

Oaklands College & Land south of Sandpit Lane, St Albans

PEA & Ecological Impact Assessment
(including Reptile Survey Report
& Bat Survey Report)

October 2025

**LAND OFF SANDPIT LANE AND OAKLANDS
COLLEGE, ST ALBANS**

ECOLOGICAL IMPACT ASSESSMENT

Final Document

October 2025

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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LAND OFF SANDPIT LAND AND OAKLANDS COLLEGE, ST ALBANS

ECOLOGICAL IMPACT ASSESSMENT

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EXECUTIVE SUMMARY

Ecological Survey and Assessment Ltd (ECOSA) have been appointed by Stantec to undertake an Ecological Impact Assessment to support a planning application for the redevelopment of the land off Sandpit Lane and Oaklands College. The site comprises a college campus with associated facilities and surrounding grassland and woodland owned by the college. The proposals entail the construction of new residential units on land to the north-west of the site, demolition of some college buildings and subsequent construction of new facilities.

The main findings of the Ecological Impact Assessment are:

- A number of designated sites are present in the Zone of Influence including The Wick LNR and 14 LWS.
- The site supports day roosts of common pipistrelle and breeding birds. The site is also suitable for otter, badger, hazel dormouse, reptiles, European hedgehog, polecat, harvest mouse and common toad. Bat emergence, hazel dormouse and reptile surveys are currently ongoing to determine the presence/likely absence of these species on site.
- The proposals will result in the loss of habitats and may cause disturbance and/or harm to roosting bats, otter, badger, breeding birds and invertebrates.
- Mitigation and compensation measures include the need for EPSM licences for roosting bats and sensitive methods of works for breeding birds, European hedgehog, polecat, harvest mouse and common toad.
- Proposed enhancement measures include the provision of roosting, nesting and new planting to improve habitat connectivity on site.
- Further measures will be proposed with regards to bats, following the completion of ongoing surveys, however it is considered that there is scope for the proposals to accord with all relevant local and national 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 Stantec to undertake an Ecological Impact Assessment to support a planning application for the redevelopment of land off Sandpit Lane and Oaklands College, St Albans, Hertfordshire, AL4 0JA (hereafter referred to as the site).

1.2 The Site

The site is located in St Albans, Hertfordshire, centred on National Grid Reference (NGR) TL 1822 0769 (**Map 1**).

The site is located on the outskirts of St Albans and comprises a college campus with associated facilities and surrounding grassland and woodland owned by the college.

In the wider area the landscape is dominated by urban development to the north, west and south, with areas of agricultural fields, quarries and woodland blocks to the east of the site.

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 September 2024 and August 2025. 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 on 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;
- 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;

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.

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'.

- 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 site proposals will be submitted as a hybrid planning application for a severable phased development comprising:

- Full planning application for the construction of homes (use class C3); new local centre and community facility (use classes E(a to f) and F); a children's home (use class C2); demolition and renovation of existing college buildings; construction of new college buildings (use class F1.); the creation of Active Travel Routes including footpaths for walking, cycling and equestrian activities; removal and planting of trees; along with the laying out of green infrastructure (including publicly accessible open space) and habitat creation; drainage infrastructure, earthworks, new means of access and alterations to existing access points.
- Outline planning application (access only, all other matters reserved) for the construction new homes (use class C3); new extra care home dwellings (use class C2); land for the construction of a new primary school (use class F.1); demolition and renovation of existing college buildings; construction of new college buildings (use class F1.); the construction of new sports facilities and pitches; the creation of Active Travel Routes including footpaths for walking, cycling and equestrian activities; removal and planting of trees; a new energy centre; new recycling facilities; new car parking facilities; along with the laying out of green infrastructure and habitat creation; drainage infrastructure, earthworks, pedestrian and cycle routes, and alterations to existing access points.

The phasing of the development is indicative, allowing different phases to commence at different times and independently (severable) from each other. The outline phases will be the subject of parameter plans and design codes.

The Ecological Impact Assessment is based on the proposals plan produced by Initial Landscape Framework Proposals by Julia Goodwin Landscape Architects, dated 4th August 2025 (Drawing No. B2ACad03) (**Appendix 1**).

It is anticipated that planning permission will be sought during 2025 with construction commencing soon after permission has been granted.

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2.0 PLANNING POLICY CONTEXT

2.1 Introduction

This section summarises the planning policy in relation to ecology and biodiversity within the St Albans City and District 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 2024. 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 195 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 187 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 193, 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)."

193 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 194 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

The local planning policies for St Albans District Council are the saved policies set out in the District Local Plan Review 1994. A single policy relates to ecology:

- **Policy 106: Nature Conservation**

The Council will take into account ecological factors when considering planning applications and will refuse applications which could adversely affect Sites of Special Scientific Interest, Nature Reserves, other sites of importance for wildlife, any sites supporting protected species covered by the Wildlife and Countryside Act 1981, and/or the natural regime of either surface or ground waters in river valleys or their wetlands. If planning permission is granted for a site which could affect a site of conservation interest, it will normally be subject to conditions aimed at protecting the special features of the site. The Council will also seek a Section 106 Agreement to ensure the appropriate management of the site.

St Albans District Council formally submitted the Draft Local Plan 2026 - 2041 for review on 24th November 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 (Horsham District Council, 2022).

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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

Hertfordshire Environmental Records Centre (HERC) was consulted 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; and
- 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, 2025) was reviewed on 25th February 2025 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).

The Preliminary Ecological Appraisal Report produced by ECOSA (ECOSA, 2025) is referenced throughout the report.

3.5 Field Survey

3.5.1 Survey Methods

The field survey followed a modified version of 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.

3.5.2 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). Which was modified to make the habitat assessment compatible with the habitat classification within the Biodiversity Net Gain Metric (DEFRA, 2024). 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.

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.

Where Biodiversity Net Gain Statutory Metric habitats are not classified under any of the hierarchical levels within the UKHab methodology, the relevant secondary code definitions have been used to identify these habitats.

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.

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**.

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.

3.5.3 Survey Details

The field survey was carried out by Hugh Turner, Principal Ecologist of ECOSA (2020-50816-CLS-CLS) and Samantha Faggetter, Senior Ecologist of ECOSA (2024-12530-CL18-BAT) on 28th January 2025. The weather conditions were rainy with 100% cloud cover, an ambient temperature of 13°C and a light breeze. A further survey was carried out by Sam Lloyd, Ecologist of ECOSA on 31st January 2025. The weather conditions were dry with approximately 30% cloud cover, an ambient temperature of 10°C and a light breeze.

During the surveys, the surveyors were equipped with a ladder, 10x40 binoculars, a high-powered torch and digital cameras.

3.5.4 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.

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.

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.

Access to building loft voids was limited due to presence of water damage to the floor of the voids, asbestos potentially being present and access not being large enough. As such, a precautionary approach has been taken with regard to assessing bat suitability based solely on external features.

3.6 Bat Survey

3.6.1 Survey Methods

Ground Level Tree Assessment

The ground level tree assessment was undertaken in line with current best practice guidelines (Collins, 2023). An assessment was made of the suitability of the trees on the site which are set to be removed (Error! Reference source not found.) to support roosting bats based on the presence of Potential Roost Features such as holes, cracks, splits, loose bark and ivy cladding. The assessment of the potential for trees on the site to support roosting bats is based on a four-point scale as detailed in **Appendix 5**.

Bat Emergence Surveys

The bat emergence surveys were undertaken in line with current best practice guidelines (Collins, 2023). In accordance with guidelines for buildings assessed as having suitability to support roosting bats, a single dusk emergence survey was undertaken for buildings with low suitability to support roosting bats, and two dusk emergence surveys were undertaken for buildings assessed as having medium suitability for roosting bats, in order to ascertain the presence/likely absence of roosting bats within the buildings. Where the presence of roosting bats is confirmed, these data also allow for an assessment of the status of the roost present. The status of roosts (where appropriate) has been based on standard terminology as detailed in **Appendix 6**.

The dusk emergence surveys commenced approximately 15 minutes before sunset until approximately 1.5 to two hours after sunset.

The surveys were carried out by eleven experienced ECOSA surveyors, positioned at previously identified vantage points around the buildings. These vantage point locations allowed a sufficient coverage of the Potential Roosting Features identified on the buildings 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 buildings.

Bat Transect Survey

Bat transect surveys were undertaken in line with current best practice guidelines (Collins, 2023). Given that the site has been assessed as having high suitability for supporting foraging and commuting bats, a single survey visit per season was undertaken in spring, summer and autumn to allow an assessment of the status and importance of foraging/commuting bats at the site.

A team of two surveyors walked pre-determined transect routes across each site on each occasion (**Map 3**), walking the same transect route on each survey. The transect routes ensured that the surveyors visited key areas of foraging and commuting habitat within the site, such as hedgerows, woodland edge and tree lines as well as less suitable habitats. The dusk transects surveys commenced at sunset and lasted for at least two hours depending on the level of bat activity.

At the end of each transect survey, data was downloaded and then analysed using BatExplorer (Version 2.2.6.0). This program is designed to analyse bat call data by identifying key call characteristics such as call shape, call length, call 'distance' (i.e. the time period between two consecutive calls) and peak frequency.

The species calls were subsequently checked manually by a suitably qualified ecologist using the spectrogram feature of BatExplorer to verify their identities. Where suitable recordings were obtained, bats were identified to species level. For some groups, notably long-eared bat species⁷ and *Myotis*⁸ bat species, specific identification was not always possible.

The GPS feature of the Batlogger M allows the location of the surveyor at the time of each bat call registration to be recorded. These data are exported to BatExplorer and used to create a 'heat map' of activity at the site for each bat species recorded (see **Map 3**).

The GPS feature shows the location of the surveyor when the registration was recorded, not the location of the bat. Where bats were heard but not seen it has been assumed that they were flying in the vicinity of the surveyor. Where bats were seen some distance from the surveyor, the locations of these bats were noted.

Bat Automated Detector Survey

In addition to the transect surveys, automated detector surveys were undertaken in line with current best practice guidelines (Collins, 2023) between September 2024 and September 2025 inclusive for the Oaklands Blossom Site, with the Oaklands College deployments commencing in July 2025. The latter are ongoing at the time of writing.

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.

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.

Two Wildlife Acoustics Song Meter 4 (SM4 FS) detectors with SMM-U2 microphones were deployed for five consecutive nights each month on both sites.

The automated detectors were secured in suitable habitat with the microphone positioned to face towards the nearest open space. The devices were programmed to record from 30 minutes before sunset until 30 minutes after sunrise the following morning on each night they were deployed. The settings utilised on the automated detectors are provided in **Appendix 7**.

The location at which each detector was deployed at Oaklands Blossom was varied throughout the survey period. The suitable habitat within the site was equally divided into a number grid. The location at which each detector was located on each month was determined through the use of a random number generator. Where the generator determined that a detector would be deployed within a single grid on more than one month the program was re-run until detectors were at varied location throughout the survey period. The locations at which the automated detectors were deployed are provided in **Map 4**.

For Oaklands College, the detectors were deployed at the same location during each survey period in order to allow a determination of the levels of activity at the site in each survey period. The locations at which the automated detectors were deployed are provided in **Map 4**.

The two sites were surveyed using different methodologies due to the differences in proposals for the Oaklands Blossom and Oaklands College site.

At the end of each survey period, the automated bat detectors were retrieved from the site, data was downloaded and then analysed using Kaleidoscope Pro® (Version 5.1.9G). This program is designed to analyse large volumes of bat call data using an automated classifier (Bats of Europe Version 5.1.0). More information on the settings used for the conversion process are provided in **Appendix 7**.

The species calls were subsequently checked manually by a suitably qualified ecologist using the Kaleidoscope software, to verify their identities. Sonobat® (v2.9.7) was used to confirm the species identity for ambiguous bat calls. Where suitable recordings were

obtained, bats were identified to species level. For some groups, notably long-eared bat species⁹ and *Myotis*¹⁰ bat species, specific identification was not always possible.

These data were then exported to Microsoft Excel for detailed analysis of various parameters (i.e. counts of bat registrations).

The number of registrations recorded is not a measure of the number of bats present on site; the number of registrations provides a quantitative assessment of the level of bat activity at a particular location (i.e. the greater the number of registrations, the greater the level of bat activity). The data cannot differentiate between, for example, a single bat passing the detector 10 times or 10 bats passing the detector once. The detectors were programmed to count each two-second call as a single bat pass.

In order to standardise the number of bat calls recorded, the data were then used to calculate an “Activity Index” for various different parameters to be assessed. This involved dividing the number of registrations by the number of nights which detectors were deployed. These data are then represented as number of registrations per night.

3.6.2 Survey Details

Ground Level Tree Assessment

The initial ground level tree assessment was carried out by Samantha Faggetter, Senior Ecologist of ECOSA on 28th January 2025. The weather conditions were rainy with 100% cloud cover, an ambient temperature of 13°C and a light breeze. An additional survey was carried out by Joseph Hunt, Field Ecologist of ECOSA and Francesca Richardson, Assistant Ecologist of ECOSA on 17th July 2025. The weather conditions were sunny with approximately 25% cloud cover, an ambient temperature of 15°C and a moderate breeze. A further survey was conducted by Hugh Turner, Principal Ecologist of ECOSA on 21st August 2025. The weather conditions were occasional showers with 60-100% cloud cover, an ambient temperature of 18°C and a moderate breeze.

⁹ 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.

¹⁰ 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.

Bat Emergence Survey

The bat emergence surveys commenced in July 2025 and are ongoing at the time of this report's preparation. **Table 1** provides details of each emergence survey.

Table 1: Bat emergence survey details

Survey Date	Buildings	Survey Type	Survey Timings	Weather Conditions	Sunset Time
8 th July 2025	B17, B18 & B19	Emergence	Start: 21:04 End: 23:08	General conditions: Clear Start temperature: 18°C End temperature: 16°C Cloud Cover: 0-15% Wind Speed: Light breeze	21:19
9 th July 2025	B1, B2, B3 & B14	Emergence	Start: 21:03 End: 22:48	General conditions: Partly cloudy, dry Start temperature: 25°C End temperature: 22°C Cloud Cover: 50-70% Wind Speed: Calm	21:18
15 th July 2025	B5, B7, B15 & B16	Emergence	Start: 20:58 End: 23:13	General conditions: Overcast Start temperature: 19°C End temperature: 16°C Cloud Cover: 100% Wind Speed: Calm	21:13
17 th July 2025	B6, B8, B9 & B10	Emergence	Start: 20:55 End: 23:00	General conditions: Dry and overcast Start temperature: 21°C End temperature: 19°C Cloud Cover: 60-80% Wind Speed: Light breeze	21:10
21 st July 2025	B11, B12 & B13	Emergence	Start: 20:51 End: 23:04	General conditions: Overcast, light rain Start temperature: 18°C End temperature: 17°C Cloud Cover: 30-50% Wind Speed: Light breeze	21:06
29 th July 2025	B20 & B21	Emergence	Start: 20:39 End: 23:05	General conditions: Slightly cloudy Start temperature: 21°C End temperature: 20°C Cloud Cover: 75% Wind Speed: Calm	21:05
19 th August 2025	B11	Emergence	Start: 20:00 End: 22:00	General conditions: Partially sunny Start temperature: 19°C End temperature: 17°C Cloud Cover: 65-70% Wind Speed: Moderate breeze	20:15
20 th August 2025	B6	Emergence	Start: 19:59 End: 22:14	General Conditions: Dry, windy Start temperature: 17°C End temperature: 15°C Cloud Cover: 75% Wind Speed: A moderate breeze.	20:14

Survey Date	Buildings	Survey Type	Survey Timings	Weather Conditions	Sunset Time
4 th September 2025	B1 & B2	Emergence	Start: 19:25 End: 21:40	General Conditions: Clear and dry Start temperature: 19°C End temperature: 13°C Cloud Cover: 10% Wind Speed: Calm	19:40
8 th September 2025	B11	Emergence	Start: 19:16 End: 21:15	General Conditions: Overcast Start temperature: 19°C End temperature: 18°C Cloud Cover: 40-50% Wind Speed: a light breeze	19:31
11 th September 2025	B6	Emergence	Start: 19:08 End: 21:23	General Conditions: Dry Start temperature: 13°C End temperature: 12°C Cloud Cover: 5-15% Wind Speed: a light breeze	19:23

During the bat emergence surveys the surveyors were equipped with Batlogger M bat detectors. Night Vision Aid (NVA) kits were also used during each survey. Each NVA kit comprises a Sony A7s (MK1) camera which has been modified to capture infrared light, a Batbox Baton bat detector and two rayTEC VAR2-i8-1 Long Range Infra-Red Illuminator lamps. The bat box baton was attached to the Sony A7s to provide a 'bat detector soundtrack' on the video recording.

Recordings made with the detectors were later analysed using BatExplorer (Version 2.2.6.0). This program is designed to analyse bat call data by identifying key call characteristics such as call shape, call length, call 'distance' (i.e. the time period between two consecutive calls) and peak frequency to confirm the identity of any species encountered. Video recordings made with the NVA cameras were analysed using VLC Media Player.

The bat emergence surveys were coordinated by Hugh Turner, Principal Ecologist of ECOSA (Natural England Bat Licence 2020-50816-CLS-CLS), assisted by suitably qualified and experienced ECOSA surveyors: Ryan Brazendale, Rose Hodgson, Samantha Faggetter, Briza Alves, Sam Henderson, Sam Lloyd, Joseph Longbone, Joseph Hunt, Charlotte Mollon, Jessica Turner, and Francesca Richardson.

Bat Transect Survey

A total of four dusk bat transect surveys were undertaken between October 2024 and August 2025. **Table 2** provides details of each survey.

Table 2: Bat transect survey details

Survey Date	Site	Duration	Weather Conditions	Sunset Time
17 th October 2024	Oaklands Blossom	18:10-20:03	12°C, dry, 5% cloud cover and calm.	18:03
1 st May 2025	Oaklands Blossom	20:26-22:26	20°C, dry, 15-30% cloud cover and calm.	20:26
26 th June 2025	Oaklands Blossom	21:23-23:23	19°C, clear and dry, 20-30% cloud cover and a light breeze.	21:23
6 th August 2025	Oaklands College	20:41-22:43	17-18°C, dry, 80% cloud cover and a light breeze.	20:41

The bat transect surveys were coordinated by Hugh Turner, Principal Ecologist of ECOSA (2020-50816-CLS-CLS), assisted by suitably qualified and experienced ECOSA surveyors.

The detector programming and data analysis were conducted by Francesca Richardson, Assistant Ecologist of ECOSA.

Bat Automated Detector Survey

The automated detector surveys at Oaklands Blossom were undertaken between September 2024 and August 2025 with a total of 35 nights recording undertaken. **Table 3** provides details of each recording period.

The automated detector surveys at Oaklands Blossom began in July 2025 and are ongoing at the time of this report's preparation. **Table 3** provides details of each recording period to date.

Table 3: Automated detector survey details (Oaklands Blossom)

Survey Period	Date	Weather Conditions ¹¹				Sunset	Sunrise
		Temperature (°C)		Wind (km/h)	Precipitation (mm)		
		High	Low				
September 2024	25 th	15	9	17	0.0	18:54	6:53
	26 th	16	14	30	0.0	18:52	6:55
	27 th	12	6	35	0.0	18:50	06:57
	28 th	13	5	22	0.0	18:47	06:58
	29 th	13	4	33	0.0	18:45	07:00
October 2025	26 th	14	7	15	0.0	17:46	07:46

¹¹ Weather data is sourced from online weather data (Weather Underground, 2025)

Survey Period	Date	Weather Conditions ¹¹			Sunset	Sunrise	
		Temperature (°C)		Wind (km/h)			Precipitation (mm)
		High	Low				
	27 th	13	7	22	0.0	16:42	06:48
	28 th	14	10	22	0.0	16:40	06:50
	29 th	15	12	17	0.0	16:38	06:52
	30 th	13	7	11	0.0	16:36	06:53
April 2025	5 th	17	4	28	0.0	19:42	06:28
	6 th	15	2	24	0.0	19:43	06:26
	7 th	14	1	19	0.0	19:45	06:23
	8 th	14	2	13	0.0	19:47	06:21
	9 th	13	2	24	0.0	19:48	06:19
May 2025	3 rd	17	7	28	0.0	20:29	05:29
	4 th	11	4	26	0.0	20:31	05:27
	5 th	12	3	33	0.0	20:32	05:25
	6 th	14	5	22	0.0	20:34	05:24
	7 th	15	4	26	0.0	20:36	05:22
June 2025	3 rd	17	9	41	0.0	21:14	04:47
	4 th	17	9	28	0.0	21:15	04:47
	5 th	14	11	26	0.0	21:16	04:46
	6 th	18	10	33	0.0	21:17	04:46
	7 th	15	9	24	0.0	21:18	04:45
July 2025	5 th	21	15	31	0.0	21:23	04:50
	6 th	20	14	28	0.0	21:23	04:51
	7 th	20	12	33	0.0	21:22	04:52
	8 th	23	10	28	0.0	21:21	04:53
	9 th	26	13	20	0.0	21:21	04:54
August 2025	5 th	20	11	37	0.0	20:45	05:31
	6 th	22	8	20	0.0	20:44	05:32
	7 th	23	13	31	0.0	20:42	05:34
	8 th	24	13	24	0.0	20:40	05:36

Survey Period	Date	Weather Conditions ¹¹			Sunset	Sunrise	
		Temperature (°C)		Wind (km/h)			Precipitation (mm)
		High	Low				
	9 th	24	11	31	0.0	20:39	05:37

Table 4: Automated detector survey details (Oaklands College)

Survey Period	Date	Weather Conditions ¹²			Sunset	Sunrise	
		Temperature (°C)		Wind (km/h)			Precipitation (mm)
		High	Low				
July 2025	5 th	21	15	31	0.0	21:23	04:50
	6 th	20	14	28	0.0	21:23	04:51
	7 th	20	12	33	0.0	21:22	04:52
	8 th	23	10	28	0.0	21:21	04:53
	9 th	26	13	20	0.0	21:21	04:54
August 2025	5 th	20	11	37	0.0	20:45	05:31
	6 th	22	8	20	0.0	20:44	05:32
	7 th	23	13	31	0.0	20:42	05:34
	8 th	24	13	24	0.0	20:40	05:36
	9 th	24	11	31	0.0	20:39	05:37

The automated detectors were deployed by a suitably experienced ECOSA ecologist. The detector programming and data analysis were conducted by Francesca Richardson, Assistant Ecologist of ECOSA.

3.6.3 Survey Limitations

Some bat species, e.g. long-eared bats *Plecotus* species¹³, 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 both hand-held and automated 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

¹² Weather data is sourced from online weather data (Weather Underground, 2025)

¹³ 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.

vegetation will all influence the quality of sound reaching the microphone and thus some bat echolocation recordings are of insufficient quality for species-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.

Due to technical issues experienced by the automated detectors, data collected from Location 8 in September 2024 and Location 10 in August 2025 are incomplete. To compensate for this loss of survey effort, two additional automated detectors will be deployed in September 2025 at these locations.

3.7 Hazel Dormouse Survey

3.7.1 Survey Methods

The hazel dormouse survey was undertaken in line with current best practice guidelines (Wells, 2025).

The hazel dormouse survey involved the deployment of 80 dormouse tubes on 29th July 2025 within suitable dormouse habitat throughout the site at intervals of approximately 20 metres. The locations of these tubes are marked on **Map 6**. The nest tubes will subsequently be checked for evidence of dormouse on a monthly basis between August and October 2025.

Table 5 shows the number of surveys required to ensure sufficient survey effort has been undertaken. As the tubes were deployed within seven days of the start of August a total of three surveys are required to provide sufficient survey effort.

Table 5: Hazel dormouse survey effort

Tubes Installed (First Day of Month +/- 7 days)	Number of Checks at Monthly Intervals	End Date (end of Month +/- 7 days)
April	6	September
May	5	
June	4	
July	3	
August	3	October
September	3	November
October	9*	September the following year

*assumes checks at end of October and November, then from April onwards

The level of survey effort carried out at the site currently could not be used to determine the absence of hazel dormouse; however, once the September and October checks are complete, this will be possible.

3.7.2 Survey Details

The survey was undertaken using 80 dormouse tubes comprising corrugated plastic tubes of standard dimensions (Bright, et al., 2006) with plywood insert secured in the relevant habitat with heavy duty garden wire.

The dormouse tubes were deployed on 29th July 2025 with checks ongoing at the time of this report's preparation. **Table 6** provides details of each hazel dormouse survey.

Table 6: Hazel dormouse survey details

Survey Date	Weather Conditions
2 nd September 2025	Overcast with rain, 20°C, 80% cloud cover and a light breeze.

The hazel dormouse surveys were co-ordinated and led by Hugh Turner, Principal Ecologist of ECOSA, assisted by suitably qualified ECOSA surveyors.

3.7.3 Survey Limitations

There were no significant limitations to the dormouse survey.

3.8 Bird Survey

3.8.1 Survey Methods

Breeding Bird Survey

Breeding bird surveys were undertaken using a modified version the British Trust for Ornithology (BTO) Breeding Bird Survey (Baillie, et al., 2012) and followed the Bird Survey Guidelines for Assessing Ecological Impacts (Bird Survey & Assessment Steering Group, 2023). A single survey was undertaken in July 2025, with another five surveys expected to be carried out between March and June 2026. Survey visits will be separated by approximately two weeks.

The bird surveyor walked a pre-determined transect route across the site, on each occasion walking the same transect route. The transect route ensured that the surveyor visited key areas of habitat for breeding birds such as woodland, wetland and large expanses of grassland / arable land, as well as less suitable habitats. The transect was punctuated by pauses to scan and listen for territorial birds. The transect survey was always undertaken during the morning and began within one hour of sunrise. The survey was undertaken in suitable weather conditions i.e. without strong winds or heavy rainfall.

The survey was aimed at recording the presence of Schedule 1¹⁴ and / or British Trust for Ornithology red¹⁵ or amber listed Birds of Conservation Concern (Stanbury, et al., 2021) and assessing the number of active territories of notable species within the site. Green listed species were recorded but no attempt was made to identify their territories. Territorial activity was mainly defined by the presence of singing birds; however other evidence such as courtship and display, agitated behaviour, nest building, distraction display, recently fledged young, occupied nests and / or birds carrying food was also recorded.

The detectability of bird species and associated territorial activity are affected by a variety of factors including, but not limited to: species detectability, species abundance, temporal variations in activity, species phenology, habitat structure, survey effort and observer ability. During the breeding bird survey, methods to reduce these potential impacts will include using experienced ornithologists and undertaking a robust number of surveys spread over the main breeding season. As a result, a comprehensive assessment of the breeding bird assemblage at the site will be completed.

¹⁴ 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.

¹⁵ 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.

3.8.2 Survey Details

Breeding Bird Survey

A single survey visit was undertaken on 23rd July 2025. The breeding bird survey was carried out by experienced ornithologist Darrel Bryant on behalf of Skopeo, sub-contractor of ECOSA.

During the breeding bird survey, the surveyor was equipped with 10x40 binoculars.

3.8.3 Survey Limitations

There were no significant limitations to the breeding bird survey.

3.9 Reptile Survey

3.9.1 Survey Methods

The reptile survey was undertaken in accordance with current best practice guidelines (Froglife, 2015).

The reptile survey consisted of the laying of bitumen felt mats approximately 500 millimetres x 500 millimetres in all areas of suitable habitat on the site. Typically, this included areas of suitable habitat with good exposure to the sun. The locations of these mats are marked on **Map 7**.

The use of such refugia is an effective way of surveying for all species of reptile and current survey guidance states that seven inspections is sufficient to confirm presence/likely absence. Survey visits were undertaken in marginal weather conditions such as cold but sunny weather or hazy and somewhat overcast conditions, as these conditions maximise the thermal value of the refugia for basking reptiles.

During each visit surveyors also undertook a visual inspection survey of other suitable refugia in the site and other suitable basking locations. During the survey a note was also made of any suitable hibernation features present within the site.

3.9.2 Survey Details

A total of 200 reptile refugia were distributed on 17th July 2025. Inspection visits commenced on 29th July 2025, and are ongoing until seven visits have been completed. **Table 7** provides details of each reptile survey.

Table 7: Reptile survey details

Survey Date	Air Temperature (°C)	Weather Conditions
29 th July 2025	18	Overcast and dry, 100% cloud cover and a light breeze.

7 th August 2025	20	Overcast, 80% cloud cover and a light breeze.
14 th August 2025	21	Overcast and sunny, 80% cloud cover with a light breeze.
21 st August 2025	19	Overcast, 80% cloud cover and a light breeze.
1 st September 2025	19	Sunny with some showers, 75% cloud cover and a light breeze.
3 rd September 2025	20	Overcast with some showers, 100% cloud cover and light breeze.
11 th September 2025	15	Overcast, 70% cloud cover and a light breeze.

The reptile survey was coordinated by Hugh Turner, Principal Ecologist of ECOSA, assisted by suitably experienced ECOSA surveyors.

3.9.3 **Survey Limitations**

There were no significant limitations to the reptile survey.

3.10 **Great Crested Newt Survey**

3.10.1 **Survey Methods**

Environmental DNA (eDNA) Survey

The great crested newt environmental DNA (eDNA) sampling was undertaken following current best practice guidelines (Biggs, et al., 2014).

Given the presence of a number of waterbodies within 500 metres of the site boundary, an environmental DNA (eDNA) analysis was undertaken to establish the presence / likely absence of great crested newt from within the ponds which were accessible.

The field sampling entailed the collection of 20 samples of 30 millilitres of water from pre-selected sub-sampling sites around the margin of each waterbody. Sub-sampling sites are chosen to include areas where great crested newt are likely to be present such as areas of vegetation where they may be egg laying and areas of open water where they may be displaying. The 20 samples are then mixed into a single sterile bag from which six samples of water of 15 millilitres are taken each of which is preserved in 35 millilitres of ethanol. The samples are then refrigerated until analysis at the lab. The samples were sent to SureScreen eDNA testing service for analysis and were analysed in line with current guidance (Biggs, et al., 2014). The samples were taken within the required season (mid-April to June) when great crested newt eDNA is likely to be present within the pond and therefore, the analysis result indicates the presence or likely absence of the species from a given waterbody.

3.10.2 Survey Details

Habitat Suitability Index (HSI) Assessment

The great crested newt HSI assessment was carried out by Sam Lloyd, Ecologist of ECOSA (Natural England Great Crested Newt Licence No. 2021-55319-CLS-CLS) on 24th June 2025. The weather conditions were sunny with approximately 20% cloud cover, an ambient temperature of 18°C and a light breeze.

Environmental DNA (eDNA) Survey

The eDNA sampling was carried out by Sam Lloyd, Ecologist of ECOSA (Natural England Great Crested Newt Licence No. 2021-55319-CLS-CLS) and Jessica Turner, Assistant Ecologist of ECOSA on 24th August. The weather conditions were sunny with approximately 20% cloud cover, an ambient temperature of 18°C and a light breeze.

3.10.3 Survey Limitations

Of the 12 ponds on site, eight of them were dry and therefore water samples could not be collected from them.

3.11 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, 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 is one statutory designated site of nature conservation interest situated within one kilometre of the site boundary. This is The Wick LNR, located 910 metres to the north-west, and designated for supporting ancient semi-natural woodland habitat. The site is also of ornithological importance, with woodland species including greater spotted woodpecker *Dendrocopos major*, nuthatch *Sitta europaea* and tawny owl *Strix aluco*, and migratory birds including fieldfare *Turdus pilaris* and redwing *Turdus iliacus*.

Further details of the statutory designation listed above are provided in **Appendix 8**.

Non-Statutory Designated Sites

There are also 14 non-statutory designated sites of nature conservation interest situated within one kilometre of the site boundary. These are:

- Homewood (LWS) – Located on site to the west and designated for supporting ancient semi-natural woodland and notable woodland flora including bluebell *Hyacinthoides non-scripta* and wood sedge *Carex sylvatica* and wood melick *Melica uniflora*.
- Oaklands Wood (LWS) - Located on site to the east and designated for supporting ancient woodland habitat, notable woodland indicator species, scrub, and pond with associated aquatic vegetation.
- Oaklands Gravel Pit (LWS) – Located adjacent to the eastern site boundary and designated for supporting species-rich grassland habitat, scrub habitat and wetland. Species recorded include common bird's-foot trefoil *Lotus corniculatus*, southern marsh orchid *Dactylorhiza praetermissa* and common spotted orchid *Dactylorhiza fuchsia*.

- Land near Smallford Nurseries (LWS) - Located approximately 20 metres south of the site and designated for its areas of moderately species-rich grassland, scrub-lined stream, and pond supporting aquatic flora.
- Smallford Trail/Alban Way (LWS) - Located approximately 210 metres south-west of the site and designated for supporting broadleaved woodland habitat, including mature pedunculate oak *Quercus robur* and notable ground flora, and species-rich grassland habitat.
- Woodland by House Lane (LWS) – Located approximately 220 metres north of the site and designated for supporting ancient woodland habitat and notable ground flora.
- Smallford Pit (LWS) – Located approximately 240 metres south of the site and designated for supporting mosaic habitat comprising species-rich grasslands, ephemeral and permanent ponds, scrub, and woodland edge. The site is also designated for supporting a range of notable plant species including bee orchid *Ophrys apifera* and lesser pondweed *Potamogeton pusillus*, both listed as Species of Conservation Concern in Hertfordshire.
- Hill End Hospital, Highfield Park South (LWS) - Located approximately 410 metres south of the site and designated for supporting species-rich neutral-to-acid grassland habitat, deciduous woodland and traditional orchards.
- Cemetery by Hill End Lane (LWS) - Located approximately 510 metres south-west of the site and designated for supporting species-rich grassland habitat including red fescue *Festuca rubra*, field wood-rush *Luzula campestris*, bulbous buttercup *Ranunculus bulbosus* and common knapweed *Centaurea nigra*.
- Sky's Wood (LWS) - Located approximately 680 metres north-west of the site and designated for supporting ancient semi-natural woodland and notable ground flora species.
- Oakwood (LWS) – Located approximately 720 metres north of the site and designated for supporting ancient semi-natural woodland and notable plant species.
- Open Space off House Lane (LWS) - Located approximately 740 metres north of the site and designated for its areas of species-rich grassland.
- The Wick (LWS) – Located approximately 910 metres north-west of the site and designated for supporting ancient semi-natural woodland habitat and notable woodland bird species.

- Bentsley Spinney (LWS) - Located approximately 980 metres north-west of the site and designated for its areas of ancient semi-natural woodland and notable woodland indicator species.

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

4.2.2 Evaluation

The Wick LNR and the 14 LWS are assessed as being of local value.

4.3 Habitats

4.3.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with HERC and MAGIC identified the presence of the Priority Habitat deciduous woodland within the wider site boundary to the east and west, and adjacent to the east of the site. Deciduous woodland habitat to the west also comprises ancient and semi-natural woodland. The Priority Habitat traditional orchard is also present within the wider site boundary to the west.

Consultation with MAGIC also revealed the presence of eight standing water bodies on site. Butterwick Brook is present on site to the east.

Further habitats identified within one kilometre of the site include an area of Priority Habitat 'good quality semi-improved grassland' adjacent to the site boundary to the east, a chalk river to the southeast and blocks of ancient and semi-natural woodland.

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 described in general terms using standard UKHab terminology. The main habitats recorded on site during the field survey were as below.

Other neutral grassland

Small areas of other neutral grassland were recorded to the south-west of the site, located immediately adjacent to the east of Home Wood (**Figure 1**) and to the north of the college. The areas of grassland supports a tussocky structure. Species recorded in these areas include Yorkshire fog *Holcus lanatus*, cock's-foot *Dactylis glomerata*, common fleabane *Pulicaria dysenterica*, box-leaved honeysuckle *Lonicera pileate*, dove's-foot crane's-bill *Geranium molle* and creeping thistle *Cirsium arvense*.



Figure 1: Other neutral grassland located to east of Home Wood

Modified grassland

The majority of the site is dominated by modified grassland. The habitat is present either as areas of amenity grassland and sports pitches associated with the college or in agricultural fields used for grazing (**Figure 2** and **Figure 3**). The agricultural grassland is grazed by horses, sheep and llamas while the amenity grassland and sports pitches are subject to frequent management. Species recorded in these areas include perennial rye-grass *Lolium perene*, Yorkshire-fog, cock's-foot, daisy *Bellis perennis* and cut-leaved crane's-bill *Geranium dissectum*.



Figure 2: Horse grazed grassland



Figure 3: Area of amenity grassland

Ruderal or ephemeral

Small areas of ruderal or ephemeral vegetation was recorded in a small unmanaged area to the north of the college (**Figure 4**). Species recorded in this area include cock's-foot, willowherb *Epilobium* species and wild teasel *Dipsacus fullonum*.



Figure 4: Ephemeral vegetation

Wood-pasture and parkland

An area of wood-pasture and parkland, a habitat of principal importance, was recorded immediately to the south-west of the college (**Figure 5**). This area was recorded as wood-pasture and parkland due to the age of the trees with limited canopy cover and the grassland habitats beneath the trees. Tree species recorded in this area include Scots pine *Pinus sylvestris*, oriental plane *Platanus orientalis*, goat willow *Salix caprea*, holly *Ilex aquifolium*, yew *Taxus baccata*, creeping buttercup *Ranunculus repens*, curled dock *Rumex crispus*, cow parsley *Anthriscus sylvestris*, lord's and ladies *Arum maculatum*, annual meadow grass *Poa annua* and snowdrop *Galanthus nivalis*.



Figure 5: Parkland habitat on site

Other native hedgerow

A number of other native hedgerows were recorded across the site (**Figure 6**). These hedgerows comprise mostly of native species, but do not support a high enough diversity to be considered species rich, as less than five woody species was recorded per 30 metres. Species recorded include beech *Fagus sylvatica*, holly, ash *Fraxinus excelsior*, hawthorn *Crataegus monogyna*, blackthorn *Prunus spinosa*, spindle *Euonymus europaeus*, cherry laurel *Prunus laurocerasus* and bramble *Rubus fruticosus* aggregate.



Figure 6: Other native hedgerow along road

Bramble scrub

Areas of dense bramble scrub were recorded across the site, in areas that are subject to less frequent management or use. These areas comprise exclusively of bramble

Mixed scrub

A small area of mixed scrub was recorded on site located in an area of disused habitats (**Figure 7**). Species recorded in this area included alder *Alnus glutinosa* and buddleia *Buddleia davidii*.



Figure 7: Mixed alder scrub

Willow scrub

Small blocks of succession willow *Salix* species scrub were recorded in a field that is subject to limited management and is used for rubbish storage (**Figure 8**). The willow trees recorded on site are immature.



Figure 8: Willow scrub

Pond

There are eight ponds on site. At the time of the survey, the ponds supported limited vegetation with common reed *Phragmites australis* and pendulous sedge *Carex pendula* recorded. Three of the ponds recorded were associated with woodland blocks on site (**Figure 9**), while five ponds were located in the vicinity of the college (**Figure 10**).



Figure 9: Pond located within Home Wood



Figure 10: Pond located to east of college

Bare ground

Areas of bare ground, suggesting recent ground works, were recorded on site (**Figure 11**).



Figure 11: Area of bare ground, subject to recent works

Urban Tree

A number of scattered trees are present across the site. Trees range in age from immature trees recently planted to large and mature trees (**Figure 12**). Tree species recorded include pedunculate oak *Quercus robur*, Turkey oak *Quercus cerris* and beech.



Figure 12: Mature pedunculate oak

Other lowland mixed deciduous woodland

There are five blocks of other lowland mixed deciduous woodland, a habitat of principal importance, located across the site (**Figure 13**). In addition, Home Wood, located adjacent to the south-west of the site is also classified as semi-natural ancient woodland. Species recorded within the woodland include holly, pedunculate oak, *Rhododendron* species, hazel *Corylus avellana*, western red-cedar *Thuja plicata*, ash, silver birch *Betula pendula* and beech.



Figure 13: Lowland mixed deciduous woodland located to the east of the site

Traditional orchards (27)

A small area of traditional orchard, a habitat of principal importance, is present on site, located between Home Wood and the college (**Figure 14**). The grassland within the orchard is subject to light management and supported a medium tussocky sward at the time of the survey. Species recorded in this area include apple, pedunculate oak, hazel, cock's-foot, Yorkshire fog and sweet vernal-grass *Anthoxanthum odoratum*.



Figure 14: On-site traditional orchard

Line of trees

A number of lines of trees are spread across the site, associated with field boundaries and along roads (**Figure 15**). Trees ranged in age from immature to mature. Tree species recorded include horse-chestnut *Aesculus hippocastanum*, hazel, wild privet *Ligustrum vulgare*, pedunculate oak and sycamore *Acer pseudoplatanus*.



Figure 15: Line of horse-chestnut trees lining road

Other Habitats

Other habitats on site include artificial sealed surfaces and buildings.

4.3.2 Evaluation

The site is dominated by modified grassland, buildings and hardstanding. The habitats of greatest ecological importance include the other lowland mixed deciduous woodland, traditional orchards and areas of ancient woodland which are considered to be of local value.

4.4 Bats

4.4.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with HERC returned the following bat species within a two-kilometre radius of the site: barbastelle *Barbastella barbastellus*, serotine *Eptesicus serotinus*, Myotis bat species¹⁶, pipistrelle *Pipistrellus* species¹⁷, common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, Nathusius' pipistrelle *Pipistrellus nathusii*, long-eared bat *Plecotus* species¹⁸, brown long-eared bat *Plecotus auratus*,

¹⁶ 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.

¹⁷ There are three species of pipistrelle bat, the common pipistrelle *Pipistrellus pipistrellus*, the soprano pipistrelle *Pipistrellus pygmaeus* and the Nathusius' pipistrelle *Pipistrellus nathusii*. The species can be separated by their echolocations, examination of physical characteristics and Phylogenetic Analysis Identification of bat droppings. Unless confirmation of identification has been made by visual identification the three species shall be referred to in this report as pipistrelle bat. All three species will roost in similar locations within buildings. The soprano pipistrelle has a tendency to form larger roosts numbering 100's of bats and is associated with wetland habitat. Nathusius' pipistrelle bats frequently share maternity roosts with soprano pipistrelle bats.

¹⁸ 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.

Leisler's bat *Nyctalus leisleri*, Daubenton's bat *Myotis daubentonii* and noctule *Nyctalus noctule*.

Consultation with the MAGIC website produced three granted EPSM licences with respect to bats within a two-kilometre search radius of the site. The closest licence (EPSM2011-2901) was located on site and was granted in 2012 for the destruction of a resting site for soprano pipistrelle. License EPSM2009-992, located approximately 1.2 kilometres south, was granted in 2009 for the destruction of a resting place for common pipistrelle and brown long-eared bat. The final license (2017-30977-EPS-MIT) is located 1.2 kilometres east and was granted in 2017 for the destruction of a resting place for brown long-eared bat.

Field Survey Results

Building Assessment

There are 16 buildings on site that are proposed for demolition. Building 4 was assessed as having negligible suitability to support roosting bats, due to it not supporting any potential bat roosting features. Of the remaining buildings, 13 were assessed as having low suitability to support roosting bats, due to supporting features that are likely only suitable for individual bats such as small cavities in walls and small gaps where roofing materials meet. Two buildings (Buildings 1 and 2) were assessed as having moderate suitability to support roosting bats, and were recorded as supporting suitable features including missing tiles, lifted lead flashing and missing gaps in mortar.

Foraging and Commuting Habitat

The on-site woodland habitats, lines of trees, hedgerows and scrub habitats provide good opportunities for foraging and commuting bats and provide good connectivity between habitats on site and adjacent lines of trees and woodland habitats off-site. Therefore, the site is assessed as having high suitability to support foraging and commuting bats.

Bat Ground Level Tree Assessment Results

The results of the ground level tree assessment of the on-site trees are provided in **Table 8**. Sixteen trees were identified as having suitability to support bats, or as having the potential to support bats in the future. Potential roosting features identified included woodpecker holes, cankers, tear outs, knot holes and lifted bark.

Table 8: Ground level tree assessment results

Tree Number	Species and Description	Description of Features	Climb and Inspect Survey?	Suitability for Bats
1	Pedunculate oak	Knot holes at 0.25, 1 and 1.5 metres	Yes	PRF-M
2	Alder	Lightning strike along whole west side of tree	Yes	Unable to determine
3	Wild cherry	Cankers 1-2 metres on the south elevation leading up to 5 metres	No	PRF-M
4	Ash	Tear out and knot holes on the south, north and east elevations approximately 10 metres up	Yes	Unable to determine
5	Ash	Knot holes 15 metres up on the south-east elevation	Yes	Unable to determine
6	Wild cherry	Cankers and lifting bark on the northern elevation	Yes	Unable to determine
7	Ash	Tear out and knot holes 10 metres up on the south-east elevation	Yes	Unable to determine
8	Ash	Cankers five metres up on the southern elevation	Yes	Unable to determine
9	Wild cherry	Woodpecker holes on the northern elevation, cankers and knot holes on the western elevation	Yes	Unable to determine
10	Hazel	Tree covered in ivy, unable to rule out PRFs	Yes	Unable to determine
11	Hazel	Knot hole 1-2 metres up on the northern elevation	No	Unable to determine
13	Hazel	Knot holes on the northern elevation and cankers on all sides, all approximately one metre up	No	PRF-I
14	Hazel	Knot holes one metre up on the southern elevation and cankers with exposed heart wood all over	No	Unable to determine

Tree Number	Species and Description	Description of Features	Climb and Inspect Survey?	Suitability for Bats
15	Ash	Tear out six meters up on the southern elevation	Yes	PRF-I
16	Ash	Knot holes 10 metres up on the northern elevation and cankers 20 metres up on the northern elevation	Yes	PRF-M

Bat Emergence Survey Results

The surveys recorded at least six species of bat including common pipistrelle, soprano pipistrelle, noctule, serotine, *Myotis* bat species, Nathusius' pipistrelle.

A peak count of four common pipistrelle were recorded emerging from B6 and one common pipistrelle was recorded emerging from B11. Therefore, these buildings are considered to support day roosts of common pipistrelle.

Table 9 provides details of the species, numbers and locations of bats recorded roosting and foraging/commuting during the emergence surveys.

Table 9: Bat Emergence Survey Results

Visit 1 - Survey Details	
Survey Date:	8 th July 2025
Structures Surveyed:	B17, B18 & B19
Survey Type:	Dusk Emergence Survey
Time of Sunset:	21:09
General Bat Activity	
No emergences were recorded during this survey.	

Visit 1 - Survey Details	
Survey Date:	9 th July 2025
Structures Surveyed:	B1, B2, B3 & B14
Survey Type:	Dusk Emergence Survey
Time of Sunset:	21:18
General Bat Activity	
No emergences were recorded from B1, B2, B3 or B14 during the surveys.	

Visit 1 - Survey Details	
Survey Date:	15 th July 2025
Structures Surveyed:	B5, B7, B15 & B16
Survey Type:	Dusk Emergence Survey
Time of Sunset:	21:13
General Bat Activity	
No emergences were recorded by surveyors during this survey.	

Visit 1 - Survey Details				
Survey Date:		17 th July 2025		
Structures Surveyed:		B8, B9, B10 & B6		
Survey Type:		Dusk Emergence Survey		
Time of Sunset		21:10		
Recorded Bat Roosts				
Map Ref.	Species	Number of bats	Emergence Time	Roosting/Access Feature
	Common pipistrelle	1	21:08	From roof of B6
	Common pipistrelle	1	21:14	From roof of B6
	Common pipistrelle	1	21:16	From roof of B6
	Common pipistrelle	1	21:19	From roof of B6
General Bat Activity				
No emergences were recorded by surveyors at B9 or B10. Four emergences were reported by the surveyor from B6.				

Visit 1 - Survey Details				
Survey Date:		21 st July 2025		
Structures Surveyed:		B11, B12 & B13		
Survey Type:		Dusk Emergence Survey		
Time of Sunset		21:06		
Recorded Bat Roosts				
Map Ref.	Species	Number of bats	Emergence Time	Roosting/Access Feature
	Common pipistrelle	1	21:53	Emerged from under soffit of B11
General Bat Activity				
Low levels of foraging activity could be heard by surveyors. Bats were observed passing by surveyors at the beginning of the survey. One emergence was reported by the surveyor at B11.				

Visit 1 - Survey Details	
Survey Date:	29 th July 2025
Structures Surveyed:	B20 & B21
Survey Type:	Dusk Emergence Survey
Time of Sunset:	21:05
General Bat Activity	
No emergences were recorded by surveyors during this survey.	

Visit 2 - Survey Details	
Survey Date:	19 th August 2025
Structures Surveyed:	B11
Survey Type:	Dusk Emergence Survey
Time of Sunset:	20:15
General Bat Activity	
Very low levels of foraging and commuting bats throughout the survey. A few bats were heard but not seen by surveyors. No emergences were recorded during this survey.	

Visit 2 - Survey Details				
Survey Date:		20 th August 2025		
Structures Surveyed:		B6		
Survey Type:		Dusk Emergence Survey		
Time of Sunset		20:14		
Recorded Bat Roosts				
Map Ref.	Species	Number of bats	Emergence Time	Roosting/Access Feature
	Common pipistrelle	1	20:19	From above roof of B6
General Bat Activity				
High levels of foraging activity could be heard by surveyors throughout the survey. One emergence was reported by the surveyor south of B6.				

Visit 2 - Survey Details				
Survey Date:		4 th September 2025		
Structures Surveyed:		B1 & B2		
Survey Type:		Dusk Emergence Survey		
Time of Sunset		19:40		
Recorded Bat Roosts				
Map Ref.	Species	Number of bats	Emergence Time	Roosting/Access Feature
	Common pipistrelle	1	20:17	From below the roof of B2.
General Bat Activity				
Low activity was recorded throughout the night by surveyors with some passes and foraging behaviour observed. One emergence was recorded by surveyors from B2.				

Visit 3 - Survey Details	
Survey Date:	8 th September 2025
Structures Surveyed:	B11
Survey Type:	Dusk Emergence Survey
Time of Sunset	19:31
General Bat Activity	
No emergences were reported by surveyors during this survey. Common pipistrelle and noctules were observed and heard passing and over the site.	

Visit 3 - Survey Details	
Survey Date:	11 th September 2025
Structures Surveyed:	B6
Survey Type:	Dusk Emergence Survey
Time of Sunset	19:23
General Bat Activity	
No emergences were reported by surveyors during this survey. Common pipistrelle and soprano pipistrelle were observed and heard passing over the site.	

Bat Transect Survey Results

A total of three bat transect surveys were undertaken at the Oaklands Blossom site between 17th October 2024 and 26th June 2025. A single survey was carried out at Oaklands College site on 6th July 2025, with more surveys ongoing at the time of this report's preparation. During these surveys a minimum of three species of bat were recorded within the site including common pipistrelle, soprano pipistrelle, and noctule.

Common species of bat such as common pipistrelle and soprano pipistrelle were observed during all surveys, with high activity along the tree lines in the north-west of the site. Noctules were also observed foraging throughout the site, especially around areas of woodland in the south of the site. The locations of the bat activity recorded are provided on **Map 3** with a summary of the findings of each survey provided in **Table 10**.

Table 10: Bat activity recorded during transect surveys

Survey Date and Location	General Bat Activity at the Site
17 th October 2024 Oaklands Blossom	Common pipistrelle and soprano pipistrelle were observed foraging and commuting throughout the site, with high levels of activity along the tree lines of the northern field.
1 st May 2025 Oaklands Blossom	Low activity at the beginning of the survey. Activity picked up as surveyors walked the boundaries of the northern field, observing common pipistrelle foraging along the treelines and hedgerows. Common pipistrelles were observed dipping in and out of the treelines between the northern field and horse paddocks.
26 th June 2025 Oaklands Blossom	Common pipistrelles were observed foraging over the horse paddocks at the beginning and end of the survey; however activity was low overall, with only some passes occurring within the northern field.
6 th July 2025 Oaklands College	Noctule and soprano pipistrelle were observed foraging over the woodland at the south of the site, with soprano pipistrelle observed foraging along the edge of the woodland. Common pipistrelles were observed foraging and circling the trees in the orchard on the west of the site. Activity in the north-east of the site dropped significantly, but picked up again near East Drive, where a single common pipistrelle was observed foraging along the hedge despite the streetlights.

Bat Automated Detector Survey Results (Oaklands Blossom)

The automated bat detector survey results recorded a total of 13,076 bat registrations of at least nine species: *Myotis* bat species, noctule, common pipistrelle, soprano pipistrelle, long-eared bat *Plecotus* species, barbastelle, Nathusius' pipistrelle, unidentified pipistrelle species, serotine, and Leislers's bat.

Activity by Species

Table 11 shows the number of registrations and proportion of recorded bat activity at the site by species. Common pipistrelle made up the majority of call registrations at 82%, with soprano pipistrelle contributing to 16% of call registrations. *Myotis* bats, noctules, long-eared bats and serotine contributed less than 1% of registrations each, with barbastelle, Nathusius' pipistrelle and Leisler's contributing less than 0.1% each.

Table 11: Number of registrations and proportion of bat activity from each species (Oaklands College)

Species	Count of Species	%
<i>Myotis</i> bat species	45	0.34%
Noctule	71	0.54%
Common pipistrelle	10681	81.68%
Soprano pipistrelle	2163	16.54%
Long-eared bat species	46	0.35%
Barbastelle	12	0.09%
Nathusius' pipistrelle	4	0.03%
Serotine	50	0.38%
Unidentified pipistrelle species	2	0.02%
Leisler's bat	2	0.02%
Grand Total	13076	100.00%

Species Activity by Month

Table 12 provides the number of registrations of each species recorded within each month. June 2025 had the highest number of registrations of all months that the automated detectors were deployed, recording 3,865 registrations. July however had the highest diversity if species recorded, with at least nine bat species recorded; common pipistrelle, noctule, soprano pipistrelle, serotine, Nathusius pipistrelle, barbastelle, long-eared bats, *Myotis* bats, and Leisler's bat.

Table 12: Number of registrations of each month split by species (Oaklands College)

Period	Species	No. Registrations	Activity Index
Sep-24	Common pipistrelle	452	124.7
	Noctule	5	0.5
	Soprano pipistrelle	227	22.7
	Barbastelle	1	0.1
	Long-eared bat species	7	0.7
	<i>Myotis</i> bat species	5	0.5
Sep-24 Total		697	149.2
Oct-24	Common pipistrelle	1819	181.9
	Soprano pipistrelle	346	34.6
	Nathusius' pipistrelle	1	0.1
	<i>Myotis</i> bat species	3	0.3
Oct-24 Total		2169	216.9
Apr-25	Common pipistrelle	362	36.2
	Soprano pipistrelle	22	2.2
	Nathusius' pipistrelle	1	0.1

	Barbastelle	1	0.1
	<i>Myotis</i> bat species	1	0.1
Apr-25 Total		387	38.7
May-25	Common pipistrelle	2241	224.1
	Noctule	4	0.4
	Soprano pipistrelle	50	5
	Serotine	2	0.2
	Long-eared bat species	11	1.1
	<i>Myotis</i> bat species	10	1
May-25 Total		2318	231.8
Jun-25	Common pipistrelle	3414	341.4
	Noctule	23	2.3
	Soprano pipistrelle	349	34.9
	Serotine	43	4.3
	Barbastelle	8	0.8
	Long-eared bat species	18	1.8
	<i>Myotis</i> bat species	7	0.7
	Unidentified pipistrelle species	2	0.2
	Leisler's bat	1	0.1
Jun-25 Total		3865	386.5
Jul-25	Common pipistrelle	2393	239.3
	Noctule	39	3.9
	Soprano pipistrelle	1169	116.9
	Serotine	5	0.5
	Nathusius' pipistrelle	2	0.2
	Barbastelle	2	0.2
	Long-eared bat species	10	1
	<i>Myotis</i> bat species	19	1.9
	Leisler's bat	1	0.1
Jul-25 Total		3640	364
Grand Total		13076	1387.1

Activity Levels at Locations

Table 13 shows the number of registrations recorded at each individual location throughout the survey period. Location 13 and Location 17 had the highest species counts across all of the locations, however it should be noted that the automated detectors were deployed in these locations for a total of 20 days each, whereas all other locations were deployed at for a total of 5 days each. Also, an equipment failure at Location 8 in September 2024 resulted in incomplete data, which accounts for the very low registration number and activity index for this location.

Location 13 had the highest activity index of all the locations (398.05), however location 21 also had a high activity index (379.2). This suggests that these two locations have much higher levels of activity compared to other locations, such as Location 17, with an Activity Index of 180.85). Location 17 however had the highest species diversity of all locations, with at least six species recorded: common pipistrelle, noctule, soprano pipistrelle, serotine, Nathusius' pipistrelle, and barbastelle.

Table 13: Activity Recorded at Each Location (Oaklands College)

Location	Species	Count of Species	Activity Index
Location 13	Common pipistrelle	4980	249
	Noctule	55	2.75
	Soprano pipistrelle	1448	144.8
	Serotine	21	1.05
	Barbastelle	9	0.45
Location 13 Total		6513	398.05
Location 17	Common pipistrelle	3430	171.5
	Noctule	11	0.55
	Soprano pipistrelle	142	7.1
	Serotine	29	1.45
	Nathusius' pipistrelle	3	0.15
	Barbastelle	2	0.1
Location 17 Total		3617	180.85
Location 21	Common pipistrelle	1590	318
	Soprano pipistrelle	305	61
	Nathusius' pipistrelle	1	0.2
Location 21 Total		1896	379.2
Location 3	Common pipistrelle	449	89.8
	Noctule	5	1
	Soprano pipistrelle	227	45.4
Location 3 Total		681	136.2
Location 5	Common pipistrelle	229	45.8
	Soprano pipistrelle	41	8.2
Location 5 Total		270	54
Location 8	Common pipistrelle	3	0.6
	Barbastelle	1	0.2
Location 8 Total		4	0.8
Grand Total		12981	1149.1

Bat Automated Detector Survey Results (Oaklands College)

The automated bat detector survey results to date have recorded a total of 3,795 bat registrations of at least six species: *Myotis* species, Leisler’s bat, noctule, common pipistrelle, long-eared bat species, and soprano pipistrelle.

Activity by Species

Table 14 shows the number of registrations and proportion of recorded bat activity at the site by species. Common pipistrelle made up the majority of call registrations at 92%. Soprano pipistrelle and noctules each contributed to less and 5% of registrations, with myotis, Leisler’s bat, and long-eared bat each contributing to less than 1% of registrations each.

Table 14: Number of registrations and proportion of bat activity from each species (Oaklands Blossom)

Species	Count of Species	%
Myotis bat species	28	0.74%
Leisler’s bat	5	0.13%
Noctule	96	2.53%
Common pipistrelle	3504	92.33%
Long-eared bat species	8	0.21%
Soprano pipistrelle	154	4.06%
Grand Total	3795	100.00%

Species Activity by Month

Table 15 provides the number of registrations of each species recorded within each month.

Table 15: Number of registrations of each month split by species (Oaklands Blossom)

Period	Species	No. Registrations	Activity Index
Jul-25	Common pipistrelle	3504	350.4
	Noctule	96	9.6
	Soprano pipistrelle	154	15.4
	Long-eared bat species	8	0.8
Jul-25 Total		3762	376.2
Grand Total		3762	376.2

Activity Levels at Locations

Table 16 shows the number of registrations recorded at each individual location throughout the survey period. Location 2 had the highest number of registrations

(2,094) and Activity index (418.8) between the two locations, however both locations only recorded three species of bat: common pipistrelle, noctule, and soprano pipistrelle.

Table 16: Activity Recorded at Each Location (Oaklands Blossom)

Location	Species	Count of Species	Activity Index
Location 1	Common pipistrelle	1505	301
	Noctule	28	5.6
	Soprano pipistrelle	127	25.4
Location 1 Total		1660	332
Location 2	Common pipistrelle	1999	399.8
	Noctule	68	13.6
	Soprano pipistrelle	27	5.4
Location 2 Total		2094	418.8
Grand Total		3754	750.8

4.4.2 Evaluation

Roosting Bats

The site supports two day roosts of common pipistrelle with a peak count of four bats recorded in one roost. Common pipistrelle are common and widespread across the country, therefore the roosts are assessed as being of no more than site value for roosting common pipistrelle.

Foraging and Commuting Bats

Bat surveys recorded at least nine species of bat foraging and commuting at the site. **Table 17** shows the geographic level of value of foraging and commuting habitat at the site.

Table 17: Value of the site to bat species/species complexes

Species	Foraging and Commuting Value
Common pipistrelle, soprano pipistrelle, Nathusius' pipistrelle, noctule, Leisler's bat, serotine and long-eared bat <i>Plecotus</i> species	Site
<i>Myotis</i> species bat, barbastelle	Local

Within Hertfordshire common pipistrelle, soprano pipistrelle and brown long-eared bat are common and widespread (Hertfordshire & Middlesex Bat Group, 2022). The records of foraging and commuting individuals of these species are considered to be of value at the site level.

Noctule, Nathusius' pipistrelle, serotine and Leisler's bat are all widespread species within the county although scarce (Hertfordshire & Middlesex Bat Group, 2022). None of these species comprised more than 1% of the total recordings during the automated detector surveys and none were recorded during the transect surveys. Therefore they are infrequent species foraging and commuting within the site. As such, these species are considered to be of value at the site level.

Barbastelle is a rare species within Hertfordshire and limited to a small number of wooded river valleys (Hertfordshire & Middlesex Bat Group, 2022). Therefore, although only a small number of registrations of the species were made, these are considered to be notable at the local level.

Four species of *Myotis* bat species are known to be present within Hertfordshire: Daubenton's bat *Myotis daubentonii*, Natterer's bat, Whiskered bat *Myotis mystacinus* and Brandt's bat *Myotis brandtii*. Daubenton's bat and Natterer's bat are both widespread species within the county, while few records are known of whiskered bat and Brandt's bat and therefore these species are considered to be rare. Given that the site contains habitats which all of the four *Myotis* bat species would utilise for foraging and commuting, it is not possible to rule out any one species as being present on site. As such, the records of foraging and commuting *Myotis* bats are considered to be of value at a local level.

4.5 Otter

4.5.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with HERC produced no recent records of otter *Lutra lutra* within the desktop study area. A review of the MAGIC database returned no granted EPSM licences in respect of otter within a two-kilometre radius of the site. These findings do not confirm the absence of the species in the local area.

Field Survey Results

No evidence of otter was recorded on site during the initial field survey. The Butterwick Brook to the east of the site provides opportunities for foraging and commuting otter and the surrounding adjacent woodland habitats provide opportunities for resting and holts; however the brook was recorded on subsequent site visits for other habitat surveys as being dry, suggesting that the suitability of the site for otter is limited to specific times of the year. Therefore, the site is assessed as having suitability to support otter.

4.5.2 Evaluation

The site offers some foraging and holt creation opportunities for otter but is limited by the seasonality of Butterwick Brook to the east of the site. Therefore, the site is considered to be of no more than site value for this species.

4.6 Badger

4.6.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with HERC produced 37 records of badger *Meles meles* within the desktop study area, 18 of which were recorded since 2015. The most recent record was returned from 2023, however the location was not available. A review of the MAGIC database returned no granted EPSM licences in respect of badger within a two-kilometre radius of the site.

Field Survey Results

Badger latrines were recorded [REDACTED] and along the [REDACTED]. The grassland habitats on site provide opportunities for foraging badger while the woodland, hedgerows and scrub habitats provide opportunities for sett building. Therefore, the site is assessed as having suitability to support badger.

4.6.2 Evaluation

The woodland, hedgerows, scrub and grassland habitats on site provide a large proportion of the available habitats for badger in the local area. Overall, the site is assessed as being of local importance for badger.

4.7 Hazel Dormouse

4.7.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with HERC produced no 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. A review of the MAGIC database returned no granted EPSM licences in respect of hazel dormouse within a two-kilometre radius of the site.

Field Survey Results

The woodland habitats, treelines, scrub and hedgerows provide suitable habitat for hazel dormouse and the site has connectivity to off-site habitats via adjacent woodland and treelines. Therefore the site is assessed as having suitability for hazel dormouse.

Hazel Dormouse Survey Results

The results of the hazel dormouse survey carried out to date are presented in **Table 18**. Locations of the dormouse records are provided on **Map 6**.

Table 18: Hazel dormouse survey results

Survey Date	Results
2 nd September 2025	No evidence of hazel dormouse was found.

4.8 Water Vole

4.8.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with HERC produced no recent records of water vole *Arvicola amphibius* within the desktop study area, with two historical records returned from 1967 and 1969; however, this does not confirm the absence of the species in the local area.

Field Survey Results

No evidence of water vole was recorded during the survey. The river to the east of the site provides burrowing and commuting opportunities for water vole; however the river was subsequently recorded as being dry in summer, making it unsuitable for water vole. Therefore, the site is assessed as being unsuitable to support water vole.

4.9 Birds

4.9.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with HBIC returned records of 107 notable and protected bird species within the desktop study area. Records of 39 amber-listed species¹⁹ and 20 red-listed²⁰ species were returned, including swift *Apus apus*, house sparrow *Passer domesticus*

¹⁹ The UK's birds are split into 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.

²⁰ The UK's birds are split into 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.

and yellowhammer *Emberiza citrinella*, all red-listed species, and amber-listed species redwing *Turdus iliacus*, tawny owl *Strix aluco*, and song thrush *Turdus philomelos*.

Field Survey Results

The buildings, woodland, treelines, hedgerow and scrub habitats on site provide nesting opportunities for breeding birds, while the tussocky grassland provides opportunity for ground nesting birds. The grassland habitats may support individual wintering bird species but are unlikely to support significant assemblages due to a lack of inundation over winter.

Breeding Bird Survey Results

During the breeding bird survey, a number of species were recorded on site displaying territorial behaviour including the amber-listed species wren *Troglodytes troglodytes*, wood pigeon *Columba palumbus* and dunnock *Prunella modularis*. In addition, a number of other notable bird species were recorded on site during the survey including the red-listed species skylark *Alauda arvensis*, house sparrow, linnet *Carduelis cannabina* and starling *Sturnus vulgaris* and the amber-listed species lesser black-backed gull *Larus fuscus*, kestrel *Falco tinnunculus* and whitethroat *Sylvia communis*.

4.9.2 Evaluation

Breeding Birds

A full evaluation of the value of the site for breeding birds will be conducted following the completion of the remaining surveys.

4.10 Reptiles

4.10.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with HERC returned two recent records of grass snake, from 2017 and 2018, located approximately 460 and 560 metres south of the site respectively. There were an additional 16 historical records of grass snake and two records of common lizard *Zootoca vivipara*, returned prior to 2004.

Field Survey Results

The tussocky grassland habitats on site provide basking and foraging opportunities for reptiles, while the woodland, treelines, hedgerow and scrub habitats provide hibernating and sheltering opportunities for reptiles. Therefore, the site is assessed as having suitability for reptiles.

Reptile Survey Results

No reptiles were found during any of the surveys carried out between 29th July and 11th September. The locations of the refugia within are shown on **Map 7**.

4.11 Great Crested Newt

4.11.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with HERC produced 18 recent records of great crested newt *Triturus cristatus* within the desktop study area. The most recent of which were returned from 2020, with the closest record approximately 240 metres south of the site boundary.

Consultation with the MAGIC website produced one granted EPSM licence (2017-32651-EPS-MIT-1) with respect to great crested newt within a two-kilometre search radius. This is located approximately 1.6 kilometres east of the site and granted in 2018 for the destruction of a resting place. A total of 11 records from class licence returns were also returned within the desktop study area, the closest of which is located 800 metres east of the site boundary and dated from 2015.

An assessment of aerial photography and 1:25,000 OS mapping identified the presence of eight waterbodies on site. Within 500 metres of the site a further 12 waterbodies were identified, the closest of which is adjacent to the site boundary to the east. Consultation with MAGIC revealed that four of these ponds were surveyed between 2017 and 2019. Two of the ponds surveyed are on site, the largest of which returned a positive result for GCN in 2019 (NGR TL18140753).

Field Survey Results

The on-site waterbodies provide breeding opportunities for great crested newt while the woodland, grassland, treelines, hedgerow and scrub habitats provide opportunities for great crested newt in their terrestrial phase. Given previous records of great crested newt on site, it is considered likely that this species is present on site.

Great Crested Newt eDNA Survey Results

Out of the 12 onsite ponds, eight were dry and thus unsuitable for great crested newt. The four ponds where it was possible to collect samples for eDNA were Pond 1, Pond 8, Pond 11, and Pond 12. Results for all four ponds returned negative for great crested newt. As great crested newt have been confirmed as being absent from site, they are not considered any further in this report.

4.12 Invertebrates

4.12.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with HERC returned records of 20 species of Lepidoptera, two species of Odonata and one Diptera species. Of these species, 19 are listed under Section 41 of the NERC act.

Field Survey Results

A white admiral *Limenitis camilla* was recorded on site during survey works. The habitats on site provide opportunities for common and widespread invertebrate assemblages, while the woodland habitats provide deadwood for notable saproxylic species. Overall, the site is assessed as having suitability to support invertebrate species on site.

4.12.2 Evaluation

The woodland habitats on and adjacent to the site offer a good portion of the habitats available in the local area. Therefore the site is assessed as having local value for invertebrates.

4.13 Other Relevant Species

4.13.1 Baseline Ecological Conditions

Desktop Study Results

Consultation with HERC produced multiple records of the Species of Principal Importance European hedgehog *Erinaceus europaeus*, common toad *Bufo bufo* and brown hare *Lepus europaeus*. Five records of midwife toad *Alytes obstetricans*, a Schedule 9 invasive species, were also returned, as well as one record of harvest mouse *Micromys minutus*, and one record of polecat *Mustela putorius*.

Field Survey Results

The grassland habitats provide foraging opportunities for harvest mouse, European hedgehog, common toad and midwife toad, while the woodland habitats provide opportunities for polecat. In addition, the ponds on site provide breeding opportunities for common toad and midwife toad. Therefore, the site is considered to have suitability for harvest mouse, European hedgehog, polecat, common toad and midwife toad.

4.13.2 Evaluation

The habitats on site represent a small proportion of the available habitats for harvest mouse, European hedgehog, polecat and common toad. Therefore, the site is assessed as being of site value only for these species.

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 hierarchy²¹ 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 proposed development entails the construction of new homes, local community buildings, care homes, demolition of college buildings, construction of new college buildings including sports facilities. A new rambling path will also be created around the edge of the site.

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 current proposals will not result in the loss of habitats or qualifying features of designated sites.

On-site and adjacent designated sites could be impacted through pollution events and accidental damage through contact or root compaction from heavy machinery.

5.3.2 *Mitigation Measures*

A buffer of 20 metres will be implemented between construction works and designated sites and reinforced with Heras-type fencing. A Construction Environmental Management Plan (CEMP) will be produced prior to construction, with input from an ecologist, detailing how impacts to nearby designated sites will be mitigated for during

²¹ 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'.

construction works and the operational phase including storage of fuel and chemicals on site, provision of spill kits and measures to reduce dust and noise pollution on site.

5.3.3 Significance of Residual Effects

Following mitigation measures, there are no anticipated residual effects to designated sites.

5.3.4 Compensation

No compensation measures are proposed with regard to designated sites.

5.3.5 Enhancement

No enhancement measures are proposed with regard to designated sites.

5.4 Habitats

5.4.1 Potential Impacts and Effects

The majority of the grassland habitats will be lost as a result of new residential development in the north-west of the site. While the majority of the hedgerows and tree lines are currently expected to be retained in this area, some sections will be lost to accommodate new access. Grassland in the south-east and centre of the site is also likely to be permanently or temporarily lost during the construction of sports fields, new access routes, and car parks.

The majority of woodland habitats on site are expected to be retained as part of the proposals. An area of other lowland mixed deciduous woodland in the mid-west of the site is currently set for removal.

Retained habitats may be damaged through root compaction and accidental contact with machinery. Contamination of aquatic habitats through dust and increased run-off may also be encountered.

5.4.2 Mitigation Measures

Adjacent ancient woodland habitats will be protected with a minimum of a 20-metre buffer.

All trees to be retained within the site will be protected with Root Protection Zones (RPZs) established in accordance with BS 5837:2012 (British Standards, 2012). Heras-type fencing should be installed around retained trees and habitats during construction to protect RPZs and areas of retained habitat.

Fuel and chemicals will be stored on site in secure containment at least 100 metres away from any watercourses on site. Spill kits will be kept on site to be used in the event of a pollution incident. A CEMP will be produced (**Paragraph 5.3.2**), detailing

how fuel and chemicals will be stored on site during construction works and how pollution incidents will be prevented on site.

5.4.3 Significance of Residual Effects

To accommodate the scheme, the loss of habitats cannot be mitigated for. This is considered of moderate significance at the site level.

5.4.4 Compensation

New planting will comprise native tree and shrub species as opposed to cultivars and/or non-natives. Retained habitats will be enhanced with additional planting to improve the condition of the habitats and enhance existing connections. A biodiversity net gain assessment will ensure no net loss of habitats.

5.4.5 Enhancement

A biodiversity net gain assessment will be carried out to ensure the proposals achieve a minimum of 10% gain in biodiversity units.

5.5 Bats

5.5.1 Potential Impacts and Effects

Demolition of buildings confirmed to support bat roosts by ongoing surveys will result in the permanent loss of bat roosts. Demolition of these buildings also has the potential to disturb, injure and or kill bats, if present.

Removal of trees with suitability for roosting bats has potential to result in harm to individual bats and loss of active roosts, and will result in a net loss of roosting opportunities at the site overall.

Removal of woodland and tree lines will result in a net loss of suitable foraging and commuting habitat for bats, and has potential to result in habitat fragmentation, deterring or preventing bats from passing through the site between areas of high-quality habitat in the surrounding landscape.

During construction, there is potential for accidental damage to retained trees and woodland through direct impact. Works that result in high levels of noise or vibration have potential to result in disturbance to roosting bats, if undertaken in close proximity to active roosts. The proposals also have the potential to result in long-term disturbance through introduction of new lighting.

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**

A EPSM licence will need to be applied for and granted prior to the demolition of Buildings 2, 6 and 11 and any other buildings that further buildings identify as supporting roosting bats.

The species protection provision of the Habitats Directive, as implemented by the Conservation (Natural Habitats etc.) Regulations 2017 contains three 'derogation tests' which must be applied by the Local Planning Authority at the Planning Application stage and by Natural England when deciding whether to grant a licence to a person carrying out an activity which would harm a European Protected Species. The three tests that must be met in order to successfully obtain a Natural England protected species licence are as follows:

- *The consented operation must be for 'preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment';*
- *There must be 'no satisfactory alternative'; and*
- *The action authorised 'will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'.*

Preserving Public Health and Safety or other Imperative Reasons of Overriding Public Interest

The existing buildings are not fit for purpose and do not fulfil the needs of the college.

No Satisfactory Alternative

A "do nothing approach" is not a viable proposition due to the factors outlined above.

Maintaining the Favourable Conservation Status of the Species at the Site

The licence application will require the preparation of a statement which details the methods for maintaining the conservation status of the species at the site. This can be achieved by the following measures:

- Given the low status of the roosts, there would be no limitations to the timings of the works during the bat active season (March to October, inclusive). However, works should take place outside of the key hibernation period, when bats are

less vulnerable to disturbance, so as to minimise the impact on bat roosting locations;

- The roof void would be lined with bitumen roofing felt or non-bitumen coated roofing membrane (NBCRM) that has passed a 'snagging propensity test' instead of Breathable Roofing Membrane (BRM);
- Three vivara pro woodstone bat boxes will be installed on suitable trees within the retained other lowland mixed deciduous woodland prior to the demolition works commencing at the site;
- Prior to any works commencing at the site, the buildings will be inspected externally and internally by a licensed bat worker to locate any roosting bats. Where considered appropriate, any bats found will be placed within bat boxes that will be installed within the wider site prior to the works commencing;
- A toolbox talk will be given to contractors on site, and signage will be installed informing contractors of issues relating to bats and the development works; and
- To ensure that no bats are injured or maimed during the demolition process, careful removal / inspection of tiles, soffits and lead flashing will be carried out by a licensed bat worker using hand tools. Any bats found during works will be placed within bat boxes that will be installed within the wider site prior to the works commencing.

New external lighting to be installed on the new development will comprise hooded luminaires directed away from vegetation and the adjacent boundary hedgerow and woodland habitats. Ideally the bulbs will be LED and at the warmer end of the spectrum (i.e. avoiding blue or white light). LED lights emit much lower levels of UV and therefore have a lower impact on wildlife. The new lighting will be task-related, associated with specific entrance/exit points of the development. 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 and mitigation options as described within the Bats and Artificial Lighting in the UK report will be followed (Institution of Lighting Professionals, Bat Conservation Trust, 2023).

5.5.3 Significance of Residual Effects

The loss of suitable bat roosting, foraging and commuting habitats cannot be mitigated for within the scheme.

5.5.4 Compensation

For every tree with bat roosting suitability to be removed, one Vivara Pro Woodstone bat box will be installed on retained trees on site. The new habitat planting will provide new foraging and commuting opportunities for bats on site and will create new foraging routes.

5.5.5 Enhancement

As an enhancement measure for roosting bats within the site, one integrated bat box will be incorporated into every new residential unit. The boxes will be installed as high as possible on the northern elevations of the buildings.

5.6 Otter

5.6.1 Potential Impacts and Effects

No direct impacts to otter are anticipated as a result of the proposals. Chemical spillage and silt run-off, causing a release of nitrogen, phosphorus and potassium (NPK), during construction works may enter nearby watercourses causing harm to otter.

Otter are fully protected under the Wildlife and Countryside Act 1981 (as amended). Refer to **Appendix 3** for details.

5.6.2 Mitigation Measures

The CEMP recommended in Paragraph 5.4.2 will include measures to avoid pollution incidents to on-site watercourses.

5.6.3 Enhancement

No enhancement measures are proposed with regards to otter.

5.7 Badger

5.7.1 Potential Impacts and Effects

The proposals may result in the loss of habitat suitable for foraging and sett building badger. While no badger setts were identified during the initial field survey, if badgers colonise habitats to be removed, construction works may lead to the disturbance or destruction of setts.

Badger are protected from killing and injury, and their setts protected from damage and interference, under the Protection of Badgers Act 1992. Refer to **Appendix 3** for details.

5.7.2 Mitigation Measures

An updating badger walkover should be carried out 6 months prior to works commencing on site. Any badger setts identified during the works should be retained within the development proposals wherever possible and buffered by a minimum of 30

metres from any built form or construction activities. Where this is not possible setts will need to be closed under licence. Artificial replacement setts would be required to offset the loss of any main setts.

Where badger setts are identified it will be necessary to ensure connectivity between the setts and areas of green space within the site and offsite.

5.7.3 Significance of Residual Effects

Following mitigation there are no anticipated residual effects with regards to badger.

5.7.4 Compensation

No compensation measures are proposed with regards to badger.

5.7.5 Enhancement

No specific enhancement measures are proposed with regards to badger, but the enhancement of habitats on site will also benefit this species.

5.8 Hazel Dormouse

5.8.1 Potential Impacts and Effects

Removal of or damage to woodland, hedgerow, scrub or tree lines on site has the potential to disturb and/or harm individual hazel dormouse and lead to a loss of suitable habitat.

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

5.8.2 Mitigation Measures

Should hazel dormouse be identified in the site during the ongoing surveys then any suitable habitat such as hedgerows, scrub, woodland and tree lines should be retained within the proposals as far as possible. It is possible that an EPSM licence will be required from Natural England before works affecting the species can proceed. Any losses will require offsetting through new planting within the site landscaping. It will also be necessary to ensure that those habitats which are retained and created are well connected to other suitable habitat in the surrounds.

It will be necessary to ensure that connectivity is maintained across the site to minimise any fragmentation effects associated with hazel dormouse, if present.

5.8.3 Significance of Residual Effects

The loss of suitable hazel dormouse habitat cannot be mitigated for through the scheme design.

5.8.4 Compensation

New planting proposals will provide new hedgerow and arboreal habitats for hazel dormouse.

5.8.5 Enhancement

There are opportunities for enhancement for hazel dormouse including the installation of nest boxes on site and planting of additional habitats. Full details of enhancement necessary for hazel dormouse should be informed by the results of the ongoing survey work.

5.9 Birds

5.9.1 Potential Impacts and Effects

The proposals will lead to a loss of suitable breeding bird habitats. Breeding birds may be disturbed and/or harmed if vegetation clearance or demolition works are carried out during the nesting bird season.

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.

5.9.2 Mitigation Measures

Any vegetation clearance will need to be undertaken outside of the nesting bird season (March to August inclusive). Should this not be possible then a suitably qualified ecologist will need to be present immediately prior to vegetation removal in order to check for active nests.

5.9.3 Significance of Residual Effects

To accommodate the scheme, the loss of suitable nesting bird habitats cannot be mitigated for.

5.9.4 Compensation

In order to offset any losses to nesting bird habitat new native species planting will be undertaken within the site.

Further compensation measures will be provided upon completion of the further survey works.

5.9.5 Enhancement

The inclusion of new bird boxes on retained trees and at least 20% of new buildings will provide new nesting opportunities for breeding birds at the site.

5.10 Invertebrates

5.10.1 Potential Impacts and Effects

An area of woodland in the mid-west of the site is current scheduled for removal; this will result in a loss of suitable invertebrate habitats and possible harm to notable invertebrates.

Accidental damage to further woodland habitats on the site would also result in loss of suitable invertebrate habitat and possible harm to notable invertebrates.

5.10.2 Mitigation Measures

Woodland habitats planned to be retained will be suitably buffered to prevent accidental damage to these habitats. Deadwood within the woodland should be retained to provide opportunities for saproxylic invertebrates.

5.10.3 Significance of Residual Effects

The loss of suitable invertebrate habitats cannot be mitigated for.

5.10.4 Compensation

The new planting measures will provide new opportunities for invertebrates.

5.10.5 Enhancement

Opportunities for enhancement for invertebrates including wildflower meadow planting, bee banks, invertebrate towers and creating loggeries (SEMBLE, 2014) as part of the proposals.

5.11 Other Relevant Species

5.11.1 Potential Impacts and Effects

The proposals will result in the loss of European hedgehog, harvest mouse, polecat and common toad habitats and these species may be harmed during vegetation clearance works. Midwife toad may be accidentally allowed to spread from the site if incorrectly identified and moved during clearance works.

5.11.2 Mitigation Measures

Possible mitigation measures include ecological supervision of vegetation clearance to remove European hedgehog, harvest mouse, polecat and common toad during construction works and providing access routes across the site post-development by

preventing isolation of habitats by fencing, or providing suitable gaps to allow continued access.

Should midwife toad be encountered or caught during vegetation clearance and construction works, individuals will be not be allowed to be released and will be destroyed humanely.

5.11.3 Significance of Residual Effects

The loss of suitable habitats for European hedgehog, harvest mouse, polecat and common toad cannot be mitigated for within the scheme design.

5.11.4 Compensation

The proposed landscaping measures will replace lost habitats for European hedgehog, harvest mouse, polecat and common toad.

5.11.5 Enhancement

There are opportunities for enhancement for European hedgehog, harvest mouse, polecat and common toad including the installation of sheltering features , new planting proposals and water features.

5.12 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 supports day roosts of common pipistrelle and assemblages of breeding birds and has suitability for otter, badger, invertebrates, European hedgehog, polecat, harvest mouse and common toad. Adverse impacts on these ecological features have been identified and appropriate mitigation measures proposed. At the time of preparing this report, surveys are ongoing to determine the presence of roosting bats, hazel dormouse, breeding birds and reptiles on site and further mitigation measures will be provided once the surveys are completed.

At present, no residual or cumulative impacts are anticipated. The site will be enhanced for bats, hazel dormouse, birds and invertebrates through the installation of roosting and nesting features and provision of new planting creating breeding spaces and foraging and commuting opportunities. As such it is considered that the proposals have scope to accord with all relevant national and local planning policy in relation to ecology including Policy 106 of the Local Plan 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, 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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Map 1 Site Location Plan

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Map 2 Baseline Habitat Map

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Map 3 Bat Transect Survey

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Map 4 Bat Automated Detector Survey (Oaklands Blossom)

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Map 5 Bat Automated Detector Survey (Oaklands College)

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Map 6 Hazel Dormouse Survey

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Map 7 Reptile Survey

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Appendix 1 Proposed Site Layout

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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.

Hazel Dormouse and Otter

These 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 one of these species uses for shelter or protection.

Badger

The Protection of Badgers Act 1992 consolidates previous legislation (including the Badgers Acts 1973 and 1991 Badgers (Further Protection) Act 1991). It makes it an offence to:

- Kill, injure or take a badger;
- Attempt to kill, injure or take a badger; or
- To damage or interfere with a sett.

The 1992 Act defines a badger sett as 'any structure or place which displays signs indicating current use by a badger'.

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.

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.

Where badger setts are present on or adjacent to the site and are considered potentially vulnerable to interference, details of these setts, associated impacts and proposed mitigation are included in a separate confidential annex.

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) species²², 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.

²² 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 19**²³.

Table 19: 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.	<p>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.</p> <p>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.</p> <p>Site is close to and connected to known roosts.</p>
Moderate	A structure or 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.	<p>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.</p> <p>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</p>
Low	<p>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).</p> <p>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.</p>	<p>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).</p> <p>Suitable, but isolated, habitat that could be used by small numbers of foraging bats such as a lone tree or a patch or scrub.</p>
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.

²³ Table adapted from (Collins, 2023).

Appendix 6 Assessment Criteria for Roosting Bats

Roost types have been defined in accordance with Natural England and Bat Conservation Trust guidelines. Definitions are set out in **Table 20**.

Table 20: Bat roost types as defined by Natural England and the Bat Conservation Trust

Roost Type	Definition
Day Roost	A place where individual bats, or small groups of males, rest or shelter in the day but are rarely found by night in the summer.
Night Roost	A place where bats rest or shelter in the night but are rarely found in the day. May be used by a single individual on occasion or it could be used regularly by the whole colony.
Feeding Roost	A place where individual bats or a few individuals rest or feed during the night but are rarely present by day.
Transitional/Occasional Roost	Used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.
Swarming Site	Where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites.
Mating Sites	Where mating takes place from late summer and can continue through winter.
Maternity Roost	Where female bats give birth and raise their young to independence.
Hibernation Roost	Where bats may be found individually or together during winter. They have a constant cool temperature and high humidity.
Satellite Roost	An alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

Appendix 7 Automated Detector Settings

Automated Detector Settings

Automated detectors can be calibrated in a number of different settings which can result in the potential variations in the way that bat calls are recorded. **Table 21** details the standard settings used by ECOSA during automated detector surveys undertaken.

Table 21: Standard automated detector settings

Option	Basic Setup
Settings - Audio	
Sample rate	192000Khz
Channels	Mono L (left)
Compression	WAV
Gain Left	+0.00
Gain Right	+0.00
Settings - Audio Advanced	
Dig High Pass Filter (HPF) Left	Fs/12
Dig High Pass Filter (HPF) Right	Off
Digital Low Pass Filter (LPF) Left	Off
Digital Low Pass Filter (LPF) Right	Off
Trig Lvl Left	12SNR
Trig Lvl Right	Off
Trg Win Left	2.0s
Trg Win Right	2.0s
Trg Max Length	2s
Bits (Div Ratio)	16
Nap Trg Lvl	Off

Data Conversion Settings

In order to analyse the data efficiently the raw .wav files recorded on the automated detector are subsequently converted to zero crossing (.zc) files which are subject to automated classification by Wildlife Acoustics Kaleidoscope Pro. During the conversion process the data is filtered to remove noise files in line with Wildlife Acoustics recommended setting as provided in **Table 22**.

Table 22: Noise file filtering settings

Option	Basic Setup
Signal of Interest – Frequency	8 – 120 kHz
Signal of Interest – Call Length	2 - 500ms
Signal of Interest – Minimum Number of Calls	2
Advanced Signal Enhancement	On

All filtered noise files are kept and subsequently assessed for bat calls in order to ensure that no bat calls have been incorrectly classified as noise. The “Advanced Signal Enhancement” setting discards files which Kaleidoscope assessed as being insufficient quality. Any discarded files are subsequently not stored by Kaleidoscope and therefore, not subject to analysis by an ecologist.

Appendix 8 Statutory Designated Sites within the Desktop Study Area

Details of statutory designated sites within the desktop study area, as listed in Paragraph 4.2.1, are provided in **Table 23**.

Table 23: Statutory Designated Sites Located Within the Desktop Study Area

Site Name	The Wick
Site Designation	LNR
Approximate Relative Location	910 metres northwest of the site
Reasons for Designation:	
Designated for supporting ancient woodland habitats as well as a number of bird species including great spotted woodpecker, nuthatch and tawny owl, and migratory birds including fieldfare and redwing.	