



Ecological Impact Assessment

Land adjacent to Ivy Cottage,
Botley Road

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Report	Ecological Impact Assessment (EcIA)
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Executive Summary

Ecosupport Ltd was instructed by Osman Homes Ltd to undertake ecological surveys and any possible subsequent Phase II survey work to inform an EclA for the land adjacent to Ivy Cottage site. This was required in order to identify any potentially important ecological features that may be affected by the proposed development. As part of this assessment, the following surveys were undertaken:

- Walkover survey with UK Habs habitat assessment (November, 2023)
- BNG baseline condition assessment (November, 2023)
- Badger walkover survey (November, 2023)
- Preliminary roost assessment (trees) (November, 2023)

Given the identification of these potential constraints, outline mitigation measures for each species group / feature are indicated in **Table 1** below.

Table 1. Summary of the proposed mitigation / compensation measures to address impacts to the identified constraints on-site.

Species Group / Features	Potential Impacts	Outline Mitigation / Compensation
Bats	A single tree was noted as having Low potential for roosting bats, it is not yet known if this tree is to be removed or retained. Additionally, loss of foraging resources of disruption to commuting routes (through vegetation removal or increase in lighting).	Updated ground level roost assessment recommended once a tree protection plan has been produced. Should the low potential Beech tree require removal / remedial works, this will be undertaken under supervision of an ecologist through soft felling. Sensitive lighting to be recommended on site and directed away from any retained habitats. Provision of a bat brick and 2 bat boxes.
Badgers	No evidence of Badgers noted on site, presence of suitable habitat and connectivity to areas with hedgehog records.	Pre-commencement walkover to be undertaken within 2 weeks of commencement of ground works to ensure no setts present. Open excavations left overnight should either be covered to prevent commuting Badgers falling in or escape ladders should be used.
GCN / Reptiles	Suitable GCN habitat on site (woodland and scrub) with limited reptile habitat on site (scrub and small areas of grassland). Known presence of GCN within 1 km and wider site connectivity to suitable habitat for both species.	Vegetation clearance to be under the supervision of an Ecological Clerk of Works (ECoW) under a precautionary approach. A log pile will be provided from the wood removed during facilitation of the development.

Hazel Dormice	Suitable Dormice habitat on site (woodland and scrub) with no records returned within 1 km. Possible gaps isolating the habitats on site based on aerial imagery, not inspected at ground level.	Vegetation clearance to be under the supervision of an Ecological Clerk of Works (ECoW) under a precautionary approach. 5 Dormouse boxes will be provided within the woodland to the west.
Hedgehogs	No evidence of hedgehogs noted on site, presence of suitable habitat and connectivity to areas with hedgehog records.	Any proposed gravel boards / fencing on site to include small mammal permeability including at least 2 gaps that are 13cm x 13cm in diameter. Open excavations left overnight should either be covered to prevent commuting hedgehogs falling in or escape ladders should be used. Additionally, the provision of 1 No hedgehog home within the western retained woodland. Open excavations left overnight should either be covered to prevent commuting Hedgehogs falling in or escape ladders should be used.
Birds	Suitable habitat present on site (woodland and scrub) proposed to be removed or works to take place in close proximity, which may result in disturbance or damage to nests.	Works recommended to avoid nesting bird period, or any vegetation clearance to be under the supervision of an Ecological Clerk of Works (ECoW) under a precautionary approach. Provision of a swift brick and 2 bird boxes.
Designated Sites	The site is situated within the 5.6 km Solent and Southampton Water SPA and 13.6 km New Forest SAC zones of influence for recreational pressure. The site is also situated within the Solent catchment for nitrogen input.	Due to the net gain in dwellings on site, mitigation is required to offset the increase in nitrogen and recreational pressure upon the designated sites.
Biodiversity Net Gain	Requirement to demonstrate a 10% net gain in the site's biodiversity value as quantified using the Defra 4.0 metric or statutory metric (once published).	BNG report with the mapping + metric provided in a separate document to support the application.

In addition to the above species / feature specific recommendations, ecological enhancements are proposed in **Section 6.0** which will include the provision of integrated bat / bird features, bat / bird boxes, log piles, Hedgehog home along with features to enable Hedgehog movement throughout the site.

1.0 INTRODUCTION

1.1 Brief

Ecosupport Ltd was commissioned by Osman Homes Ltd to conduct ecological surveys in support of an EclA for the land adjacent to Ivy Cottage site (here after referred to as 'the site'). The purpose of this survey was to assess any ecological impacts that may arise as a result of the proposed development. The objectives of the survey were as follows:

- Identify and classify any priority habitats;
- Assess the ecological value of the site;
- Identify any signs of protected species and potential features that may support them
- Make recommendations for further survey work as necessary;
- Make recommendations for any necessary ecological avoidance and mitigation where possible.

NB: If the works do not take place within 18 months of this report¹ then the findings of this survey will no longer be considered valid and certain aspects may require updating.

1.2 Site Description & Location

The site comprises of a parcel of woodland with a grassland clearing which contained several chicken coops and wooden sheds adjacent to Botley Road, Horton Heath, SO50 7DT (centered on OS grid reference SU 49607 16418) (**Fig 1**). The northern aspect of site is bound by residential dwellings, the eastern by Botley Road, the southern by Blind Lane and the western by an area of woodland and grassland. Due to the site's location on the edge of the settlement of Horton Heath, the wider landscape can be considered to comprise of a mixture of rural and residential characteristics with agricultural land bound by hedgerows, patches of woodland and similar sized settlements all recorded.

¹ <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

Figure 1. Plan showing approximate redline boundary of the site (Google Satellite, 2024).



1.3 Proposed Development

The proposals entail an application for the development of a new two storey, 4-bedroom detached chalet with accompanying single storey garage and access road leading from Botley Road (Fig 2).

Figure 2. Plan of the proposed development and retained habitats supplied by Wildern Architecture Ltd (2023).



2.0 RELEVANT LEGISLATION AND POLICY

2.1 Legislation

2.1.1 The Environment Act (2021)

The Environment Act 2021 is the UK's new legislation for environmental protection in the UK, which includes protection of water quality, clean air, and biodiversity among other key protections. This Act provides the government power to set targets to reach long-term aims relating to the environment, which will be periodically reviewed and updated. This legislation also establishes a new environmental watchdog organisation, the Office for Environmental Protection (OEP), which will hold the government accountable on environmental issues. Part 6 of The Environment Act relates to nature and biodiversity. This section makes provision for biodiversity net gain to be a condition of planning permission in England and a requirement for nationally significant infrastructure projects. Biodiversity net gain will require maintenance for a period of at least 30 years after the completion of enhancement works to be achieved.

The legislation also includes updates to existing environmental legislation, such as the NERC Act 2006, to strengthen biodiversity enhancement rather than just conservation and includes a requirement for local, or relevant, authorities to publish biodiversity reports. Further, The Environment Act places a requirement on responsible authorities to prepare local nature recovery strategies, which will outline nature conservation sites and priorities and opportunities for recovering or enhancing biodiversity within the local area. Within England, the legislation also provides Natural England with the power to publish 'species conservation strategies' and 'protected site strategies' to identify activities that may affect a species or site's status and outline their opinions on measures that would be appropriate to avoid, mitigate or compensate any adverse impacts.

2.1.2 The Conservation of Habitats and Species (2017)

The Conservation of Habitats and Species Regulations 2017 transposes the EU Habitats Directive (Council Directive 92/43/EEC) into UK domestic law. It provides protection for sites and species deemed to be of conservation importance across Europe. It is an offence to deliberately capture, kill or injure species listed in Schedule 2 or to damage or destroy their breeding sites or shelter. It is also illegal to deliberately disturb these species in such a way that is likely to significantly impact on the local distribution or abundance or affect their ability to survive, breed and rear or nurture their young.

The Conservation of Habitats and Species Regulations 2019 (EU Exit) makes changes to the three existing instruments which transpose the Habitats and Wild Birds Directives so that they continue to work (are operable) upon the UK's exit from the European Union (EU). These include The Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017. This instrument also amends section 27 of the Wildlife and Countryside Act 1981 to ensure existing protections continue. The intention is to ensure habitat and species protection and standards as set out under the Nature Directives are implemented in the same way or an equivalent way when the UK exits the EU.

In order for activities that would be likely to result in a breach of species protection under the regulations to legally take place, a European Protected Species (EPS) licence must first be obtained from Natural England.

2.1.3 The Wildlife and Countryside Act (1981) (as amended)

This is the primary piece of legislation by which biodiversity is protected within the UK. Protected fauna and flora are listed under Schedules 1, 5 and 8 of the Act. They include all species of bats, making it an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost or to intentionally or recklessly obstruct access to a bat roost. Similarly, this Act makes it an offence to kill or injure any species of British reptiles and also makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy their eggs and nests (whilst in use or being built).

The Wildlife & Countryside Act (1981) states that it is an offence to 'plant or otherwise cause to grow in the wild' any plant listed in Schedule 9 of the Act. This list over 30 plants including Japanese Knotweed (*Fallopia japonica*), Giant Hogweed (*Heracleum mantegazzianum*) and Parrot's Feather (*Myriophyllum aquaticum*).

2.1.4 The Countryside and Rights of Way Act (2000)

This Act strengthens the Wildlife & Countryside Act by the addition of "reckless" offences in certain circumstances, such as where there is the likelihood of protected species being present. The Act places a duty on Government Ministers and Departments to conserve biological diversity and provides police with stronger powers relating to wildlife crimes.

2.1.5 Natural Environment and Rural Communities Act (2006)

The Natural Environment and Rural Communities (NERC) Act 2006 requires that public bodies have due regard to the conservation of biodiversity. This means that Planning authorities must consider biodiversity when planning or undertaking activities. Section 41 of the Act lists species found in England which were identified as requiring action under the UK Biodiversity Action Plan and which continue to be regarded as conservation priorities under the *UK Post – 2010 Biodiversity Framework*.

2.1.6 Protection of Badgers Act

The Protection of Badgers Act (1992) relates to the welfare of Badgers (*Meles meles*) as opposed to nature conservation considerations. The Act prevents:

- The wilful killing, injury, ill treatment or taking of Badgers and / or
- Interference with a Badger sett
- Damaging or destroying all or part of a sett
- Causing a dog to enter a sett and
- Disturbing a Badger while it is occupying a sett

Provisions are included within the Act to allow for the lawful licensing of certain activities that would otherwise constitute an offence under the Act.

2.2 Policy

2.2.1 National

Section 15 of the National Planning Policy Framework (NPPF, 2021) 'Conserving and enhancing the natural environment' states that planning policies and decisions should contribute to and enhance the natural environment. They should do this by protecting and enhancing sites of biodiversity and minimising impacts on and providing net gains for biodiversity, including establishing coherent ecological networks.

The plan states to protect and enhance biodiversity plans should identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks. This includes the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them. Plans should identify the protection and recovery of priority species and opportunities for securing measurable net gains for biodiversity.

When determining planning applications, local planning authorities should apply the following principles:

- if significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact;
- development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- 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.
-

2.2.2 Local – Eastleigh Borough Council (2022)

New Strategic Policy S10 'Green Infrastructure' is subject to proposed amendments that are currently out to public consultation. These include re-numbering the Policy to S9 Green Infrastructure which is still to seek the provision of connected habitats, linking the network of designated sites and existing priority sites.

This new strategic policy cross-refers to new Policy DM11 Nature Conservation which is also proposed to be amended to read...

'Policy DM11, Nature conservation

General Approach

1. The Council will work with statutory and voluntary agencies and developers, and will determine planning applications, to:

a. Protect, conserve and enhance all:

- i. international, national and local nature conservation designations; and
- ii. networks of natural habitats and features, including the Local Ecological Network, Priority Biodiversity Areas and Priority Biodiversity Links, watercourses, wetland complexes, woodland trees, and trees and hedgerows important to biodiversity and local character;

and facilitate their adaptation to climate change wherever possible;

b. Assist in achieving national, county and local biodiversity targets as set out in Biodiversity Action Plans (BAPs);

c. Seek a net gain of biodiversity on all development sites (including sites for redevelopment) through the protection, enhancement and connection of existing and provision of new habitats and features of nature conservation interest compatible with the native biodiversity characteristics of the Borough, having regard to local geodiversity and soils; and

d. Contribute to major elements of the PfSH Green Infrastructure Strategy and other strategies for the provision and enhancement of multifunctional green infrastructure including green routes, ecological networks and biodiversity enhancements (see strategic policy S910).

International Designations

2. Development which is likely (either individually or in combination with other developments) to adversely affect the integrity of an international or European nature conservation site will not be permitted subject only to imperative reasons of overriding public interest in the absence of alternative solutions. A 'project level' Habitat Regulations Assessment will be required. Any mitigation measures required to ensure no adverse impact must be implemented at the appropriate time.

3. The Council will work with PfSH, Natural England, the Environment Agency and other wildlife organisations to develop and implement with developers a strategic approach to the protection and enhancement of international and European sites from the direct and indirect effects of development. Within Eastleigh Borough this will include:

a. Implementing:

- i. the Solent Recreation Mitigation Strategy (requiring contributions from residential developments within 5.6 kilometres of the Solent Special Protection Area to the Strategy); and*
- ii. the interim and any future New Forest Recreation Mitigation Strategy if required; or alternative agreed site specific measures to address recreational disturbance;*

b. preserving the water quality and flows within the Itchen and Hamble, Southampton Water and Solent;

c. protecting the River Itchen SAC, in particular the maintenance and where appropriate restoration of habitats and qualifying species to favourable conservation status (as defined by article 1 of the Habitats Directive); and

d. seeking contributions towards measures set out in the Southern Damselfly Conservation Strategy (or other strategy) specifically to deliver biodiversity net gain.

National and Local Designations

4. Development will not be permitted if it is likely (either individually or in combination with other developments) to have a direct or indirect adverse effect on a Site of Special Scientific Interest (SSSI), Site of Importance for Nature Conservation (SINC) or Local Nature Reserve (LNR) as shown on the policies map (or on a more recent plan provided by the Hampshire Biodiversity Information Centre) unless it can be demonstrated that:

- a. there are no alternative solutions;*
- b. the adverse effects are unavoidable;*
- c. measures are taken to mitigate or, as a last resort, compensate for the adverse effects;*
- d. there is an overall biodiversity net gain; and*
- e. if there are any residual adverse effects, the benefits of the development clearly outweigh the adverse effects on the nature conservation value of the site and any broader impacts on national and local designations.*

Priority habitats, protected and priority species and the local ecological network

5. Development will not be permitted if it is likely (either individually or in combination with other developments) to have a direct or indirect adverse effect on priority habitats, protected or priority species, or on the local ecological network unless it can be demonstrated that:

- a. there are no alternative solutions;*
- b. the adverse effects are unavoidable;*
- c. measures are taken to mitigate or, as a last resort, compensate for the adverse effects;*
- d. there is an overall biodiversity net gain; and*
- e. if there are any residual adverse effects, the benefits of the development clearly outweigh the adverse effects on priority habitats, priority and protected species, and the local ecological network.*

Irreplaceable habitats

6. Development will not be permitted if it results in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees), unless there are wholly exceptional reasons and a suitable compensation strategy exists.

Buffers

7. Buffers free from development will be provided to designated sites to avoid/mitigate impacts, including recreational impact and impacts on edge habitats, and to maintain dark skies.

Surveys

- 8. Development will not be permitted unless it can be demonstrated that:*
- a. there have been thorough habitat and species surveys;*
 - b. the great crested newt strategic survey and strategy have been considered in all developments within 500m of a great crested newt pond; and*
 - c. the strategic bat trapping survey has been considered in all developments within the locality of a woodland or connected habitat networks.'*

3.0 METHODOLOGY

3.1 Desk Study

3.1.1 Waterbodies

Any ponds located within 250 m of the proposed development were searched for using Ordnance Survey maps and available aerial images.

3.1.2 Designated Sites

A search for designated sites within 1 km of the site was undertaken using freely available online resources.

3.2 Field Survey

3.2.1 Habitats

The field survey work which forms the basis of the findings of this report was carried out by Abby Pidgen and Kristian Markusen (Field ecologists with Ecosupport Ltd) on 22nd November 2023.

Habitats on site pre-development were identified in accordance with the categories specified for a UK Habitats survey, using Habitat Definitions Version 2.0 (UKHab Ltd., 2023). This was chosen as an appropriate habitat categorisation system as it fits within the Biodiversity Metric 4.0 calculation.

UKHab represents a method for classifying habitats which has been produced to provide an up-to-date replacement for the current industry standard phase 1 survey method. One of the main benefits of UKHab is that it supports the evaluation of habitats for EclA and no net loss/net gain analysis, providing a more detailed interpretation of habitat types, which is important for assessing the distinctiveness and condition of habitats against which biodiversity net gain is measured.

A condition assessment, in line with the Biodiversity Metric 4.0 Technical Supplement, was carried out during an additional walkover undertaken by Abby Pidgen of Ecosupport Ltd on the 22nd November 2023. The area of identified habitats is calculated in hectares (ha) with the dominant habitat type selected, according to those defined by UKHab Ltd (2023). Where there was disparity between the UK classification for habitat type and those present within the Biodiversity Metric 4.0 calculator tool, this was noted within the calculation table.

The standard survey methodology has been 'extended' in this report to include the following:

- Floral species lists for each identified habitat;
- Descriptions of habitat structure, the evidence of management and a broad assessment of habitat condition;
- Mapping of additional habitat types (e.g. hardstanding);
- Identification of Priority Habitats under Section 41 of the NERC Act;
- Evidence of, or potential for, the presence of certain species/groups

3.2.2 Badger

The site and the woodland adjacent to the site was thoroughly searched for evidence of Badgers (*Meles meles*) with the specific aim of identifying the presence and location of any setts. In accordance with the *Badgers and Development: A Guide to Best Practice and Licensing* (Natural England, 2011) guidance, the survey accounted for a 30m from the site's boundary (observed where possible i.e. does not conflict with private dwellings). Evidence of Badgers could include latrines, dung pits, feeding remains and foraging evidence, trails and setts.

3.2.3 Bats

3.2.3.1 PRA

An assessment of all building and trees on site were subject to a Preliminary Roost Assessment (PRA) following BCT (Collins (ed) 2023) best practice survey guidelines searching for any PRFs / evidence of bat occupation and assigning a roost potential assessment as outlined in **Table 2** below.

Table 2. Guidelines for assessing the potential suitability of a built structures for roosting bats (reproduced from BCT (Collins (ed) 2023).

Suitability	Description of Roosting Habitats
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ² 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 and not a classic cool/stable hibernation site, but could be used by individual hibernating bats ³ .
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions ² and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions ² and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g., maternity or classic cool/stable hibernation site.
2 For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance. 3 Evidence from the Netherlands shows mass swarming events of common pipistrelle bats in the autumn followed by mass hibernation in a diverse range of building types in urban environments (Korsten et al., 2016 and Jansen et al., 2022). Common pipistrelle swarming has been observed in the UK (Bell, 2022 and Tomlinson,	

2020) and winter hibernation of numbers of this species has been detected at Seaton Delaval Hall in Northumberland (National Trust, 2018). This phenomenon requires some research in the UK, but ecologists should be aware of the potential for larger numbers of this species to be present during the autumn and winter in prominent buildings in the landscape, urban or otherwise.

3.3 Assessment of Waterbodies

A Habitat Suitability Index (HSI) was carried out on the standing water in the adjacent woodland following the guidance provided with ARG (2010). This considers the following factors when calculating the waterbodies suitability to support GCN:

- Location of Waterbody,
- Surface Area,
- Permanence,
- Water Quality,
- Shade,
- Presence of Waterfowl and Fish,
- Number of Ponds within 1km,
- Quality of Terrestrial Habitat,
- Macrophyte Cover

These criteria are used to calculate a score according to ARC Guidelines (ARC 2010) using the Oldham (2000) calculation formulae.

This gives a score between 0 and 1 of the suitability of the waterbody for GCN with:

- 0.40 – 0.50: Poor suitability for GCN
- 0.51 – 0.59: Below average suitability for GCN
- 0.60 – 0.69: Average suitability for GCN
- 0.70 – 0.79: Good suitability for GCN
- 0.80 – 1.00: Excellent suitability for GCN

3.4 Assessment Methodology

3.4.1 Introduction

The methodology for the assessment of the likely ecological effects of the proposed development is based on CIEEM's *Guidelines for Ecological Assessment in the UK* (CIEEM 2018). This includes establishing the likely Zone of Influence (Zoi) for the project.

3.4.2 Valuation

Features of ecological interest are valued on a geographic scale. Value is assigned on the basis of legal protection, national and local biodiversity policy and cultural and/or social significance.

3.5 Limitations

Although the survey was taken outside the optimum timing for the identification of botanical interest species, it was considered that the majority of species present could be suitably identified; this was therefore not considered to represent a significant limitation to the overall assessment. This survey does not constitute a full site assessment for invasive species, such as Japanese Knotweed (*Fallopia japonica*).

4.0 ECOLOGICAL BASELINE

4.1 Waterbodies

No waterbodies were identified within 250 m of site using freely available online resources, however during the walkover a pond was noted within the woodland opposite the site (**Fig 3**).

Figure 3a. Location of the waterbody (red circle) within 250 m of the site (Magic Maps, 2023).

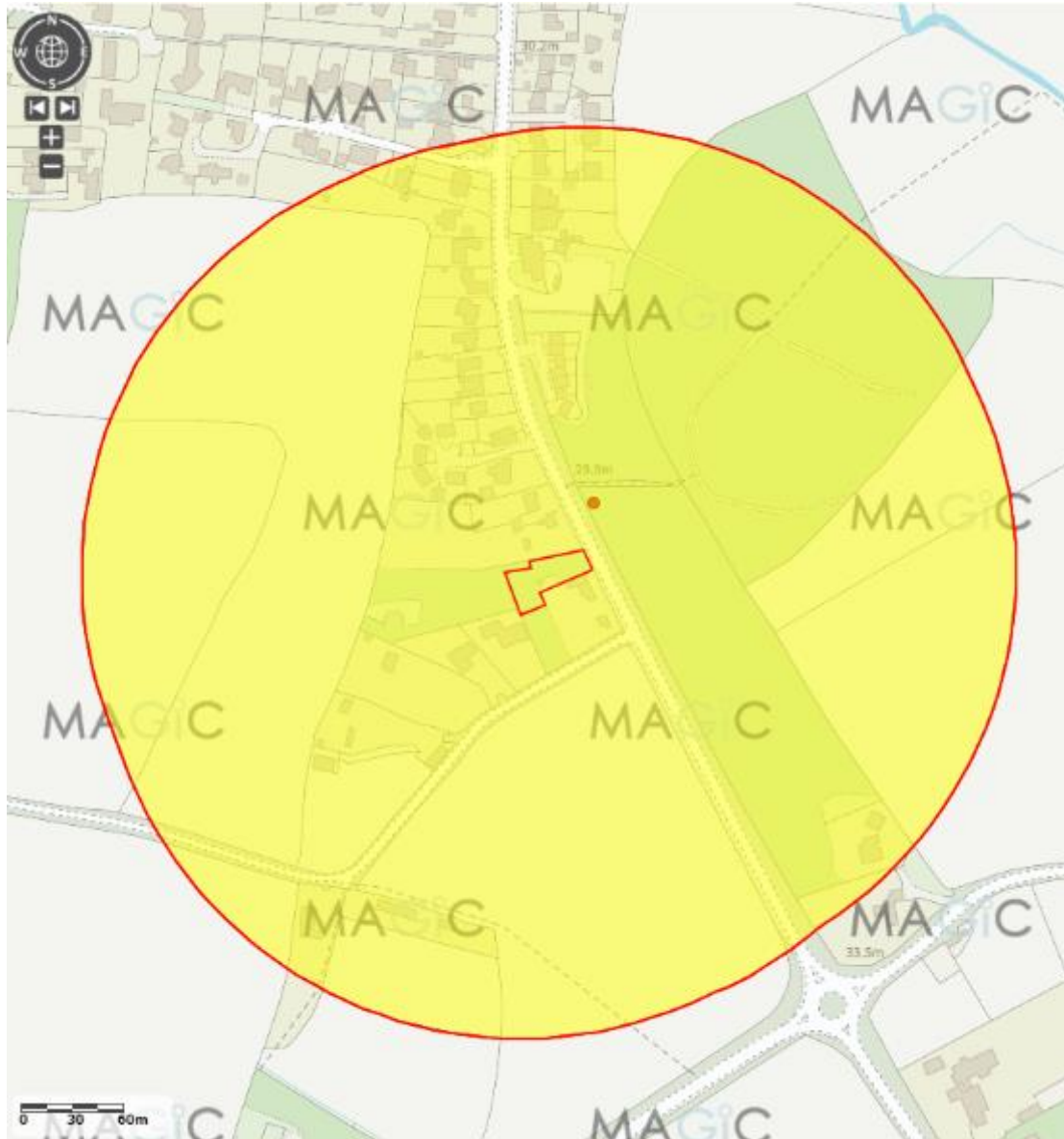


Figure 3b. The pond located in the woodland adjacent to the site (taken November 2023)



4.2 Designated Sites

No statutory designated sites were identified within 1 km of site using freely available resources. Notwithstanding this, Solent & Southampton Water SPA is located approximately 4.3 km to the south, therefore the site falls within the 5.6 km zone of influence (Zol) for recreational pressure. Additionally, the New Forest SAC is located approximately 13.3 km to the south-west, therefore the site falls within the 13.6 km Zol for recreational pressure for this designated site.

4.3 Vegetation Survey Results

The vegetation within the site has been described below using the UK Habs Habitat Definitions Version 2.0 (UKHab Ltd., 2023). The below species noted should not be considered an exhaustive list and instead refer to dominant, characteristic and other noteworthy species associated with each community within the survey area. The UKHab habitat map is provided in **Appendix 1**. The habitat types on site comprise:

- Other woodland; broadleaved (w1g)
- Modified grassland (g4) (secondary habitat codes 510, bare ground)
- Bramble scrub (h3d)
- Buildings (u1b5)

4.3.1 Other woodland; broadleaved (w1g)

The dominant habitat on site was the lowland mixed deciduous woodland which was located towards the east of site (**Fig 4**). The woodland supported Hazel (*Corylus avellana*), Ash (*Fraxinus excelsior*), Oak (*Quercus* spp.), Holly (*Ilex aquifolium*) and Silver Birch (*Betula pendula*) with occasional Blackthorn (*Prunus spinosa*), Hawthorn (*Crataegus monogyna*) and Field Maple (*Acer campestre*) present. Dense Ground Ivy (*Glechoma hederacea*) and sections of Bramble (*Rubus fruticosus* agg.) scrub comprised the understory, infrequent areas of Bracken (*Pteridium aquilinum*) and a single Wild Garlic (*Allium ursinum*) were also noted.

Figure 4. An area of the woodland on the western boundary of the site (taken November 2023)



4.3.2 Modified grassland (g4) (secondary habitat 510, bare ground)

A small area of modified grassland was present on site along the southern boundary of site which comprised of large areas of bare ground (510) with an area of standing water (**Fig 5**).

Species noted included Perennial Rye Grass (*Lolium perenne*), White Clover (*Trifolium repens*), Common Dandelion (*Taraxacum officinale*), Broad-leaved Dock (*Rumex obtusifolius*), Common Nettle (*Urtica dioica*) and Cleavers (*Galium aparine*).

Figure 5. The area of modified grassland on the southern boundary of the site with bare ground and standing water (taken November 2023).



4.3.3 Bramble scrub (h3d)

Dense scrub dominated by Bramble (*Rubus fruticosus* agg.) was present along the eastern and western boundaries of the grassland which expanded into the understory of the woodland on site (**Fig 6**).

Figure 6. An area of Bramble scrub along the western boundary of the grassland area (taken November 2023)



4.3.4 Buildings (u1b5)

This habitat type is further described in the below **Section 4.4.2**.

4.4 Bat Survey Results

4.4.1 Preliminary Roost Assessment (Trees)

During the preliminary roost assessment of the trees on site, a single Ash (*Fraxinus excelsior*) tree on the western boundary of site was noted to have a knot hole present (**Fig 7**), therefore this tree is considered to be of **low potential** for roosting bats.

The majority of the trees on site were small in diameter and lack the age and size to support roosting bats, ivy was present on several trees, however the level of ivy cover was not dense and lacked the required cover for bats, therefore the remaining trees on site were considered to be of **negligible potential** (**Fig 8**).

Figure 7. Location of the Ash tree within the woodland (left) with a knot hole noted (taken November 2023)



4.4.2 Buildings

The findings of the preliminary roost assessment concluded that all buildings on site were of **negligible potential** for roosting bats. The buildings on site comprised of temporary structures of sheds, greenhouses or chicken coops. The sheds were found to be in good condition, well sealed with no PRF's present (**Fig 8**) whilst the additional buildings were assessed as having high light levels and would lack the thermoregulation required by roosting bats (**Fig 5**).

Figure 8. View of the sheds present on site (taken November 2023).



4.4.3 Foraging and Commuting Habitat

The habitat on site comprises of modified grassland which is comprised of large patches of bare ground, Bramble scrub and an area of woodland with limited ground flora. However, the site is connected to a network of hedgerows, agricultural fields and ponds further west which would support a rich supply of invertebrates for local foraging bats. Taking this into consideration the limited habitat presents on site and the proximity of suitable habitat within the woodland to the east of site, the site is considered to be of **low potential** for foraging and commuting and bats.

4.5 Badgers

During the site walkover, no evidence of Badgers was found. Notwithstanding this, the habitats on site provide the suitable foraging opportunities for Badgers, comprised of woodland, modified grassland, bare ground and some dense scrub. The site is also connected to further suitable habitat to the west in the form of agricultural fields. Taking all of this into consideration, there is **potential** for foraging and commuting Badgers.

4.6 Reptiles

The grassland on site is mostly comprised of bare ground and has some areas of very short sward height, as such the grassland does not provide the required structure and heterogeneity favoured by reptiles (Edgar et al., 2010). The areas of dense Bramble scrub offers limited structure and lacks the variety of thermal niches typically required by reptiles. However, this habitat is connected to suitable habitat to the west in the form of agricultural fields and hedgerow boundaries through the woodland on site. Taking all of this into consideration, there is **low potential** for common reptile species.

4.7 Great Crested Newts

4.7.1 Habitat Suitability Index (HSI)

The results of the HSI assessment of the pond found 30 m north-east of site are provided below (**Table 3**) along with an image of the ponds also provided above (**Fig 3b**).

Table 3. Results of the HSI assessment undertaken on the pond located 30 m north-east of site (as per ARG 2010).

Suitability Indices	Criteria Selected	Score Awarded	Notes
Location	A	1.00	-
Pond area	~600m ²	1.00	-
Pond drying	Dries annually	0.10	-
Water quality	Poor	0.33	-
Shade	~80% shaded	0.5	-
Water fowl	Absent	1.00	No water fowl seen during assessment
Fish	Absent	1.00	No fish observed during assessment and unlikely due to seasonal drying
Ponds within 1 km	2	0.65	-

Terrestrial habitat quality	Good	1.00	Woodland directly adjacent
Macrophytes	~10%	0.35	-
HSI score – 0.57 (Below Average)			

4.7.2 On Site Assessment

The grassland on-site can be considered to offer limited potential for GCN as similarly for reptiles, the grassland area is largely comprised of bare ground with patches of a short sward height. This area would consequently not support the structure and heterogeneity needed by GCN. Notwithstanding this, the majority of the site comprises a scrub interface and the woodland area present on site. Additionally, the woodland present on site provides foraging and sheltering opportunities for GCN in the form of a scattered scrub understorey. The pond situated 30 m to the north-east of site returned an HSI score of ‘Below Average’. The proposals are to be undertaken within the green - amber impact zone for GCN (**Fig 9**) under the District Licencing scheme, which determines there is moderate habitat suitability and GCN may be present (green) and suitable habitat where GCN are likely to be present (amber). Using freely available resources, 2 records of GCN were returned within 1 km of the site from 2013 (**Fig 10**). The closest record returned was opposite site, **although it must be noted this had a grid reference accuracy of 1 km**. Meanwhile an additional record was returned 0.98 km to the west to **a grid reference accuracy of 100 m**. Taking all of the above into consideration, there is **low potential** for GCN to be present on site.

Figure 9. Eastleigh Borough Council Impact Risk Zones for GCN (NatureSpace Partnership, 2023). Approximate location of the site indicated by the red arrow.

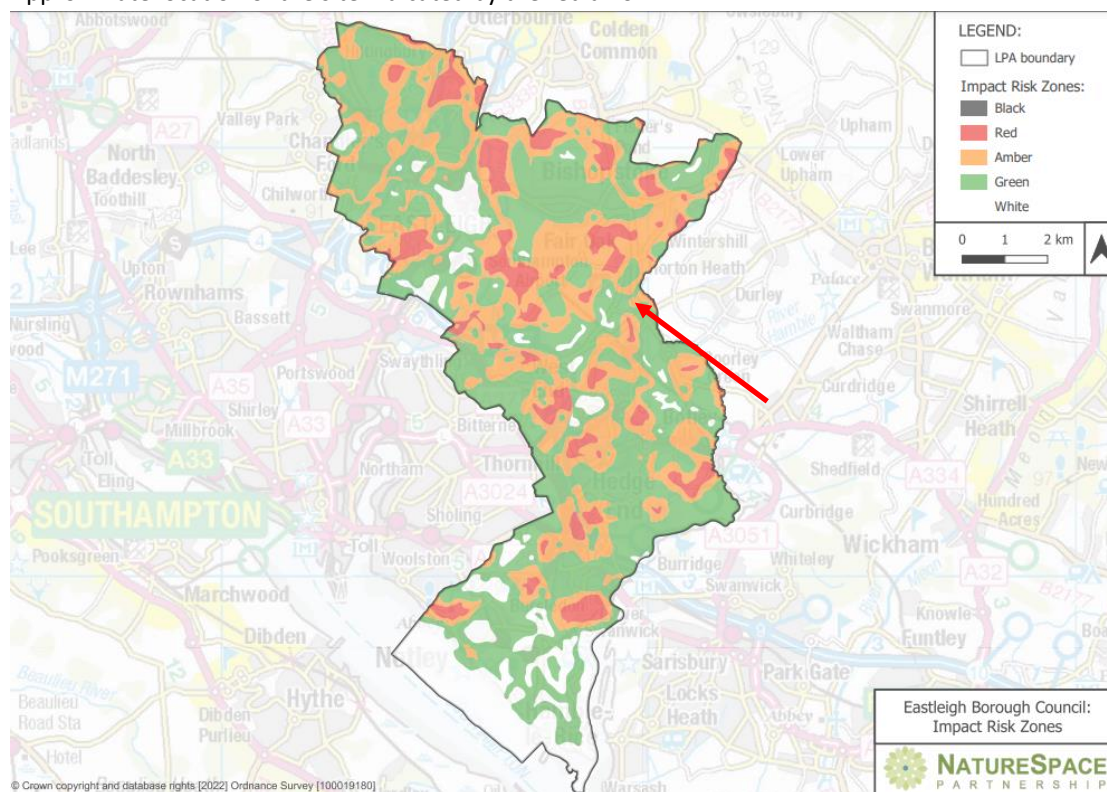
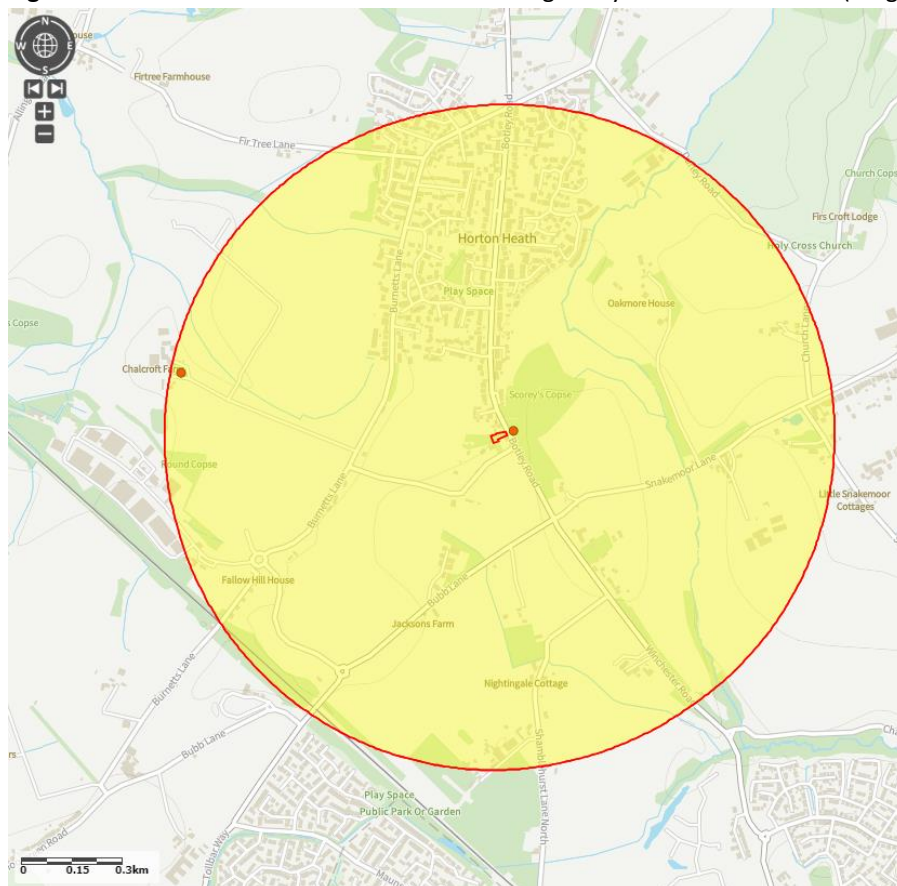


Figure 10. View of the GCN records returned using freely available resources (Magic Maps, 2023).



4.8 Hazel Dormouse

Whilst the woodland and Bramble understorey on site can be considered to provide suitable habitat for Dormice as they are well established and formed by a variety of different native species of known benefit to Dormice (as per Bright et al., 2006), it appears they may be isolated in nature. The woodland adjacent to the application site boundary is connected to trees / hedgerows with gaps in-between resulting from fences / management of nearby rear gardens. The gaps between the site and the surrounding suitable habitat imposes '*an impediment to free movement*' as Dormice '*is reluctant to cross open spaces, perhaps because of the danger posed by owls and other predators*' (as per Bright et al., 2006). The gaps between the wider environ and the woodland on site is shown below in **Fig 11**. ***Notwithstanding this, as the gaps from aerial imagery have not been assessed at ground level, as a precaution it is therefore assumed they may provide connectivity to the wider landscape of suitable habitat for Hazel Dormice.*** Additionally, using freely available online resources, no records of Dormice was returned within 1 km of the site. Taking all of the above into consideration the site is considered to be of ***low potential*** for Dormice.

Figure 11. View of the suitable habitat on site (red line) with context of the surrounding gaps isolating them from suitable Dormouse habitat in the wider environ (yellow dashed lines) (Google Maps, 2023)



4.9 Hedgehogs

Although no evidence of hedgehogs was observed on site, the woodland and Bramble scrub habitats on site are considered to be of value for commuting and foraging hedgehogs. In combination with the number of records and connectivity to the wider environment, the site is considered to be of ***moderate potential*** for commuting and foraging Hedgehogs.

4.10 Breeding and Nesting Birds

The woodland habitat, mature trees and Bramble understorey on site provide ideal nesting and foraging habitat for a variety of bird species. The surrounding environ provides a mosaic of ideal habitats including arable land, grassland and woodland, all suitable habitats for foraging and breeding birds. During the site walkover, a bird nest was identified in a Beech tree along the eastern boundary. Although no birds were seen using the nest during the walkover, the site was considered to offer ***moderate potential*** for breeding, nesting and foraging birds.

5.0 LIKELY ECOLOGICAL IMPACTS IN ABSENCE OF MITIGATION

5.1 Introduction

The CIEEM guidelines (CIEEM 2018) require that the potential impacts of the proposals should be considered in absence of mitigation. In order for a significant adverse effect to occur, the feature being affected must be at least of local value. However, in some cases, features of less than local value may be protected by legislation and/or policy and these are also considered within the assessment. Although significant effects may be identified at this stage of the assessment, it is often possible to provide appropriate mitigation.

5.2 Site Preparation and Construction

5.2.1 Impacts to Habitats

The proposals will involve the loss of the areas of modified grassland which is only considered to be of value at the **Site** levels of significance, however a portion of the woodland and Bramble scrub will also be lost to facilitate the development (of **Local** significance). In the absence of mitigation, the development works may also result in the damage of these retained habitats by machinery and particularly by root zone compaction. Therefore, a **moderate adverse impact** is possible to habitats of **Local** value.

5.2.2 Impacts to Wildlife

5.2.2.1 Bats

A tree on site was noted to have PRF's for bats. Works on site could result in damage and disturbance to this tree (i.e. from vehicles or due to light spill and high noise levels associated with works) if the tree is not proposed for remedial works or removal to facilitate the development. Should bats be present this could result in the harm, disturbance or even death of bats. Therefore, an **adverse impact is possible** at the **local level** of significance.

In the absence of mitigation, the loss of foraging resources (woodland, scrub and grassland) and any disruption to commuting routes (from external lighting would result in a **likely moderate adverse impact** at the **local level** of significance.

5.2.2.2 Badgers and Hedgehogs

The proposed works may require the creation of some excavations. This may lead to Badgers and other mammals becoming trapped or injured during the works. Therefore, in the absence of mitigation an **adverse impact is possible** at the **site level**.

5.2.2.3 Reptiles

The proposed plans would involve groundworks to the modified grassland and removal of Bramble scrub on site. This has the potential to cause harm, or even death of common reptile species which may be present on site. Therefore, in the absence of mitigation a **minor adverse impact** is possible at the **local level**.

5.2.2.4 Great Crested Newts

The proposed works will require the removal of woodland and scrub habitat to facilitate the development. The woodland and scrub on site is of potential for terrestrial GCN, which are confirmed as present within 1 km of the site and the site is within the green - amber impact

zone for GCN. Additionally, the scrub on site does hold some suitability for common reptile species. Therefore, in the absence of mitigation an **adverse impact is likely** at the **local level**.

5.2.2.5 Dormice

The proposals will result in the removal of suitable Dormice habitat on site and the retained habitats may be disturbed or damaged in the absence of mitigation. This could result in the disturbance, harm or even death of individual Dormice. Therefore, an **adverse impact is possible** at the **local level** of significance.

5.2.2.6 Breeding & Nesting Birds

The proposed works resulting in the loss of woodland and scrub, and taking place in close proximity to retained suitable habitat, could result in the disturbance of nesting birds and damage to their nests if conducted during the nesting season as the works are in close proximity of suitable breeding and nesting habitat. Therefore, it is considered **an adverse impact is possible** at the **local level**.

5.3 Site Operation

5.3.1 Impacts to Wildlife

The development may result in an increase in lighting within the general area from any external lights on the new dwelling. This can affect the behaviour, particularly foraging, of nocturnal wildlife. Therefore, an **adverse impact is possible** on Badgers, Dormice and bats (should they be present on site).

5.3.2 Impacts on Designated Sites

The proposals will result in an increase in dwellings on site and this will take place within the 5.6 km 'disturbance zone' for the Solent and Southampton Water SPA and Ramsar. It is Natural England's advice that all net increases in residential development within the 5.6km 'Zone of Influence' are likely to have a significant effect on the SPA either alone or in combination with other development. As such the increase in visitor numbers would have an **adverse impact** to features of **International Significance**.

The site is located within the recreational zone of influence 13.6 km buffer for New Forest SAC. The proposals involve the development of 1 new dwelling and therefore will result in possible increased visitor pressure to the SAC. As such the increase in visitor numbers would have an **adverse impact** to features of **International Significance**.

In addition, as the proposed development will result in an increase in dwellings on site then the site will result in an increase in nitrogen input into the WwTW, which is within the watershed draining into the Solent. Natural England has stated there is uncertainty as to whether new growth will further deteriorate designated sites due to an increase in nutrient inputs from wastewater. Therefore, **an adverse impact is possible** on the Solent and Southampton Water SPA, a site of **International Significance**.

6.0 RECOMMENDATIONS

6.1 Introduction

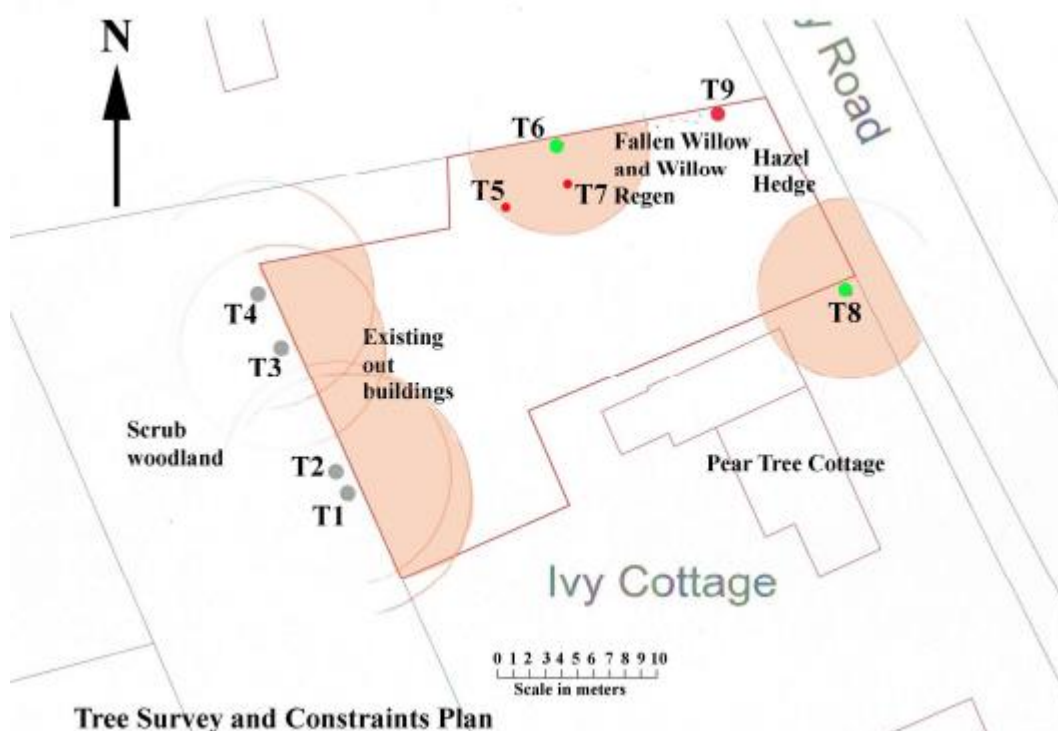
The below sections outline recommendations for further survey work required to fully assess the potential ecological impacts of the development and ensure proposed mitigation and compensation appropriate and proportionate. In addition to this, measures are outlined to protect the existing features of value and provide enhancements post development.

6.2 Protection of Retained Trees

The woodland / trees that will be retained will be protected from damage during the works. All the site boundaries and retained habitats outside the area of impact will be fenced using Heras fencing or similar to prevent access by machinery. Where large mature trees are present, they will be protected using standard arboriculture tree protection measures which include protection of the canopy and prevents root compaction.

A tree survey and constraints plan was provided by Mark Hinsley Arboricultural Consultants Ltd. after the conduction of a tree survey on 12th December 2023 (**Fig 12**). This survey identified that trees T5, T7 and T9 will require removal, and whilst T1 – T4 are outside of the site boundary they face significant constraints *if excavations are required*.

Figure 12. Tree survey and constraints plan as provided by Mark Hinsley Arboricultural Consultants Ltd (2023)



Proposed heras fencing will also provide protection for wildlife species that may be using the margins of the site including bats, reptiles, amphibians, invertebrates and other mammals. No vehicles will enter the protective ring fencing and no materials will be stored within their circumference. All protective fencing must be in place prior to any construction machinery arriving on site, before any works on site get underway, and will remain in place until all work

is completed. This will minimise the level of disturbance within the boundary habitat / buffer areas during the works and ensure the habitats and any wildlife species that may be using them are protected.

6.3 Bats

6.3.1 Roosting

All trees considered to be of **Low potential** (the Ash tree) with stem diameters in excess of 50mm should be soft-felled ***should the tree face significant constraints requiring removal as per Mark Hinsley Arboricultural Consultants Ltd Tree Survey results (2023)***. The tree would be soft felled with any Ivy carefully pulled back and checked for bats prior to felling. The existing cavities/crevices/voids that may support roosting bats, as well as any additional ones which are uncovered during works, ***will require further assessment through endoscopy of potential features and felling under the supervision of a suitability qualified ecologist.***

NB Should either of the retained trees later be proposed for removal or remedial works (either removal or crown reduction), they require a detailed ground-based assessment is required prior to commencement by a suitability qualified ecologist.

6.3.2 Foraging and Commuting - Sensitive Lighting

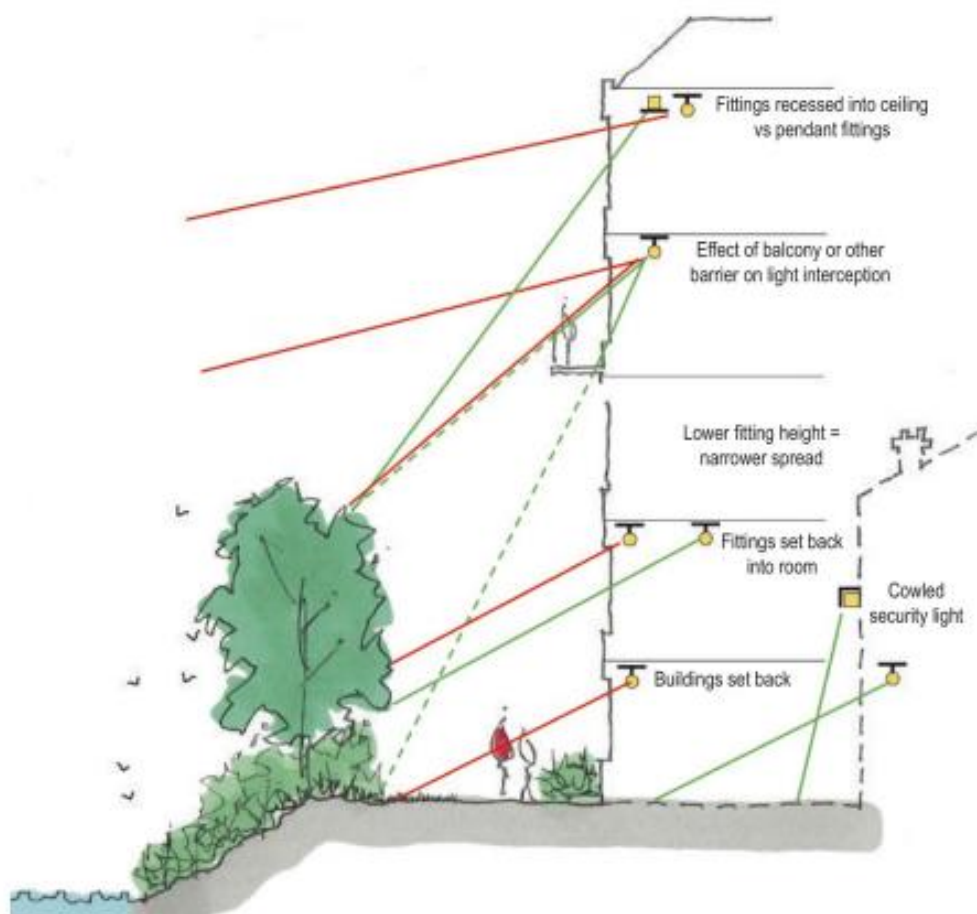
It is recommended that any lighting complies with the following the newly published *Guidance Note 08/23 Bats and Artificial Lighting at night* (ILP / BCT, 2023) produced via a collaboration between the Institute of Lighting Professionals (ILP) and the Bat Conservation Trust (BCT), which outlines the latest recommendations to minimise the impacts of increased artificial lighting on bats. ***Sensitive lighting must be in place during site construction and site operation with particular regard to the connected woodland on the western boundary of the site.*** The key recommendations within this document have been outlined below and will be implemented as far as is practicable:

'Light sources, lamps, LEDs and their fittings come in a myriad of different specifications which a lighting professional can help to select. However, the following should be considered when choosing luminaires and their potential impact on Key Habitats and features:

- *All luminaires will lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used*
- *LED luminaires will be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability*
- *A warm white light source (2700Kelvin or lower) will be adopted to reduce blue light component*
- *Light sources will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012)*
- *Internal luminaires can be recessed (as opposed to using a pendant fitting - See **Fig 13**) where installed in proximity to windows to reduce glare and light spill*
- *Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges (see Case Study 1)*

- *Column heights will be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards*
- *Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01*
- *Luminaires will always be mounted horizontally, with no light output above 90° and/or no upward tilt*
- *Where appropriate, external security lighting will be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate*
- *Use of a Central Management System (CMS) with additional web-enabled devices to light on demand Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS*
- *The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues. See Case Study 6*
- *Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely'*

Figure 13. Internal lighting mitigation options (ILP 2023).



6.4 Badgers

Although no evidence of badgers was recorded on site, the site does have potential for foraging and commuting badgers. Therefore, a walkover of the site is recommended to be undertaken by a suitably qualified ecologist in search of recent Badger activity immediately prior to works commencing. Due to the overgrown nature of the understory vegetation currently, the Bramble on site is required to be strimmed prior to this walkover – **this must be done in accordance with the sensitive habitat removal outlined for reptiles, GCN, birds and Dormice**. In the case evidence of recent Badger activity was identified, further survey works may be required to assess the status of any potential Badger setts on site.

During the construction phase, any open excavations left overnight will either be covered to prevent commuting Badgers falling in or escape ladders will be used to prevent them from becoming trapped. Any open pipework will be checked and then capped nightly.

6.5 GCN / Reptiles

With an area of standing water in close proximity to the site, local records of GCN within 1 km and the majority of site is comprised of suitable GCN habitat (woodland / scrub), it is considered the most appropriate form of mitigation would be to adopt a precautionary approach. Similar for reptiles, due to the small area of suitable habitat for reptiles in the context of the wider site, it is considered that the most suitable form of mitigation would be passive dispersal into retained habitat to the west which further connects to agricultural

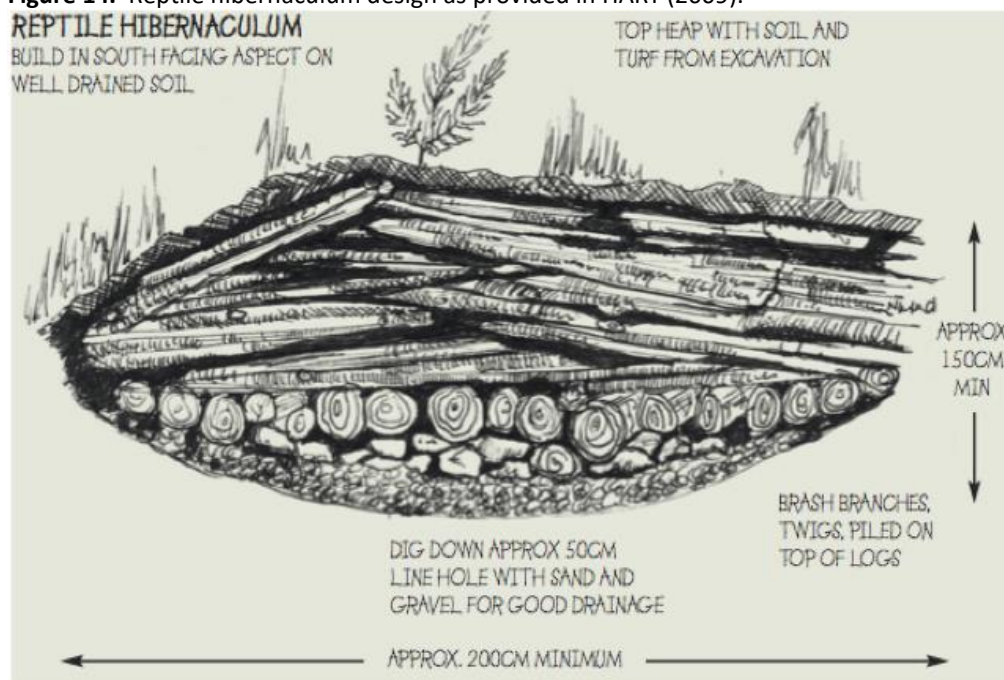
fields. These works will be undertaken during the active reptile / GCN period (April – September) when temperatures are above 12°C with sunshine.

The suitable habitat on site (woodland / scrub and any longer areas of grassland) will be managed in a 2-stage strim and removed under supervision of a suitably qualified ecologist.

Stage 1: During the first stage, the vegetation will be cut down to a height no lower than 15cm. Cutting will occur directionally, working towards suitable habitat to be retained to the west to encourage GCN / reptiles to these areas. Vegetation should be cleared using hand tools.

Stage 2: A second cut (within 1-5 days after the first stage, weather permitting) will take it down to ground level. At this time, the supervising ecologist will do a fingertip search of any tussocky areas. Any potential refugia (i.e. deadwood, rubble) will also be searched and removed. The deadwood/rubble/brash/cuttings from the vegetation clearance should, where possible, be retained to be made into log piles (**Fig 14**).

Figure 14. Reptile hibernaculum design as provided in HART (2009).



If a GCN is found, all works will stop, and a European Protected Species license (EPSL) will be required from Natural England prior to the recommencement of works.

6.5.1 Destructive Search

Following the two-stage clearance, if deemed necessary by an ecologist a destructive search will be carried out under the supervision of the suitably qualified ecologist. Topsoil will be gently stripped to 100mm depth using a digger with a toothed bucket. ***However, if a GCN is found then all works must cease and Natural England consulted as mentioned above.***

6.6 Hazel Dormice

It is considered adopting a precautionary approach to the clearance works is the most proportionate approach to provide mitigation towards Dormice. This is taking into consideration: the suitable Dormouse habitat proposed to be removed as part of the proposals (woodland and scrub), but with apparent isolation of habitats based on aerial imagery, no records of Dormice returned within 1 km of site and that the size of the site and habitat proposed to be removed is of too small scale to conduct a full nest tube survey with tubes requiring deployment at 20-m intervals. The details of this precautionary approach would entail the following:

- The licensed ecologist will deliver a toolbox talk to the vegetation clearance contractors, detailing the sensitive measures required. The ecologist will then supervise all vegetation clearance. No clearance will be undertaken without the supervision of the ecologist.
- Prior to any work being undertaken, 5 wooden Dormouse nest boxes will be erected within the retained woodland habitat immediately to the west. These will act as receptors in the unlikely event that any Dormice are found during the clearance works.
- Fingertip search of all vegetation to be cleared, by the licensed ecologist, immediately prior to clearance commencing (on the same day and every day clearance occurs). This will be done between April - early May and October - early November (i.e. after Dormice have awoken from hibernation but before they start breeding). When works proceed would be at the discretion of the ecologist (as in if it is unseasonably cold during April, works may need to be delayed in early May).
- Hand tools will be utilised to sensitively cut vegetation down to ground level in **a single stage**. This will be undertaken in a directional fashion to passively encourage Dormice to move away from the works area towards retained, suitable habitat on the site's boundaries. Where areas of developing scrub are being cut, this will be done directionally towards the retained hedgerow / woodland habitats. All arisings will be moved away from the hedgerows immediately to an area of within the central part of the site, and will then be chipped and immediately removed from site.
- Works will take place outside of the core breeding periods
- No more than 50m² of habitat will be cleared in a single day
- ***NB If any Dormice are found, works will cease, and Natural England consulted.***

6.7 Hedgehogs

To ensure permeability for small mammals across the site, any new fencing will ensure at least 2 gaps are present within the gravel boards / bases of each fence line to allow for movement of Hedgehogs between gardens and into the wider area. The gaps should be at least 15 cm high by 15 cm wide with permeability for small mammals. Small signage could be installed at these points to ensure they remain open upon completion of the development. The People's Trust for Endangered Species provide such signage, the purchase of which also supports conservation efforts (**Fig 15**). Additionally, during the construction phase, any open excavations left overnight will either be covered to prevent hedgehogs falling in or escape ladders will be used to prevent them from becoming trapped.

Fig 15. Example of Hedgehog Highway signage to be placed above fence gaps provided to allow movements between gardens and the wider environment.



6.8 Avoidance of Impacts to Breeding and Nesting Birds

In order to avoid disturbance of breeding and nesting birds or damage to their nests, works on site should avoid bird nesting season (typically March – August, dependent on weather). If this is not possible, the site should be thoroughly checked by an ecologist immediately prior to works. If any active nests are found, including the one identified during the walkover, they should be left undisturbed with a suitable buffer within which works cannot take place (ca. 5m) until nestlings have fledged.

6.9 Designated Sites

6.9.1 Solent SPA 'Zone of Influence' for Recreation

The site lies within the vicinity of the recreational zone of influence for the Solent & Southampton Water SPA. In order to mitigate for the likely increases in residential pressure upon this SPA, due to the high densities of wildfowl and waders for which the area is predominantly protected, the Solent Recreation Mitigation Strategy (SRMS) has been introduced in collaboration with Natural England, comprising a partnership of all local councils. Mitigation towards the SPA must be provided for all new recreational developments within the 5.6km disturbance zone of the SPA.

The simplest method of providing a necessary suitable and appropriate level of mitigation towards the SPAs associated with the Solent is via financial contributions. These contributions

are used to enable the continued use of the coastline in a way that reduces the risks to the bird species of international importance that use the area, for example funding a team of rangers and implementing initiatives to encourage responsible dog walking (Solent Recreation Mitigation Partnership, 2014). It is considered that the contribution, in compliance with the recommendations presented within the SDMP, provides a suitable level of mitigation for the potential adverse impacts associated with the proposed scheme upon the Solent SPA.

In April 2023, the standard rates were updated to the following:

Number of bedrooms	Amount	5% monitoring fee	Administration fee	Total
1	£443	£22.15	£23	£488.15
2	£639	£31.95	£23	£693.95
3	£834	£41.70	£23	£898.70
4	£980	£49.00	£23	£1,052.00
5+	£1,150	£57.50	£23	£1,230.50

Therefore, a contribution will be made either prior to planning permission being granted, by completing the Agreement and sending the completed form along with mitigation contribution to the Planning Agreements Officer at the Local Planning Authority or by completing a Unilateral Undertaking before planning permission is granted with the per dwelling payment made before the development is implemented.

6.9.2 New Forest SAC

Policy ENV1 in the Local Plan requires mitigation for potential recreational impacts to The New Forest SAC for development within the district. As this development is under 50 new dwellings this mitigation can be provided financially. This contribution will go towards the provision of new green spaces and the enhancement of existing green spaces and walking routes, including long-term maintenance and management costs. The rolling supply of projects will be maintained by the Council.

6.9.3 Nitrogen Mitigation in Solent

The site is likely to result in an increase in nitrogen run-off to the Solent through added waste to the wastewater treatment works due to the addition of new dwellings. Natural England has laid out guidance for calculating and mitigating any increased nitrogen from new development (Natural England, 2022). A nitrogen budget calculation will be completed to measure the

amount of increased nitrogen from the development and mitigation will be required to offset this.

6.10 Biodiversity Net Gain

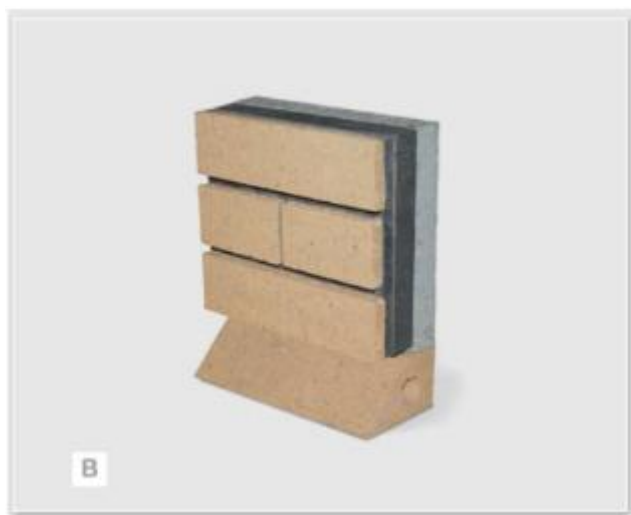
A biodiversity net gain assessment will be undertaken for the site using the latest Defra 4.0 or Statutory metric. This will be provided as a separate document (the Excel workbook) and results provided within a full BNG Assessment.

6.11 Enhancements

6.11.1 Bats

The new dwelling will have 1 No Ibstock bat brick (**Fig 16**) integrated within the external brick work. These features are entirely self-contained and available in a variety of different colours to match different construction materials. They should ideally be placed on an elevation which will benefit from some degree of sunlight exposure and be located away from windows.

Figure 16. Ibstock bat brick 'B' which will be integrated into the gable walls of the newly built dwelling.



In addition to the integrated bat boxes, the following woodcrete models will also be erected on suitable retained trees within the woodland areas around the site's boundary:

- 1 No Vivara Pro Miramare Large WoodStone bat box
- 1 No Vivara Pro Large Multi Chamber WoodStone bat box

The woodcrete bat boxes will be erected by or under the supervision of an ecologists to ensure they are placed in the most appropriate / effective locations.

6.11.2 Hedgehogs

A hedgehog home will be incorporated into the garden of the site to enhance sheltering opportunities for local hedgehogs (such as the Wildlife World Hedgehog Home or Hogitat Hedgehog House). This will provide a rapidly declining species with a place to shelter / hibernate.

6.11.3 Birds

To act as biodiversity enhancement, the new dwelling will incorporate 1 No Swift brick. The 'CJ Wildlife Swift maxi nesting box' (**Fig 17**) with entrance via a CJ Wildlife 'Cambridge Swift full-face brick' (The Cambridge System is a concept comprising an entrance piece and a nest box embedded in the cavity and inner leaf. It is particularly suited to gable ends at roof-space level). If this model is not suitable for the building specifications, an alternative swift box with internal floor space exceeding 400cm squared must be used. A list of swift boxes can be found on the RSPB website via the following link (<https://www.rspb.org.uk/globalassets/downloads/about-swifts/swift-bricks.pdf>) however it is worth noting that some of these do not have an internal floor space exceeding 400cm squared and are therefore not considered appropriate.

Figure 17. A schematic of how the Cambridge full face Swift brick leads into a cavity created by the prior installation of the Swift maxi nesting box.



Additionally, the erection of 2 No nest boxes in trees within the retained sections of woodland on site will provide further enhancements. Where possible these nest boxes could be tailored to provide opportunities for red listed/BAP species known from the local area. Vivara Pro Seville 32mm, Seville 28mm or Barcelona Bird Box should be used. These will provide suitable nesting opportunities for a variety of bird species and will increase the nesting opportunities for birds on site.

7.0 REFERENCES

CIEEM (2018) *Guidelines for Ecological Impact Assessment in the UK & Ireland*

Collins, J. (ed) (2023). *Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th Edition)*. The Bat Conservation Trust, London. ISBN-978-1-7395126-0-6.

Eastleigh Borough Council (2022). *Eastleigh Borough Local Plan (2016-2036)*. Adopted April 2022.

Edgar, P., Foster, J., & Baker, J., (2010) *Reptile Management Handbook, Amphibian and Reptile Conservation (ARC)*

HMSO (2000). *The Countryside and Rights of Way Act 2000*. HMSO, London.

HMSO (1981). *The Wildlife & Countryside Act 1981*. HMSO, London.

ILP / BCT (2023) *Guidance Note 08/23: Bats and Artificial Lighting at Night*.

Natural England & Forestry Commission England (2014) *Standing Advice for Ancient Woodland and Veteran Trees*.

Natural England, 2011 *Badgers and Development: A Guide to Best Practice and Licensing*

Natural England (2015). *Wild Birds: Surveys and Mitigation for Development Projects*. Available from: <https://www.gov.uk/guidance/wild-birds-surveys-and-mitigation-for-development-projects>

UKHab Ltd. (2023). *UK Habitat Classification – Habitat Definitions Version 2.0* (July, 2023).



Legend

 Site Boundary

 Modified Grassland (g4)
Secondary habitat codes:
510 - Bare ground

 Bramble Scrub (h3d)

 Other Woodland-Broadleaved (w1g)



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Map	Appendix 1 - UK Habs Map
Site	Land adjacent to Ivy Cottage
Client	Osman Homes Ltd
Date	02/02/2024
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