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# Preliminary Ecological Appraisal Report

Land at Buckover, Milbury Heath,  
Gloucestershire, GL12 8QN

Client	Best of British Home and Outdoors Ltd
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## Quality Assurance

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## Document History

Version	Date Issued	Revision
1	02/10/2023	Issued to the client.
1.1	23/10/2023	Minor corrections. Reissued to the client.

### Disclaimer

This document has been prepared solely for use by the client. Smart Ecology accepts no responsibility or liability for any use of this document by third parties or for purposes for which it was not originally commissioned.

The summary of wildlife legislation provided is for general guidance only and does not in any way provide legal opinion or a definitive statement of the law. For detailed information, the legislation itself should be reviewed and a legal professional consulted.

Smart Ecology cannot be held liable for any information provided by third parties which is referenced within this document.

The evidence in this document is based upon the field survey(s) detailed. Due to the changing nature of ecology the list of species present cannot be considered comprehensive and Smart Ecology cannot guarantee that other protected/notable species and habitats are not present.

The ecology of a site is constantly changing and therefore the information provided in this document is only relevant at the time of survey. **If it has been over 12 months since this survey was undertaken advice should be sought on whether an updated survey is necessary.**

The evidence which we have prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

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# Non-Technical Summary

<b>Purpose of Report</b>	<p>Smart Ecology was commissioned by Best of British Home and Outdoors Ltd. to undertake a Preliminary Ecological Appraisal of Land at Buckover, Milbury Heath, Gloucestershire, GL12 8QN.</p> <p>The purpose of the appraisal was to inform a planning application to South Gloucestershire Council for the erection of a residential property with associated landscaping. The proposals would primarily impact developed and bare ground, with scattered broadleaved trees and scrub retained. It is proposed to fell <i>Leylandii</i> trees in the north of the site.</p>
<b>Methodology</b>	A desk study, UK Habitat Classification survey, and an assessment for legally protected, notable and invasive non-native species were undertaken.

<b>Ecological Feature</b>	<b>Potential Impacts without Mitigation</b> (refer to Section 5)	<b>Required Mitigation</b> (refer to Section 6.2)
Hedgerows	Damage during works.	Protect hedgerows during works, where necessary.
Open standing water (Ditch)	Pollution during site clearance and construction.	Implement good construction practices during site clearance and construction.
Scattered broadleaved trees	Damage to trees during works.	Protect trees during works, where necessary.
Bats	Artificial illumination of scattered broadleaved trees could result in disturbance and abandonment of roosts.	<b>Soft fell Tree Group G1 (<i>Leylandii</i>).</b> Avoid artificial light spill onto scattered broadleaved trees.
Birds	Damage/destruction of active nests if <i>Leylandii</i> trees (Tree Group G1 and G2) are felled during the nesting season (which is typically March until the end of August).	Removal of <i>Leylandii</i> trees (Tree Group G1 and G2) must be undertaken outside of the nesting season or they must be checked for active nests by an ecologist immediately before felling starts; if active nests were then found to be present these would have to be left undisturbed until the young had fledged.
Badgers & other mammals	Injury/death if badgers are trapped in any open excavations or open pipework during construction.	Cover excavations or provide a ramp overnight and cap any open pipework overnight.
Amphibians & reptiles	Injury/death during site clearance and construction.	Implement Reasonable Avoidance Measures (RAMs) during site clearance and construction.

<b>Conclusions</b>	<p>The proposed development would not impact any statutory designated sites or ecologically important or protected habitats. A <i>Leylandii</i> tree group (Tree Group G1) must be soft felled.</p> <p>No significant impacts on protected or notable species are considered likely if the mitigation measures provided in this report are implemented.</p>
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# 1 Introduction

## 1.1 Background

- 1.1.1 Smart Ecology was commissioned by Best of British Home and Outdoors Ltd to undertake a Preliminary Ecological Appraisal of Land at Buckover, Milbury Heath, Gloucestershire, GL12 8QN (central national grid reference ST 6623 9007). Refer to Figure 1, Section 9 for a location map, which shows the survey area delimited by a red-line boundary (hereafter referred to as the “site”).
- 1.1.2 The purpose of the appraisal was to inform a planning application to South Gloucestershire Council for the erection of a residential dwelling on the site, with associated landscaping. Refer to Appendix 1 for the proposed site plan.
- 1.1.3 This report has been prepared by Joseph Wilkie, an ecologist at Smart Ecology and a qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM), with reference to CIEEM’s Guidelines for Preliminary Ecological Appraisal (CIEEM, 2017a), Guidelines for Ecological Report Writing (CIEEM, 2017b), and BS42020 Biodiversity – a code of practice for planners and developers (BSI, 2013).

## 1.2 Site Context

- 1.2.1 The site is approximately 0.23 ha and is situated in the village of Milbury Heath. A storage area is located to the north of the site, a car park is located to the east, a garden centre is located to the south across a minor road, and a residential garden is located to the west. The local landscape predominantly comprises arable and pasture farmland bounded by hedgerows/tree lines, with extensive areas of woodland also present, including ancient woodland.

## 1.3 Aims

- 1.3.1 The purpose of the survey and report was to:
- Identify any statutory<sup>1</sup> and non-statutory<sup>2</sup> designated sites on or close to the site.
  - Provide an ecological baseline for the site including habitats<sup>3</sup> and the presence of, and potential for, legally protected<sup>4</sup>, notable<sup>5</sup>, and invasive non-native species.
  - Identify any potential impacts on designated sites, habitats, and species.
  - Provide details of further required surveys and/or mitigation.
  - Provide recommendations for biodiversity enhancements.

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<sup>1</sup> Statutory designated sites are those protected by legislation and include Ramsar, Special Protection Areas (SPA), Special Areas of Conservation (SAC), Sites of Special Scientific Interest (SSSI), National Nature Reserves (NNR), and Local Nature Reserves (LNR).

<sup>2</sup> Non-statutory designated sites are not afforded any legal (statutory) protection and are often designated by local authorities e.g. Local Wildlife Sites (LWS), County Wildlife Sites (CWS), and Key Wildlife Sites (KWS).

<sup>3</sup> Including priority habitats listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006.

<sup>4</sup> Legally protected species include species afforded protection by the Conservation of Habitats and Species Regulations 2017 (as amended) and the Wildlife and Countryside Act 1981 (as amended).

<sup>5</sup> Notable species include priority species listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006, UK red data book species, and Birds of Conservation Concern (BoCC).



## 2 Legislation and Planning Policy

### 2.1 Legislation

2.1.1 Certain species and habitats are legally protected in the UK by legislation. The key pieces of legislation are:

- The Conservation of Habitats and Species Regulations 2017 (as amended).
- Wildlife and Countryside Act 1981 (as amended).
- Natural Environment and Rural Communities (NERC) Act 2006.
- Protection of Badgers Act 1992.
- Wild Mammals (Protection) Act 1996.
- The Hedgerows Regulations 1997.
- The Environment Act 2021.

2.1.2 The implications of legislation with regard to species are provided in Table 2-1.

2.1.3 Only a brief summary of wildlife legislation is provided here for general guidance and should not be considered a definitive statement of the law. For detailed information the legislation itself should be consulted.

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

2.1.4 These Regulations transpose the EU Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law. The Regulations require the designation and protection of European Sites (Special Areas of Conservation (SAC) and Special Protection Areas (SPA) and the protection of European Protected Species (EPS).

2.1.5 A EPS mitigation licence is required if works affect EPS (e.g. bats) or their places of rest or breeding sites. EPS licences are issued by Natural England only after the following three tests have been satisfied:

- The proposed works must be for the purpose of preserving public health or safety or other imperative reasons of overriding public interest.
- There is no satisfactory alternative to the proposed works.
- The proposed works will not be detrimental to the maintenance of the species concerned at a favourable conservation status in their natural range.

**2.1.6 It will be necessary to determine whether any European Sites or EPS may be impacted, either directly or indirectly, by the proposed development.**

#### Wildlife and Countryside Act 1981 (as amended)

2.1.7 This Act implements the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Directive) and the EU Directive 79/409/EEC on the conservation of wild birds (Birds Directive).

2.1.8 The Act provides protection to a range of animal and plant species. It also requires sites with special wildlife or geological interest to be designated nationally as Sites of Special Scientific Interest (SSSI).



**2.1.9 It will be necessary to consider whether the proposed development would have any direct or indirect impacts on any SSSI or species listed in relevant schedules of the Act.**

Natural Environment and Rural Communities (NERC) Act 2006

2.1.10 Section 40 of this Act places a duty on public authorities to 'have regard' to conserving biodiversity when determining planning applications. Section 41 of the Act requires the Secretary of State to publish a list of species and habitats of principal importance to biodiversity (priority species and habitats). The local planning authority must 'have regard' to conserving these species and habitats when determining a planning application. The development would need to mitigate for any impacts on priority habitats and species.

**2.1.11 The proposed development would need to mitigate for any impacts on priority habitats and species.**

Protection of Badgers Act 1992

2.1.12 This Act provides specific protection for badgers and their setts from harm and disturbance.

**2.1.13 The proposed development would need to mitigate any impacts on badgers and setts.**

Wild Mammals (Protection) Act 1996

2.1.14 This Act makes it an offence to intentionally inflict unnecessary suffering on a wild mammal through mutilation, kicking, beating, nails, impaling, stabbing, burning, stoning, crushing, drowning, dragging, or asphyxiation.

**2.1.15 Care would have to be taken during the construction phase of the proposed development to ensure that unnecessary suffering is not inflicted.**

The Hedgerows Regulations 1997

2.1.16 These Regulations protect most hedgerows from removal unless permissioned by a local planning authority. They also provide historic and ecological criteria for defining important hedgerows. A local planning authority can only refuse permission to remove a hedgerow under the Hedgerows Regulations 1997 if a hedgerow is assessed to be important.

**2.1.17 The proposed development should aim to retain and protect hedgerows and mitigate for impacts.**

The Environment Act 2021

2.1.18 This Act sets statutory targets in four priority areas: biodiversity, air quality, water, and waste, and includes a new target to reverse the decline in species abundance by the end of 2030. The Act also makes provisions for a mandatory 10% net gain in biodiversity for all developments covered by the Town and Country Planning Act 1990; this is expected to come into force in November 2023.



Table 2-1: Implications of legislation with regard to species

Legislation	Species	Legal Implications
The Conservation of Habitats and Species Regulations 2017 (as amended)	<ul style="list-style-type: none"> <li>• Bats</li> <li>• Hazel dormouse</li> <li>• Otter</li> <li>• Great crested newt</li> </ul>	<p>It is illegal to:</p> <ul style="list-style-type: none"> <li>• Deliberately capture, injure or kill these species.</li> <li>• Deliberately disturb<sup>1</sup> these species.</li> <li>• Damage or destroy a breeding site or resting place used by these species.</li> </ul>
Wildlife and Countryside Act 1981 (as amended) – sub-sections 9(4) b and c and 9(5) only	<ul style="list-style-type: none"> <li>• Bats</li> <li>• Hazel dormouse</li> <li>• Otter</li> <li>• Great crested newt</li> </ul>	<p>It is illegal to:</p> <ul style="list-style-type: none"> <li>• Intentionally or recklessly disturb these species while they are occupying a structure or place of shelter or protection.</li> <li>• Intentionally or recklessly obstruct access to a structure or place of shelter or protection.</li> </ul>
Wildlife and Countryside Act 1981 (as amended)	<ul style="list-style-type: none"> <li>• Birds</li> </ul>	<p>It is illegal to intentionally:</p> <ul style="list-style-type: none"> <li>• Kill, injure or take any wild bird.</li> <li>• Take, damage or destroy a wild bird's nest while it is in use or being built.</li> <li>• Take or destroy the eggs of any wild bird.</li> </ul> <p>There is additional protection for birds listed on Schedule 1 (S1) of the Act.</p>
Wildlife and Countryside Act 1981 (as amended)	<ul style="list-style-type: none"> <li>• Water vole</li> </ul>	<p>It is illegal to:</p> <ul style="list-style-type: none"> <li>• Intentionally kill, take, or injure water voles.</li> <li>• Intentionally or recklessly damage or destroy a place of shelter or protection.</li> <li>• Intentionally or recklessly disturb water voles while they are occupying a structure or place of shelter or protection.</li> <li>• Intentionally or recklessly obstruct access to a structure or place of shelter or protection.</li> </ul>
Wildlife and Countryside Act 1981 (as amended) – sub-sections 9(1) (partial) and 9(5) only	<ul style="list-style-type: none"> <li>• Common reptile species</li> </ul>	<p>It is illegal to:</p> <ul style="list-style-type: none"> <li>• Intentionally or recklessly kill or injure common lizard, slow worm, grass snake, and adder.</li> </ul>
NERC Act 2006	<ul style="list-style-type: none"> <li>• Priority species</li> </ul>	<p>Local planning authorities must 'have regard' to conserving priority species. Priority species include several bat and bird species, otter, hazel dormouse, water vole, hedgehog, brown hare, harvest mouse, polecat, common reptile species, great crested newt, and common toad.</p>
Protection of Badgers Act 1992	<ul style="list-style-type: none"> <li>• Badger</li> </ul>	<p>It is illegal to:</p> <ul style="list-style-type: none"> <li>• Wilfully capture, kill or injure a badger.</li> <li>• Damage, destroy or obstruct access to setts.</li> <li>• Disturb badgers in setts.</li> </ul>

<sup>1</sup> Disturbance under the Conservation of Habitats and Species Regulations 2017 (as amended) is defined as impairing the ability of an animal to survive, breed, reproduce, rear or nurture their young, hibernate or migrate, or to significantly affect the local distribution or abundance of the species.





## 2.2 Planning Policy

### National Planning Policy Framework (NPPF) 2021

- 2.2.1 Paragraph 174 states that planning decisions should protect sites of biodiversity value, minimise biodiversity impacts, and contribute to net biodiversity gains.
- 2.2.2 Paragraph 180 states that planning permission should be refused if significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for.
- 2.2.3 The NPPF emphasises the need to consider biodiversity at a landscape scale, conserving, restoring and enhancing priority habitats and ecological networks, and protecting priority species. The NPPF also specifies the need to protect designated sites from adverse harm and to protect irreplaceable habitats (e.g. ancient woodland and veteran trees).
- 2.2.4 The proposed development would need to mitigate for impacts on biodiversity and provide net biodiversity gains where possible.**

### Local Planning Policy

- 2.2.5 The presence of EPS, including bats, is a material consideration in the planning process and local planning authorities will refuse planning permission where a EPS licence is unlikely to be granted and a criminal offence relating to an EPS is likely to result from a development.
- 2.2.6 The South Gloucestershire Local Plan Core Strategy (adopted 2013) and Policies, Sites and Places Plan (adopted 2017) set out policies for development and land use in the district. Refer to Table 2-2 for a summary of policies relevant to ecology and biodiversity at this site. Refer to the original documents for the full wording of these policies.

Table 2-2: Relevant South Gloucestershire Council policies

Policy	Details
Policy CS9 – Managing the environment and heritage	In order to protect and manage South Gloucestershire’s environment and its resources in a sustainable way, new development will be expected to: <ul style="list-style-type: none"><li>• Conserve and enhance the natural environment, avoiding or minimising impacts on biodiversity and geodiversity.</li></ul>
Policy PSP3 – Trees and Woodland	Proposals should minimise the loss of existing vegetation that is of ecological importance. Where appropriate proposals should include: <ul style="list-style-type: none"><li>• Tree protection.</li><li>• Replacement and additional tree planting.</li></ul>
Policy PSP19 – Wider Biodiversity	Where appropriate biodiversity gain will be sought from development proposals, this will be proportionate to the size of the scheme.



# 3 Methodology

## 3.1 Desk Study

3.1.1 A search was conducted for existing information on:

- Statutory and non-statutory designated sites within 1 km of the site.
- SSSI, SAC, SPA, and Ramsar sites Impact Risk Zones.
- Statutory designated sites for bats within 6 km<sup>1</sup> of the site.
- Bat SAC Consultation Zones.
- Mapped priority habitats and ancient woodlands within 100 m of the site.
- Protected and notable species within 1 km of the site.
- Invasive non-native species within 1 km of the site.
- Granted EPS mitigation licences within 1 km of the site.
- Habitats within 6 km<sup>1</sup> of the site<sup>2</sup>.
- Great crested newts licence returns and pond survey results within 1 km of the site.
- Great Crested Newt Risk Zones.
- Waterbodies within 500 m of the site.

3.1.2 The following organisation and websites were consulted:

- Bristol Regional Environmental Records Centre (BRERC)<sup>3</sup>.
- Multi-Agency Geographic Information Centre (MAGIC)<sup>4</sup>.
- Natural England Open Data Geoportal<sup>5</sup>.

3.1.3 The search areas are considered sufficient to take into account ecological receptors which could potentially be impacted by the proposed development.

## 3.2 Field Survey

### Personnel

3.2.1 The field survey was carried out by Joseph Wilkie; see Table 3-1 for details of the surveyor's experience and qualifications.

Table 3-1: Surveyor information

Surveyor	Natural England Survey Licences	Qualifications/Experience
<b>Joseph Wilkie</b> BSc, Qualifying member of CIEEM	Bats Level 1 (2021-54618)	Four years' experience in ecological consultancy. BSc Environmental Resource Management (University of Plymouth – 1 <sup>st</sup> ).

<sup>1</sup> 6 km is the largest known bat Core Sustenance Zone (CSZ) (Collins, 2023).

<sup>2</sup> To inform an assessment of the suitability of habitats and landscape features for commuting and foraging bats.

<sup>3</sup> Data provided September 2023.

<sup>4</sup> <https://magic.defra.gov.uk/MagicMap.aspx> (accessed September 2023).

<sup>5</sup> <https://naturalengland-defra.opendata.arcgis.com> (accessed September 2023).



## Survey Weather Conditions

3.2.2 The survey was undertaken on the 21<sup>st</sup> of September 2023. See Table 3-2 for details of weather conditions during the survey.

**Table 3-2: Survey weather conditions**

Variable	Weather Conditions
Cloud cover	60 %
Temperature	15°C
Wind	Gentle breeze (BWS 3)
Precipitation	Light showers

## UK Habitat Classification and Species Survey

3.2.3 A walkover of the site was undertaken to map the habitats present. The habitats were mapped and classified using the UK Habitats Classification system with a minimum mapping unit of 25 m<sup>2</sup> (UKHab Ltd, 2023). Additionally, any priority habitats within the site were identified and habitats assessed for evidence of, and potential to support, legally protected, notable and invasive non-native species. Any evidence of, and potential for, such species was recorded. Target Notes (TN) were made for any evidence of, or features with particular suitability for legally protected, notable and invasive non-native species; these are provided in Appendix 2 and plotted on the UK Habitats Classification Plan (Figure 2, Section 9).

3.2.4 Specifically, the site was surveyed for evidence of, and potential for, the species/groups detailed in Table 3-3:

**Table 3-3: Typical habitat requirements and field signs for surveyed species/groups**

Species/Group	Typical Habitat Requirements	Field Signs
Bats	Roost in buildings, trees, other structures, and underground sites. Foraging and commuting habitat include watercourses, waterbodies, hedgerows, tree-lines, scrub, woodland, pasture, and meadows.	Direct sighting, carcasses, droppings, urine, grease marks, feeding remains, squeaking.
Birds	Woodland, trees, scrub, hedgerows, moorland, heathland, wetlands, cavities within buildings, waterbodies, grassland.	Direct sightings, nests, droppings, feathers, eggs.
Badger	Woodland, dense scrub, hedgerows, moorland, grassland, field edges.	Direct sightings, setts, hair, footprints, dung, latrine pits, paths.
Hazel dormouse	Deciduous and mixed woodland (especially coppice managed with a successional stage of vegetation). Also hedgerows, conifer plantations, and dense scrub.	Direct sighting, nests, gnawed nuts.



Species/ Group	Typical Habitat Requirements	Field Signs
Otter	Holts in tree cavities, roots, rabbit burrows and bank-side rocks. Rivers, wetland, wet ditches, drains, ponds, lakes, coastal and marshland.	Direct sightings, anal jelly, spraint (dung), footprints, paths/tracks through vegetation, feeding remains, slides into and out of the water, couches (above ground resting places), holt entrances (below ground shelters).
Water vole	Vegetated banks on slow moving watercourses, reed beds, ponds, lakes, marshland, upland.	Direct sightings, latrines, droppings, feeding stations, burrows, feeding remains, lawns, nests, footprints.
Brown hare	Open farmland, grassland, woodland edges. Favours a mosaic of arable (cereal crops), grassland (with long areas for shelter) and hedgerows. Hare forms (resting places) may be in a grass tussock or behind a rock to give some protection. Hayfields provide better habitat than silage grassland as leverets are vulnerable to earlier cutting.	Direct sightings, footprints, droppings, forms, paths (tracks),
Hedgehog	Grassland, heathland, moorland, farmland, woodland, gardens	Direct sightings, footprints, droppings.
Polecat	Woodland, riverbank, marsh and farmland with hedgerows and small woods. Generalist species with wide ranges. Feed on rabbits, small rodents, birds, insects, frogs when gathered to spawn in the spring. Dens often in rabbit burrows in summer and move to farmyards (hay bales, under sheds, rubbish tips) in winter.	Direct sightings, footprints, droppings.
Harvest mouse	Long tussocky grassland, cereals, roadside verges, reedbeds, hedgerows, farmland and around woodland edges. Feed on seeds, berries, insects, cereal grains, also moss, roots and fungi. Nests found in dense vegetation (grasses, rushes, cereals, grassy hedgerows, ditches and brambles).	Direct sighting, nests.
Amphibians	Waterbodies for breeding. Terrestrial habitat includes most semi-natural environments including rough grassland, marsh, scrub, woodland, hedgerows, brownfield and low-intensity farmland. Tree stumps, mammal burrows, stone piles, log piles, compost heaps for shelter and hibernation.	Direct sightings, eggs attached to vegetation in waterbodies.



Species/ Group	Typical Habitat Requirements	Field Signs
Reptiles	Mosaic of habitats with potential for shelter and basking including rough grassland, scattered scrub, hedgerows, heathland, moorland, woodland glades, wetland, gardens and brownfield.  Tree stumps, mammal burrows, stone piles, log piles, compost heaps for shelter and hibernation.	Direct sightings, sloughed skin.
Invertebrates	Diverse range of habitats including mature trees, deadwood, flower-rich grassland, tussocky grassland, waterbodies, wetlands, scrub, hedgerows and brownfield sites.	Direct sightings.
Fish	Running and standing water.	Direct sightings.
Plants	Waterbodies, woodland, grassland, hedgerow bases.	Direct sightings.
Invasive non-native species	All habitats.	Direct sightings.

3.2.5 An assessment was made of the likelihood that the protected, notable, and invasive non-native species/groups detailed in Table 3-3 occur on or close to the site with reference to the criteria provided in Table 3-4.

Table 3-4: Criteria for the assessment for the presence of species/groups

Likelihood of Occurrence	Assessment Criteria
Confirmed	Field signs and/or records confirm the presence of species/group.
High	Presence of species concerned not confirmed by field signs or records, but high quality suitable habitat present on site and connected to further suitable habitat AND/OR field signs present indicative of presence of species but presence not definitely proven. Site within known geographic distribution for the species/group.
Moderate	Presence of species concerned not confirmed by field signs or records, but moderate quality suitable habitat present on the site and some connectivity to further moderate or high quality suitable habitat in the wider landscape. Site within known geographic distribution for the species/group.
Low	Presence of species concerned not confirmed by field signs or records. Low quality suitable habitat on the site AND/OR poor connectivity to further suitable habitat in the local landscape. However, possible presence of the species/group cannot be completely discounted. Site within known geographic distribution for the species/group.
Negligible	No field signs and/or records of species. No suitable habitat present on or close to the site. Site not within known geographic distribution for the species/group.



3.2.6 The survey included a preliminary bat roost assessment of on-site *Leylandii* trees which are proposed to be felled, as follows:

#### Ground Level Tree Assessment

#### Habitat Assessment

3.2.7 Habitats on and in the vicinity of the site were assessed for their suitability for commuting and foraging bats. An assessment of habitat suitability was made with reference to the BCT good practice guidelines (Collins, 2023); see Table 3-5 for the assessment criteria.

Table 3-5: Habitat suitability assessment criteria

Suitability	Description
None	No habitat features on site likely to be used by commuting or foraging bats at any time of the year.
Negligible	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.
Low	Habitat that could be used by small numbers of bats as a flight-paths such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

#### Tree Survey

3.2.8 *Leylandii* trees which are proposed to be felled were inspected for potential bat roost features from ground level using a high-powered torch (Clulite 1 million candle power), close focusing (8.5 x 21) binoculars, and an endoscope to inspect accessible cavities. Trees were viewed from all angles and any potential roost features (e.g. woodpecker holes, rot holes, hazard beams etc.) or evidence of bats (e.g. droppings, odour, staining etc.) were noted.

3.2.9 An assessment was then made of the suitability of the trees for roosting bats with reference to the BCT good practice guidelines (Collins, 2023); see Table 3-6.



Table 3-6: Bat roost suitability assessment criteria

Suitability	Description
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels.
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	1 + 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 <sup>1</sup> 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).
Moderate	1 + potential roost sites that could be used by bats due to their size, shelter, protection, conditions <sup>1</sup> and surrounding habitat but unlikely to support a roost of high conservation status (e.g. maternity and hibernation).
High	1 + 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 <sup>1</sup> and surrounding habitat. These structures have the potential to support high conservation status roosts (e.g. maternity or classic cool/stable hibernation site).
Confirmed bat roost	1 + roost sites.

<sup>1</sup> Conditions include temperature, humidity, height above ground, light levels and disturbance levels.

### Hibernation Assessment

3.2.10 An assessment of the suitability of the Leylandii trees for hibernating bats was undertaken, which considered the following aspects (Collins, 2023):

- Presence and suitability of potential roost features and access.
- Temperature and humidity conditions likely to be present during the hibernation period (i.e. November to February).
- The suitability of habitat in the local landscape for bats.
- Presence of known roosts within, or close to, the trees during the active season.

3.2.11 The assessment then followed the rationale provided in Figure 3-1.





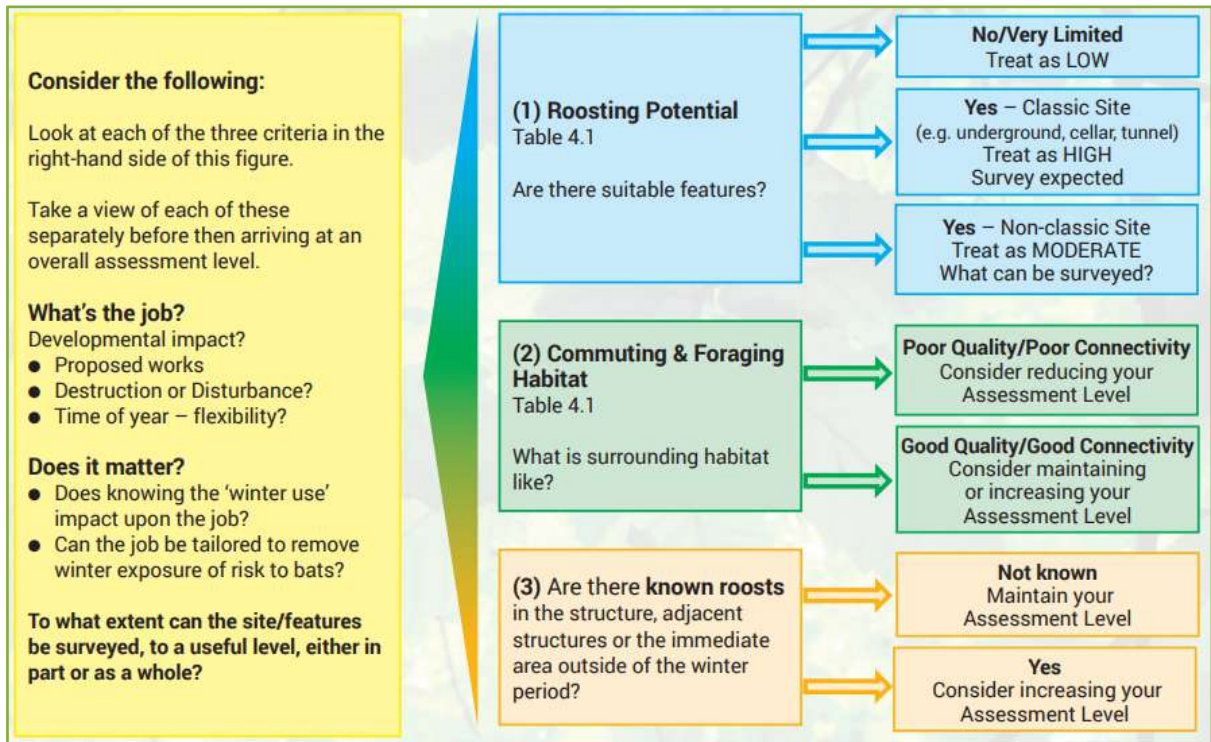


Figure 3-1: Rationale for hibernation roost assessment in non-classic hibernation sites (from Colins, 2023).

### 3.3 Evaluation of Ecological Features

- 3.3.1 A valuation of ecological features (designated sites, species, and habitats) was undertaken in accordance with CIEEM guidance (CIEEM, 2022). Valuation is determined using the geographic framework provided in Table 3-7.
- 3.3.2 The value of an ecological feature is based on a professional ecologist's judgement and takes into consideration various characteristics including any site designations, species records, priority species and habitats, species rarity, the quality of the resources (e.g. habitat diversity, species population size), and location within the landscape context.
- 3.3.3 Sometimes it is not possible to provide a valuation of ecological features in the absence of data, which would have to be provided by further ecological surveys. Important ecological features, which may pose a constraint to the proposed development, are those with an ecological value which could be impacted by the development. These are the features which may require further survey work and mitigation.





Table 3-7: Framework for assessing the value of ecological features

Geographic Scale	Example of Ecological Feature
International <b>(most important)</b>	An internationally designated site e.g. Special Areas of Conservation (SAC), Special Protection Area (SPA), Ramsar sites. Regularly occurring populations of internationally important species.
National	Site of national importance e.g. Site of Special Scientific Interest (SSSI), National Nature Reserve (NNR). Regularly occurring populations of nationally important species.
Regional	Non-statutory site e.g. Local Wildlife Site (LWS), Key Wildlife Site (KWS), Country Wildlife Site (CWS) supporting a regionally significant area of priority habitat or regionally significant population of legally protected/priority species.
County	Non-statutory site e.g. Local Wildlife Site (LWS), Key Wildlife Site (KWS), Country Wildlife Site (CWS), ancient woodland, site supporting priority habitats, priority species, and/or legally protected species of significance for the county.
Local	Habitats which enhance the local habitat resource e.g. old species-rich hedgerow, deciduous woodland, pond, small areas of priority habitat or areas supporting small populations of legally protected/priority species which are not rare within the region, county, or nationally.
Site	Habitats of limited ecological importance e.g. scattered trees, hedgerows, woodland plantations, small areas of non-priority habitats that are of value for wildlife. Species of limited ecological importance.
Negligible <b>(least important)</b>	Hardstanding, bare ground, built environment, and other areas with negligible biodiversity value, including for priority and legally protected species.

### 3.4 Limitations

- 3.4.1 Many of the species records provided by BRERC were at low spatial resolution and therefore the precise location of these records could not be determined, although they still provide background information on species present in the local area. Additionally, it must be noted that the accuracy of these records (e.g. correct species identification) has not been independently verified, and that an absence of records does not necessarily mean that a species is not present within the search area.
- 3.4.2 The survey was carried out outside of the bird breeding season and therefore nesting activity would not have been apparent. Additionally, nests are often hidden away in areas that are not viewable. However, it was still possible to identify any visible evidence of old nests and features with potential for use by nesting birds.



## 4 Baseline Ecological Conditions

### 4.1 Desk Study

#### Statutory Designated Sites

4.1.1 Refer to Table 4-1 for details of statutory designated sites located within 1 km of the site.

Table 4-1: Statutory designated sites within 1 km

Site Name	Approximate Distance from Site (m)	Description
Buckover Road Cutting SSSI	500	Geological site.

#### SSSI, SAC, SPA, and Ramsar Sites Impact Risk Zones

4.1.2 The site is not situated within a relevant risk category.

#### Statutory Designated Sites for Bats

4.1.3 No statutory designated sites which include bats as a reason for their designation are located within 6 km of the site.

#### Non-Statutory Designated Sites

4.1.4 Refer to Table 4-2 for details of non-statutory designated sites located within 1 km of the site.

Table 4-2: Non-statutory designated sites within 1 km

Site Name	Approximate Distance from Site (m)	Description
Rudge Wood SSSI	445	Ancient woodland.
Cleeve Wood SSSI	560	Ancient woodland.
Crossways Wood SSSI	860	Ancient woodland.

#### Mapped Priority Habitats and Ancient Woodlands

4.1.5 There are no records of priority habitat or ancient woodlands within 100 m of the site.

#### Species Records

4.1.6 Species records provided by BRERC are summarised in Table 4-3. To ensure the relevancy of data, records more than 20 years old were screened out of the data search.



Table 4-3: Summary of desk study species records

Group	Species	No. of Records	Closest Record (m)
Mammal - bat	Brown Long-eared	1	19.10 (+/- 10 m)
Mammal	Badger	1	937.45 (+/- 1 m)
	Hedgehog	1	685.78 (+/- 1 m)
Bird	Barn Owl	1	190.42 (+/- 10 m)
	Blackcap	2	190.42 (+/- 10 m)
	Blue Tit	13	182.43 (+/- 100m)
	Bullfinch	2	190.42 (+/- 10 m)
	Buzzard	4	182.43 (+/- 100m)
	Chiffchaff	1	190.42 (+/- 10 m)
	Coal Tit	10	182.43 (+/- 100m)
	Dunnock	12	182.43 (+/- 100m)
	Goldcrest	1	818.24 (+/- 100m)
	Goldfinch	2	182.43 (+/- 100m)
	Great Spotted Woodpecker	11	182.43 (+/- 100m)
	Great Tit	13	182.43 (+/- 100m)
	Green Woodpecker	6	182.43 (+/- 100m)
	Greenfinch	12	182.43 (+/- 100m)
	House Sparrow	24	182.43 (+/- 100m)
	Kestrel	1	753.83 (+/- 10 m)
	Lesser Redpoll	1	215.60 (+/- 100m)
	Lesser Whitethroat	1	934.13 (+/- 100m)
	Nuthatch	2	190.42 (+/- 10 m)
	Pied Wagtail	11	182.43 (+/- 100m)
	Redwing	8	182.43 (+/- 100m)
	Robin	13	182.43 (+/- 100m)
	Siskin	1	836.27 (+/- 1 m)
	Song Thrush	2	182.43 (+/- 100m)
	Sparrowhawk	8	182.43 (+/- 100m)
	Starling	22	182.43 (+/- 100m)
	Tawny Owl	2	182.43 (+/- 100m)
	Wren	12	182.43 (+/- 100m)
Yellow Wagtail	1	182.43 (+/- 100m)	
Yellowhammer	1	190.42 (+/- 10 m)	
Amphibian	Common Frog	4	818.40 (+/- 10 m)
	Common Toad	2	818.40 (+/- 10 m)
	Great Crested Newt	2	749.79 (+/- 1 m)
	Palmate Newt	1	818.40 (+/- 10 m)



Group	Species	No. of Records	Closest Record (m)
Moth or butterfly	Annulet	1	779.18 (+/- 100m)
	August Thorn	1	779.18 (+/- 100m)
	Beaded Chestnut	1	779.18 (+/- 100m)
	Chalk Carpet	1	779.18 (+/- 100m)
	Latticed Heath	1	779.18 (+/- 100m)
	Mouse Moth	1	779.18 (+/- 100m)
	Pretty Chalk Carpet	1	779.18 (+/- 100m)
	Rosy Minor	1	779.18 (+/- 100m)
	Rustic	1	779.18 (+/- 100m)
	Shaded Broad-bar	1	779.18 (+/- 100m)
	Small Square-spot	1	779.18 (+/- 100m)
	White-spotted Pug	1	779.18 (+/- 100m)
Plant	Aspen	1	843.69 (+/- 100m)
	Bluebell	1	811.12 (+/- 100m)
	Common Twayblade	1	934.13 (+/- 100m)

#### Granted EPS Mitigation Licences

- 4.1.7 One EPS mitigation licence has been granted within 1 km of the site, which was for bats; see Table 4-4 for details. This shows that bats are present in the area and that the local landscape has suitability for bats.

Table 4-4: Granted EPS mitigation licences within 1 km

Case Reference	Approximate Distance from Site (m)	Species Affected	Start Date	End Date	Impact Allowed
2020-46300-EPS-MIT	920	Brown long-eared Common pipistrelle Natterer's bat	14/05/2020	31/05/2030	Damage of a resting place and destruction of a breeding site and resting place

#### Great Crested Newt Licence Returns and Pond Survey Results

- 4.1.8 There are no records of great crested newt licence returns or pond survey results within 1 km of the site.

#### Great Crested Newt Risk Zones

- 4.1.9 The site is situated in a green risk zone. These zones contain sparsely distributed great crested newts and are less likely to contain important pathways of connecting habitat for this species.



## Waterbodies

- 4.1.10 Two waterbodies were identified within 500 m of the site. Refer to Table 4-5 for the distances of these waterbodies from the site, and to Figure 3, Section 9 for a map showing the location of these waterbodies.

Table 4-5: Waterbodies within 500 m

Waterbody	Approximate Distance from Site (m)
1	380
2	430

## 4.2 Field Survey – Habitats

- 4.2.1 The location and extent of habitats within the site are shown on the UK Habitats Classification Plan; see Figure 2, Section 9.

### On-Site Habitats

#### Mixed Scrub – h3h 32, 523 (Scattered Trees, Non-native)



- 4.2.2 Mature, unmanaged shrubs of predominantly non-native species were present along parts of the western and southern site boundaries. Some shrubs had grown out to trees, and species present included Persian ironwood, tree of heaven, magnolia sp., katsura, catalpa and chittamwood. Shrub species present included cherry laurel, firethorn, barberry sp., buddleia and acuba. A low density of native species were present, which included ivy, holly, elder, bramble and hedge bindweed.





#### Other Developed Land – u1b6 32, 81 (Scattered Trees, Ruderal or Ephemeral)



- 4.2.3 The majority of the site area comprised bare ground with gravel and a low density of ruderal and ephemeral vegetation. Species present included black medic, willowherb sp., sow thistle sp., spurge sp., horsetail sp., common nettle, common ragwort, broad-leaved plantain, Jack-by-the-hedge, and germander speedwell.

#### Artificial Unvegetated, Unsealed Surface – u1c 81 (Ruderal or Ephemeral)



- 4.2.4 A small section of mainly bare ground with a mature Norway maple was present in the south-east of the site. Woodchip and leaf litter were dominant, with a low density of ephemeral species including petty spurge, horsetail sp., herb Robert, black medic and willowherb sp..

#### Other Native Hedgerow – h2a6



- 4.2.5 A managed hedgerow approximately 1.5 m high and 1 m wide was present in the south-eastern corner of the site, separating the site from an adjacent car park. Dogwood was dominant, with hawthorn and hazel also present. Clematis sp., was present throughout the hedgerow, and the base of the hedgerow was mostly bare, with a low density of ivy and petty spurge present.

#### Non-native and Ornamental Hedgerow – h2b



- 4.2.6 A newly planted hedgerow comprising cherry laurel saplings was present in the east of the site, along the base of a timber fence.





### Line of Trees - w1g6



- 4.2.7 Lines of *Leylandii* trees were present along the northern part of the western site boundary and in the north-eastern corner of the site, extending further to the north. These trees were tall (>5 m) and shrubby with no signs of recent management.

### Built Linear Feature - u1e (114, 612 - Dry Stone Wall, Fence)

- 4.2.8 A dilapidated dry stone wall was present along the southern site boundary.
- 4.2.9 Timber fences were present along the northern site boundary and in the east of the site.

### Scattered Broadleaved Trees



- 4.2.10 Scattered trees were present in the south of the site, which included mature ash, sessile oak, and katsura.



**Modified Grassland – g4**



- 4.2.11 A road verge comprising modified grassland was present to the south of the site. Grass species were dominant and included cock's-foot, perennial rye-grass and red fescue. Forb species present included dandelion, creeping buttercup, ribwort plantain, cow parsley, and curled dock.

**Other Standing Water – r1g (50 - Ditch)**



- 4.2.12 A wet ditch ran parallel to the southern site boundary and was culverted under the existing southern site access. A low level of water was present. Flora present within the ditch included common nettle, willowherb sp., hedge bindweed, water mint and a low density of bramble.

## 4.3 Field Survey – Species

4.3.1 Table 4-6 provides details of an assessment of the suitability of habitats on and close to the site for protected, notable, and invasive non-native species/groups, details of any evidence of these species/groups, and an assessment of the likelihood that these species/groups occur on or close to the site.

Table 4-6: Site suitability for protected and notable species/groups and invasive non-native species

Species/ Group	Habitat Assessment	Evidence	Likelihood of Presence/Occurrence
Bats (foraging and commuting)	<p>Shrubs and trees on the site provided a small area of suitable foraging and commuting habitat. The site is located in a rural location, with further suitable foraging and commuting habitat present in the vicinity, including broadleaved woodland and several waterbodies to the south.</p> <p>The majority of the site comprised bare ground with a low abundance of vegetation and would provide low value foraging habitat.</p>	N/A	<p><b>LOW</b></p> <p>Records of brown long-eared, common pipistrelle, lesser horseshoe bat, <i>Myotis</i> species, Natterer's bat, pipistrelle species and <i>Plecotus</i> species within 1 km, the closest record was of brown long-eared bat from a location approximately 19 m from the site.</p> <p>Suitable foraging habitat on the site, and further suitable foraging and commuting habitat located in the vicinity of the site.</p>
Bats (roosting)	<p>Two groups of <i>Leylandii</i> trees are proposed to be felled; these are referred to in this report as Tree Group G1 (TN1) and Tree Group G2 (TN2). Tree Group G1 was assessed to have low suitability for roosting bats and Tree Group G2 was assessed to have negligible suitability for roosting bats. Refer to Appendices 3 and 4 for the results of the preliminary roost assessment of these trees. Other on-site trees could have features with potential for use by roosting bats.</p>	None	<p><b>LOW – Tree Group G1</b></p> <p><b>NEGLIGIBLE – Tree Group G2</b></p> <p><b>UNKNOWN – Other on-site trees</b></p> <p>Records of brown long-eared, common pipistrelle, lesser horseshoe bat, <i>Myotis</i> species, Natterer's bat, pipistrelle species and <i>Plecotus</i> species within 1 km, the closest record was of brown long-eared bat from a location approximately 19 m from the site.</p> <p>The presence of suitable habitats in the local landscape indicates a higher likelihood that bats may roost in trees close to these habitats where suitable roosting opportunities are available.</p>



Species/ Group	Habitat Assessment	Evidence	Likelihood of Presence / Occurrence
Birds	Ruderal/ephemeral vegetation provided a small area of suitable foraging habitat. Potential for nesting in trees and shrubs, which also provided a small area of suitable foraging habitat.	None	<b>MODERATE</b> Multiple records were provided within 1 km of the site. Suitable foraging and nesting habitat present on the site, likely to be used by common species.
Badger	Suitable foraging and dispersal habitat present on and in the vicinity of the site.	No setts on or within 30 m of the site.	<b>MODERATE</b> One record within 1 km of the site, approximately 937 m from the site. Use of the site for foraging and dispersal is possible.
Hazel dormouse	The on-site hedgerows, shrubs and tree lines provided sub-optimal habitat (low botanical diversity, non-native species). Additionally, the on-site hedgerows, shrubs and tree lines in the vicinity of the site did not connect to sufficiently extensive woodland habitat in the local landscape, with at least 20 ha of suitable habitat considered to be the minimum required to support dormouse populations (Bright et al, 2006).	None	<b>NEGLIGIBLE</b> No records within 1 km of the site.
Otter	No suitable habitat on the site. Ditch did not contain sufficient water or connect to further watercourses.	None	<b>NEGLIGIBLE</b> No records within 1 km of the site.
Water vole	No suitable habitat on the site. Ditch did not contain sufficient water or connect to further watercourses.	None	<b>NEGLIGIBLE</b> No records within 1 km of the site.
Other mammals	Suitable foraging and dispersal habitat on the site for hedgehogs. The base of shrubs and wood and refuse piles (TN3, TN4, TN5 and TN6) provided suitable refuge habitat for hedgehogs.	None	<b>MODERATE</b> One record of hedgehog within 1 km of the site, approximately 685 m from the site. Suitable habitat on and in the vicinity of the site for hedgehogs.



Species/ Group	Habitat Assessment	Evidence	Likelihood of Presence/Occurrence
Amphibians	Two waterbodies are located within 500 m, closest approximately 380 m from the site. Ruderal/ephemeral vegetation provided suitable foraging and dispersal habitat. The base of shrubs, wood and refuse piles (TN3, TN4, TN5 and TN6) and earth and rubble piles (TN7, TN8, TN9 and TN10) provided potential for refuge.	None	<b>LOW</b> Records of common frog, common toad, palmate newt and great crested newt within 1 km of the site. Closest record of great crested newt is from a location approximately 749 m from the site. Site within green risk zone for great crested newts, which contain sparsely distributed great crested newts and are less likely to contain important pathways of connecting habitat for this species. Possible use of on-site habitats for foraging, dispersal and refuge.
Reptiles	Ruderal/ephemeral vegetation provided suitable foraging and dispersal habitat. Base of shrubs, wood and refuse piles (TN3, TN4, TN5 and TN6) and earth and rubble piles (TN7, TN8, TN9 and TN10) provided potential for refuge.	None	<b>LOW</b> No records within 1 km of the site. Possible occasional use of on-site habitats.
Invertebrates	Site provided low value habitat for invertebrates.	None	<b>LOW</b> Records of several moth and butterfly species within 1 km of the site, all approximately 779 m from the site. On-site habitats are likely to be used by common and widespread species only.
Fish	No suitable habitat on the site.	None	<b>NEGLIGIBLE</b> No records within 1 km of the site.
Plants	On-site habitats provided negligible potential for rare or notable species to be present.	None	<b>NEGLIGIBLE</b> Three records of plants within 1 km, closest record was of bluebell approximately 811 m from the site.
Invasive non-native species	N/A	None	<b>NEGLIGIBLE</b>



## 5 Ecological Constraints

### 5.1 Development Proposals

5.1.1 It is proposed to erect a residential dwelling on the site, with associated landscaping. Refer to Appendix 1 for the proposed site plan, which is the scheme considered in this report. The proposals would primarily impact developed and bare ground, and scattered broadleaved trees and scrub would be retained. It is proposed to fell Leylandii trees in the north of the site.

### 5.2 Great Crested Newt Rapid Risk Assessment

5.2.1 A Natural England Rapid Risk Assessment (RRA) was undertaken (see Figure 5-1), which is an assessment of the likelihood that the proposed development would result in an offence with respect to great crested newts. This RRA assumes that great crested newts are present within both waterbodies identified within 500 m of the site and that precautionary methods of working would be implemented during site clearance and works to avoid impacts on individual great crested newts. This RRA indicates that even if the whole 0.23 ha site was cleared of suitable terrestrial habitat it is highly unlikely that the proposed development would result in an offence being committed with respect to great crested newts.

Component	Likely effect	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100 m of any breeding pond(s)	No effect	0
Land 100 - 250m from any breeding pond(s)	No effect	0
Land >250 m from any breeding pond(s)	0.1 - 0.5 ha lost or damaged	0.005
Individual great crested newts	No effect	0
	Maximum:	0.005
Rapid Risk Assessment result:	<b>GREEN: OFFENCE HIGHLY UNLIKELY</b>	

Figure 5-1: Rapid Risk Assessment (Natural England, 2015)

### 5.3 Evaluation of Potential Impacts

5.3.1 Statutory and non-statutory designated sites, protected and ecologically valuable habitats, and protected and notable species may pose a constraint if there is potential for them to be impacted by a proposed development. Invasive non-native species may also pose a constraint to development, and provide opportunities to enhance the biodiversity value of a site by their removal or control.





5.3.2 Table 5-1 provides a valuation of features on and close to the site which could be impacted by the proposed development, justification for the valuation, and details of potential impacts upon these features in the absence of mitigation. Only species which were present or assessed to have potential to be present on or close to the site are included in the valuation. Features highlighted in blue have the potential to pose a constraint to the proposed development of the site and would require further surveys and/or mitigation (see Section 6).

Table 5-1: Valuation and potential impacts on ecological features

Ecological Feature	Value	Justification for Value	Potential Impacts Without Mitigation
Statutory designated sites	International/ National	Site of international and/or national importance for biodiversity.	No impacts are anticipated due to the distance from the site and the small scale of the development.
Non-statutory designated site	County	Site of county importance for biodiversity.	No impacts are anticipated due to the distance from the site and the small scale of the development.
Mapped priority habitats	County	Habitats of importance at the county level.	No impacts are anticipated due to the distance from the site and the small scale of the development.
Ancient woodland	National	Irreplaceable habitat.	No impacts are anticipated due to the distance from the site and the small scale of the development.
Mixed scrub (non-native)	Site	Widespread and common habitat.	No impacts are anticipated.
Other developed land	Site	Widespread and common habitat.	It is considered that the loss of a small area of ruderal/ephemeral vegetation would not have a significant biodiversity impact.
Artificial unvegetated, unsealed surface	Site	Widespread and common habitat.	No significant biodiversity impacts are anticipated.
Hedgerows	Site	Provide suitable habitat for a range of species.	Damage during works.
Open standing water (Ditch)	Site	Widespread and common habitat.	Pollution during works.
Scattered broadleaved trees	Site	Provide suitable habitat for a range of species.	Damage to trees during works.



Ecological Feature	Value	Justification for Value	Potential Impacts Without Mitigation
Bats (foraging and commuting)	Site	Small area of mostly low suitability habitat.	<p>Loss of a small area of low value foraging habitat is considered unlikely to have a significant impact on local bat populations. Further and more extensive suitable habitat in the local landscape.</p> <p>Artificial light spill onto surrounding habitats (trees, shrubs and hedgerows) could disturb foraging and commuting bats.</p>
Bats (roosting)	Unknown	<p>Tree group G1 had low suitability for roosting bats.</p> <p>Tree group G2 had negligible suitability for roosting bats.</p> <p>Scattered broadleaved trees in the south of the site could have features with suitability for use by roosting bats.</p>	<p>Removal of tree group G1 and scattered broadleaved trees could potentially kill or injure bats and destroy roosts.</p> <p>Artificial illumination of trees could result in disturbance and abandonment of roosts.</p>
Birds	Site	Small area of suitable foraging habitat. Trees, hedgerows and scrub provided suitable nesting habitat.	Damage/destruction of active nests if Leylandii trees (Tree Group G1 and G2) are felled during the nesting season (which is typically March until the end of August).
Badger	Site	Small area of foraging and dispersal habitat.	<p>Loss of a small area of suitable foraging habitat is considered unlikely to have a significant impact on the local population. Further and more extensive suitable habitat in the local landscape.</p> <p>Injury/death during construction.</p>
Other mammals	Site	Small area of foraging, refuge, and dispersal habitat for hedgehog.	<p>Loss of a small area of suitable foraging habitat is considered unlikely to have a significant impact on the local hedgehog population. Further and more extensive suitable habitat in the local landscape.</p> <p>Injury/death during construction.</p>



Ecological Feature	Value	Justification for Value	Potential Impacts Without Mitigation
Amphibians	Site	Small area of suitable terrestrial habitat on the site.	Loss of a small area of suitable terrestrial habitat is considered unlikely to have a significant impact on local amphibian populations. Further and more extensive suitable habitat in the local landscape. Injury/death during site clearance and construction.
Reptiles	Site	Small area of suitable habitat on the site.	Loss of a small area of suitable habitat is considered unlikely to have a significant impact on local reptile populations. Further and more extensive suitable habitat in the local landscape. Injury/death during site clearance and construction.
Invertebrates	Site	Small area of suitable habitat on the site, likely to be used by common and widespread species.	No significant impacts are anticipated. Further and more extensive suitable habitat in the local landscape.





## 6 Surveys, Mitigation and Enhancements

### 6.1 Surveys

6.1.1 From the proposed site plan (Appendix 1) it is understood that the scattered trees in the south of the site will be retained. However, if the scheme changes and any of these trees require removal then ground level tree assessments of trees which would be felled will be required to look for evidence of, and potential for, roosting bats. This survey can be undertaken at any time of year, but is best during the winter months (November – March inclusive) when leaves are absent.

### 6.2 Mitigation

6.2.1 The following mitigation must be implemented to avoid impacts on habitats and species.

#### Hedgerows

6.2.2 Where necessary, the retained hedgerows must be protected by maintaining a zone delimited by a temporary fence or barrier tape or using suitable ground protection at least 5 m from the hedgerow's central point. Where needed, this protection must be installed prior to works commencing and retained throughout the construction period.

#### Open Standing Water (Ditch)

6.2.3 To ensure that the ditch located to the south of the site is not polluted during site clearance and construction, good construction practices must be followed. This should include the use of silt fences or fibre bund (where necessary), careful storage of fuels and chemicals on an impervious base sited away from the stream, covering material stockpiles and minimising the amount of time the ground is left bare.

#### Scattered Broadleaved Trees

6.2.4 Where necessary, protect trees by erecting temporary fencing or barrier tape around the root protection area or using suitable ground protection in accordance with BS5387 - trees in relation to design, demolition and construction (BSI, 2012). The root protection area should be calculated as 12 times the tree stem diameter, unless otherwise advised by an arboricultural specialist. Where needed, this must be installed prior to works commencing and retained throughout the construction period.

#### Bats

6.2.5 Tree group G1 has low suitability for roosting bats and so must be soft felled as follows:

- The trees must either be cut into sections, or cut at the base, and gently lowered to the ground.
- Any cavities or crevices must not be cut through.
- Cut sections must be left on the ground, with openings clear, for at least 24 hours.



- If bats are found at any time during felling works, works must stop immediately and an ecologist contacted immediately for advice.

6.2.6 Avoid artificial light spill onto scattered broadleaved trees and scrub. It is recommended that external artificial lights are not installed on the southern or western elevations of the proposed property, which face towards the trees and scrub. Any other external artificial lighting should be kept to a minimum and warm-white (long wavelength, not UV) LED lights used, and motion sensors on short-duration timers and high motion threshold fitted (e.g. so that moths do not set them off).

#### Birds

6.2.7 Remove *Leylandii* trees (Tree Groups G1 and G2) outside of the nesting season (which is generally March until the end of August), or they must be checked for active nests by an ecologist immediately before felling starts; if active nests were then found these would have to be left undisturbed until the young had fledged.

#### Badger & Other Mammals

6.2.8 During construction any excavations must either be covered overnight to prevent badgers, hedgehogs, and other animals falling in and becoming trapped, or a ramp at least 40 cm wide must be installed within excavations, with an angle no steeper than 40 degrees, to enable animals to escape. Excavations must be checked every morning to ensure that there are no trapped animals, and any present must either be left to escape by their own volition (badgers) or moved carefully out of the works area using a suitable container. Any open pipework larger than 100 mm outside diameter must be capped overnight to prevent animals from becoming trapped.

6.2.9 If fence boundaries are to be installed around the new curtilage then it is recommended that gaps at least 130 x 130 mm in size are provided at the base of each boundary to ensure that hedgehogs can continue to freely move through the landscape.

#### Amphibians & Reptiles

6.2.10 Implement RAMs during works, as follows:

- During construction, store building material on pallets or hardstanding to deter amphibians and reptiles from sheltering underneath. All waste must be stored in skips or containers and not in piles on the ground.
- Any excavations must be covered overnight, or a ramp installed with an angle no steeper than 40 degrees, to enable animals to escape. Any open pipework must be capped overnight. Excavations must be checked every morning to ensure there are no trapped amphibians and reptiles; any animals present must be moved outside of the works area by gloved hand or using a suitable container.
- In the unlikely event that a great crested newt is found at any time during works then works must stop immediately and an ecologist must be contacted. A guide to newt identification is provided in Appendix 5, and this must be displayed on the site for contractors to see.



## 6.3 Biodiversity Enhancements

- 6.3.1 Under the Environment Act 2021, all new planning applications (other than small sites<sup>1</sup>) will have to provide at least 10 % biodiversity net gain (BNG) from January 2024. BNG will be required for small sites from April 2024. BNG will be measured using Defra’s biodiversity metric.
- 6.3.2 In line with the NPPF and local planning policy, details of opportunities to permit biodiversity enhancements are provided in Table 6-1.

Table 6-1: Opportunities for biodiversity enhancements

Opportunity	Details
Provision of bird nest boxes	<p>One or more nest boxes could be installed on the external elevations of the proposed building. Ideally these should be integrated boxes which are built into the walls (e.g. Vivara Pro WoodStone House Sparrow Nest Box, Woodstone Build-in Open Nest Box, Schwegler Brick Nest Boxes).</p> <p>Alternatively, boxes could be mounted on the external walls (e.g. Vivara Pro Seville 28 mm or 32 mm WoodStone nest box, Vivara Pro WoodStone house martin nest) or on trees (e.g. 1B Schwegler bird box, Vivara Pro Seville 32mm WoodStone nest box, 2GR Schwegler nest box).</p> <p>Nest boxes must be installed 3 – 4 m above ground level, and ideally face between the north and east to avoid direct sunlight and prevailing wind and rain. Birds must have a clear flight path to and from the boxes.</p>
Provision of bat boxes	<p>One or more bat boxes could be installed on or within the external elevations of the proposed building. Ideally these should be integrated boxes which are built into the walls (e.g. 1FR Schwegler bat tube, Vivara Pro Build-in Woodstone bat tube, Ibstock Enclosed bat box).</p> <p>Alternatively, boxes could be mounted on the external walls (e.g. Beaumaris Woodstone bat box, 1FF Schwegler bat box) or on trees (e.g. Low Profile WoodStone bat box, 1FF Schwegler bat box, Vivara Pro WoodStone bat box).</p> <p>Bat boxes must be installed at least 3 – 4 m above ground level, ideally facing to the south, south-west and/or south-east, located away from windows and other artificial light sources, and with a clear flight path to and from the entrance.</p>
Provision of hedgehog nest boxes	<p>One or more hedgehog nest boxes could be installed in sheltered areas to provide permanent nesting opportunities for hedgehogs.</p>
Provision of invertebrate habitat	<p>One or more bee bricks could be incorporated into the external elevations of the proposed building to provide additional opportunities for invertebrates. Bee bricks should be located at least 1 m above ground level on a south-facing wall.</p> <p>Additionally, one or more invertebrate hotels could be installed within the garden area.</p>
Native tree and shrub planting	<p>New tree and shrub planting utilising native species of local provenance could be carried out on the site, which would provide suitable habitat for a range of species.</p>

<sup>1</sup> Small sites are defined for the purpose of the BNG exemption as:

(i) For residential: where the number of dwellings to be provided is between one and nine inclusive on a site having an area of less than one hectare, or where the number of dwellings to be provided is not known, a site area of less than 0.5 hectares.

(ii) For non-residential: where the floor space to be created is less than 1,000 square metres OR where the site area is less than one hectare.



## 7 Conclusions

- 7.1.1 It is proposed to erect a residential dwelling on the site, with associated landscaping. Refer to Appendix 1 for the proposed site plan, which is the scheme considered in this report. The proposals would primarily impact developed and bare ground, and scattered broadleaved trees and scrub would be retained. It is proposed to fell *Leylandii* trees in the north of the site.
- 7.1.2 The proposed development would not impact any statutory designated sites or ecologically important or protected habitats. A *Leylandii* tree group (Tree Group G1) must be soft felled. No significant impacts on protected or notable species are considered likely if the mitigation measures provided in this report are implemented.
- 7.1.3 A summary of potential impacts which could arise from the proposed development and details of required mitigation are provided in Table 7-1.

**Table 7-1: Summary of potential impacts and required mitigation**

<b>Ecological Feature</b>	<b>Potential Impacts without Mitigation</b> (refer to Section 5)	<b>Required Mitigation</b> (refer to Section 6.2)
Hedgerows	Damage during works.	Protect hedgerows during works, where necessary.
Open standing water (Ditch)	Pollution during site clearance and construction.	Implement good construction practices during site clearance and construction.
Scattered broadleaved trees	Damage to trees during works.	Protect trees during works, where necessary.
Bats	Artificial illumination of scattered broadleaved trees could result in disturbance and abandonment of roosts.	<b>Soft fell Tree Group G1 (<i>Leylandii</i>).</b> Avoid artificial light spill onto scattered broadleaved trees.
Birds	Damage/destruction of active nests if <i>Leylandii</i> trees (Tree Group G1 and G2) are felled during the nesting season (which is typically March until the end of August).	Removal of <i>Leylandii</i> trees (Tree Group G1 and G2) must be undertaken outside of the nesting season or they must be checked for active nests by an ecologist immediately before felling starts; if active nests were then found to be present these would have to be left undisturbed until the young had fledged.
Badger & other mammals	Injury/death if badgers are trapped in any open excavations or open pipework during construction.	Cover excavations or provide a ramp overnight and cap any open pipework overnight.
Amphibians & reptiles	Injury/death during site clearance and construction.	Implement RAMs during site clearance and construction to avoid injury/death.



## 8 References

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**CIEEM (2016).** *UK Guidelines for Accessing and Using Biodiversity Data.* Chartered Institute of Ecology and Environmental Management, Winchester.

**CIEEM (2017a).** *Guidelines for Preliminary Ecological Appraisal - Second Edition.* Chartered Institute of Ecology and Environmental Management, Winchester.

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**Collins, J. (2023).** *Bat Surveys for Professional Ecologists - Good Practice Guidelines, 4th edition.* Bat Conservation Trust, London.

**Natural England (2015).** *Method Statement for Great Crested Newt Mitigation.* [https://www.gov.uk/government/uploads/system/uploads/attachmentatachment\\_data/file/494444/gcn-method-statement.xlsm](https://www.gov.uk/government/uploads/system/uploads/attachmentatachment_data/file/494444/gcn-method-statement.xlsm)

**UKHab Ltd (2023).** *UK Habitat Classification Version 2.0.* Available at <https://www.ukhab.org/>



## 9 Figures

Figure 1 – Site Location Map

Figure 2 – UK Habitat Classification Plan

Figure 3 – Waterbody Location Map



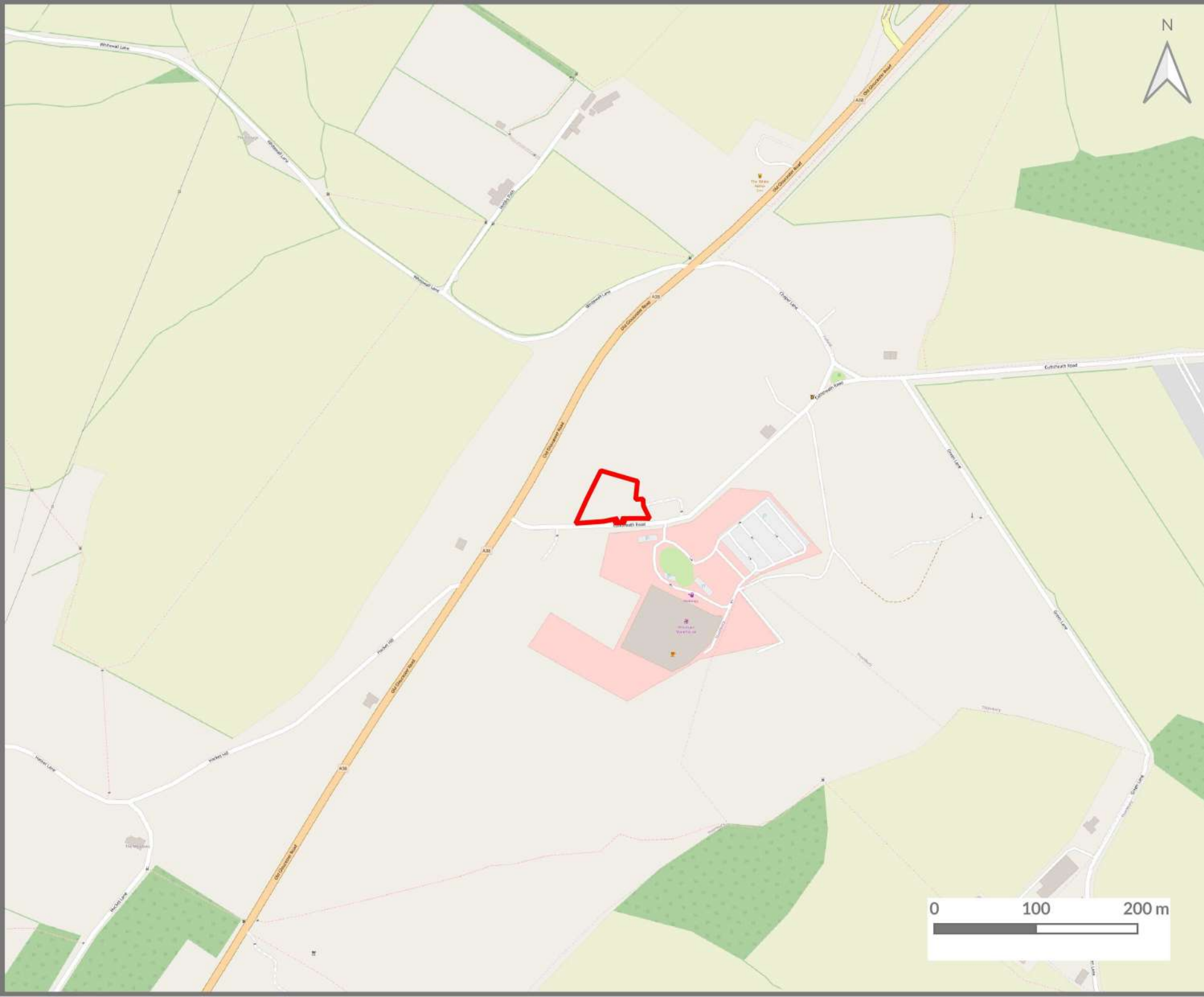
Figure 1 -  
Site Location Map  
Land at Buckover,  
Milbury Heath,  
Gloucestershire,  
GL12 8QN

 Site boundary

Contains Open Street Map data ©  
2023.

Date:	27/09/2023
Drawn by:	Joseph Wilkie
Checked by:	Robert Dunn

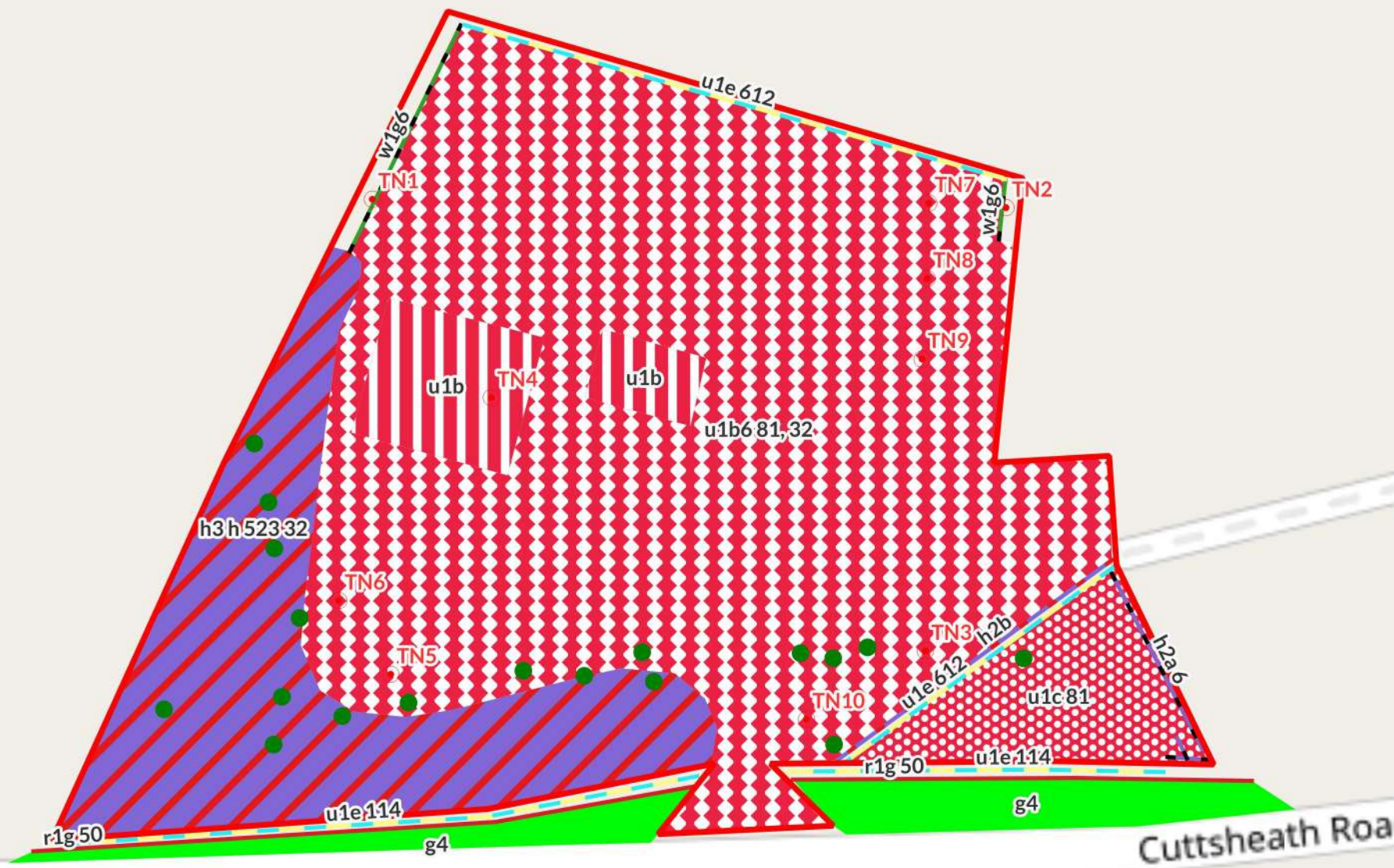
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**Figure 2 - UK Habitats Classification Plan**  
Land at Buckover, Milbury Heath, Gloucestershire, GL12 8QN



- g4 - modified grassland
- h3h - mixed scrub
- u1b - developed land, sealed surface
- u1b6 - other developed land
- u1c - artificial unvegetated unsealed surface
- h2a6 - other native hedgerow
- h2b - non-native and ornamental hedgerow
- w1g6 - line of trees
- u1e - built linear feature
- r1g - other standing water
- Scattered Broadleaved Trees
- Target Notes
- Site boundary

**Secondary Codes**  
32 - Scattered trees  
50 - Ditch  
81 - Ruderal/ephemeral  
114 - Dry stone wall  
523 - Non-native  
612 - Fence  
Contains Open Street Map data © 2023.

Date:	27/09/2023
Drawn by:	Joseph Wilkie
Checked by:	Robert Dunn

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Figure 3 -  
Waterbody Location  
Map  
Land at Buckover,  
Milbury Heath,  
Gloucestershire,  
GL12 8QN

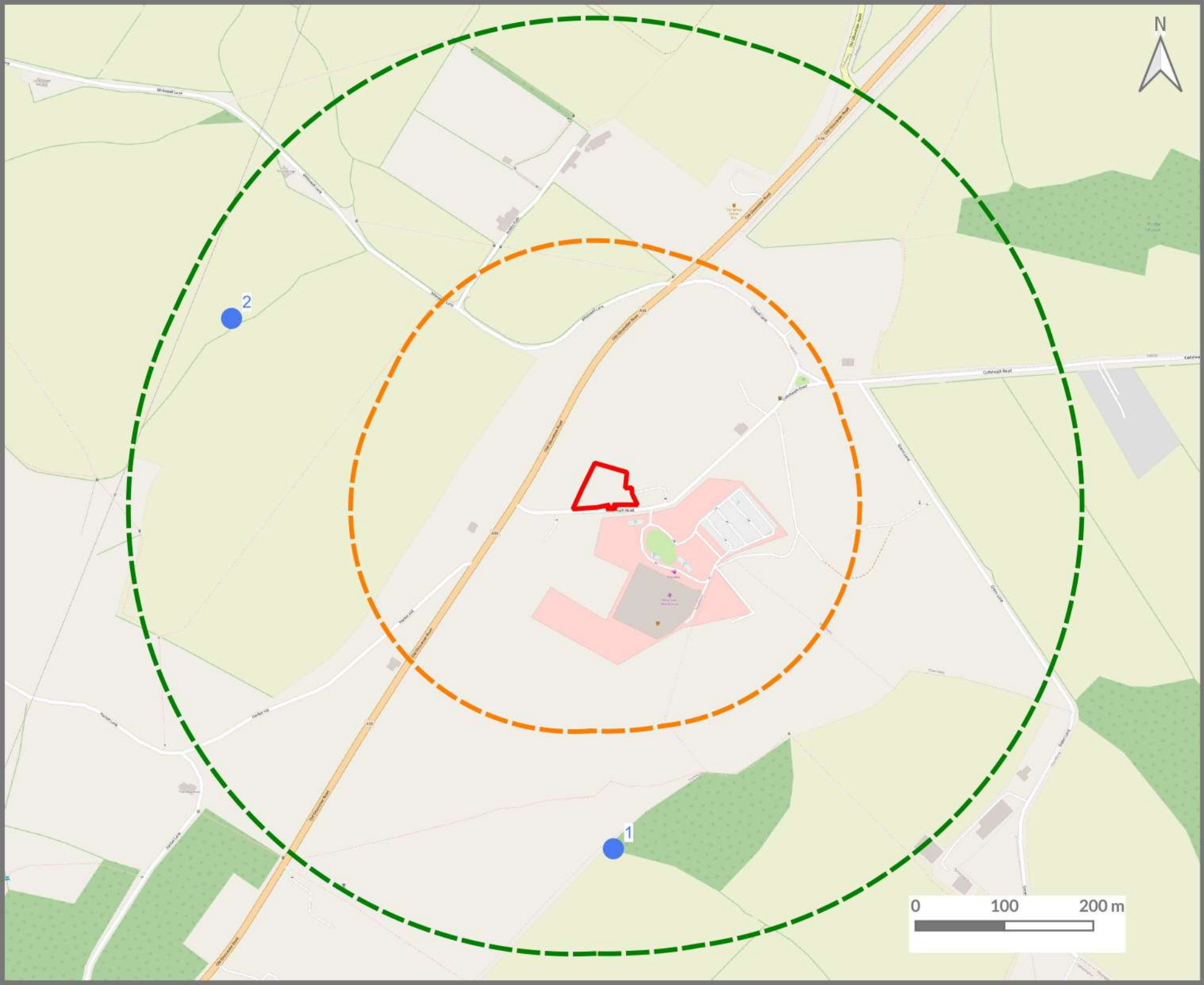
- Waterbodies
- 250 m Buffer
- 500 m Buffer
- Site boundary



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Drawn by:	Joseph Wilkie
Checked by:	Rachel Barber

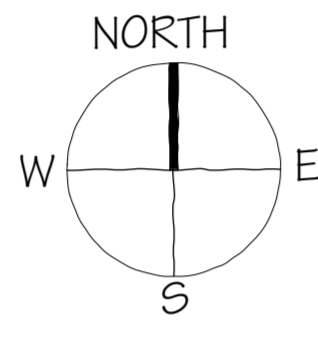
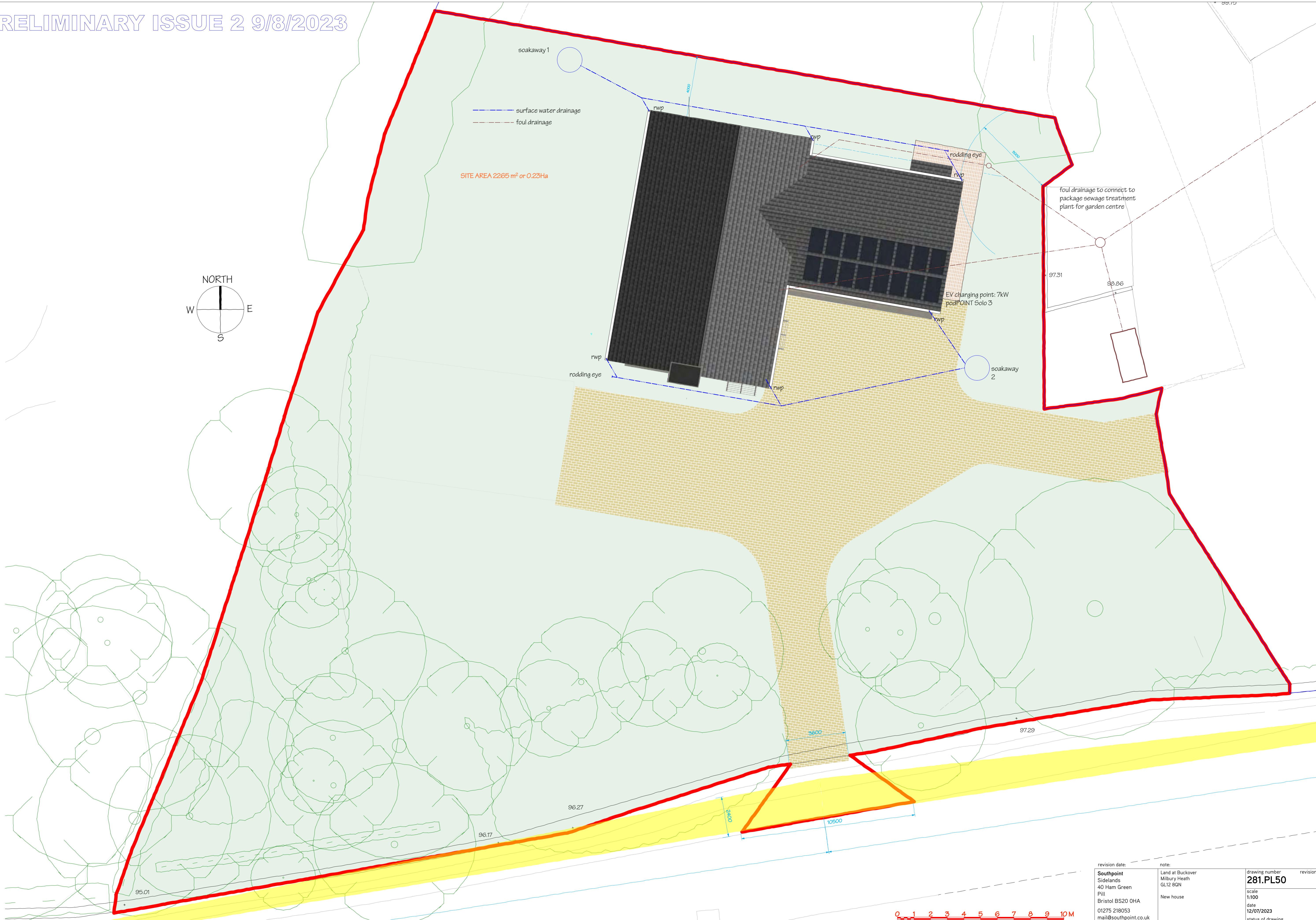
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revision date:	note:	drawing number	revision
Southpoint Sidelands 40 Ham Green Pill Bristol BS20 0HA 01275 218053 mail@southpoint.co.uk www.southpoint.co.uk	Land at Buckover Milbury Heath GL12 8QN New house	<b>281.PL50</b>	
scale 1:100		date 12/07/2023	status of drawing Planning Application only
<b>southpoint!</b>	Site and roof plan - proposed	This drawing © Southpoint 2023	
<small>Responsibility is not accepted for errors made by others in scaling from this drawing. All construction information should be taken from figured dimensions only. All dimensions to be checked on site. Notify architect of any discrepancies.</small>			






# Appendix 2 – Target Notes

Number	Description	Photographs
TN1	Tree Group G1.	
TN2	Tree Group G2.	
TN3	Wood pile with suitability for refuge by mammals, amphibians and reptiles.	





Number	Description	Photographs
TN4	Refuse pile with suitability for refuge by mammals, amphibians and reptiles.	
TN5	Wood pile with suitability for refuge by mammals, amphibians and reptiles.	
TN6	Wood pile with suitability for refuge by mammals, amphibians and reptiles.	





Number	Description	Photographs
TN7	Earth and rubble pile with suitability for refuge by amphibians and reptiles.	
TN8	Earth and rubble pile with suitability for refuge by amphibians and reptiles.	
TN9	Earth and rubble pile with suitability for refuge by amphibians and reptiles.	



Number	Description	Photographs
TN10	Rubble pile with suitability for refuge by amphibians and reptiles.	



# Appendix 3 – Preliminary Roost Assessment

## Habitat Assessment

With reference to Collins (2023), it is assessed that habitats within the local landscape have **moderate suitability** for foraging and commuting bats; see Table A3-1 for details of the assessment. The presence of suitable habitats in the local landscape indicates a higher likelihood that bats may roost in trees close to these habitats where suitable roosting opportunities are available.

Table A3-1: Habitat assessment results

Habitat and Environmental Context	Suitability Assessment Descriptions <sup>1</sup>		Description	Suitability <sup>1</sup>
General location	H	Rural	Rural location.	<b>H</b>
	M	Suburban/intensive farmland		
	L	Dense urban		
Foraging habitat within 50 m	H	Well connected, high quality habitat (e.g. broadleaved woodland, tree-lined watercourses, grazed parkland)	Residential gardens with trees, car parks bounded by tree lines and hedgerows.	<b>M</b>
	M	Connected habitat (e.g. trees, scrub, grassland, water)		
	L	Isolated habitat (e.g. lone tree, small scrub patch)		
Foraging habitat within 2 km	H	Well connected, high quality habitat (e.g. broadleaved woodland, tree-lined watercourses, grazed parkland)	Predominantly arable and pasture farmland bounded by hedgerows and tree lines with scattered areas of broadleaved woodland including ancient woodland and traditional orchards.	<b>M</b>
	M	Connected habitat (e.g. trees, scrub, grassland, water)		
	L	Isolated habitat (e.g. lone tree, small scrub patch)		
Foraging habitat within 2 - 6 km	H	Well connected, high quality habitat (e.g. broadleaved woodland, tree-lined watercourses, grazed parkland)	Further areas of woodland. Mostly farmland bounded by hedgerows and tree lines. Floodplain grazing marsh habitat.	<b>M</b>
	M	Connected habitat (e.g. trees, scrub, grassland, water)		
	L	Isolated habitat (e.g. lone tree, small scrub patch)		
Commuting habitat	H	Continuous, high quality, well connected habitat (e.g. river valleys, hedgerows, tree lines, woodland edge)	Continuous connectivity to foraging habitat via field boundary hedgerows and tree lines.	<b>M</b>
	M	Continuous connected habitat (e.g. tree lines, linked back gardens)		
	L	Isolated habitats (e.g. gappy hedgerow, unvegetated stream)		





Habitat and Environmental Context	Suitability Assessment Descriptions <sup>1</sup>	Description	Suitability <sup>1</sup>
		Features in the local landscape are assessed to have moderate suitability for foraging and commuting bats.	<b>MODERATE</b>

<sup>1</sup> H = High; M = Moderate; L = Low

### Tree Survey


Table A3-2: Tree survey results

General Photographs (location shown on Figure 2, Section 9)						
						
G1			G2			
Tree Group	Species	Description	Potential Roost Features (PRF)	Evidence of Bat Use	Roost Suitability	Justification
			Feature <sup>1</sup>			
G1	Leylandii	Mature tree line, extending further to the north.	Crevices between close growing branches running up the east side of stem (P1).	None	Low	Feature open on eastern elevation and so exposed to light and weather, reducing suitability for roosting bats.
G2	Leylandii	Mature tree line, extending further to the north.	None.	None	Negligible	No features present.

<sup>1</sup>see Appendix 4 for photograph.



## Appendix 4 – Tree Survey Photographs

Number	Description	Photograph
P1	Crevice between close growing branches running up the stem.	






# Appendix 5 – Newt Identification Guide

Newt Identification Guide (source: Amphibian and Reptile Conservation Trust)

### Smooth newt

Grows to about 10 cm. Both sexes have orange or yellow belly stripe, with rounded black spots. Male has undulating crest running from head to tail tip.



Male

Juvenile

Female

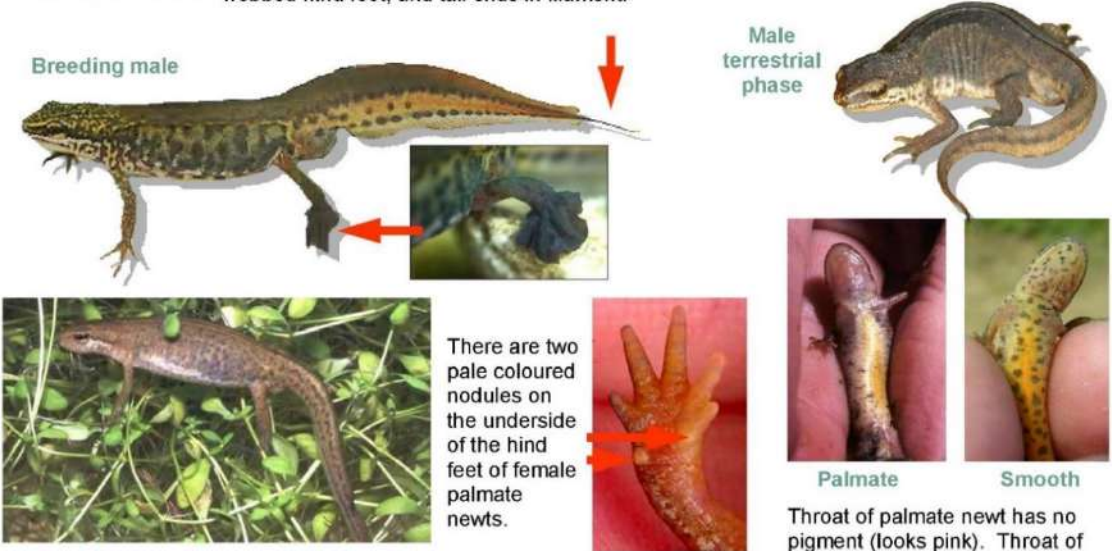
A widespread species which breeds in a variety of water bodies. Often found in garden ponds.

After the 'tadpole' stage, young newts live on land. Most likely to be found from late summer to autumn as they disperse from ponds.

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### Palmate newt

Grows to 9 cm. Breeding male has ridge running along back, rather than a crest. Dark, webbed hind feet, and tail ends in filament.



Breeding male

Male terrestrial phase

There are two pale coloured nodules on the underside of the hind feet of female palmate newts.

Female looks similar to smooth newt.

Palmate

Smooth

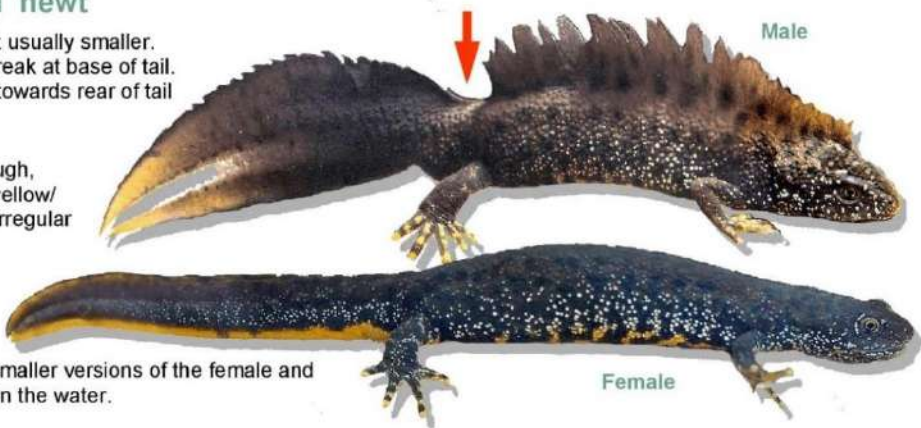
Throat of palmate newt has no pigment (looks pink). Throat of smooth newt is off-white and usually spotted.

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### Great crested newt

Grows to 16 cm, but usually smaller. Crest in male has break at base of tail. Silvery-white stripe towards rear of tail conspicuous.

Both sexes have rough, granular skins and yellow/orange bellies with irregular black spots.



Male

Female

Juveniles look like smaller versions of the female and may live on land or in the water.

Strictly protected species, requiring a licence to handle or disturb.

