

LAND AT WENSLEY ROAD, READING, BERKSHIRE

ECOLOGICAL IMPACT ASSESSMENT

Draft Document

January 2020

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 Limited
Issue:	Draft
Report Reference:	5388.D0
Date of Issue:	27 th January 2020
Date of Survey Works:	11 th December 2019, 7 th and 24 th January 2020
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LAND AT WENSLEY ROAD, READING, BERKSHIRE

ECOLOGICAL IMPACT ASSESSMENT

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EXECUTIVE SUMMARY

Ecological Survey and Assessment Ltd (ECOSA) have been appointed by Gleeds Limited to undertake an Ecological Impact Assessment to support a planning application for the redevelopment of Land at Wensley Road, Reading. The site is located in Reading, Berkshire and comprises a series of high-rise flats with parking, garages and gardens. The proposals entail the construction of 46 residential dwellings with associated parking and infrastructure.

The main findings of the Ecological Impact Assessment are:

- The habitats of relatively greatest importance on the site are the mature scattered trees. The site offers suitability for invertebrates, tree roosting bats, foraging and commuting bats and nesting birds;
- Mitigation recommended includes the implementation of a CEMP during site preparation and clearance. The CEMP would include detail such as the use of tree protection barriers and sensitive timings of vegetation removal ecological supervision for certain aspects of works;
- Trees with low suitability for roosting bats will require removal under ecological supervision. None of the buildings on site (the flats have not been included in the assessment) have bat roosting suitability;
- Mature trees should be retained where possible. Where tree removal is unavoidable, dead wood should be retained on site to create habitat for invertebrates;
- There are opportunities for site enhancement through the provision of suitable native species planting (with appropriate ongoing management), provision of bat and bird boxes and the creation of habitat for invertebrates. A site-specific EMEP is recommended and will provide details of mitigation, compensation and enhancement;
- Given the impacts identified and the mitigation, compensation and enhancement measures proposed, it is considered that the proposals accord with all relevant local and national planning policy; and
- 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 Limited to undertake an Ecological Impact Assessment to support a planning application for the redevelopment of Land at Wensley Road, Reading, Berkshire, RG1 6EB (hereafter referred to as the site).

This Ecological Impact Assessment relates to Phase One of the development for new homes and landscaping. A second phase of work, Phase Two, comprises an ongoing programme of tower block improvements. This phase will require a separate planning application, due to be submitted later in the year, and is excluded from this current assessment.

1.2 The Site

The site is located in Reading, Berkshire, centred on National Grid Reference (NGR) SU 7002 7194 (**Map 1**). The Phase 1 habitat map (**Map 2**) depicts the boundary of the site.

The site covers approximately 2.5 hectares and comprises three 15 storey tower blocks with three associated parking courts, garages and open grass amenity spaces. The site is bounded by Wensley Road on the northern, southern and eastern boundaries with residential terrace and semi-detached housing located to the west.

The site is located on the southern boundary of Reading within the suburb of Coley Park. The wider landscape to the north is dominated by urban development while agricultural fields lie to the south. The M4 is approximately 2.5 kilometres south of the site, while the River Kennet and Holy Brook are within 650 metres and 300 metres south, respectively.

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 December 2019 and January 2020 and relates to Phase One of the proposed development. 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

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.

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;
- 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

Phase One of the proposals is for new homes and landscaping, comprising 46 new affordable family homes, carparking, amenity space and landscaping.

The Ecological Impact Assessment is based on the Landscape Illustrative Masterplan produced by HTA dated 20th December 2019 (Drawing No. RBC-WLR-HTA-L-XX-XX-DR-0900) (**Appendix 1**).

A planning application is due to be submitted to the Local Planning Authority (LPA) in January 2020.

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 a revised NPPF published in February 2019. 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 177 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 170 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 175, 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)."*

175 also states *“development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity”*. Protection of sites proposed as SPAs, SACs and Ramsar sites or 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

Local planning policy for Reading Borough Council is provided by the Core Strategy (Adopted 2008, altered January 2015). A single policy makes specific reference to ecology and biodiversity:

- **Biodiversity and Geology CS36: Biodiversity and Geology**
 - a) Development should retain, protect and incorporate features of biodiversity or geological interest (including protected species and their habitats) found within the application site into their schemes.

On sites with recognised biodiversity or geological value, development will not be permitted where there would be a direct or indirect adverse impact on the site, unless it can be clearly demonstrated that:

 - i. The need for development clearly outweighs the need to protect the value of the site; and
 - ii. Appropriate compensation, impact minimisation, mitigation and compensation are provided.
 - b) Local Nature Reserves and Wildlife Heritage Sites will be safeguarded and where possible, enhanced. Permission will not be granted for any development that would adversely affect a designated nature reserve or Wildlife Heritage Site.

- c) Any development that would sever or threaten the integrity of an established wildlife link, as indicated on an adopted proposals map, will not be permitted. Where applicable, developments should be designed to protect, consolidate, extend and enhance the network of wildlife links and corridors in and adjoining the Borough, working with neighbouring authorities where appropriate.

A new local plan, which will replace the Core Strategy, Reading Central Area Action Plan and Sites and Detailed Policies Document, is currently in development.

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 31st December 2019 for the following data:

- Records of non-statutory designated sites (Local Wildlife Sites (LWSs)) within one kilometre of the site boundary. See **Appendix 2** for details;
- Records of legally protected and notable species (flora and fauna) within two kilometres of the site boundary, including Species of Principal Importance (**Appendix 3**) (the BRC data request was for a 500 metre search buffer around the site, however, the data centre records received were for a two kilometre search buffer; these have therefore been included); 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, 2019) was reviewed on 17th December 2019 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 broadly followed standard Phase 1 habitat survey methodology (JNCC, 2010) 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**) and photographs provided, where relevant.

Phase 1 Habitat Survey

An assessment was made of all areas of vegetation within the site based on the standardised Phase 1 habitat survey methodology (JNCC, 2010)⁶. This involved identification of broad vegetation types, which were then classified against Phase 1 habitat types, where appropriate. A list of characteristic plant species for each vegetation type was compiled and any invasive species⁷ encountered as an incidental result of the survey recorded.

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 initial field survey was carried out by Samantha Munslow, Principal Ecologist of ECOSA on 11th December 2019. The weather conditions were heavy rain with approximately 70% cloud cover, an ambient temperature of 6°C and no wind.

During the survey, the surveyor was equipped with 10x40 binoculars, 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. 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. No internal

⁶ The standard JNCC Phase 1 habitat survey methodology involves the production of a Phase 1 map showing the location and extent of habitat types, however, given the limited size and complexity of the site surveyed a Phase 1 habitat map has not been produced in this instance.

⁷ 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.

access was possible to on-site buildings during the survey, therefore assessments were made from an external inspection only.

It is not always possible to provide definitive assessments of a species' presence/likely absence at a site and so in the absence of direct evidence, assessments and recommendations are based on the presence of suitable habitat within/adjacent to a site and the results of species records within the desk study data.

The survey was undertaken at a time of year when many species of plant and animal are either dormant, not visible above ground or simply not present in the UK (such as migratory birds). Therefore, the survey was based upon an assessment of the habitat present on site and the suitability of this habitat to support protected species.

3.6 Bat Survey

3.6.1 Survey Methods

Bat Tree Climb and Inspect Survey

The bat tree climb and inspect survey was undertaken in line with current best practice guidelines (Collins, 2016). Trees with suitability to support roosting bats (Error! Reference source not found.) were subject to tree climb and inspect surveys in order to provide a detailed assessment of the suitability of Potential Roost Features to support roosting bats.

The climb and inspect survey involved the use of rope access techniques to climb those trees assessed as having suitability to support roosting bats from the ground level and ascertain whether Potential Roost Features previously identified on the trees were suitable for bat roosting.

The tree climb and inspect survey then allowed surveyors to either confirm presence of a roost through the presence of bat roosting evidence such as droppings or staining or rule out features which otherwise may have appeared suitable from the ground level tree assessment.

Where bat roosts are identified or confirming likely absence of bat roosts within suitable features is not possible further emergence/re-entry surveys may be required.

Building Endoscope Survey

The water tank structure (**B1**) underwent a targeted endoscope survey to inspect potential roosting features for bats such as gaps in brick work and lifted roofing material. The survey aimed to identify any evidence of roosting bats such as the presence of bats, droppings, feeding remains or urine staining.

3.6.2 Survey Details

Bat Tree Climb and Inspect Survey

The climb and inspect survey was carried out by qualified tree climbers and licenced bat surveyors Edward Venables (Natural England Bat Licence 2015-14865-CLS-CLS) and Jack Medley, Field Ecologist (Natural England Bat Licence 2018-38355-CLS-CLS) of ECOSA on 7th and 24th January 2020. The weather conditions on both days were overcast and dry with 50-75% cloud cover, an ambient temperature of 8-9°C and a gentle breeze.

During the surveys, the trees were accessed using climbing ropes and the surveyors were equipped with high powered torches and endoscopes.

Building Endoscope Survey

The building endoscope survey was carried out by licenced bat surveyors Ed Venables (Natural England Bat Licence 2015-14865-CLS-CLS) and Jack Medley, Field Ecologist (Natural England Bat Licence 2018-38355-CLS-CLS) of ECOSA on 7th January 2020. The weather conditions were overcast and dry with 50-75% cloud cover, an ambient temperature of 8°C and a gentle breeze.

During the survey the surveyors were equipped with high powered torches and endoscopes.

3.6.3 Survey Limitations

No internal access to the three garage buildings was possible during the survey, therefore assessments were made from external inspections only. Due to the nature of these buildings (lack any roof voids and the fact that the garages are in use) and taking account of the suboptimal nature of the surrounding habitat for bats, the lack of an internal inspection is not a significant limitation to the building assessment.

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

Statutory Designated Sites

There are no statutory designated sites of nature conservation interest situated within one kilometre of the site boundary. The closest is West Reading Woodlands LNR located approximately 1.7 kilometres north-west of the site and consists of three parcels of broadleaved semi-natural woodland with streams and ponds.

Non-Statutory Designated Sites

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

- Holy Brook (LWS) – Located approximately 300 metres south of the site and is a stream that carries water from and discharging back into the River Kennet;
- Fobney and Kennet Valley Meadows (LWS) – Located 340 metres south of the site and is an area of permanent pasture with some wet grassland and swamp vegetation. Dragonflies and damselflies are present as well as a range of aquatic plant species;
- River Kennet/Kennet and Avon Canal (LWS) – Located approximately 610 metres south of the site, the River Kennet is one of the best examples of a chalk river nationally and is a UK Priority Habitat;
- Fobney Island (LWS) – Located approximately 700 metres south of the site and is an area of land (island) between the Kennet and Avon Canal and the Kennet overflow. The habitats on the island comprise standing waterbodies bounded by grassland and tall ruderal habitats and a wetland mosaic dedicated to wildlife; and
- Prospect Park (LWS) – Located approximately 870 metres north-west of the site and consists of prospect Park and the Rookery. The Rookery is a small area of

lowland mixed deciduous woodland raised above Prospect Park. The park is largely an amenity space with grassland, mature and veteran trees, hedgerows and ponds.

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

4.2.2 Evaluation

There are five non-statutory designated sites within one kilometre of the site boundary, all of which are assessed as being of local importance.

4.3 Habitats

4.3.1 Baseline Ecological Conditions

Desktop Study Results

A review of MAGIC revealed the presence of the Priority habitat Coastal and Floodplain Grazing Marsh located approximately 60 metres south of the site associated with the River Kennet and Holy Brook. There are also small patches of the Priority Habitat Deciduous Woodland within the desktop study area.

Consultation with TVERC produced records of common and widespread plant species within the desktop study area. No records of rare or notable plant species were returned.

Field Survey Results

Habitats within the site are shown on the Phase 1 Habitat Map (**Map 2**), Target Notes and photographs have been provided as appropriate, Target Notes are cross referenced to **Map 2**. Habitats are described in general terms using standard Phase 1 habitat survey terminology, with reference to dominant, characteristic and notable species in each vegetation type. The main habitats recorded on site during the Phase 1 habitat survey were as follows:

Scattered Trees

There are a large number of scattered trees present across the site, many of which are mature (**Figure 1** and **Figure 2**). A group of six mature Turkey oak *Quercus cerris* are present in the centre of the site, and one recently felled oak with limbs stacked on the ground. Three mature London plane *Platanus x hispanica* are located on the western boundary and a line of London plane in the north-eastern corner. Three mature lime *Tilia x europaea* are located east of the Wensley Road loop.

There are many other trees scattered around the edges of the site, around car parks, around the play area and at site entrances. The majority of these are immature. Species

include spindle *Euonymus europaea*, London plane, beech *Fagus sylvatica*, common lime, cherry *Prunus avium*, horse chestnut *Aesculus hippocastanum*, hornbeam *Carpinus betulus*, field maple *Acer campestre*, goat willow *Salix caprea* and a number of ornamental species. Further information in relation to trees on site is provided further on in this report and also within the separate Arboriculture Report, provided by ACD Environmental.



Figure 1: Example of mature lime tree



Figure 2: Examples of mature oak trees

Amenity Grassland

Areas of amenity grassland surrounding the buildings and car parks cover approximately 1.1 hectares, are typical of public open green space and are intensively managed by close mowing, resulting in a short sward in all grassy areas of the site. The grassland areas are dominated by perennial rye-grass *Lolium perenne*, with a limited range of common forbs including yarrow *Archillea millefolium*, clover *Trifolium* species, dandelion *Taraxacum officinale*, ribwort plantain *Plantago lanceolata*, creeping buttercup *Ranunculus repens*, daisy *Bellis perennis* and creeping cinquefoil *Potentilla reptans* (**Figure 3** and **Figure 4**).



Figure 3: Example of well-managed semi-improved grassland



Figure 4: Example of well-managed semi-improved grassland

Buildings and Hardstanding

There are three 15 storey tower blocks, three rows of garages (**B2, 3 and 4**) and a watertank structure (**B1**) present on site (**Figure 5** and **Figure 6**) with surrounding hardstanding. Three parking courts, access roads and a play area are also present. The tower blocks (part of the Phase Two proposed works to be dealt with under a separate, future application) lie outside of the Phase One boundary and are therefore not assessed as part of this Ecological Impact Assessment.



Figure 5: Row of garages



Figure 6: Watertank structure

4.3.2 Evaluation

The habitats on site are common and widespread comprising scattered trees, semi-improved grassland, buildings and hardstanding. The habitats of relatively greatest importance are the mature scattered trees.

4.4 Bats

4.4.1 Baseline Ecological Conditions

Desktop Study Results

A review of MAGIC revealed the presence of four granted EPSM licences within two kilometres of the site. The closest was granted in 2011 and covers the destruction of a resting place and breeding site of soprano pipistrelle *Pipistrellus pygmaeus* located approximately 520 metres north-west of the site.

Consultation with TVERC produced records of six species of bat within two kilometres of the site. These are serotine *Eptesicus serotinus*, Daubenton's bat *Myotis daubentonii*, noctule *Nyctalus noctula*, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle and brown long-eared bat *Plecotus auritus*. The most recent records for each species range from 2013 and 2018.

Field Survey Results

Building Assessment

There are three rows of garages located in the north-western corner of the site. These are single storey buildings of brick construction with pitched metal corrugated roofs and metal garage doors (**Figure 5**). The northern garage building (**B2**) does not support any potential bat roosting features externally. Gaps are present above garage numbers 11 and 12 leading to an internal void, however it is considered highly unlikely that bats use this feature due to the presence of cobwebs. The two other garage buildings (**B3** and **B4**) are well sealed externally with no visible access points. There is a slight gap beneath the fascia on the western-most garage but this is heavily cobwebbed. No internal access to garage buildings was possible. Each of the three sets of garage buildings on site are assessed as having negligible suitability for roosting bats.

The watertank structure (**B1**) is single storey and of brick construction with a flat metal roof (**Figure 6**). The building is well sealed externally with the exception of a partially lifted fascia which is filled with cobwebs. There is possible internal access via holes in the brickwork and ventilation grille. The watertank structure is very noisy due to the presence of a generator and heavily cobwebbed internally. The electrical room within the structure has two holes in the ceiling plasterboard leading to rafter but is also heavily cobwebbed. Due to the noise disturbance, cobwebs and structural design of the building, it is assessed as having negligible suitability for roosting bats.

Tree Assessment

During the initial field survey, a number of mature trees on site were identified as containing Potential Bat Roost Features such as rot holes, callous rolls, limb scars and flaking bark (**Figure 7** and **Figure 8**). Due to the number of trees present and the height of some of the more mature specimens, it was not possible to carry out a detailed assessment of trees during the initial survey. As such, a detailed ground level tree assessment was required, followed by tree climb and inspect surveys of those trees where features were not visible from the ground or where suitability for roosting bats could not be ruled out (see below).



Figure 7: Example of rot hole within mature lime **Figure 8:** Example of callous roll

Foraging and Commuting Habitat

The site provides some suitability for foraging and commuting bats in the form of scattered trees. Land to the south of the site including Coley Water Meadows Nature Reserve comprises highly suitable foraging habitat comprising well-connected trees, hedgerows and fields. The River Kennet and Holy Brook are located 650 metres and 300 metres south, respectively and are likely commuting routes for bats in the local area. In addition, a network of lagoons and lakes lie approximately one kilometre south-west of the site and are also likely to represent an important foraging resource for bats. Due to the extent of highly suitable habitat in the wider area, the site is assessed as having low suitability for foraging and commuting bats.

Bat Ground Level Tree Assessment and Climb and Inspect Survey Results

The results of the ground level tree assessment and tree climb and inspect survey of the on-site trees are provided in **Table 1**. Refer to Tree Protection Plan PRI22568-03 dated 6th January 2020 produced by ACD Environmental for details of tree reference numbers and tree locations.

A total of eleven trees were identified during the ground level tree assessment as having suitability for roosting bats. Five trees showing suitability for roosting bats from the ground level assessment and knowing to be affected by the proposals were then climbed and inspected. Those trees climbed and inspected were: G38, T4, T93, T94 and the monolith. See **Table 1** for the results of the tree assessment.

Table 1: Tree assessment results

Tree Number	Species and Description	Description of Features	Climb and Inspect Survey?	Suitability for Bats (final assessment score)
T4	Pedunculate Oak	Deadwood stump on main trunk, three rot holes	Yes	Negligible

Tree Number	Species and Description	Description of Features	Climb and Inspect Survey?	Suitability for Bats (final assessment score)
G38	Goat willow	Rotted branch tear at 5m. Sealed	Yes	Negligible
T56	Large-leaved lime	Multiple rotted out callous roll ranging in size, hollow trunk, suitable for hibernation	No	High
T57	Large-leaved lime	Multiple rotted out callous roll ranging in size, hollow trunk, evidence of bees at 7m, suitable for hibernation	No	High
T58	Large-leaved lime	Multiple rotted out callous rolls, possible hollow trunk	No	Moderate
T87	Turkey oak	Hole within callous roll at 10m	No	Low
T88	Turkey oak	Three rot holes/branch tears	No	High
T90	Turkey oak	Callous rolls at 7m and 10m	No	Low
T93	Turkey oak	Limb scar, rotted branch snag, loose bark	Yes	Negligible
T94	Turkey oak	Healed hazard beam with rot hole, large callous roll, branch tear, deep rot hole	Yes	Moderate
Monolith (not marked on tree plan)	Turkey oak	Cavity within callous roll, rot hole in limb scar, downward facing limb scar at 17m	Yes	Low

4.4.2 Evaluation

Roosting Bats

Of the eleven trees assessed, a total of five will require removal to facilitate the proposals. The five trees affected by the proposals are T4 (negligible roosting suitability), T87 (low roosting suitability), T90 (low roosting suitability), T93 (negligible roosting suitability) and the monolith (low suitability). Five further trees on site have been assessed as having moderate and high suitability for roosting bats (T56, T57, T58, T88 and T94) but will not be affected by the proposals. All other trees on site have been assessed as having negligible suitability for roosting bats.

Foraging and Commuting Bats

The site is assessed as having low suitability for foraging and commuting bats. The site supports a large number of mature trees and a small number of bats may pass over the site to forage and to access foraging areas within the wider landscape. Given the extent of highly suitable habitat in the wider area, including watercourses, trees, hedgerows and lakes to the south, on-site habitats are assessed as being of site value only to foraging and commuting bats. It is unlikely given the location and nature of the site that it would provide a valuable resource for foraging or commuting bats.

4.5 Otter

4.5.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC produced a single record of otter *Lutra lutra* within the desk study area. The record is from 2012 and is located along Holy Brook some 1.7 kilometres south-west of the site.

Field Survey Results

There are no watercourses, drainage ditches or waterbodies on or directly adjacent to the site. A network of drainage ditches hydrologically linked to Holy Brook and the River Kennet is present to the south of the site. The closest lies 45 metres south. However, the site itself largely comprises buildings, hardstanding and amenity grassland with no terrestrial connectivity between suitable otter habitat. The habitat on site is unsuitable for otter and 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 17 records of badger *Meles meles* within the desktop study area, with the most recent record from 2018. The locations of all badger records are confidential.

Field Survey Results

The site largely comprises buildings, hardstanding and well-managed amenity grassland that are unsuitable for foraging badger or sett construction. It is possible that badger may cross over the site to reach more suitable habitat comprising fields, woodland and hedgerow to the south, however the site itself does not provide suitability for species and therefore badger is not considered further in this report.

4.7 Hazel Dormouse

4.7.1 Baseline Ecological Conditions

Desktop Study Results

A review of MAGIC did not reveal the presence of any granted EPSM licences in respect of hazel dormouse *Muscardinus avellanarius* within two kilometres of the site boundary and consultation with TVERC did not produce any records of the species within the desktop study area. However, this does not confirm the absence of the species in the local area.

Field Survey Results

The site comprises largely buildings, hardstanding and amenity grassland with scattered trees that are isolated in nature. The site is encircled by Wensley Road with no connectivity to off-site habitat suitable for the species. The habitat on site is unsuitable for hazel dormouse and therefore the species is not considered further in this report.

4.8 Water Vole

4.8.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC produced 20 records of water vole *Arvicola amphibius* within the desktop study area. The most recent record is from 2009 and is located some 1.2 kilometres south-west of the site associated with Holy Brook.

Field Survey Results

There are no watercourses, drainage ditches or waterbodies on or directly adjacent to the site. A network of drainage ditches hydrologically linked to Holy Brook and the River Kennet is present to the south of the site. The closest lies 45 metres south. However, the site itself largely comprises buildings, hardstanding and amenity grassland with no terrestrial connectivity between suitable water vole habitat. The habitat on site is unsuitable for water vole and 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 produced records of 101 species of bird within the desktop study area. Of these, dunnock *Prunella modularis*, marsh tit *Poecile palustris*, house

sparrow *Passer domesticus* and bullfinch *Pyrrhula pyrrhula* are most likely to nest within on-site trees. There are a large number of wader and wildfowl records listed within the data search. Many of these are associated with the network of former gravel pits (now lakes) located approximately 1.3 kilometres south-west of the site but these are unlikely to be present on the site itself.

Field Survey Results

There are a large number of scattered trees on site that provide suitable nesting habitat for a range of common bird species. Birds may also use the tower blocks and other buildings for nesting. It is considered unlikely that overwintering birds would be present as the site lacks the open space utilised by overwintering species. Holy Brook and the River Kennet are located nearby to the south, however the site itself is not suitable for waders or waterfowl.

4.9.2 Evaluation

Breeding Birds

Given the extent of suitable nesting habitat for birds in the wider area, habitats on site are assessed as being of site value only to breeding birds.

4.10 Reptiles

4.10.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC produced 32 records of slow-worm *Anguis fragilis* and 18 records of grass snake *Natrix helvetica* within the desktop study area. The most recent records for both species are from 2016 and are located approximately one kilometre south-east of the site.

Field Survey Results

The site largely comprises buildings, hardstanding and well-managed amenity grassland that are unsuitable for reptiles as they do not provide the shelter and foraging opportunities required by the species group. Furthermore, the site is enclosed by well-used roads and does not link up to any suitable reptile habitat in the wider area. The habitat on site is unsuitable for reptiles and therefore this species group is not considered further in this report.

4.11 Great Crested Newt

4.11.1 Baseline Ecological Conditions

Desktop Study Results

A review of MAGIC did not reveal the presence of any granted EPSM licences in respect to great crested newt *Triturus cristatus* within two kilometres of the site boundary and consultation with TVERC did not produce any records of the species within the desktop study area. However, this does not confirm the absence of great crested newt within the local area.

OS online mapping and aerial imagery identified a network of drainage ditches located to the south of the site, the closest of which lies approximately 45 metres away. These appear to flow into Holy Brook and the River Kennet.

Field Survey Results

The site largely comprises buildings, hardstanding and well-managed amenity grassland and therefore does not provide suitable terrestrial habitat for great crested newt. There is some potentially suitable habitat for great crested newt around the bases of some of the boundary trees where vegetation is a little longer, however, this is limited in its extent and its suitability. Wensley Road and associated residential development are situated between the site and the network of drainage ditches to the south, likely forming a dispersal barrier to any individuals that may utilise the ditches for breeding. The habitat on site is unsuitable for great crested newt, there are no records of the species within the desk study data and therefore this species group is considered likely absent on site and considered no further in this report.

4.12 Invertebrates

4.12.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC produced 209 records of stag beetle *Lucanus cervus* within the desktop study area. The most recent record is from 2018 and is located approximately 1.6 kilometres north-east of the site.

Field Survey Results

The habitats on site are likely to support common and widespread invertebrate species and assemblages. There is currently little suitable habitat on site for notable invertebrate species such as stage beetle (the larvae of which rely on dead/decaying wood to develop and feed). However, if left on site, the wood from the oak tree that has been recently felled by council could provide suitable stag beetle larvae habitat as it starts to decay.

4.13 Other Relevant Species

4.13.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with TVERC produced 21 records of European hedgehog *Erinaceus europaeus* and 11 records of common frog *Rana temporaria* within the desktop study area. The most recent record for European hedgehog is from 2019 and is located 1.5 kilometres south-west of the site, while the most recent record for common frog is from 2013 and is located 300 metres south of the site.

Field Survey Results

The site is largely unsuitable for European hedgehog, comprising short mown grassland, buildings and hardstanding. Common frog is unlikely to be present on site due to the lack of waterbodies and lack of suitable terrestrial habitat available for hibernation/refuge. Common frog and European hedgehog are not considered further in this report.

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 hierarchy⁸ 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 170 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

Phase One of the proposed development entails the construction of 46 affordable family homes, reconfiguration of parking courts, improvement of central amenity space and preservation and enhancement of landscape features. A total of 35 new six metre directional column luminaires are due to be installed around the site. Access to the site will be to the east from Wensley Road. A total of 65 individual trees and 13 groups of trees are due to be removed as part of the proposals, a further tree to be retained will undergo pruning.

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

The proposed development has the potential to result in degradation to Holy Brook LWS and in turn the River Kennet and Avon Canal LWS, during the construction phase. Holy Brook carried water to and from the River Kennet and it is possible that runoff (containing sediment/soil/chemicals from machinery) from the construction area may eventually enter the watercourse via drainage ditches located some 40 metres south of the site, especially in times of heavy rainfall during the construction phase. This may harm the integrity of the watercourses and the species they support.

⁸ 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'.

Post-development, there will be an increase in residents in the local area which may cause additional recreational pressure to designated sites within proximity to the site. However, the majority of the non-statutory designated sites described in Paragraph 4.2.1 are amenity spaces already managed in such a way to deal with recreational use. As such, this is not considered to be a negative impact.

5.3.2 Mitigation Measures

The production of a Construction Environmental Management Plan (CEMP) will be required to avoid adverse harm to Holy Brook LWS and in turn the River Kennet and Avon Canal LWS. This plan will detail the proposed working measures to avoid any construction related impacts on both designated sites but also surrounding undesignated habitats. This would include measures such as controlling surface runoff, dust and spills, safe storage of materials, retained tree/habitat protection information, environmental screening and a timetable of works.

5.3.3 Significance of Residual Effects

Given that the mitigation measures above are implemented, there will be no significant residual effects on designated sites as a result of the proposals.

5.3.4 Compensation

No compensation measures are required in relation to designated sites.

5.3.5 Enhancement

No enhancement measures are considered necessary.

5.3.6 Monitoring

No future monitoring of designated sites is required.

5.4 Habitats

5.4.1 Potential Impacts and Effects

As a result of the proposals, there will be a loss of 0.38 hectares of land which is currently vegetated (currently amenity grassland/public and inaccessible greenspace) as well as 65 individual trees and 13 groups of trees.

In the absence of mitigation, there will be an overall loss of habitat across the site, comprising amenity grassland and trees. There is also the risk of retained trees on site becoming damaged during the construction phase through use of machinery and compaction within the tree root protection zones.

5.4.2 Mitigation Measures

All works should follow protective measures in line with BS 5837:2012 *Trees in Relation to Design, Demolition and Construction* (BSI, 2012). This document outlines the use of

tree protection barriers to be used for the duration of the construction phase. These barriers are proposed to shield the retained mature trees from damage during construction. This mitigation is also included within the arboricultural report. If possible, wood from felled trees should be retained on site rather than removed to help mitigate for the loss of deadwood from the site. This wood can then provide suitable habitat for a range of wildlife in the form of dead wood piles/loggeries in suitable locations, ideally around the site boundaries/within areas prone to less human disturbance. Further detail of this mitigation (along with compensation and enhancement measures below) will be provided within an Ecological Mitigation and Enhancement Plan (EMEP) to be secured via a planning condition for the application.

5.4.3 Significance of Residual Effects

In the absence of compensation, there will be a net loss of habitat on the site as a result of the proposals comprising grassland and trees.

5.4.4 Compensation

Approximately 0.50 hectares of green space is proposed as part of the new development. Areas of grassland will be sown with a native seed mix such as Emorsgate EM4 (suitable for clay soils) flowering lawn mixture. This mixture contains slow-growing grasses with a selection of wildflowers. Shaded areas of the site will be planted with EW1. This will allow for the replacement of existing grassland and result in improved, more species-rich habitats over these areas. These areas should be suitably managed in a way which makes them as attractive and suitable for invertebrates as possible, leaving areas unmown during the flowering season to ensure plants have the opportunity to flower, set seed and to provide nectar sources.

New landscaping will incorporate native species including a mixture of flowering plants and shrubs that are beneficial to invertebrates. While new tree planting will incorporate native species as opposed to cultivars, and preferably with an understorey of species-rich flora. Species such as oak and beech, willow species and silver birch *Betula pendula*, amongst others, are suitable for this site.

5.4.5 Enhancement

Areas of wildflower meadow are proposed along the southern site boundary. These will be sown with a native species mix such as Emorsgate EW1 and EM4 which contains a wide range of species to create a diverse sward and is suitable for the soil type/conditions of the site. A species-rich grassland with varying grass heights should be encouraged, again, managed with selective cutting at appropriate times of the year to provide habitat for a range of invertebrate species and create less “formal” amenity areas wherever the possibility arises.

5.4.6 Monitoring

Monitoring of new planting will be carried out by landscape contractors and further details of this monitoring, along with measures taken to ensure planting success, are provided within the landscape report accompanying the application.

5.5 Bats

5.5.1 Potential Impacts and Effects

Trees with suitability for roosting bats which require removal to facilitate the proposals are T90, T87 and the monolith (see Paragraph 4.4.1 and Tree Protection Plan PRI22568-03). Each of these three trees have low suitability for roosting bats. If present, individual bats may be killed/harmed during tree removal and there would also be a loss of bat tree roosts (or features which may be suitable for roosting bats even if not currently used as such) in the long-term. The remaining trees identified as having suitability for roosting bats are due to be retained and will not be impacted by the proposals, including no impacts from the new lighting being proposed.

A total of 35 new six metre directional column luminaires are due to be installed around the site. New external lighting may result in disturbance to foraging and commuting bats at the site.

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

Impacts on trees suitable for roosting bats have been determined based on Tree Protection Plan PRI22568-03 and lighting plans produced by Hoare Lea. If proposals change and additional or different trees are to be removed, mitigation recommendations would need to be reviewed. Likewise, if current lighting proposals change, recommendations regarding lighting may need to be reviewed.

Trees T87, T90 and the monolith have low suitability for roosting bats. Current Bat Conservation Trust Guidance states that trees with low suitability for roosting bats should be felled under the supervision of an ecologist and in a sensitive manner involving “soft felling”. Further details of this precautionary tree removal technique would be provided within the CEMP. In summary, this precautionary method of removing trees with low suitability for roosting bats will comprise ecological supervision of the tree works. In the unlikely event that roosting bats are discovered during the works, Natural England would be contacted by the ecologist to provide advice on a suitable and legal way of proceeding. This may involve applying for a Natural England

European Protected Species Mitigation (EPSM) licence in relation to bats. Where possible to do so, limbs containing roosting features should be retained and fixed to suitable mature trees which are being retained so these features are not lost from the site. Detail of how this could be achieved would be included within the CEMP.

To reduce impacts on foraging and commuting bats, installation of external lighting will follow guidance on bats and artificial lighting (Bat Conservation Trust, 2018). External lighting will comprise hooded luminaires directed away from vegetation, particularly the mature trees on site. 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 (ARUP, 2014). Any lighting on the outside of houses should be motion-activated and task related, associated with specific entrance/exit points. The lux level will be as low as possible to allow the task to be carried out safely and effectively. Guidance on task related lighting levels published by the Chartered Institution of Building Services Engineers (CIBSE) (CIBSE, 2002) will be followed.

5.5.3 Significance of Residual Effects

Based on the tree removal plans and results of the initial and further assessments of trees on site for roosting bats, with the suitable mitigation implemented, there should be no significant residual effects.

5.5.4 Compensation

A total of 185 new trees are due to be planted on the site. Replacement tree planting will incorporate native species wherever possible as opposed to cultivars. Species such as oak *Quercus* species and beech *Fagus sylvatica* are suitable for roosting bats, while oak, willow *Salix* species and silver birch *Betula pendula*, amongst others, are suitable for foraging and commuting.

5.5.5 Enhancement

Native species planting will enhance the site for bats by providing an additional foraging and commuting resource. Low level planting will include a mixture of native flowering plants and shrubs.

A species-rich grassland with varying grass heights, managed with selective cutting will provide habitat suitable for a range of invertebrates that bats species prey on.

New buildings will each contain a Schwegler 1FR bat tube (or similar design) built into the fabric of the building. In addition, three bat boxes such as Schwegler 1FF or Schwegler 2F boxes will be installed on retained trees on the site to provide additional opportunities for roosting bats at the site. Information relating to mitigation, compensation and enhancement pertaining to bats will be included within the EMEP.

5.5.6 Monitoring

Should any further tree removal be required on site, either as part of the proposals or for maintenance purposes, an ecologist should perform an assessment of those trees in case they contain roosting features for bats. Specifically, trees T56, T57, T58, T88 and T94, all provide suitable habitat for roosting bats and would need pre-felling/pruning surveys should they be affected in the future, including the introduction of any additional lighting on the site.

5.6 Birds

5.6.1 Potential Impacts and Effects

Removal/pruning of woody vegetation and tree removal/lopping may result in the killing/injury of breeding birds if carried out during the nesting season of March to August inclusive. Disturbance to nesting birds may also result from construction related activities that are taking place in close proximity to trees. In the absence of compensation, there will be a net loss in habitat suitable for nesting birds in the long-term.

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

Tree removal will be undertaken outside of the nesting season of March to August inclusive. Where this is not possible, an ecologist will be present immediately prior to clearance to check vegetation for nests. Any active nests will be left with a suitable buffer until nesting ends naturally and chicks have fledged.

Tree protection barriers described in Paragraph 5.4.2 will ensure that there is suitable protection of trees that may be utilised by nesting birds. Mitigation measures in relation to nesting birds will be included within the CEMP to ensure their protection during the construction activities.

5.6.3 Significance of Residual Effects

In the absence of compensation, there will be a net loss of habitat suitable for breeding birds as a result of the proposals.

5.6.4 Compensation

A total of 185 new trees are due to be planted on the site. Replacement tree planting will incorporate native species as opposed to cultivars and will provide habitat suitable for nesting birds.

5.6.5 Enhancement

Native species planting, comprising low level planting and shrubs will provide birds with additional nesting habitat. A variety of artificial nesting opportunities will be provided within the new houses comprising terraced sparrow boxes, starling boxes and swift bricks. The exact number, design and location of these boxes will be provided within the EMEP and be no less than one artificial bird box per new dwelling.

5.6.6 Monitoring

No future monitoring in relation to birds is required.

5.7 Invertebrates

5.7.1 Potential Impacts and Effects

If the wood from the felled tree on site is left and not removed until site preparation for the proposed development commences, over time this wood would provide suitable habitat for stag beetle larvae (along with other beetles and insects).

Stag beetle receive partial protection (from sale) under the Wildlife and Countryside Act 1981 (as amended), are listed as a “priority” species under this act and are a “species of principal importance” under the NERC Act. Refer to **Appendix 3** for details.

5.7.2 Mitigation Measures

If left on site, the wood from the felled tree would need to be removed under supervision of an ecologist to ensure no accidental killing/disturbance of stag beetle larvae. Any larvae found would need to be transferred out of the way of the works to a suitable area of habitat. Mitigation measures in relation to stag beetle will be included within the CEMP (unless the wood is removed prior to site preparation commencing) to ensure the protection of larvae during the construction activities.

5.7.3 Significance of Residual Effects

In the absence of compensation, there would be a loss of potentially suitable habitat on site for invertebrates, including stag beetle.

5.7.4 Compensation

As much of the wood as possible from the tree removal works should be retained on site as possible to make up for the loss of habitat. This wood will be used to create “loggeries” to provide habitat for a range of invertebrates, including stage beetle larvae (see paragraph 5.4.2).

5.7.5 Enhancement

Native species planting, will provide good opportunities for a variety of invertebrates over time, once new planting has become established. Insect “houses” can readily be provided within suitable areas of the site which are prone to the least levels of

disturbance, such as the site boundaries. The exact number, design and location of invertebrate enhancements will be provided within the EMEP.

5.7.6 Monitoring

No future monitoring in relation to invertebrates.

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6.0 CONCLUSIONS

6.1 Conclusion

Holy Brook LWS and the River Kennet and Avon Canal LWS lie 300 metres and 600 metres south of the site respectively; neither of these designated sites will be affected by the proposals. The habitats of relatively greatest importance on the site are the mature scattered trees and the site offers suitability for tree roosting bats, foraging and commuting bats, invertebrates and nesting birds. Potential adverse impacts on these ecological features have been identified and suitable mitigation measures have been recommended including the implementation of a CEMP, sensitive timings of tree/woody vegetation removal/pruning, the use of tree protection barriers and a sensitive lighting scheme. The site can be enhanced through the provision of new native species planting, invertebrate habitat provision and the inclusion of bat and bird boxes on new dwellings. As part of the planning conditions for the application, it is recommended that mitigation, compensation and enhancement measures are detailed within an EMEP document. If mitigation, compensation and enhancement measures are delivered (as outlined above), the proposals have the potential to accord with relevant national and local planning policy in relation to ecology including Policy CS36 of the Core Strategy and the NPPF (see Section 2.0).

6.2 Updating Site Survey

If the planning application boundary changes or the proposals for the site alter (including the need to remove/modify any additional mature trees on site to those already earmarked for removal), 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 (ie. if site work has not commenced by June 2021).

7.0 REFERENCES

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Map 1

Site Location Plan

DRAFT



LAND AT WENSLEY ROAD, READING

PRELIMINARY ECOLOGICAL APPRAISAL

Map 1 - Site Location Plan

Client:	Gleeds Limited
Date:	December 2019
Status:	Final

KEY

 Site Boundary



Scale at A4: 1:10,000

0 100 200 400 Metres



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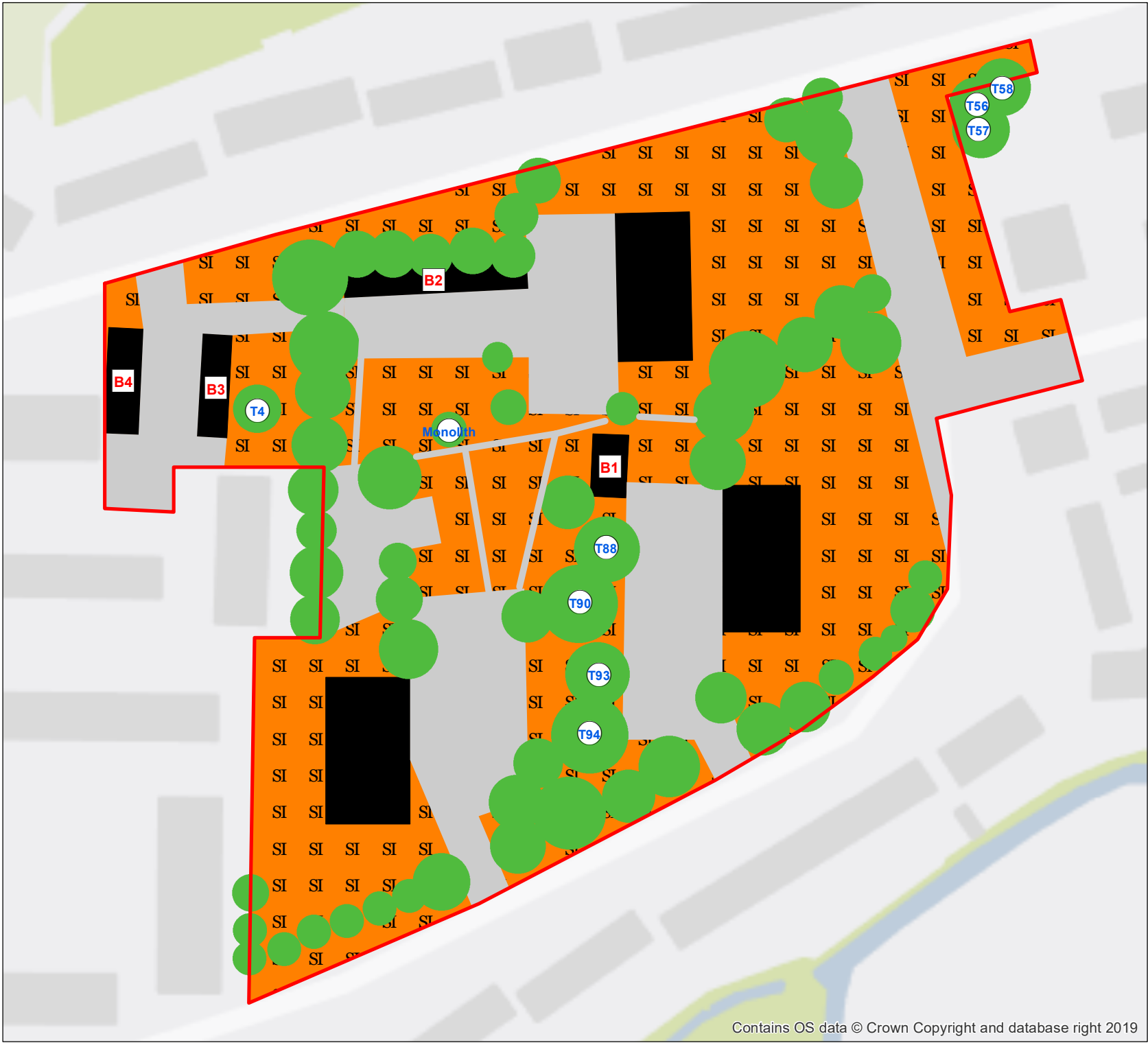
ECOSA Ltd., Ten Hogs House, Manor Farm Offices,
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Web: www.ecosa.co.uk

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Map 2

Phase 1 Habitat Map

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**LAND AT WENSLEY ROAD, READING
BERKSHIRE**

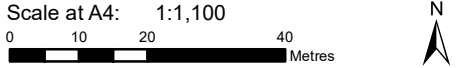
ECOLOGICAL IMPACT ASSESSMENT

Map 2 - Phase 1 Habitat Map

Client:	Gleeds Ltd.
Date:	January 2020
Status:	Draft

KEY

- Site Boundary
- Scattered Trees
- Semi-Improved Grassland
- Hardstanding
- Buildings
- Tree Reference Numbers
- Building Numbers



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Appendix 1 Proposed Site Layout

DRAFT



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Legend

Phase 1 boundary

Key

- Surface Type - Vehicular build up where overrun by vehicles
- Shared Surface Streets
- Asphalt
- Play Trail
- Informal Path

Play Features

- Boulders
- Slide
- Stepping stones
- Exercise equipment

Planting

- Existing Trees
- Proposed Trees
- Succession Planting

Rev	Date	EHE	Initial Issue
1	20.12.19	EHE	Initial Issue

client / project
Reading Borough Council
Wensley Road
drawing title
Landscape Illustrative Masterplan

drawing number	revision
RBC-WLR-HTA-L-XX-XX-DR-0900	-
scale @ A1 1:500	project code RBC-WLR



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 (SPA) and Special Areas of Conservation (SAC) form a network of protected sites across the European Union called Natura 2000 sites. 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 Natura 2000 sites.

SACs are sites which support intentionally important habitats or internationally important assemblages or populations of species. SPAs are designated for supporting internationally important populations of birds listed in the annexes of the Birds Directive. 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 Natura 2000 sites 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 Natura 2000 site 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.

Stag Beetle

The stag beetle is listed on Appendix III of the Bern Convention, on Appendix 2 of the Habitat Directive and listed as a “priority species” on Schedule 5 of Wildlife & Countryside Act 1981 (as amended). It is also listed as a species of “principal importance” under the NERC Act (see below).

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, 2016). 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 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) species⁹, 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.

⁹ 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 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 2**¹⁰.

Table 2: 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	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.

¹⁰ Table adapted from (Collins, 2016)