ECOLOGICAL ASSESSMENT OF:

25 LOXWOOD
EARLEY
RG6 5QZ

Client: Shivshankar Bhagat
Our reference: ECO3997
Report date: 22 January 2026
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1.0 Introduction

Survey and reporting

1.1 This report details the results of an Ecological Assessment (comprising an Extended Phase 1 Habitat & Protected Species Scoping Survey, and, Preliminary Bat Roost Assessment) of 25 Loxwood, Earley RG6 5QZ.

1.2 The survey, carried on 12 January 2026, was undertaken to inform a planning application for the site.

Application site

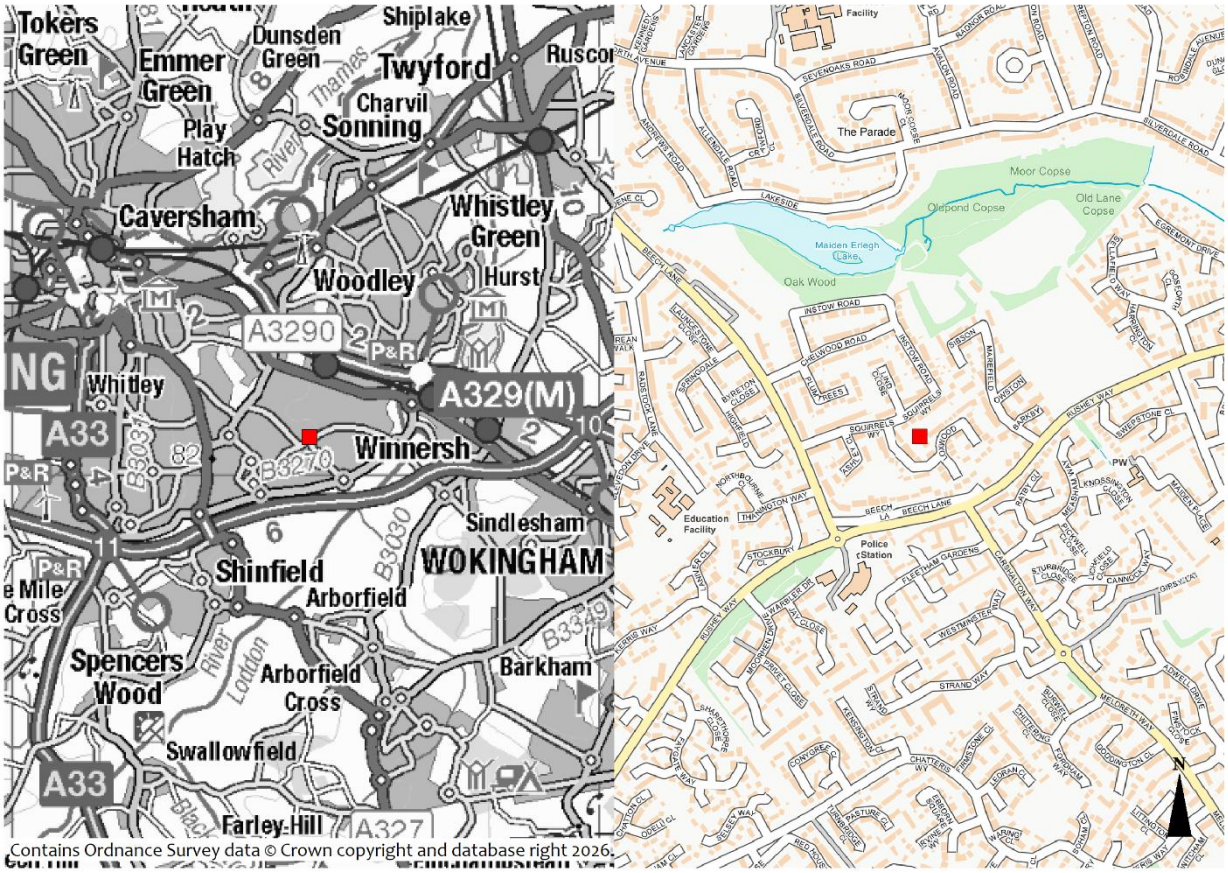
1.3 The application site is located midway along Loxwood, a residential cul-de-sac in Earley, south east of Reading (Ordnance Survey Grid Reference: SU7504570670, Figure 1).

1.4 It comprises a detached, one and two-storey house, detached single garage, driveway, and, front and rear gardens.

1.5 The total area of the application site is approximately 0.05 hectares.

1.6 The local planning authority is Wokingham Borough Council.

Figure 1 – Site location plan



Details of proposed works

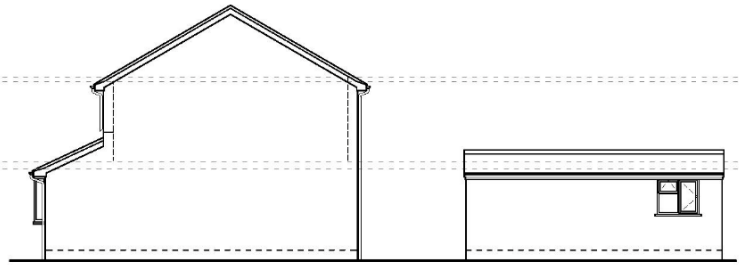
1.7 It is proposed to erect a single-storey, rear extension, which will connect to the garage (see Figure 2). The garage will be converted into habitable living space.

1.8 In addition, the loft will be converted into habitable accommodation, which will include raising the roof level, the installation of a rear dormer, and, installation of two roof lights on the front elevation.

Figure 2 – Existing and proposed elevations

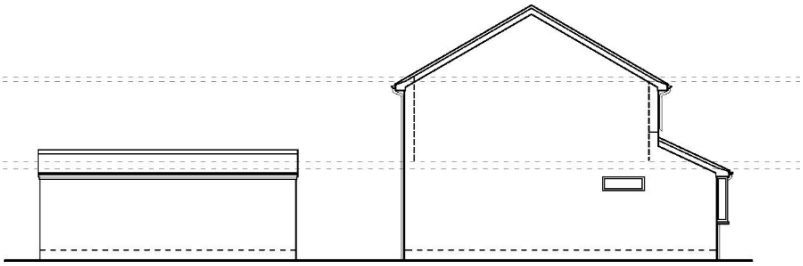
EXISTING

EXISTING FRONT ELEVATION



EXISTING SIDE ELEVATION

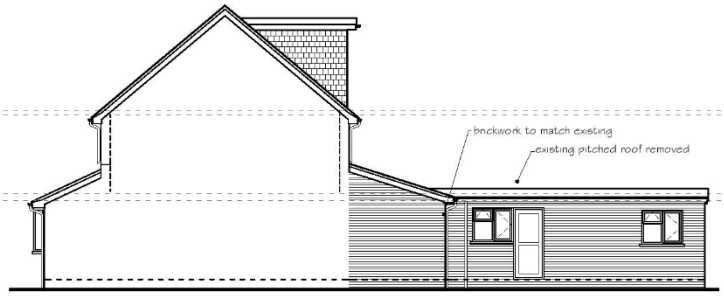
EXISTING REAR ELEVATION



EXISTING SIDE ELEVATION

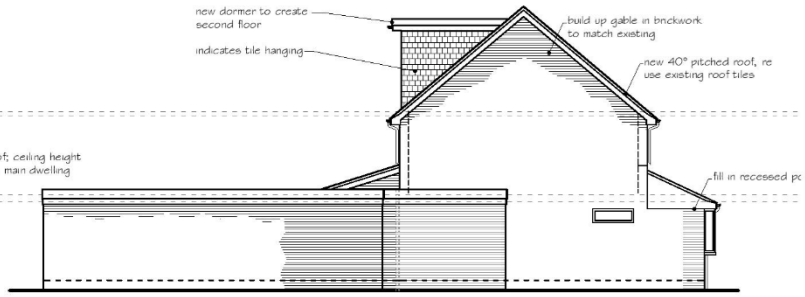
PROPOSED

PROPOSED FRONT ELEVATION



PROPOSED SIDE ELEVATION

PROPOSED REAR ELEVATION



PROPOSED SIDE ELEVATION

2.0 Methodology

Desk study

2.1 A desk study data search was undertaken for ecological data within the zone of influence of the survey area. This involved:

(1) Reviewing publicly available datasets and citations of statutory designated sites of importance for nature conservation, Natural England's Priority Habitat Inventory GIS dataset for England, and Natural England's Ancient Woodland Inventory for sites within the zone of influence of the survey area (considered to be a maximum of 1km in this case).

(2) Accessing species records on Natural England's MAGIC website[1].

(3) Studying aerial photographs and Ordnance Survey maps for features of interest (such as nearby ponds).

Extended Phase 1 Habitat and Protected Species Scoping Survey

2.2 An Extended Phase 1 Habitat and Protected Species Scoping Survey was undertaken. This comprised a walkover survey of the application site and the classification of habitats following the descriptions provided within the Joint Nature Conservancy Council 'Handbook for Phase 1 Habitat Survey' (NCC 1990, JNCC 1993).

2.3 An assessment of the site in terms of its suitability for notable or protected species was carried out and any features of note were described.

Bat survey

2.4 A bat survey was undertaken. This comprised:

Daytime Bat Walkover (DBW)

2.5 A survey to assess the suitability of habitats for bats to roost, commute and forage within and adjacent to the site (where accessible). Habitat suitability was assessed as per Table 1 below.

Preliminary Roost Assessment (PRA)

2.6 This survey consisted of a detailed search of the interior and exterior of the buildings looking for bats and/or evidence of bats including droppings (on walls and windowsills and in roof and loft spaces), rub or scratch marks, staining at potential roosts and exit holes, live or dead bats and features, such as raised or missing tiles, potentially suitable for use by roosting bats. Binoculars, an endoscope, a ladder and a high-powered torch were used as required.

2.7 The buildings were classified in terms of their suitability for use by roosting bats (see Table 2) and in accordance with the Bat Conservation Trust's Bat Survey Guidelines[2].

2.8 Classification was dependent on a number of factors including:

- Bats and/or signs of bats
- External and internal features potentially suitable for use by roosting bats (e.g. raised or missing tiles, gaps behind fascia boards)
- Setting
- Night time light levels
- Disturbance levels

1 https://magic.defra.gov.uk/

2 Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn) Bat Conservation Trust

- Proximity of suitable foraging habitat and flight-paths (e.g. ponds, streams, woodland, large gardens, hedgerows)

Surveyor details

2.9 The survey was undertaken by Ryan Davies BSc (Hons) ACIEEM (senior ecologist) and Zoe Maidment BSc (Hons) (assistant ecologist) of GS Ecology Ltd.

2.10 Ryan holds a Natural England WML A34 Level 2 bat survey licence, a Natural England great crested newt survey licence (WML-CL08), and is an associate member of the Chartered Institute of Ecology and Environmental Management with more than 10 years' experience as professional ecologist.

Constraints

2.11 There were no constraints to the survey.

Table 1 – Habitat suitability scale for potential flight-paths and foraging bats

	Potential Suitability	*Description*
Potential Suitability of potential flight-paths and foraging habitats	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.
	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.
	Low	Habitat that could be used by small numbers of bats as 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.
	Negligible[3]	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.
	None [Not suitable]	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (i.e. no habitats that provide continuous lines of shade/protection for flight-lines, or generate/shelter insect populations available to foraging bats).

3Negligible is defined as 'so small or unimportant as to be not worth considering, insignificant.' This category may be used where are places that a bat could roost or forage (due to one attribute) but it is unlikely that they actually would (due to another attribute)

Table 2 – Description of the categories used to assess a building's bat roost potential and the survey effort required to determine the likely presence or absence of bats

	Roost status	*Description*	*Survey effort required to determine the likely presence or absence of bats*
Bat Roost Potential *Status*	**Confirmed**	Bats or evidence of bats found.	Surveys would be required to establish the status of the roost. Generally, three dusk emergence surveys between May and September. Optimum period May – August (two surveys should be undertaken during the optimal period). Surveys should be carried out at least three weeks apart.
	High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions (For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance) and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.	Three dusk emergence surveys between May and September. Optimum period May – August. Two surveys should be undertaken during the optimal period. Surveys should be carried out at least three weeks apart.
	Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).	Two dusk emergence surveys, between May and September (one of the surveys needs to be carried out between May and the end of August). Surveys should be carried out at least three weeks apart.
	Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions 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).	One dusk emergence survey between May and the end of August (but only if features will be affected by the proposals).
	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.	No further surveys required.
	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).	No further surveys required.

3.0 Results

Weather conditions

3.1 Weather conditions during the survey were 10°C, 8/8ths cloud cover, wind at Beaufort Scale 2 and no rain.

Desk study

Statutory sites of importance for nature conservation

3.2 There is a single statutory site of importance for nature conservation within 1km of the application site - Maiden Erlegh Local Nature Reserve – located approximately 280m to the north. The reserve comprises a lake with surrounding woodland and grassland.

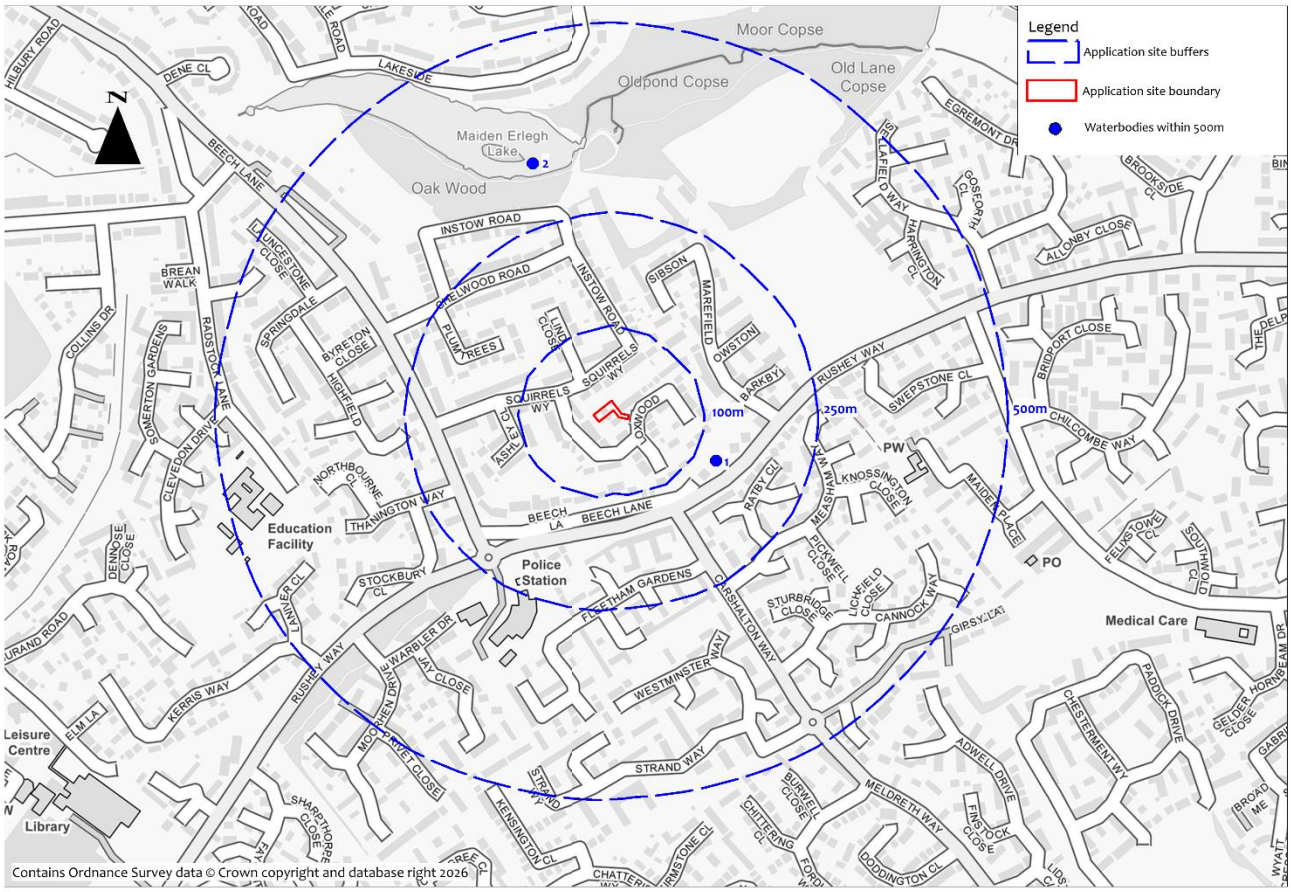
Ancient woodland

3.3 There are three areas of woodland listed on Natural England's Ancient Woodland Inventory within 1km of the application site. The nearest of these woodlands – "Oak Wood" is located approximately 270m north of the site, with the other woodlands situated 360m north ("Old Pond Copse") and 750m west ("Redhatch Copse").

Nearby ponds

3.4 There are two waterbodies shown on ordnance survey maps (1:25,000 scale) within 500m of the site (see Figure 3). The nearest of these - "Marefield Dew Pond" - is located approximately 140m south east of the site, with the other ("Maiden Erlegh Lake") situated approximately 320m north.

Figure 3 – Ponds within 500m of the application site



Great crested newt District Licence Zone

3.5 The NatureSpace "Impact Risk Map"[4] shows the site as within the "Amber" zone (defined as "*suitable habitat – great crested newts are likely to be present*").

Protected and notable species records

3.6 Within 2km of the site there are six records of licenses issued by Natural England for works affecting protected species on The MAGIC website. These are summarised in Table 3 below.

Table 3 – Summary of Natural England licence records within 2km of the application site

Distance and direction from the application site	Species affected	Breeding site	Year licence was issued
1.1km North East	Brown long-eared	Yes	2012
1.3km South East	Daubenton's bat and soprano pipistrelle	Yes	2020
1.4km South West	Brown long-eared and common pipistrelle	No	2011
1.6km North West	Common pipistrelle and soprano pipistrelle	No	2012
1.6km North West	Common pipistrelle and soprano pipistrelle	No	2014
1.8km North West	Brown long-eared	Yes	2010

Surrounding land use

3.7 The application site is located midway along Loxwood, a residential cul-de-sac in Earley, south east of Reading. Adjacent to the site, and further in all directions, are residential properties and their associated gardens with some trees. In places the gardens of these properties abut one another to form areas of continuous green space – notably to the south west (approx. 70m).

3.8 Approximately 140m south east is a small pond bound by woodland. Further south and south west, along Rushey Way, are numerous scattered trees and strips of woodland, the largest of which is approximately 260m south west.

3.9 There are a number of parks nearby, located approximately 200m north (Laurel Park), 250m north east (Laurel Park Recreational Ground), and 350m south east (Pickwell Playground). All of these are characterised by amenity grassland with scattered trees.

3.10 In addition, approximately 280m north lies Maiden Erlegh Local Nature Reserve, which comprises a lake bound by woodland.

3.11 Beyond to the west (approx. 450m) is Radstock Primary School and its associated grounds, which include amenity grassland playing fields bound by trees.

3.12 The habitats surrounding the site are therefore of predominantly 'moderate' suitability for commuting and foraging bats (see Table 1) with areas of higher suitability across the wider landscape.

Habitats within the application site

3.13 The application site comprises a detached, one and two-storey house, detached single garage, driveway, and, front and rear gardens.

3.14 A Phase 1 habitat map and associated target notes are provided in Appendix 1, and photographs provided in Appendix 2.

3.15 A brief description of each habitat is given below:

4 The "Impact Risk Map" is the accepted statutory guidance that Local Planning Authorities must take into account when considering the risk of development for great crested newts. https://naturespaceuk.com/district-licensing/impact-map/

3.16 **Buildings** – see preliminary bat roost assessment section below.

3.17 **Hardstanding** – Leading in from the south east of the site is a concrete driveway which continues along the south eastern elevation of the house to the front of the garage. In addition, there is a small, flagstone patio at the rear of the house and flagstone paved steps leading to the front door.

3.18 **Amenity grassland** – The front and rear gardens predominantly consist of short-cut and well-maintained amenity grassland lawns.

3.19 **Introduced shrub** – The front lawn is bound along its south western and north western edges by garden planting.

3.20 **Bare ground** – At the boundaries of the rear lawn there are shrub beds which were empty at the time of the survey and comprised bare ground.

3.21 **Ornamental hedging** – Along the south western boundary of the rear garden is a short section of ornamental Leyland cypress hedge.

Bats - Preliminary Roost Assessment

Main House

3.22 25 Loxwood is a detached, one and two storey house with cavity brick walls.

3.23 The main roof is pitched and clad with interlocking concrete tiles, which are in good condition and all tightly fitted, with no gaps. On the front elevation there is a single-storey lean-to roof which forms a porch at the eastern corner of the building. The lean-to roof is also clad with tightly fitted interlocking concrete tiles and there are interlocking plastic caps at the verge which are also tightly fitted. On the side (north western) elevation there is UPVC lean-to.

3.24 The house has UPVC soffit and bargeboards, which are in good condition and tightly sealed to the brickwork, with no gaps. In addition, the verge mortar on the gable ends is in good condition.

3.25 Internally, the house has a single loft space below the main roof. The roof has a modern, A-frame timber configuration, with no exposed ridge board, and is lined with bituminous underfelt. The loft is insulated with several thick layers of fibreglass – which extend to the eaves – and is partially boarded out.

3.26 No bats or signs of bats were observed inside or outside of 25 Loxwood, and it is assessed as having "negligible" potential to host a bat roost (see Table 2).

Garage

3.27 Located directly south west of the main house is a detached, single garage. The garage has single skin brick walls, with painted wooden cladding on the front elevation above the garage door. The roof is pitched and clad with interlocking concrete tiles which have been painted. The end tiles of the roof are blocked by plastic bird guards. At the eaves the garage has painted wooden facias which are tightly fitted.

3.28 Internally, the garage roof has wooden beams and ridgeboard, and, is lined with bitumen felt. The walls, including behind the wooden cladding, are unlined.

3.29 No bats or signs of bats were observed on the outside or the inside the garage, and it is assessed as having "negligible" potential to host a bat roost (see Table 2).

4.0 Assessment and recommendations

Statutory sites of importance for nature conservation

4.1 The nearest statutory site of importance for nature conservation - Maiden Erlegh Local Nature Reserve – is located situated 280m north of the site.

4.2 There is no direct ecological link between this site and the application site, and, there will be no impact on the local nature reserve as a result of the proposed works. Statutory sites of importance for nature conservation should therefore not be a constraint to the proposals.

Ancient woodland

4.3 There are three areas of woodland listed on Natural England's Ancient Woodland Inventory within 1km of the application site, the nearest of which is located 270m north of the site.

4.4 None of these woodlands will be encroached upon, overshadowed, or illuminated (by artificial lighting) as a result of the works and therefore will be unaffected by the proposals. As such, ancient woodland will not be a constraint to the proposals.

Priority Habitats

4.5 The Secretary of State periodically publishes a list of habitats that are of principal importance for the conservation of biodiversity in England under Section 41 (S41) of the 2006 Natural Environment and Rural Communities (NERC) Act. The list currently comprises 56 habitats, referred to as "priority habitats" in the National Planning Policy Framework (NPPF).

4.6 Paragraph 192 of the NPPF reads:

> "To protect and enhance biodiversity and geodiversity, plans should […] promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity"

4.7 As such where priority habitats are found they should be protected from the adverse impacts of development.

4.8 The habitats on site - buildings, hardstanding, amenity grassland and ornamental planting - are not 'Priority Habitats' and there should be no Priority Habitat-related constraints to the current proposals.

Bats

4.9 All species of bats receive special protection under UK law and it is a criminal offence under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017 (The Habitat Regulations), deliberately or recklessly to destroy or damage their roosts, or to disturb, kill or injure them without first having obtained the relevant licence for derogation from the regulations from the Statutory Nature Conservation Organisation (the SNCO - Natural England in England).

Site status

4.10 Both the main house and garage are assessed as having "negligible" potential to host a bat roost as no bats or signs of bats were found during the survey and neither building has features potentially suitable for use by roosting bats.

4.11 It is therefore very unlikely that bats will be affected by the proposed works, there is no need to undertake further surveys, and there should be no bat related constraints to the proposals.

4.12 Appendix 5 provides further information on bat ecology and legislation.

Great crested newts

4.13 GCN receive special protection under UK law and it is an offence under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2017 (The Habitat Regulations) to deliberately or recklessly destroy or damage their habitat, or to disturb, kill or harm them without first having obtained the relevant licence for derogation from the regulations from the Statutory Nature Conservation Organisation (the SNCO - Natural England in England).

4.14 GCN spend most of their lives on land, within up to 500m of a breeding pond. The most important terrestrial habitat is within 100m, where most of the population are likely to be located foraging, resting, sheltering and hibernating relatively close to their breeding site. However, a proportion of the population is also likely to forage for food and shelter in suitable habitats up to 250m from a breeding pond and juvenile animals have been known to disperse up to 500m from it in a single season.

4.15 GCN are likely to be disturbed by any work that involves altering their breeding pond (e.g. by introducing fish or deepening or altering its size) or works that involve clearing land up to 500m around ponds, where such land has been managed and maintained in such a way that it is likely to support GCN. In such cases a licence for derogation from the provisions of the habitat regulations may need to be obtained.

4.16 In addition, GCN are a species of principal importance for the conservation of biodiversity in England under Section 41 (S41) of the 2006 Natural Environment and Rural Communities (NERC) Act (these are the "priority species" as per the NPPF).

Site status

4.17 There are two waterbodies shown on ordnance survey maps within 500m of the site, located approximately 140m south east and 320m north of the site. These ponds were not visited or assessed for their suitability for great crested newts.

4.18 In addition, the NatureSpace "Impact Risk Map" shows the site as within the "Amber zone" (defined as "suitable habitat – great crested newts are likely to be present").

4.19 If either of these waterbodies were to host GCN, then these populations are unlikely to be affected by the works on site. This is confirmed by using Natural England's risk assessment, as detailed in their GCN licence method statement template. Application of the risk assessment shows that an offence under the 2017 Habitat Regulations as a result of the development is "highly unlikely", if the species were to be breeding in these ponds (see Table 4).

4.20 It is therefore unlikely that GCN will be affected by the proposals.

Table 4 – Risk assessment for great crested newts as per Natural England's Great Crested Newt method statement in the event either of the two ponds within 500m were to host GCN

Component	Likely effect	Notional offence probability score
Great crested newt breeding pond(s)	No effect	0
Land within 100m of any breeding pond(s)	No effect	0
Land 100-250m from any breeding pond(s)	0.01 - 0.1 ha lost or damaged	0.01
Land >250m from any breeding pond(s)	0.01 - 0.1 ha lost or damaged	0.001
Individual great crested newts	No effect	0
Maximum:		0.01
Rapid risk assessment result:	**GREEN: OFFENCE HIGHLY UNLIKELY**[5]	

Other protected species

4.21 It is considered highly unlikely that the proposals will have any adverse effects on other protected species, such as badgers, dormouse, nesting birds, or reptiles. This is because;

- All habitats to be affected by the proposals – buildings and hardstanding - are unsuitable or sub-optimal for use by these species.
- The site is isolated through roads and buildings from other areas of suitable habitat.
- In the case of badgers, no signs of badgers were observed on or adjacent to the site during the survey.
- In the case of nesting birds, the buildings are tightly sealed and unlikely to host nesting birds.

Landscaping and ecological enhancements

4.22 Paragraph 193 of the NPPF reads:

> "[…] opportunities to improve biodiversity in and around developments should be integrated as part of their design [..]"

4.23 It is therefore recommended that any new planting comprises predominantly native and wildlife-friendly species. It is also recommended that ecological enhancements such as bird and bat boxes, bricks or tiles are built into the extended house.

5 In their method statement guidance Natural England state that: "'Green: offence highly unlikely' indicates that the development activities are of such a type, scale and location that it is highly unlikely any offence would be committed should the development proceed."

5.0 Summary

Habitats

5.1 The application site comprises a detached, one and two-storey house, detached single garage, driveway, and, front and rear gardens.

5.2 None of the habitats on site are 'Priority Habitats' and there should be no Priority Habitat-related constraints to the current proposals.

Bats

5.3 Both the main house and garage are assessed as having "negligible" potential to host a bat roost as no bats or signs of bats were found during the survey and neither building has any features potentially suitable for use by roosting bats.

5.4 It is therefore very unlikely that bats will be affected by the proposed works, there is no need to undertake further surveys, and there should be no bat related constraints to the proposals.

Other protected species

5.5 It is unlikely that the other protected species such as badgers, dormouse, great crested newts nesting bird or reptiles will be affected by the proposals.

Ecological enhancements

5.6 In accordance with paragraph 193 of the NPPF it is recommended that any new planting comprises predominantly native and wildlife-friendly species. It is also recommended that ecological enhancements such as bird and bat boxes, bricks or tiles are built into the extended house.

Appendix 1 - Extended Phase 1 Habitat Map and Target Notes

Target Notes

(1) 25 Loxwood. A detached, one and two storey, house with cavity brick walls. The main roof is pitched and clad with interlocking concrete tiles.

(2) Detached single garage with single skin brick walls. It has a pitched roof clad with painted concrete interlocking tiles.

(3) The front garden and concrete driveway. Front garden consists of shrub borders, dominated by ornamental species and a well-maintained, short cut amenity grassland lawn.

(4) The rear garden. Flagstone patio and short-cut amenity grassland lawn. The lawn is bound by shrub beds which were empty at the time of the survey and comprised bare ground. Along the south eastern boundary is a short section of ornamental Leyland cypress hedge (*Cupressus × leylandii*)

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Meters
Scale: 1:140
Key
Application site boundary
Target Note
Amenity grassland
Buildings
Hardstanding
Bare ground
Introduced shrub
Wall
Fence
Intact hedge
BosqMap
Produced using BosqMap Software
www.bosqmap.co.uk
ECO3997
25 Loxwood
Phase 1 Habitat Survey
Contains Ordnance Survey data © Crown copyright and database right 2026

Appendix 2 – Photographs

Photos 1 and 2 - 25 Loxwood viewed from the front and rear

Photos 3 and 4 – The garage viewed from north east and north west

Photo 5 – Tightly fitted tiles on the main roof, and Photo 6 – tightly fitted tiles and UPVC eaves capping on the front lean-to.

Photo 7 – Tightly fitted and sealed soffits on the main house, and Photo 8 – Bird guard underneath the tiles on the garage.

Photo 9 – The loft space of 25 Loxwood, and, Photo 10 – The garage viewed internally

Photo 11 – The front garden, and Photo 12 – The rear garden

Appendix 3 – Legislation and planning policy

Planning Authorities have a legal duty to consider biodiversity when assessing planning applications. Where there is a reasonable likelihood that a planning application might affect important protected sites, species or habitats, information on the species, habitat or site likely to be affected, together with an assessment of the impacts of the proposals, will almost certainly be required.

The legal duty for Planning Authorities to have regard to the conservation of biodiversity was introduced in the 2006 Natural Environment and Rural Communities Act (The NERC Act). This act clarified existing commitments with regard to biodiversity, raised the profile of biodiversity and aimed to make the consideration of biodiversity a natural and integral part of policy and decision making.

In addition to the NERC Act there is also national and international biodiversity legislation. This includes legislation in relation to protected species and sites which operates outside of the planning system. Local Authorities and developers have a duty to comply with this legislation.

National planning policy

Paragraph 99 of the government Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System (referred to in the National Planning Policy Framework) states that:

'It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision.'

As such, in line with national planning policy, most planning authorities will ask for this information to be provided before a planning decision is made and in many cases before it is registered.

Local planning policy

In addition to national planning policy, most councils have planning policies to protect biodiversity, and to enhance it where practicable within and adjacent to development sites.

European protected species

The United Kingdom hosts a number of European Protected Species (EPS) of animals (table 1) and plants (table 2). These species receive special protection under UK law and it is an offence under the Wildlife and Countryside Act 1981 (as amended) and the European Habitats and Species Directive (92/43/EC), enacted in the UK through The Conservation of Habitats and Species Regulations 2010, to deliberately or recklessly destroy or damage their habitat, or to disturb, kill or injure the species without first having obtained the relevant licence from Natural England.

Planning Authorities have a statutory duty under these regulations to have regard to the requirements of the Habitats Directive and need to be satisfied that the development is likely to receive a licence from Natural England, and therefore comply with the Habitats Directive, before granting planning permission.

Table 1 – European Protected Species of Animal found in the UK

Common name	Scientific name
Bats, Horseshoe (all species)	*Rhinolophidae*
Bats, Typical (all species)	*Vespertilionidae*
Butterfly, Large Blue	*Maculinea arion*
Cat, Wild	*Felis silvestris*
Dolphins, porpoises and whales (all species)	*Cetacea*
Dormouse	*Muscardinus avellanarius*
Frog, Pool	*Rana lessonae*
Lizard, Sand	*Lacerta agilis*
Moth, Fisher's Estuarine	*Gortyna borelii lunata*
Newt, Great Crested (or Warty)	*Triturus cristatus*
Otter, Common	*Lutra lutra*
Snail, Lesser Whirlpool Ram's-horn	*Anisus vorticulus*
Snake, Smooth	*Coronella austriaca*
Sturgeon	*Acipenser sturio*
Toad, Natterjack	*Bufo calamita*
Turtles, Marine	*Caretta caretta*
	Chelonia mydas
	Lepidochelys kempii
	Eretmochelys imbricata
	Dermochelys coriacea

Table 2 – European Protected Species of Plant found in the UK

Common name	Scientific name
Dock, Shore	*Rumex rupestris*
Fern, Killarney	*Trichomanes speciosum*
Gentian, Early	*Gentianella anglica*
Lady's-slipper	*Cypripedium calceolus*
Marshwort, Creeping	*Apium repens*
Naiad, Slender	*Najas flexilis*
Orchid, Fen	*Liparis loeselii*
Plantain, Floating-leaved water	*Luronium natans*
Saxifrage, Yellow Marsh	*Saxifraga hirculus*

Nationally protected species

Many species of animal are protected under the 1981 Wildlife and Countryside Act (as amended). 'Full protection' applies to EPS and some non EPS species such as the water vole. This prohibits the intentional killing, injuring or taking (capture. etc); possession; intentional disturbance whilst occupying a 'place used for shelter or protection' and destruction of these places; sale, barter, exchange, transporting for sale and advertising to sell or to buy. Many species, such as common species of reptile and amphibian, are protected from intentional killing and injuring and trading.

Badgers

Badgers and their setts are protected under the 1992 Protection of Badgers Act and the Wildlife and Countryside Act 1981 (as amended). It is illegal to intentionally or recklessly kill, injure or take badgers or to interfere with a badger sett. Interference with a sett includes blocking tunnels, or damaging the sett in any way, and could include blocking a badger pathway if it were to stop badgers entering or leaving a

sett. Penalties for offences can be severe, with fines of up to £5,000 plus up to six months' imprisonment, for each illegal sett interference, badger death or injury.

Work that disturbs badgers occupying a sett is illegal without the appropriate licence from the relevant statutory authority being held. Natural England issue licences for reasons including science, education or conservation, for development such as the building of houses and for investigation of offences against badgers. They also issue licences for the prevention of serious damage to land, crops or other form of property, as well as for agriculture, forestry, drainage operations and prevention of the spread of disease.

Birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended), whilst they are actively nesting or roosting. Section 1 of this Act makes it an offence to kill, injure or take any wild bird, and to intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built. It is also an offence to take or destroy any wild bird eggs.

In addition, bird species listed under Schedule 1 of the Act receive extra protection. The Act states that 'it is an offence to intentionally or recklessly disturb any wild bird listed in Schedule 1 while it is nest building, or at (or near) a nest containing eggs or young, or disturb the dependent young of such a bird'.

In practice this means that in areas where birds are likely to be nesting works should not be undertaken during the nesting season, which is generally considered to be March to September, although this very much depends on weather conditions, habitats and the species involved. If works cannot be avoided then areas should first be checked for nesting birds. Habitats likely to host nesting birds include trees, hedgerows and dense scrub, buildings, reedbeds and riverine habitats and open areas with tussocky vegetation.

Appendix 4 - Great crested newts: ecology and legislation

The great crested newt (*Triturus cristatus*) can grow up to 18cm in size. It is Britain's largest newt. The body can have a warty appearance and the skin is normally dark brown or black, the belly is predominantly bright orange with black markings. During the breeding season the males develop a crest on their back and tail which they use to attract a mate.

The species is widely distributed in Britain but is absent from Cornwall, Devon, and parts of Wales. It is uncommon but locally abundant. The population has undergone a severe decline in the last 50 years due to the loss of breeding ponds and a decline in the quality of foraging habitat.

The species can be found in northern Europe part of West Siberia. The edge of the northern range extends from northern France, Great Britain, southern Scandinavia to the north of Russia, and the southern edge from central France to south-western Romania into central European Russia. Britain is one of the last strongholds for the species.

Great crested newts spend the majority of their lives on land, returning within up to 500m, but more usually 250m, of their breeding ponds. The mainstay of their diet is invertebrates.

They return to waterbodies, usually ponds, in the spring to breed. Adults enter the ponds from February onwards with the courtship and egg-laying period being from mid-March to mid-June. Eggs are laid in the folds of debris or the leaves of submerged aquatic plants. A female lays up to 200 eggs per season.

Eggs take 3 weeks to hatch and the larvae take 2 to 3 months to develop. Adults begin to leave breeding ponds gradually from late May. However they can over-winter in ponds and also sometimes return to feed. Young start to emerge from the pond in August and will not normally return until they have reached sexual maturity 2 – 4 years later.

Great crested newts receive special protection under UK law and it is an offence under the Wildlife and Countryside Act 1981 (as amended) and the European Habitats and Species Directive (92/43/EC), enacted in the UK through The Conservation of Habitats and Species Regulations 2010 (The Habitat Regulations) to deliberately or recklessly, to destroy or damage their habitat, or to disturb, kill or them without first having obtained the relevant licence for derogation from the regulations from the Statutory Nature Conservation Organisation (the SNCO - Natural England in England).

In order to obtain such a licence the SNCO must apply the requirements of Regulation 535 of the Regulations and, in particular, the three tests set out in sub-paragraphs (2)(e), (9)(a) and (9)(b)6. These are as follows:

(1) Regulation 53(2)(e) states: a licence can be granted for the purposes of "preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment".

(2) Regulation 53(9)(a) states: the appropriate authority (the SNCO) shall not grant a licence unless they are satisfied "that there is no satisfactory alternative".

(3) Regulation 53(9)(b) states: the appropriate authority (the SNCO) shall not grant a licence unless they are satisfied "that the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range."

Newts are likely to be disturbed by any work that involves altering their breeding ponds (e.g. by introducing fish, deepening or altering its size) or works that involve clearing land up to 500m around

ponds, and in such cases a licence for derogation form the provisions of the habitat regulations may need to be obtained.

Appendix 5 – Bat ecology and conservation status

Background

Bats are the only true flying mammals and belong to their own taxonomic group, the *Chiroptera*. Worldwide there are almost 1,000 species, with 16 in the UK. All species in the UK are insectivorous. They have a highly sophisticated echolocation system that allows them to avoid obstacles and catch invertebrates, either in flight or by picking them off water, the ground or foliage.

Bat species in the UK

There are 16 species of bat that are known to exist in the UK mainland, with a further two - the greater mouse eared bat *Myotis myotis*, and the parti-coloured bat *Vespertilio murinus* - that are thought to occur as rare migrants or to have small populations in the UK. Bats in the UK belong to one of two taxonomic families, the Rhinolophidae (horseshoe bats) and the Vespertilionidae (all other UK bats).

Bat Conservation Status

Bat populations have undergone a significant decline in the past sixty years. For example, estimates from the National Bat Colony Survey suggest that the UK pipistrelle population (one of our commonest bat species), declined by approximately 70% between 1978 and 1993. Factors contributing to this decline include:

- Loss of, and damage to, roosting sites, including buildings, trees, and underground structures (mines, tunnels, ice-houses, cellars, etc).
- Loss and fragmentation of suitable insect-rich feeding habitats such as wetlands and deciduous woodland.
- Reduction in the abundance and diversity of insect prey due to intensive agriculture, particularly over-grazing and the use of pesticides.
- Loss of linear features such as tree-lines and hedgerows, depriving bats of commuting routes between roosts and feeding areas.
- Loss of winter roosting sites in buildings and old trees.
- Disturbance and destruction of roosts, including the loss of maternity roosts due to the use of toxic timber treatment chemicals.

Roosts

Bats use a variety of roosts of different types including trees, buildings, caves, mines and other structures. Most species are colonial and roost in groups. This can make populations particularly vulnerable to loss of roosts as the loss of a single roost may affect the whole population. Some species hang in obvious locations, such as the timbers near to the apex of a roof, others roost in cracks and crevices, such as the gaps under tiles, and as such can be very difficult to locate.

During the winter (November to February), when there is a reduction in insect numbers, bats hibernate to conserve energy. They prefer sites with a constant low temperature and a high relative humidity. On mild winter's nights, bats may wake up and feed. However, bats are particularly vulnerable to disturbance at this time of year, as flying in winter uses up large quantities of energy that cannot easily be replaced.

In the spring, after emerging from hibernation, bats often move from site to site and may congregate in small groups. Female bats gather together in the summer (approximately May to August dependant on

species) in maternity roosts. Once the young have stopped suckling, and the baby is independent, bats tend to disperse and use other roosts. Maternity roosts are particularly vulnerable to disturbance, as bats may have come from a wide geographical area, and have a strong tradition of returning to the same roost year after year.

During the late summer and early autumn males occupy mating roosts which are visited by several females. After mating some species gather together at swarming sites to fatten up prior to hibernation.

Habitat associations

In addition to roosts, bats also need foraging habitats to find suitable food resources, and commuting routes to get to these areas. As would be expected, the highest numbers of bats are found in areas with abundant invertebrates. Some species specialise in catching small invertebrates in flight, whilst others specialise in catching larger invertebrates such as moths and beetles. The distances that bats travel to foraging areas varies between species; records have shown some greater horseshoe bats travel up to 22km to forage, although many species will typically feed within 1km of a roost.

Bats, especially the smaller species, tend to follow linear features (such as hedgerows and tree lines) to their foraging habitats and will often not cross open spaces. A gap of 10m in a linear feature will often not be crossed by bats, and it is important that developments do not create such gaps if linear features are used by bats.

Appendix 6 – About GS Ecology

Established in 2009, GS Ecology is an independent ecological consultancy in Berkshire. We carry-out surveys and ecological consultancy services for public and private sector clients including in Berkshire, Oxfordshire and Hampshire, London and the south of England. We can advise you on cost effective sustainable solutions for your project, whether it be a bat survey to inform a planning application, the ecology chapter of an Environmental Statement or a Woodland Management Plan.

Our work is undertaken by experienced and qualified ecologists, who are members of the Chartered Institute of Ecology and Environmental Managers. Our services include:

- Ecology surveying and reporting to inform planning applications, e.g.
  - Preliminary Ecological Appraisal
  - Extended Phase 1 Habitat Survey
  - Protected species surveys, e.g. badgers, dormouse, great crested newts
  - Bat surveys in Oxfordshire, Berkshire, Hampshire, London and Southern England
- BREEAM ecology assessments – to demonstrate the sustainability of a new building
- Protected species licensing such as bat and great crested newt licences for development sites after planning permission has been obtained
- Providing advice to land managers and writing ecological management plans, such as woodland management plans and farm environmental plans for England woodland Grant Scheme and Environmental Stewardship applications
- Providing ecology advice to Local Authorities and Local Planning Authorities