



**Ground Level Tree Assessment for  
Bats**

**Land North of Camp Road,  
Upper Heyford**

For

**David Wilson Homes Ltd**

Report Ref.: DWH001-029-004/001/001

April 2024

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## 1. Summary and Main Recommendations

### 1.1 Summary

**1.1.1** David Wilson Homes Ltd is preparing a planning proposal for the construction of 126 residential dwellings and associated hard and soft landscaping, including the planting of native shrub and wildflower meadows, and the creation of swales. The site currently consists of a field divided by fences and surrounded by hedgerows. The project will require the clearance of the existing field habitats and the removal of the southern and western hedgerows, however, the eastern hedgerow will be retained.

**1.1.2** This report presents the findings of a Ground Level Tree Assessment (GLTA) undertaken to identify potential ecological constraints regarding roosting bats, relating to the project development.

**1.1.3** The main findings of the desk study were that the site is within 2km of two statutory and one non-statutory designated sites, however none of them were identified as being designated for bat populations. Six bat species within 1km of the site were identified in the desk study. Additionally, two records of European Protected Species (EPS) licence granted were identified 0.4km east of the site.

**1.1.4** A total of 16 trees containing at least one potential roost feature (PRF) were identified during the survey. A further two trees were identified as 'further assessment required' (FAR). The most frequent PRF identified within the trees on site was the presence of dense ivy, that can serve both as a PRF but can also obscure further features especially when assessed from the ground. One tree (T3) was identified to have an additional feature that was estimated to be PRF-M.

**1.1.5** Bats and their roosts are protected by law and policy and their presence is a material consideration in the determination of the planning application. To ensure the development is compliant with legislation and policy relating to bats, impacts should be minimised as far as possible through good design, with any residual impacts compensated by habitat creation.

### 1.2 Main Recommendations

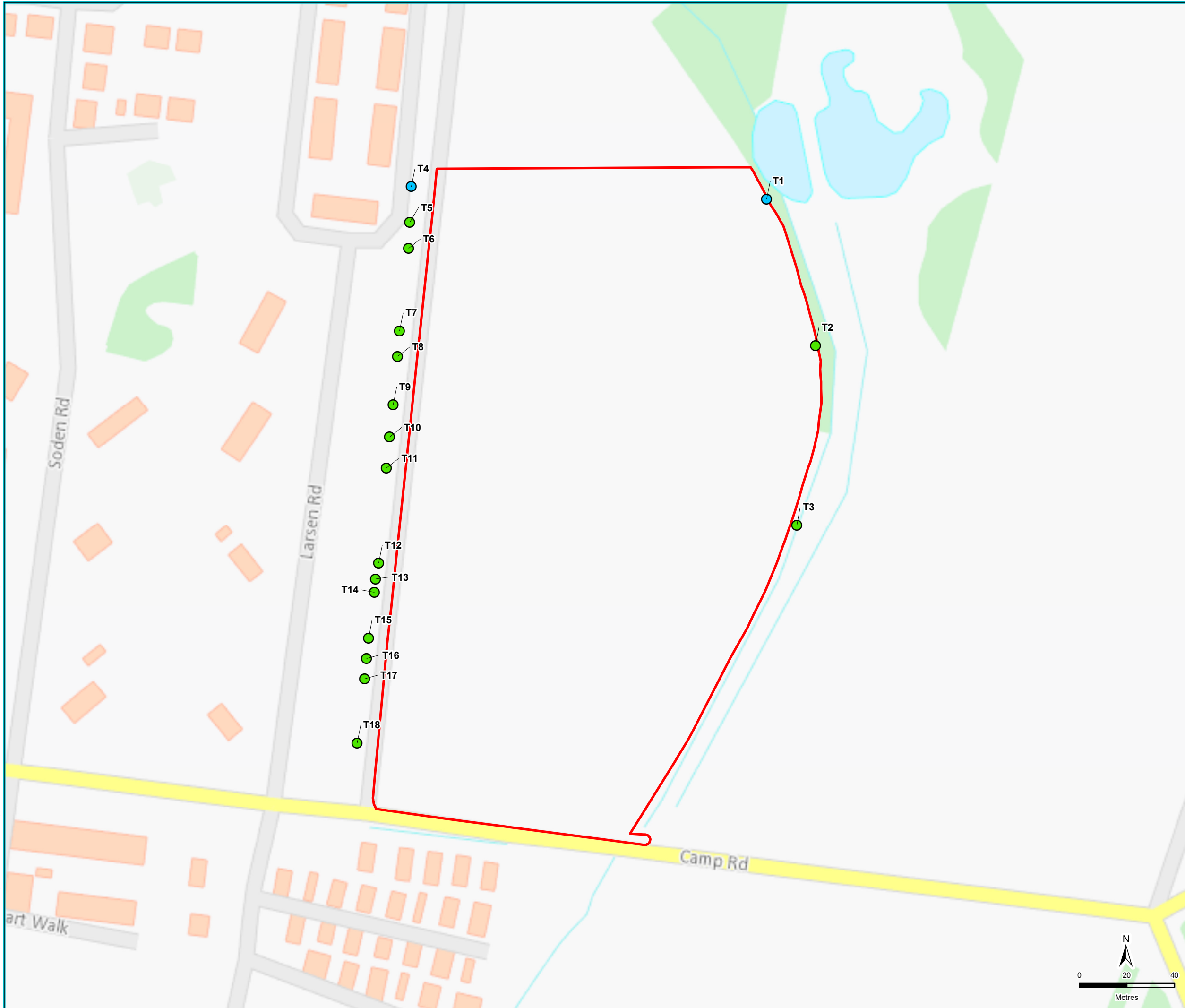
**1.2.1** No trees are to be removed under current plans and as such further surveys are not currently necessary, however, if that changes and any of the trees identified as FAR are to be directly impacted, categorization of the PRFs present, including internal inspection of the features, will be required.

**1.2.2** If works at night are necessary, any lighting used to facilitate the works should be implemented using a sensitive lighting regime. This should include the focus of lighting to be on the works area only and directed away from suitable habitat for commuting and foraging bats. Any light spill in the surrounding habitats should be minimised to prevent disturbance to any foraging or commuting bats that may be present.

- 1.2.3** It is recommended that any lighting plan produced for the development should be reviewed by an ecologist to ensure that the impacts of lighting on bats are considered.
- 1.2.4** Recommendations included within the separate Faunal Enhancement Plan produced by Thomson Environmental Consultants (2023c) should be followed to provide further roosting opportunities for bats within the site.

Legend

- Potential Roosting Features (PRF) Present
- Further Assessment Required (FAR)
- Site Location



Filepath: \\thomson.int\data\Live Projects\Terrestrial Ecology\Guildford\DWH001-029\_1 - Upper Heyford BNG\Mapping\Working\DWH001\_029\_Fig1\_SitelocationandTrees\_SC\_050124.mxd

Map Centre Grid Reference: 451,944 225,847

Contains Ordnance Survey data  
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Drawing Ref  
 DWH001-029/404211/1

Scale at A3  
 1:1,500

Drawn SC	Checked AS
Date 08/01/2024	Date 08/01/2024

Client  
 David Wilson Homes

Figure Number  
 1

Figure Title  
 Site Location, Survey  
 Extent and Location  
 of Identified Trees



Photograph 1:  
View of T2 in its wider setting within the hedgerow



Photograph 2:  
Detailed view of T2 where the ivy cover and the lifting bark PRFs can be seen



Photograph 3:  
View of the basal cavity in T3




Photograph 4:  
Detail view of T3 where the ivy cover and the lifting bark PRFs can be seen



Photograph 5:  
Example of ivy cover PRF on one of the trees on site



Photograph 6:  
View of ivy cover on one of the trees on site

Client	David Wilson Homes		Drawing Ref	DWH001-029-004		 <p>www.thomsonec.com enquiries@thomsonec.com</p>	
Figure Number	2		Drawn	APB	Checked		AC
Figure Title	Photographs of the Site		Date	21/12/2023			

## 2. Introduction

### 2.1 Context

- 2.1.1 This report presents the findings of a Ground Level Tree Assessment (GLTA) undertaken to identify potential ecological constraints regarding roosting, foraging and commuting bats, relating to a development proposal on the land north of Camp Road, Upper Heyford, Bicester, OX25 5BP (central grid reference: SP 51944 25847).
- 2.1.2 During the survey undertaken by a suitably qualified ecologist, the trees on site are identified and mapped, with an assessment made of their potential to support roosting bats.
- 2.1.3 The report has been prepared by Thomson Environmental Consultants on behalf of David Wilson Homes Ltd.

### 2.2 Project Description

- 2.2.1 David Wilson Homes Ltd is preparing a planning proposal for the construction of 126 residential dwellings and associated hard and soft landscaping, including the planting of native shrub and wildflower meadows, and the creation of swales. These proposals are hereafter referred to as “the development”.
- 2.2.2 The development will require planning consent from Cherwell District Council.

### 2.3 Site Description

- 2.3.1 The area of land upon which the development will be undertaken is 4.2ha and currently consists of a recently ploughed field, divided by fences and surrounded by hedgerows. The development will require the clearance of the existing field habitats and the removal of the southern and western hedgerows, however, the eastern hedgerow will be retained. This area of land is hereafter referred to as “the site”. The site location is shown on Figure 1.

### 2.4 Development Background

- 2.4.1 A previous planning permission for the site, submitted in two phases (15/01357/F and 21/03523/OUT), which included Preliminary Ecological Appraisals (PEAs) and Biodiversity Net Gain (BNG) calculations, has been submitted for a total of 120 units, and David Wilson Homes Ltd proposes to increase this by six units to 123 units.

### 2.5 Ecology Background

- 2.5.1 Aspect Ecology produced a series of reports for the previous planning application on behalf of Pye Homes. A PEA was carried out on the site in 2021 (Aspect Ecology, 2021a; 2021b) and concluded with recommendations such as hedgerow and tree protection, and pollution prevention. A BNG assessment report based on the Natural England Biodiversity Metric 3.1 (Panks *et al.*, 2022) was carried out for the site in 2022 (Aspect Ecology, 2022a; 2022b).
- 2.5.2 Thomson Environmental Consultants conducted an updated BNG assessment and PEA in 2023 (Thomson, 2024a; 2024b) for the 126 unit development. The PEA identified desk study records

of bats within 1km of the site, and identified potential roosting, foraging and commuting habitat on site in the form of hedgerows with trees. An assessment of the potential of trees on site to support roosting bats was recommended; this forms the scope of this report.

**2.5.3** A summary of the biology, conservation status and legal protection of bats is given in Appendix 1.

## **2.6 The Brief and Objectives**

**2.6.1** David Wilson Homes Ltd commissioned Thomson Environmental Consultants on 6<sup>th</sup> December 2023 to undertake a GLTA of the site, comprising:

- A GLTA survey of trees present on site;
- A report including the methods and results of the survey, discussion of the legal and planning policy issues and our recommendations; and
- A digitised map of the survey results.

**2.6.2** The objective of the survey was to identify constraints and opportunities related to bats with respect to the proposed development of the site as detailed in the project description.

## **2.7 Limitations**

**2.7.1** Trees in the hedgerow along the western site boundary could only be assessed on the eastern aspect, i.e. from the site, as access to the land west of the site was not possible. Trees along this hedgerow were treated precautionarily and assigned the category of further assessment required (FAR) if PRFs could not be viewed from within the site boundary.

**2.7.2** The species data collated during the desk study is mainly derived from records submitted by members of the public and *ad hoc* surveys undertaken by volunteers. Therefore, it should not be taken as a definitive list of the protected species and other species of conservation concern that occur in the local area.

**2.7.3** This report is based on the development boundary and layout shown on the 'General Arrangement' drawing (drawing ref: 2099.16/01J). Subsequent changes may result in a requirement to reassess the potential impacts of the development and the requirements for avoidance, mitigation and enhancement.

**2.7.4** It is known that at least a quarter of tree roosts are likely to not be visible from the ground. Therefore, as per current guidance, only trees which could be thoroughly visually viewed from the ground with a high level of confidence that PRFs were not present were classified as having no suitability for roosting bats.

## **2.8 Surveyors**

**2.8.1** The GLTA survey was conducted by Ecological Consultant Jessica Green BSc (Hons) MSc, holder of a Natural England Level 1 Class Licence for bats (licence number 2022-10684-CL17-BAT), and Assistant Ecologist Helena Bentham BSc (Hons).

## 3. Methodology

### 3.1 Desk Study

**3.1.1** Desk study data purchased during the PEA (Thomson, 2024b) was used to identify records of bats within 1km of the site, within the last ten years. A search was also conducted for any statutory or non-statutory designated sites, within 2km of the site, designated at least in part for their bat populations (see Appendix 1).

**3.1.2** The search areas for biological records were deemed to be suitable based on the zone of influence for the works. The zone of influence for a project is defined as the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities (CIEEM, 2017).

**3.1.3** Publicly available data sets were referenced to identify the location of statutory designated sites and priority habitats, including ancient woodland. Biological records were requested from the Local Environmental Records Centre (LERC) for records relating to species and non-statutory designated sites. The Natural England MAGIC website (<https://magic.defra.gov.uk>) was also consulted for biological records. Requests for information were sent to the Thames Valley Environmental Records Centre (TVERC) and the results were received on 9th October 2023.

### 3.2 Ground Level Tree Assessment

**3.2.1** During the PEA (Thomson, 2024b), hedgerows around the site were identified as containing trees with the potential to support roosting bats. A GLTA was therefore undertaken of these trees. The survey was conducted on the 11<sup>th</sup> and 12<sup>th</sup> December 2023. During the assessment a detailed and systematic inspection of the exterior of the tree was undertaken to look for potential roosting features (PRFs) that could be used by bats. Close-focusing binoculars were used to undertake the assessment. PRFs searched for included:

- Natural crevices and holes;
- Woodpecker and rot holes;
- Loose bark, splits and cracks;
- Bird and bat boxes;
- Presence or absence of dense ivy or dense epicormic growth; and
- Presence of bats.

**3.2.2** Each PRF was given a unique identification code.

**3.2.3** The search for bats and evidence of bats focused on these PRFs and the surfaces and ground beneath them. Information collected on the tree included: species, tree age, tree condition, diameter at breast height and tree height, plus a photograph of each tree and its location. Details recorded regarding the PRF included a description of the PRF, height of the PRF above the ground, position and aspect.

### 3.3 Contextual Information

3.3.1 For each tree with a PRF, contextual information was also recorded to aid the assessment. This was distance to hedgerows, distance to woodland, distance to water, potential commuting corridors, potential foraging corridors, setting, surrounding area habitat quality and the level of disturbance.

### 3.4 Categorisation of Results

3.4.1 The suitability of trees as roosting habitat was assessed and classified as 'none', 'further assessment required' (FAR) and 'PRF present' (PRF), as seen in Table 1.

**Table 1 Guidelines for assessing the suitability of trees for bats**

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.

3.4.2 Trees identified as 'none', with no bat roosting potential, were not recorded. Trees identified as FAR or PRF were recorded.

3.4.3 When PRFs were visible from the ground, these were assigned a level of estimated suitability as per Table 2.

**Table 2 Guidelines for categorising the potential suitability of PRFs in trees**

Suitability	Description
PRF-I	PRF is 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.

3.4.4 The suitability of foraging and commuting habitat was identified and classified as none, negligible, low, moderate or high, as included in Table 3.

**Table 3 Guidelines for assessing the suitability of commuting and foraging habitats for bats**

Suitability	Commuting and Foraging Habitats
None	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	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	Habitat that could be used by small numbers of bats as flight-paths such as 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	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	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.

## 4. Results

### 4.1 Desk Study

- 4.1.1** There are two statutory designated sites and one non-statutory designated sites within 2km of the site however, neither was identified as being at least in part designated due to their bat populations.
- 4.1.2** Ardley and Heyford Conservation Target Areas (CTA) is identified within the study area, 0.19km east and 0.50km north of the site. The Ardley and Heyford CTA includes, but is not limited to, the two statutory sites and the non-statutory site, and includes habitats (including scrub, ancient woodland and wetland) with high suitability for commuting and foraging bats.
- 4.1.3** Records of six species of bat were identified within 1km of the site in the desk study. These are detailed in Table 4.
- 4.1.4** There are two records on MAGIC of a European Protected Species (EPS) licence granted within the study area. The first record corresponds to a licence granted in 2013 for the destruction of a resting place of common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), Natterer's bat (*Myotis nattereri*) and brown long-eared bats (*Plecotus auritus*) (reference: EPSM2012-5157). A second licence was also granted in 2013 for the destruction of a breeding place, in addition to a resting place for common pipistrelle and brown long-eared bats (reference: EPSM2013-6341). Both are located 0.4km east of the site.

**Table 4 Bat species records derived from the desk study**

Common Name	Scientific Name	Habitats Regulations <sup>1</sup>	WCA <sup>2</sup>	SPI <sup>3</sup>	Grid Reference	Distance from Site (km)
Brown long-eared	<i>Plecotus auritus</i>	Schedule 2	Schedule 5	✓	SP514257	0.35
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	Schedule 2	Schedule 5		SP514257	0.35
Leisler's	<i>Nyctalus leisleri</i>	Schedule 2	Schedule 5		SP514257	0.35
Myotis species	<i>Myotis</i> sp.	Schedule 2	Schedule 5		SP514257	0.35
Noctule	<i>Nyctalus noctula</i>	Schedule 2	Schedule 5	✓	SP514257	0.35
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	Schedule 2	Schedule 5	✓	SP514257	0.35

1. The Wildlife and Countryside Act 1981, as amended

2. The Conservation of Habitats and Species Regulations 2017, as amended

3. Species of Principal Importance listed under Section 41 of the Natural Environment and Rural Communities Act 2006

### 4.2 Ground Level Tree Assessment

- 4.2.1** A total of 16 trees were classified as PRF, with two classified as FAR. Further details for each of the identified trees and identified trees and the reason for the classification are given in Table 4.
- 4.2.2** All trees identified as PRF were partially or fully covered by ivy (*Hedera helix*) which, if sufficiently dense, can serve as a roosting feature in itself or can conceal other features, making

it difficult to assess the suitability of the tree to support roosting bats from the ground.

**4.2.3** One tree (T3), an over mature crack willow (*Salix fragilis*) located in the eastern hedgerow, presents further features in the form of cracked bark and a large hollow near the base of the main stem. This feature could not be inspected but was estimated as PRF-M (suitable for multiple roosting bats). A second tree (T2), in addition to the ivy cover, also has lifting bark present that was estimated to be PRF-I (suitable for individually roosting bats). Two trees were assigned 'FAR' (T1 and T4) based on less dense ivy within trees which had no other PRFs identified but could not be fully inspected based on their size and structure.

**4.2.4** Any further survey and mitigation recommendations are made based on the Overall Tree Suitability (bottom row) in Table 5, which takes into account the decreased level of confidence in identifying and assessing a PRF from the ground. Photographs of selected trees and PRFs are shown on Figure 2.

**Table 5 Ground Level Tree Assessment results**

Attribute	T1	T2	T3	T4	T5
Tree species	Oak	Oak	Willow	Sycamore	Sycamore
Life stage	Mature	Mature	Over mature	Semi-mature	Semi-mature
Type of PRF 1	Ivy present	Ivy present	Ivy present	Ivy present	Ivy present
Type of PRF 2	-	Lifting bark	Crevices and holes with lifting bark	-	-
Type of PRF 3	-	-	Basal cavity	-	-
PRF1 suitability (estimated)	PRF-I	PRF-I	PRF-I	PRF-I	PRF-I
PRF2 suitability (estimated)	-	PRF-I	PRF-M	-	-
PRF3 suitability (estimated)	-	-	PRF-M	-	-
Main habitat	Hedgerow	Hedgerow	Hedgerow	Hedgerow	Hedgerow
Setting	Rural	Rural	Rural	Rural	Rural
Distance from woodland or waterbody	Associated with ditch	Associated with ditch	Associated with ditch	<250m	<250m
Level of disturbance/lighting	Negligible	Negligible	Negligible	Low	Low
Comments	50% of tree visible from approx. 20m distance. Ivy sparse.	Dense ivy covering throughout crown.	Partially snapped stem with associated PRFs.	-	Ivy stems thick, potentially creating PRFs

Overall Tree suitability	FAR	PRF	PRF	FAR	PRF
<b>Attribute</b>	<b>T6</b>	<b>T7</b>	<b>T8</b>	<b>T9</b>	<b>T10</b>
Tree species	Sycamore	Oak	Ash	Sycamore	Sycamore
Life stage	Semi-mature	Semi-mature	Semi-mature	Semi-mature	Semi-mature
Type of PRF	Ivy present	Ivy present	Ivy present	Ivy present	Ivy present
PRF1 suitability estimated	PRF-I	PRF-I	PRF-I	PRF-I	PRF-I
Main habitat	Hedgerow	Hedgerow	Hedgerow	Hedgerow	Hedgerow
Setting	Rural	Rural	Rural	Rural	Rural
Distance from woodland or waterbody	<250m	<250m	<250m	<250m	<250m
Level of disturbance/lighting	Low	Low	Low	Low	Low
Comments	Dense ivy covering throughout crown.	Ivy stems thick, potentially creating PRFs	Dense ivy covering throughout crown.	Dense ivy covering throughout crown and stem.	Dense ivy covering throughout crown and stem.
<b>Tree suitability</b>	<b>PRF</b>	<b>PRF</b>	<b>PRF</b>	<b>PRF</b>	<b>PRF</b>

Attribute	T11	T12	T13	T14	T15
Tree species	Ash	Ash	Ash	Ash	Sycamore
Life stage	Semi-mature	Semi-mature	Mature	Mature	Mature
Type of PRF	Ivy present	Ivy present	Ivy present	Ivy present	Ivy present
PRF1 suitability estimated	PRF-I	PRF-I	PRF-I	PRF-I	PRF-I
Main habitat	Hedgerow	Hedgerow	Hedgerow	Hedgerow	Hedgerow
Setting	Rural	Rural	Rural	Rural	Rural
Distance from woodland or waterbody	<250m	<250m	<250m	<250m	<250m
Level of disturbance/lighting	Low	Low	Low	Low	Low
Comments	Dense ivy covering throughout	Dense ivy covering throughout crown.	Dense ivy covering throughout	Dense ivy covering throughout stem.	Dense ivy covering throughout stem.

	crown and stem.		crown and stem.		
<b>Tree suitability</b>	<b>PRF</b>	<b>PRF</b>	<b>PRF</b>	<b>PRF</b>	<b>PRF</b>

<b>Attribute</b>	<b>T16</b>	<b>T17</b>	<b>T18</b>
Tree species	Sycamore	Sycamore	Field maple
Life stage	Mature	Mature	Semi-mature
Type of PRF	Ivy present	Ivy present	Ivy present
PRF1 suitability estimated	PRF-I	PRF-I	PRF-I
Main habitat	Hedgerow	Hedgerow	Hedgerow
Setting	Rural	Rural	Rural
Distance from woodland or waterbody	<250m	<250m	<250m
Level of disturbance/lighting	Low	Low	Low
Comments	Dense ivy covering throughout crown and stem.	Dense ivy covering throughout crown and stem.	Dense ivy covering throughout stem.
<b>Tree suitability</b>	<b>PRF</b>	<b>PRF</b>	<b>PRF</b>

- 4.2.5** The hedgerows within the site provide moderate suitability for foraging and commuting bats. The eastern hedgerow is well connected with the landscape, and it is adjacent to suitable foraging habitat over the ponds and wetland to the east of the site.

## 5. Legal and Planning Policy Considerations

### 5.1 Legislation

5.1.1 All UK bat species are protected by the Conservation of Habitats and Species Regulations 2017 (as amended). The Regulations make it an offence, with very few exceptions, to:

- Deliberately capture, injure or kill a bat;
- Deliberately disturb a bat in such a way as to be likely:
  - i. to impair its ability to survive, to breed or reproduce, or to rear or nurture its young; or
  - ii. to impair its ability to hibernate or migrate; or
  - iii. to affect significantly the local distribution or abundance of the species to which they belong.
- Damage or destroy a breeding site or resting place of a bat; or
- Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead bat, or any part of, or anything derived from a bat.

5.1.2 In addition to the protection given to bats under the Conservation of Habitats and Species Regulations 2017 (as amended) already described, bats receive additional protection under the Wildlife and Countryside Act 1981 (as amended), which adds the following offences (with certain exceptions):

- Disturbance while it is occupying a structure or place which it uses for shelter or protection; or
- Obstructing access to any structure or place used for shelter or protection.

5.1.3 A roost is any structure or place used by bats for shelter or protection. As bats tend to re-use the same roosts year after year, the roost is protected whether or not bats are present at the time.

### 5.2 Planning Policy

5.2.1 Seven species of bats have been adopted as Species of Principal Importance for the Conservation of Biodiversity in England (see Appendix 1). Under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, the Secretary of State must publish a list of species which in the Secretary of State's opinion are species of principal importance for the purpose of conserving biodiversity. Planning authorities are required to have particular regard to these species and treat them as a material consideration in the planning process. Most protected species are also listed as species of principal importance. Species of principal importance are often referred to as 'priority species'.

5.2.2 Consideration of species of conservation concern during development projects is a requirement of the NERC Act 2006 which states that any "public authority must, in exercising its functions,

*have regard ... to the purpose of conserving biodiversity” and “conserving biodiversity includes, in relation to a living organism or type of habitat, restoring or enhancing a population or habitat.”*

**5.2.3** Policy ESD 10 of the Cherwell Local Plan 2011-2031 Part 1 states that:

- *“Relevant habitat and species surveys and associated reports will be required to accompany planning applications which may affect a site, habitat or species of known or potential ecological value.”;*
- *“Planning conditions/obligations will be used to secure net gains in biodiversity by helping to deliver Biodiversity Action Plan targets and/or meeting the aims of Conservation Target Areas. Developments for which these are the principal aims will be viewed favourably.”;* and
- *“A monitoring and management plan will be required for biodiversity features on site to ensure their long term suitable management.”*

**5.2.4** In paragraph B.237 of the Policy ESD 10 of the Cherwell Local Plan 2011-2031 Part 1 it is noted that: *“ Surveys should include consideration of the site's value as a wildlife corridor and the contribution it makes to ecological networks.”*

**5.2.5** To comply with legislation and planning policy, the avoidance, mitigation and compensation measures outlined in Section 6 in relation to bats should be adopted as part of the development proposal.

## 6. Recommendations

### 6.1 Background

**6.1.1** Records of bat species and previously granted mitigation licences were found within the 1km study area. Sixteen trees within the hedgerows on the site have been classified as PRF, where at least one PRF is present, and two have been classified as FAR (further assessment required).

**6.1.2** The legal protection afforded to bats is summarised in Section 5 and Appendix 1. Killing or injury of bats would be an offence, as well as damage or destruction of a roosting site. Disturbance of roosting bats is also an offence.

### 6.2 Further Survey

**6.2.1** No trees are to be removed under current plans and as such further surveys are not currently necessary, however, if that changes and any of the trees identified as PRF or FAR are to be temporarily or permanently impacted (through removal or remedial works or increases in lighting, noise or vibration above baseline levels), categorisation of the PRFs present (including internal inspection of the features) and/or further assessment of the trees through aerial close inspection (respectively) will be required.

### 6.3 Avoidance and Mitigation

**6.3.1** If works at night are necessary, any lighting used to facilitate the works should be implemented using a sensitive lighting regime. This should include the focus of lighting to be on the works area only and directed away from suitable habitat for commuting and foraging bats, including trees, woodland and hedgerows. Any light spill in the surrounding habitats should be minimised to prevent disturbance to any foraging or commuting bats that may be present.

**6.3.2** During the construction phase, none of the trees classified as FAR or PRF, or any hedgerows or trees, should be subject to increased illumination. During and post development, dark (no increased illumination) corridors within the development will be required enabling continued commuting and foraging by bats on site and maintaining connectivity for bats between the site and the wider landscape. This should include all existing suitable habitat for foraging and commuting bats, such as hedgerows, tree lines and woodland, to ensure that roosting habitat within the site boundary remains functional.

**6.3.3** To ensure implementation of the above, it is recommended that a bat sensitive lighting plan is produced for the development in coordination between a suitably experienced ecologist and a qualified lighting engineer, according to guidelines produced by the Institute of Lighting Professionals (ILP, 2023). To enable appraisal of the lighting plan regarding bats, the scheme should include a horizontal illuminance contour plan using an appropriate software package to model 'Day 1', extent of light spill from the proposed, retained and, possibly, existing luminaires. In areas where PRF and FAR trees are present, vertical illuminance contour plots are also likely to be required, to ensure that PRFs are not subject to increased illumination.

#### 6.4 Opportunities for Enhancement

- 6.4.1 A separate Faunal Enhancement Plan has been produced by Thomson Environmental Consultants (2024c).

## 7. Conclusion

- 7.1.1** Sixteen trees were found to fall under the PRF category, and two under the FAR category. However, under the current development proposals all trees on site will be retained and as such further surveys are not necessary at this stage.
- 7.1.2** The site contains suitable habitat for roosting, foraging and commuting bats. Recommendations have been made to protect these ecological receptors from adverse effects during and post development. If the plans are altered to include impacts to suitable bat habitat then further survey is likely to be required to assess the use of the site by foraging, commuting and roosting bats (as necessary).
- 7.1.3** A key element of the avoidance recommendations is inclusion within the planning application of a sensitive lighting scheme for bats, to be produced in coordination between a suitably experienced ecologist and qualified lighting engineer. Should these recommendations be followed, the development should be compliant with legislation and planning policy relating to bats.

## 8. References

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Aspect Ecology Ltd (2022a) Land off Larsen Road, Upper Heyford Biodiversity Net Gain Assessment. December 2022.

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Thomson Environmental Consultants (2024b) Land North of Camp Road, Upper Heyford Preliminary Ecological Appraisal. Report reference: DWH001-029-003/001/002

Thomson Environmental Consultants (2024c) Land North of Camp Road, Upper Heyford Faunal Enhancement Plan. Report reference: DWH001-029-003/002/002

## Appendix 1 British Bats

### *Introduction*

A summary of the biology of British bats and the legislation and policy that protects them is provided below.

### *Biology*

There are 18 British species of bats, belonging to two families; the horseshoe bats (*Rhinolophidae*) and vesper bats (*Vespertilionidae*). Of the 18 species, two species are horseshoe bats and belong to the genus *Rhinolophus*. The remaining 16 species are vesper bats and are sub-divided between six genera; *Myotis*, *Eptesicus*, *Nyctalus*, *Pipistrellus*, *Plecotus* and *Barbastella*. Whilst there are many differences in the biology of the different species, all share certain characteristics and these are described below.

### *Roosting*

Bat species utilise roost sites of varying character; some preferring tree roosts whilst others are thought to be almost entirely dependent on built structures. Most bats will have a number of available roosting sites within their range, which they move between throughout the year. They are generally faithful to their roosts and a colony of bats may use the same roost site(s) year after year.

Bats hibernate during the winter and will often gather to hibernate communally, remaining in the same hibernation roost from November to February/March. Hibernation roost sites typically have a constant low temperature and high humidity levels. Sites include caves, mines, thick walled buildings and hollow trees. With the arrival of spring, the ambient temperature and day length increase and bats begin to leave their hibernation roosts, either moving immediately to summer roost sites or occasionally, to a transitional roost.

By June, breeding females will begin to congregate in maternity roost sites where they will give birth to and nurture their young. Male bats are also occasionally found roosting in maternity roosts but during this period they mostly roost alone. Maternity roost sites include hollowed out trees, buildings and bridges. Male bats may use similar sites but also cracks and crevices in trees, under loose tiles or even amongst dense ivy growth during the summer period. Similar sites may be used by bats for brief periods during the night when they are resting or feeding on recently caught prey. In autumn, male bats establish mating roosts and are visited by females. A variety of roost sites may be used until the bats return to their hibernation roosts.

### *Foraging*

All British bat species feed on invertebrates, with flies, beetles, moths and other insects making up much of their diet. Areas with an abundance of insect prey, such as woodlands, scrub, wetlands, river corridors and flower rich grasslands are therefore favoured foraging sites for bats. Habitats such as intensively farmed arable land, and amenity grassland support a much lower invertebrate abundance and are therefore less favoured foraging habitats for bats.

### *Commuting*

Bats favour roost sites in close proximity to suitable foraging habitat, however, given variation in prey availability, land-use change, and competition with other bats, for at least part of the year bats must commute between their roosts and foraging habitat.

Commuting routes tend to follow linear features in the landscape such as hedgerows, woodland edges, rivers and other watercourses, particularly when crossing areas of less favourable habitat. The distance that bats commute between roost sites and foraging areas is dependent on local geography and also the species of bat. Some species will travel up to 18km, though shorter distances are more typical.

### *Site Designation*

All bat roosts in the UK receive protection under the following legislation:

- Conservation of Habitats and Species Regulations 2017 as amended (which replaces the Conservation (Habitats &c) Regulations 1994 as amended)
- Wildlife and Countryside Act 1981, as amended;
- The Countryside and Rights of Way Act 2000 (which amends the Wildlife and Countryside Act); and
- Natural Environment and Rural Communities Act 2006 (which amends the Wildlife and Countryside Act).

This is described in more detail under 'Species Protection' below. In addition, the most important sites for certain bat species in the UK receive further statutory protection through designation of Special Areas of Conservation (SACs) and/or Sites of Special Scientific Interest (SSSIs).

Four UK bat species, the greater and lesser horseshoe, barbastelle and Bechstein's bats, are included on Annex II of the European Community Directive of the Conservation of Natural Habitats and of Wild Fauna and Flora, referred to as the Habitats Directive. The Habitats Directive was transposed into UK law by the Conservation of Habitats and Species Regulations 2017 as amended. The Habitat Regulations, amended by the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, now form stand-alone legislation for England and Wales, independent of the Directive. This legislation requires that areas are designated as Special Areas of Conservation (SACs) to protect populations of these 4 bat species. These sites for part of the National site network and are considered to be of international importance for the bat populations they support.

Sites designated under the Wildlife and Countryside Act 1981 (WCA) are known as Sites of Special Scientific Interest (SSSIs). SSSIs received further protection under the Countryside and Rights of Way Act 2000 (CRoW) and the Natural Environment and Rural Communities (NERC) Act 2006.

Some SSSIs are designated for the population(s) of bats that they support. The criteria for selecting SSSIs on the basis of their bat populations are provided in Guidelines for the Selection of Biological SSSIs (NCC, 1989):

- Greater horseshoe bat - all main breeding roosts and all winter roosts with 50 or more adult bats;
- Lesser horseshoe bat - all main breeding roosts containing 100 or more adult bats and all winter roosts containing 50 or more bats;
- Barbastelle, Bechstein's and grey long-eared bats - any traditional breeding roosts;
- Natterer's, Daubenton's, whiskered, Brandt's, serotine, noctule and Leisler's bats - only exceptionally large breeding roosts or those with a long history of use; and
- Mixed Roost sites - all hibernacula containing four or more species and more than 50 individuals or three species and 100 or more individuals or two species and 150 or more individuals, though these criteria may be lower in some parts of the UK.

Sites that qualify as SSSIs for the bat populations they support are considered to be of at least national importance.

Sites designated for nature conservation at the county level may also include bat populations as part of the site qualifying criteria, although the criteria used may vary from county to county. Such sites are protected through the planning system and there is generally a presumption against development that affects such sites in local authority development plans.

### *Planning Policy*

The National Planning Policy Framework (NPPF) 2019, gives further direction with respect to biodiversity conservation and land use change / development. The NPPF encourages local planning authorities to identify, conserve and restore, ecological networks, which should benefit bats, and it also states that planning permission should be refused if significant harm to biodiversity cannot be avoided, mitigated or compensated. In addition, the Government Circular 06/05, which relates to biodiversity conservation, states that all protected species, such as bats, are a material consideration for the planning authority when considering proposed developments.

### *Species Protection*

#### *Legislation*

All bat species are protected by the Conservation of Habitats and Species Regulations 2017 as amended. The Regulations make it an offence, with very few exceptions, to:

- Deliberately capture, injure or kill a bat;
- Deliberately disturb a bat in such a way as to be likely:
  - iv. to impair its ability to survive, to breed or reproduce, or to rear or nurture its young; or
  - v. to impair its ability to hibernate or migrate; or

- vi. to affect significantly the local distribution or abundance of the species to which they belong.
- Damage or destroy a breeding site or resting place of a bat; or
- Keep, transport, sell or exchange, or offer for sale or exchange, any live or dead bat, or any part of, or anything derived from a bat.

In addition to the protection given to bats under the Conservation of Habitats and Species Regulations 2017 as amended already described, bats are also partially protected in England under the Wildlife and Countryside Act 1981 (as amended), which adds the following offences (with certain exceptions):

- Disturbance while it is occupying a structure or place which it uses for shelter or protection; or
- Obstructing access to any structure or place used for shelter or protection.

A roost is any structure or place used by bats for shelter or protection. As bats tend to re-use the same roosts year after year, the roost is protected whether bats are present or not, at the time.

In this context of the legislation, 'damage' would include such operations as treatment of wood with toxic preservatives or use of rodenticides near roosting bats while 'disturbance' includes any work in or affecting a bat roost.

If proposed actions, such as redevelopment of an existing building may lead to an offence under the above legislation, appropriate mitigation which seeks to avoid these impacts should be devised and implemented under licence from Natural England to allow the activity to proceed legally.

In addition to the above legislation, all bats are protected under the Bonn Convention, within which the Agreement on the Conservation of Bats in Europe (1991) or EUROBAT, establishes a mechanism for international collaboration to conserve bats and their habitats, including foraging habitats. All European bat species are covered under Appendix II of the Conservation of Migratory Species of Wild Animals (CMS).

The Hedgerow Regulations 1997 provide for the conservation of 'important' hedgerows and their constituent trees. The presence of a protected species such as bats is included in the assessment of whether a hedgerow is considered 'important' and applications to remove such hedgerows must be made to the planning authority.

#### *UK Post-2010 Biodiversity Framework and Species of Principal Importance*

Published by the Joint Nature Conservation Committee (JNCC) and the Department for Environment, Food and Rural Affairs (Defra) in July 2012, the UK Post-2010 Biodiversity Framework identifies UK-scale activities and priority works that are required to deliver the EU Biodiversity Strategy. Following a process of devolution, the framework is underpinned by country level strategies which are now largely responsible for continuing the work carried out under the former UK Biodiversity Action Plans (UK BAP). JNCC guidance dictates that UK BAP background information on priority species and habitats still remains relevant and it now forms the basis of country specific priority lists, which for England, are specified under

Section 41 of the Natural Environment and Rural Communities Act 2006 (the NERC Act). Targets for England's biodiversity strategy 'Biodiversity 2020': A strategy for England's wildlife and ecosystem services, are informed by this list.

Seven species of bats (Barbastelle, Bechstein's, greater and lesser horseshoe, brown long-eared, noctule and soprano pipistrelle) have been adopted as Species of Principal Importance for the Conservation of Biodiversity in England. This places a duty on all government departments to have regard for the conservation of these species and on the Secretary of State to further, or promote others to further, the conservation of these species. Furthermore, the NPPF states that local planning authorities should promote the protection and recovery of priority species populations linked to national and local targets, which presumably means those listed under the Section 41 of the NERC Act, the former UK BAP and on Local or Regional priorities species lists.

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