

90A Wood Lane, Chippenham

Habitat Survey and Biodiversity Net Gain Assessment

On behalf of Horizon Homes

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1 Executive Summary

Avondale Ecology completed a Preliminary Ecological Appraisal including an ecological desk study and habitat survey for a proposed development of five dwellings at the site of a bungalow and surrounding gardens in August 2025. It is understood that bat roost assessments and surveys have been completed separately. The potential for the garden to support other protected and notable species was also noted. This report is intended specifically to inform Biodiversity Net Gain requirements. The BNG metric spreadsheet and condition sheets are appended.

The site comprises a residential bungalow which is currently occupied, surfaced driveway and parking area and surrounding mature gardens including mown lawn, scattered trees and hedgerows. *Cotoneaster horizontalis*, a non-native invasive species subject to legal controls, is present within the garden.

The garden habitats are likely to support nesting birds, foraging/commuting bats and hedgehog. There is also a low risk of presence of reptiles such as slow worm.

The site achieves a baseline of 0.3983 habitat units and 0.1750 hedgerow units. The proposals include retention of four of the eight small trees on site and planting of one new tree along the shared driveway. There is very limited scope for any additional habitat creation due to most of the site being within private ownership. This will result in a deficit of 0.2219 habitat units and 0.1925 hedgerow units which will need to be purchased from a habitat bank. Options are provided within the report.

Avoidance/Mitigation Measures

- Consider retention of the south-east boundary hedgerow or compensatory native hedgerow planting if at all possible.
- Appropriate removal and disposal of *Cotoneaster horizontalis*.
- Sensitive lighting design.
- Dense vegetation and building to be removed during September to February inclusive to avoid the main bird nesting season or immediately after a pre-commencement nesting bird check by an ecologist. Active bird nests plus a buffer to be retained.
- Two-stage clearance of habitats and dismantling of habitat piles by hand to protect reptiles and hedgehog.
- Works to cease immediately and an ecologist contacted for advice if any protected species such as are unexpectedly found or suspected to be present when an ecologist is not present on site. Hedgehog and common toad to be moved to safety if found.

Enhancement Measures

- Maximise benefits of soft landscaping including tree and native hedgerow creation and use of species-mixes to benefit invertebrates in particular.
- Bat and nesting bird provision to be incorporated into the new buildings in suitable locations.
- Hedgehog connectivity measures through solid boundaries.

Please be aware that a survey of this nature can only provide a snapshot of the site's ecological importance. Please note that the survey results and any recommendations contained within this report will remain valid for two years following the date of survey.

5. To complete an ecological impact assessment based on detailed design and current site conditions;
6. To detail requirements for a mitigation licence(s) or further surveys, if needed;
7. To update requirements for avoidance, mitigation and compensation measures and also suggest working practices to meet legislative and best practice requirements; and
8. To complete a biodiversity net gain assessment and to provide additional recommendations for species-specific opportunities.

2.3 Legislation

There are several different Acts of legislation and regulations which refer to the protection of wildlife of relevance to the site. The regulations of direct relevance to the site are summarised below.

There are 18 species of bats in the UK, all of which are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). They are also included in Schedule 2 of the Conservation of Habitats and Species Regulations 2017 (as amended). The Wildlife and Countryside Act, the “Habitats Regulations” and the CRow Act 2000 together make it an offence, among other things, to recklessly, intentionally or deliberately:

- Disturb roosting bats or obstruct access to their roosts;
- Disturb a significant number of bats (whether in a roost or not);
- Damage, destroy or obstruct access to bat roosts;
- Kill, injure or capture (or take) bats.

A bat roost is defined as “any structure or place (including trees) which any bat uses for shelter or protection”. Because bats tend to re-use the same roosts, legal opinion is that the roost is protected whether or not the bat(s) are present at the time. Great crested newt *Triturus cristatus*, including their terrestrial habitat and breeding ponds are similarly protected

Statutory protection is given to nesting birds in the UK under the Wildlife and Countryside Act (WCA) 1981 (as amended). It is an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition, it is an offence to intentionally or recklessly disturb species listed on Schedule 1 of the Act while they are nest building or at/ near a nest with eggs or young, or to disturb the dependent young of such a bird.

All British reptiles are protected from deliberate killing or injury under the Wildlife and Countryside Act 1981 (as amended).

Hedgehogs *Erinaceus europaeus* are not protected by law but are afforded due consideration in the planning process as a result of being listed on Section 41 of NERC Act 2006. Other Species of Conservation Concern which have also experienced significant recent declines are also listed on Section 41. This includes common toad *Bufo bufo*.

Non-native invasive species as listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) are subject to legal controls.

Habitats of Principal Importance (HPI) (formerly called 'priority habitat' under the UK BAP process) are afforded consideration in the planning process through Section 40 and 41 of the NERC Act 2006, although they are not given statutory protection in their own right.

Under the Environment Act 2021, all qualifying sites must achieve at least 10% biodiversity net gain as calculated through habitat, linear or river units in the Defra metric spreadsheet. More information is available at [Biodiversity net gain - GOV.UK \(www.gov.uk\)](https://www.gov.uk/guidance/biodiversity-net-gain).

Local planning policy also incorporates biodiversity considerations – including Wiltshire Local Plan Core Policy 50.

This is a brief summary of the legislation and is not to be regarded as a definitive legal opinion. When dealing with individual cases, the client is advised to consult the full texts of the relevant legislation and obtain further legal advice.

3 Methodology

3.1 Desk Study

The previous desk study including a Wiltshire and Swindon Biodiversity Records Centre (WSBRC) search from 2023 was reviewed as detailed in the Quantock Ecology report. Statutory designated sites within 1km were assessed using the Multi-Agency Geographic Information for the Countryside (magic.defra.gov.uk) mapping. MAGIC mapping was also assessed for statutory designated sites for highly mobile species such as bats and birds within 10km, and Habitats of Principal Importance as listed under the NERC Act 2006 (also known as 'priority habitats') within 1km. Aerial photographs and Ordnance Survey maps were also reviewed to assess the site in context of surrounding habitats. A search for Natural England protected species licences and eDNA records for great crested newt was completed within 1km using MAGIC maps.

3.2 Habitat Survey and Protected Species Audit

An Extended Phase 1 Habitat survey i.e. habitat survey and protected species audit was completed in accordance with best practice guidance *Guidelines for Ecological Impact Assessment in the UK and Ireland* (CIEEM, 2024) and *Handbook for Phase 1 Habitat Survey* (JNCC, 2010) on 21st August 2025. Vegetation type, structure and dominant species were noted. Types of habitat present were also assessed using UK Habitat Code classifications (V2, 2023). The presence of any invasive species subject to legal controls was recorded. The habitats were also assessed for their potential, and any evidence, to support legally protected or otherwise notable flora and fauna such as roosting bats, badger, reptiles and nesting birds. It is understood that bat surveys of the building have already been completed. Botanical nomenclature in this report follows that laid out by Stace (2010). The survey was completed by Sarah Dale MCIEEM, an experienced ecologist and Natural England licensed bat, great crested newt and hazel dormouse ecologist with over nineteen years' professional practice.

3.3 Biodiversity Net Gain Metric

A Biodiversity Net Gain assessment was completed following statutory Defra methodology as set out in *The Small Sites (Statutory) Metric: User Guide* (Defra, July 2025). Habitats were assessed using *UK Habitat Classification* methodology (as above). Habitat areas were mapped and then measured. In general, a minimum mappable unit of 25m² was used in accordance with UK Hab guidance. Trees over 7.5cm diameter at breast height are classified as individual trees.

3.4 Constraints

The survey was completed at an optimal time of year for botanical identification. The whole of the garden was accessible.

Wildlife use habitats in a dynamic manner and use may change from year to year or between different seasons. Wildlife can also colonise new areas, and surveys only provide a snapshot of use.

The biodiversity net gain calculations are based on areas calculated within qGIS using a georeferenced base map. This is only an estimate based on best available data. Biodiversity net gain is an iterative process and the calculations will need to be updated if the proposals change.

4 Results

4.1 Desk Study

4.1.1. Designated Sites

There is one statutory designated site for nature conservation within 1km: Mortimore's Wood Local Nature Reserve (LNR) lies 1km south-west. The LNR includes habitats such as woodland, woodland edge and river bank. The site does not meet Natural England's Site of Special Scientific Interest (SSSI) Impact Risk Zone criteria.

There are two locally designated wildlife sites within 1km;

- River Avon: designated for riparian and associated habitats.
- Baydons Meadow Woodland Trust Reserve: A hay meadow with associated habitats.

The designated wildlife sites are a sufficient distance from the proposals, and separated from the site by existing development, and as such are unlikely to be impacted.

There are no statutory designated sites for highly-mobile species of relevance to the site (e.g. horseshoe bats) within 10km.

The closest Habitat of Principal Importance/priority habitat shown on MAGIC mapping is an area of floodplain grazing marsh approximately 465m east.

4.1.2 Protected and Notable Species Records

There are three recent Natural England bat mitigation licences within 1km for common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, lesser horseshoe *Rhinolophus hipposideros* and serotine *Eptesicus serotinus* bats. The closest is 460m from the site. Additional records for brown long-eared *Plecotus auritus*, Daubenton's *Myotis daubentonii*, noctule *Nyctalus noctula*, barbastelle *Barbastella barbastellus* and whiskered bats *Myotis mystacinus* were recorded within 1km.

Other mammals including otter *Lutra lutra*, water vole *Arvicola amphibius*, hedgehog *Erinaceus europaeus* and badger *Meles meles* have also been recorded within 1km.

Reptiles are known to be present in gardens in the area, with records for grass snake *Natrix helvetica* and slow worm *Anguis fragilis* within 1km.

There are no great crested newt *Triturus cristatus* records on MAGIC mapping within 1km of the site on MAGIC or within the previous desk study. There are no ponds shown on Ordnance Survey mapping within 250m, although unmapped garden ponds are likely to be present.

There are numerous nearby records for bird species including Birds of Conservation Concern (RSPB, 2021) within Chippenham. This includes red and amber list species, which have been subject to recent declines, such as house sparrow *Passer domesticus* and starling *Sturnus vulgaris*. There are

swift *Apus apus* records within 1km (as shown on RSPB Swift Mapper swiftmapper.org.uk), including a nearby nesting site along London Road.

4.2 Site Description

The small site of approximately 0.1 hectares comprises an occupied bungalow surrounded by mature gardens with mown lawn, hedgerows and scattered trees. The site is situated within the urban area of Chippenham surrounded with residential housing, with Charter Primary School to the south.

4.3 Habitats

Photographs of the site are provided in Appendix A. A pre-development habitat map is provided in Figure 2. Habitats on site are described below.

4.3.1 Developed Land, Sealed Surface including Building (u1b, u1b5)

There is a bungalow, constructed of brick/block with areas of intact render. The roof is covered with concrete interlocking tiles. A Preliminary Bat Roost Assessment and detailed building assessment was not completed as it is understood that separate bat surveys have been completed. There is also a surfaced driveway and parking area.

4.3.2 Vegetated Garden (u1, 828)

Most of the site comprises mature vegetated garden. There are areas of frequently and less frequently mown lawn. Frequently mown areas had a sward height of less than 3cm. There was an area of less frequently mown lawn in the north-east corner with a sward of up to 70cm in height at the time of the survey. There is relatively low species diversity, with grasses dominant. Species present include Yorkshire fog *Holcus lanatus*, creeping bent *Agrostis stolonifera*, perennial ryegrass *Lolium perenne*, false oat grass *Arrhenatherum elatius*, cock's-foot *Dactylis glomerata* and crested dogstail *Cynosurus cristatus*. Herbaceous species include yarrow *Achillea millefolium*, dandelion *Taraxacum* agg., self-heal *Prunella vulgaris* and creeping buttercup *Ranunculus repens*.

There are scattered ornamental shrubs including lilac *Syringa* sp., buddleia *Buddleja davidii*, pyracantha *Pyracantha* sp., holly *Ilex aquifolium*, pampas grass *Cortaderia selloana* and small areas of *Cotoneaster horizontalis* to the front. The latter is a non-native, invasive species subject to legal controls under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). There was also colonising horsetail *Equisetum arvense* in the front garden. This is an invasive species, but is not subject to legal controls. There was also colonising bramble *Rubus fruticosus* and dogrose *Rosa canina* in less frequently managed areas of the garden.

4.3.3 Ornamental Hedge (h2b) and Native Hedgerow (h2a)

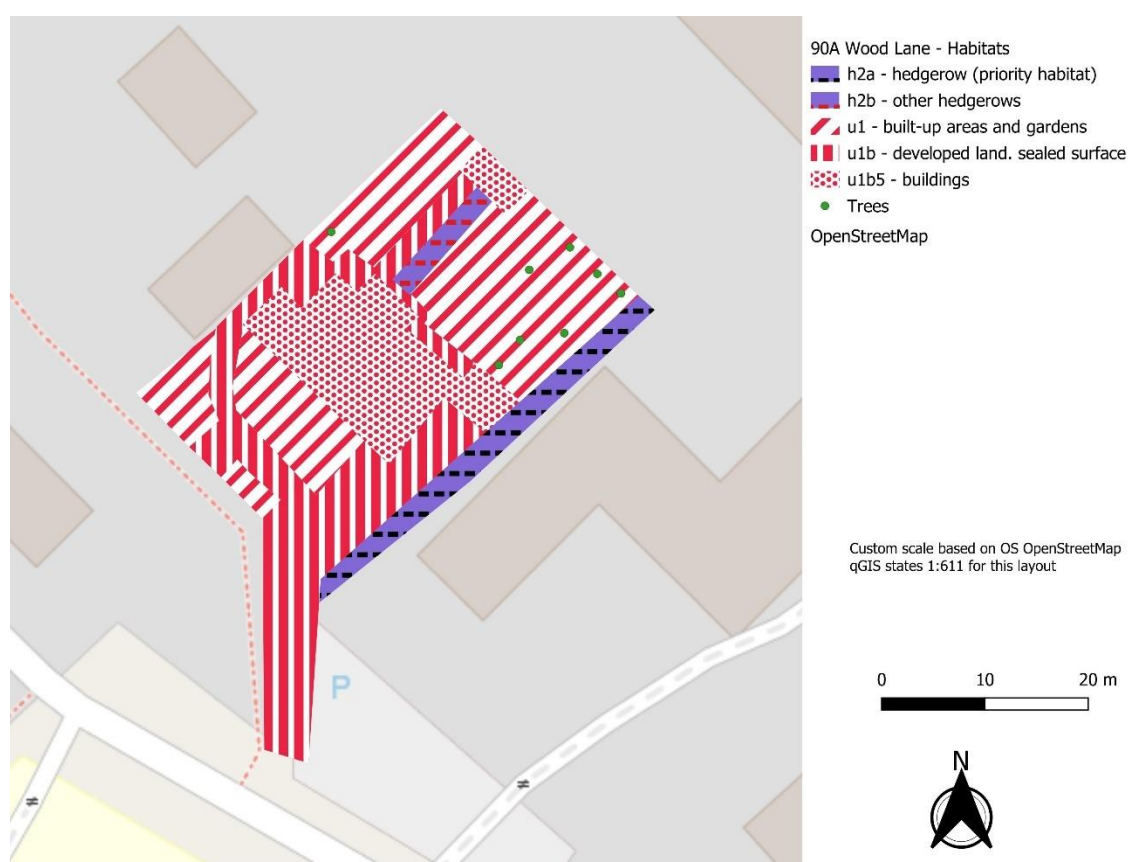
There is a short length of mature conifer hedge (11m long) in the centre of the rear garden. There is a dense and mature mixed native and ornamental hedgerow along the south-west boundary. Species include holly, beech *Fagus sylvatica*, hawthorn *Crataegus monogyna*, buddleia, dogwood *Cornus*

sanguinea and blackthorn *Prunus spinosa*. The hedgerow is 41m in length. All native hedgerows qualify as Habitats of Principal Importance under Section 41 of the NERC Act 2006.

4.3.4 Scattered Trees (32)

There are eight scattered trees of over 7.5cm diameter at breast height within the garden. All are to the rear of the building. Species include cherry plum *Prunus cerasifera*, wild cherry *Prunus avium*, apple *Malus* sp. and yew *Taxus baccata* trees. Some of the trees are obviously diseased and in relatively poor condition. Four of the trees towards the eastern corner will be retained within the proposals.

Figure 2 Pre-Development Habitat Plan



4.4 Protected and Notable Species

4.4.1 Bat Species

The building was not subject to a Preliminary Bat Roost Assessment, but appeared likely to have negligible or low bat roost potential. Nearby buildings may support roosting bats. Occasional noctule,

common pipistrelle and soprano pipistrelle bat passes were recorded in emergence surveys of adjacent properties by IES Consulting in July 2024.

The garden habitats are likely to support foraging and commuting bat species. The rear garden is likely to remain dark at night and may support light-sensitive bat species. There might be light spill from street lights to the south.

4.4.2 Other Mammals

No evidence of sett building or use of the site by badgers was observed. There is negligible potential for hazel dormouse *Muscardinus avellanarius* to be present and impacted due to lack of nearby records and no connectivity to suitable habitat for the species. Hedgehog may be present, especially sheltering within dense shrubs or habitats within the garden. There is no habitat on site for other protected or notable mammal species.

4.4.3 Nesting Birds

The building appears to be unlikely to be used by nesting birds as it is in a fairly good state of repair. The dense vegetation including trees, shrubs and hedgerows within the garden is highly likely to be used by nesting birds, particularly during the peak nesting season of March to August.

4.4.4 Reptile Species

The garden is suitable for use by individual or low numbers of slow worm and grass snake around the fringes of dense vegetation.

4.4.5 Amphibian Species

There are no ponds shown on Ordnance Survey mapping within 250m, although unmapped garden ponds may be present. Habitat on site is suitable for sheltering amphibians. Great crested newt are considered likely to be absent given lack of nearby records and potential breeding ponds. Other amphibian species, including the notable species common toad, may be present.

4.4.6 Invertebrate Species

Some invertebrate species are likely to use the site, but there are no habitats which would be likely to support notable invertebrate species.

4.4.7 Other Protected and Notable Species

There is no habitat likely to be suitable for other protected or notable species.

4.5 Biodiversity Net Gain Assessment

The site qualifies under the Environment Act 2021 for requirements for at least 10% measurable biodiversity net gain to be demonstrated. An assessment has been completed based on the mapped habitats within qGIS. The pre-development habitat areas are shown in Figure 2 and the BNG metric spreadsheet is appended. The BNG calculations will need to be revised if soft landscaping plans and specifications are revised.

The calculations are based on Proposed Site Plan Drawing 19.016 - 002C and areas of habitat as shown in Figure 2. As stated in Section 3.4, areas on the GIS plan are estimates. The site achieves a baseline of 0.3983 habitat units and 0.1750 hedgerow units.

Soft landscaping proposals include:

- Retention of four trees and removal of four trees.
- Vegetated gardens to the front and rear.
- Planting of new trees, including one in a shared area to the front which counts towards Biodiversity Net Gain.

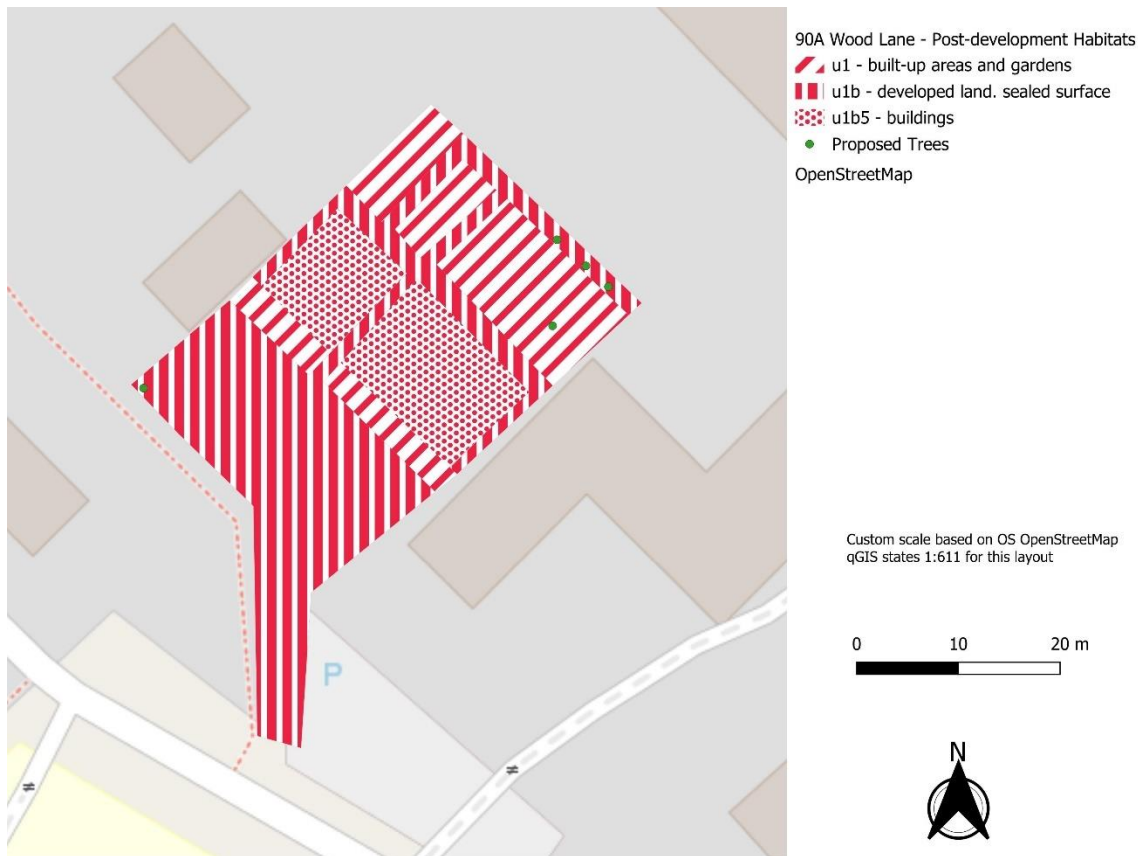
The soft landscaping proposals will achieve 0.2162 habitat units (45.71% net loss) and 0 hedgerow units (0% net gain). Habitat retention and creation measures will need to be retained for at least a 30-year period.

Without a significant revision of the layout of the site, it will not be possible to achieve 10%+ Biodiversity Net Gain within the site. The deficit of 0.2219 habitat units and 0.1925 hedgerow units (unless the hedgerow can be retained and enhanced) will need to be purchased from a habitat bank. Options include:

- Contacting to the Local Planning Authority to see if they are aware of any local habitat banks or landowners who would be interested in selling units.
- <https://www.harthamparkestate.co.uk/>
- [Bath and North East Somerset BNG - Eco LiteHome - Natural Cap - Nutrient Credits](#) : They offer BNG as well as nutrient credits
- [SomersetBNG](#)
- [Home - Wild Heritage Biodiversity](#)
- [Biodiversity Net Gain - Offsite units available](#)
- Large-scale habitat banks such as Environment Bank, Farm Farm or Wild Capital.
- Purchasing statutory credits – see [Statutory biodiversity credits - GOV.UK](#).

Figure 3

Post-Development Habitat Plan



5 Impacts and Recommendations

The impact assessment is based on Proposed Site Plan Drawing 19.016 - 002C. This includes demolition of the building and site clearance to facilitate construction of five dwellings with associated access and landscaping. If proposals change or if additional enabling works are required, an updated ecological impact assessment will need to be completed.

5.1 Avoidance and Mitigation Measures

5.1.1 Designated Sites and Habitats

There are no anticipated direct negative impacts on designated sites for nature conservation due to the distance from these sites and small scale of the proposed development. A 41m length of mixed hedgerow with is mostly native hedge, a Habitat of Principal Importance will be removed.

Cotoneaster horizontalis is a non-native invasive species subject to legal controls under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended). It is illegal to deliberately cause the spread of this species in the wild. The shrub will be removed during site clearance, with arisings either disposed of on-site (e.g. through burying or burning) or removed into a controlled waste stream. There will be no disposal via standard green waste schemes. It also recommended that horsetail is managed in a similar way.

5.1.2 Bat Species

Wherever possible, best practice should be followed including designing external lighting sensitively in accordance with *Bats and Artificial Lighting at Night* (ILP, 2023) to reduce light spill. Measures include:

- Only using external lighting where necessary for safety reasons;
- External lighting to be fitted with PIR sensors and short-duration timers where this is practical;
- Avoiding indiscriminate floodlighting and choosing downward-facing, wall-mounted directional fittings where possible or directional pole mounted fittings with hoods, baffles or shields; and
- Warmer light colours below 2700K to be used.

5.1.3 Nesting Birds

It is an offence to kill a wild bird or damage or destroy their nests or eggs under Section 1 of the Wildlife and Countryside Act 1981 (as amended). Dense habitats should be cleared during September to February inclusive to avoid the main bird nesting season. If this is not possible and demolition and clearance works are timed during March to August inclusive, a suitably qualified ecologist will need to complete a nesting bird check within 48 hours of removal or demolition. If any evidence of active bird's nests is found or suspected to be present, all activities must cease within 5m of the nest. Active bird's

nests plus the buffer would need to be retained and protected until chicks have fledged which can take up to six weeks. As it is highly likely that active nests will be present during the nesting season, seasonal timing of clearance is strongly recommended.

5.1.4 Reptiles

Reptiles are protected from deliberate killing or injury under the Wildlife and Countryside Act 1981 (as amended). To avoid potential harm to reptiles, the following methodology will be required:

- All vegetation to be cleared to no less than 10cm above ground level using hand tools including chainsaws and strimmers.
- A second stage cut to ground level to be completed during the reptile active season of late March to October inclusive with the site also cleared of any piles of debris and compost (by hand rather than by machinery) at the same time. The clearance will be completed sequentially from one end of the site to another to flush reptiles out of the area of works.
- If any reptiles/slow worms are found, the ecologist will be contacted for advice and a mitigation strategy devised. This may require additional ecological supervision and a receptor area to be set up.
- No vehicle access into the site under the site has been made unsuitable for reptiles.

5.1.5 Other Protected and Notable Species

If notable species such as hedgehog or common toad are discovered during works, they must be moved to safety into nearby suitable habitat. All trenches should be covered overnight or fitted with a mammal escape ramp (e.g. a scaffold board). If other protected species are unexpectedly found, an ecologist must be contacted for advice.

5.2 Enhancement Measures

5.2.1 Habitats

The quality of created habitats can vary widely. The exact planting specifications should be carefully considered to benefit a wide range of wildlife e.g. night-flying invertebrate prey of bat species. Planting of a new native hedgerow around the parking area should be considered, along with planting of night-scented climbing species and fruit trees.

5.2.2 Species-Specific Measures

Measures to benefit wildlife such as the following should also be considered:

- Hedgehog connectivity measures (13cm x 13cm) gaps to be installed in solid boundary features – as detailed in [Link your garden with a hedgehog highway](#).
- Features for nesting birds including house sparrow terraces and particularly swift nesting features to be incorporated on the existing or extended building (<https://www.swift-conservation.org/Nestboxes%26Attraction.htm> and [RSPB Sparrow Terrace Nest Box - RSPB Shop](#)). If appropriate to be included, swift nesting features should be sited at 4-5m+ above ground level with a suitable drop zone and nest boxes should be sited at 2m+

externally. All boxes should be sited in a location where it is unlikely to be disturbed or accessible to predators and ideally on a north facing elevation or out of direct sunlight as much as possible.

- Integrated features for roosting bats should be considered if appropriate locations are present. Options for bat roost creation include:
 - Roost feature in new soffit/fascias created by leaving 2-3cm access gaps or holes or installing a soffit bat box (see [Soffit Bat Box \(wildcare.co.uk\)](https://www.wildcare.co.uk)). Ideally, the soffit would be wood or rough-surfaced (i.e. not uPVC) for this option to be most effective;
 - Bat tubes such as Schwegler 1FR incorporated into the building fabric;
 - Bat bricks such as Ibstock brick or Habibat box incorporated into the building fabric;
 - Attached bat boxes such as Schwegler 2FE or Beaumaris woodstone boxes on the existing or extended building, although these often degrade more rapidly or become detached over time.

Bat roost features are usually installed at least 3-4m in height to maximise their chance of use and ideally installed on south/west elevations.

It is recommended that the location and specification of enhancement features are shown on a site plan with planning submissions, to evidence that national and local planning policy has been met.

To meet British Standard BS42021: Integral Nest Boxes, a ratio of one habitat feature per residential unit is recommended.

References

Amphibian and Reptile Groups of the UK (2010). *Great Crested Newt Habitat Suitability Index*. ARG UK Advice Note 5

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

Defra (2024). *Statutory Biodiversity Metric – User Guide*. Updated July 2025.

Institute of Ecology and Environmental Management (2018). *Guidelines for Preliminary Ecological Appraisal*. IEEM, Winchester. Available at www.ieem.net/docs/GPEA_web.pdf.

Institute of Lighting Professionals (2023). *Bats and Artificial Lighting at Night*.

JNCC (2010). *Handbook for Phase 1 habitat survey - a technique for environmental audit*.

RSPB (2021). *The Population Status of Birds in the UK - Birds of Conservation Concern 5*.

Appendices

Appendix A Site Photographs

	
A1 Front (south) elevation of bungalow and front garden	A2 Outbuilding in rear garden
	
A3 Rear garden, trees and native hedgerow	A4 Conifer hedge

Habitat Survey and Biodiversity Net Gain Assessment

	
A5 Parking area and native hedge	A6 Rear garden including native hedge
	
A7 Rear elevation and rear garden	A8 Tree within garden
	
A9 Variable heights of grassland within rear garden	A10 Yew tree

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A11 Front garden	