

234 SOUTHCOTE LANE, READING, BERKSHIRE

ECOLOGICAL IMPACT ASSESSMENT

Final Document

August 2024

Preliminary Ecological Appraisals • Protected Species Surveys and Licensing • NVC • EclA • HRA • Management Plans
Habitats • Badger • Bats • Hazel Dormouse • Birds • Reptiles • Amphibians • Invertebrates • Riparian and Aquatic Species

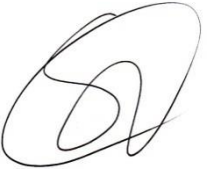
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ECOSA Quality Assurance Record

This report has been produced in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) Guidelines for Ecological Report Writing 2017 (CIEEM, 2017). The Ecological Impact Assessment and report has been prepared in line with the CIEEM Guidelines for Ecological Impact Assessment in the UK and Ireland (CIEEM, 2018) and survey work has been undertaken in line with references within CIEEM's Source of Survey Guidance (CIEEM, 2017).

Description:	Ecological Impact Assessment
Produced For:	Gleeds
Issue:	Final
Report Reference:	24.0001.0003 (F0)
Date of Issue:	1 st August 2024
Date of Survey Works:	Various dates between 24 th January 2024 and 2 nd July 2024
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EXECUTIVE SUMMARY

Ecological Survey and Assessment Ltd (ECOSA) have been appointed by Gleeds to undertake an Ecological Impact Assessment to support a planning application for the redevelopment of 234 Southcote Lane, Reading. The site is located on the outskirts of Reading and comprises a large former building surrounded by areas of hardstanding associated with access and parking. The proposals comprise the demolition of the existing building, and removal of the majority of vegetation and hardstanding. This will then facilitate the construction of a building complex comprising approximately 14 apartment units, parking, access, facilities and landscaping in association with Reading Borough Council. The main findings of the Ecological Impact Assessment are:

- The site comprises a former building with associated hardstanding parking and access (developed land; sealed surface), with limited ornamental shrub planting and areas of modified grassland with some scattered trees and patchy scrub. The north and west site boundaries comprise a continuous line of trees, mostly consisting of non-native mature conifer trees.
- The site supports foraging and commuting bats and is assessed as being suitable for tree roosting bats, breeding birds, reptiles and European hedgehog. Bat emergence surveys recorded no bats roosting within the building, therefore bats are considered likely absent from the site.
- Mitigation measures proposed include the preparation of a Construction Environmental Management Plan (CEMP), a sensitive lighting design and sensitively timed habitat clearance works in consideration of reptiles, nesting birds and European hedgehog.
- Compensatory measures will include new native species planting and the provision of additional, dedicated bat roosting and bird nesting features. Post-development, no residual or cumulative impacts are anticipated.
- Following the completion of a biodiversity net gain assessment, achieving +10% net gain in line with the statutory requirements of the Environment Act 2021, it will then be considered that the proposals will accord with all relevant national and local planning policy.
- If the planning application boundary changes or the proposals for the site alter, a re-assessment of the scheme in relation to ecology may be required. Given the mobility of animals and the potential for colonisation of the site over time, updating survey work may be required, particularly if development does not commence within 18 months of the date of the most recent relevant survey.

1.0 INTRODUCTION

1.1 Background

Ecological Survey & Assessment Limited (ECOSA) have been appointed by Gleeds to undertake an Ecological Impact Assessment to support a planning application for the redevelopment of 234 Southcote Lane, Reading, Berkshire, RG30 3BA (hereafter referred to as the site).

1.2 The Site

The site is located in Reading, Berkshire centred on National Grid Reference (NGR) SU 6877 7188 (**Map 1**).

The site is approximately 0.18 hectares in area and mainly comprises a large central building surrounded by areas of hardstanding associated with access and parking as well as areas of greenspace.

The surrounds largely comprise residential dwellings with associated gardens and road networks in all directions. Areas of communal greenspace also lie to the north and north-east, including sports grounds, allotment plots and Prospect Park, the latter of which is separated from the site by the A4 Bath Road to the north.

The wider landscape comprises further residential dwellings to the north, interspersed with blocks of woodland and a railway line to the east and south. Beyond the railway line to the south lies a substantial expanse of wetland, with its large waterbodies, bisected by the River Kennet and Holly Brook. Further west of the site lies Calcot Park golf course with managed grassland, trees and ponds.

1.3 Aims and Scope of Report

The information within this report is based on a field survey and desktop study and relevant species-specific surveys carried out between January and July 2024. The report describes the habitats and species (hereafter referred to as ecological features) within the site's Zone of Influence (Paragraph 3.2), and provides a detailed assessment of potential ecological effects of the proposed development of the site. It identifies the need for any measures to avoid, mitigate or compensate for significant adverse effects¹ ecological features and outlines enhancements to the site's ecology to be implemented as part of the development. The objectives of the assessment are:

- To provide baseline information on ecological features within the site's Zone of Influence and determine the importance of these features;

¹ For the purposes of this assessment a 'significant' adverse effect is one which will have an adverse effect on the ecological feature at the site level or higher.

- To assess, characterise and quantify the effects on ecological features, including cumulative effects, and identify significant effects in the absence of any mitigation;
- To set out measures to avoid, mitigate and compensate for significant ecological effects in accordance with the 'mitigation hierarchy'²;
- To provide an assessment of the significance of any residual effects;
- To outline opportunities for enhancement in order to achieve a net gain for biodiversity; and
- To set out the requirements for any post-construction monitoring.

1.4 Site Proposals

The proposals comprise the demolition of the existing building, and removal of the majority of vegetation and hardstanding. These works will then facilitate

the construction of a building complex comprising approximately 14 apartment units for a residential scheme in association with Reading Borough Council. The scheme will also comprise the provision of residential parking, access, facilities and landscaping.

This Ecological Impact Assessment makes reference to the most recent proposals plan produced by HTA Design, dated April 2024 (Drawing No. RBC-SLI-HTA-A_RP-0014_Planning Compliant Option_240425) (see **Appendix 1**).

It is understood that any detailed lighting proposals for the site are currently not available and are still being finalised at this stage.

It is anticipated that planning permission will be sought by the end of 2024 with construction commencing soon after permission has been granted.

² In accordance with CIEEM Ecological Impact Assessment guidance (CIEEM, 2018) a sequential process is adopted to address impacts on features of ecological interest, with 'Avoidance' prioritised at the top of the hierarchy and Compensation/Enhancement' at the bottom. This is often referred to as the 'mitigation hierarchy'.

2.0 PLANNING POLICY CONTEXT

2.1 Introduction

This section summarises the planning policy in relation to ecology and biodiversity within the Reading Borough Council administrative area. This information is then used to assess the compliance of the scheme in relation to relevant planning policy and where necessary make recommendations for mitigation, compensation and enhancements (see Section 5.0).

2.2 National Policy

The National Planning Policy Framework (NPPF) sets out the government's requirements for the planning system in England. The original document was published in 2012 with the most recent revised NPPF published in December 2023. A number of sections of the NPPF are relevant when taking into account development proposals and the environment. As set out within Paragraph 11 of the NPPF *“Plans and decisions should apply a presumption in favour of sustainable development”*. However, Paragraph 188 goes on to state that *“The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site.”*.

The NPPF sets out that development proposals should not only minimise the impacts on biodiversity but also to provide enhancement. Paragraph 180 states that the planning system should contribute to and enhance the natural environment by *“...minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures...”*.

A number of principles are set out in Paragraph 186, including that where harm cannot be adequately avoided then it should be mitigated for, or as a last resort, compensated for. Where impacts occur on nationally designated sites, the benefits must clearly outweigh any adverse impact and incorporating biodiversity in and around developments should be encouraged. Specific reference is also made to the protection of irreplaceable habitats³, including ancient woodland⁴. Where loss to irreplaceable habitats occurs planning permission would normally be refused unless there are wholly exceptional reasons and an adequate compensation strategy is in place. Paragraph

³ The NPPF defines irreplaceable habitats as *“Habitats which would be technically very difficult (or take a very significant time) to restore, recreate or replace once destroyed, taking into account their age, uniqueness, species diversity or rarity. They include ancient woodland, ancient and veteran trees, blanket bog, limestone pavement, sand dunes, salt marsh and lowland fen.”*

⁴ Natural England defines ancient woodland as *“An area that has been wooded continuously since at least 1600 AD. It includes ancient semi-natural woodland and plantations on ancient woodland sites (PAWS).”*

186 also states *“development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.”*. Paragraph 187 also sets out that potential SPAs, SACs and listed or proposed Ramsar sites or sites acting as compensation for SPAs, SACs and Ramsar sites, should receive the same protection as habitat sites.

In addition to the NPPF, Circular 06/05 provides guidance on the application of the law relating to planning and nature conservation as it applies in England. Paragraph 98 states *“the presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat”*. Paragraph 99 states *“it is essential that the presence or otherwise of a protected species, and the extent that they may be affected by the Proposed Project Development, is established before planning permission is granted”*.

2.3 Local Policy

A new Reading Borough Council Local Plan was adopted on 4th November 2019 and sets out planning policies for development in Reading up to 2036. Two policies make specific reference to ecology and biodiversity:

- **EN12: Biodiversity and the Green Network**

This policy refers to the protection and enhancement of the biodiversity value of the Reading Borough Green Network, comprising statutory designated sites for nature conservation, the River Thames and its tributaries as well as any retained or newly created green space which may expand or link into the Green Network.

Reference is also made to the required maintenance and net gain in the biodiversity value of a site proposed for development. Where biodiversity loss cannot be avoided, mitigated or compensated for on site, off-site provisions should be factored into the development proposals following nationally recognised guidance. The provision of additional ecological enhancements, such as newly planted trees, wildlife ponds and bat boxes, should also be clearly laid out in any development proposals, wherever practicable.

- **EN14: Trees, Hedges and Woodlands**

This policy refers to the protection and increase of the quality and area of important trees, hedgerows, woodlands and waterside vegetation within the borough of Reading. The designs of new development proposals will consider this at all stages, ensuring the planting and maintenance of these habitats and utilising off-

site provisions where required. The success of this policy will ensure the retention and enhancement of the character and biodiversity value of the borough.

Reading's Biodiversity Action Plan was adopted in February 2021 and sets out several 'Themes for Action', one of which makes specific reference to the ecological impacts of planning and development:

- **C: Planning & Building Control**

This 'Theme for Action' refers to the requirement of the Reading Borough Council to continue assessing planning applications for their impact on protected and notable species and habitats. Reference is also made to the provision of additional documents as part of planning applications to set out an approach to achieving measurable biodiversity net gain in line with the council's approach, and for ongoing development projects to continue to provide and monitor the success of required ecological enhancement provisions.

Planning advice in relation to biodiversity net gain is available in the '*Validation Requirements for Planning Applications – Biodiversity Net Gain Addendum – February 2024*'. This document outlines the statutory requirement for all relevant developments to achieve 10% biodiversity net gain in line with the Environment Act 2021, as of April 2024. This requirement must always be considered in addition to the mitigation and compensation policies already in place for protected species and habitats. Biodiversity net gain for developments must also be measured using only the most recently published version of the DEFRA metric, with these measurable gains to be secured and monitored for a minimum of 30 years (Reading Borough Council, 2024).

3.0 METHODS

3.1 Introduction

This section details the methods employed during the Ecological Impact Assessment. Any significant limitations to the assessment are also considered.

3.2 Zone of Influence

To define the total extent of the study area for this assessment, the proposed scheme was reviewed to establish the spatial scale at which ecological features could be affected⁵. The appropriate survey radii for the various elements of the assessment (i.e. desktop study, field survey and species-specific surveys) have been defined in the relevant sections below. These distances are determined based on the professional judgement of the ecologist leading the appraisal, taking into account the characteristics of the site subject to assessment, its surroundings and the nature of the proposals.

3.3 Scoping

Protected species considered within the Ecological Impact Assessment are those species/species groups considered likely to be encountered given the geographical location and context of the site. Where the site was found to be suitable to support these species/species groups, and adverse effects cannot be avoided from the outset, further species-specific surveys are undertaken. These are discussed within the results section (Section 4.0) of the current report. Where such a species is unlikely to be present on site a justification for likely absence is provided. Species considered likely absent from the site are not then considered in the assessment of ecological effects and mitigation/compensation measures section (Section 5.0) of this report.

3.4 Desk Study

3.4.1 Biological Records Centre

Thames Valley Environmental Records Centre (TVERC) was consulted on 23rd January 2024 for the following data:

- Records of non-statutory designated sites (Local Wildlife Sites (LWSs), Biodiversity Opportunity Areas and Berkshire Proposed Local Wildlife Site Extension) within one kilometre of the site boundary. See **Appendix 2** for details;
- Records of legally protected and notable species (flora and fauna) within one kilometre of the site boundary, including Species of Principal Importance (**Appendix 3**); and

⁵ The Zone of Influence (Zoi), as defined by CIEEM, is the area over which ecological features may be subject to significant effects as a result of the proposed project and associated activities (CIEEM, 2018).

- Records of bats within two kilometres of the site boundary. Bat species are highly mobile and therefore the search radius is increased for this species group.

3.4.2 Multi-Agency Geographic Information for the Countryside

The Multi-Agency Geographic Information for the Countryside (MAGIC) database (DEFRA, 2024) was reviewed on 8th February 2024 to establish the location of statutory designated sites located within the vicinity of the site. This included a search for all internationally and nationally designated sites such as Special Protection Areas (SPAs), Special Areas of Conservation (SACs), Wetlands of International Importance (Ramsar sites), Sites of Special Scientific Interest (SSSIs), National Nature Reserves (NNRs) and Local Nature Reserves (LNRs) within one kilometre of the site. See **Appendix 2** for details. Where appropriate, the desk study search area has been extended to take account of any appropriate statutory designated sites which need consideration in terms of potential in-direct effects and which support particularly mobile species, particularly those specifically mentioned in local planning policy. The Impact Risk Zones (IRZ) were also obtained from MAGIC, which are used to help guide and assess planning applications for likely effects on SSSIs.

Sites within two kilometres of the site boundary where European Protected Species Mitigation (EPSM) licences have been granted were reviewed. This information allows a greater understanding of the potential for European Protected Species to be present in the local area.

3.4.3 Other Sources of Information

Online mapping resources, at an appropriate scale, were used to identify the presence of habitats such as woodland blocks, ponds, watercourses and hedgerows, in the vicinity of the site. These habitats may offer resources and connectivity between the site and suitable habitat in the local area, which may be exploited by local species populations.

The presence of ponds or other waterbodies within a 500 metre radius of the site in particular are noted in relation to great crested newt. The 500 metre radius is a standardised search radius to assist in the assessment of the suitability of a site and its surrounding habitat to support this species, based on current Natural England guidance (English Nature, 2001).

3.5 Field Survey

3.5.1 Survey Methods

The field survey followed UK Habitat Classification (UKHab) methodology (UKHab Ltd, 2023) and included a search for evidence of, and an assessment of the site's suitability to support, protected and notable species as recommended by CIEEM (CIEEM, 2017).

The field survey covered all accessible areas of the site, including boundary features. Habitats described in Section 4.0, have been mapped (**Map 2**), photographs and target notes provided, where relevant.

The UKHab Survey Application, developed using the digital survey platform Coreo was used to map habitats in the field, collect the field survey data and photograph the site.

UKHab Survey

An assessment was made of all habitats within the site, which were classified based on the standardised UKHab survey methodology (UKHab Ltd, 2023). The UKHab classification system comprises two major parts, a hierarchical Primary Habitat system and a list of Secondary Codes. The classification of Primary Habitats is hierarchical with five levels:

Level 1: Major ecosystem, currently covering terrestrial, freshwater and coastal ecosystems.

Level 2: Nine ecosystem types, based upon the Mapping and Assessment of Ecosystems and their Services (MAES) typology and corresponding with major habitat types within the European Nature Information System (EUNIS) habitat classification.

Level 3: 20 broad habitat types, corresponding directly with UK Biodiversity Action Plan Broad Habitats and closely to EUNIS.

Level 4: 80 habitats, including 47 UK Biodiversity Action Plan Priority Habitats, and further splits of Level 3 habitats.

Level 5: 104 habitats, including 69 Habitats Directive Annex 1 habitats and further splits of Level 4 habitats.

It should be noted that not all habitats will be classified to Level 5, for example modified grassland is classified at Level 3 and no Level 4 or Level 5 habitat is applicable. In addition, where Level 4 or 5 habitats are considered to be present on site there may be a requirement for further surveys by a specialist botanist to confirm or classify these habitat types.

During the field survey notes and photographs were taken in order to evidence the surveyor's classification of each habitat type.

Any invasive species⁶ encountered as an incidental result of the survey were recorded.

⁶ Plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). The survey was not specifically aimed at assessing the presence of these species and further specialist advice may need to be sought.

Protected and Notable Species Appraisal

A preliminary appraisal of the site's suitability to support legally protected and notable species was carried out. Specific methods for species/species groups considered during the appraisal are provided in **Appendix 4**.

3.5.2 Survey Details

The field survey was carried out by Hugh Turner, Principal Ecologist of ECOSA (Natural England Bat Licence No. 2020-50816-CLS-CLS) and Joseph Hunt, Ecologist of ECOSA on 24th January 2024. The weather conditions were dry with approximately 80% cloud cover, an ambient temperature of 10°C and a light breeze.

During the survey, the surveyor was equipped with a high powered torch and a digital camera.

3.5.3 Field Survey Limitations

Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. The field survey has therefore not produced a complete list of plants and animals and in the absence of evidence of any particular species should not be taken as conclusive proof that the species is absent or that it will not occur in the future.

Online mapping resources provide an indication of habitat features present in the wider area, but do not provide a detailed assessment of habitat types.

Not all potential bat roosting features are accessible to the surveyor, e.g. roof voids, gaps beneath roof materials or holes or cracks in trees, and therefore assessments are based upon the potential for these features to provide suitable roosting opportunities.

3.6 Bat Survey

3.6.1 Survey Methods

Bat Tree Endoscope Inspect Survey

The bat tree endoscope inspect survey was undertaken in line with current best practice guidelines (Collins, 2023). During the field survey, a single semi-mature cherry tree (T1) located within the site was assessed as having suitability to potentially support roosting bats (**Map 2**). It was therefore subject to a further endoscopic inspection to provide a detailed assessment of the suitability of the Potential Roosting Features identified to support roosting bats. Features that have suitability for roosting bats are further classified to determine if they are suitable for one or low numbers of bats (PRF-I) or if the feature is suitable for a large number of bats (PRF-M).

The bat tree endoscope inspect survey allowed for the confirmation of the presence / likely absence of a bat roost within the Potential Roosting Features identified during the Preliminary Ecological Appraisal field survey.

Bat Emergence Survey

The bat emergence survey was undertaken in line with current best practice guidelines (Collins, 2023). In accordance with the guidelines for a building assessed as having moderate suitability to support roosting bats two dusk emergence surveys were undertaken in order to ascertain the presence/likely absence of roosting bats from within the building.

The dusk emergence surveys commenced approximately 15 minutes before sunset until approximately two hours after sunset.

The surveys were carried out by four experienced ECOSA surveyors with the use of three night vision aid cameras, all positioned at previously identified vantage points around the building. These vantage point locations allowed a sufficient coverage of the Potential Roosting Features identified on the building impacted by the proposals.

During the surveys surveyors recorded the time, species, location and direction of flight for each bat encountered, with particular attention paid to establishing bat access/egress locations to any roosts within the building.

3.6.2 Survey Details

Bat Tree Endoscope Inspect Survey

The endoscope inspect survey was carried out by licenced bat surveyor Hugh Turner, Principal Ecologist of ECOSA (Natural England Bat Licence 2020-50816-CLS-CLS) and Joseph Hunt, Ecologist of ECOSA on 25th March 2024. The weather conditions were dry with approximately 90% cloud cover, an ambient temperature of 9°C and a moderate breeze.

During the survey, the surveyors were equipped with high powered torches and a RIDGID Micro CA-150 Inspection Camera endoscope.

Bat Emergence Survey

The bat emergence surveys were undertaken during June and July 2024. **Table 1** provides details of each emergence survey.

Table 1: Bat emergence survey details

Survey Date	Survey Timings	Weather Conditions	Sunset/ Sunrise Time
4 th June 2024	Start: 20:59 End: 22:34	General conditions: Dry and overcast, with occasional showers. Start temp: 16°C End temp:14°C Cloud Cover: 100% Wind Speed: Moderate breeze	20:19
2 nd July 2024	Start: 21:20 End: 23:13	General conditions: Dry Start temp: 16°C End temp:14°C Cloud Cover: 5-90% Wind Speed: Calm	21:23

During the bat emergence surveys the surveyors were equipped with Batlogger M bat detectors. Recordings made with the detectors were later analysed using Sonobat® (v2.9.7) to confirm the identity of any species encountered.

The bat emergence surveys were coordinated by Joseph Hunt, Ecologist of ECOSA, assisted by suitably qualified and experienced ECOSA surveyors.

3.6.3 Survey Limitations

Some bat species, e.g. long-eared bats *Plecotus* species⁷, generally emerge from their roosts in total darkness and do not produce strong echolocations, and therefore these bats can be difficult to observe and record during bat surveys, leading to under-recording.

The quality of hand-held bat detector recordings is based, to a large extent, on the proximity of a bat to the detector's microphone. Obstructions such as vegetation or environmental variables such as rainfall and wind noise from vegetation will all influence the quality of sound reaching the microphone and thus some bat echolocation recordings are of insufficient quality for specific identification. Bats routinely alter their echolocations in relation to behaviour and their environment. It is not always possible to make a robust identification of every bat recording.

The second bat emergence on 2nd July started later than expected, however as the survey began before sunset and the first bats were not heard until 30 minutes after sunset, it is considered that this is not a significant limitation.

⁷ There are two species of long-eared bat, the brown long-eared bat *Plecotus auritus* and the grey long-eared bat *Plecotus austriacus*. These species can only be separated by examination of physical characteristics and Phylogenetic Analysis Identification of bat droppings. Unless confirmation of identification has been made by visual identification the two species shall be referred to in this report as long-eared bat. The brown long-eared bat is the commonest of the two species typically being found roosting within large roof voids although small voids and trees are also utilised. The grey long-eared bat is rare and confined to southern England and like the brown long-eared typically roosts in roof voids.

3.7 Criteria used to Assess Ecological Value

The evaluation criteria used in this report are based on ECOSA's professional judgement and publicly available publications, survey data and other sources as referenced in the main text. The evaluation is based on a sliding scale of importance as follows; international and European, national, regional, county, local and site. There are a wide range of characteristics which contribute to the importance of ecological features, and these may justify an increase or reduction in the value of an ecological feature. Where deviations occur, these will be explained in the evaluation section of this report (Section 4.0). Current published relevant guidance, including information sources such as A Nature Conservation Review (Ratcliffe, 1977) and Guidelines for Ecological Impact Assessment in the United Kingdom (CIEEM, 2018) have also been used to inform the assessment.

4.0 BASELINE ECOLOGICAL CONDITIONS AND EVALUATION

4.1 Introduction

This section details the results of the Ecological Impact Assessment undertaken for the site. It assesses the baseline ecological conditions of the site at the time the desktop study was completed and based on the findings of the field survey and subsequent protected species surveys. This section also provides an assessment of the ecological value of ecological features present at the site.

4.2 Statutory and Non-statutory Designated Sites

4.2.1 Baseline Ecological Conditions

Details of designated sites are provided in the paragraphs below.

Statutory Designated Sites

There are no statutory designated sites of nature conservation interest situated within one kilometre of the site boundary. The nearest statutory designated site of nature conservation interest is Lousehill Copse LNR located approximately 1.1 kilometres north of the site.

Non-Statutory Designated Sites

There are nine non-statutory designated sites of nature conservation interest situated within one kilometre of the site boundary. These are:

- Holly Brook (LWS) - Located approximately 280 metres south of the site and designated for supporting a chalk river, wetland habitats, invertebrate species and water vole *Arvicola amphibius*.
- Prospect park (LWS) - Located approximately 430 metres north of the site and designated for supporting lowland mixed deciduous woodland, lowland wood pasture and parkland and notable flora and fauna species.
- Kennet Valley East (Biodiversity Opportunity Area) - Located approximately 440 metres south of the site and designated for supporting notable habitats including the River Kennet which is a chalk river, the most extensive areas of reedbed habitat in Berkshire, lowland fen, wet woodland, lowland meadow, wet grassland and standing water.
- Fobney and Kennet Valley Meadows (LWS) - Located approximately 440 metres south of the site and designated for supporting grassland and swamp habitats as well as wetland and aquatic species including river water dropwort *Oenanthe fluvialis*, fennel pondweed *Potamogeton pectinatus* and spiked water milfoil *Myriophyllum spicatum*.

- River Kennet / Kennet and Avon Canal (LWS) - Located approximately 790 metres south of the site and designated for supporting botanically rich riverine habitat, lowland fen and a wide range of notable species including rich invertebrate assemblages, birds, water vole and European eel *Anguilla anguilla*.
- Prospect College (LWS) - Located approximately 890 metres north-west of the site and designated for supporting grassland, woodland and scrub habitats important for invertebrates.
- West Reading Woodlands (Biodiversity Opportunity Area) - Located approximately 925 metres north-west of the site and designated for supporting lowland mixed deciduous woodland and parkland habitat.
- Burghfield Gravel Pits (LWS) - Located approximately 940 metres south of the site and designated for supporting well-developed wooded areas, islands and marginal vegetation that attracts wildfowl and other birds including Wildlife and Countryside Act Schedule 1 species and uncommon passage migrants.
- Meadway Fringe (LWS) - Located approximately 955 metres north-west of the site and designated for supporting lowland mixed deciduous woodland and ancient woodland indicator species.

Further information on sites designated for nature conservation are provided in **Appendix 2**.

4.2.2 Evaluation

All non-statutory designated sites for nature conservation interest are of particular importance for nature conservation within Berkshire and are therefore of county value.

4.3 Habitats

4.3.1 Baseline Ecological Conditions

Desktop Study Results

A review of the MAGIC database did not reveal the presence of any Habitats of Principal Importance within or adjacent to the site. A number of Habitats of Principal Importance were returned within a one kilometre search radius of the site, these include deciduous woodland, wood pasture and parkland and coastal and floodplain grazing marsh and are mostly associated with non-statutory designated sites described in Paragraph 4.2.1.

Consultation with TVERC produced records of a number of notable plant species within one kilometre of the site boundary. These include bluebell *Hyacinthoides non-scripta*,

common valerian *Valeriana officinalis*, crosswort *Cruciata laevipes*, goldenrod *Solidago virgaurea*, quaking grass *Briza media* and wood-sorrel *Oxalis acetosella* however none of these records are adjacent to the site and these species were not recorded on site.

Field Survey Results

Habitats within the site are shown on the Baseline Habitat Map (**Map 2**) and details of how each habitat has been classified based on the UKHab five-level hierarchical system, with relevant secondary codes, are provided in **Appendix 5**. Habitats are described in general terms using standard UKHab terminology. The main habitats recorded on site during the field survey were as follows:

Modified grassland (g4)

The areas of green space associated with the site are dominated by modified grassland habitat and largely bound the main central building. The areas of modified grassland to the east and south of the building show signs of active, regular management by mowing with its short sward height (**Figure 1**). There are also scattered urban trees present in these areas (**Figure 2**). The area of modified grassland to the north of the main building has a much more tussocky structure with little to no signs of active management (**Figure 3**). This area also contains patches of scattered scrub, dominated by bramble *Rubus fruticosus* aggregate (**Figure 4**) and butterfly bush *Buddleia davidii*, with these patches showing signs of past management by cutting (**Figure 5**). The areas of modified grassland within the site are dominated by grass species such as Yorkshire fog *Holcus lanatus* and perennial rye grass *Lolium perenne* and herbaceous plants such as creeping buttercup *Ranunculus repens*, ribwort plantain *Plantago lanceolata* and dandelion *Taraxacum officinale* aggregate .



Figure 1: Area of modified grassland showing signs of active management, located to the south-east of the building.



Figure 2: Scattered tree within modified grassland habitat.



Figure 3: Area of tussocky modified grassland to the north of the building showing signs of a lack of management.



Figure 4: Scattered scrub within modified grassland habitat.



Figure 5: Patch of scrub dominated by butterfly bush, showing signs of past management.

Other Developed land (u1b6)

Areas of tarmac hardstanding associated with access and parking for the building divide up the areas of green space within the site, with the largest area located adjacent to the south-west boundary (**Figure 3**). Areas of ephemeral/ruderal grass and scattered grass interspersed with introduced, ornamental shrubs form the boundaries of this larger area of hardstanding (**Figure 4**). There is also a raised flower bed of mortared brick construction present just to the south of the main building (**Figure 5**).



Figure 3: Larger area of tarmac hardstanding with boundary scattered grass.



Figure 4: Introduced, ornamental shrubs within area of scattered grass bordering hardstanding.



Figure 5: Raised flower bed.

Buildings (u1b5)

The site area is dominated by a large, single-storey former building which is currently in a state of disuse (**Figure 6**, **Figure 7** and **Figure 8**).



Figure 6: Eastern and north-eastern elevations of main on site building from the south-east.



Figure 7: North-west elevation of main on site building from the south-west.



Figure 8: North-western corner elevation of main on site building from the north-west.

Line of Trees

The western boundary and the western half of the northern boundary consist of a continuous line of trees which runs parallel with fencing associated with these boundaries. The line of trees separates the site from residential plots to the north and

west and largely consist of conifer species (**Figure 9**) such as western red cedar *Thuja plicata* and Leyland cypress *Cupressus × leylandii*. The understorey mostly consists of introduced ornamental shrubs (**Figure 10**).



Figure 9: Conifer species dominated treeline with parallel fence forming part of the western site boundary.



Figure 10: Treeline with understorey and parallel fence forming part of the northern site boundary.

4.3.2 Evaluation

The habitats within the site are common and widespread within the wider landscape. The dominant habitats on site contain a low diversity of plant species and are of low ecological value. The scattered scrub and the line of trees have the highest relative ecological value.

4.4 Bats

4.4.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC returned the following bat species within a two-kilometre radius of the site: common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Nathusius' pipistrelle *Pipistrellus nathusii*, noctule *Nyctalus noctula*, Leisler's bat *Nyctalus leisleri*, brown long-eared bat *Plecotus auritus*. Daubenton's bat *Myotis daubentonii*, serotine *Eptesicus serotinus*, barbastelle *Barbastella barbastellus* and *Myotis* bat species⁸.

Consultation with the MAGIC database revealed eight EPSM licences in respect of bats within two kilometres of the site, granted for the destruction of resting places of common pipistrelle, soprano pipistrelle and brown long-eared bat. The closest and most recent of these licenses is located approximately 420 metres south-west of site and was

⁸ There are seven species of *Myotis* bats in Britain. *Myotis* bats are very difficult to identify specifically, this can generally only be done by examination of physical features and Phylogenetic Analysis Identification of bat droppings. Many of these bats are common and will utilise buildings for roosting often occupying small and inaccessible voids. For the purpose of this report all species shall be referred to as *Myotis* bats unless a specific identification has been possible.

granted in 2020 for the destruction of a resting place for soprano pipistrelle (licence reference: 2020-49490-EPS-MIT).

Field Survey Results

Building Assessment

There is a large, single-storey former building located within the site, which is currently in a state of disuse with very limited permitted access. Externally, the building is of brick construction with the majority of the roof space being flat and comprising bitumen coated strawboard with associated fibre cement soffit boxes. A small area of roof associated with the entrance lobby is pitched, with a gable end and associated fibre cement barge boards. This area of roof is constructed from metal corrugated sheeting. Access doors are present on both the northern and southern south elevations, which were closed tight at the time of the survey.

External potential roosting and access features for bats comprised many gaps and cracks within and behind the soffit boxes, mostly located along the southern elevation of the building (see **Figure 11** and **Figure 12**).



Figure 11: Cracks and gaps in soffit boxes on southern elevation of building.



Figure 12: Gap behind soffit boxes on southern elevation of building.

The internal space of the building is divided into several different rooms including a large hall located in the western half of the building. The light levels were very low in all areas, with no artificial lighting being available at the time of the survey. The walls and ceiling were constructed of plaster boarding and no roof voids are present within the building.

No evidence of roosting bats was found within this internal space. However, access to this space is not restricted for bats given the external access features recorded, as well as holes which were identified in several places on the ceiling plaster boards. It is considered that the building could provide sufficient roosting opportunities for small numbers of bats, although it is unlikely to support a high-status roost. This is due to the buildings location resulting in a lack of good connectivity to suitable and extensive

foraging and commuting habitat, and the absence of roof voids or loft spaces. The building is therefore assessed as having moderate suitability for roosting bats.

Tree Assessment

A single semi-mature, scattered cherry *Prunus* species on site was found to contain multiple PRFs for bats. These included a callus roll (**Figure 13**) and a rot hole (**Figure 14**) which were unable to be fully inspected, and therefore the full extent of these determined, during the survey. It is considered that the tree could provide sufficient shelter and protection for small numbers of bats on occasion. Although the tree is unlikely to support a high-status roost due to its size and isolation. The tree is therefore assessed as having Potential Roosting Features for Individual (PRF-I) roosting bats.



Figure 13: Callus roll present in standalone on site cherry tree.

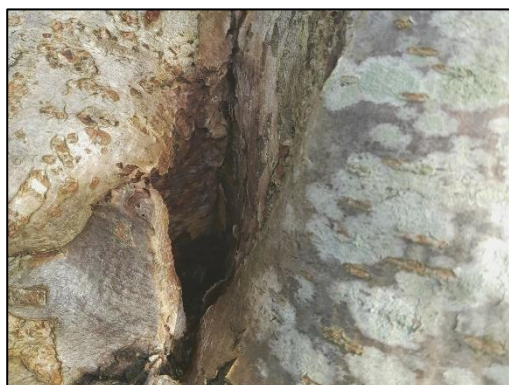


Figure 14: Rot hole present in standalone on site cherry tree.

The remaining trees present on site, including those which make up the boundary line of trees, were assessed as having negligible suitability to support roosting bats due to a lack of suitable PRFs recorded as present.

Foraging and Commuting Habitat

The site contains some limited habitat to support foraging and commuting bats in the form of small areas of scattered scrub, introduced shrub, a line of trees and scattered trees. The wider landscape provides suitable foraging and commuting habitat for bats in the form of extensive areas of woodland, waterbodies, large areas of wetland hedgerows, lines of trees and scattered trees located within communal and private greenspace.

Bat Tree Endoscope Inspection Survey Results

The semi-mature cherry tree (T1, see **Map 2**), previously assessed as having PRF-I for roosting bats during the field survey, was subject to a bat tree endoscope inspect survey. Following the endoscope inspection, the tree was assessed to remain as PRF-I suitability for roosting bats, given the presence of a rot hole which has the potential to support one or low numbers of individual bats. The results of the bat tree endoscope inspection are provided in **Table 2**.

Table 2: Bat tree endoscope inspection results

Tree Reference No.	Species and Description	Description of Features	Bat Tree Endoscope Inspection?	Suitability for Bats
T1	Cherry – semi-mature	Rot hole and callus roll in trunk	Yes	PRF-I

Bat Emergence Survey Results

The emergence surveys recorded at least four species of bat: common pipistrelle, soprano pipistrelle, *Myotis* bat species⁸ and noctule. During the survey, no bats were recorded emerging from the building and low to moderate levels of bat foraging and commuting activity were recorded. **Table 3** provides details of the species, numbers and locations of bats recorded foraging and commuting during the emergence surveys.

Table 3: Bat Emergence Survey Results

Visit 1 - Survey Details	
Survey Date:	4 th June 2024
Structures Surveyed:	Building
Time of Sunset:	20:19
General Bat Activity	
Low levels of bat foraging and commuting activity were recorded on site during the dusk survey. Activity was attributed to common pipistrelle and soprano pipistrelle, associated with the immediate surrounds of the building to the north and south. Bats were not recorded emerging from the building.	

Visit 2 - Survey Details	
Survey Date:	2 nd July 2024
Structures Surveyed:	Building
Time of Sunset:	21:23
General Bat Activity	
Moderate levels of bat foraging and commuting activity were recorded on site during the dusk survey, with the majority of activity attributed to common pipistrelle and soprano pipistrelle. Lower levels of activity were also recorded for <i>Myotis</i> bat species and noctule. The majority of the activity was recorded along the treeline on the west site boundary, but also over the roof	

of the building close to the north and east elevations. Bats were not recorded emerging from the building.

4.4.2 Evaluation

Roosting Bats

The bat emergence surveys undertaken at the site did not record the presence of roosting bats within either the building or the cherry tree (T1), therefore roosting bats are considered likely absent from the site.

Foraging and Commuting Bats

Bat surveys recorded at least four species of bat foraging and commuting at the site with low activity levels recorded on site during the surveys.

Common pipistrelle and soprano pipistrelle are common and widespread within Berkshire and the UK (CA Ecology, 2021). Noctule bats are infrequent within Berkshire but widespread across the UK. While the status of *Myotis* bat species varies in Berkshire depending on the species (CA Ecology, 2021), given the low number of bats recorded across all surveys, it is considered that the site is unlikely to be an important resource for this species group. Therefore the site is assessed as being of site value only for foraging and commuting bats.

Table 4 shows the geographic level of value of foraging and commuting habitat at the site.

Table 4: Value of the site to bat species/species complexes

Species	Foraging and Commuting Value
Common pipistrelle	Site
Soprano pipistrelle	Site
<i>Myotis</i> bat species	Site
Noctule	Site

4.5 Otter

4.5.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC produced two records of otter *Lutra lutra* within the desktop study area. In 2012, one individual was recorded approximately 820 metres south-west

of the site near Holly Brook, and in 2016 otter spraints were recorded approximately 900 metres south of the site near the River Kennet.

No granted EPSM licences in respect of otter were identified within a two kilometre radius of the site.

Field Survey Results

There are no aquatic habitats such as rivers or streams on or immediately adjacent to the site and no habitats which present suitable shelter or foraging opportunities for otter. There are no suitable habitats for this species which connect to the site, with the nearest watercourse being Holly Brook which lies approximately 280 metres south and is separated from the site by extensive residential areas with associated road networks. The site is unsuitable for otter, therefore the species is not considered further in this report.

4.6 Badger

4.6.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC produced eight records of badger *Meles meles*, A total of 18 records of badger setts, and one record of badger field signs was returned within the desktop study area. The closest record of a badger individual was a dead individual on the A4 (Bath Road), approximately one kilometre north-west of the site boundary. The closest record of a badger sett was approximately 930 metres south-east of the site, associated with the railway line.

Field Survey Results

No evidence of badger was observed on site during the field survey. The site provides minimal foraging resources and no areas suitable for sett building. More suitable habitat is present within the wider landscape which has very limited connectivity to the site. It is possible that badger may pass through the site on occasion, but given the limited foraging habitat in the context of the local area it is unlikely that a significant population of badgers rely on the site as a resource. Therefore, this species is not considered further in this report.

4.7 Hazel Dormouse

4.7.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC produced no recent records of hazel dormouse *Muscardinus avellanarius* within the desktop study area, however, this does not confirm the absence of the species in the local area.

No granted EPSM licences in respect of hazel dormouse were identified within a two kilometre radius of the site. However, this does not confirm the absence of the species group in the local area.

Field Survey Results

The tree line and scrub habitats on site are of poor quality for supporting hazel dormouse, lacking the structural diversity and foraging resources, which the species requires. The wider landscape supports a high density of well-connected areas of broad-leaved woodland of greater suitability to support hazel dormouse.

Given that the habitats on site which are unsuitable for hazel dormouse, are limited in size and have poor connectivity to more suitable habitat areas within the wider landscape, it is considered highly unlikely that the species is present on site. Therefore, this species is not considered further in this report.

4.8 Water Vole

4.8.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC returned three records of water vole individuals within the desktop study area. These were all associated with the Holly Brook and River Kennet watercourses south of the site, with the closest located approximately 400 metres from the site boundary.

Field Survey Results

There are no aquatic habitats such as rivers or streams on site and no habitats which present suitable shelter or foraging opportunities for water vole. There are no suitable habitats for this species which connect to the site, with the nearest watercourse being Holly Brook which lies approximately 280 metres south and is separated from the site by extensive residential areas with associated road networks. The site is considered unsuitable for water vole, therefore the species is not considered further in this report.

4.9 Birds

4.9.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC returned 71 species of bird within a one kilometre radius of the site. Of these species, the red listed⁹, starling *Sturnus vulgaris*, wren *Troglodytes troglodytes*, house martin *Delichon urbicum*, swift *Apus apus* and house sparrow *Passer domesticus* and the amber listed¹⁰ woodpigeon *Columba palumbus* and song thrush *Turdus philomelos* were considered most likely to breed within the site.

Field Survey Results

During the field survey several bird species including the amber listed¹⁰ woodpigeon, house sparrow, common gull *Larus Canus* and black-headed gull *Chroicocephalus ridibundus* were all recorded using the areas within the site boundary. Red kite *Milvus milvus*, a Schedule 1 species¹¹, magpie *Pica pica* and carrion crow *Corvus corone* were also recorded within the site boundary.

Birds nest material was recorded in multiple places within gaps in the wooden soffit boxes on the southern elevation of the main building (**Figure 15**), as well as bird faeces stained on its brick walls nearby (**Figure 16**). The building also provides suitable nesting opportunities within the internal spaces accessed through gaps behind the soffits and holes which were identified in several places on the ceiling plaster boards.

⁹ The UK's birds are split in to three categories of conservation importance - red, amber and green. Red is the highest conservation priority, with species needing urgent action. Amber is the next most critical group, followed by green. Red List criteria include species which are: globally threatened; have been subject to historical population decline in UK during 1800–1995; are in severe (at least 50%) decline in UK breeding population over last 25 years, or longer-term period, or; subject to severe (at least 50%) contraction of UK breeding range over last 25 years, or longer-term period.

¹⁰ The UK's birds are split in to three categories of conservation importance - red, amber and green. Red is the highest conservation priority, with species needing urgent action. Amber is the next most critical group, followed by green. Amber list criteria include species which are: in unfavourable conservation status in Europe; subject to historical population decline during 1800–1995, but recovering; subject to moderate (25-49%) decline in UK breeding population or contraction of UK breeding range over last 25 years, or the longer-term period; subject to moderate (25-49%) decline in UK non-breeding population over last 25 years, or the longer-term period; rare breeders (1–300 breeding pairs in UK); rare non-breeders (less than 900 individuals), or; internationally important species with at least 20% of European breeding or non-breeding population in UK.

¹¹ Birds listed on Schedule 1 of the Wildlife and Countryside Act (1981 as amended) are afforded additional protection making it an offence to: Intentionally or recklessly disturb any bird while it is nest building, or is at a nest containing eggs or young; or; Intentionally or recklessly disturb the dependent young of any such bird.

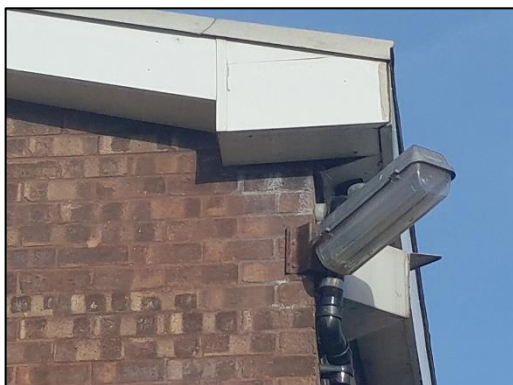


Figure 15: Gaps within and behind soffit boxes on building, creating potential access points for breeding birds.



Figure 16: Bird faeces on brick walls of building.

Other than the on site building, habitat in the form of scattered scrub, introduced shrubs, scattered trees and a line of trees provide suitable habitat to support nesting birds on site. The wider landscape provides suitable habitat for breeding birds in the form of extensive areas of woodland, waterbodies, hedgerows, wetland, lines of trees and scattered trees located within communal and private greenspace.

Because of the scale and types of habitats present on the site, it is highly unlikely that the site supports notable populations or assemblages of wintering birds or ground nesting birds. Therefore, both wintering birds and ground nesting birds are not considered further in this report.

4.9.2 Evaluation

The habitats on site represent a small portion of the habitats available for breeding birds in the wider area. Therefore the site is assessed as being of no more than site value for breeding birds.

4.10 Reptiles

4.10.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC returned two records of reptile species, both from 2009. These were a single grass snake *Natrix Helvetica*, located approximately 390 metres south of the site and one slow-worm *Anguis fragilis*, found approximately 970 metres east of the site.

No granted EPSM licences in respect of sand lizard *Lacerta agilis* or smooth snake *Coronella austriacus* were identified within a two kilometre radius of the site. However, this does not confirm the absence of these species in the local area.

Field Survey Results

During the field survey no evidence of reptiles was recorded within the site boundary. The modified grassland, scattered scrub, introduced shrub and line of trees on site provides suitable terrestrial habitat for the species. Piles of waste materials were also noted within the northern area of modified grassland and these could provide artificial refugia for the species group (**Figure 17**).



Figure 17: Scattered piles of waste material forming potential artificial refugia for reptiles.

Overall the site is assessed as having suitability for reptiles.

4.11 Great Crested Newt

4.11.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC produced no records of great crested newt *Triturus cristatus* within the desktop study area and review of the MAGIC database produced no records of granted EPSM licences in respect of great crested newt within a two kilometre radius of the site.

In addition, no ponds, or records of great crested newt within ponds submitted as part of a great crested newt class survey licence return, were found within a 500 metre radius of the site as part of the MAGIC database review undertaken.

It should be noted that these results do not confirm the absence of the species in the local area.

Field Survey Results

The habitat on site is unsuitable for breeding great crested newt as there are no bodies of water present. The onsite areas of modified grassland, tree lines, scattered scrub and introduced shrub do provide some limited suitable terrestrial habitat for the species. The nearest waterbody is Holly Brook which lies approximately 280 metres south. However given that this watercourse contains flowing water, it is unsuitable for egg

laying and therefore will not support great crested newt during their aquatic phase. The nearest pond is located within Prospect Park approximately 840 metres north-west of the site.

There are no breeding opportunities for great crested newt on site or within 500 metres of the site boundary. It is therefore assessed that the site is unsuitable for great crested newt and this species is not considered further in this report.

4.12 Invertebrates

4.12.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC returned two records of notable species within one kilometre of the site. These were stag beetle *Lucanus cervus* and white-letter hairstreak butterfly *Satyrrium w-album*. A total of 98 recordings of stag beetle were returned between 2015 and 2022, with the closest approximately 40 metres south of the site boundary and recorded during 2022. In 2019 the notable species white-letter hairstreak was recorded 950 metres north-west of the site.

Other species of principal importance records returned within the desktop study area include the butterfly and moths; small heath *Coenonympha pamphilus*, white ermine *Spilosoma lubricipeda* *Timandra comae*, cinnabar *Tyria jacobaeae* and small blue *Cupido minimus*.

Field Survey Results

The modified grassland, introduced shrub and scattered scrub habitats present within the site are limited in their extent. The line of trees present lacks deadwood habitat for stag beetle and the site as a whole lacks elm *Ulmus* species which are the foodplant for white-letter hairstreak. The vegetation species present do flower in the spring/summer and provide leaf litter in the autumn/winter. Given these factors the site is likely to support numbers of common and widespread pollinating and terrestrial invertebrate species. The site is considered unlikely to support notable species or assemblages of invertebrates and therefore this species group is not considered further in this report.

4.13 Other Relevant Species

4.13.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC returned 26 records of European hedgehog *Erinaceus europaeus*, with the closest of these recorded approximately 190 metres north-west of the site boundary.

Three historical records of brown hare *Lepus europaeus* from 1999 were returned, approximately 700 metres from the site and associated with King's Academy playing field.

Field Survey Results

No evidence of any other relevant species was recorded within the site during the survey undertaken. The site provides suitable habitat for the Species of Principal Importance European hedgehog in the form of the modified grassland, scattered scrub, line of trees and areas of introduced shrub where these species may commute, forage, seek shelter and hibernate.

4.13.2 Evaluation

Given the further extensive suitable habitat in the surrounds, mostly associated with residential gardens, the on site habitats are assessed as being of no more than site value for European hedgehog.

5.0 ASSESSMENT OF ECOLOGICAL EFFECTS AND MITIGATION/COMPENSATION/ENHANCEMENT MEASURES

5.1 Introduction

This section assesses the ecological effects of the proposed development scheme on the identified ecological features as identified in Section 4.0. Methods for addressing potential impacts on ecological features have been approached in accordance with the mitigation hierarchy¹² with avoidance of impacts prioritised where possible. Where significant adverse effects cannot be avoided other forms of mitigation are prioritised over compensation. Enhancement measures have been detailed, where relevant, in order to not only minimise the impacts on biodiversity but also to provide enhancement in accordance with Paragraph 174 of the NPPF (Paragraph 2.2). It is anticipated that mitigation, compensation and enhancement measures will be secured through the planning process.

5.2 Scheme Design

The proposals comprise the demolition of the existing former building, and removal of the majority of vegetation and hardstanding. This will then facilitate the construction of a building complex comprising approximately 14 apartment units for a residential scheme in association with Reading Borough Council. The scheme will also comprise the provision of residential parking, access, facilities and landscaping.

It is understood that the lighting proposals for the site are currently not available and are still being finalised at this stage.

The potential ecological impacts and effects of these proposals, in the absence of mitigation, are described for each ecological feature below. For each ecological feature, measures to mitigate and/or compensate for significant effects are described.

5.3 Designated Sites

5.3.1 *Potential Impacts and Effects*

Multiple non-statutory designated sites of nature conservation interest are located within a one kilometre radius of the site. However, given the nature and scale of the proposals, the distance between these designated sites and the redevelopment works, and that no impact pathways to such sites have been identified, no potential impacts on designated sites or their qualifying features are anticipated as a result of the current proposals.

¹² In accordance with CIEEM Ecological Impact Assessment guidance (CIEEM, 2018) a sequential process is adopted to address impacts on features of ecological interest, with 'Avoidance' prioritised at the top of the hierarchy and Compensation/Enhancement' at the bottom. This is often referred to as the 'mitigation hierarchy'.

5.3.2 Mitigation Measures

Given that no potential constraints are anticipated, no mitigation measures are required in relation to designated sites.

5.3.3 Significance of Residual Effects

There are no anticipated effects on designated sites.

5.3.4 Compensation

No compensation measures are proposed with regards to designated sites.

5.3.5 Enhancement

No enhancement measures are proposed with regards to designated sites.

5.3.6 Monitoring

No monitoring is required in relation to designated sites.

5.4 Habitats

5.4.1 Potential Impacts and Effects

The current proposals will result in the demolition of the existing building. The scheme will also result in the loss of a small areas of modified grassland, scattered scrub, introduced shrub and scattered trees within the site, which will result in a net loss of vegetation cover.

The line of trees habitat bounding the site along the west and north site boundaries are to be retained as part of the proposals plan. Accidental damage to this habitat during construction has also been identified as a potential impact.

5.4.2 Mitigation Measures

The application will be required to be supported by a separate Biodiversity Net Gain assessment, as per the legislation set out within The Environment Act 2021. This will ensure that the proposals achieve a minimum of 10% net gain in biodiversity using a formalised biodiversity metric calculator.

To ensure the avoidance of impacts on the line of trees habitat a suitable buffer, enforced with protective fencing will be established around the retained tree line. The installation of protective fencing should follow guidance set out in BS 5837:2012 – Trees in relation to design, demolition and construction (British Standards Institution, 2012).

5.4.3 Significance of Residual Effects

Following the above mitigation measures, there will be a net loss of habitats on site.

5.4.4 Compensation

To compensate for the loss of the modified grassland within the site, areas of grassland incorporated into the landscaping design will be sown with a suitable seed mix which will increase species diversity within the habitat. Prior to the selection of the seed mixture to be utilised, it may be necessary to undertake soil testing to establish the current pH, phosphorus and nitrogen levels of the soil. A seed mix such as Emorsgate EM3 Special General-Purpose Meadow Mixture, is recommended as it is suitable for a wide range of soil types, and contains a 1:5 ratio of wildflower and grass species. Consultation with a suitably qualified ecologist will be sought where necessary.

Any new tree planting will be designed to incorporate appropriate native species, such as native cherry *Prunus* species, pedunculate oak *Quercus robur*, field maple *Acer campestre* and ash, and an ecologist will be consulted in any forthcoming landscape plans.

5.4.5 Enhancement

No enhancement measures are proposed in relation to habitats.

5.4.6 Monitoring

No monitoring is required in relation to habitats.

5.5 Bats

5.5.1 Potential Impacts and Effects

The semi-mature cherry tree, T1, is proposed for removal is part of the site preparation works. Following the endoscope inspection, the tree was re-assessed to have PRF-I suitability for roosting bats, given the presence of a rot hole which has the potential to support one or low numbers of individual bats. As a result, the removal of T1 has the potential to injure and/or kill bats, and destroy their roosts, if present at the time of the proposed site preparation works.

The line of trees habitat bounding the site along the west and north site boundaries are to be retained as part of the proposals plan. Light spill on this habitat, either during construction or during operation as part of the external lighting strategy, has the potential to result in the deterrence of foraging and commuting bats, resulting in a net loss and potential fragmentation of suitable habitat.

In England, bats and their habitat are fully protected under the Wildlife and Countryside Act 1981 through inclusion in Schedule 5. In addition, all bat species are protected under the Conservation of Habitats and Species Regulations 2017. Refer to **Appendix 3** for details.

5.5.2 Mitigation Measures

Since the cherry tree is classified as a PRF-I, a precautionary method of work will be required in respect of the removal of the tree. This will involve the tree to be removed being inspected by a suitably qualified ecologist immediately prior to works commencing. If no bats are recorded within the tree during the inspection, it will then be cut down immediately..

Ideally new lighting to be introduced should comprise directional lighting in order to minimise any spill on to both the retained line of trees and newly created habitat. Ideally the bulbs will be LED and at the warmer end of the spectrum (e.g. avoiding blue or white light). LED lights emit much lower levels of UV and therefore have a lower impact on wildlife (BCT, 2019). New lighting should be task related, and limited to the access points of the new proposed facilities. Guidance on task related lighting levels and mitigation options as described within the Bats and Artificial Lighting in the UK report will be followed (BCT and the Institution of Lighting Professionals, 2023). An ecologist should be consulted to provide input into any forthcoming lighting plans.

5.5.3 Significance of Residual Effects

While the mitigation measure will prevent direct harm to bats it will not prevent the loss of suitable roosting, foraging and commuting habitat at the site as a result of this development.

5.5.4 Compensation

Compensatory roosting opportunities will be provided by installing integrated cavity wall units in the fabric of the new residential buildings, such as Vivara Pro WoodStone Build-In Bat Tube (or similar) or a suitable wall mounted alternatives such as Vivara Pro WoodStone Low Profile Bat Boxes. The tubes or boxes should be located below the eaves, and wherever possible not above windows or doors to prevent accidental disturbance to bats utilising the feature. The features will ideally be positioned for accessibility for the species group into the wider landscape, and on southern elevations to allow the features to warm up. These boxes are self-contained and do not allow bats to access the rest of the building.

The installation of two Vivara Pro WoodStone Build-In Bat Tubes (or similar) into the fabric of the building complex is deemed appropriate compensation for the loss of on site roosting opportunities for bats. One Vivara Pro WoodStone Bat Box will be installed on the retained tree line to provide immediate compensation during demolition works.

5.5.5 Enhancement

Any new landscaping (as detailed in Paragraph 5.4.4) will enhance the site for foraging and commuting bats.

5.5.6 Monitoring

No monitoring is required in relation to bats.

5.6 Birds

5.6.1 Potential Impacts and Effects

The removal of the trees and scrub and demolition of the building has the potential to injure and/or kill breeding birds, their nests and young, if present during the works.

All birds, their nests, eggs and young are legally protected, with certain exceptions, under the Wildlife and Countryside Act 1981 (as amended). Refer to **Appendix 3** for details.

5.6.2 Mitigation Measures

Any woody vegetation removal and building demolition works will be undertaken outside of the breeding bird season, which extends from March to August (inclusive). If this is not possible, a suitably qualified ecologist will inspect the building and woody vegetation to be removed immediately prior to works commencing. Any active nests encountered will be left with an undisturbed and suitably sized buffer area scoped out by the supervising ecologist, until chicks have fledged and/or the nests are no longer in use.

5.6.3 Significance of Residual Effects

While the mitigation measures will prevent direct harm to nesting birds, it will not prevent the loss of suitable breeding habitat at the site as such there will be a significant residual effect as a result of this development.

5.6.4 Compensation

Compensatory nesting opportunities will be provided by installing artificial nesting features. These will be erected onto the walls of the proposed residential complex or erected onto the trunks of retained on site mature trees, using Vivara Pro WoodStone Bird Boxes or similar. Nesting features will also be integrated into the fabric of the new building, using for example WoodStone House Sparrow Terraces and Ibstock Swift Bricks (or similar). The provision of two bird boxes or integrated nesting bird features as part of the development proposals is deemed appropriate compensation for the loss of on site nesting opportunities for birds.

Whether installed onto the trunks of retained mature trees or onto the new building, the nesting features will be positioned at a minimum height of three metres, away from artificial light sources, sheltered from strong winds and ideally positioned for accessibility for the species group into the wider landscape. The boxes will not be installed on southern elevations as there is the potential for chicks in the nest to

overheat in warmer temperatures. For bird boxes installed on the building, these will be located below the eaves or gable ends, and wherever possible not above windows or doors to prevent droppings fouling these features.

5.6.5 Enhancement

Any new landscaping (as detailed in Paragraph 5.4.4) will indirectly benefit birds through the provision of additional food sources and nesting opportunities.

5.6.6 Monitoring

No monitoring is required in relation to birds.

5.7 Reptiles

5.7.1 Potential Impacts and Effects

Given that individuals of common reptile species may use the site and pass through to reach further suitable habitat within the wider landscape, the removal of the on site vegetation has the potential to result in the killing and/or injury of reptiles during the works. There will be a small loss of habitats for reptile however this will not be a significant impact given the extent of suitable habitats in the wider area.

Widespread reptile species (slow-worm *Anguis fragilis*, common lizard *Zootoca vivipara*, grass snake *Natrix helvetica* and adder *Vipera berus*) are protected under the Wildlife and Countryside Act 1981 against harm. Refer to **Appendix 3** for details.

5.7.2 Mitigation Measures

As a precautionary measure, to prevent the killing and/or injury of reptile individuals that may be present at the time of the vegetation clearance works, a precautionary destructive search will be required prior to the commencement of development works. This will involve a suitably qualified ecologist supervising two-stage vegetation removal, with an initial cut down to 150 millimetres before the topsoil is stripped. The clearance works will be undertaken in a directional manner, working south to north, to encourage individuals to disperse into the off-site adjacent suitable habitat of their own accord. Any reptile individuals encountered during the destructive search works will be relocated to these areas also. The works will need to be undertaken during the reptile active season which extends from April to October, inclusive. Works could be carried out outside of the period if suitable weather conditions are met.

Any storage of building materials will be preferentially located upon sealed surface habitat in the first instance.

5.7.3 Significance of Residual Effects

Following mitigation, there will be no residual effects on reptiles.

5.7.4 Compensation

As there will be no residual effects following mitigation, no compensation measures are proposed with regards to reptiles.

5.7.5 Enhancement

Any new landscaping (as detailed in Paragraph 5.4.4) will indirectly benefit reptiles, through the provision of additional foraging opportunities.

5.7.6 Monitoring

No monitoring is required in relation to reptiles.

5.8 Other Relevant Species

5.8.1 Potential Impacts and Effects

The removal of vegetation has the potential to injure and/or kill European hedgehog if present during the works, and the installation of new barriers within the site may disrupt commuting pathways for the species. There will be a small loss of suitable habitats for European hedgehog, however given the extent of suitable habitats available in the wider area, this is considered to be insignificant.

During construction works, there is the potential for European hedgehog to become trapped in excavations if left open at night.

European hedgehog is protected under Schedule 6 of the Wildlife and Countryside Act 1981 against killing or capturing them using certain methods (see **Appendix 4**).

5.8.2 Mitigation Measures

Any vegetation clearance works to be carried out under a precautionary destructive search methodology (as outlined within Paragraph 5.7.2) will also take European hedgehog into consideration. Any individuals or nests encountered will be relocated to off-site adjacent suitable habitat.

If any new barriers are to be erected within the site, they will comprise post and rail fences, and not closed board fences or brick walls, to ensure the continued permeability of the site for European hedgehog. If post and rail fences are not possible, gaps will be created within the wooden boards or brick walls measuring a minimum of 13 by 13 centimetres to allow safe passage of individuals across the site, termed 'Hedgehog Highways' (Peoples Trust for Endangered Wildlife, 2018).

In the unlikely event that a hedgehog becomes trapped in excavations during construction works, a timber ramp will be inserted to allow the animal to escape of its own accord.

5.8.3 Significance of Residual Effects

Following mitigation, there will be a no residual effects on European hedgehog.

5.8.4 Compensation

No compensation measures are proposed with regards to European hedgehog.

5.8.5 Enhancement

Any new landscaping (as detailed in Paragraph 5.4.4) will indirectly benefit European hedgehog, through the provision of additional foraging opportunities.

5.8.6 Monitoring

No monitoring is required in relation to European hedgehog.

5.9 Cumulative Effects

Assuming that the mitigation and compensation measures outlined in the paragraphs above are implemented, no significant residual effects are anticipated. As such it is considered unlikely that the proposals will contribute to cumulative adverse effects in association with other proposals in the local area.

6.0 CONCLUSIONS

6.1 Conclusion

The site is assessed as containing PRF-I suitability for tree roosting bats within the semi-mature cherry tree, T1, being of site value for foraging and commuting bats, and having suitability for nesting birds, reptiles and European hedgehog. Adverse impacts on these ecological features have been identified and appropriate mitigation measures proposed, including the preparation of a Construction Environmental Management Plan (CEMP), a sensitive lighting design and sensitively timed habitat clearance works.

Compensatory measures including new native species planting and the provision of additional, dedicated bat roosting and bird nesting features will be introduced. Post-development, no residual or cumulative impacts are anticipated. Upon the completion of a biodiversity net gain assessment, achieving +10% net gain in line with the statutory requirements of the Environment Act 2021, it will then be considered that the proposals will accord with all relevant national and local planning policy in relation to ecology. These include Policies EN12 and EN14 of the Reading Borough Council Local Plan and 'Theme for Action C' of Reading's Biodiversity Action Plan (refer to Section 2.0) and the NPPF.

6.2 Updating Site Survey

If the planning application boundary changes or the proposals for the site alter, a re-assessment of the scheme in relation to ecology may be required. Given the mobility of animals and the potential for colonisation of the site over time, updating survey work may be required, particularly if development does not commence within 18 months of the date of the most recent relevant survey.

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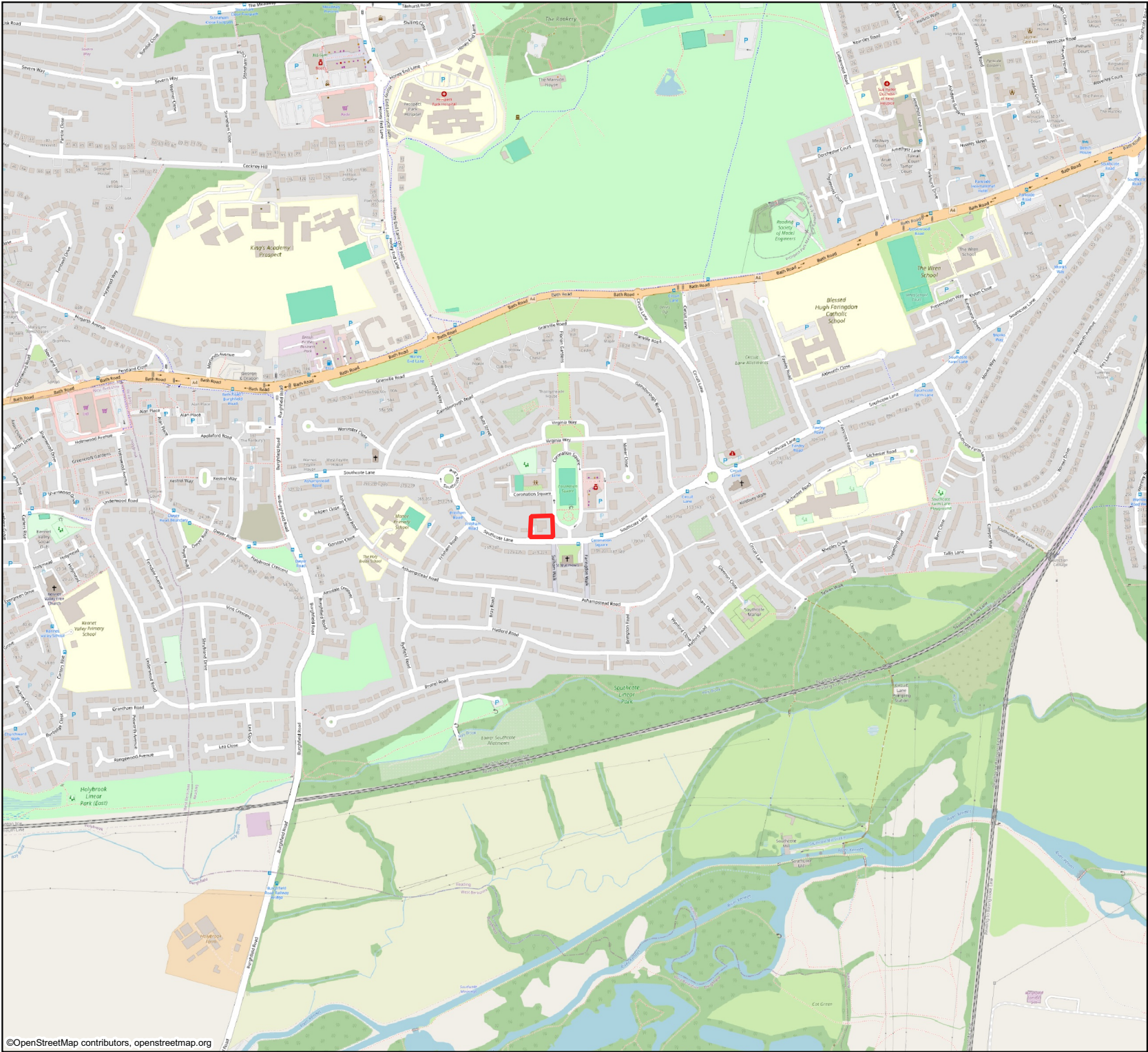
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Map 1 Site Location Plan



SOUTHCOTE LANE, READING BERKSHIRE

ECOLOGICAL IMPACT ASSESSMENT

Map 1 - Site Location Plan

Client:	Gleeds
Date:	January 2024
Status:	Draft

KEY

 Site Boundary



Prepared by: BA	Date: 250124
Last amended by:	Date:

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Map 2 Baseline Habitat Map



**SOUTHCOTE LANE, READING,
BERKSHIRE**

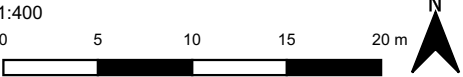
ECOLOGICAL IMPACT ASSESSMENT

Map 2- Baseline habitats

Client:	Gleeds
Date:	February 2024
Status:	Draft

KEY

-  Red Line Boundary
-  Small Urban Tree
-  Line of trees
-  Built linear features
-  Developed land; sealed surface
-  Modified grassland



Prepared by: BA	Date: 160224
Last amended by: N/A	Date: N/A

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Appendix 1 Proposed Site Layout

Site Option 01

RBC Housing Viable minimum

GROUND FLOOR PLAN



TOTAL HOMES

- Building footprint pushed 5 metres Westward to align with Building to the North
- 16 Parking spaces
- Vehicular Entrance moved Westward to avoid clash with pedestrian crossing
- Vehicular access widened to 4.8m
- Turning head for large car provided in parking court

KEY

-  **Site Boundary**
-  **2 Bed 4 Person WCH Flat (x1)**
-  **2 Bed 4 Person Flat (x11)**
-  **3 Bed 6 Person Flat (x2)**
-  **Core & Circulation**
-  **Refuse Storage**
-  **Bike Storage**
-  **Apartment Entrance**
-  **Plant Room**
-  **Proposed Trees**
-  **Proposed Parking Spaces**



Ground Floor Plan
Scale - 1:200@A3

Appendix 2 Sites Designated for Nature Conservation

Statutory Sites

Internationally Designated Sites - Ramsar Sites, Special Areas of Conservation and Special Protection Areas

Special Protection Areas (SPAs) and Special Areas of Conservation (SACs) form a network of protected sites across the European Union and United Kingdom. In the United Kingdom the primary legislative protection is afforded to these sites under the Conservation of Habitats and Species Regulations 2017 (as amended).

Ramsar sites are designated as wetlands of international importance which are afforded similar legislative protection to SPAs and SACs.

SACs are sites which support internationally important habitats or internationally important assemblages or populations of species. SPAs are designated for supporting internationally important populations of birds. SACs, SPAs and Ramsar sites are generally also designated as Sites of Special Scientific Interest.

Under Regulation 63 of the Conservation of Habitats and Species Regulations 2017 (as amended) there is a legal requirement that competent authorities, such as local planning authorities, need to consider whether plans or projects are likely to have a significant adverse effect on SPAs, SACs or Ramsar sites, either alone, or in combination with other plans or projects. In the event that a likely significant effect cannot be ruled out, on the basis of objective information, then the competent authority must undertake an “Appropriate Assessment” to fully assess the plan or project against the site’s conservation objectives. Unless certain defined derogation tests can be met, the competent authority may not authorise nor undertake any plan or project which adversely affects the integrity of a SPA, SAC or Ramsar site.

Nationally Designated Sites – Sites of Special Scientific Interest and National Nature Reserves

Sites of Special Scientific Interest (SSSI) receive legal protection under the Wildlife and Countryside Act 1981 (as amended). Such sites are designated to protect specific areas of biological or geological interest of national importance. Such sites also generally receive strict protection through the planning system.

National Nature Reserves (NNR) are also usually designated as SSSIs and are specifically managed for their wildlife value. They receive legal protection through the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981 (as amended). As with SSSIs, these sites generally receive strict protection through the planning system.

Locally Designated Sites – Local Nature Reserves

Local Nature Reserves (LNR) are designated by local authorities under the National Park and Access to the Countryside Act 1949. These are generally designated not only for their local wildlife value but also for education, scientific and recreational purposes. These sites generally receive protection from development through the planning system.

Non-Statutory Sites

Locally Designated Sites

In addition to statutory designations, local authorities often designate sites of nature conservation importance at the local level. Such designations are named differently by each local authority and may be referred to as Local Wildlife Sites (LWS), Sites of Importance for Nature Conservation (SINC) or Sites of Nature Conservation Importance (SNCI), amongst others. The exact level of protection afforded to these sites varies and is normally defined through local planning policy.

Appendix 3 Relevant Legislation

Bats

All UK bat species are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 2 of the Conservation of Habitats and Species Regulations 2017. They are afforded full protection under Section 9(4) of the Act and Regulation 43 of the Regulations. These make it an offence to:

- Deliberately capture, injure or kill any such animal;
- Deliberately disturb any such animal, including in particular any disturbance which is likely:
 - To impair its ability to survive, breed, or rear or nurture their young;
 - To impair its ability to hibernate or migrate;
 - To affect significantly the local distribution or abundance of that species;
- Damage or destroy a breeding site or resting place of any such animal;
- Intentionally or recklessly disturb any of these animals while it is occupying a structure or place that it uses for shelter or protection; or
- Intentionally or recklessly obstruct access to any place that any of these animals uses for shelter or protection.

In addition, five British bat species are listed on Annex II of the Habitats Directive. These are:

- Greater horseshoe bat *Rhinolophus ferrumequinum*;
- Lesser horseshoe bat *Rhinolophus hipposideros*;
- Bechstein's bat *Myotis bechsteinii*;
- Barbastelle *Barbastella barbastellus*; and
- Greater mouse-eared bat *Myotis myotis*.

In certain circumstances where these species are found the Directive requires the designation of Special Areas of Conservation (SACs) by EC member states to ensure that their populations are maintained at a favourable conservation status. Outside SACs, the level of legal protection that these species receive is the same as for other bat species.

Breeding Birds

With certain exceptions, all wild birds, their nests and eggs are protected by Section 1 of the Wildlife and Countryside Act 1981 (as amended). Therefore, it is an offence, to:

- Intentionally kill, injure or take any wild bird;
- Intentionally take, damage or destroy the nest of any wild bird while it is in use or being built; or
- Intentionally take or destroy the egg of any wild bird.

These offences do not apply to hunting of birds listed in Schedule 2 subject to various controls. Bird species listed on Schedule 1 of the Act receive further protection, thus for these species it is also an offence to:

- Intentionally or recklessly disturb any bird while it is nest building, or is at a nest containing eggs or young; or
- Intentionally or recklessly disturb the dependent young of any such bird.

Reptiles

The four widespread species of reptile that are native to Britain, namely common or viviparous lizard *Zootoca vivipara*, slow-worm *Anguis fragilis*, adder *Vipera berus* and grass snake *Natrix helvetica*, are listed in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and are afforded limited protection under Section 9 of this Act. This makes it an offence to:

- Intentionally kill or injure any of these species.

The remaining native species of British reptile (sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca*) receive a higher level of protection via inclusion under Schedule 2 of the Conservation of Habitats and Species Regulations 2017. They are afforded full protection under Section 9(4) of the Act and Regulation 43 of the Regulations (in England and Wales only) and the Wildlife and Countryside Act 1981 (as amended). The distribution of these species are restricted to only a few sites in England.

Species and Habitats of Principal Importance in England

The Natural Environment and Rural Communities (NERC) Act came into force on 1st October 2006. Section 41 (S41) of the Act requires the Secretary of State to publish a list of habitats and species which are of principal importance for the conservation of biodiversity in England. The England Biodiversity List is used to guide decision-makers such as public bodies, including local and regional authorities, in implementing their duty under section 40 of the NERC Act 2006, to have regard to the conservation of biodiversity in England, when carrying out their normal functions. There are currently 943 species of principal importance and 41 habitats of principal importance included on the England Biodiversity List.

Appendix 4 Protected and Notable Species Appraisal Methods

Bats

The survey conformed to current Bat Conservation Trust guidelines (Collins, 2023). An assessment was made of the suitability of buildings and trees on the site and immediately on the site boundary to support roosting bats based on the presence of features such as loose or missing roof tiles or lifted lead flashing for buildings and holes, cracks, splits, loose bark and ivy cladding for trees. A detailed external and internal inspection of accessible structures was undertaken to compile information on potential and actual bat entry/exit points; potential and actual bat roosting locations; any evidence of bats found.

An assessment was made of the suitability of the site and the surrounding landscape to support foraging and/or commuting bat species. The assessment of the potential for the site to support roosting, foraging and commuting bat is based on a four-point scale as detailed in **Appendix 5**.

Otter

The otter appraisal was based on an assessment of the suitability of the habitat present within the site to support otter by reference to habitat type (such as rivers, streams, ditches, wetlands, reed beds, lakes, ponds and reservoirs), proximity of the site to freshwater and potential important feeding resources (such as fisheries), presence of habitat features which could provide opportunities for resting places and/or holts (such as tunnels, hollows at the base of trees and presence of dense, undisturbed habitat). During the survey attention was paid to the presence of evidence such as spraints, feeding remains, footprints and slides.

Badger

The survey involved a detailed investigation of the site to identify evidence of badger residence, foraging or territorial activity. Particular emphasis was placed on locating badger setts, paths, and signs of territorial activity such as latrine sites both on site and within immediately adjacent areas where access was possible.

Hazel Dormouse

The appraisal for the potential of the site to support dormouse was based on an assessment of habitat features that may indicate that the species is present. This includes the presence of key food sources such as hazel and bramble, or plants used as nesting material such as honeysuckle and clematis. Additionally, the species requires a continuum of food supply so that habitat structure, diversity and connectivity to adjacent areas of woodland/scrub are important features in determining the potential presence of hazel dormouse.

Water Vole

The water vole appraisal was based on an assessment of the suitability of the habitat present within the site to support water vole by reference to habitat type (such as rivers, streams, ditches, wetlands, reed beds, lakes, ponds and reservoirs), bank structure and the bank side

vegetation. Water voles generally require sloping banks in which to burrow and well-developed bank side vegetation to provide shelter and food. During the survey attention was paid to the presence of burrows, latrines, feeding remains, trails and footprints.

Birds

The appraisal of breeding birds on the site was based on the suitability of habitat present to support nesting bird communities, the presence of bird species that may potentially nest within the available habitat and evidence of nesting such as old or currently active nests.

The assessment of wintering birds was based on an assessment of the suitability of the habitat on site to support important wintering bird species and populations. Particular attention was paid to the potential for the site to support wintering farmland bird species, waders and wildfowl.

Reptiles

The reptile appraisal was based on an assessment of the suitability of the habitat present within the site to support a population of reptiles. Reptiles particularly favour scrub and rough grassland interfaces and the presence of these is a good indication that reptiles may be present on site. In addition, reptiles may utilise features such as bare ground for basking, tussocky grassland for shelter and compost heaps and rubble piles for breeding and/or hibernating.

Great Crested Newt

The appraisal of the site to support great crested newt included establishing the presence of suitable aquatic habitats such as ponds, lakes or other waterbodies within or adjacent to the site and the presence of suitable terrestrial habitat. Waterbodies that are densely shaded, highly eutrophic or that contain fish are likely to be less suitable for this species. The suitability of on site ponds and terrestrial habitat is considered in relation to the presence of ponds within the wider area, as identified within the desktop study (Paragraph 3.4.3), and their suitability to be used as a network.

Invertebrates

An assessment was made of the site for its potential value to support diverse communities of invertebrates. The assessment was based on the presence of habitat features which may support important invertebrate communities. These features include, for example, an abundance of dead wood, the presence of diverse plant communities, varied woodland structure, sunny woodland edges with a diverse flora, waterbodies and water courses and areas of free draining soil exposures. During the field survey there was no attempt made to identify species present as this is a more specialist area of ecological assessment reserved for targeted surveys.

Other Relevant Species

An assessment was made of site suitability for other notable species such as more rarely encountered protected species, Species of Principal Importance for the Conservation of diversity in England notified under Section 41 of the NERC Act 2006 and as listed in the England

Biodiversity List, and Local Biodiversity Action Plan (LBAP) species¹³, specific to the study region.

Invasive Species

During the field survey any incidental records of invasive species listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) were recorded. However, it should be considered that the survey was not specifically aimed at assessing the presence of these species and further specialist advice may need to be sought.

¹³ LBAPs identify local priorities for biodiversity conservation by translating national targets for species into effective action at the local level and identifying targets for species important to the local area.

Appendix 5 Baseline Habitats

Table 5: Summary of Baseline Habitats

Level 1	Terrestrial
Level 2	Grassland (g)
Level 3	Modified Grassland (g4)
Level 4	N/A
Level 5	N/A
Secondary Codes	Frequently mown (108) Active management (516) Scattered scrub (10) Non-native (523) Tall or tussocky sward (128) Scattered trees (32)
	
Species List Creeping buttercup <i>Ranunculus repens</i>, ribwort plantain <i>Plantago lanceolata</i>, broad-leaved dock <i>Rumex obtusifolius</i>, dandelion <i>Taraxacum officinale</i> aggregate, deadnettle <i>Lamium</i> species, cleavers <i>Galium aparine</i>, common groundsel <i>Senecio vulgaris</i>, herb Robert <i>Geranium robertianum</i>, daisy <i>Bellis perennis</i>, spear thistle <i>Cirsium vulgare</i>, ragwort <i>Senecio jacobaea</i>, wall barley <i>Hordeum murinum</i>, yarrow <i>Achillea millefolium</i>, wild strawberry <i>Fragaria vesca</i>, Yorkshire fog <i>Holcus lanatus</i>, perennial rye grass <i>Lolium perenne</i>, stinging nettle <i>Urtica dioica</i>, <i>Geranium</i> species, ivy <i>Hedera helix</i> and lords & ladies <i>Arum maculatum</i>. Scattered scrub (10) – ash <i>Fraxinus excelsior</i>, bramble <i>Rubus fruticosus</i>, blackthorn <i>Prunus spinosa</i> and cherry <i>Prunus avium</i> Non-native (523) – Butterfly bush <i>Buddleia davidii</i>, Spanish bluebell <i>Hyacinthoides hispanica</i> and daffodil <i>Narcissus</i> species. Scattered trees (32) – Hawthorn <i>Crataegus monogyna</i> and cherry <i>Prunus</i> species.	

Level 1	Terrestrial
Level 2	Urban (u)
Level 3	Built-up areas and gardens (u1)
Level 4	Developed land – sealed surface (u1b)
Level 5	Other Developed Land (u1b6)
Secondary Codes	Ruderal or ephemeral (81) Introduced shrub (847) Scattered grass (532) Flower bed (846) Mortared wall (853)
	
Species List	
Introduced shrub (847) – <i>Cotoneaster</i> species, holly <i>Ilex aquifolium</i>, <i>Clematis</i> species. Flower bed (846) – Spanish bluebell <i>Hyacinthoides hispanica</i> Scattered grass (532) – Yorkshire fog <i>Holcus lanatus</i> and perennial rye grass <i>Lolium perenne</i>	

Level 1	Urban (u)
Level 2	Built-up areas and gardens (u1)
Level 3	Developed land – sealed surface (u1b)
Level 4	Buildings (u1b5)
Level 5	N/A
Secondary Codes	
	
Species List	
N/A	

Level 1	Terrestrial
Level 2	Woodland and forest (w)
Level 3	N/A
Level 4	N/A
Level 5	N/A
Secondary Codes	Line of trees (33)
	
Species List	
Line of trees (33) – Leyland cypress <i>Cupressus × leylandii</i> , western red cedar <i>Thuja plicata</i> , bramble <i>Rubus fruticosus</i> aggregate, cherry <i>Prunus avium</i> and ivy <i>Hedera helix</i>	

Appendix 6 Appraisal Criteria for Bats

The criteria used to assess the suitability of roosting and foraging/commuting habitat for bats is based on industry guidelines and outlined in **Table 6**¹⁴.

Table 6: Criteria used to Assess Suitability of Roosting and Foraging/Commuting Habitat for Bats

Suitability	Description of roosting habitats	Commuting and foraging habitats
High	A structure or tree 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 habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.
Moderate	A structure of tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status.	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically/structure that does not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerows or un-vegetated stream, but isolated (i.e. not very well connected to the surrounding landscape by other habitat). Suitable, but isolated, habitat that could be used by small numbers of foraging bats such as a lone tree or a patch or scrub.
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.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats)

¹⁴ Table adapted from (Collins, 2023)

