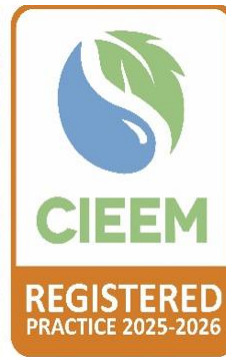


# Reading Sewage Treatment Works Car Park

Island Road, Reading

## Ecological Impact Assessment (EclA)

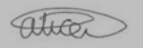
April 2026



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## Document Approval

|               | Name            | Title               | Signature                                                                           | Date     |
|---------------|-----------------|---------------------|-------------------------------------------------------------------------------------|----------|
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# Contents

|          |                                                          |           |  |  |
|----------|----------------------------------------------------------|-----------|--|--|
| <b>1</b> | <b>Introduction.....</b>                                 | <b>5</b>  |  |  |
| 1.1      | Background .....                                         | 5         |  |  |
| 1.2      | Site Description .....                                   | 5         |  |  |
| 1.3      | Site Proposals .....                                     | 5         |  |  |
| 1.4      | Aims of the Study .....                                  | 6         |  |  |
| <b>2</b> | <b>Planning Policy &amp; Legislation .....</b>           | <b>7</b>  |  |  |
| 2.1      | National Planning policy .....                           | 7         |  |  |
| 2.2      | Local Planning Policies .....                            | 7         |  |  |
| 2.3      | Legislation .....                                        | 9         |  |  |
| <b>3</b> | <b>Methodology .....</b>                                 | <b>10</b> |  |  |
| 3.1      | Guidelines for Ecological Impact Assessment .....        | 10        |  |  |
| 3.2      | Scope of the Assessment .....                            | 10        |  |  |
| 3.3      | Desk Study .....                                         | 11        |  |  |
| 3.4      | Habitat Survey .....                                     | 11        |  |  |
| 3.5      | BADGERS .....                                            | 11        |  |  |
| 3.6      | Bats .....                                               | 11        |  |  |
| 3.7      | Assessment .....                                         | 13        |  |  |
| 3.8      | Surveyor Qualifications .....                            | 14        |  |  |
| <b>4</b> | <b>Baseline Ecological Conditions .....</b>              | <b>15</b> |  |  |
| 4.1      | Designated Sites .....                                   | 15        |  |  |
| 4.2      | Habitats .....                                           | 15        |  |  |
| 4.3      | Species .....                                            | 17        |  |  |
| <b>5</b> | <b>Impact Assessment &amp; Mitigation Measures .....</b> | <b>22</b> |  |  |
| 5.1      | Designated Sites .....                                   | 22        |  |  |
| 5.2      | Habitats .....                                           | 22        |  |  |
| 5.3      | Species .....                                            | 23        |  |  |
| 5.4      | Residual Effects .....                                   | 26        |  |  |
| 5.5      | Enhancements .....                                       | 27        |  |  |
| 5.6      | Compensation .....                                       | 28        |  |  |
| 5.7      | Monitoring .....                                         | 28        |  |  |
| <b>6</b> | <b>Conclusions.....</b>                                  | <b>29</b> |  |  |
| <b>7</b> | <b>References.....</b>                                   | <b>32</b> |  |  |
| <b>8</b> | <b>Appendices.....</b>                                   | <b>33</b> |  |  |

## Site Summary

|                                   |                                                              |
|-----------------------------------|--------------------------------------------------------------|
| <b>Site / Project Name</b>        | Reading Sewage Treatment Works (STW)                         |
| <b>Site Address</b>               | Reading STW Car Park, Island Road, Whitley, Reading, RG2 0RP |
| <b>Grid Ref</b>                   | SU 70757 70800                                               |
| <b>Client</b>                     | Thames Water                                                 |
| <b>Local Authority</b>            | Reading Borough Council                                      |
| <b>Statutory Designations</b>     | None on site                                                 |
| <b>Non-Statutory Designations</b> | None on site                                                 |

## Executive Summary

Maydencroft Limited was commissioned by Nick Solanki of Thames Water to complete an Ecological Impact Assessment (EclA) of the Site at Reading Sewage Treatment Works Car Park. The appraisal was required to assess the potential ecological constraints affecting the clearance of woodland to facilitate the development of a car park area.

The habitats on Site include; other lowland mixed deciduous woodland, modified grassland and other developed land. The initial survey identified that the Site and its surroundings have the potential to be utilised by the following protected species: badgers, nesting birds, hedgehogs, reptiles and, roosting, foraging and commuting bats.

To inform this assessment a range of ecological surveys were undertaken including:

- UK Habs survey
- Preliminary Bat Roost Assessment (PBRA)
- Ground Level Tree Assessments (GLTA)
- Badger sett monitoring
- Biodiversity Net Gain Assessment

Further surveys have confirmed the absence of roosting bats and the absence of an active badger sett. As such, the Site is considered likely to support foraging and commuting badgers, nesting birds, hedgehogs, reptiles and foraging and commuting bats.

As habitat is to be permanently lost, a Biodiversity Net Gain assessment has been produced to ensure a net gain in biodiversity from the scheme.

Recommended measures to minimise adverse effects on species/species groups which have the potential to be impacted by the proposed development have been set out within Table 1, along with precautionary measures in respect to species throughout the works.

*Table 1: Mitigation measures for species considered likely present on Site.*

| Species | Mitigation measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|---------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Bats    | <p>Immediately prior to the commencement of works, all identified potential roost features (PRFs) will be subject to an inspection by a suitably qualified and licensed ecologist. Works may only proceed once it has been confirmed that the PRFs are not being used by roosting bats at the time of inspection.</p> <p>Should evidence of a bat roost be identified, works in the affected area must cease immediately and ecologist advice sought. Works may only recommence once appropriate mitigation has been agreed, which may include the requirement to obtain a mitigation licence from Natural England.</p> <p>A 5m buffer must be maintained around all retained trees on and immediately adjacent to the Site that contain PRFs, within which no heavy plant, machinery, or ground disturbance shall occur.</p> <p>The following lighting mitigation should be followed:</p> <ul style="list-style-type: none"> <li>• All works should be undertaken during normal working daylight hours. Any artificial lighting (if absolutely required) should not illuminate the boundary habitats;</li> <li>• Where security lighting is required, it is recommended that these are motion activated with hooded luminaires and directed away from the boundaries;</li> <li>• Any new temporary or permanent lighting should be designed to avoid light-spill onto the Site boundaries and boundary vegetation.</li> </ul> <p>If permanent lighting is to be installed it must follow the principles of mitigation as outlined within the Bat Conservation Trust and Institution of Lighting Professionals Guidance Note. Mitigation measures for external street lighting will include:</p> <ul style="list-style-type: none"> <li>• Only luminaires with an upward light ratio of 0% should be used;</li> <li>• All external luminaires used on site should lack UV elements and be warm white coloured (ideally &lt; 2700 Kelvin) to reduce blue-light components;</li> </ul> |

| Species  | Mitigation measures                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|          | <ul style="list-style-type: none"> <li>LED luminaries should be used due to their sharp cut-off, lower intensity, good colour retention and dimming capability;</li> <li>Where security lighting is installed, this should be motion-activated;</li> <li>Lights should not be directed at boundary vegetation. Where required, lights can be fitted with hoods, baffles or louvres to reduce back-spill.</li> </ul> <p>A lighting design strategy for bats should be created prior to works commencing to ensure that external lighting follows the above recommendations and does not produce excessive light spill.</p>                                                                                                                                                                                                                                                                                                                                                                                     |
| Badger   | <p>Sett exclusion and destruction will be undertaken as soon as practicable. A pre-commencement badger walkover survey should be undertaken no more than three months prior to the start of works.</p> <p>Any excavations on Site must be covered overnight or a means of escape provided for any badger which may become trapped within the excavation. The excavations, if left open, will need to be inspected daily prior to works commencing.</p> <p>If any equipment or materials are to be stored on Site overnight, all possible entrances must be blocked and checked for wildlife the following morning prior to work commencing. If present, the Ecologist should be contacted for advice.</p>                                                                                                                                                                                                                                                                                                     |
| Birds    | <p>Vegetation clearance should be undertaken outside bird nesting season i.e. during the period September to February (inclusive – as a guide). If this is not possible, all areas impacted should first be checked for active nests by an ecologist or other suitably qualified individual. In the event that nesting activity is identified, certain aspects of the work in the vicinity of the nest will need to cease until the birds have finished nesting and the young have fledged.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| Hedgehog | <p>If the removal of any sheltering/hibernation habitat is required to facilitate the works then a walkover survey will be undertaken by an Ecologist immediately prior to works. A hand search of any identified suitable habitat will be carried out by an Ecologist immediately prior to clearance. Any hedgehogs found will be carefully removed and placed in suitable habitat within woodland, scrub or hedgerow away from the development but remaining within suitable surrounding habitat.</p> <p>Any excavations on Site must be covered overnight or a means of escape provided for any hedgehogs which may become trapped within the excavation. The excavations, if left open, will need to be inspected daily prior to works commencing.</p> <p>If any equipment or materials are to be stored on Site overnight, all possible entrances must be blocked and checked for wildlife the following morning prior to work commencing. If present, the Ecologist should be contacted for advice.</p> |

| Species  | Mitigation measures                                                                                                                                                                                                              |
|----------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Reptiles | <p>A two-phased clearance of vegetation with hand-tools. Any habitat features such as rubble piles, log stacks, brash piles, or deadwood must be carefully dismantled by hand under ECoW supervision if removal is required.</p> |

# 1 Introduction

## 1.1 BACKGROUND

Maydencroft Limited was commissioned by Nick Solanki of Thames Water to undertake an Ecological Impact Assessment (EclA) on Site at Reading Sewage Treatment Works (STW) car park, Whitley, Reading. The appraisal was required to assess the potential ecological constraints associated with a proposal to develop a car park area.

The EclA has been produced by Jasper Carnell, Assistant Ecologist at Maydencroft Limited. The Preliminary Ecological Appraisal (PEA) produced by Maydencroft Limited (2025) supports the EclA.

## 1.2 SITE DESCRIPTION

The section of land concerned in the survey (referred to as the 'Site' from hereafter) covers an area of approximately 0.21ha and lies approximately 900m northeast from Green Park Village. The Site is bordered to the south and east by infrastructure associated with the STW.

Industrial land lies north and west, with arable land situated beyond, approximately 200m from the Site. The southern and eastern boundaries are adjacent to urban development and commercial infrastructure. The River Kennet flows approximately 200m north of the Site.

## 1.3 SITE PROPOSALS

The project entails the expansion of the existing hardstanding car park to enable the construction of a new building and associated infrastructure. This includes additional parking spaces (including electric vehicle charging points), an underground fuel tank, a bicycle store, a smoking shelter and a substation. The development will necessitate the removal of an area of lowland mixed deciduous woodland.

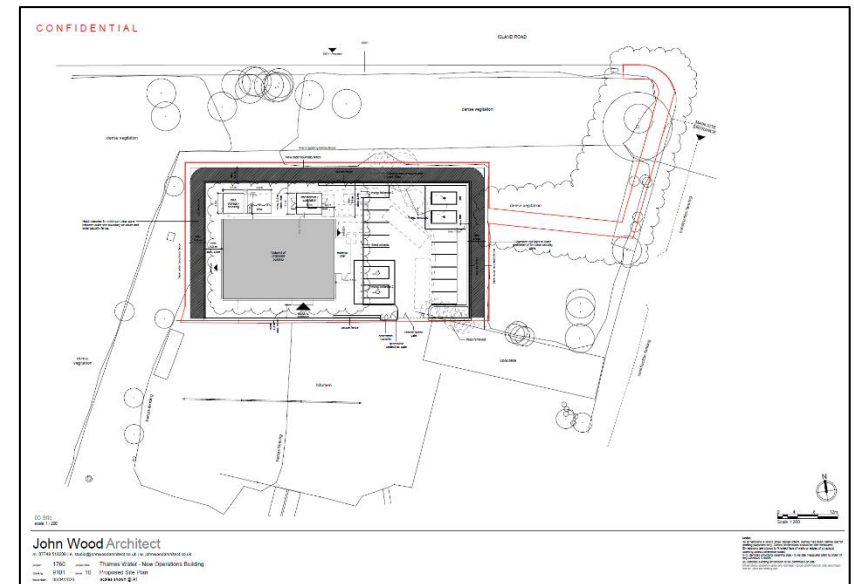


Figure 1. Proposed Site plan

## 1.4 AIMS OF THE STUDY

The purpose of the EclA is to establish key ecological baseline data related to protected and non-protected habitats and species within the area of Reading STW Car Park so that this can be considered throughout project design and delivery stages in accordance with the ecological mitigation hierarchy.

It also seeks to assess the impact of proposed Site changes on ecological receptors in order to devise an appropriate strategy for mitigation and compensation. Equally, the EclA aims to feed into the design process so that opportunities for biodiversity enhancement are recognised and incorporated wherever possible.

This EclA covers the following stages:

- Review and summarise designated sites and biological records returned by the desk study;
- Describe the habitats and features present on Site and evaluate their ecological importance;
- Detail the methods and results of the surveys undertaken on Site;
- Outline the legislative and/or policy protection afforded to any habitats or species of importance likely to be associated with the Site;
- Discuss the predicted impacts on ecological receptors in the absence of mitigation, with recommendations for mitigation measures following the 'mitigation hierarchy' to avoid, reduce or compensate for these impacts.

- Set out recommendations for ecological enhancement measures.



*Figure 2. Location of the Site (red line) in its landscape context.*

## 2 Planning Policy & Legislation

### 2.1 NATIONAL PLANNING POLICY

The National Planning Policy Framework (NPPF) states that the planning system should 'contribute to and enhance' the natural and local environment by, in part:

- Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity.

Other key principles of the NPPF which relate to biodiversity are:

- The conservation of international and national statutorily designated sites;
- Protection of ancient woodland and veteran trees;
- The creation, protection, enhancement and management of networks of biodiversity and green infrastructure;
- The preservation, restoration and recreation of priority habitats and ecological networks, and;
- The recovery of priority species populations.

The NPPF provides information relating to the approach to be taken within the planning system, including the production of Local Development Plans and the determination of planning applications for Local Planning Authorities. The principles set out within this framework should be reflected at a local level

in Local Development Frameworks and other planning policy documents for that area.

### 2.2 LOCAL PLANNING POLICIES

#### 2.2.1 *District Council Local Plan*

Reading Council Local Plan (2019) contains planning policies which relate to ecology, biodiversity and/or nature conservation. Those which are considered potentially relevant to the Site are listed below:

#### **EN12: BIODIVERSITY AND THE GREEN NETWORK**

The identified Green Network, will be maintained, protected, consolidated, extended and enhanced, and development will not be permitted where it would harm sites of ecological interest or fragment the network; this includes sites of biodiversity value (such as Local Wildlife Sites, Local Nature Reserves, Biodiversity Opportunity Areas, protected and priority species and habitats, Priority and Biodiversity Action Plan habitats, and the River Thames and its tributaries) and areas that connect the network (including Local Green Space, open green spaces, and existing or potential Green Links).

New development must demonstrate how green space, landscaping and water features are designed to maintain, link to and enhance the Green Network, maximise opportunities for new assets and connections, and avoid a net loss of biodiversity or geodiversity while delivering net gains wherever possible.

Development should protect and enhance biodiversity features on and adjacent to sites, incorporate wildlife-friendly landscaping and ecological enhancements, and, only in

exceptional circumstances where impacts cannot be avoided, mitigated or compensated on-site, provide off-site compensation in accordance with recognised guidance and metrics, delivered prior to development and without replacing existing habitats.

#### EN14: TREES, HEDGES AND WOODLANDS

Individual trees, groups of trees, hedges and woodlands will be protected from damage or removal where they are of importance, and Reading's vegetation cover will be extended. The quality of waterside vegetation will be maintained or enhanced.

New development shall make provision for tree retention and planting within the application site, particularly on the street frontage, or off-site in appropriate situations, to improve the level of tree coverage within the Borough, to maintain and enhance the character and appearance of the area in which a site is located, to provide for biodiversity and to contribute to measures to reduce carbon and adapt to climate change. Measures must be in place to ensure that these trees are adequately maintained.

#### 2.2.2 Berkshire Local Nature Recovery Strategy (LNRS)

Berkshire's Local Nature Recovery Strategy (LNRS) was published in 2025. The LNRS is a spatial strategy to recover nature as per The Environment Act 2021. The priority habitats and species identified within Berkshire are listed below.

##### Priority Species:

- Adder (*Vipera berus*)

- Great crested newt (*Triturus cristatus*)
- Common toad (*Bufo bufo*)
- Palmate newt (*Lissotriton helveticus*)
- Barbastelle bat (*Barbastella barbastellus*)
- Bechstein's bat (*Myotis bechsteinii*)
- Leisler's bat (*Nyctalus leisleri*)
- Nathusius' pipistrelle (*Pipistrellus nathusii*)
- Serotine bat (*Eptesicus serotinus*)
- Grey long-eared bat (*Plecotus austriacus*)
- Eurasian beaver (*Castor fiber*)
- Eurasian harvest mouse (*Micromys minutus*)
- Hazel dormouse (*Muscardinus avellanarius*)
- European hedgehog (*Erinaceus europaeus*)
- Eurasian otter (*Lutra lutra*)
- Pine marten (*Martes martes*)
- Water vole (*Arvicola amphibius*)
- Several invertebrate species
- Several vascular and non-vascular plants
- Fungi
- Several bird species

##### Priority Habitats:

- Agricultural land and wider countryside habitats
- Wooded habitats
- Chalk habitats

- Urban habitats
- River and wetland habitats
- Heath habitats

## 2.3 LEGISLATION

### 2.3.1 *European Legislation*

The Bern Convention (The Convention on the Conservation of European Wildlife and Natural Habitats) was adopted in 1979 and came into force in 1982. To implement this agreement, the European Community adopted the EC Habitats Directive.

The EC habitats directive has been transposed into UK legislation by the Wildlife and Countryside Act (WCA) 1981 (as amended) and the Conservation of Habitats and Species Regulations, 2017. The Countryside and Rights of Way Act (CRoW) 2000 strengthened the existing wildlife legislation in the UK.

The UK has also signed The Bonn Convention (The Convention on the Conservation of Migratory Species of Wild Animals) and is therefore party to various agreements.

### 2.3.2 *National Legislation*

The WCA 1981, as amended by the CRoW 2000 and NERC Act 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention)

and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive).

The WCA gives protection to native species (especially those under threat), controls the release of non-native species, enhances the protection of SSSIs and builds upon the rights of way rules in the National Parks and Access to the Countryside Act 1949.

The NERC Act places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations. Please see [Appendix C](#) for protected species legislation relevant to the Site.

## 3 Methodology

### 3.1 GUIDELINES FOR ECOLOGICAL IMPACT ASSESSMENT

This report has been produced based on the Guidelines for Ecological Impact Assessment (Chartered Institute of Ecology and Environmental Management, 2019). It includes an overview of Phase 1 and Phase 2 ecology surveys and identifies, quantifies and evaluates the potential effects of the development on habitats, species and ecosystems on Site.

### 3.2 SCOPE OF THE ASSESSMENT

This assessment has been produced to identify which ecologically important features lie within the zone of influence (Zol) of the proposed development and to assess how they will be impacted by the proposed works. Ecologically important features considered within this assessment include statutory and non-statutory designated sites, protected and important species and habitats.

Important ecological features have been identified and assessed against potential environmental changes to which they are likely to be sensitive, considering the spatial and temporal scope of the proposed development. The Zol of the proposed development differs depending on the ecological features and other factors such as time of year, time of day, hydrological connectivity, and/or the life stage of a species (CIEEM, 2018). Therefore, the Zol for each ecological feature is not listed but is referred to in the assessment when necessary.

The desk study area to inform the Zol was defined as within:

- International statutory designated sites within 2km;
- National statutory sites within 1km;
- Non-statutory sites within 1km;
- Protected and important species and habitats within a 2km radius of the Site.

The survey area of the field survey was informed by Zol and was defined as:

- Habitats present on Site and those of interest surrounding the Site;
- Invasive non-native species list under Schedule 9 of the Wildlife and Countryside Act 1981 present within the Site boundary;
- Reptile habitat and presence on Site;
- Bat roosts on Site;
- Foraging and commuting habitats for bats on Site and in the bordering hedgerows and trees;
- Badger setts and foraging habitats on Site and within the surrounding hedgerow and woodland habitats;
- Great crested newt habitat on Site and within 250m of the Site;
- Common nesting birds present on Site and on the habitats surrounding the Site;

- Hedgehog habitats present on Site and within the boundaries.

### 3.3 DESK STUDY

To provide contextual background to this project, a desk study was undertaken in September 2025 by Maydencroft Limited. The desk study searched for statutory and non-statutory designated sites and protected and important species and habitats within the Zol. The desk study was conducted using online sources such as Magic Map alongside data on protected/notable species and local sites from the Thames Valley Environmental Records Centre (TVERC).

### 3.4 HABITAT SURVEY

The Site survey was undertaken on 5<sup>th</sup> September 2025 by Assistant Ecologist Jasper Carnell of Maydencroft Limited. The weather during the survey was sunny with minimal cloud cover. The survey involved an assessment of the habitats and a search for indicative evidence of habitual use by protected and important species.

#### 3.4.1 *Limitations*

Areas of scrub forming part of the woodland understorey to the east were dense and locally inaccessible. However, this is not considered a significant limitation, as the scrub is relatively narrow in extent and the majority of the area could be adequately assessed through visual inspection.

### 3.5 BADGERS

#### 3.5.1 *Badger sett monitoring*

A badger sett was identified within the working area during the initial habitat survey, alongside several other signs of badger activity including badger hair and snuffle holes. As such, camera monitoring of the sett was recommended.

Badger sett monitoring commenced on 1<sup>st</sup> December and concluded on 22<sup>nd</sup> December. The monitoring was conducted by Jasper Carnell and Lorena Sinclair of Maydencroft. Browning infrared trail cameras were set out to monitor all six of the burrow entrances and were monitored by a surveyor every seven days. The holes were also assessed by placement of sticks; a precautionary measure in case of camera malfunction.

#### 3.5.2 *Limitations*

Badger activity is typically reduced during the winter months; however, larger setts with multiple entrances, such as the sett identified during the survey, commonly remain active year-round and are likely to continue to be in use over winter. As such, the seasonal timing of the survey is not considered to represent a significant limitation to the assessment of sett presence or status.

### 3.6 BATS

#### 3.6.1 *Preliminary Bat Roost Assessment*

The initial assessment of habitats during the initial PEA survey of the Site highlighted potential for roosting bats on

Site. A Preliminary Bat Roost Assessment (PBRA) of the buildings on Site prior to development were recommended.

A PBRA survey was carried out on 1<sup>st</sup> December by Hannah-May Yetman and Jasper Carnell of Maydencroft Limited. The survey was conducted to assess the potential of the buildings on Site to support roosting bats. The survey was conducted following best practice guidance (BCT 2023), as shown in Table 1. The weather during the survey consisted of overcast and light rain, with temperatures reaching 12°C and humidity at 95%.

The buildings were inspected externally from ground level using binoculars, to identify potential ingress and egress points for bats. Internal access was not arranged. The survey also looked for evidence of bats including the presence of roosting bats, droppings, scratch marks, staining and feeding remains.

Best practice guidance was utilised to assign suitability (BCT, 2023) based on the number and type of features identified within the building. Table 2 details the suitability categories.

**Table 2.** Guidance for assessing potential suitability of buildings for bats (BCT, 2023).

| Suitability | Description                                                                                                                                                                                                                                                       |
|-------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| None        | No habitat features on site likely to be used by any roosting bats at any time of the year.                                                                                                                                                                       |
| Negligible  | 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.                                                                     |
| 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 and/or suitable |

| Suitability | Description                                                                                                                                                                                                                                                                                                                                                                |
|-------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|             | surrounding habitat to be used on a regular basis or by larger numbers of bats.                                                                                                                                                                                                                                                                                            |
| Moderate    | A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitats but unlikely to support a roost of high conservation status.                                                                                                                                                     |
| 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 and surrounding habitats. These structures have the potential to support high conservation status roosts – maternity or hibernation |

### 3.6.2 Ground Level Tree Assessment

A GLTA was undertaken on Site on 28<sup>th</sup> January by Jasper Carnell of Maydencroft Limited. The GLTA included a ground-level search for PRFs on the trees present on Site. The surveyor was equipped with; binoculars, a laser clinometer, diameter at breast height tape and surveying forms. The survey was conducted following best practice guidance (BCT 2023, BTHK, 2024).

Information collected about the trees included: phase 1 habitat type, tree species, tree height, whether the tree is alive/dead, diameter at breast height, and number of stems present. Information collected about the PRFs included: whether the PRF is on the stem or limb, the PRF type, height and facing direction of the PRF and its suitability (descriptions shown in Table 3).

**Table 3.** Guidance for assessing potential suitability of trees for bats (BCT, 2023).

| Suitability       | Description                                                                                                                       |
|-------------------|-----------------------------------------------------------------------------------------------------------------------------------|
| <b>Negligible</b> | Either no PRFs in the tree or highly unlikely to be any                                                                           |
| <b>FAR</b>        | Further assessment required to establish if PRF are present in the tree                                                           |
| <b>PRF-I</b>      | PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitat |
| <b>PRF-M</b>      | PRF is suitable for multiple bats and may therefore be used by a maternity colony                                                 |

### 3.7 ASSESSMENT

Significance has been determined within geographical contexts and the legal protection afforded to habitats and species within those geographical contexts. The geographical importance of each habitat and species within the Zol. Table 4 outlines the criteria utilised to assess the importance of ecological features.

Ecological impacts were determined following the below criteria:

- Positive or negative impact
- Extent of the impact
- Magnitude of the impact
- Duration of the impact
- Frequency and timing of the impact
- Whether the impact is reversible or not.

The assessment will only discuss the characteristics of the impact where they are relevant to determining the significance of the impact.

**Table 4.** *Geographic importance of habitats and species (CIEEM 2018).*

| Geographic importance | Description                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |
|-----------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>International</b>  | Natura 2000 sites such as Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar sites are considered to be of international importance.<br>Areas of habitats or populations of species which would qualify for Natura 2000 site status but is not currently designated. (ie the amount of habitat present or number of species present meet the criteria for designation) are considered internationally important.                                                                             |
| <b>National</b>       | Sites of Special Scientific Interest (SSSI) or National Nature Reserves (NNR) are considered to be of national importance. Areas of habitats or populations of species which meet the criteria for SSSI designation but are not yet designated, are considered to be of national importance.<br>All areas of ancient woodland and all veteran trees are considered to be of national importance.<br>Habitats and Species of Principal Importance within the NERC Act (2006) are considered to be of national importance. |
| <b>Regional</b>       | Regional is utilised only when valuing foraging and commuting habitats for bats.                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>County</b>         | Non-statutory designated sites are determined to be of county importance.                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <b>District</b>       | District is utilised only when valuing foraging and commuting habitats for bats.                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| <b>Local</b>          | Common and widespread habitats and species within the study area in proportions greater than may be expected in the local context.                                                                                                                                                                                                                                                                                                                                                                                       |
| <b>Negligible</b>     | Common and widespread habitats and species within the study area which do not exceed those of the surrounding area. Areas of urban or heavily modified habitats.                                                                                                                                                                                                                                                                                                                                                         |

A significant effect is an effect that either supports or undermines biodiversity conservation objectives for important

ecological features or for biodiversity in general (CIEEM 2018). Where significant effects are present, they have been classified at an appropriate geographic scale.

### 3.7.1 *Mitigation hierarchy*

The mitigation hierarchy is comprised of four principals: avoidance, mitigation, compensation and offset to enhance biodiversity. Throughout the project, the mitigation hierarchy has been followed, where possible, impacts have been avoided. Where they could not be avoided sufficient mitigation has been outlined. Where mitigation is not sufficient, compensation and enhancements have been recommended.

## 3.8 SURVEYOR QUALIFICATIONS

- *Jasper Carnell - Assistant Ecologist, MSci (Hons) QCIEEM*

*Jasper has over one years' experience carrying out ecological surveys including Preliminary Ecological Appraisals, Biodiversity Net Gain assessments, protected species surveys and reporting.*

- *Hannah Yetman - Ecologist, BSc (Hons) ACIEEM AMIEnvSc*

*Hannah has over four years of professional survey, reporting, consultancy and project management experience. She also holds Level 1 Class Licences for Great Crested Newt and Bat (2023-11686-CL17-BAT) and is a certified tree climber.*

## 4 Baseline Ecological Conditions

### 4.1 DESIGNATED SITES

#### 4.1.1 International Statutory Sites

No international statutory sites are located within 2km of the Site boundary.

#### 4.1.2 National Statutory Sites

No statutory sites are located within 2km of the Site boundary of national importance.

#### 4.1.3 Non-Statutory Sites

There are nine non-statutory sites located within 2km of the Site. The four local wildlife sites (LWS) that fall within 1km of the Site are described within Table 5.

**Table 5.** Non-statutory designated sites within 1km of the Site, including their proximity to the Site and a summary of their ecological importance.

| Site name                          | Distance from Site | Reason for designation                                                                                                                                                                                                                                                                                  |
|------------------------------------|--------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Fobney Island LWS                  | 350m NW            | This site features a mosaic of wetland habitats, created water bodies, and neutral grassland with MG1 community characteristics. The area is bounded by pollarded willows and includes adjacent broadleaf woodland and willow-based wet woodland, though not qualifying as a NERC s41 Priority Habitat. |
| Fobney & Kennet Valley Meadows LWS | 400m N             | A large area of permanent pasture with some wet grassland and patches of swamp vegetation. The site has a good series of ditches with tall wetland and aquatic species and a small area of woodland.                                                                                                    |

| Site name                     | Distance from Site | Reason for designation                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
|-------------------------------|--------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Holy brook LWS                | 900m N             | The Holy Brook, a chalk stream connected to the River Kennet, flows through a variety of habitats from west of Burghfield Road to the Reading Inner Distribution Road, where it becomes canalised.                                                                                                                                                                                                                                                                                                             |
| River Kennet & Avon Canal LSW | 350m N             | This area holds significant ecological value due to its high-quality chalk river and calcareous canal waters. It supports diverse wetland and aquatic vegetation, particularly around Fobney Island, including numerous typical species such as reed canary-grass, yellow flag-iris, and purple loosestrife. The site is an important wildlife corridor with a known population of water voles and a rich invertebrate community, including 22 species of damselflies and dragonflies - 13 confirmed breeding. |

### 4.2 HABITATS

#### 4.2.1 Other lowland mixed deciduous woodland (w1f7)

The woodland is composed primarily of young, mixed broadleaved stands with a relatively even age structure. This is likely due to the majority of trees having been planted, many of which still retain their tree guards. The canopy layer includes field maple (*Acer campestre*), buckthorn (*Rhamnus cathartica*), hazel (*Corylus avellana*), wild cherry (*Prunus avium*), hawthorn (*Crataegus monogyna*), ash (*Fraxinus excelsior*), holly (*Ilex aquifolium*), blackthorn (*Prunus spinosa*), crack willow (*Salix fragilis*), dogwood (*Cornus sanguinea*), goat willow (*Salix caprea*), white poplar (*Populus alba*), and white willow (*Salix alba*). Trees are densely spaced and relatively slender, indicating an early to mid-successional stage of woodland development. The canopy is dense and largely closed, allowing little light penetration, which has resulted in a predominantly bare and open ground layer.

Where an understory is present, it mainly consists of regenerating shrubs, saplings, and coppice shoots. Around the woodland periphery, patches of garlic mustard (*Alliaria petiolata*) are established. Additional areas of scrub, including blackthorn, hawthorn, dogrose (*Rosa canina*), and bramble (*Rubus fruticosus* spp.), occur predominantly at the woodland edges, although they are generally sparse. Nettles (*Urtica dioica*) are present along the woodland edge at the southwest corner near the car park. Moss cover is minimal, and there is little evidence of wetland or hydrophilic ground flora, suggesting the Site is generally well-drained. A dry ditch runs along the boundary fence line, which may occasionally hold water. This feature appears seasonal and weather-dependent, as no associated marginal vegetation was recorded. The ditch also contained scattered human litter.

The woodland supports a high volume of standing and fallen deadwood, particularly where trees have been outcompeted by neighbouring specimens. This provides valuable hibernacula for fauna, supplemented by anthropogenic refugia such as rubble and cut logs. Some disease symptoms were noted on the leaves of hazel and field maple, with a few individuals showing signs of stress. Evidence of browsing pressure was also observed, with seedlings and saplings exhibiting damaged stems and leaves.

#### 4.2.2 Modified grassland (g4)

At the entrance to the STW is a small, regularly mown grass verge. The sward is uniformly short and species-poor, with low overall diversity. The species assemblage is typical of modified roadside verges, comprising common and widespread species such as dandelion (*Taraxacum officinale*

agg.), perennial ryegrass (*Lolium perenne*), false oat-grass (*Arrhenatherum elatius*), cocksfoot (*Dactylis glomerata*), curly dock (*Rumex crispus*) and common nettle.

#### 4.2.3 Buildings (u1b5)

On the western boundary of the Site, there is a green, flat-roofed temporary office cabin measuring approximately 2.5m in height, 6m in length and 3m in width, with metal-framed windows. Evidence of human activity is present in the surrounding area, including litter, barrels and wood debris.

A second structure is also present, comprising a small brick-built utility building measuring approximately 2m in height, 1.5m in width and 2.5m in length. The building is in a state of disrepair, with the door missing and the roof partially collapsed inwards.

Several temporary buildings are present upon the hardstanding car park. This includes five galvanised metal containers of varying size, the majority of which are approximately 8-10m in length and 3m wide. Situated within the east side of the carpark are two temporary cabins, both appear to be recently installed featuring PVC windows and flat roofs.

#### 4.2.4 Other developed land (u1b6)

The majority of the Site comprises a hardstanding carpark with several temporary buildings present.

#### 4.2.5 Habitats adjacent to Site

A wet ditch is present to the north of the woodland, next to the road. The ditch is predominately dry with areas of high

turbidity water present and no marginal vegetation. There is a lot of litter present within the ditch and it is heavily shaded by woody vegetation including goat willow, hazel and bramble. The ditch is approximately 2m wide and steep banked.

To the south of the woodland is an area of modified grassland which is partially mown. The grassland is comprised of ribwort plantain (*Plantago lanceolata*), false oat-grass (*Arrhenatherum elatius*) and cock's-foot (*Dactylis glomerata*). To the west of the Site is an area of dense bramble scrub with nettle and scattered trees.

## 4.3 SPECIES

### 4.3.1 Amphibians

#### 4.3.1.1 Desk Study

The TVERC data search returned 15 records of four amphibian species within 2km of the Site: common frog (*Rana temporaria*), common toad (*Bufo bufo*), great crested newt (*Triturus cristatus*), and smooth newt (*Lissotriton vulgaris*). A single record of great crested newt was identified 1.89km south of the Site in 2011.

#### 4.3.1.2 Site Suitability

The woodland on Site provides suitable habitat for terrestrial phase amphibians, including great crested newt (GCN). However, there are no suitable waterbodies within 500m of the Site. In addition, the River Kennet is present to the north and the A33 to the east of the Site, which are likely barriers to movement for amphibians. As such, amphibians, including GCN are considered likely absent from Site.

### 4.3.2 Bats

#### 4.3.2.1 Desk Study

The TVERC data search returned eight species of bat recorded within 2km of the Site: brown long-eared (*Plecotus auritus*), common pipistrelle (*Pipistrellus pipistrellus*), Daubenton's (*Myotis daubentonii*), Leisler's (*Nyctalus leisleri*), Nathusius' pipistrelle (*Pipistrellus nathusii*), noctule (*Nyctalus noctula*), serotine (*Eptesicus serotinus*) and soprano pipistrelle (*Pipistrellus pygmaeus*).

The closest record to the Site was a common pipistrelle 90m north of Site in 2016. The most recent record was also a common pipistrelle from 2024, 1.45km north of the Site.

#### 4.3.2.2 Site Suitability

The woodland on Site is considered to be of "moderate" suitability for foraging and commuting bats due to the presence of other woodlands and linear wooded features within the locality as well as the presence of waterways in the locality.

A number of the trees within the woodland on Site are considered to be suitable for roosting bats. In addition, the two buildings on Site may offer suitability for roosting bats.

#### 4.3.2.3 Preliminary Bat Roost Assessment

A PBRA survey was carried out to assess the potential of the buildings on Site to support roosting bats. Two buildings were present within the woodland.

Building 1 is a small electrical control structure measuring approximately 2m in length, 1m in width and 2m in height. It is constructed of painted breezeblock walls with a door frame on the eastern elevation, although the door itself is missing.

The timber roof has collapsed and the bitumen felt covering is largely absent or torn. The interior contains what appear to be disused electrical cabinets. Owing to the collapsed roof, exposed interior and absence of any enclosed or sheltered features, this structure provides no suitable roosting opportunities for bats.

Building 2 is an old temporary office cabin with rigid flat walls clad externally in vinyl. Windows are present on the northern, western and eastern elevations, with a door on the southern elevation. The roof is flat and covered with bitumen felt, though its condition could not be fully confirmed. Internally, wooden cladding is present and, while small gaps are visible in the ceiling, there is no void between the ceiling and roof. One east-facing window is partially open, but the interior is heavily cobwebbed and screened by a lowered blind. No features with potential to offer shelter, crevices or roosting opportunities for bats were identified within this structure.

Several other temporary buildings were present within the hardstanding car park. These include five galvanised metal containers of varying sizes, the majority measuring approximately 8–10m in length and 3m in width. All are of a construction type and material that offers negligible bat roosting potential. In the eastern section of the car park, two temporary cabins were also observed. Each cabin features two doors, PVC windows and flat roofs. Both appear newly installed and are well-sealed, with no features suitable for bat roosting.

Given the absence of features that may provide potential roosting opportunities for bats, the buildings are assessed as having 'negligible' suitability for roosting bats.

#### 4.3.2.4 Ground Level Tree Assessment

A GLTA was undertaken, comprising a ground-level search for PRFs on the trees present on Site and immediately adjacent. The GLTA identified three trees with potential roosting features. The features were classified as "FAR", meaning that it required further assessment for its roost suitability. The results of the GLTA are summarised in Table 6.

**Table 6.** PRFs identified during the GLTA.

| Tree No. | Species      | DBH  | Location              | Feature ID | Description                                                                                                                                                    |
|----------|--------------|------|-----------------------|------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1        | White Willow | 25cm | Twins.every.losses    | a          | Wound, south facing, 4m high, semi-mature tree, rot cavity beneath dead branch with 3cm opening.                                                               |
| 2        | White Willow | 20cm | Metals.copy.dots      | a          | Wound, southeast facing, 4m high, semi-mature tree, main stem has died back, wound at union with 4cm opening                                                   |
| 3        | White Willow | 35cm | Enjoyable.shunts.mild | a          | Frost crack on western stem, north facing, 7m high, semi-mature dual-stemmed tree, 3cm opening at apex of frost crack. Additional frost crack at rear of limb. |

| Tree No. | Species | DBH | Location | Feature ID | Description                                                                                 |
|----------|---------|-----|----------|------------|---------------------------------------------------------------------------------------------|
|          |         |     |          | b          | Frost crack on stem leaning east, south facing, 6m high, 2cm opening at apex of frost crack |

The three trees are located just outside the works boundary. Tree 1 is located within 5m. See Figure 3.



Figure 3. Location of the PRFs in relation to the Site boundary

### 4.3.3 Badger

#### 4.3.3.1 Desk Study

A total of 120 badger (*Meles meles*) records were returned in the data search. The closest record of a badger (*Meles*

*meles*) was found 330m northeast of the Site in 2020. The most recent record is from 2024, 1.25km north of the Site.

#### 4.3.3.2 Site Suitability

The woodland on Site provides suitable habitat for setting, foraging and commuting badgers.

During the PEA survey two potential setts were identified on Site; the first is adjacent to the buildings on the western boundary of the woodland and is comprised of six holes. Bare ground was present around the holes and a distinct lack of leaf litter, suggesting recent excavations. Some evidence of snuffling around the buildings is also present and a badger hair was found close to one of the entrances. The sett does not appear to be regularly used but does not show conclusive signs of being disused.

The second potential sett was identified to the east of the woodland, close to the STW access road. The feature was heavily constrained by surrounding blackthorn, preventing a full assessment at the time; however, approximately 1–3 holes were noted.

This area was subsequently revisited during the GLTA, when improved access allowed further inspection. The burrows were then determined to be unsuitable for badger use. Notwithstanding this, a badger scatt was recorded to the east of the Site, alongside a concentration of badger hairs in close proximity.

These findings confirm that badgers utilise the woodland, although the frequency of use remains uncertain.

#### 4.3.3.3 Badger Sett Monitoring

The badger sett entrances located within 30m of the working area were monitored using Browning trail cameras. All footage on the infrared cameras was analysed and an assessment was made of the likely status of the badger sett.

The assessment found no evidence of badgers utilising the potential setts. Over a three-week period, no badgers were caught on any of the cameras. Footage recorded species such as fox (*Vulpes vulpes*), rabbits (*Oryctolagus cuniculus*), rats (*Rattus norvegicus*), and species of birds foraging and commuting through the area.

#### 4.3.4 Birds

##### 4.3.4.1 Desk Study

The TVERC data search returned 8,952 bird records across 125 species. The closest bird record to the Site was a yellowhammer (*Emberiza citrinella*) 440m west in 2013. The most recent record was a wigeon (*Mareca Penelope*) from 2023, 460m west of the Site.

##### 4.3.4.2 Site Suitability

The woodland on Site provides ample opportunities for woodland nesting birds and is considered likely to be utilised by a number of woodland nesting species during the bird nesting season (March – August, inclusive).

#### 4.3.5 Hazel dormouse

##### 4.3.5.1 Desk Study

No records of hazel dormouse (*Muscardinus avellanarius*) were returned within 2km of the Site, according to the TVERC data search.

#### 4.3.5.2 Site Suitability

The woodland on Site is relatively young and does not have the structure and diversity typical for woodlands colonised by hazel dormice. In addition, the species are not known to be present within the locality. As such, hazel dormice are considered likely absent from Site.

#### 4.3.6 Invertebrates

##### 4.3.6.1 Desk Study

The TVERC data search returned 85 species of invertebrates across seven groups: beetles, butterflies and moths, dragonflies and damselflies, true flies, true bugs and snails. The most frequent species was the stag beetle (*Lucanus cervus*) recorded 143 times. The closest record to the Site is a common darter (*Sympetrum striolatum*) 230m north in 2015. The most recent record was a stag beetle (*Lucanus cervus*) from 2023, 1.26km from the Site.

##### 4.3.6.2 Site Suitability

The woodland on the Site is considered suitable for a range of common and widespread invertebrate species; however, it is too young and lacks the structural diversity necessary to support a significant assemblage of invertebrates. Additionally, the woodland does not contain sufficient deadwood to support stag beetles, although this species is known to occur in the surrounding area.

#### 4.3.7 Hedgehog

##### 4.3.7.1 Desk Study

37 records of European hedgehog (*Erinaceus europaeus*) were returned in the data search. The closest record was

380m north of the Site from 2020. The most recent record was from 2023, 1.3km east of the Site.

#### 4.3.7.2 Site Suitability

No evidence of hedgehog was identified during the Site survey however; the woodland is considered to be suitable for sheltering and commuting hedgehogs. Hedgehogs typically stick to the edge of woodlands, therefore, may utilise the western and southern edges for sheltering.

### 4.3.8 Reptiles

#### 4.3.8.1 Desk Study

According to the TVERC data search, two species of reptiles have been reported within a 2km radius of the Site: grass snake (*Natrix helvetica*) (24 records) and slow worm (*Anguis fragilis*) (63 records). The closest record of grass snake was found 106m northwest of the Site in 2016. The most recent was from 2020, 815m north of Site. The closest record of slow worm was from 2016, 102m northwest of the Site. The most recent was from 2022, 1km west of the Site.

#### 4.3.8.2 Site Suitability

It is considered likely that reptiles may utilise the woodland on Site for sheltering and hibernating. This is considered likely due to the presence of grassland and scrub to the south and west of the Site. In addition, other suitable habitats such as rough grassland and waterways are present further to the south, west and northwest. As such, reptiles cannot be discounted from Site.

### 4.3.9 Water voles

#### 4.3.9.1 Desk Study

The TVERC data search returned 26 records of European water vole (*Arvicola amphibius*). The closest record was 210m north of the Site in 2020, while the most recent record was from 2022, 805m west of the Site.

#### 4.3.9.2 Site Suitability

It is considered likely that water voles utilise the various waterways in the surrounding area; however, the dry and wet ditches on the Site are not considered suitable due to limited water depth and the absence of marginal vegetation. As water voles typically remain close to the banks of the rivers and streams they inhabit, it is considered highly unlikely that they are present on the Site.

### 4.3.10 Otter

#### 4.3.10.1 Desk Study

The TVERC data search returned eight records of otter (*Lutra lutra*). The closest record to the Site is 265m northwest in 2018. The most recent record is from 2023, 1.65km west of the Site.

#### 4.3.10.2 Site Suitability

It is considered likely that otters utilise the various waterways surrounding the Site. The woodland on Site provides suitable habitat for resting otters however, there is a lack of understorey or low-lying vegetation to provide shelter. As such, it is considered unlikely that otters utilise the Site.

### 4.3.11 Invasive species

No invasive species have been recorded on Site.

## 5 Impact Assessment & Mitigation Measures

### 5.1 DESIGNATED SITES

The mitigation hierarchy will be followed to include in order: avoidance of impacts, mitigation of impacts and compensation for loss/impacts. Where avoidance and mitigation cannot be achieved, compensation will be required and biodiversity net gain will be utilised to ensure that all losses are adequately compensated and a gain in biodiversity is achieved through the development on Site.

#### 5.1.1 Statutory Sites

The Site does not lie within any statutory wildlife site designations but is located within a Site of Special Scientific Interest Impact Risk Zone (SSSI IRZ). Natural England has identified three development types that are considered to constitute a threat to local SSSIs within the IRZ. The proposed works do not fall into any of the categories and is therefore unlikely to impact the SSSI.

#### 5.1.2 Non-Statutory Sites

The Site does not lie within any non-statutory wildlife site designations.

### 5.2 HABITATS

The mitigation hierarchy will be followed to include in order: avoidance of impacts, mitigation of impacts and

compensation for loss/impacts. Where avoidance and mitigation cannot be achieved, compensation will be required.

#### 5.2.1 Other lowland mixed deciduous woodland

The woodland areas on Site will be permanently destroyed through the development. This is considered ecologically significant at a regional level and lowland mixed deciduous woodland is considered a Habitat of Principal Interest (HPI). The loss of the lowland mixed deciduous woodland will require compensation through Biodiversity Net Gain.

#### 5.2.2 Modified grassland

The modified grassland area on Site will be permanently destroyed through the development. This is not considered ecologically significant, though will require compensation through Biodiversity Net Gain.

#### 5.2.3 Buildings

Both buildings within the woodland will be removed to facilitate the development. This is not considered ecologically significant.

#### 5.2.4 Other developed land

The hardstanding on Site may be impacted by the works; however, this is not considered ecologically significant.

#### 5.2.5 Habitats adjacent to Site

The wet ditch, modified grassland and dense bramble scrub may incur temporary disturbance and damage during the felling of the woodland and construction of the car park. This

is not considered ecologically significant however, impacts should be minimised where possible.

## 5.3 SPECIES

### 5.3.1 *Amphibians*

Due the absence of suitable waterbodies within 500m of the Site, GCN are considered likely absent, therefore, no impacts are anticipated.

### 5.3.2 *Bats*

#### 5.3.2.1 *Predicted impacts*

##### *Roosting*

The majority of the woodland is composed of young and regenerating trees, which have negligible potential to support roosting bats. However, three trees have been identified containing PRFs, therefore the Site is assessed as having potential to support roosting bats and there is potential for killing/injury of bats and/or damage/destruction to bat roosts.

##### *Foraging/commuting*

To facilitate the works, loss of suitable foraging/commuting habitat will occur. This permanent loss of an area of “moderate” suitability foraging and commuting habitat is considered ecologically significant at a regional level. As such, compensation measures will be needed. Furthermore, there is potential for indirect impacts from artificial lighting during the works if mitigation measures are not put in place.

#### 5.3.2.2 *Mitigation measures*

Immediately prior to the commencement of works, the identified potential roost feature (PRF) within Tree 1 will be subject to an inspection by a suitably qualified and licensed ecologist. Works may only proceed once it has been confirmed that the PRF is not being used by roosting bats at the time of inspection.

Should evidence of a bat roost be identified, works in the affected area must cease immediately and ecologist advice sought. Works may only recommence once appropriate mitigation has been agreed, which may include the requirement to obtain a mitigation licence from Natural England.

A 5m buffer must be maintained around Trees 2 and 3, within which no heavy plant, machinery, or ground disturbance shall occur. Should the plans be revised such that the removal of Trees 2 and/or 3 becomes necessary, all associated PRFs must first be inspected by a suitably qualified ecologist prior to any works taking place.

The following lighting mitigation should be followed. The mitigation is outlined within the Bat Conservation Trust and Institution of Lighting Professional Guidance note:

- All works should be undertaken during normal working daylight hours. Any artificial lighting (if absolutely required) should not illuminate the boundary habitats;
- Where security lighting is required, it is recommended that these are motion activated with hooded luminaires and directed away from the boundaries, particularly the southern or eastern boundary;

- Any new temporary or permanent lighting should be designed to avoid light-spill onto the Site boundaries and boundary vegetation. If permanent lighting is to be installed it must follow the principles of mitigation as outlined within the Bat Conservation Trust and Institution of Lighting Professionals Guidance Note.

Mitigation measures for external street lighting will include:

- Only luminaires with an upward light ratio of 0% should be used;
- All external luminaires used on Site should lack UV elements and be warm white coloured (ideally < 2700 Kelvin) to reduce blue-light components;
- LED luminaires should be used due to their sharp cut-off, lower intensity, good colour retention and dimming capability;
- Where security lighting is installed, this should be motion-activated;
- Lights should not be directed at boundary vegetation. Where required, lights can be fitted with hoods, baffles or louvres to reduce back-spill.

A lighting design strategy for bats should be created prior to works commencing to ensure that external lighting follows the above recommendations and does not produce excessive light spill.

### 5.3.3 Badger

#### 5.3.3.1 Predicted impacts

No badgers were recorded utilising the identified potential setts during the three-week period of camera monitoring.

However, evidence of badger activity was identified during previous surveys of the Site. As a result, the presence and continued use of the Site by badgers cannot be ruled out due to their mobile nature.

There is potential for causing damage/destruction of a badger sett and/or killing/injury to badgers, resulting in a contravention of the law.

#### 5.3.3.2 Mitigation measures

As there is an inactive sett present within the Site boundary, sett exclusion and destruction will be undertaken as soon as practicable. Prior to work commencing, the sett will be monitored using motion-activated trail cameras for a minimum of 48 hours to confirm continued inactivity. Following confirmation, all existing tunnel systems in close proximity to infrastructure will be carefully destroyed using a small hydraulic excavator, prior to surface reprofiling and over-meshing. This approach will provide additional security against future badger incursions in proximity to sensitive infrastructure.

Upon completion of sett destruction and prior to any proofing works, any necessary reprofiling will be undertaken using hand-held tools or a hydraulic excavator fitted with a non-toothed bucket, under the supervision of an Ecologist. Should any evidence of badger activity be identified at any stage, works will cease immediately and further advice will be sought from a suitably licensed ecologist.

It is recommended that a pre-commencement walkover survey be undertaken no more than three months prior to the start of works. This survey should cover the working area and

a 30m buffer around its perimeter, and be conducted by a suitably experienced ecologist.

The survey should assess for signs of badger activity, including the presence of setts (new or reoccupied), latrines, well-worn paths, snuffle holes, hair traces, footprints, and scratching posts at the base of trees.

If an active sett is identified and is likely to be disturbed or damaged by the proposed works, a licence from Natural England will be required. Any sett closure must be completed in accordance with the conditions of the licence and can only be undertaken between July and November, outside the badger breeding season.

To prevent accidental harm to badgers and other mammals during construction, the following precautions are also recommended:

- All excavations should be covered overnight or fitted with escape ramps (e.g. a plank at no steeper than a 30° angle).
- Any temporarily open pipework should be capped to prevent entry by wildlife.

These measures will help minimise the risk of injury or disturbance to badgers and other terrestrial mammals during the construction phase.

Any fencing required around the working area should be designed to allow the movement of Badgers and other species through the Site and into the wider area.

#### 5.3.4 *Birds*

##### 5.3.4.1 *Predicted impacts*

Destruction of, or damage to, active birds' nests throughout the development, resulting in a contravention of the law.

##### 5.3.4.2 *Mitigation measures*

Vegetation clearance should be undertaken outside bird nesting season i.e. during the period September to February (inclusive – as a guide). If this is not possible, all areas impacted should first be checked for active nests by an ecologist or other suitably qualified individual. In the event that nesting activity is identified, certain aspects of the work in the vicinity of the nest will need to cease until the birds have finished nesting and the young have fledged.

#### 5.3.5 *Hazel dormouse*

##### 5.3.5.1 *Predicted impacts*

Hazel dormouse is considered likely absent from Site; therefore, no impacts are anticipated.

#### 5.3.6 *Hedgehog*

##### 5.3.6.1 *Predicted impacts*

Due to suitable habitats on Site and records showing that they are present in the local area, there is potential for killing/injury of hedgehog during the works. This impact is considered ecologically significant at a local level.

##### 5.3.6.2 *Mitigation measures*

If the removal of any sheltering/hibernation habitat is required to facilitate the works then a walkover survey will be undertaken by an Ecologist immediately prior to works. A hand search of any identified suitable habitat will be carried out by an Ecologist immediately prior to clearance. Any

hedgehogs found will be carefully removed and placed in suitable habitat within woodland, scrub or hedgerow away from the development but remaining within suitable surrounding habitat.

Any excavations on Site must be covered overnight or a means of escape provided for any hedgehogs which may become trapped within the excavation. The excavations, if left open, will need to be inspected daily prior to works commencing.

If any equipment or materials are to be stored on Site overnight, all possible entrances must be blocked and checked for wildlife the following morning prior to work commencing. If present, the Ecologist should be contacted for advice.

### 5.3.7 *Invertebrates*

#### 5.3.7.1 *Predicted impacts*

The habitats on Site are not considered suitable to support an important assemblage of invertebrates. As such, the impacts are not considered ecologically significant and will not be considered further.

### 5.3.8 *Reptiles*

#### 5.3.8.1 *Predicted impacts*

Due to removal of suitable reptile habitat, there is the potential for killing/injury to reptiles during the works resulting in a contravention of the law.

#### 5.3.8.2 *Mitigation measures*

All dense vegetation should be cleared in a two-stage process (as mentioned above) under the supervision of a qualified

ECoW to minimise the risk to protected species and reptiles. In addition, any habitat features such as rubble piles, log stacks, brash piles, or deadwood must be carefully dismantled by hand under ECoW supervision if removal is required.

### 5.3.9 *Otter*

#### 5.3.9.1 *Predicted impacts*

Due to lack of appropriate habitat on Site and lack of records within the local area, otters are considered likely absent, and therefore no impacts anticipated.

### 5.3.10 *Water vole*

#### 5.3.10.1 *Predicted impacts*

Due to lack of suitable habitat on Site and lack of records within the local area, water voles are considered likely absent, and therefore no impacts anticipated.

### 5.3.11 *Invasive species*

#### 5.3.11.1 *Predicted impacts*

No invasive species were identified on Site; therefore, no impacts are anticipated.

## 5.4 **RESIDUAL EFFECTS**

The measures detailed above avoid and/or mitigate the impacts to protected species on Site. Table 5 below summarises the impacts, including residual impacts, to ecological receptors in order to facilitate the development on Site. The proposed mitigation has reduced several likely impacts to ensure minimal residual impacts post

Development. In addition, when BNG is calculated, loss of habitats will be mitigated by proposed measures.

**Table 5. Summary of impacts**

| Feature       | Details                                                                                            | Likely Impacts       | Mitigation                                                                                                                                                                 | Residual Impact       |
|---------------|----------------------------------------------------------------------------------------------------|----------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|
| Habitats      | The woodland and modified grassland on Site will need to be removed to facilitate the development. | High negative impact | No mitigation for lost habitats during development. All habitats will be compensated for through BNG.                                                                      | Low negative          |
| Birds         | Breeding birds are likely to utilise the Site.                                                     | Low negative         | Undertake development where possible outside of bird nesting season. If not possible, Ecologist to survey the area prior to commencement of the proposed development.      | Minor negative impact |
| Roosting bat  | Roosting bats may be present within trees on Site.                                                 | High negative        | Trees containing PRFS will be inspected prior to works commencing to ensure no roosting bats are present. No works will occur within 5m of retained trees containing PRFs. | No residual impacts.  |
| Foraging bats | Foraging bats are likely to utilise the habitats on Site.                                          | Low negative         | Lighting design strategy.                                                                                                                                                  | Low negative          |
| Badger        | Badger activity evident but no active setts identified during camera monitoring.                   | Moderate negative    | Inactive sett exclusion and pre-commencement badger walkover survey is required.                                                                                           | No residual impacts.  |

| Feature  | Details                         | Likely Impacts    | Mitigation                                                                                                          | Residual Impact      |
|----------|---------------------------------|-------------------|---------------------------------------------------------------------------------------------------------------------|----------------------|
| Hedgehog | Likely to be present on Site.   | Moderate negative | Any sheltering/hibernation habitat will be inspected by an Ecologist before removal.                                | No residual impacts. |
| Reptiles | Reptile may be present on Site. | Low negative      | Phased vegetation clearance, under ECoW supervision. Hibernacula to be dismantled by Ecologist if removal required. | No residual impacts. |

## 5.5 ENHANCEMENTS

### 5.5.1 National Planning Policy Framework

The National Planning Policy Framework (NPPF) requires local planning authorities to request the preservation, restoration, and recreation of priority habitats and ecological networks and the recovery of priority species populations. In addition, the works should result in no net loss of biodiversity.

### 5.5.2 Recommendations

The following list is the recommended ecological enhancement opportunities for the Site. They are not required for mitigation but would allow a greater increase in biodiversity at the Site in line with the NPPF requirements:

- Placement of hedgehog boxes on the peripheries of the new car park.

- Bat boxes should be installed on retained buildings or trees across the Site.
- Bird boxes should be installed on retained buildings or trees across the Site.

## 5.6 COMPENSTATION

The proposed development on the Site will result in the loss of habitats. As such, a calculation of net gain against the loss of habitat using Natural England's Statutory Biodiversity Metric will be conducted by a suitably qualified Ecologist to ensure all loss is compensated for and a 10% gain in biodiversity is achieved.

A baseline survey has been undertaken, completing the habitat condition assessment sheets. The data will be inputted into the metric.

Biodiversity net gain is distinguished from other forms of ecological compensation by the requirement for measurable outcomes. Losses from development and gains from an 'offset' are calculated using a single biodiversity metric, which quantifies habitats against fixed units of biodiversity.

Biodiversity offsets can be both on-site and off-site, and can involve creation, enhancement or accelerated succession of habitats. The amount of biodiversity units an offset is worth must exceed the amount of biodiversity units that will be lost as a result of development.

## 5.7 MONITORING

The BNG enhancement and creation proposals will require a Habitat Management and Monitoring Plan (HMMP) to ensure the habitats on Site are retained for 30 years post development. No further post-construction ecological monitoring is required.

## 6 Conclusions

The proposed works on Site are not considered likely to impact any internationally, nationally or locally designated sites. The habitats on Site include; other lowland mixed deciduous woodland, modified grassland and other developed land, and are considered likely to support; badgers, nesting birds, hedgehogs, reptiles and foraging and commuting bats.

A Preliminary Bat Roost Assessment, Ground Level Tree Assessment and badger sett monitoring were undertaken. The surveys confirmed the Site does not support roosting bat and the sett present on Site is inactive.

As habitat is to be permanently lost, a Biodiversity Net Gain assessment has been produced to ensure a net gain in biodiversity from the scheme. This should be read in conjunction with this report.

A number of mitigation measures will be necessary either prior to construction commencing or related to the timing of works, as detailed in Table 6.

**Table 6.** Summary of further surveys and mitigation measures on Site.

| Bats | Mitigation measures                                                                                                                                                                                                                                                                                            |
|------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|      | Immediately prior to the commencement of works, all identified potential roost features (PRFs) will be subject to an inspection by a suitably qualified and licensed ecologist. Works may only proceed once it has been confirmed that the PRFs are not being used by roosting bats at the time of inspection. |

Should evidence of a bat roost be identified, works in the affected area must cease immediately and ecologist advice sought. Works may only recommence once appropriate mitigation has been agreed, which may include the requirement to obtain a mitigation licence from Natural England.

A 5m buffer must be maintained around all retained trees on and immediately adjacent to the Site that contain PRFs, within which no heavy plant, machinery, or ground disturbance shall occur.

The following lighting mitigation should be followed:

- All works should be undertaken during normal working daylight hours. Any artificial lighting (if absolutely required) should not illuminate the boundary habitats;
- Where security lighting is required, it is recommended that these are motion activated with hooded luminaires and directed away from the boundaries;
- Any new temporary or permanent lighting should be designed to avoid light-spill onto the Site boundaries and boundary vegetation.

If permanent lighting is to be installed it must follow the principles of mitigation as outlined within the Bat Conservation Trust and Institution of Lighting Professionals Guidance Note. Mitigation measures for external street lighting will include:

- Only luminaires with an upward light ratio of 0% should be used;
- All external luminaires used on site should lack UV elements and be warm white coloured (ideally < 2700 Kelvin) to reduce blue-light components;
- LED luminaires should be used due to their sharp cut-off, lower intensity, good colour retention and dimming capability;
- Where security lighting is installed, this should be motion-activated;

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |
|-----------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | <ul style="list-style-type: none"> <li>Lights should not be directed at boundary vegetation. Where required, lights can be fitted with hoods, baffles or louvres to reduce back-spill.</li> </ul> <p>A lighting design strategy for bats should be created prior to works commencing to ensure that external lighting follows the above recommendations and does not produce excessive light spill.</p>                                                                                                                                                                                                                                                                                                                                            |
| <b>Badger</b>   | <p><i>Mitigation measures</i></p> <p>Sett exclusion and destruction will be undertaken as soon as practicable.</p> <p>A pre-commencement badger walkover survey should be undertaken no more than three months prior to the start of works.</p> <p>Any excavations on Site must be covered overnight or a means of escape provided for any badger which may become trapped within the excavation. The excavations, if left open, will need to be inspected daily prior to works commencing.</p> <p>If any equipment or materials are to be stored on site overnight, all possible entrances must be blocked and checked for wildlife the following morning prior to work commencing. If present, the Ecologist should be contacted for advice.</p> |
| <b>Birds</b>    | <p><i>Mitigation measures</i></p> <p>Vegetation clearance should be undertaken outside bird nesting season i.e. during the period September to February (inclusive – as a guide). If this is not possible, all areas impacted should first be checked for active nests by an ecologist or other suitably qualified individual. In the event that nesting activity is identified, certain aspects of the work in the vicinity of the nest will need to cease until the birds have finished nesting and the young have fledged.</p>                                                                                                                                                                                                                  |
| <b>Hedgehog</b> | <p><i>Mitigation measures</i></p> <p>If the removal of any sheltering/hibernation habitat is required to facilitate the works then a walkover survey will be undertaken by an Ecologist immediately prior to works. A hand search of any identified suitable habitat will be carried out by an Ecologist</p>                                                                                                                                                                                                                                                                                                                                                                                                                                       |

|                 |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|-----------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                 | <p>immediately prior to clearance. Any hedgehogs found will be carefully removed and placed in suitable habitat within woodland, scrub or hedgerow away from the development but remaining within suitable surrounding habitat.</p> <p>Any excavations on Site must be covered overnight or a means of escape provided for any hedgehogs which may become trapped within the excavation. The excavations, if left open, will need to be inspected daily prior to works commencing.</p> <p>If any equipment or materials are to be stored on site overnight, all possible entrances must be blocked and checked for wildlife the following morning prior to work commencing. If present, the Ecologist should be contacted for advice.</p> |
| <b>Reptiles</b> | <p><i>Mitigation measures</i></p> <p>A two-phased clearance of vegetation with hand-tools. Any habitat features such as rubble piles, log stacks, brash piles, or deadwood must be carefully dismantled by hand under ECoW supervision if removal is required.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                        |

A low negative residual effect is anticipated as a result of the development, arising from the loss of habitat and the presence of light-sensitive bat species in the local area. A minor negative residual impact is also expected due to the removal of nesting bird habitat. No further residual effects are anticipated if the aforementioned mitigation measures are followed. In addition, it is recommended that a Construction Environment Management Plan (CEMP) is produced once a Principal Contractor has been appointed, and a finalised work plan has been agreed. This will ensure all ecological matters are managed throughout the construction phase and may identify the need for further ecological monitoring and supervision.

A HMMP will also be required to ensure the habitat creation required to achieve a 10% increase in biodiversity units on Site is appropriately managed for 30 years post-development.

## 7 References

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### Disclaimer

Every effort has been made to ensure that the content of this report accurately identifies the potential ecological constraints to operations, its overall ecological value, and considered the possibility of the presence or absence of all Protected Species and the need for further surveys or ecological works. External factors such as weather conditions, time of day, seasons, disturbance by others, can all affect the use of the site by such species, and this report should therefore not be viewed as definitive. No liability can be accepted for omissions or changes within the status of wildlife after the production of this report.

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## 8 Appendices



- Key
-  g4 - modified grassland
  -  w1f - lowland mixed deciduous woodland
  -  u1b5 - buildings
  -  u1b6 - other developed land
  -  Badger sett

|                                                                                                                            |                                                       |         |                                                   |                                                                                            |                     |
|----------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------|---------|---------------------------------------------------|--------------------------------------------------------------------------------------------|---------------------|
| Client                                                                                                                     |                                                       |         | Thames Water                                      |                                                                                            |                     |
| Project                                                                                                                    |                                                       |         | Reading STW Car Park Ecological Impact Assessment |                                                                                            |                     |
| Title                                                                                                                      |                                                       |         | Habitat Map                                       |                                                                                            |                     |
| Drawn                                                                                                                      | JC                                                    | Checked | AS                                                | Date                                                                                       | 21.04.26            |
| Drawing No.                                                                                                                | Appendix A                                            |         |                                                   | Revision                                                                                   | Issue 2             |
| This drawing is confidential and the property of MAYDENCROFT LIMITED and must not be reproduced without written permission |                                                       |         |                                                   |                                                                                            |                     |
| Scale                                                                                                                      |                                                       |         | 1:400                                             |                                                                                            | Original Size<br>A3 |
| Licensing                                                                                                                  | Contains OS data © Crown copyright Google Maps (2019) |         |                                                   | Orientation                                                                                |                     |
|                                                                                                                            |                                                       |         |                                                   | <br>N |                     |

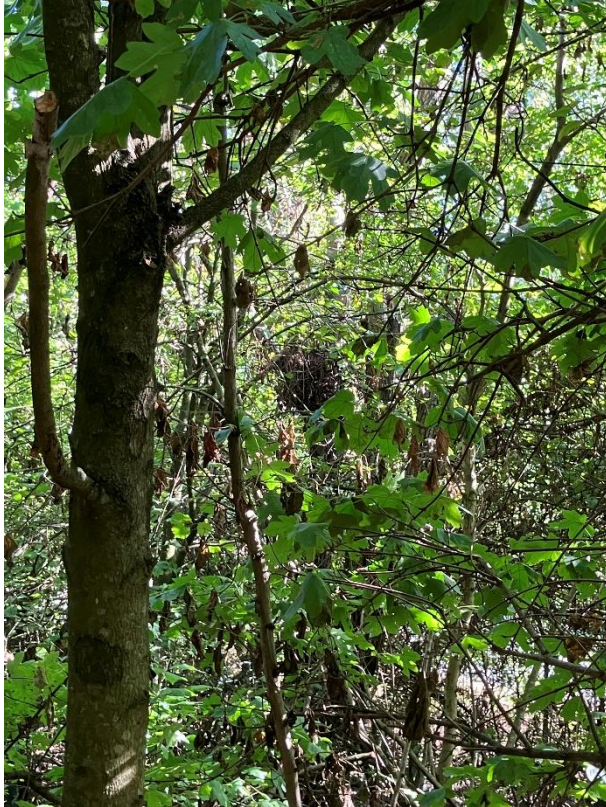


**Plate 1:** Woodland on Site



**Plate 2:** Two potential badger holes close to the buildings on Site



**Plate 3:** Badger holes by Building 1 in woodland



**Plate 4:** Open space and trees within woodland



**Plate 5:** Badger scat on Site

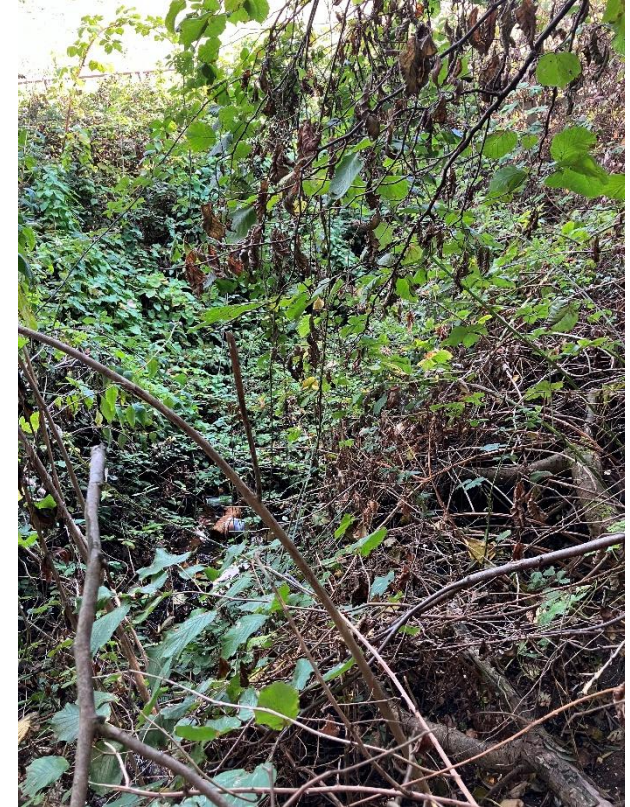


**Plate 6:** Offsite wet ditch



Plate 7: Building 1



Plate 8: Building 2





Plate 9: Buildings within the hardstanding carpark



Plate 10: Potential roost feature



Plate 11: Tree 1



Plate 12: Tree 1 PRF a



Plate 13: Tree 2



Plate 14: Tree 2 PRF a



Plate 15: Tree 3



Plate 16: Tree 3 PRF a



Plate 17: Tree 3 PRF b

## CORE LEGISLATION

### **Conservation of Habitats and Species Regulations 2017 (as amended)**

These Regulations transpose the EU Habitats Directive into domestic law and remain in force post-Brexit. They protect European Protected Species (EPS), requiring a Protected Species Licence (Regulation 55) from Natural England for any works likely to impact these species or their habitats.

### **Wildlife and Countryside Act 1981 (as amended)**

This Act provides national protection for wild animals, plants, and habitats. Amendments (including 2022 updates) expanded offences for reckless disturbance and updated the schedules of protected species. Key offences include the intentional or reckless killing, injuring, taking, or disturbing of protected species.

### **Protection of Badgers Act 1992**

Fully protects badgers and their setts from killing, injury, disturbance, or obstruction. It is an offence to intentionally or recklessly damage or destroy a badger sett or disturb a badger while it occupies one.

### **Natural Environment and Rural Communities (NERC) Act 2006 – Section 41**

Identifies Species of Principal Importance for the purpose of conserving biodiversity in England. Public authorities must have regard to conserving these species when carrying out their functions.

### **Environment Act 2021**

Introduces mandatory Biodiversity Net Gain (BNG) requirements and legally binding targets to halt biodiversity loss. It strengthens existing protections under the Habitats Regulations and the Wildlife and Countryside Act.

### **International Conventions**

The Bern Convention (1979) – Conservation of European Wildlife and Natural Habitats.

The Bonn Convention (1979) – Conservation of Migratory Species of Wild Animals.

These conventions underpin many of the UK's domestic wildlife protections.

## SPECIES-SPECIFIC LEGISLATION

### **Bats (All 18 species)**

Protected under:

- *Conservation of Habitats and Species Regulations 2017* – Schedule 2.
- *Wildlife and Countryside Act 1981* – Schedule 5.

Offences include:

- Intentionally or recklessly killing, injuring, capturing, or disturbing bats.
- Damaging, destroying, or obstructing access to a place of shelter or rest.
- Possession, sale, or advertisement for sale of any live or dead specimen.

### **Birds (All Wild Species)**

Protected under:

- *Wildlife and Countryside Act 1981* – Schedule 1.

Offences include:

- Taking, damaging, or destroying an active nest or eggs.
- Killing, injuring, or taking any wild bird.
- Disturbing Schedule 1 species while nesting or rearing young.

Nesting period: typically March–August (may vary by species).

### **Badger (*Meles meles*)**

Protected under:

- *Protection of Badgers Act 1992*.
- *Wildlife and Countryside Act 1981* – Schedule 6.

It is an offence to kill, injure, or disturb a badger or to damage, destroy, or obstruct access to a sett. Disturbance can include vegetation clearance or excavation within 30m of a sett.

### **Reptiles**

Protected under:

- *Wildlife and Countryside Act 1981* – Schedule 5.
- *Conservation of Habitats and Species Regulations 2017* – Schedule 2 (for sand lizard and smooth snake).

Common species (adder, grass snake, slow worm, common lizard): protected from intentional killing or injury. Fully protected species (sand lizard, smooth snake): protection extends to their habitats; works affecting them require a Protected Species Licence.

Prohibits killing or capturing by certain methods.

## **SPECIES OF PRINCIPAL IMPORTANCE**

Species of Principal Importance must be considered in development planning and environmental management to maintain favourable conservation status. Species likely to occur on site include:

- West European Hedgehog (*Erinaceus europaeus*);
- Harvest Mouse (*Micromys minutus*).

## **POST-BREXIT LEGAL CONTEXT**

Following the UK's departure from the EU, retained EU law continues to underpin UK wildlife protection. The UK Government has committed to maintaining or enhancing these standards through the Environmental Improvement Plan (2023) and the Environment Act 2021.