Ecological Impact Assessment

Micheli, Lower End, Alvescot

Presented to: Sarah and Helen Barling

Issued: October 2022

Delta-Simons Project No: 22-1573.01

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Report Details

Client	Sarah and Helen Barling
Report Title	Ecological Impact Assessment
Site Address	Micheli, Lower End, Alvescot
Project No.	22-1573.01
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Quality Assurance

Issue No.	Status	Issue Date	Comments	Author	Technical Review	Authorised
1	Final	7th October 2022		[redacted]		
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INOGEN ALLIANCE

Non-Technical Summary

Delta-Simons Ltd was instructed by Sarah and Helen Barling (the 'Client') to undertake an Ecological Impact Assessment (EcIA) of an area of land at Micheli, Lower End, Alvescot (hereafter referred to as the 'Site') to inform a planning application for conversion works to stables and potential roof works of the existing dwelling (the 'Proposed Development').

This EcIA addresses the potential effects of the Proposed Development on ecology and nature conservation. The report describes the methods used to assess the effects; the baseline conditions currently existing at the Site and within the immediate surrounding area; the mitigation measures required to prevent, reduce or offset any significant adverse effects and the likely residual effects after these measures have been adopted, as well as any proposed enhancement measures. A summary of residual effects is provided overleaf.

An ecological desk study undertaken in August 2022 identified no internationally designated statutory sites within 6 km of the Site, one nationally designated statutory site within 2 km of the Site and no locally designated statutory sites within 2 km of the Site. Two non-statutory designated sites were identified within 2 km of the Site. The Site falls within a Site of Special Scientific Interest (SSSI) Impact Risk Zones (IRZ), however the Proposed Development does not meet the criteria for which Natural England would need to be consulted to assess any effects on designated sites.

The habitats on Site were surveyed and assessed for their suitability to support protected/otherwise notable species by Delta-Simons on 9th June 2022. The Site covers an area of approximately 0.13 ha and comprises an existing dwelling and gardens, alongside a stable block. The habitats present on Site are widespread on both a local and national scale, with none of the habitats being considered rare. The proposals will result in the loss of most of some of the habitats on-Site, although the more ecologically valuable habitats around the boundaries are to be retained where possible.

The Site was found to be suitable for bats and nesting birds and further survey was carried out to determine whether bats were roosting in the buildings on Site. Following further survey, it was concluded that bat roosts were likely to be absent from the existing dwelling, but two common pipistrelle day roosts were identified associated with the stable.

The construction phase will result in the loss of suitable bird nesting habitat. Suitable habitat will be removed either outside the main nesting bird season, or subsequent to a nesting bird check by a suitably experienced ecologist immediately prior to removal.

To enable the legal demolition of the stables, a bat mitigation licence will be required. This licence will include the details of the required mitigation to prevent significant impacts to bats. The Site is considered to be of low value for foraging and commuting bats. Any lighting strategy will need to be designed in consultation with an ecologist to prevent impacts on bats.

Clearance of any suitable habitat will be undertaken with an awareness for the potential presence of hedgehog and any individuals found will be caught with gloved hands and moved to an alternative suitable habitat away from the proposed works. During the construction phase of works, no open pits or trenches will be left uncovered or alternatively without being fitted with a mammal escape ramp overnight.

Summary of Residual Effects

Important Ecological Feature	Geographic Value	Characterisation of Unmitigated Impact	Significance Before Mitigation	Avoidance, Mitigation and Compensation	Residual Effect Significance
Habitats	Local	Habitat loss	Minor adverse Non-significant	Adherence to BS5837:2012 Creation of new landscaping areas	Negligible Neutral
Birds	Local	Habitat loss Nest destruction/ disturbance Noise and vibration	Minor adverse Non-significant	Sensitive timing of works and/or watching brief with regards to the removal of, and works within close proximity to, suitable nesting habitat Inclusion of bird boxes	Negligible Neutral
Bats	Local	Damage / destruction of roosts Harm to individuals Increased lighting on Site	Moderate adverse Significant	Building demolition to be undertaken under a suitable bat mitigation licence Lighting design to be discussed with ecologist	Negligible Neutral
Hedgehog	Local	Risk of killing/ injury during Site clearance	Minor adverse Non-significant	Precautionary approach to clearance Open pits covered overnight	Negligible Neutral

Table of Contents

Tables

Figures

Appendices

1.0 Introduction

1.1 Purpose and Scope of the Survey

Delta-Simons Ltd was instructed by Sarah and Helen Barling (the 'Client') to undertake an Ecological Impact Assessment (EcIA) of Micheli, Lower End, Alvescot (hereafter referred to as the 'Site') to inform a planning application for conversion works to stables and potential roof works to the existing dwelling (the 'Proposed Development').

The purpose of this report is to:

- Establish baseline ecological conditions at the Site.
- Provide details of ecological mitigation measures incorporated through design evolution as an intrinsic part of the project design.
- Detail any ecological mitigation measures to be implemented during Site clearance and construction.
- Identify any residual ecological effects after avoidance and mitigation measures have been considered.
- Identify any compensation measures required to offset residual effects.
- Provide recommendations for how mitigation and compensation may be secured and monitored.
- Set out details of ecological enhancement measures to be included within the Proposed Development.
- Provide sufficient information to determine whether the project accords with relevant nature conservation policies and legislation and, where appropriate, to allow conditions or obligations to be proposed by the relevant authority.

The Site location and the red line boundary and survey area are shown in Figure 1.

1.2 Site Description

The Site is centred at Ordnance Survey (OS) grid reference SP 27092 04082, in the south of Alvescot in Oxfordshire. The area surveyed covers an area of approximately 0.13 ha and comprises an existing dwelling and gardens, alongside a stable block.

The surrounding area comprises predominantly a mix of residential properties, private gardens and arable land.

The habitats present on Site are shown in Figure 2.

1.3 Proposed Development

It is understood that the Proposed Development will comprise replacement of the stables with two additional dwellings and the potential re-roofing of the existing bungalow.

The construction phase will comprise:

- Demolition of the stable block;
- Retention and protection of other habitats;
- Works to the roof of the bungalow (if required); and
- Construction of new dwellings in place of the stables.

The operational phase will comprise:

- Three dwellings and associated gardens / hardstanding.

2.0 Legislation & Policy Summary

Planning guidelines, international commitments, legislation and planning policies relevant to the protection, conservation and enhancement of nature conservation interests are detailed below.

2.1 National Policy and Guidance

Specific habitats and species of relevance to the Site receive legal protection in the United Kingdom under various pieces of legislation, including:

National Planning Policy Framework (NPPF, revised 2021);

The Conservation of Habitats and Species Regulations 2017 (as amended);

The Wildlife and Countryside Act (WCA) 1981 (as amended);

The Countryside and Rights of Way (CRoW) Act 2000;

The Natural Environment and Rural Communities Act (NERC) 2006;

The Hedgerow Regulations 1997; and

The Protection of Badgers Act 1992.

Where relevant, this assessment takes account of the legislative and policy protection afforded to specific habitats and species. Delta-Simons do not purport to provide specialist legal advice and where necessary the reader should also consult the original legislation, references to which are included in Appendix A.

2.2 Local Policy and Guidance

Local planning policies relating to ecology are generally based on national planning policy, the conservation of species protected under the above legislation and the protection of designated sites. However, relevant local policy and guidance documents are outlined below.

West Oxfordshire Local Plan (2018)

The Local Plan sets out the planning framework for West Oxfordshire to 2031 and contains the following policies relevant to ecological features:

"Policy EH3: Biodiversity and Geodiversity

The biodiversity of West Oxfordshire shall be protected and enhanced to achieve an overall net gain in biodiversity and minimise impacts on geodiversity, including by:

• giving sites and species of international nature conservation importance and nationally important sites of special scientific interest the highest level of protection from any development that will have an adverse impact;

• requiring a Habitats Regulations Assessment to be undertaken of any development proposal that is likely to have a significant adverse effect, either alone or in combination, on the Oxford Meadows SAC, particularly in relation to air quality and nitrogen oxide emissions and deposition;

• protecting and mitigating for impacts on priority habitats, protected species and priority species, both for their importance individually and as part of a wider network;

• avoiding loss, deterioration or harm to locally important wildlife and geological sites and sites supporting irreplaceable habitats (including ancient woodland, Plantations on Ancient Woodland Sites and aged or veteran trees), UK priority habitats and priority species, except in exceptional circumstances where the

importance of the development significantly and demonstrably outweighs the harm and the harm can be mitigated through appropriate measures and a net gain in biodiversity is secured;

• ensuring development works towards achieving the aims and objectives of the Conservation Target Areas (CTAs) and Nature Improvement Areas (NIAs);

• promoting the conservation, restoration and recreation of priority habitats, ecological networks and the protection and recovery of priority species populations, particularly within the CTAs and NIAs;

• taking all opportunities to enhance the biodiversity of the site or the locality, especially where this will help deliver networks of biodiversity and green infrastructure and UK priority habitats and species targets and meet the aims of CTAs;

• ensuring that all applications that might adversely affect biodiversity are accompanied by adequate ecological survey information in accordance with BS 42020:2013 unless alternative approaches are agreed as being appropriate with the District Council's ecologist;

• all major and minor applications demonstrating a net gain in biodiversity where possible. For major applications this should be demonstrated in a quantifiable way through the use of a Biodiversity Impact Assessment Calculator (BIAC) based on that described in the DEFRA Biodiversity Offsetting guidance or a suitably amended version. For minor applications a BIAC will not usually be required but might be requested at the Council's discretion;

• all development incorporating biodiversity enhancement features.

All developments will be expected to provide towards the provision of necessary enhancements in areas of biodiversity importance."

3.0 Methodology

The baseline for the EcIA has been established through a combination of desk study and field surveys.

3.1 Scope of the Assessment and Zone of Influence

The features considered for this assessment were designated sites, Habitats and Species of Principal Importance for conservation, and species protected by wildlife legislation.

Given the size and location of the Site, the zone of influence was taken to be the Site boundary and its immediate environs only. The exception for this was for designated sites and great crested newt (GCN) *Triturus cristatus*, details of the zone of influence for these features is provided in Section 3.2, below.

3.2 Desk Study

3.2.1 Data Search

In August 2022, available records of protected and notable species were collated from the local record centre, Thames Valley Environmental Records Centre (TVERC) along with the non-statutory designated sites from within 2 km of the Site centre.

A search for internationally, nationally and locally designated statutory sites for nature conservation was undertaken using the Multi-Agency Geographic Information for the Countryside (MAGIC) website. The search radius was 6 km from the Site centre for internationally designated statutory sites and 2 km from the Site centre for nationally and locally designated statutory sites. A search for non-statutory ancient woodland was undertaken within 2 km of the Site centre, and an assessment was made regarding the location of Habitats of Principal Importance (HPIs) on or near the Site using MAGIC.

In addition, free and publicly accessible Ordnance Survey maps and aerial photographs were searched for waterbodies on, or within, 500 m of the Site boundary. This information has been used to assess the Site for its potential to support GCN, the results of which are found in Section 4.3.

3.3 Preliminary Ecological Appraisal Survey

The habitats on Site, were surveyed on 9th August 2022 by a Delta-Simons ecologist (as shown on Figure 2). Since access was not permitted to the surrounding land, it was visually assessed from the Site boundary.

The following was undertaken during the survey:

Habitats were classified and mapped using the standard UK Habitat Classification and methodology (Butcher *et al.,* 2020). Dominant plant species were recorded in each different habitat. The plant species nomenclature followed that of Stace (2010). The list of plant species was compiled in accordance with methodology required to establish UK Habitat Classification types up to at least level 3, and to levels 4 or 5 wherever possible. Care was taken to accurately record all habitats of priority importance (if present). Secondary codes were added to polygons where deemed appropriate, taking special care to map mandatory codes for habitat mosaic, complex and origin. Survey was undertaken at the fine scale minimum mapping unit (MMU) of 25 m^2 (polygons) and 1 m width and 5 m long (lines). Key ecological features below the MMU in either area or length were mapped as points; Habitats were classified and assessed in terms of both their conservation importance and potential to support notable and/or protected species, and widespread invasive plants (based on habitat suitability and/or field signs/evidence); and

Habitats on-Site were surveyed for the presence of, or field signs to indicate the presence of protected or notable birds, amphibians, reptiles, mammals and widespread invasive plants. This included an external visual assessment of any trees/buildings on the Site for potential bat roost features and any evidence of bat activity, and an assessment of the Site's suitability to support commuting and foraging bats (Appendix B), in line with Collins (2016).

3.4 Bat Survey

Following the PEA and preliminary roost assessment undertaken on 9th August 2022, three dusk emergence surveys of the stable (confirmed roost) and a single dusk emergence survey of the bungalow (low roost suitability) were recommended.

The dusk emergence surveys were carried out in line with the Bat Mitigation Guidelines (2004), Collins (2016) and professional judgement to determine bat activity associated with the buildings at the Site assessed as having Bat Roost Potential (BRP). The surveys were carried out by Sam Wilson (SW), Alexandra Jackson (AJ), Richard Ball (RB) and Anna Potter (AP).

The dusk surveys commenced fifteen minutes prior to sunset and ceased one and a half hours following sunset. The surveyors were equipped with Wildlife Acoustics Echo Meter Touch 2 Pros. Recordings were made of any bats seen and/or heard and the species, the timing, activity, location and direction of flight. Where required, surveyors were supplemented by infra-red video recording equipment.

Any bat calls that could not be identified in the field at the time of the individual surveys were subject to analysis using BatExplorer software.

The surveys were undertaken on 14th and 28th August 2022, and 22nd September 2022.

Table 1 provides details of the surveys. The locations of each surveyor are shown on Figure 3 and listed in the table below .

Table 1 –Timings, Weather Conditions and Location of Surveyors of the Building Surveys

Structure	Surveyors	Date	Timing	Weather*
Stable	RB (Position 1) AP (Position 2)	14/08/2022	20:16 - 22:01 Sunset: 20:31	Start: 23°C, 2/8 cloud cover, wind 2 End: 22°C, 2/8 cloud cover, wind 1
Stable	RB (Position 1) AP (Position 2)	28/08/2022	19:50 - 21:35 Sunset: 20:05	Start: 21°C, 6/8 cloud cover, wind 0 End: 20°C, 3/8 cloud cover, wind 0
Stable and Bungalow	SW (Position 1) AJ (Position 3)	22/09/2022	18:51 - 20:36 Sunset: 19:06	Start: 18°C, 8/8 cloud cover, wind 1 End: 17°C, 8/8 cloud cover, wind 0

* Wind speed measured in Beaufort, cloud cover measured in Oktas.

With reference to the Bat Mitigation Guidelines (2004), Collins (2016) and professional judgement, the weather conditions during the survey were considered suitable for bat activity.

3.5 Survey Limitations

The baseline conditions described in this report were accurate at the time at which the survey was undertaken. Should at least two years pass by, and/or conditions on Site/Site usage change prior to the commencement of works, an update survey should be undertaken.

Following the publication of the BCT Interim Guidance Note in May 2022, all of the surveys were carried out at dusk, with support from an infra-red camera. Based on the Guidance Note, which supports the *"transition away from the standard use of dawn surveys, particularly as a method for presence/absence surveys, in favour of dusk surveys supported by night vision aids"*, it is considered that the lack of any dawn surveys of the buildings is not a significant limitation.

During the third survey, there was sporadic light rain during the first 30 minutes of the survey (approximately five minutes of total rainfall), however bats were recorded flying and emerging during this time (including whilst it was raining) and as such this is not considered to be a limitation.

There were no limitations to any of the surveys in terms of access, timing and weather conditions.

3.6 Ecological Impact Assessment Methodology

An ecological impact assessment has been carried out following the principles set out within the Guidelines for Ecological Impact Assessment (EcIA) in the UK and Ireland; Terrestrial, Freshwater, Coastal and Marine updated by the Chartered Institute of Ecology and Environmental Management (CIEEM) in 2019, the full details of which are provided in Appendix C.

4.0 Baseline Conditions

The following section describes the baseline ecological conditions at the Site, outlining the results of the desk study and field survey findings. Current management is anticipated to remain unchanged up until development and, therefore, baseline conditions at the time of writing this report are anticipated to reflect those at the commencement of the Proposed Development. The conservation importance of the features identified has been evaluated using the geographical scale outlined in Appendix C.

The pertinent information from the data search is set out in section 4.1 below for designated sites, whilst data search records for the species are discussed in the relevant species sections. Full results of the data searches are available to the Client on request.

4.1 Desk Study

4.1.1 Designated Sites

The results of the MAGIC data search and the TVERC desk search indicate:

No internationally designated statutory sites within 6 km of the Site centre;

One nationally designated statutory site within 2 km of the Site centre: Alvescot Meadows Site of Special Scientific Interest (SSSI);

No locally designated statutory sites within 2 km of the Site centre;

Two non-statutory designated sites within 2 km of the Site centre, Manor Farm Local Wildlife Site (LWS) and South Cotswolds Valleys Conservation Target Area (CTA).

Table 2 below sets out the statutory and non-statutory designated sites identified within the ZOI. All other designated sites have been screened out on the basis of the Site's scale, location, existing use and proposed future use.

Table 2 - Local and National Statutory Designated Sites within 2 km of the Site

Site Name	Designation	Distance and Direction from Site Boundary	Designation Criteria Summary
Alvescot Meadows	SSSI	870 m north	Two areas of hay meadow that pro habitat for a range of invertebrates.
South Cotswolds Valleys	CTA	1.1 km north	Large area that supports a range of important habitats (Alvescot Meadows SSSI falls within this area).
Manor Farm Meadow	LWS	1.7 km north	An area of species-rich unimproved neutral grassland, which supports a numb orchids.

4.1.2 SSSI Impact Risk Zones

The Site falls within a SSSI Impact Risk Zone (IRZ) that requires the Local Planning Authority (LPA) to consult with Natural England and assess planning applications for likely impacts on SSSIs/SACs/SPAs and Ramsar sites, however, the proposed development does not meet any of the criteria that would require consultation.

4.1.3 Priority Habitats

The MAGIC data search also provided information regarding Priority/HPI habitats on and around the Site. The MAGIC Maps do not suggest that there are any Priority/HPI habitats on Site or immediately adjacent to Site.

4.2 Habitats

Figure 2 shows the extent of habitat types and boundary features. Descriptions of the habitat types and dominant plant species found at the Site are provided below. Habitat descriptions are as listed in the UK Habitat Classification: Habitat Definitions Version 1.1 (Butcher *et al.,* 2020).

Photographs taken during the Site survey are presented in Appendix D.

Habitats recorded on Site are:

Built-up Areas and Gardens

The majority of the Site comprises the gardens of the residential property, with formal lawns, flower beds and shrubs. No plant species of significance were noted within the garden.

Developed Land, Sealed Surface

A hardstanding driveway and pathways are present.

Buildings

Two buildings are present on Site. The first is the existing dwelling (Photograph 1), a bungalow, with windows in the roof suggesting a conversion has been completed. This building is an irregular shape and is brick built, with a multi-hipped, multi-gabled tiled roof. The building has PVC soffits and is generally in very good condition with little evidence of damage or wear and tear.

The second building is a stable block in the north-west of the Site. The stable is single-storey and of breeze-block construction with a number of wooden stable doors (all closed) and windows (Photograph 2). The roof is double-pitched and tiled, with a large open gap running the length of the building at the eaves on the north side (Photograph 3). At the eastern extent of the this building is a south-facing, open-fronted section with a brick gap in its western wall that leads into the stables (Photograph 4). Internally, the building has felt laid on wooden batons, with the tiles above (Photograph 5). Whilst appearing to be split into sections from outside, the internal inspection revealed that the internal walls do not fully separate each section, as they have missing courses of brickwork at the top.

Artificial Unvegetated Sealed Surface

The area to the south of the stable block was entirely gravel, with occasional colonising plants starting to grow through.

Hedgerows

Managed, species-poor hedgerows run across the Site in multiple locations throughout the garden, providing separation along the boundaries and within the garden.

4.3 Species

Amphibians

There were no records of amphibians returned by the records centre within 1 km of the Site centre within the last 10 years.

A review of aerial photographs and OS maps revealed that there are no ponds on Site or within 500 m of connected habitat of the Site that could support breeding amphibians. The terrestrial habitats on Site were considered unsuitable for amphibians, and the wider area comprises predominantly mown and managed grassland or residential properties (with managed gardens). There is no reason for amphibians to commute across the Site and the Site lacks connectivity to any suitable aquatic habitat for amphibians, such that it is considered unlikely that any would have colonised the area.

GCN are not considered to be a constraint at this Site and are not considered further.

Reptiles

There was a single record of a reptile found within 1 km of the Site centre within the last 10 years, a juvenile grass snake *Natrix helvetica* located approximately 700 m north of the Site, separated from the Site by the entire village of Alvescot.

The habitats on Site are wholly unsuitable for reptiles and connectivity to suitable habitat in the wider area is relatively poor.

Reptiles are not considered to be a constraint at this Site and are not considered further.

Birds

Three records of two bird species were returned from within 1 km of the Site, for swift *Apus apus* and tawny owl *Stix aluco*. These records were all from within 300 m of the Site, and it is considered possible that these species may commute across or forage in the vicinity of the Site. There is no nesting habitat on Site considered suitable for either species.

Bird droppings were recorded inside the stables, however, the only bird species recorded at the time of the survey was wood pigeon *Columba palumbus*, an Amber-listed Bird of Conservation Concern (Stanbury *et al.* 2021). It should be noted that this is not a comprehensive inventory of the bird species which may be present at the Site.

Whilst the majority of the Site is considered to be unsuitable for nesting birds, the hedgerows and stables offer suitable habitat for a range of nesting birds.

The geographic value of this feature is considered to be local.

Bats

30 records of at least seven bat species: common pipistrelle *Pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, barbastelle *Barbastella barbastellus*, noctule *Nyctalus noctula*, Leisler's bat *Nyctalus leisleri*, brown long-eared bat *Plecotus auritus* and Myotis bat *Myotis sp.* were returned from within 1 km of the Site. The majority of these records are from within the centre of Alvescot and include a number of records of bats returning to roost within buildings.

A review of the MAGIC website confirmed that no recent bat licences have been granted within 1 km of the Site.

The habitats on Site are predominantly of low quality for foraging and commuting bats, given their open and managed nature. The most valuable habitats for foraging and commuting bats are considered to be the hedgerows around the Site, which provide linkages to additional suitable foraging and commuting habitats in the wider area.

During the surveys, it was observed that there is minimal light spill onto the Site, despite small amounts of light pollution from internal lighting at the bungalow.

Buildings

Both buildings were assessed as having BRP. Details of these are provided Table 3, below.

Table 3 –Bat Roost Potential Assessment - Buildings

Building Reference	BRP Features	Evidence of Bats	BRP Assessment
Bungalow	Tiles all well sealed, small ga below PVC soffit on northern elevation of southern section of the house (Photograph 6).	None.	Low
Stables	Gap in western wall of open, south-facing section at east end of building, allowing access to stables. Wooden rafters of the roof creating crevices, gap along the entire northern elevation at eaves.	Single dropping found in open section, multiple droppings found inside the building, both on the wall and floor (Photograph 7), scratching noises heard coming from t roof, but exact location could not be determined.	Confirmed roost

Building Roost Emergence/Re-entry Surveys

During the first survey, three common pipistrelle bats were recorded to emerge from the open section on the east end of the building, coming from the gap in the brickwork leading into the stables (shown in Photograph 4). Following the emergences, the bats continued to swarm around the open end of the building for several minutes before flying off Site.

During the second survey, three common pipistrelles were again recorded emerging from the eastern end of the building, however on this survey the emergences were from the other side of the open-fronted section from amongst the rafters. It is anticipated that these were the same bats as the first survey but they do not have a fixed roosting location within this section of the building. A single noctule bat was also recorded flying over the Site, however this was not considered to be roosting on Site. The first recorded emergence was at 20:26, 21 minutes after sunset.

During the third survey, three common pipistrelles were recorded to emerge from the east end of the stables, from the same location as they had been recorded on the first survey. A fourth common pipistrelle was recorded to emerge from the roof of the building on the western end (see Figure 3). Whilst the exact location of the emergence could not be confirmed, it is considered that this is a separate roost to the one recorded in the east of the building. Both noctule and a single *Myotis* sp. bats were recorded foraging / commuting over the Site during the survey, however none of these bats were considered to have emerged from the building. The first emergence was the bat on the western end of the building, recorded at 19:11, six minutes after sunset. The three emergences from the east were recorded between 19:16 and 19:22. One of these bats was seen to re-enter the roost and then re-emerge quickly afterwards (potentially as a consequence of the light rainfall).

No bats were seen to emerge from the feature identified on the bungalow and as such it is considered that a roost is not present within this building.

The results of the surveys are shown on Figure 3.

The geographic value of this feature is considered to be local.

Badgers

There was one record of badger found within 1 km of the Site centre within the last 10 years, the specific location of which was not included in the returned data for welfare reasons.

No evidence of badger was identified during the survey, and the habitats on Site are unsuitable for badgers. As such it is anticipated that badgers would be unlikely to venture onto the Site.

Badgers are not considered to be a constraint at the Site.

Other Notable Species

Four records of hedgehog *Erinaceus europaeus* were returned from within 1 km of the Site.

The habitats on Site (hedgerows, gardens) provide some suitability for hedgehog and it is possible that they could commute or forage across or in the vicinity of the Site.

The geographic value of this feature is considered to be local.

4.4 Summary of Important Ecological Features and Geographic Value

The species scoped out as important ecological features above due to their likely absence from Site cannot experience effects from the Proposed Development and are not therefore considered below.

The 'important ecological features' identified above with the potential to experience effects as a result of the Proposed Development are listed in Table 4 below, along with their geographic importance. These features will be the subject of the ecological impact assessment in section 5.0.

Table 4 - Identified Important Ecological Features

Important Ecological Feature	Geographic Value
Designated Sites	National & Local
Habitats	Local
Nesting Birds	Local
Bats	Local
Hedgehog	Local

5.0 Assessment of Effects

The evaluation in this section is based on the baseline information presented above, review of design proposals, consultation with the design team, knowledge of likely construction practices to be employed, and reasonable assumptions regarding operation.

For purposes of the assessment, it is assumed there has been no change in the condition of the Site since the Site surveys (unless otherwise stated).

5.1 Important Ecological Features for Which No Effect is Anticipated

5.1.1 Designated Sites

Given the distance between the Site and any of the nearby designated sites and the small scale of the proposed development, no significant adverse effects on statutory or non-statutory designated sites are anticipated.

5.2 Important Ecological Features and Potential Effects

5.2.1 Habitats

Potential Impacts and Effects During Construction and Operation

The habitats present on Site are widespread on both a local and national scale, with none of the habitats being considered rare.

The Development Proposals are considered likely to result in the loss of a building, sealed and unsealed surfaces and potentially some areas of garden.

Without mitigation, the proposed development has the potential to have a minor adverse effect that is non-significant.

Avoidance and Mitigation

<u>During Construction</u>

Any hedgerows to be retained will be protected during the construction works, with adherence to BS5837:2012. Any new plants to be included will be of native species or of those known to be of benefit to wildlife.

It is considered likely that any garden habitats lost during construction will be replaced with similar habitat following completion of the works.

Assessment of Residual Effects

Provided the above mitigation is completed, the potential residual effects are considered to be negligible and of neutral significance.

5.2.2 Birds

Potential Impacts and Effects During Construction and Operation

<u>During Construction</u>

The construction phase will result in the loss of suitable nesting habitat. There is, therefore, potential for direct adverse effects on nesting birds that are permanent in nature as a result of such clearance.

In addition, construction works being carried out within proximity to nesting birds may affect them indirectly, depending on the works being carried out, and the species of bird affected. Noise and vibration disturbance

effects may result in birds being repeatedly flushed off nests, causing disruption to feeding activity, or even abandonment of nests. This is considered to be a temporary impact.

Further to the potential direct effects on birds whilst they are actively nesting, the removal of suitable vegetation will result in the direct loss of available bird nesting habitat, as well as a loss of foraging opportunities.

The loss of available bird nesting and foraging habitat on Site is unlikely to be significant in isolation.

Without mitigation, this is considered likely to have a minor adverse effect that is non-significant.

Avoidance and Mitigation

During Construction

Where practicable, any vegetation clearance and building demolition at the Site will be undertaken outside of the main nesting bird season (i.e. clearance carried out between September and February inclusive). Conflict with the development can be avoided by managing the land to discourage nesting birds up to the works commencing.

If these works cannot be restricted to within this period, an Ecological Watching Brief will be maintained during the main bird breeding season to ensure that no nesting birds are adversely affected. This will entail checking all suitable habitat for nesting birds due to be removed, and a buffer of at least 10 m beyond that area, by a suitably qualified ecologist prior to the commencement of works. If, during the Ecological Watching Brief, birds are found to be within the area due to be cleared or the buffer zone, measures to prevent any disturbance to breeding birds, including the cessation of tree and vegetation clearance, or construction works in areas close to breeding sites until the birds have completed breeding, will be put in place until the chicks have fledged.

Assessment of Residual Effects

Provided the above mitigation is completed, the potential residual effects during construction and operation are considered to be negligible and of neutral significance.

5.2.3 Bats

Potential Impacts and Effects During Construction and Operation

The works will lead to the permanent destruction of two bat day roosts, one supporting three common pipistrelles and one supporting an individual common pipistrelle. The works also have the potential to result in the injury or death of the bats that make use of these roosts.

The Site offers some potential foraging and commuting habitat for bats, with at least three species being recorded on Site during the surveys. Any change to the lighting on Site could impact the bats that would make use of the Site.

Without mitigation, the works have the potential to have an moderate adverse effect that is significant at the local level.

Avoidance and Mitigation

During Construction

Prior to any works on the stables, a bat mitigation licence will need to be sought from Natural England. This licence will detail any and all necessary mitigation to enable the works to progress without having a significant effect on bats.

The majority of boundary vegetation will to be retained or replaced during construction which will continue to provide suitable foraging and commuting habitat across the Site and into the wider landscape for bats.

The construction phase of works has the potential to result in temporary disturbance to bats through increased lighting, noise and vibration, both on foraging and commuting corridors. However, it is anticipated that during the main active bat season (April-October, inclusive), construction works will generally cease, or be winding down before dusk when bats emerge and will not begin before dawn when bats return to roosts. Therefore, generally additional artificial lighting will not be required, and there are not anticipated to be any negative effects upon bat foraging and commuting behaviour from noise across the Site since construction works will not coincide with the timing of bat activity.

In certain circumstances, for example, in late autumn or early spring when daylight hours are limited but weather conditions may be suitable for bats to be active, there may be a brief overlap between bat activity and on-Site construction works. During this period, lighting may be required to enable the construction works to progress, and this along with any associated noise, may temporarily alter bats foraging and commuting activity across an area of the Site. However, the combined effects of lighting and noise from construction works during these occasional circumstances would only be a temporary deterrent to foraging and commuting bats in a concentrated area, and not across the wider Site and this is not anticipated to have any adverse impact upon bats.

During Operation

In order to avoid significant impacts to bat species recorded at the Site, the lighting strategy for the Proposed Development will be designed in consultation with an ecologist, seeking to avoid increasing light spill to any foraging/commuting habitats beyond existing lux levels. Due consideration will be given to current best practice guidance relating to bats and lighting (BCT, 2014; BCT & ILP, 2018)

Assessment of Residual Effects

Subsequent to the application of avoidance and mitigation, the residual effects on bats are considered to be negligible and of neutral significance.

5.2.4 Hedgehog

Potential Impacts and Effects During Construction and Operation

Hedgehogs may make use of the hedgerows and garden habitat on Site and therefore have potential to be killed/injured during Site clearance works.

Without mitigation, this is considered likely to have a minor adverse effect that is non-significant.

Avoidance and Mitigation

During Construction

Clearance of any suitable habitat will be undertaken with an awareness for the potential presence of hedgehog and any individuals found will be caught with gloved hands and moved to an alternative suitable habitat away from the proposed works.

During the construction phase of works, no open pits or trenches will be left uncovered or alternatively without being fitted with a mammal escape ramp overnight.

Assessment of Residual Effects

Subsequent to the application of avoidance and mitigation, the residual effects on hedgehogs are considered to be negligible and of neutral significance.

5.3 Cumulative Effects

As the Proposed Development will result in no significant residual effects on any of the identified important ecological features and is very small in scale, it is considered unlikely to contribute to a cumulative effect in combination with other nearby developments.

5.4 Enhancement

The revised National Planning Policy Framework (NPPF), sets out, amongst other points, how "Planning policies and decisions should contribute to and enhance the natural and local 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 pressure'.

Similarly, the West Oxfordshire Local Plan encourages "*all development incorporating biodiversity enhancement features*".

Enhancement measures could include the below:

Two bird boxes integrated into new buildings on Site. The boxes will be erected at least 2 m from ground level in a sheltered, shaded location, facing vegetation; and

Two bat boxes. The boxes will be integrated into new buildings on Site. The boxes will be erected at least 5 m from ground level in a south-east, south or south-west facing position, near vegetation, but with a clear flight path to the box. The boxes and flight paths to the box will remain unlit.

6.0 Conclusions

The habitats present on Site are widespread, in both a local and national context. The majority of those habitats with the greatest ecological value (i.e. the boundary hedgerows) are to be retained or replaced within the development. Whilst there is likely to be a temporal delay in achieving the biodiversity objectives for the Site (i.e. whilst new habitats become established), it is anticipated that in the long term there will be no significant adverse residual effects on habitats or protected species resulting from the Proposed Development.

7.0 Disclaimer

The recommendations contained in this report represent Delta-Simons' professional opinions, based upon the information referred to in Section 1.0 of this report, exercising the duty of care required of an experienced Ecology Consultant. Delta-Simons does not warrant or guarantee that the Site is free of bats or other protected species.

The behaviour of animals can be unpredictable and may not conform to characteristics recorded in current scientific literature. This report, therefore, cannot predict with absolute certainty that animal species will or will not occur in apparently suitable locations or habitats or that they will not occur in locations or habitats that appear unsuitable.

No part of the survey included an assessment of the materials and conditions of any buildings. No part of the survey included an asbestos assessment, nor did it represent an appraisal of other deleterious materials or hazardous substances.

This report was prepared by Delta-Simons for the sole and exclusive use of the Client and for the specific purpose for which Delta-Simons was instructed as defined in Section 1.0 of this report. Nothing contained in this report shall be construed to give any rights or benefits to anyone other than the Client and Delta-Simons, and all duties and responsibilities undertaken are for the sole and exclusive benefit of the Client and not for the benefit of any other party. In particular, Delta-Simons does not intend, without its written consent, for this report to be disseminated to anyone other than the Client or to be used or relied upon by anyone other than the Client. Use of the report by any other person is unauthorised and such use is at the sole risk of the user. Anyone using or relying upon this report, other than the Client, agrees by virtue of its use to indemnify and hold harmless Delta-Simons from and against all claims, losses and damages (of whatsoever nature and howsoever or whensoever arising), arising out of or resulting from the performance of the work by the Consultant.

Figure 1 –Site Location Plan

Legend

Survey area

0 50 100 150 200 Meters

N

Figure	Site Location Plan		
Job	Micheli, Lower End, Alvescot		
Client	Sarah and Helen Barling		
Figure No. 1	Revision A	Date 10/08/2022	
Drawn KH	Checked SW	Scale 1:5,000 @ A3	
Job No. 22-1573.01		Central GR 427088E 204079N	

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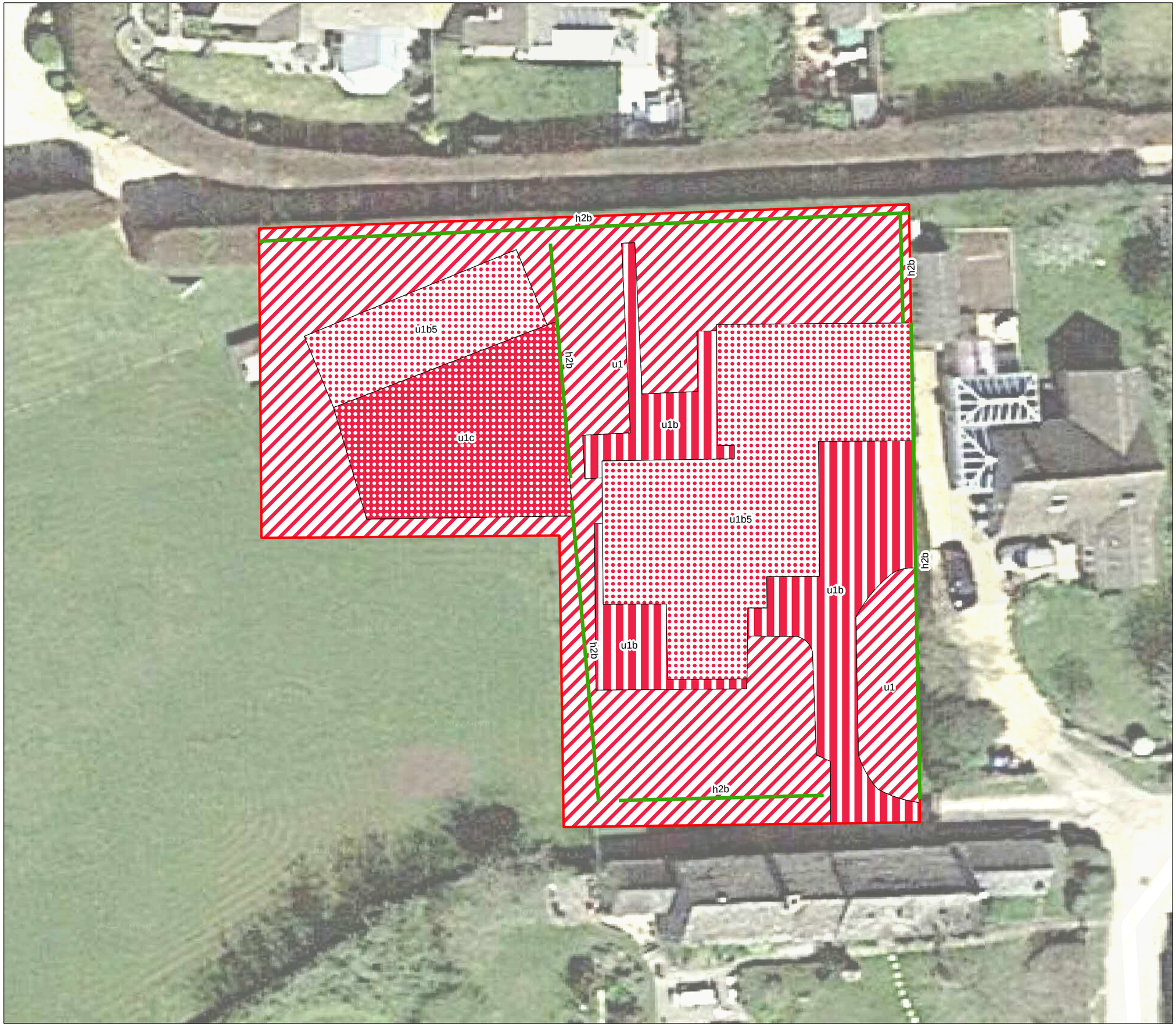
Figure 2 –Habitat Survey Plan



Legend

- Survey area
- u1 - built-up areas and gardens
- u1b - developed land, sealed surface
- u1b5 - buildings
- u1c - artificial unvegetated unsealed surface
- h2b - Other hedgerows

Figure	UK Habitat Plan		
Job	Micheli, Lower End, Alvescot		
Client	Sarah and Helen Barling		
Figure No. 2	Revision A	Date 03/10/2022	
Drawn KH	Checked SW	Scale 1:250 @ A3	
Job No. 22-1573.01		Central GR 427087E 204081N	

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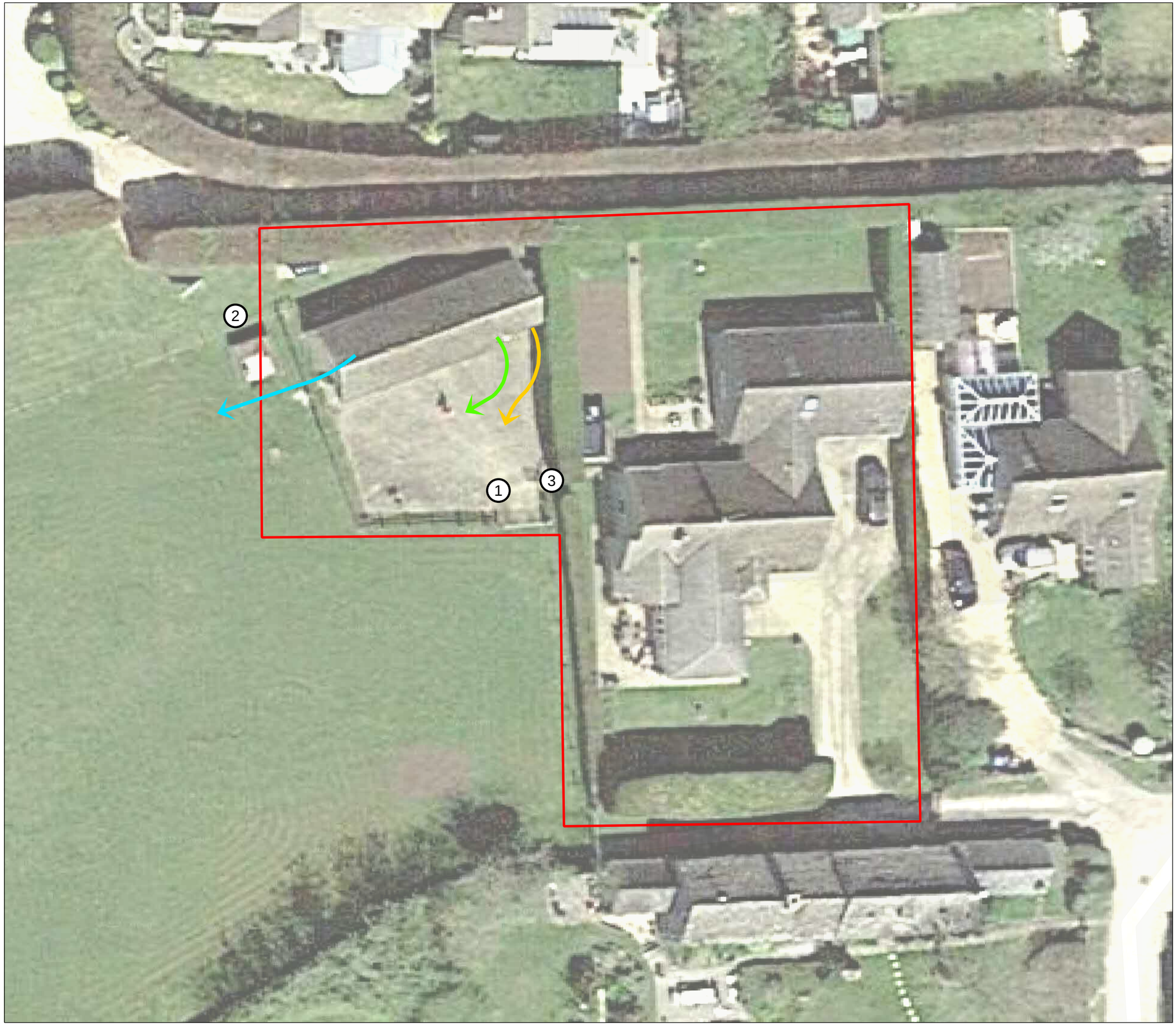
Figure 3 –Bat Survey Results



Legend

- Survey area
- Survey 1 and 3 - 3x common pipistrelle emergences
- Survey 2 - 3x common pipistrelle emergences
- Survey 3 - 1x common pipistrelle emergence
- Surveyor locations

0 3 6 9 12 Meters

N

Figure	Bat Survey Results				
Job	Micheli, Lower End, Alvescot				
Client	Sarah and Helen Barling				
Figure No.	3	Revision	A	Date	06/10/2022
Drawn	KH	Checked	SW	Scale	1:250 @ A3
Job No.	22-1573.01			Central GR	427087E 204081N

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Appendix A –References

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Wildlife and Countryside Act 1981 (as amended). HMSO

Appendix B –Assessment of Structures, Trees and Habitats for Bats

Assessment of Structures, Trees and Habitats for Bats

Suitability	Description	
	Roosting	**Commuting and Foraging**
Negligible	An inspected structure or tree which is considered to have no featur importance for roosting bats. No further constraints apply t method or timing of proposed works.	Negligible habitat features on-Site to suppor commuting or foraging bats.
Low	A structure with at least one or m features suitable to support opportunistic individual bats. However, inadequate space, shelter, protection and conditions, and the low suitability of surrounding habitats means that it is unlikely to be used as a maternity hibernation roost site. A tree of adequate age and stature to support potential roosting features, however, either no features, or only features of limited potential record from the ground.	Habitat with potential to support low numbers of commuting bats due to its quality and connectivity. For example, a gappy hedgerow or unvegetated stream that is isolated fror surrounding landscape. Alternatively, suitable but isolated habitats suitable to support low numbers of foraging bats such as a lone tree or a patch of scrub.
Moderate	A structure or tree with one or m potential roost sites that are of adequate size, shelter and protection, with suitable conditions and surrounding habitat to support a roost not of high conservation sta (with respect to roost type not individual species conservation status).	Linear habitat continuity connecting to the wider landscape offering potential to support commuting bats, such as rows of trees and scrub or linked back gardens. Habitat such as trees, scrub, grasslan waterbody with connectivity to the wider landscape offering foraging opportunitie bats.
High	A structure or tree with one or mo potential roost sites that are suitable for use by large numbers of bats regular basis and for long period time due to their size, shelter, protection, conditions and the surrounding habitat.	Continuous high-quality habitat with strong connectivity to the wider landscape that is likely to be used by commuting bats on a regular basis, such as flowing waterbodies, hedgerows, rows of trees and woodland edges. High quality habitat with strong connectivity to the wider landscape that is likely to be regularly used by foraging bats, such as broadle woodland, tree-lined watercourses and graze parkland. Site is close to, and connected to, known roost sites.

Guidance on Assessing the Potential Suitability of Development Sites to Support Bats (adapted from Collins, J. (ed)).

Appendix C - Ecological Impact Assessment Methodology

Ecological Impact Assessment Methodology

The methodology for the EcIA follows the principles set out within the Guidelines for Ecological Impact Assessment (EcIA) in the UK and Ireland; Terrestrial, Freshwater, Coastal and Marine updated by the Chartered Institute of Ecology and Environmental Management (CIEEM) in 2019 and comprises a staged approach to assessing the potential impacts resulting from the proposed development on the ecological features within the ZOI.

The EcIA has involved the following stages:

Determination of baseline conditions;

Identification of important ecological features;

Identification of potential impacts and effects;

Identifying likely significant effects;

Designing appropriate avoidance and/or mitigation for impacts and effects;

Assessment of residual effect significance;

Assessment of cumulative impacts and effects; and

Identification of compensation and enhancement measures.

Baseline Conditions

Baseline conditions have been established following the methodology outlined in the above sections.

Important Ecological Features

Important ecological features have been identified based on existing statutory, policy and conservation objectives. In accordance with the CIEEM Guidelines the value or potential value of an ecological resource has been determined within a defined geographical context in line with the table below.

Potential Impacts and Effects

The potential impacts on any important ecological features are identified during construction and operation, and prior to any mitigation, based on available baseline data, an assessment of design proposals and construction methods, and available information on the existing conservation status of the features in question.

Impacts are then characterised in terms of the following attributes:

Positive or negative –i.e. a change that improves or reduces the quality of the environment;

Magnitude –i.e. the size of an impact in quantitative terms where possible;

Extent –i.e. the area over which an impact occurs;

Duration –i.e. the time for which an impact is expected to last;

Reversibility –i.e. is the impact permanent or temporary; and

Timing and frequency –e.g. related to breeding seasons.

The likely effects of potential impacts on important ecological features largely depend upon their sensitivity, whilst the level of certainty that an impact will occur as predicted is based on professional judgment. Only the impacts likely to result in significant effects have been described in detail within the report. Impacts that are either unlikely to occur, or if they did occur are unlikely to be significant have been scoped out and justification for scoping out provided.

Geographic Scale	Example Criteria for Classification at each Geographic Scale
International	Habitats meeting the criteria for Wetlands of International Importance (Ramsar), Special Area of Conservation (SAC) or Special Protection Area (SPA) site. A species present in internationally important numbers (>1% of international population). Notable species which is part of the cited interest of an SPA or SAC and which regularly occurs in internationally or nationally important numbers.
National	Habitats meeting the criteria for a Site of Special Scientific Interest, Marine Conservation Zone (MCZ), or National Nature Reserve (NNR). A species present in nationally important numbers (>1% of UK population). A species which is part of the cited interest of a SSSI and which regularly occu internationally or nationally important numbers. Rare breeding species (e.g. birds with <300 UK breeding pairs).
Regional	A local site with important regional habitats or significant populations of Species of Principal Importance (SPIs) under the NERC act. Species present in regionally important numbers (>1% of regional population). Species listed as priority species, which are not covered above, and which regularly occur in regionally important numbers. Sustainable populations of a species that is rare or scarce within a region. Species on the Birds of Conservation Concern (BoCC) Red or Amber List and which regularly occur in regionally important numbers.
County	A local site with a habitat that is characteristic of the county or rare on a county scale, or with significant populations of locally important species. Species present in county important numbers (>1% of county population). Species listed as priority species, which are not covered above, and which regularly occur in county important numbers. Sustainable population of a species that is rare or scarce within a county. A site designated for its county important assemblage of species. Species on the BoCC Red or Amber List and which regularly occur in county important numbers.
Local	A site which has wildlife corridors likely to be essential to allow viable movement of species or improve the biodiversity of the area. Species listed as priority species, which are not covered above, and are rare in the locality. Species present in numbers just under county importance (<1% of county population). Sustainable population of a species that is rare or scarce within the locality. A site whose designation is just under for inclusion for its county important assemblage of a particular species on site. Other species on the BoCC Red or Amber List and which are considered to regularly occur in locally important numbers.

Likely Significant Effects

In accordance with the CIEEM guidelines, an ecologically significant effect is 'an effect that either supports or undermines the biodiversity conservation objectives for 'important ecological features' or for biodiversity in general'.

Using an approach to valuing impacts that involves professional judgement and reference to available conservation objectives, neutral and minor effects are considered to be not significant, while moderate and major effects are assessed to be significant. The table below provides a comparison of the terms used.

Effect Significance	Type of Effect	Equivalent CIEEM Assessment
Significant	Major beneficial	Significant positive impact on biodiversity conservation objectives given geographical context
	Moderate beneficial	Positive impact on biodiversity conservation objectives at given geographical context
Non-significant	Minor beneficial	Limited positive impact on biodiversity conservation objectives at given geographical context
Neutral	Negligible	No significant impact on biodiversity conservation objectives at given geographical context
Non-significant	Minor adverse	Limited adverse impact on biodiversity conservation objectives at given geographical context
Significant	Moderate adverse	Adverse impact on biodiversity conservation objectives at given geographical context
	Major adverse	Significant adverse impact on biodiversity conservation objectives given geographical context

The evaluation of significant effects has been based on the best available scientific evidence. Where sufficient evidence is not available, the precautionary principle has been applied. Therefore, where it is not possible to robustly justify a conclusion of no significant effect, a significant effect has been assumed. Any uncertainty has been acknowledged within the report.

Avoidance and/or Mitigation

Negative impacts have been avoided and/or mitigated where possible, in line with the mitigation hierarchy as presented within the CIEEM Guidelines.

Assessment of Residual Effect Significance

Once the impacts of the proposed development have been assessed, and all attempts to avoid and mitigate ecological impacts have been finalised, an assessment of the residual impacts is undertaken to determine the significance of their effects upon ecological features.

Cumulative Impact Assessment

The following types of future development within the same zone of influence have been considered as part of the cumulative impact assessment in relation to each important ecological feature:

Proposals for which consent has been applied which are awaiting determination and are visible on the local planning portal;

Projects which have been granted planning consent, but which have not yet been started or which have been started but are not yet completed (i.e. under construction); and

Proposals which have been refused permission but which are subject to appeal and the appeal is undetermined.

Compensation and Enhancement

Compensation measures were taken to offset residual effects resulting in the loss of, or permanent damage to ecological features despite mitigation, where required. Compensation has only been considered as a last resort, in line with the mitigation hierarchy.

Enhancement measures have been agreed over and above any mitigation or compensation measures, in order to provide a biodiversity net gain.

Appendix D –Site Photographs

Site Photographs

Photograph 1 –Bungalow

Photograph 2 –Stables

Photograph 3 –Gap between roof and northern wall of stables

Photograph 4 –Hole in western wall of south-facing open-fronted section at east end of stables, allowing access into interior of stables

Photograph 5 –Internal view of the roof of the stables

Photograph 6 –Gap behind soffit on bungalow

Photograph 7 –Droppings found within the stables