitats within the site include drainage ditches and small streams associated with the field boundaries and several ponds in poor condition are located across the site. Further information on the extent and composition of habitats across the site is provided in the Phase 1 Habitat Survey and Target Notes (HDA, 2024).

1.1.3 The site is part of a larger area covering a total of 110ha, hereinafter referred to as the 'wider site'. The wider site comprises residential dwellings associated with Parcels 1 and 2 in the north-west, construction sites associated with Parcels 14 and 15 in the east and the Nine Mile Ride Extension (NMRE) and the SANG which comprises a mix of wetland, grassland, scrub and woodland habitats which is located in the south of the wider site.

1.1.4 The site and wider site are bordered to the north by residential dwellings, the Bohunt School and the Hogwood Industrial Estate; to the east by Park Lane beyond which lie residential dwellings and park homes; to the south by Park Lane and farmland; and to the west by A327 Reading Road and Sheerlands Road beyond which lie farmland and woodland. The wider area is dominated by agricultural land interspersed with woodland and residential properties. The location and boundary of the site are shown in *Appendix A*.

## **1.2 Background and legislative context**

- 1.2.1 Five species of amphibian are widespread in England: Common Frog *Rana temporaria*, Common Toad *Bufo bufo*; Smooth Newt *Lissotriton vulgaris*; Palmate Newt *Lissotriton helveticus*; and Great Crested Newt *Triturus cristatus*. A sixth species of amphibian, the Natterjack Toad *Bufo calamita*, also occurs in England but this species has special habitat requirements that limit its range to certain sand dune and heathland sites.
- 1.2.2 Amphibians require aquatic habitat within which to breed and suitable terrestrial habitat to forage and hibernate. Suitable breeding ponds are usually well vegetated with still, shallow water that is not heavily shaded or very exposed. Terrestrial habitat includes woodland, scrub, field edges and gardens. Hibernation can occur under stone or log piles, in crevices or leaf litter and under the soil. Occasionally amphibians may be found hibernating in their breeding pools.
- 1.2.3 Over the last few decades all amphibians have suffered a decline in numbers. This is due to a combination of many factors, which include habitat destruction and fragmentation, loss of breeding pools through unsympathetic management and neglect, introduction of fish (which eat amphibian larvae) and pollution.
- 1.2.4 The Great Crested Newt is protected as a European Protected Species (EPS) under the 2017 Conservation of Habitats and Species Regulations (as amended). In relation to European Protected Species, the 2017 Regulations make it an offence to:
- Deliberately capture, injure or kill any wild animal of an EPS;
  - Deliberately disturb wild animals of any such species, in particular any disturbance which is likely to: (i) impair their ability to survive, to breed or reproduce, or to rear or nurture their young; or to hibernate or migrate; (ii) affect significantly the local distribution or abundance of the species to which they belong;
  - Damage or destroy a breeding site or resting place of such an animal; and/or
  - To (a) be in possession of, or to control; (b) to transport any live or dead animal or any part of an animal; (c) to sell or exchange or (d) offer for sale or exchange any live or dead animal or part of an animal of an EPS.
- 1.2.5 In addition, Great Crested Newts are protected under the 1981 Wildlife and Countryside Act (as amended). The Great Crested Newt is listed on Schedule 5 of the Act and is subject to the provisions of Sections 9.4b and 9.4c, which make it an offence to:
- Intentionally or recklessly disturb a Great Crested Newt while it is occupying a structure or place which it uses for shelter or protection; and/or
  - Intentionally or recklessly obstruct access to any structure or place used for shelter or protection by a Great Crested Newt.

- 1.2.6 Great Crested Newts and Common Toads are also identified as a Species of Principal Importance under Section 41 of the 2006 Natural Environment and Rural Communities (NERC) Act. Section 40 of the Act requires that these species are a material consideration in the planning process.

### **1.3 Development proposals**

- 1.3.1 Planning permission (O/2014/2179 and 140764) was granted in January 2017 for a hybrid application. This comprises:

- Outline permission for demolition of all existing buildings on site; up to 1,500 new dwellings; employment floor space; a Neighbourhood Centre; a primary school; sports pitches and associated pavilion building; highways infrastructure; associated landscaping, public realm, open/green space and sustainable urban drainage systems; and
- Full permission for a 29.7ha Suitable Alternative Natural Greenspace (SANG) in the south of the site.

The hybrid planning permission was subsequently amended by a Section 73 application (181194) which was approved in November 2018.

### **1.4 Scope and purpose of the report**

- 1.4.1 An eDNA Great Crested Newt survey of the site and wider site was carried out in April 2018 which recorded a likely absence of Great Crested Newts within the site (HDA, 2018).

- 1.4.2 Great Crested Newts typically have a maximum routine migratory range of 250m away from breeding ponds during terrestrial phases (Cresswell and Whitworth, 2004) and a review of the OS 1:10,000 scale map and aerial photographs suggest that there are waterbodies located within 300m of the site boundary which may provide breeding habitat for Great Crested Newts.

- 1.4.3 There are no waterbodies within the site which could provide suitable breeding habitat for Great Crested Newts and this species is therefore not expected to breed at the site. Habitats within the site including grassland, tall ruderals, scrub and woodland provide suitable terrestrial habitat for Great Crested Newts. A review of the OS 1:10,000 scale map and aerial photographs of the site's surrounds suggests that there are waterbodies located within 300m of the site (including ponds within wider site), the closest of which is located approximately 10m to the south of the site boundary.

- 1.4.4 In view of the above it was considered possible that Great Crested Newts could use the site during terrestrial phases and a series of updated Great Crested Newt surveys including a Habitat Suitability Index (HSI) assessment and Great Crested Newt presence/absence eDNA survey were subsequently undertaken in order to:

- i. To establish the suitability of waterbodies within the vicinity of the site for Great Crested Newts;
- ii. To establish the likely presence/absence of Great Crested Newts breeding in suitable waterbodies within the vicinity of the site;
- iii. To determine requirements for any further survey work to estimate the size of any Great Crested Newt population potentially associated with the site; and
- iv. To predict likely impacts of the proposed development on Great Crested Newts and give recommendations for impact avoidance, minimisation and/or mitigation.

## **2 METHODOLOGY**

### **2.1 Great Crested Newt Habitat Suitability Index (HSI) Assessment**

2.1.1 Habitat Suitability Index (HSI) assessments provide a mechanism by which the suitability of a pond to support Great Crested Newts can be objectively assessed in order to assist in the identification of ponds potentially supporting this species (Oldham *et al.*, 2000).

2.1.2 For the HSI assessment the locations of waterbodies within approximately 300m of the site were identified from online aerial photographs, a 1:10,000 scale Ordnance Survey map and from other waterbodies encountered during the field survey. Where necessary, relevant landowners were contacted in advance of the survey in order to gain access to off-site waterbodies. Use of a 300m radius reflects the findings of studies into the movement of Great Crested Newts during terrestrial phases which indicates that the maximum routine migratory distance of Great Crested Newts away from breeding ponds during terrestrial phases is less than 250m (Cresswell and Whitworth, 2004).

2.1.3 The HSI assessment was conducted by Robert Goldsmith and Anna Potter of HDA on the 14<sup>th</sup> and 29<sup>th</sup> June 2023. All accessible waterbodies identified within the survey area were visited and, where appropriate, assessed against each of the following ten suitability indices:

- i. Geographic location;
- ii. Pond area;
- iii. Pond permanence;
- iv. Water quality;
- v. Shading;
- vi. Presence of waterfowl;
- vii. Presence of fish;
- viii. Pond density in the area;
- ix. Terrestrial habitat quality; and
- x. Macrophyte cover in pond.

2.1.4 Details of the pond characteristics (depth, margin profile, etc.) and bankside, marginal and aquatic vegetation were also recorded during the assessment.

## **2.2 Great Crested Newt Environmental DNA (eDNA) Survey**

2.2.1 Great Crested Newt eDNA sampling surveys were conducted on all accessible waterbodies that had been identified as having suitability to support Great Crested Newts during the HSI survey. The eDNA survey methodology is recognised by Natural England as a reliable technique for determining the presence/likely absence of Great Crested Newts within a pond through detection of traces of Great Crested Newt DNA within the water.

2.2.2 The eDNA sampling survey was conducted by Robert Goldsmith and Anna Potter on the 14<sup>th</sup> and 29<sup>th</sup> June 2023. The field survey involved taking samples of pond water at each of the surveyed waterbodies in line with the recognised methodology established by Biggs *et al.* (2014). The samples were then despatched to a recognised laboratory for polymerase chain reaction (qPCR) analysis.

## **3 RESULTS**

3.1 No waterbodies are located within the site and 16 waterbodies with potential to support Great Crested Newts were identified within the wider survey area during the desk study and a further waterbody was identified during the survey visit. The locations of the waterbodies are shown in *Appendix A* and photographs are provided in *Appendix D*.

3.2 The results of the HSI assessment and eDNA survey, together with descriptions of the surveyed waterbodies and any limitations encountered, are provided below. Full findings of the HSI assessment and the laboratory results from the eDNA analysis are provided in *Appendices B* and *C* respectively.

### **3.3 Waterbody 1**

*Location: Approximately 140m to the north-west of the site.*

*HSI assessment: 0.792*

3.3.1 Waterbody 1 (*Photo 1*) comprises a medium-sized pond within a residential garden. The waterbody has a lined base with earth on top. Aquatic and emergent vegetation is present within the pond. The pond is partially shaded by the trees and shrub present along the southern and western margins. Immediately surrounding terrestrial habitat includes amenity grassland, scrub, wooded areas, buildings and paved areas/bare ground. The water quality was assessed as good and it is assumed the waterbody never dries. No waterfowl were recorded at the time of survey but it is possible that a small number of waterfowl use the pond on occasion. No fish were observed during the survey, however it is possible that fish are present within the waterbody.

3.3.2 The HSI for Waterbody 1 was calculated as 0.792, which indicates that the pond has 'good' suitability for Great Crested Newts.

3.3.3 An eDNA sampling survey of Waterbody 1 was subsequently carried out and the samples were sent to the Surescreen Scientifics laboratory for analysis. The analysis returned a negative result for Great Crested Newt eDNA which indicates that Great Crested Newts are highly likely to have been absent from the waterbody at the time of survey. The results of the eDNA analysis are provided in *Appendix C*.

3.3.4 No limitations were encountered during the survey of Waterbody 1.

### **3.4 Waterbody 2**

*Location: Approximately 200m to the north-west of the site.*

*HSI assessment: 0.760*

3.4.1 Waterbody 2 (*Photo 2*) comprises a medium-sized pond within a residential garden. The waterbody has a lined base with earth on top. Aquatic and marginal plants including reeds and sedges were present around the margins of the pond and the pond surface was dominated by duckweed at the time of survey. Beyond the pond margins is amenity grassland to the south and west; a narrow, bare earth access track to the north; and a strip of scrub and trees to the east. Trees are present on the eastern margin of the pond, shading approximately 50% of the pond. The water quality was assessed as moderate and it is assumed the waterbody never dries. No waterfowl or fish were observed during the survey, however it is possible that fish are present within the waterbody.

3.4.2 The HSI for Waterbody 2 was calculated as 0.760, which indicates that the pond has 'good' suitability for Great Crested Newts.

3.4.3 An eDNA sampling survey of Waterbody 2 was subsequently carried out and the samples were sent to the Surescreen Scientifics laboratory for analysis. The analysis returned a negative result for Great Crested Newt eDNA which indicates that Great Crested Newts are highly likely to have been absent from the waterbody at the time of survey. The results of the eDNA analysis are provided in *Appendix C*.

3.4.4 No limitations were encountered during the survey of Waterbody 2.

### **3.5 Waterbody 4**

*Location: Waterbody 4 located approximately 220m to the north of the site.*

*HSI assessment: 0.485*

- 3.5.1 Waterbody 4 (*Photo 3*) comprises an artificial pond located within the northern area of the wider site. The pond has an area of approximately 450m<sup>2</sup>, with an earth base and gently sloping earth banks which are mostly bare of vegetation. The water quality was assessed as bad, and it is anticipated that the pond only dries after long dry periods. No waterfowl or fish were observed during the survey. Trees border the pond margins creating approximately 90% shade. Moderate quality terrestrial habitat in the form of woodland, scrub and grassland habitats are located in close vicinity to the pond.
- 3.5.2 The HSI for Waterbody 4 was calculated as 0.485, which indicates that the pond has 'poor' suitability for Great Crested Newts.
- 3.5.3 An eDNA sampling survey of Waterbody 4 was subsequently carried out and the samples were sent to the Surescreen Scientifics laboratory for analysis. The analysis returned a negative result for Great Crested Newt eDNA which indicates that Great Crested Newts are highly likely to have been absent from the waterbody at the time of survey. The results of the eDNA analysis are provided in *Appendix C*.
- 3.5.4 No limitations were encountered during the survey of Waterbody 4.

### **3.6 Waterbody 5**

*Location: Approximately 275m to the north of the site.*

*HSI assessment: 0.460*

- 3.6.1 Waterbody 5 (*Photo 4*) comprises a large pond located within broadleaved woodland to the west of Hogwood Industrial Estate. The pond has an area of approximately 900m<sup>2</sup>, with a mix of gently sloping and steep sided earth banks with limited aquatic and marginal plants present. The water quality was assessed as bad and it is assumed that the pond never dries. No waterfowl were recorded at the time of survey but it is possible that a small number of waterfowl use the pond on occasion although it is anticipated that their influence is minor. It is considered possible that fish could be present within the pond. Trees border the pond margins casting approximately 90% shade. Moderate quality terrestrial habitat in the form of woodland borders all sides.
- 3.6.2 The HSI for Waterbody 5 was calculated as 0.460, which indicates that the pond has 'poor' suitability for Great Crested Newts.
- 3.6.3 An eDNA sampling survey of Waterbody 5 was subsequently carried out and the samples were sent to the Surescreen Scientifics laboratory for analysis. The analysis returned a

negative result for Great Crested Newt eDNA which indicates that Great Crested Newts are highly likely to have been absent from the waterbody at the time of survey. The results of the eDNA analysis are provided in *Appendix C*.

3.6.4 No limitations were encountered during the survey of Waterbody 5.

### **3.7 Waterbody 10**

*Location: Approximately 230m to the north-east of the site.*

*HSI assessment: Unknown*

3.7.1 Access to Waterbody 10 was not granted. Aerial photographs and a 1:10,000 scale Ordnance Survey map indicate the waterbody is large, approximately 3800m<sup>2</sup> in size, with a wooded island in its centre. The waterbody is located approximately 230m from the north-east of the site boundary at its closest point.

3.7.2 The waterbody appears to be surrounded by good quality terrestrial habitat in the form of deciduous woodland. The potential for Waterbody 10 to support Great Crested Newts is considered in the context of the findings of the wider survey in *Section 4* below.

### **3.8 Waterbody 11**

*Location: Approximately 20m to the east of the site.*

*HSI assessment: 0.271*

3.8.1 Waterbody 11 (*Photo 5*) comprises a small lake located within Robinson Crusoe Park, approximately 20m to the east of the site. The lake is deep with both gently sloping and steep-sided earth banks. Scattered trees and scrub border the pond margins, shading approximately 10% of the lake. Aquatic and marginal plants are largely absent, with occasional sedges, rushes and Iris. The water quality was assessed as poor and it is assumed the waterbody never dries. Small numbers of waterfowl and fish were observed during the survey. Moderate quality terrestrial habitat in the form of woodland to the south and west and garden habitats border the pond.

3.8.2 The HSI for Waterbody 11 was calculated as 0.271, which indicates that the pond has 'poor' suitability for Great Crested Newts.

3.8.3 An eDNA sampling survey of Waterbody 11 was subsequently carried out and the samples were sent to the Surescreen Scientifics laboratory for analysis. The analysis returned a negative result for Great Crested Newt eDNA which indicates that Great Crested Newts are highly likely to have been absent from the waterbody at the time of survey. The results of the eDNA analysis are provided in *Appendix C*.

3.8.4 No limitations were encountered during the survey of Waterbody 11.

### **3.9 Waterbody 15**

*Location: Approximately 35m to the north-east of the site.*

*HSI assessment: 0.411*

- 3.9.1 Waterbody 15 (*Photo 6*) comprises a small man-made pond within a residential garden. The pond has steep vertical concrete sides and lined base. The land surrounding the pond comprises of paved hardstanding. Aquatic and emergent vegetation is present within the pond. Fish were recorded during the survey. The waterbody has poor water quality, and it is assumed the waterbody never dries.
- 3.9.2 The HSI for Waterbody 15 was calculated as 0.411, which indicates that the pond has 'poor' suitability for Great Crested Newts.
- 3.9.3 An eDNA sampling survey of Waterbody 15 was subsequently carried out and the samples were sent to the Surescreen Scientifics laboratory for analysis. The analysis returned a negative result for Great Crested Newt eDNA which indicates that Great Crested Newts are highly likely to have been absent from the waterbody at the time of survey. The results of the eDNA analysis are provided in *Appendix C*.
- 3.9.4 No limitations were encountered during the survey of Waterbody 15.

### **3.10 Waterbody 15a**

*Location: Approximately 35m to the north-east of the site.*

*HSI assessment: 0.411*

- 3.10.1 Waterbody 15a (*Photo 7*) comprises a small man-made pond within a residential garden, approximately 10m north-west of Waterbody 15. The pond has steep vertical concrete sides and lined base. The majority of the land surrounding the pond comprises of paved hardstanding areas, short amenity grassland and ornamental shrub planting. Aquatic vegetation is present within the pond and fish were recorded during the survey.
- 3.10.2 The HSI for Waterbody 15a was calculated as 0.411, which indicates that the pond has 'poor' suitability for Great Crested Newts.
- 3.10.3 The pond was not subject to an eDNA sampling survey due to a netting guard on the pond. The potential for Waterbody 15a to support Great Crested Newts is considered in the context of the findings of the wider survey in *Section 4* below.

### **3.11 Waterbody 18**

*Location: Approximately 10m to the south of the site.*

*HSI assessment: 0.854*

- 3.11.1 Waterbody 18 (*Photo 8*) comprises a large man-made SuDS pond located within the newly established SANG within the wider site. The pond has an earth base with gently sloping earth banks. Aquatic and marginal plants including reeds, rushes and sedges were present around the margins and within the pond. Beyond the pond margins is meadow grassland boarded by mature trees. No waterfowl were recorded at the time of survey, but it is possible that a small number of waterfowl use the pond on occasion although it is anticipated that their influence is minor. It is considered possible that fish could be present within the pond. The waterbody has good water quality, and it is assumed the waterbody sometimes dries after long dry periods.
- 3.11.2 The HSI for Waterbody 18 was calculated as 0.854, which indicates that the pond has 'excellent' suitability for Great Crested Newts.
- 3.11.3 An eDNA sampling survey of Waterbody 18 was subsequently carried out and the samples were sent to the Surescreen Scientifics laboratory for analysis. The analysis returned a negative result for Great Crested Newt eDNA which indicates that Great Crested Newts are highly likely to have been absent from the waterbody at the time of survey. The results of the eDNA analysis are provided in *Appendix C*.
- 3.11.4 No limitations were encountered during the survey of Waterbody 18.

### **3.12 Waterbody 20**

*Location: Approximately 75m to the south of the site.*

*HSI assessment: 0.923*

- 3.12.1 Waterbody 20 (*Photo 9*) comprises the northern-most pond of a series of three SuDS ponds (Waterbodies 20, 21 and 22) that interconnect during periods of increased precipitation which are located in the newly established SANG within the wider site. The pond has an earth base with gently sloping earth banks. Aquatic and marginal plants including reeds, rushes and sedges were present around the margins and within the pond. Beyond the pond margins is meadow grassland bordered by mature trees. No waterfowl were recorded at the time of survey, but it is possible that a small number of waterfowl use the pond on occasion although it is anticipated that their influence is minor. It is considered possible that fish could be present within the pond. The waterbody has good water quality, and it is assumed the waterbody sometimes dries after long dry periods.
- 3.12.2 The HSI for Waterbody 20 was calculated as 0.923, which indicates that the pond has 'excellent' suitability for Great Crested Newts.

3.12.3 An eDNA sampling survey of Waterbody 20 was subsequently carried out and the samples were sent to the Surescreen Scientifics laboratory for analysis. The analysis returned a negative result for Great Crested Newt eDNA which indicates that Great Crested Newts are highly likely to have been absent from the waterbody at the time of survey. The results of the eDNA analysis are provided in *Appendix C*.

3.12.4 No limitations were encountered during the survey of Waterbody 20.

### **3.13 Waterbody 21**

*Location: Approximately 150m to the south of the site.*

*HSI assessment: 0.831*

3.13.1 Waterbody 21 (*Photo 10*) comprises the central pond of a series of three SuDS ponds (Waterbodies 20, 21 and 22) that interconnect during periods of increased precipitation which are located in the newly established SANG within the wider site. The pond has an earth base with gently sloping earth banks. Aquatic and marginal plants including reeds, rushes and sedges were present around the margins and within the pond. Beyond the pond margins is meadow grassland bordered by mature trees. No waterfowl were recorded at the time of survey, but it is possible that a small number of waterfowl use the pond on occasion although it is anticipated that their influence is minor. It is considered possible that fish could be present within the pond. The waterbody has good water quality, and it is assumed the waterbody sometimes dries after long dry periods.

3.13.2 The HSI for Waterbody 21 was calculated as 0.831, which indicates that the pond has 'excellent' suitability for Great Crested Newts.

3.13.3 An eDNA sampling survey of Waterbody 21 was subsequently carried out and the samples were sent to the Surescreen Scientifics laboratory for analysis. The analysis returned a negative result for Great Crested Newt eDNA which indicates that Great Crested Newts are highly likely to have been absent from the waterbody at the time of survey. The results of the eDNA analysis are provided in *Appendix C*.

3.13.4 No limitations were encountered during the survey of Waterbody 21.

### **3.14 Waterbody 22**

*Location: Approximately 200m to the south of the site.*

*HSI assessment: 0.852*

3.14.1 Waterbody 22 (*Photo 11*) comprises the southern-most pond of a series of three SuDS ponds (Waterbodies 20, 21 and 22) that interconnect during periods of increased precipitation which are located in the newly established SANG within the wider site. The

pond has an earth base with gently sloping earth banks. Aquatic and marginal plants including reeds, rushes and sedges were present around the margins and within the pond. Beyond the pond margins is meadow grassland bordered by mature trees. No waterfowl were recorded at the time of survey, but it is possible that a small number of waterfowl use the pond on occasion although it is anticipated that their influence is minor. It is considered possible that fish could be present within the pond. The waterbody has good water quality, and it is assumed the waterbody sometimes dries after long dry periods.

3.14.2 The HSI for Waterbody 22 was calculated as 0.852, which indicates that the pond has 'excellent' suitability for Great Crested Newts.

3.14.3 An eDNA sampling survey of Waterbody 22 was subsequently carried out and the samples were sent to the Surescreen Scientifics laboratory for analysis. The analysis returned a negative result for Great Crested Newt eDNA which indicates that Great Crested Newts are highly likely to have been absent from the waterbody at the time of survey. The results of the eDNA analysis are provided in *Appendix C*.

3.14.4 No limitations were encountered during the survey of Waterbody 22.

### **3.15 Waterbody 23**

*Location: Approximately 120m to the south of the site.*

*HSI assessment: 0.858*

3.15.1 Waterbody 23 (*Photo 12*) comprises a large SuDS pond located within the newly established SANG within the wider site, approximately 55m west of Waterbody 22. The pond has an earth base with gently sloping earth banks. Aquatic and marginal plants were present around the margins and within the pond. Beyond the pond margins is meadow grassland bordered by mature trees. No waterfowl were recorded at the time of survey, but it is possible that a small number of waterfowl use the pond on occasion although it is anticipated that their influence is minor. It is considered possible that fish could be present within the pond. The waterbody has good water quality, and it is assumed the waterbody sometimes dries after long dry periods.

3.15.2 The HSI for Waterbody 23 was calculated as 0.858, which indicates that the pond has 'excellent' suitability for Great Crested Newts.

3.15.3 An eDNA sampling survey of Waterbody 23 was subsequently carried out and the samples were sent to the Surescreen Scientifics laboratory for analysis. The analysis returned a negative result for Great Crested Newt eDNA which indicates that Great Crested Newts are highly likely to have been absent from the waterbody at the time of survey. The results of the eDNA analysis are provided in *Appendix C*.

3.15.4 No limitations were encountered during the survey of Waterbody 23.

### **3.16 Waterbody 24**

*Location: Approximately 125m to the north of the site.*

*HSI assessment: 0.504*

3.16.1 Waterbody 24 (*Photo 13*) comprises a large SuDS pond located in the north of the wider site. The pond has an earth base with gently sloping earth banks. Aquatic and marginal plants are largely absent, with occasional sedges and rushes. Beyond the pond margins is comprised of meadow grassland and areas of bare ground boarded by mature trees and scrub. Waterfowl were present at the time of survey, and it is considered possible that fish are present within the pond. The waterbody has moderate water quality, and it is assumed the waterbody never dries.

3.16.2 The HSI for Waterbody 24 was calculated as 0.504, which indicates that the pond has 'below average' suitability for Great Crested Newts.

3.16.3 An eDNA sampling survey of Waterbody 24 was subsequently carried out and the samples were sent to the Surescreen Scientifics laboratory for analysis. The analysis returned a negative result for Great Crested Newt eDNA which indicates that Great Crested Newts are highly likely to have been absent from the waterbody at the time of survey. The results of the eDNA analysis are provided in *Appendix C*.

3.16.4 No limitations were encountered during the survey of Waterbody 24.

### **3.17 Other waterbodies**

3.17.1 A number of other waterbodies occur within the site and within a 300m radius of the site, in the form of dry ponds, ditches, drains and streams, all of which were identified as being unsuitable for breeding Great Crested Newts during the HSI survey due to either: (i) the absence of water (in the case of Waterbodies 3, 16 and 17); or (ii) the presence of flowing water which is unsuitable for breeding Great Crested Newts.

## **4 SUMMARY AND RECOMMENDATIONS**

4.1 The eDNA survey results indicate that Great Crested Newts are highly likely to be absent from all tested Waterbodies (Waterbodies 1, 2, 4, 5, 11, 15, 18, 20, 21, 22, 23 and 24) which are located within the wider site and surrounding area despite the suitability of some of these ponds for this species.

4.2 Two further waterbodies (Waterbodies 10 and 15a) identified within 300m of the site boundary, were not subject to HSI and/or an eDNA sampling surveys due to access

restrictions. Notwithstanding this, it is considered unlikely that Great Crested Newts are present within either of these waterbodies (and subsequently within the site) as:

- Great Crested Newts usually exist in metapopulations, using clusters of ponds with cross dispersal of individuals between them. This decreases the vulnerability of local populations to habitat changes (e.g. individual ponds drying) thereby maintaining long-term population viability. In view of this it would be anticipated that if Great Crested Newts were present in Waterbodies 10 or 15a, their eDNA would also be present in Waterbodies 11 and 15, which are within close proximity to these waterbodies and of at least limited suitability for this species.
- Further to the above, Waterbody 15a is considered unsuitable for Great Crested Newts due to the vertical concrete walls of the pond that would prevent Great Crested Newts from accessing the waterbody and therefore can be discounted.
- In addition, recent studies suggest that 95% of newt summer refuges are within 63m of breeding ponds. Waterbody 10 is located approximately 230m from the site and subsequently, if Great Crested Newts are present within the waterbody, it is unlikely that they would utilise the site during terrestrial phases.

4.3 In view of the above, it is considered highly unlikely that Great Crested Newts are present within the site during either breeding or terrestrial phases. Development of the site is therefore considered highly unlikely to have any adverse impact on Great Crested Newts and therefore no requirement for mitigation or licensing specific to Great Crested Newts has been identified.

4.4 Notwithstanding the above, development proposals should seek to maintain and where possible enhance future opportunities for Great Crested Newts and other amphibians at the site in accordance with the 2023 NPPF and 2006 NERC Act. This could be achieved through the retention, enhancement and creation of habitats suitable for amphibians as part of the landscape strategy for the site.

4.5 The site is currently dominated by short ruderal vegetation and bare ground which provides few opportunities for amphibians during terrestrial phases. Proposals for the site present opportunities to enhance and create new habitats for amphibians in the long-term. This could be achieved through implementing a selection of the following measures:

- Inclusion of areas of high value amphibian terrestrial habitat within areas of open space such as meadow and rough grassland, native species-rich scrub and woodland planting;
- Use of native species-rich hedgerow, scrub and tree planting to form new boundary features and/or complement existing boundary vegetation to enhance connective habitats across the site;

- Enhancement of woodland edge habitats through creation of ecotones (a gradation from woodland to scrub to rough grassland habitats), to provide a range of foraging and refuge opportunities;
- Provision of opportunities for hibernation and refuge through the provision of compost heaps, log/brush piles and purpose built hibernaculum;
- Creation of new open water wetland habitats suitable for breeding amphibians planted with a range of native aquatic and marginal vegetation, either as standalone features or as part of the site surface water drainage strategy; and
- Securing the long-term integrity of new and retained habitats through inclusion within a long-term management strategy.

## 5 CONCLUSION

5.1 Results of the HSI and eDNA survey indicate that Great Crested Newts are highly likely to be absent from the site. It is therefore considered highly unlikely that Great Crested Newts are present within the site and therefore no mitigation or licensing would be required for this species in relation to the proposed development.

5.2 Notwithstanding the above, in accordance with the 2023 NPPF and 2006 NERC Act, development proposals for the site should seek to provide opportunities for Great Crested Newts and other amphibian species within the site through creation, enhancement and long-term management of habitats as part of the landscape strategy for the proposed development. Measures by which this can be achieved are given in *Section 4 above*.

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## HDA Document Control and Quality Assurance Record

Project Title: Arborfield Eco  
Project Reference: 868.1  
Document Title: 2023 Great Crested Newt HSI and eDNA Survey Report  
Commissioning Party: CALA Homes (Thames) Ltd

| Issue | Description                                        | Date of Issue | Signed |
|-------|----------------------------------------------------|---------------|--------|
| 1     | 2023 Great Crested Newt HSI and eDNA Survey Report | May 2024      |        |

|                    | Personnel         | Position            |
|--------------------|-------------------|---------------------|
| Author             | Robert Goldsmith  | Assistant Ecologist |
| Approved for issue | Clare Bird MCIEEM | Associate Ecologist |

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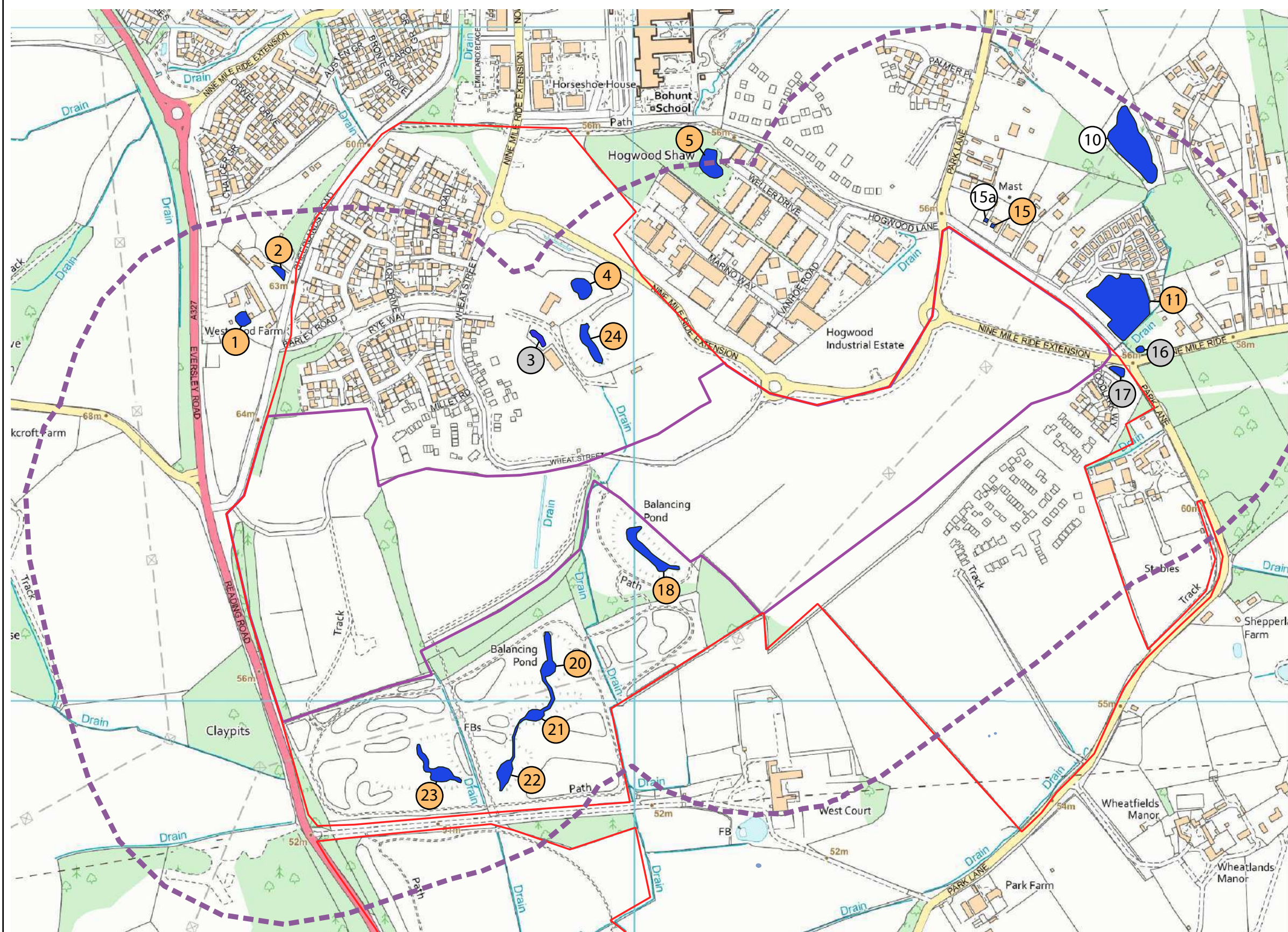
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## **APPENDIX A**

### **Great Crested Newt HSI and eDNA survey summary plan**



- KEY**
- Site Boundary
  - Wider site boundary
  - 300m radius of site
  - Waterbody reference
  - Great Crested Newts confirmed absent by eDNA analysis
  - Waterbody dry
  - No access to waterbody granted to undertake Great Crested Newt eDNA survey

CLIENT:  
CALA Homes (Thames) Ltd

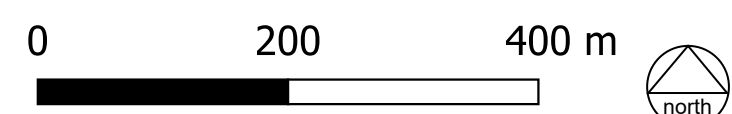
PROJECT:  
Arborfield Eco

TITLE:  
2023 Great Crested Newt HSI and eDNA survey summary plan

SCALE AT A3:  
1:7500

DATE:  
May 2024

868.1 / 81



## **APPENDIX B**

### **Full HSI assessment results**

| Pond ID |                             | Pond 1            |          | Pond 2            |          | Pond 4            |          | Pond 5            |          | Pond 11           |          | Pond 15           |          | Pond 15a          |          |
|---------|-----------------------------|-------------------|----------|-------------------|----------|-------------------|----------|-------------------|----------|-------------------|----------|-------------------|----------|-------------------|----------|
| SI Ref  | Description of Index        | Measure / Comment | SI score | Measure / Comment | SI score | Measure / Comment | SI score | Measure / Comment | SI score | Measure / Comment | SI score | Measure / Comment | SI score | Measure / Comment | SI score |
| SI1     | Geographic location         | A                 | 1        | A                 | 1        | A                 | 1        | A                 | 1        | A                 | 1        | A                 | 1        | A                 | 1        |
| SI2     | Pond area m <sup>2</sup>    | 300               | 0.6      | 200               | 0.4      | 450               | 0.9      | 900               | 0.98     | 5600              | N/A      | 100               | 0.2      | 100               | 0.2      |
| SI3     | Pond permanence             | Never             | 0.9      | Never             | 0.9      | Rarely            | 1        | Never             | 0.9      | Never             | 0.9      | Never             | 0.9      | Never             | 0.9      |
| SI4     | Water quality               | Good              | 1        | Moderate          | 0.67     | Bad               | 0.01     | Bad               | 0.01     | Poor              | 0.33     | Poor              | 0.33     | Poor              | 0.33     |
| SI5     | Shading %                   | 30%               | 1        | 50%               | 1        | 90%               | 0.4      | 90%               | 0.4      | 10%               | 1        | 10%               | 1        | 10%               | 1        |
| SI6     | Presence of waterfowl       | Minor             | 0.67     | Absent            | 1        | Absent            | 1        | Minor             | 0.67     | Major             | 0.01     | Absent            | 1        | Absent            | 1        |
| SI7     | Presence of fish            | Possible          | 0.67     | Possible          | 0.67     | Absent            | 1        | Possible          | 0.67     | Major             | 0.01     | Major             | 0.01     | Major             | 0.01     |
| SI8     | Pond density in area        | 6.3               | 1        | 6.3               | 1        | 7.3               | 1        | 10.5              | 1        | 7.6               | 1        | 7.9               | 1        | 7.9               | 1        |
| SI9     | Terrestrial habitat quality | Moderate          | 0.67     | Good              | 1        | Moderate          | 0.67     | Moderate          | 0.67     | Moderate          | 0.67     | Poor              | 0.33     | Poor              | 0.33     |
| SI10    | Macrophyte cover in pond    | 30%               | 0.6      | 10%               | 0.4      | 0%                | 0.3      | 10%               | 0.4      | 10%               | 0.4      | 40%               | 0.7      | 40%               | 0.7      |
| HSI     | Overall HSI for pond:       | 0.792             |          | 0.760             |          | 0.485             |          | 0.460             |          | 0.271             |          | 0.411             |          | 0.411             |          |
|         | Comments:                   | Good              |          | Good              |          | Poor              |          | Poor              |          | Poor              |          | Poor              |          | Poor              |          |

| Pond ID |                             | Pond 18           |          | Pond 20           |          | Pond 21           |          | Pond 22           |          | Pond 23           |          | Pond 24           |          |
|---------|-----------------------------|-------------------|----------|-------------------|----------|-------------------|----------|-------------------|----------|-------------------|----------|-------------------|----------|
| SI Ref  | Description of Index        | Measure / Comment | SI score | Measure / Comment | SI score | Measure / Comment | SI score | Measure / Comment | SI score | Measure / Comment | SI score | Measure / Comment | SI score |
| SI1     | Geographic location         | A                 | 1        | A                 | 1        | A                 | 1        | A                 | 1        | A                 | 1        | A                 | 1        |
| SI2     | Pond area m <sup>2</sup>    | 1100              | 0.92     | 700               | 1        | 550               | 1        | 800               | 1        | 900               | 0.96     | 850               | 0.98     |
| SI3     | Pond permanence             | Sometimes         | 0.5      | Rarely            | 1        | Sometimes         | 0.5      | Sometimes         | 0.5      | Sometimes         | 0.5      | Never             | 0.9      |
| SI4     | Water quality               | Good              | 1        | Good              | 1        | Good              | 1        | Good              | 1        | Good              | 1        | Moderate          | 0.67     |
| SI5     | Shading %                   | 10%               | 1        | 10%               | 1        | 10%               | 1        | 10%               | 1        | 0%                | 1        | 10%               | 1        |
| SI6     | Presence of waterfowl       | Minor             | 0.67     | Minor             | 0.67     | Minor             | 0.67     | Minor             | 0.67     | Minor             | 0.67     | Major             | 0.01     |
| SI7     | Presence of fish            | Possible          | 0.67     | Possible          | 0.67     | Possible          | 0.67     | Possible          | 0.67     | Possible          | 0.67     | Possible          | 0.67     |
| SI8     | Pond density in area        | 7.3               | 1        | 5.7               | 1        | 5.7               | 1        | 5.7               | 1        | 5                 | 1        | 7.3               | 1        |
| SI9     | Terrestrial habitat quality | Good              | 1        | Good              | 1        | Good              | 1        | Good              | 1        | Good              | 1        | Moderate          | 0.67     |
| SI10    | Macrophyte cover in pond    | 70%               | 1        | 70%               | 1        | 40%               | 0.7      | 60%               | 0.9      | 80%               | 1        | 10%               | 0.4      |
| HSI     | Overall HSI for pond:       | 0.854             |          | 0.923             |          | 0.831             |          | 0.852             |          | 0.858             |          | 0.504             |          |
|         | Comments:                   | Excellent         |          | Excellent         |          | Excellent         |          | Excellent         |          | Excellent         |          | Below average     |          |

## **APPENDIX C**

### **eDNA sampling analysis results**

Folio No: E18807  
Report No: 1  
Purchase Order: 868.1  
Client: HDA  
Contact: Bob Goldsmith

## TECHNICAL REPORT

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

#### SUMMARY

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

#### RESULTS

**Date sample received at Laboratory:** 06/07/2023  
**Date Reported:** 19/07/2023  
**Matters Affecting Results:** None

| Lab Sample No. | Site Name            | O/S Reference  | SIC  | DC   | IC   | Result   | Positive Replicates |
|----------------|----------------------|----------------|------|------|------|----------|---------------------|
| 5983           | Arborfield - Pond 24 | SU 76934 64539 | Pass | Pass | Pass | Negative | 0                   |
| 5984           | Arborfield - Pond 4  | SU 76931 64613 | Pass | Pass | Pass | Negative | 0                   |

If you have any questions regarding results, please contact us: [ForensicEcology@surescreen.com](mailto:ForensicEcology@surescreen.com)

**Reported by:** Chris Troth

**Approved by:** Jennifer Higginbottom



## **METHODOLOGY**

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

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

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

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

## **INTERPRETATION OF RESULTS**

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



Folio No: E18114  
Report No: 1  
Purchase Order: 868.1  
Client: HDA  
Contact: Bob Goldsmith

## TECHNICAL REPORT

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

#### SUMMARY

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

#### RESULTS

**Date sample received at Laboratory:** 16/06/2023  
**Date Reported:** 27/06/2023  
**Matters Affecting Results:** None

| Lab Sample No. | Site Name           | O/S Reference  | SIC  | DC   | IC   | Result   | Positive Replicates |
|----------------|---------------------|----------------|------|------|------|----------|---------------------|
| 0060           | Aborfeild - Pond 23 | SU 7671 6389   | Pass | Pass | Pass | Negative | 0                   |
| 0062           | Aborfeild - Pond 15 | SU 777587 6473 | Pass | Pass | Pass | Negative | 0                   |
| 0064           | Aborfeild - Pond 2  | SU 7647 6463   | Pass | Pass | Pass | Negative | 0                   |
| 0065           | Aborfeild - Pond 20 | SU 7687 6404   | Pass | Pass | Pass | Negative | 0                   |
| 0066           | Aborfeild - Pond 5  | SU 7711 6479   | Pass | Pass | Pass | Negative | 0                   |
| 0072           | Aborfeild - Pond 11 | SU 777 46458   | Pass | Pass | Pass | Negative | 0                   |
| 0073           | Aborfeild - Pond 22 | SU 7680 06389  | Pass | Pass | Pass | Negative | 0                   |



|      |                        |                 |      |      |      |          |   |
|------|------------------------|-----------------|------|------|------|----------|---|
| 0074 | Aborfeild -<br>Pond 18 | SU 7701<br>6421 | Pass | Pass | Pass | Negative | 0 |
| 0076 | Aborfeild -<br>Pond 1  | SU 7642<br>6456 | Pass | Pass | Pass | Negative | 0 |
| 0079 | Aborfeild -<br>Pond 21 | SU 7684<br>6397 | Pass | Pass | Pass | Negative | 0 |

If you have any questions regarding results, please contact us: [ForensicEcology@surescreen.com](mailto:ForensicEcology@surescreen.com)

**Reported by:** Chris Troth

**Approved by:** Jennifer Higginbottom

## **METHODOLOGY**

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

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

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

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

## **INTERPRETATION OF RESULTS**

**SIC:** **Sample Integrity Check** [Pass/Fail]

When samples are received in the laboratory, they are inspected for any tube leakage, suitability of sample (not too much mud or weed etc.) and absence of any factors that could potentially lead to inconclusive results.

**DC:** **Degradation Check** [Pass/Fail]

Analysis of the spiked DNA marker to see if there has been degradation of the kit or sample between the date it was made to the date of analysis. Degradation of the spiked DNA marker may lead indicate a risk of false negative results.

**IC:** **Inhibition Check** [Pass/Fail]

The presence of inhibitors within a sample are assessed using a DNA marker. If inhibition is detected,



samples are purified and re-analysed. Inhibitors cannot always be removed, if the inhibition check fails, the sample should be re-collected.

**Result:**

**Presence of GCN eDNA** [Positive/Negative/Inconclusive]

**Positive:** GCN DNA was identified within the sample, indicative of GCN presence within the sampling location at the time the sample was taken or within the recent past at the sampling location.

**Positive Replicates:** Number of positive qPCR replicates out of a series of 12. If one or more of these are found to be positive the pond is declared positive for GCN presence. It may be assumed that small fractions of positive analyses suggest low level presence, but this cannot currently be used for population studies. In accordance with Natural England protocol, even a score of 1/12 is declared positive. 0/12 indicates negative GCN presence.

**Negative:** GCN eDNA was not detected or is below the threshold detection level and the test result should be considered as evidence of GCN absence, however, does not exclude the potential for GCN presence below the limit of detection.



## **APPENDIX D**

### **Waterbody photographs**



**Photo 1:**  
Waterbody 1



**Photo 2:**  
Waterbody 2



**Photo 3:**  
Waterbody 4



**Photo 4:**  
Waterbody 5



**Photo 5:**  
Waterbody 11



**Photo 6:**  
Waterbody 15



**Photo 7:**  
Waterbody  
15a



**Photo 8:**  
Waterbody 18



**Photo 9:**  
Waterbody 20



**Photo 10:**  
Waterbody 21



**Photo 11:**  
Waterbody 22



**Photo 12:**  
Waterbody 23



**Photo 13:**  
Waterbody 24

**APPENDIX G**  
**Evaluation Criteria**

### **Criteria used for the evaluation of ecological receptors (based on Ratcliffe, 1977; CIEEM 2018)**

Assigning value is relatively straightforward in the case of designated sites, and undesignated sites meeting designation criteria. However, in most cases evaluation of ecological resources is not straightforward and requires a degree of knowledge, experience and professional judgement (Usher, 1986; Spellerberg, 1992). Evaluation of an ecological receptor was based on a number of criteria (Ratcliffe, 1977; CIEEM 2018).

- Site designations; SPA, SAC, Ramsar, SSSI, NNR, LNR, SINCR or equivalent.
- Site designation criteria; e.g. Guidelines for the Selection of Biological SSIs (JNCC, 1989).
- Conservation status; whether a habitat or species is rare, declining or threatened at a given geographic scale.
- Geographic location; the value of a habitat or species may change depending on whether it is being assessed in the south of England or the north of Scotland.
- Distribution; habitats or species on the edge of their distribution, particularly where that distribution is changing as a result of global trends and climate change and endemic species or locally distinct sub-populations of a species are more valuable;
- Rarity; the presence of habitats, species, subspecies or varieties that are rare or uncommon at a given geographic scale.
- Diversity; of habitats, or species, particularly of vascular plants. Species-rich assemblages of plants or animals are likely to be important in terms of biodiversity;
- Naturalness; habitats least affected by human disturbance are normally of relatively higher importance.
- Size; larger areas are generally more valuable than lots of small ones. Notably large populations of animals or concentrations of animals considered uncommon or threatened in a wider context may be important.
- Fragility; sensitivity to, and probability of, human impact.
- Typicalness; a good example of the type, particularly plant communities (and their associated animals) that are considered to be typical of valued natural/semi-natural vegetation types, including examples of naturally species-poor communities.
- Potential value (if restored to favourable conservation status).
- Secondary or supporting value; value of a receptor in supporting the integrity or conservation status of another valued receptor.
- Ability to be recreated; the more difficult a habitat is to re-create, were it to be destroyed, the greater the importance usually attached to it.