

HEATHLANDS RIDING ESTATE, WOKINGHAM

Preliminary Ecological Appraisal Report

September 2025



Report Control Sheet

Project Name: Heathlands Riding Estate, Wokingham
Project Reference: CW20-1947
Report Title: Preliminary Ecological Appraisal Report
Report Reference: CW20-1947 RPT 001
Printing Instructions: Print at A4 Portrait, Double Sided.

Rev	Date	Description	Prepared	Reviewed	Approved
/	13/09/2024	Draft report sent to Client for comment.	EA	OC	OC
/	25/09/2025	Final report issued to Client.	EA	OC	OC

Quality Assurance

All ecological reports produced by Collington Winter Environmental Ltd are checked and approved by a Principal Ecologist with appropriate professional membership (CIEEM or IES) who are bound by a code of professional conduct and ethics.

Collington Winter Environmental Ltd disclaims any responsibility to ET Planning Ltd and others in respect of any matters outside the scope of this report. This report has been prepared with reasonable skill, care and diligence within the terms of the Contract with ET Planning Ltd and according to the proposed plans supplied by the client or the client's agent upon commencement of the project.

The contents of this report are valid at the time of writing. As the ecological value of a site is constantly evolving and changing, if more than twelve months have elapsed since the date of this report, further advice must be taken before reliance upon on the contents. Notwithstanding any provision of the Collington Winter Environmental Ltd Terms & Conditions, Collington Winter Environmental Ltd shall not be liable for any losses (howsoever incurred) arising as a result of reliance by the client or any third party on this report more than twelve months after the report date.

This report is confidential to ET Planning Ltd and Collington Winter Environmental Ltd accepts no responsibility of whatsoever nature to third parties to whom this report or any part thereof is made known. Any such party relies upon the report at their own risk.

EXECUTIVE SUMMARY

Site Address	Heathlands Riding Estate, Wokingham, RG40 3AS
Grid Reference	SU 82795 65629
Approximate Site Area	2.4 ha
Current Site Use	The site is currently used as a livery stable and horse-riding school.
Designated Sites within Zone of Influence	A series of statutory and non-statutory sites were located within 5km of the site, the closest of which related to Heath Lake Site of Special Scientific Interest (SSSI) located approximately 180m south of the site boundary, and Heathlake Local Nature Reserve (LNR) located approximately 45m south of the site boundary.
Notable Habitat Features	Notable habitats present included the trees present on site.
Notable Species Applicable to the Assessment	• Common amphibians • Reptiles • Breeding Birds • Bats (Potential roosting, commuting and foraging) • [REDACTED] • Hedgehog • Non-Native Invasive Species
Mitigation Recommendations	• A Construction and Environmental Management Plan (CEMP: Biodiversity). • Protection measures for trees and hedgerows, and compensatory planting at a 1:2 ratio. • Reasonable Avoidance Measures (RAMs) for reptiles. • Lighting mitigation for bats. • [REDACTED] • Precautionary Working Methods (PWMs) for [REDACTED] and bats. • Consideration for hedgehogs and common amphibians. • Non-native invasive species walkover and eradication.
Recommended Further Surveys and Assessment	• Aerial Tree Survey • [REDACTED] • Consultation with Natural England
Recommended Ecological Enhancements	• Bat and bird boxes could be placed on the new buildings. A plan to show the locations of these boxes and the specifications should be produced by a suitably qualified ecologist once the layout is finalised. • The inclusion of 'hedgehog highways' to facilitate movement across the site. This includes holes of 13 x 13cm at the bases of fences, leaving a sufficient gap beneath gates and/or leaving brick spaces at the bases of brick walls. • Hibernacula, which may provide cover for amphibians, reptiles, and small terrestrial mammals, could be incorporated into the site to replace any lost habitats which fulfil this function.

CONTENTS

1	INTRODUCTION.....	4
1.1.	SCOPE & PURPOSE	4
1.2.	LOCATION	4
1.3.	OBJECTIVES	4
2	METHODOLOGY	5
2.1.	DESK STUDY	5
2.2.	VEGETATION AND HABITAT ASSESSMENT	5
2.3.	FAUNA ASSESSMENT	5
2.4.	PRELIMINARY ROOST ASSESSMENT AND BAT ACTIVITY ASSESSMENT	5
2.5.	HABITAT SUITABILITY INDEX	7
2.6.	SURVEY LIMITATIONS	7
2.7.	PROPORTIONALITY	8
3	SURVEY RESULTS.....	9
3.1.	SITE CONTEXT	9
3.2.	DESIGNATED SITES.....	9
3.3.	PRIORITY HABITATS	10
3.4.	HABITATS	11
	DEVELOPED LAND; SEALED SURFACE.....	11
	ARTIFICIAL UNVEGETATED; UNSEALED SURFACE.....	11
	MODIFIED GRASSLAND.....	11
	VACANT AND DERELICT LAND	11
	INDIVIDUAL TREES.....	11
	INTRODUCED SHRUB.....	12
3.5.	SPECIES	12
	FLORA.....	12
	INVERTEBRATES.....	12
	AMPHIBIANS.....	12
	REPTILES	12
	BIRDS.....	13
	BATS	13
		19
	OTHER TERRESTRIAL MAMMALS.....	19
	NON-NATIVE INVASIVE SPECIES	19
	SPECIES DISCOUNTED FROM ASSESSMENT	20
4	MITIGATION RECOMMENDATIONS.....	21
4.1.	DESIGNATED SITES.....	21
4.2.	HABITATS	21
	INDIVIDUAL TREES.....	21
4.3.	SPECIES	21
	AMPHIBIANS.....	21
	REPTILES	22
	BIRDS.....	22
	BATS	22
		23
	TERRESTRIAL MAMMALS.....	24
	NON-NATIVE INVASIVE SPECIES	24
5	CONCLUSION.....	25
5.1.	AERIAL TREE INSPECTION.....	25
5.2.	 (IF REQUIRED)	25
5.3.	CONCLUSION	25
6	BIBLIOGRAPHY	26

1 INTRODUCTION

1.1. SCOPE & PURPOSE

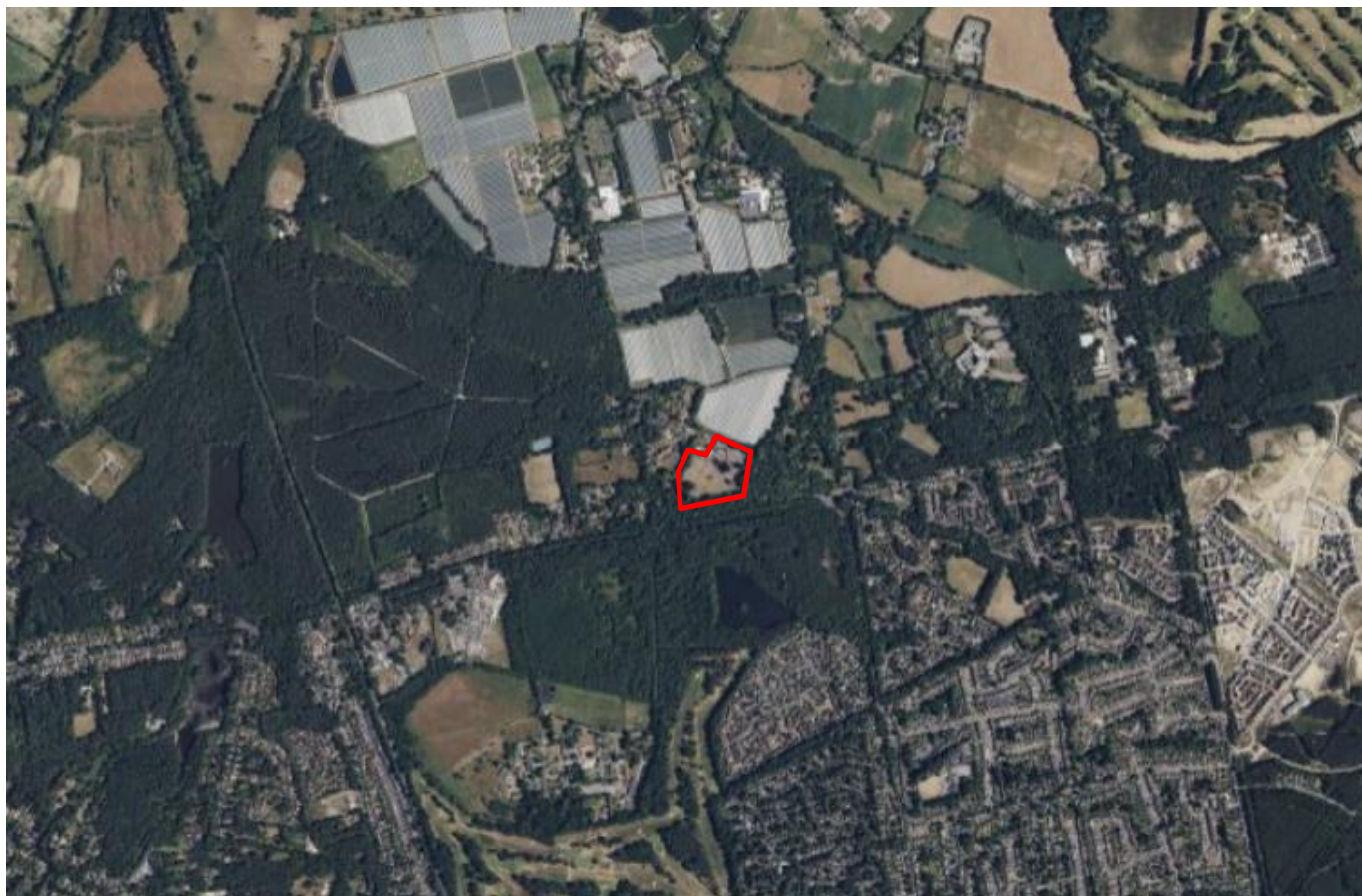
1.1.1. Collington Winter Environmental Ltd was commissioned by ET Planning to undertake a Preliminary Ecological Appraisal (PEA) at Heathlands Riding Estate, Wokingham, RG40 3AS. The report has been produced in support of a planning application for a residential development on the site.

1.1.2. The author of this report is Emma Anderson MSc, Ecologist at Collington Winter Environmental Ltd. The project has been overseen by Olivia Collington BSc (Hons), MEnvSc, CEnv Director. Olivia is highly experienced managing schemes and has produced many ecological reports to inform planning management plans.

1.2. LOCATION

1.2.1. Please refer to Figure 1.1 for the site location.

Figure 1.1 Site Location



1.3. OBJECTIVES

1.3.1. The objectives of the Preliminary Ecological Appraisal are as follows:

- Identify the major habitats present
- Ascertain the presence or potential presence of any legally protected or notable species or habitats
- Identify any mitigation or further survey required and opportunities for strategic wildlife enhancements and long-term management.

2 METHODOLOGY

2.1. DESK STUDY

2.1.1. An initial desk-based assessment of the site was undertaken to collate baseline data. The desk study included:

- Obtaining local records of notable species and locally designated sites within 1 km of the site from Thames Valley Environmental Records Centre (TVERC) obtained on the 24.07.2024.
- Review of Magic.gov.uk website for details of any designated sites, notable habitats and presence of European Protected Species Licences.
- Review of aerial and OS maps for habitat information, as well as determining locations of potential waterbodies to be considered in the assessment.
- Review of potential habitat links on and off site, to determine the potential zone of influence of the proposed development.

2.1.2. Please note, a lack of records for a species does not confirm absence. Instead, local surveys may not have been undertaken or records not submitted to TVERC.

2.2. VEGETATION AND HABITAT ASSESSMENT

2.2.1. An Ecological Appraisal of the site was undertaken by Emma Anderson, Ecological Project Manager at Collington Winter Environmental Ltd. The survey was undertaken on the 6th August 2024. The weather was overcast (8/8 oktas), with moderate precipitation, wind speed 2 and 15C.

2.2.2. The walkover survey was undertaken broadly in line with standard UK HAB Methodology, Version 2 (2023). The assessment is undertaken with consideration of methodology as per "Preliminary Ecological Appraisal" (CIEEM, 2018).

2.2.3. A UK HAB Plan has been produced and is presented in the Appendix of this report. Standard methodology has been used, though adjustments have been made based on judgement to demonstrate habitats in a clearer manner, or where standard guidance does not fit the conditions found on site.

2.3. FAUNA ASSESSMENT

2.3.1. A search for signs of protected and notable species of fauna was undertaken during the site walkover. This included both field signs of species, as well as potential for species to be present based on habitat availability.

2.3.2. The searches broadly included the following:

- Assessment of waterbodies on site and within 250m of the site boundary, and terrestrial habitats for suitability to support notable amphibians.
- Searches for field signs of, and habitat suitability for bats.
- Suitability of habitats to support reptiles, and searches for incidental field signs.
- Searches for field signs of [REDACTED] (*Meles meles*), including setts, mammal paths, snuffle holes, [REDACTED] hair and latrines to indicate activity.
- Searches of watercourses for signs of water vole (*Arvicola amphibius*), white-clawed crayfish (*Austropotamobius pallipes*) and otter (*Lutra lutra*), and assessment of habitat availability for the species.
- Assessment of the suitability of habitats to support notable birds and recording any field sightings of birds during the walkover.
- Assessment of the sites ability to support notable invertebrates and flora.
- Searches for non-native invasive species.

2.4. PRELIMINARY ROOST ASSESSMENT AND BAT ACTIVITY ASSESSMENT

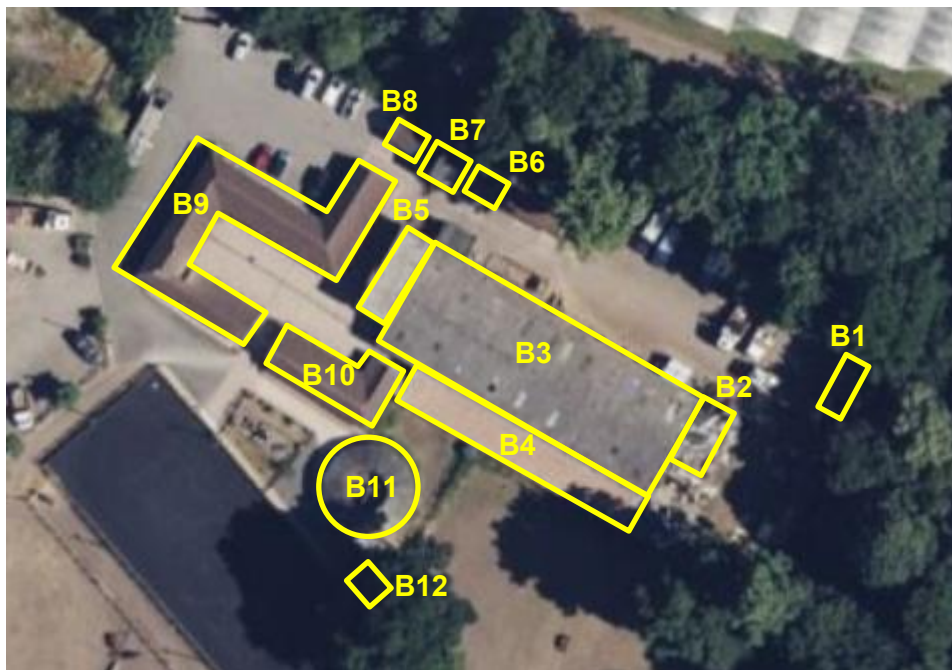
2.4.1. A Preliminary Bat Roost Assessment (PRA) and Ground Level Tree Assessment (GLTA) of the site was undertaken by Emma Anderson and overseen by Olivia Collington who holds a Class 1 Bat Survey Licence from Natural England (2020-46960-CLS-CLS).

2.4.2. The survey was undertaken following guidance set out in Collins (2023). This includes undertaking a detailed

internal and external inspection of any features to compile information on potential and actual bat entry/ exit points, roosting locations and evidence of bats. Please refer to Figure 2.1 for the building references.

2.4.3. It should be noted that buildings were found to be present on site which could not be found on satellite imagery sites. The approximate locations and sizes of these buildings have been included within Figure 2.1.

Figure 2.1 Building Referencing Plan



2.4.4. The commuting and foraging assessment methodology is based on information contained within the Bat Conservation Trust guidelines 4th edition (Collins 2023).

2.4.5. The GLTA and Potential flightpaths and foraging habitats were assessed as per categories listed in Table 4.1, 4.2 and 6.2, demonstrated below (Collins 2023).

2.4.6. If negative impacts on bat activity is suspected, further surveys may be required. Negative impacts anticipated on bats flights paths and foraging habitats may include:

- Modification of light paths or foraging habitats either physically or through disturbance such as light spill/noise
- Severance of flight paths (fragmentation)
- Loss of Foraging habitats

Table 4.1. Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.

Potential suitability	Description	
	Roosting habitats in structures	Potential flight-paths and foraging habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).
Negligible ^a	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ^b and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats ^c).	Habitat that could be used by small numbers of bats as flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ^b and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions ^b and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

Assessment Criteria for Bat Roosting Potential

Table 4.2. Guidelines for assessing the suitability of trees on proposed development sites for bats, to be applied using professional judgement.

Suitability	Description
NONE	Either no PRFs in the tree or highly unlikely to be any
FAR	Further assessment required to establish if PRFs are present in the tree
PRF	A tree with at least one PRF present

Table 6.2. Guidelines for categorising the potential suitability of PRFs on a proposed development site for bats, to be applied using professional judgement.

Suitability	Description
PRF-I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
PRF-M	PRF is suitable for multiple bats and may therefore be used by a maternity colony.

2.5. HABITAT SUITABILITY INDEX

2.5.1. No ponds were present on site; however, Magic.gov identified the presence of a group of three ponds approximately 25m north of the site boundary. This area was thoroughly searched during the survey, and it was found that no ponds were present. No further ponds were located within 250m of the site boundary. As great crested newts' upper dispersal limit is generally considered to be up to 250 m from a waterbody (though occurrence of greater distances does exist), ponds beyond this distance were not assessed due to limited connectivity (English Nature, 2001).

2.6. SURVEY LIMITATIONS

2.6.1. This survey does not constitute a full botanical survey. Key species for each habitat type have been identified to give a broad representation of habitats present within the site.

2.6.2. It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation of the natural environment. This survey does not constitute

a full botanical survey. Plant species may have been under-recorded, unidentifiable or not visible due to a number of factors including the time of year the survey was carried out.

- 2.6.3. The protected species assessment provides a preliminary view of the likelihood of protected species occurring on the site. This is based on the suitability of the habitat, known distribution of the species in the local area (provided by data searches) and any direct evidence within the survey area.
- 2.6.4. The findings of this report represent the professional opinion of qualified ecologists and do not constitute professional legal advice. The client may wish to seek professional legal interpretation of the relevant wildlife legislation cited within this document.
- 2.6.5. The mature trees within the site could not be thoroughly assessed due to the presence of horses within the modified grassland fields.

2.7. PROPORTIONALITY

- 2.7.1. Collington Winter Environmental Ltd provide recommendations in line with the British Standard for Biodiversity (BS42020). Within BS42020, proportionality is encouraged for both ecologists and Local Authority Decision Makers and Consultees. Please refer to the below extract from Section 5.5 of BS42020.

“The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.”

NOTE 1 This approach is enshrined in Government planning guidance, for example, paragraph 193 of the National Planning Policy Framework for England [41].

NOTE 2 The desk studies and field surveys undertaken to provide a preliminary ecological appraisal (PEA) might in some cases be all that is necessary.”

3 SURVEY RESULTS

3.1. SITE CONTEXT

3.1.1. The site is located within a rural area south of Gardeners Green. The area north of the site comprises predominantly arable fields, with a small residential estate located to the west. The site is bound by woodland to the south and east, which is anticipated to be a habitat of significant value to local flora and fauna. Gorrick Plantation Local Wildlife Site (LWS) and Heath Lake Local Nature Reserve (LNR) comprise two large parcels of the local woodland.

3.2. DESIGNATED SITES

3.2.1. The following Sites of Special Scientific Interest (SSSIs) were located within 5km of the site boundary:

- Heath Lake SSSI located approximately 180m south of the site boundary. The site consists of a small, shallow lake, surrounded by birch and pine woodland with areas of relict heathland. Heath Lake is a long-established open water habitat supporting specialist communities of native plants and animals. Of particular interest are populations of some uncommon and rare aquatic plant species. Heath Lake is situated on a sandy alluvial deposit overlying the Bracklesham Beds.
- Broadmoor to Bagshot Woods and Heaths SSSI located approximately 1.95km southeast of the site boundary. This site has an extensive mosaic of broadleaved woodland, coniferous plantation, dry and wet heathland, valley mire, a series of base-poor ponds and a scarce breeding invertebrate assemblage. In particular, the heathland and coniferous plantation supports internationally important populations of woodlark, nightjar and Dartford warbler, and have a nationally important dragonfly and damselfly population. The site includes the valley bogs of Broadmoor Bottom and Wishmoor Bottom which form the most important remaining examples of this type of habitat in the area.
- Sandhurst to Owlsmoor Bog and Heaths SSSI located approximately 2.65km southeast of the site boundary. An area of wet and dry heathland and mixed broadleaved/coniferous woodland, supporting a rich and varied fauna and flora. Together with the nearby Broadmoor Bottom complex this site forms the largest and most important area of heathland remaining in east Berkshire and is particularly important for its wet heath community dominated by cross-leaved heath and purple moor grass. The site includes a shallow, spring-fed valley mire of outstanding importance which supports an extremely interesting flora including several plants which are rare in the county, as well as populations of rare and localised insects.
- Wellington College Bog SSSI located approximately 2.65km southeast of the site boundary. A small but diverse site situated in the grounds of Wellington College near Crowthorne in south-east Berkshire. It comprises a valley bog or mire, with associated areas of wet heath and marsh grazing into dry heath and secondary woodland. The bog is one of the richest in the county, in terms of bryophytes (mosses and liverworts) and flowering plants, containing several species which are uncommon or rare in southern Britain.
- Wykery Copse SSSI located approximately 3.6km northeast of the site boundary. Wykery Copse is a fragment of ancient broadleaved woodland of a kind now drastically reduced in Berkshire, situated on London Clay on the fringe of Bracknell. It is exceptionally diverse for its size, in terms of both woodland stand-types and herbaceous flora, and it contains several rarities. Its interest is enhanced still further by the small stream which flows through it.
- Longmoor Bog SSSI located approximately 4.25km west of the site boundary. 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, grey willow, downy birch and alder buckthorn, and an area of wet heathland dominated by purple moor-grass and cross-leaved heath. The remainder of the site is predominantly secondary mixed woodland.
- Blackwater Valley SSSI located approximately 4.75km southeast of the site boundary. The site comprises an area of unimproved alluvial meadows, swamp and wet valley alderwood in the Blackwater Valley between the towns of Sandhurst and Blackwater. The site overlies alluvium and river gravels, and the soils consist of sandy and loamy drifts of the Swanwick series. The complex of meadows is grazed by stock and supports rich plant communities, with a number of species associated with ancient grassland sites. Such meadows are a nationally rare and threatened habitat. The meadows are bounded by hedgerows, streams and ditches, and the River Blackwater runs through the site. An area of wet deciduous woodland supports a rare species of sedge. The structural and floristic diversity of the site provides habitats suitable for a wide range of insects and other invertebrates.

3.2.2. The site falls within the Impact Risk Zone of several SSSI sites detailed above.

3.2.3. The following Local Nature Reserves (LNRs) were located within 5km of the site boundary:

- Heathlake LNR located approximately 45m south of the site boundary.
- Edgbarrow Woods LNR located approximately 2.4km south of the site boundary.

- Ambarrow Court LNR located approximately 2.85km southwest of the site boundary.
- Holt Copse & Joel Park LNR located approximately 4.1km northwest of the site boundary.
- Longmoor Bog LNR located approximately 4.25km west of the site boundary.
- Farley Copse LNR located approximately 4.3km northeast of the site boundary.

3.2.4. Thames Basin Heath Special Protection Area (SPA) is located approximately 1.95km southeast of the site boundary.

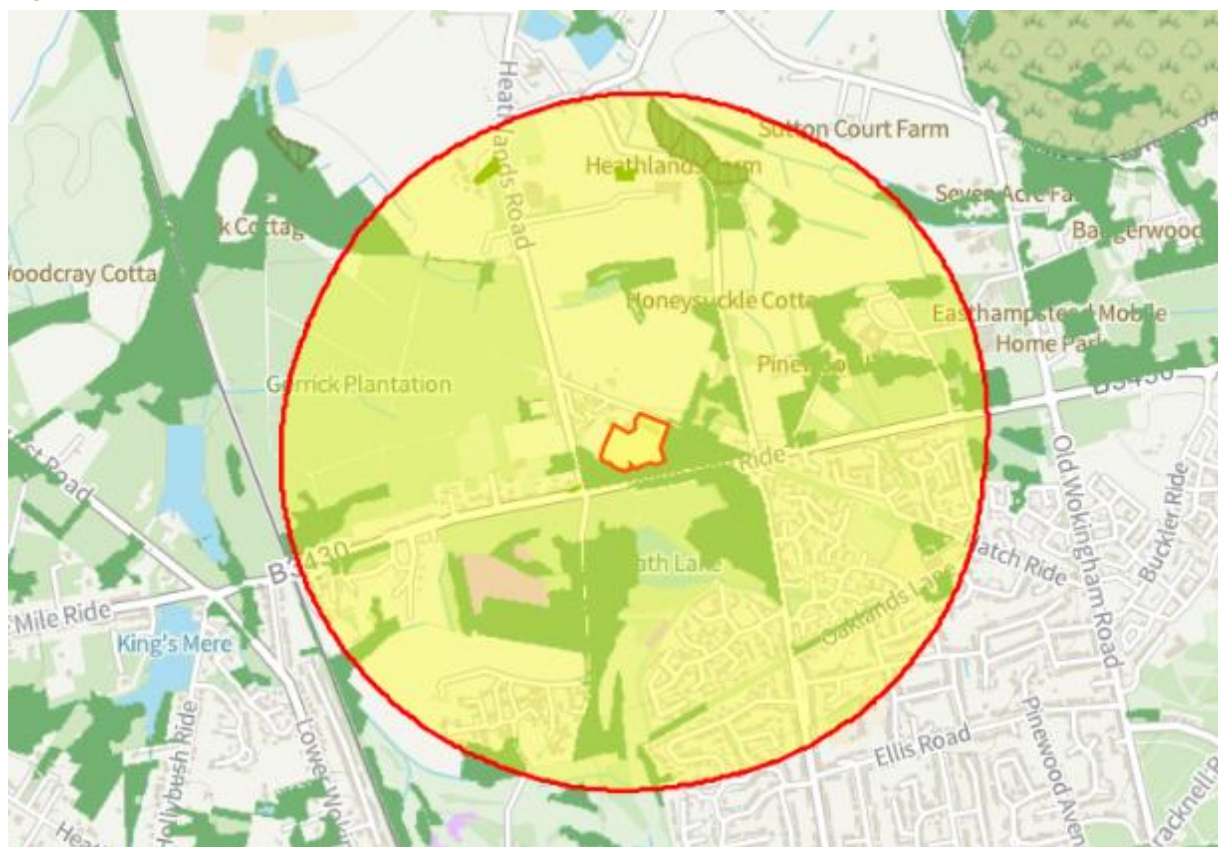
3.2.5. The following non-statutory sites were recorded within 1km of the site boundary:

- Thames Basin Heaths Biodiversity Opportunity Area (BOA) located approximately 50m south of the site boundary, at the closest point.
- Gorrick Plantation Local Wildlife Site (LWS) located approximately 165m northwest of the site boundary.
- Land to the East and West of Sandhurst Road LWS located approximately 460m southwest of the site boundary.

3.3. PRIORITY HABITATS

3.3.1. The following Priority Habitats were identified within 1km of the site boundary (See Figure 3.1.). Priority Habitat Woodland is located adjacent to the east, south and south west of the site boundary.

Figure 3.1 Section 41 habitats within 1km of the site.



Legend

 Priority Habitat Inventory - Calaminarian Grassland (England)	 Priority Habitat Inventory - Mountain Heaths and Willow Scrub (England)	 Priority Habitat Inventory - Deciduous Woodland (England)
 Priority Habitat Inventory - Coastal and Floodplain Grazing Marsh (England)	 Priority Habitat Inventory - Upland Heathland (England)	 Priority Habitat Inventory - Traditional Orchards (England)
 Priority Habitat Inventory - Good quality semi-improved grassland (Non Priority) (England)	 Priority Habitat Inventory - Blanket Bog (England)	 Woodpasture and Parkland BAP Priority Habitat (England)
 Priority Habitat Inventory - Lowland Calcareous Grassland (England)	 Priority Habitat Inventory - Lowland Fens (England)	
 Priority Habitat Inventory - Lowland Dry Acid Grassland (England)	 Priority Habitat Inventory - Lowland Raised Bog (England)	
 Priority Habitat Inventory - Lowland Meadows (England)	 Priority Habitat Inventory - Reedbeds (England)	
 Priority Habitat Inventory - Purple Moor Grass and Rush Pasture (England)	 Priority Habitat Inventory - Upland Flushes, Fens and Swamps (England)	
 Priority Habitat Inventory - Upland Calcareous Grassland (England)	 Priority Habitat Inventory - Ponds and Lakes (England)	
 Priority Habitat Inventory - Upland Hay Meadows (England)		
 Priority Habitat Inventory - Lowland Heathland (England)		

Ancient Woodland (England)

 Ancient and Semi-Natural Woodland
 Ancient Replanted Woodland

3.4. HABITATS

3.4.1. Please refer to Drawing 20-1947 – 001 for the UK HAB Map for the site. Photographs of the site are presented in the Appendix.

DEVELOPED LAND; SEALED SURFACE

3.4.2. A series of twelve buildings and structures were located onsite, alongside parking and yard areas, constituting developed land; sealed surface.

ARTIFICIAL UNVEGETATED; UNSEALED SURFACE

3.4.3. A horse manège was present on site, constituting artificial unvegetated; unsealed surface.

MODIFIED GRASSLAND

3.4.4. The majority of the site comprised modified grassland paddocks, maintained to a short sward by grazing horses. An additional enclosed garden area contained a managed lawn of modified grassland. Species present in these areas included meadow grass (*Poa annua*), dandelion (*Taraxacum vulgare*), white clover (*Trifolium repens*), daisy (*Bellis perennis*), marestail (*Hippuris vulgaris*), groundsel (*Senecio vulgaris*), common storks-bill (*Erodium cicutarium*), white campion (*Silene latifolia*), lesser spearwort (*Ranunculus flammula*), nettle (*Urtica dioica*), scented mayweed (*Matricaria chamomilla*), rosebay willowherb (*Chamaenerion angustifolium*), creeping buttercup (*Ranunculus repens*), scotch thistle (*Onopordum acanthium*), greater plantain (*Plantago major*), and ribwort plantain (*Plantago lanceolata*).

VACANT AND DERELICT LAND

3.4.5. An area of vacant and derelict land was located in the northeastern portion of the site beyond the main riding centre complex and parking area. Species present included dandelion, nettle, bramble (*Rubus fruticosus*), greater plantain, ivy (*Hedera helix*), marestail, sooth hawksbeard (*Crepis capillaris*), round leaf geranium (*Geranium pratense*), fringed willowherb (*Epilobium parviflorum*), wood avens (*Geum urbanum*), herb Robert (*Geranium robertianum*), green alkanet (*Pentaglottis sempervirens*), shortpod mustard (*Hirschfeldia incana*), hedge bindweed (*Calystegia sepium*), triangle orache (*Atriplex prostrata*), petty spurge (*Euphorbia peplus*), perennial rye (*Lolium perenne*), common sowthistle (*Sonchus arvensis*), lambsquarters (*Chenopodium album*), meadow grass, creeping buttercup, broadleaf dock (*Rumex obtusifolius*), and saplings of various trees.

INDIVIDUAL TREES

3.4.6. A series of individual trees were located within the site. A large-leaved lime (*Tilia platyphyllos*) and mature holly (*Ilex aquifolium*) tree were located on the northern boundary. The remaining nine trees were scattered throughout

the site, and consisted of oak (*Quercus robur*), Scots pine (*Pinus sylvestris*), and silver birch (*Betula pendula*).

INTRODUCED SHRUB

- 3.4.7. An enclosed garden area of modified grassland was bordered with beds of introduced and ornamental shrub. Species included buddleia (*Buddleja davidii*), common box (*Buxus sempervirens*), evergreen spindle (*Euonymus europaeus*), garden snapdragon (*Antirrhinum majus*), cabbage tree (*Cordyline australis*), and winter creeper (*Euonymus fortunei*).

3.5. SPECIES

FLORA

- 3.5.1. The data search returned a number of records of notable plants, including bluebell (*Hyacinthoides non-scripta*), heather (*Calluna vulgaris*), tormentil (*Potentilla erecta*), and wild pansy (*Viola tricolor*).
- 3.5.2. The site mainly comprised well managed habitats with minimal floral diversity, including the unvegetated land and modified grassland. The boundary habitats had greater species diversity, however these habitats supported predominantly common species. It is therefore considered unlikely that notable flora will be located on site.

INVERTEBRATES

- 3.5.3. The data search returned several records of notable invertebrates within 1km of the site boundary. Records included (but not limited to); stag beetle (*Lucanus cervus*), blood-vein (*Timandra comae*), buff ermine (*Spilosoma lutea*), cinnabar (*Tyria jacobaeae*), common darter (*Sympetrum striolatum*), and dot moth (*Melanchra persicariae*). The exact location of the records was not detailed within the data search.
- 3.5.4. The vacant and derelict area and introduced shrub are anticipated to be of value for local invertebrates, providing suitable food resources for the species group. However, due to the limited floristic diversity, it limits value of the habitats within the site for invertebrates. The remaining aspects of the site are considered to be of limited value due to the well managed nature and limited flora observed.
- 3.5.5. Overall, notable invertebrates may utilise the site for foraging but are not thought to utilise the site in significant numbers.

AMPHIBIANS

- 3.5.6. The data search returned no records of great crested newt, but thirty-five records of common amphibian amphibians within 1km of the site boundary. Species included common frog (*Rana temporaria*), common toad (*Bufo bufo*), palmate newt (*Lissotriton helveticus*), and smooth newt (*Lissotriton vulgaris*).
- 3.5.7. No EPSL for great crested newt were returned within 2km of the site boundary based on consultation with magic.gov.uk.
- 3.5.8. No ponds were located onsite; or within 250m of the site boundary. As great crested newts' upper dispersal limit is generally considered to be up to 250 m from a waterbody (though occurrence of greater distances does exist), ponds beyond this distance were not assessed due to limited connectivity (English Nature, 2001).
- 3.5.9. The site provides some terrestrial value for amphibians. The unmanaged habitats may provide suitable cover and foraging resources for amphibians. However, the developed land and well managed grassland will provide limited value due to no cover and foraging resources. Overall, common amphibians are anticipated to be present on site. The presence of great crested newts is reasonably discounted.

REPTILES

- 3.5.10. The data search returned a large number of records of reptiles, including adder (*Vipera berus*), common lizard (*Zootoca vivipara*), grass snake (*Natrix helvetica*), and slow-worm (*Anguis fragilis*).

3.5.11. The unmanaged vacant land and boundary habitats on site are anticipated to provide some cover and foraging value for reptiles, however the remaining aspects of the site are considered to be sub-optimal due to being well-managed and comprised of developed land which will not provide cover or foraging value. The site is connected via a large parcel of woodland to habitats of high value for reptiles i.e. agricultural land.

3.5.12. Overall, reptiles may occur onsite in small numbers but not considered to be of significant value for the species due to limited suitable habitat.

BIRDS

3.5.13. The data search returned a large number of records of birds within 1km of the site boundary. Species included (but not limited to); red kite (*Milvus milvus*), kingfisher (*Alcedo atthis*), woodcock (*Scolopax rusticola*), sparrowhawk (*Accipiter nisus*), skylark (*Alauda arvensis*), lapwing (*Vanellus vanellus*), pochard (*Aythya ferina*), nightjar (*Caprimulgus europaeus*), mistle thrush (*Turdus viscivorus*), mallard (*Anas platyrhynchos*), house martin (*Delichon urbicum*), and house sparrow (*Passer domesticus*).

3.5.14. The site is considered unsuitable for ground nesting birds due to frequent disturbance from grazing horses, which will deter nest creation.

3.5.15. The site provides value for breeding passerine birds relating to the buildings and individual trees present on site.

BATS

3.5.16. The data search returned a large number of records of bats within 1km of the site boundary. Species include unidentified bat (*Chiroptera* sp.), unidentified pipistrelle (*Pipistrellus* sp.), common pipistrelle (*Pipistrellus pipistrellus*), Nathusius' pipistrelle (*Pipistrellus nathusii*), soprano pipistrelle (*Pipistrellus pygmaeus*), unidentified long-eared (*Plecotus* sp.), brown long-eared (*Plecotus auritus*), unidentified myotis (*Myotis* sp.), Daubenton's (*Myotis daubentonii*), Leisler's (*Nyctalus leisleri*), noctule (*Nyctalus noctula*), serotine (*Eptesicus serotinus*), and western barbastelle (*Barbastella barbastellus*).

3.5.17. The following EPSL's were located within 2km from the site boundary based on consultation with magic.gov.uk:

Case reference of granted application	Species on the licence*	Licence Start Date	Licence End Date	Does the Licence				
				impact on a breeding site?	allow damage of breeding site?	allow damage of a resting place?	allow destruction of breeding site?	allow destruction of a resting place?
2016-25037-EPS-MIT	BLE S-PIP	06/09/2016	06/09/2021	N	N	N	N	Y
EPSM2013-6420	C-PIP;S-PIP;BLE	08/10/2013	30/04/2015	N			N	Y
EPSM2010-2316	C-PIP;S-PIP;BLE	07/10/2010	06/08/2012	N			N	Y
EPSM2011-3144	C-PIP;S-PIP;BLE	24/01/2012	31/08/2013	N			N	Y
2014-4527-EPS-MIT	BRAN BLE C-PIP S-PIP WHISK	18/12/2014	30/03/2025	Y	N	N	Y	Y
2014-4527-EPS-MIT-1	BRAN BLE C-PIP S-PIP WHISK	01/03/2015	30/03/2025	Y	N	N	Y	Y
2015-7775-EPS-MIT	C-PIP	11/03/2015	31/03/2020	N	N	N	N	Y
2015-7982-EPS-MIT	BLE	14/04/2015	14/04/2020	N	N	N	N	Y
2015-8440-EPS-MIT	BLE	28/04/2015	30/04/2020	N	N	Y	N	N
EPSM2013-5937	C-PIP;S-PIP	01/07/2013	30/11/2014	N			N	Y
2016-24162-EPS-MIT	C-PIP	18/07/2016	18/07/2021	N	N	N	N	Y
2020-45340-EPS-MIT	BLE	25/03/2020	30/09/2025	N	N	N	N	Y
2017-31639-EPS-MIT	C-PIP	24/10/2017	30/10/2027	N	N	N	N	Y
2018-33861-EPS-MIT	BLE	14/03/2018	30/11/2018	N	N	N	N	Y
2017-31130-EPS-MIT	WHISK	06/09/2017	30/09/2022	Y	N	N	Y	N
2014-3612-EPS-MIT	S-PIP	24/10/2014	22/10/2019	N	N	N	N	Y
2017-31789-EPS-MIT	S-PIP	19/10/2017	31/10/2018	N	N	N	N	Y
				Species on the licence*		Species name		
						Latin		
				C-PIP		Common pipistrelle		
				S-PIP		Soprano pipistrelle		

BLE	Brown long-eared bat	<i>Plecotus auritus</i>
WHISK	Whiskered bat	<i>Myotis mystacinus</i>

3.5.18. All buildings were subject to a PRA detailed in Table 3.1.

Table 3.1 PRA of buildings onsite.

Ref	Description	Photograph
B1	Building one comprised a caravan structure, permanently situated on site and utilised as a dwelling/office space. The caravan appeared in good condition, with no damage noted. No potential roosting features (PRFs) or access points to the interior of the trailer were observed. This structure has been assessed as providing 'None' bat roosting potential.	
B2	A series of shipping containers were present within the site. These were observed to be in good condition, with no PRFs or access points to the interior observed. This structure has been assessed as providing 'None' bat roosting potential.	
B3	Building three consisted of a large barn structure, utilised as a menage. The walls were constructed of vertical wooden panel, offset in a double layer to provide aeration and full access to the interior. The roof comprised single layers of corrugated panels supported by both metal and timber beams. Interior walls constructed of breezeblock were also present, and appeared in good condition with no gaps, cracks, or missing mortar noted. No PRFs were noted within the building. Additionally, no field signs of bats or birds were observed in relation to the structure. This structure has been assessed as providing 'Negligible' bat roosting potential.	 

B4	Building 4 comprised a lean-to style addition to B3, utilised for stabling horses. The structure comprised painted breezeblock walls, with a corrugated plastic and timber beam roof. The walls were in good condition throughout, and the roof tiling was observed to be close fitting with no gaps or lifts noted. No PRFs were observed internally or externally, and no field signs of bats or birds were noted throughout. This structure has been assessed as providing 'Negligible' bat roosting potential.	
B5	Building 5 consisted of a two-storey office building, constructed with breezeblock and PVC wood-effect cladding. The walls, exterior doors and windows of the building were in good condition throughout, with no PRFs or internal access points observed. The roof comprised predominantly a felted, flat portion, with smaller areas of tiling. The tiling and felt were well-sealed and in good condition, providing no PRFs. This structure has been assessed as providing 'Negligible' bat roosting potential.	
B6	Building 6 was constructed in a similar fashion to B5, with breezeblock walls and wooden cladding. The roof was tiled, with all tiles noted to be close-fitting and in good condition. The doors to this side of the building were open, providing internal access. Internally, the building was divided into a storage space with a timber and felt interior loft space, and an adjoining office space with a false ceiling. A plyboard soffit in the rear corner of the building was noted to provide a gap to an interior space which could be utilised by bats, however this was on the storage site of the building where no loft void was present. This structure has been assessed as providing 'Low' bat roosting potential.	 
B7	This structure comprised a hay loft constructed with wood and corrugated metal panels. The structure was dilapidated, with many gaps noted allowing access to the interior. This also allowed for the full permeation of natural light, and minimal protection from external elements. No PRFs were observed within the building. This structure has been assessed as providing 'Negligible' bat roosting potential.	

B8	Building 8 comprised a single-storey storage building of similar construction to B6. The exterior breezeblock walls and cladding were observed to be in good condition, with no PRFs noted. An area of ivy was noted on the rear corner of the building, which may provide or mask PRFs. Internally, the loft space was constructed with a timber frame and roofing felt, which was intact and providing no obvious PRFs. This structure has been assessed as providing 'Low' bat roosting potential.	
B9	Building 9 comprised a stable complex constructed of breezeblock and wood-effect cladding. The exterior walls and cladding were observed to be in good condition, with no gaps, cracks, or areas of missing mortar identified. Stable-style doors and windows were present throughout, and predominantly maintained in an open position, allowing full access to the interior. The exterior roof was tiled in machine-made clay tiles. These were in good condition throughout, with no tiles observed to be lifted or missing. No PRFs were observed on the exterior of the roof. A porch-style overhang was present on the interior courtyard aspects, which had plyboard soffits in good condition. Internally, the stables were partitioned by breezeblock walls in good condition. The roof was supported by timber framework and lined predominantly with roofing felt observed to be in good condition. One portion of the building lacked roofing felt, however the underside of the tiling was in good condition with no PRFs noted. A swallow was observed internally during heavy rain on site, however no nests or field signs of birds or bats were observed. This structure has been assessed as providing 'Negligible' bat roosting potential.	  
B10	Building 10 was constructed in a similar manner to B9, with similar features observed. This structure has been assessed as providing 'Negligible' bat roosting potential.	

B11	A metal horse carousel with corrugated plastic sheet roofing was present on site. No PRFs were observed in relation to this structure. This structure has been assessed as providing 'None' bat roosting potential.	
B12	A small wooden shed with a plywood and felt lined roof was present within the site. Small gaps were present between the plywood and felt, providing PRFs for crevice dwelling bats. This structure has been assessed as providing 'Low' bat roosting potential.	

3.5.19. The trees on site were subject to a GLTA detailed in Table 3.2.

Table 3.2 PRA of trees onsite

Tree Reference	Description	Photograph
T1	Large-leaved lime with fallen/dead upper limbs providing gaps suitable for individual crevice dwelling bat species. Grid ref: SU 82853 65678 This tree has been assessed as FAR	
T2	Large mature oak tree with lifted bark providing PRF for crevice dwelling bat species. Grid ref: SU 82865 65626 This tree has been assessed as FAR	

T3	Large mature oak tree with fallen upper limb providing PRF for crevice dwelling bat species. Grid ref: SU 82828 65627 This tree has been assessed as FAR	
T4	Large mature oak tree with hole present in lower trunk which could provide access to an interior cavity. Grid ref: SU 82828 65617 This tree has been assessed as FAR	
T5	A group of three silver birch trees which could not be accessed for assessment. Grid ref: SU 82835 65581 These trees have been assessed as FAR	
T6	A large Scots pine which could not be accessed for assessment but appeared to have a missing upper limb with associated cavity, and a hole in the trunk potentially providing further interior access. Grid ref: SU 82781 65595 This tree has been assessed as FAR	

T7	A large mature oak tree which could not be accessed for assessment. Grid ref: SU 82720 65569 This tree has been assessed as FAR	
T8	Two large mature oak trees which could not be accessed for assessment. Grid ref: SU 82714 65626 These trees have been assessed as FAR	

3.5.20. The habitats on site are anticipated to provide limited value for foraging bats due to the lack of floral diversity which is likely to result in limited invertebrate populations on site. The adjacent woodland habitats are anticipated to provide much greater value and are likely to support local bat populations.

3.5.21. Several of the buildings on site have limited potential to support roosting bats, while the habitats on site were assessed as having some value for roosting and foraging bats.

OTHER TERRESTRIAL MAMMALS

3.5.24. Records of west European hedgehog (*Erinaceus europaeus*) were located within 1km of the site boundary. Given the habitats present adjacent to the site include woodland, it is anticipated that hedgehog could be present within the site.

NON-NATIVE INVASIVE SPECIES

3.5.25. Several records of non-native invasive species were returned within the data search. These included American skunk-cabbage (*Lysichiton americanus*), buddleia (*Buddleja davidii*), Himalayan balsam (*Impatiens glandulifera*), parrot's-feather (*Myriophyllum aquaticum*), and rhododendron (*Rhododendron ponticum*).

3.5.26. Buddleia were identified on site during the survey.

SPECIES DISCOUNTED FROM ASSESSMENT

3.5.27. Water vole (*Arvicola amphibius*), otter (*Lutra lutra*), beaver (*Castor fiber*) and white-clawed crayfish (*Austropotamobius pallipes*) have been discounted from assessment. There are no aquatic habitats located on site or connecting to the site. The site does not provide any opportunities to support the listed species.

3.5.28. Hazel Dormouse (*Muscardinus avellanarius*) mainly occur in southern counties, especially in Devon, Somerset, Sussex, and Kent. There are few recorded localities north of the Midlands, though they are present in parts of the Lake District and in scattered Welsh localities (Matthews et al, 2018). The species are not generally known to be present within the area (Wembridge et al., 2016). The habitats on site are of limited value due to lacking areas of extensive woodland and scrub. As such, the species are reasonably discounted from site.

3.5.29. Red squirrel (*Sciurus vulgaris*) has been discounted from the assessment. Red squirrel populations are limited to small areas of northern England and are not known to be present in the local area; with no previous records returned in the data search. It is anticipated that high abundances of grey squirrel are present within this region (Shuttleworth/RSST n.d.). This species will displace red squirrel through competition as well as cause increased red squirrel mortality through the spread of squirrel pox (The Mammal Society, 2020).

4 MITIGATION RECOMMENDATIONS

4.1. DESIGNATED SITES

- 4.1.1. The site falls within the Impact Risk Zone of a series of SSSI sites, the closest of which related to Heath Lake SSSI located approximately 180m south of the site boundary. Consultation with Magic.gov.uk has indicated that at the location selected, there is potential for all proposed developments to have a harmful effect on terrestrial Sites of Special Scientific Interest (SSSIs) and those Special Areas of Conservation (SACs), Special Protection Areas (SPAs) or Ramsar sites that they underpin, therefore Natural England should be contacted for consultation. A review of the proposed development plan(s) should also be completed, once finalised, to assess potential indirect impact (i.e. increase of recreational pressure).
- 4.1.2. Several LNRs were located within 5km of the site boundary, the closest relating to Heathlake LNR located approximately 45m south of the site boundary. There is potential that this LNR and other designated and non-designated sites may be impacted by the development. This includes areas of the woodland adjacent to the site boundaries.
- 4.1.3. It is recommended that a minimum 5m buffer is maintained from the boundary woodland to minimise potential impacts during and post construction (safeguards protected species also). The buffer should be appropriately signed and fenced, and all contractors inducted as to their working limits throughout the construction phase. If any works are required within the buffer, they should be undertaken under the supervision of a suitably experienced ecologist.
- 4.1.4. It is recommended that a detailed Construction and Environment Management Plan (CEMP) specific to the proposed development is created (and adhered to throughout the course of construction works) to avoid, minimise and mitigate for negative impacts resulting from construction practices on all habitats surrounding the site.
- 4.1.5. This plan will detail measures to avoid, minimise or mitigate any potential negative effects caused by construction practices on the environment on and surrounding the site including:
- The control of run-off from areas of arisings to prevent any pollutants/contaminants entering nearby waterbodies.
 - Appropriate measures to suppress dust during hot, dry and/or windy conditions.
 - Excavations should be sealed overnight or should have at least one shallow-sloping side to allow any animals that may fall in, to escape.
 - An ecologist should be contacted for advice should any protected species be discovered during construction.

4.2. HABITATS

INDIVIDUAL TREES

- 4.3.1. It is recommended that all trees are retained and protected as part of the proposed development where possible. Generally, the protection measures of retained trees will be through use of temporary protective demarcation fencing to protect the trees and shrubs. The fencing must extend outside the canopy of the retained trees and must remain in position until all plots have been developed to ensure protection is provided throughout the construction phase.
- 4.3.2. The fencing will be in accordance with BS 5837:2012 Trees in Relation to Design, Demolition and Construction: Recommendations.
- 4.3.3. If not feasible, compensatory tree planting is recommended at 1:2 ratio. The tree species should be locally native and to be of benefit for local flora.

4.3. SPECIES

AMPHIBIANS

- 4.3.4. It is recommended that the consideration of common amphibian presence is made during works. Any debris that provide suitable cover for common amphibians is to be cleared by hand. Any common amphibians that are located should be moved carefully, by hand, outside of the working area.

REPTILES

4.3.5. Due to the potential presence of reptiles, it is recommended that the following RAMs are followed to minimise the likelihood of killing, injuring or disturbing any reptiles present on the site during the construction phase:

- An experienced Ecological Clerk of Works (ECoW) shall be appointed to ensure RAM's are enforced;
- A walkover of the area should be undertaken by the ECoW to determine any change in status of the habitats/structures on site prior to the initiation of any works.
- A toolbox talk will be given to the site manager and all contractors working on site with respect to the surrounding habitats and potential for protected/notable species. A copy of species factsheets relating to reptiles will be provided for display within the site office.
- Suitable vegetation is to be trimmed under ECoW to approximately 15cm in a northern to southern direction. It is to be checked by the ECoW following trimming to identify individuals. If discovered, they will be removed from the working area and covered. Once the areas are deemed reptile free, they are to be trimmed to ground level and maintained at this length for the remaining works.
- Any excavations will be back-filled on the same day as excavation, or checked immediately prior to backfilling. If not possible, a ramp, will be provided in all excavations that cannot be backfilled on the same day or alternatively, all excavations should be well-covered with plywood.
- No piles of loose construction materials are to be created during works – all material will be kept on hardstanding, stored on pallets, removed immediately from the site or checked prior to being removed.
- In the event reptiles are discovered, works will halt immediately and the ECoW will be contacted for advice. Contractors are not to handle reptiles unless informed to do so by the ECoW.

4.3.6. The precautionary destructive search work will be undertaken during the summer at a time of year when reptiles are active. The ecologist will be present during the strimming works. Any reptiles found during the destructive search will be relocated to the adjacent agricultural land.

BIRDS

4.3.7. Breeding birds are anticipated to utilise the individual trees on site. There is also a possibility that birds may use the onsite buildings for nesting purposes, although no evidence of this was observed during the survey. The recommended tree planting, detailed under paragraph 4.3.3 will consider the loss of the trees. When new buildings are created, it is recommended that bird boxes targeting species such as swallows, house sparrows, and/or house martins are included within the development.

4.3.8. Any vegetation removal and building demolition should be undertaken outside of the breeding bird season (March to September, inclusive). If this is not possible, a suitably qualified ecologist should undertake a nesting bird check no more than 48 hours prior to removal. If nesting activity is observed, the nest(s) should be left in situ until the young have fledged. A suitable buffer will be maintained and determined by the ecologist.

BATS

4.3.9. It is recommended that all mature trees with bat roosting potential are retained. If this is not feasible, further surveys will be required (See Section 5).

4.3.10. Buildings 3, 4, 5, 7, 9, and 10 were assessed as having '**Negligible**' bat roosting potential, as per the BCT's Good Practice Guidelines (Collins, 2023) which relates to a structure with no obvious or suboptimal roosting features that may be exploited by roosting bats on occasion though unlikely.

4.3.11. Buildings 6, 8, and 12 were assessed as having '**Low**' bat roosting potential due to the presence of single or discrete PRFs associated with each building.

4.3.12. The Bat Mitigation Guidelines (Reason and Wray, 2023) details that a non-licensable approach to works can be adopted in cases of buildings assessed as maximum 'low potential' with no evidence of use, but where the presence of a bat (or very low numbers of bats) cannot be ruled out.

4.3.13. A non-licensable approach includes the implementation of PWMs as detailed:

- All contractors working on the site will be briefed with a Toolbox Talk by the licenced ecologist, on the legal protection afforded to bats and their roosts, and on how to proceed if a bat is discovered during the course of

the work.

- A licenced ecologist will undertake a daylight inspection to assess the status of the site for bats prior to works commencing on site. The ecologist will check for field signs of bats in relation to the PRFs.
- The licenced ecologist will attend site on the day of the scheduled works to undertake a search for bats in relation to the potential roosting features identified during the PRA prior to the works commencing. If any bats are located, all works will cease, and Natural England is to be contacted immediately and a licence to be obtained.

4.3.14. Once the selected features have been removed under supervision, works can proceed in the absence of the licenced ecologist, at their discretion. If a bat is discovered at any unsupervised time, work must cease immediately, and a licenced bat handler must be called for advice. This advice will include leaving the bat to disperse of its own accord or wait for the licenced ecologist to move the bat. Builders and contractors are explicitly forbidden from handling bats except in the case of finding a trapped or injured bat. In which case the bat may be moved into a safe and secure place (e.g. a box) and the registered ecologist must be contacted immediately.

4.3.15. Any proposed lighting should follow the guidance outlined in the Institute for Lighting Engineers document "Guidance for the Reduction of Obtrusive Lighting" (2005) and BCT's "Bats and Artificial Lighting at Night" (2023).

4.3.16. An External Lighting Scheme had not been produced on the writing of this report. As such, the following recommendations are to be considered within the scheme during its condition, to minimise impacts of lighting. The recommendations are as follows:

- Keep site lighting to minimum levels.
- Luminaries should lack UV elements and preferably LED lighting with a warm white light should be used over cool white light (ideally <2700Kelvin).
- Lighting should feature peak wavelengths greater than 550nm.
- Light placement should be downward facing to prevent excess horizontal or vertical light spill.
- The use of integrated fittings such as cowls, shields, louvres and hoods, that effectively contain light spill from unintended areas.
- The use of hard landscaping features to block light and create dark corridors.
- Avoid illuminating habitats of value.
- Use of timed security lights should be set on motion-sensors and using short, 1-minute timers, to minimise light use.
- Column heights of lighting can be considered to minimise light spill.



TERRESTRIAL MAMMALS

- 4.3.20. European Hedgehog are anticipated to be present within the local area and are a Species of Principal Importance. identified during the works, it should be relocated carefully by hand to a location away from the working area and into nearby habitats. If any injured either species are located, they should be taken to a local vet.

NON-NATIVE INVASIVE SPECIES

- 4.3.21. Buddleia was identified within the introduced shrub on the site. These are classified in this area as an invasive non-native species and should be eradicated by an appropriately qualified invasive species contractor. It is recommended that an updated site walkover should be undertaken prior to construction, and any additional non-native invasive species identified should be removed.

5 CONCLUSION

5.1. AERIAL TREE INSPECTION

- 5.1.1. It is recommended that the mature trees which require removal or disturbance to facilitate the proposed development undergo aerial tree inspections (where safe to do so). The surveys are to follow the guidance set out in Collins (2023).
- 5.1.2. Trees assessed as PRF-M may undergo aerial tree inspections instead of nocturnal bat surveys with minimum of three visits between May and September with at least two in the period May to August. Should a maternity roost be identified on the first or second aerial tree inspection, it may be more suitable to switch to a less invasive survey effort such as the use of Night Vision Aids (NVAs) at the discretion of the project ecologist.
- 5.1.3. Trees assessed as PRF-I may undergo one aerial tree inspection instead of nocturnal bat surveys with one visit between May and August. If evidence of bats is identified, further surveys may be required.
- 5.1.4. Trees assessed as FAR may undergo one aerial tree inspection instead of nocturnal bat surveys with one visit between May and August. The category of PRF will determine further surveys or mitigation if necessary.

5.3. CONCLUSION

- 5.3.1. The site was found to comprise developed land in the form of buildings, with artificial unvegetated unsealed surfaces, modified grassland and scattered individual trees. The site was bound by woodland to the south, anticipated to be of value to local wildlife. The site was found to have value or potential value for common amphibians, reptiles, bats, birds, [REDACTED] and other terrestrial mammals. Further surveys have been recommended which include aerial tree surveys, [REDACTED]
- 5.3.2. Specific enhancement recommendations for the site include the following:
- Bat and bird boxes could be placed on retained buildings and trees. A plan to show the locations of these boxes and the specifications should be produced by a suitably qualified ecologist once the layout is finalised.
 - The inclusion of 'hedgehog highways' to facilitate movement across the site. This includes holes of 13 x 13cm at the bases of fences, leaving a sufficient gap beneath gates and/or leaving brick spaces at the bases of brick walls.
 - Hibernacula, which may provide cover for amphibians, reptiles, and small terrestrial mammals, could be incorporated into the site to replace any lost habitats which fulfil this function.

6 BIBLIOGRAPHY

- Aire Rivers Trust. (2020). Wonderful Wildlife. Available from: <https://airerivertrust.org.uk/wonderful-wildlife/#:~:text=The%20White%2Dclawed%20crayfish%20is,White%2Dclawed%20in%20our%20catchment.>
- [REDACTED]
- Bat Conservation Trust and Institute of Lighting Professionals (2023). Bats and artificial lighting at night – Guidance Note (GN08/23)
- British Hedgehog Preservation Society / People's Trust for Endangered Species (2019). Hedgehogs and Development. BHPS / PTES.
- Chanin P (2003). Ecology of the European Otter. Conserving Natura 2000
- CIEEM (2019). Advice Note on the Lifespan of Ecological Reports and Surveys. CIEEM.
- CIEEM (2019). Guidelines for Preliminary Ecological Appraisal. CIEEM.
- Reason, P.F. and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Chartered Institute of Ecology and Environmental Management, Ampfield.
- Collins (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines (Fourth Edition). The Bat Conservation Trust, London.
- Rivers Ecology Series No. 10. English Nature, Peterborough.
- Dean M., Strachan R., Gow D., Andrews R. (2016). The Water Vole Mitigation Handbook (The Mammal Society Mitigation Guidance Series). Eds Fiona Mathews and Paul Chanin. The Mammal Society, London.
- Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108, 708–746. Available online at britishbirds.co.uk/wp-content/uploads/2014/07/BoCC4.pdf IEA (1995). Guidelines for Baseline Ecological Assessment. E & F Spon.
- English Nature (2004). Bat Mitigation Guidelines. English Nature, Peterborough.
- Environment Agency. (2024). Catchment Data Explorer. Available: <https://environment.data.gov.uk/catchment-planning/WaterBody/GB104027062880>.
- Froglife (1999) Reptile Survey: An Introduction to Planning, Conducting and Interpreting Surveys for Snake and Lizard Conservation. Froglife Advice Sheet 10. Froglife, Halesworth.
- Gent, A.H & Gibson, S.D. (2003) Herpetofauna Workers' Manual. Joint Nature Conservation Committee, Peterborough.
- Gov.uk (2020). Guidance Otters: surveys and mitigation for development projects. Available: <https://www.gov.uk/guidance/otters-protection-surveys-and-licences>.
- [REDACTED]
- IEA (1995). Guidelines for Baseline Ecological Assessment. E & F Spon.
- JNCC (2004). Bat Workers Manual. JNCC, Peterborough.
- JNCC (2010). Handbook for Phase One Habitat Survey – 2010 Edition. England Field Unit, Nature Conservancy Council. Reprinted JNCC.
- Liles, G. (2003). Otter Breeding Sites. Conservation and Management. Conserving Natura 2000 Rivers Conservation Techniques Series No. 5. English Nature, Peterborough.

- Maddock, A. (2008). UK biodiversity action plan; priority habitat descriptions. UK Biodiversity Action Plan.
- Mathews, F., Kubasiewicz, L.M., Gurnell, J., Harrower, C.A., McDonald, R.A., and Shore, R.F. (2018). A review of the population and conservation status of British mammals.
- Langton, T.E.S., Beckett, C.L., and Foster, J.P. (2001), Great crested newt conservation handbook, Froglife, Halesworth.
- Oldham, R.S., Keeble, J., Swan, M.J.S., and Jeffcote, M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetology Journal* 10 (4), 143-155.
- UKHab Ltd (2023). The UK Habitat Classification, Version 2.0 (at <https://www.ukhab.org>).
- Peay, S. (2002). Guidance on Habitat for White-clawed Crayfish and its Restoration. Environment Agency.
- Shuttleworth, C., RSST (n.d.). Red and grey squirrels distribution in the British Isles in 1945 and 2010.
- The Mammal Society (2020). Species Factsheet: Red Squirrel. Available: <https://www.mammal.org.uk/species-hub/full-species-hub/discover-mammals/species-red-squirrel/>. Last accessed 05/07/2024.
- Wembridge, D., Al-Fulaij, N. and Langton, S. (2016). The State of Britain's Dormice 2016. Population index, p.100

Description	Photographs
Developed Land; Sealed Surface	 A photograph showing a paved parking area. In the background, there is a long, white, single-story building with a dark roof. Several cars are parked in front of the building. To the right, a white bus is parked. The sky is overcast.
Vacant and Derelict Land	 A photograph of a derelict building with a corrugated metal roof. The ground in the foreground is muddy and covered with fallen leaves. There is a small puddle of water in the center. The background shows trees and a cloudy sky.
Modified Grassland with Trees	 A photograph of a grassy field enclosed by a wooden fence. In the background, there are several trees. The sky is overcast.

Introduced Shrub



Offsite: [REDACTED] Sett complex under fallen tree





Heathlands Riding Estate
- UKHab
Date: 10.09.24

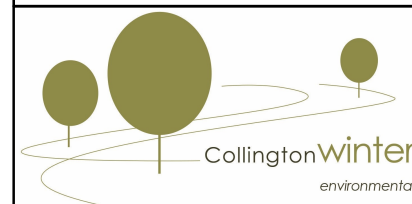
-  Individual Trees
-  Vacant, Derelict Land
-  Artificial Unvegetated Unsealed Surface
-  Introduced Shrub
-  Modified Grassland
-  Buildings
-  Developed Land Sealed Surface
-  Red Line Boundary

Scale: 1:1500

Drawn By: CW

Checked By: OC

Approved By: OC



Client: ET Planning

Site: Heathlands Riding Estate, Wokingham

Project Number: 20-1947

Rev: 1.0

© Collington Winter Environmental 2024

THIS PAGE HAS BEEN LEFT INTENTIONALLY BLANK

