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Ecological Impact Assessment

Poundlane Cottage
Pound Lane
Hurst
Reading
RG10 0RS

December 2025

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QUALITY CONTROL		
The information 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.		
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This report remains valid for 2 years from date of issue. Survey data are valid for 12-18 months from the date the survey was undertaken.		

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Whilst every effort has been made to guarantee the accuracy of this report, it should be noted that living creatures are capable of migration and whilst protected species may not have been located during the survey duration, their presence may be found on site at a later date.

The views and opinions contained within the document are based on a reasonable timeframe between the completion of the survey and the commencement of any works. If there is any delay between the commencement of works that may conflict with timeframes laid out within this document, or have the potential to allow the ingress of protected species, a suitably qualified ecologist should be consulted.

It is the duty of care of the landowner/developer to act responsibly and comply with current environmental legislation if protected species are suspected or found prior to works.

1. EXECUTIVE SUMMARY

- 1.1. Darwin Ecology Ltd was commissioned by Mr Daley Philips to undertake an Ecological Impact Assessment (EclA) of proposals for the buildings and habitats at Poundlane Cottage, Pound Lane, Hurst, Reading, RG10 0RS. The assessment was required to support a planning application for the demolition of the shed on site, the construction of two outbuildings, the construction of a builders' contractor yard, and the creation of an area of grazing paddock. The assessment was informed by a desk study and habitat walkover survey.
- 1.2. The site is set within a rural area, and comprises a hardstanding access road leading to a parcel of ruderal vegetation containing a derelict shed. The shed has become covered by encroaching bramble scrub. Two species-rich hedgerows with trees bound the northern and western aspects of the site. The site is bordered by detached residential dwellings set within areas of amenity garden, alongside various agricultural fields, farmyards and associated farm buildings.
- 1.3. It was assessed that the site provided foraging, commuting, and resting opportunities for a variety of protected and notable species, including terrestrial mammals, amphibians, common reptiles, foraging and commuting bats, and breeding birds. However, due to the low-moderate ecological value of the habitats on site, and the small size of the site, it is considered that the site is significantly unlikely to support populations of protected and notable species. However, individuals of these species may access and utilise the site on occasion.
- 1.4. Due to the potential for protected and notable species to access site on occasion, mitigative measures have been recommended.
- 1.5. Due to the small scale and localised nature of the works, it was assessed that phase II surveys would be disproportionate to the level of impact resulting from the works. It is considered that the mitigation, compensation, and enhancement measures outlined within this report will be sufficient to protect protected and notable species should they be on site at the time of the works, and compensate for the loss of any opportunities on site resulting from the proposed works.
- 1.6. Recommendations for enhancement have been made, including wildlife-beneficial landscaping and the installation of bat and bird boxes to ensure opportunities are available for protected species following the completion of the development, and that the ecological value of the site is enhanced in the long-term.

2. INTRODUCTION AND BACKGROUND

Background

- 2.1. Darwin Ecology Ltd was commissioned by Daley Philips to undertake an EclA of proposals for the buildings and habitats at Poundlane Cottage, Pound Lane, Hurst, Reading, RG10 0RS¹. The assessment was required to support a planning application for the demolition of the shed on site, the construction of two outbuildings, the construction of a builders' contractor yard, and the creation of an area of grazing paddock. The assessment was informed by a desk study and habitat walkover survey.
- 2.2. The proposed drawings on which this assessment is based are provided in the **Appendices**.
- 2.3. The habitat walkover survey followed the Chartered Institute for Ecological and Environmental Management (CIEEM) Guidelines for Preliminary Ecological Appraisal (2017). Habitats on site were broadly mapped to a minimum of 25m² in accordance with current guidance from *UK Habitat Classification Version 2.0 UKHab Ltd (2023)*.
- 2.4. The subsequent EclA follows the CIEEM Guidelines for EclA in the UK and Ireland (2018).

Site Overview

- 2.5. The site is located within a rural area between the towns of Hurst, Wokingham, and Reading. The site is situated approximately 10.00km east of Reading town centre, 1.90km southeast of Hurst town centre, and 3.60km north of Wokingham town centre.
- 2.6. The site comprises a derelict shed set within an area of ruderal vegetation. A hardstanding drive is present along the eastern aspect of the site, and two species-rich native hedgerows with trees bound the northern and western aspects of the site. The site is immediately bordered to the north, east, and south by a mosaic of detached residential properties set within areas of amenity garden, farmyards with associated farm buildings, and pastoral fields. The site is immediately bounded to the west by pastoral fields (see **Figure 1**).
- 2.7. The wider landscape comprises an agricultural mosaic of pastoral and arable fields interspersed by farmyards with associated farm buildings, small industrial developments, and detached residential properties set within areas of amenity garden. Parcels of woodland are scattered throughout the wider landscape. Dinton Pastures Country Park, which consists of large waterbodies surrounded by areas of broadleaved woodland and open grassland, is situated 2.35km west of the site. Billingbear Park Golf Course is situated 1.25km east of the site. The M4, running south-west to north-east, divides the landscape 330m south of the site (see **Figure 2**).

¹ Ordnance Survey (OS) grid reference SU 80966 72238.



Figure 1: Site location within the local landscape. Copyright Google Earth Pro (November 2025). The wider boundary is outlined in blue and the site is outlined in red.

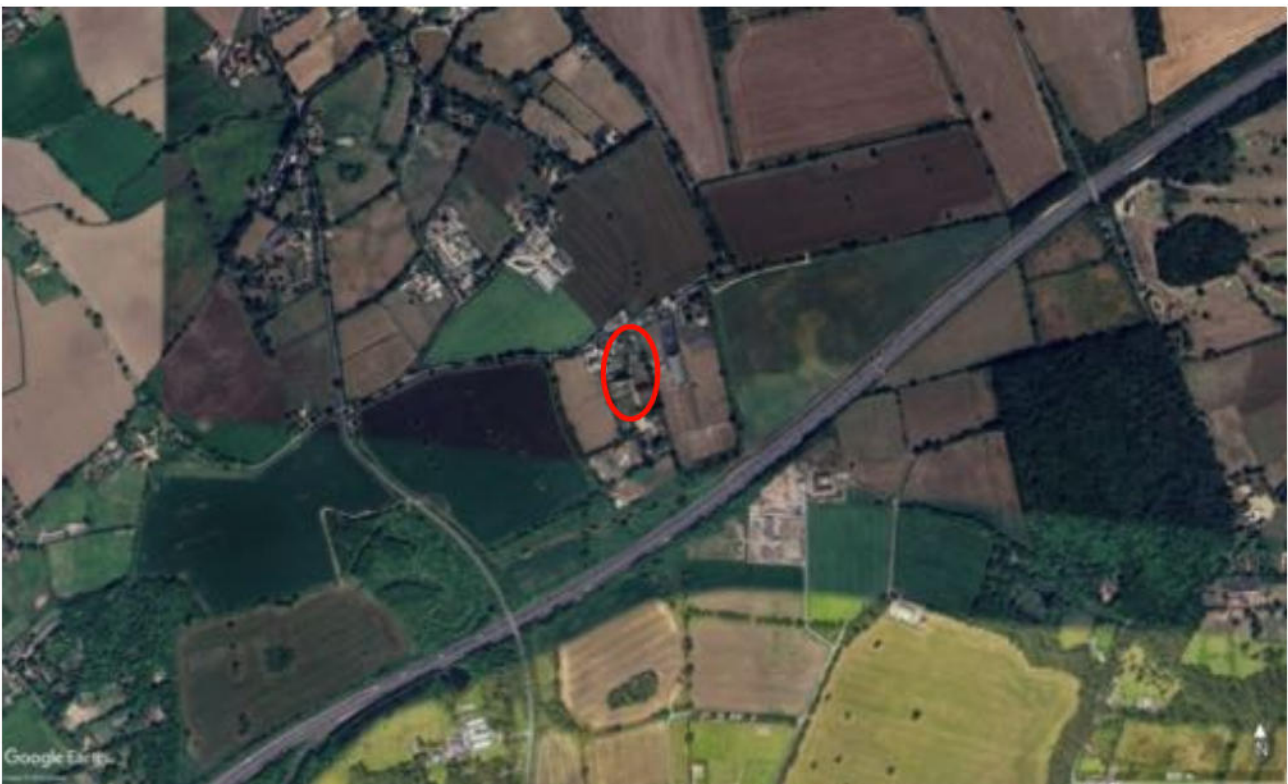


Figure 2: Site location within the wider landscape Copyright Google Earth Pro (November 2025)

Scope of Assessment

- 2.8. The process of EclA aims to identify, quantify and evaluate the potential effects of development-related or other proposed actions on habitats, species and ecosystems.
- 2.9. Potential effects on the following ecologically sensitive receptors have been considered during the EclA of Poundlane Cottage:
- Statutory and non-statutory designated sites;
 - On-site habitats of intrinsic importance (such as priority habitats); and
 - Habitats with the potential to support protected species.
- 2.10. The aim of this report is to:
- Identify and describe ecologically sensitive receptors within the site;
 - Carry out an impact assessment of the proposed works and how they will directly / indirectly affect the ecological receptors identified;
 - Outline the relevant legislation and protection afforded to protected species present at the site; and
 - Provide avoidance, compensation, mitigation and enhancement measures recommended to avoid harm / injury to protected species.

3. LEGISLATION & POLICY

General Wildlife Legislation

- 3.1. Wildlife in the United Kingdom (UK) is protected through European and national legislation, supported by national and local policy and guidance. Development can contribute to conservation and enhancement goals outlined by these various legislation and policy by retaining and protecting the most valuable ecological features within a site and incorporating enhancements to provide biodiversity net gain.
- 3.2. This section provides a brief summary of the principle legislation and policy that triggers the requirement for preliminary and further ecological assessments in the UK. The presence of protected species within a site are a material consideration during the planning process. Preliminary and any necessary further ecological assessments provide an ecological baseline for a site and evaluation of the potential impact of proposals.
- 3.3. It is the responsibility of those involved with development works to ensure that the relevant legislation is complied with at every stage of a project. Such legislation applies even in the absence of related planning conditions or projects outside the scope of the usual planning process (i.e. permitted development projects or projects requiring Listed Building Consent only).

Bat Legislation

- 3.1. In England and Wales, all bat species and their roosts are legally protected under the European *Habitats Directive (1992)*; the *Conservation of Habitats and Species Regulations (2017)*; the *Wildlife and Countryside Act (1981) (as amended)*; the *Countryside and Rights of Way Act, 2000*; and the *Natural Environment and Rural Communities Act (NERC, 2006)*.
- 3.2. Barbastelle *Barbastella barbastellus*, Bechstein's *Myotis bechsteinii*, greater horseshoe *Rhinolophus ferrumequinum*, lesser horseshoe *Rhinolophus hipposideros*, brown long-eared *Plecotus auritus*, soprano pipistrelle *Pipistrellus pygmaeus*, and noctule *Nyctalus noctula* bats are all species of principal importance in England under *Section 41* of the *Natural Environment and Rural Communities Act 2006*.
- 3.3. You will be committing a criminal offence if you:
 - Deliberately capture, injure or kill a bat;
 - Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats;
 - Damage or destroy a bat roosting place (even if bats are not occupying the roost at the time);
 - Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat; or
 - Intentionally or recklessly obstruct access to a bat roost.

- 3.4. The government's statutory conservation advisory organisation, Natural England, is responsible for administering European Protected Species (EPS) licences that permit activities that would otherwise lead to an offence.
- 3.5. A licence can be obtained if the following three tests have been met:
- Regulation 53(9)(a) - there is "no satisfactory alternative" to the derogation, and;
 - Regulation 53(9)(b) - the derogation "will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range" and;
 - Regulation 53(2)(e) - the derogation is 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".

National Planning Policy

- 3.6. The *National Planning Policy Framework (2024)* aims to minimise impacts on biodiversity and provide net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity. Chapter 15 'Conserving and enhancing the natural environment' details what local planning policies should seek to consider with regard to planning applications.
- 3.7. Planning policies and decisions should contribute to and enhance the natural and local environment by:
- 187 a) Protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan);
 - 187 b) Recognising the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland;
 - 187 d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures and incorporating features which support priority or threatened species such as swifts, bats and hedgehogs;
 - 188) Plans should: distinguish between the hierarchy of international, national and local designated sites; allocate land with the least environmental or amenity value, where consistent with other policies in this Framework; take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure; and plan for the enhancement

of natural capital at a catchment or landscape scale across local authority boundaries;

189) Great weight should be given to conserving and enhancing landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural beauty which have the highest status of protection in relation to these issues. The conservation and enhancement of wildlife and cultural heritage are also important considerations in these areas, and should be given great weight in National Parks and Broads. The scale and extent of development within all these designated areas should be limited, while development within their settings should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.

3.8. Specific policies regarding habitats and biodiversity comprise:

192) To protect and enhance biodiversity and geodiversity, plans should:

- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation and
- b) 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.

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

- a) If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) Development on land within or outside of Sites of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the feature of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;

c) Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and

d) Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around development should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

194) The following should be given the same protection as habitats sites:

a) Potential Special Protection Areas and possible Special Areas of Conservation;

b) Listed or proposed Ramsar sites; and

c) sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

Local Planning Policy

3.9. The relevant local plan to the site is the Wokingham Local Plan (2013-2033), which is a set of documents that set out the strategic vision for growth and development in the borough, policies and objectives regarding its delivery and protection of the district's environment. They comprise the Core Strategy, the Managing Development Delivery Local Plan, and the now outdated South East Plan (saved policy NRM6). The relevant policies from the Core Strategy regarding ecology, nature conservation or development and relevant ones comprise:

3.10. Policy CP7 - Biodiversity

- Sites designated as of importance for nature conservation at an international or national level will be conserved and enhanced, and inappropriate development will be resisted. The degree of protection given will be appropriate to the status of the site in terms of its international or national importance.
- Development:
 - Which may harm county-designated sites (Local Wildlife Sites in Berkshire), whether directly or indirectly, or
 - Which may harm habitats or species of principal importance in England for nature conservation, veteran trees or features of the landscape that are of major

importance for wild flora and fauna (including wildlife and river corridors), whether directly or indirectly, or

- That compromises the implementation of the national, regional, county and local biodiversity action plans
- will be only permitted if it has been clearly demonstrated that the need for the proposal outweighs the need to safeguard the nature conservation importance, that no alternative site that would result in less or no harm is available, which will meet the need, and:
 - Mitigation measures can be put in place to prevent damaging impacts; or
 - Appropriate compensation measures to offset the scale and kind of losses are provided.

3.11. *Policy CP8 - Thames Basin Heaths Special Protection Area*

- Development which alone or in combination is likely to have a significant effects on the Thames Basin Heaths Special Protection Area will be required to demonstrate that adequate measures to avoid and mitigate any potential adverse effects are delivered.

3.12. The relevant policies from the Managing Development Delivery Local Plan (2014) regarding ecology, nature conservation or development and relevant ones comprise:

3.13. *Policy CC03: Green Infrastructure, Trees and Landscaping*

- Green Routes and Green Route Enhancement Areas are defined on the Policies Map.
- Development proposals should demonstrate how they have considered and achieved the following criteria within scheme proposals:
 - Provide new or protect and enhance the Borough's Green Infrastructure networks, including the need to mitigate potential impacts of new development
 - Promote accessibility, linkages and permeability between and within existing green corridors, including public rights of way such as footpaths, cycleways and bridleways
 - Promote the integration of the scheme with any adjoining public open space or countryside
 - Protect and retain existing trees, hedges and other landscape features
 - Incorporate high-quality, ideally, native planting and landscaping as an integral part of the scheme.
- Development proposals which would result in the loss, fragmentation or isolation of areas of green infrastructure will not be acceptable.

- Development proposals within the River Valley areas shall improve or contribute toward:
 - The establishment of a Loddon/ Blackwater riverside footpath and bridleway, as defined on the Policies Map, to accommodate dual use
 - The establishment of a riverside footpath and cycleway to accommodate dual use along the Emm Brook
 - Opportunities for improvements to green infrastructure to help minimise flood risk

3.14. *Policy TB23: Biodiversity and Development*

- Planning permission for development proposals will only be granted where they comply with policy CP7 – Biodiversity of the Core Strategy and also demonstrate how they:
 - Provide opportunities, including through design, layout and landscaping, to incorporate new biodiversity features or enhance existing ones
 - Provide appropriate buffer zones between development proposals and designated sites, as well as habitats and species of principal importance for nature conservation
 - Ensure that all existing and new developments are ecologically permeable through the protection of existing and the provision of new continuous wildlife corridors, which shall be integrated and linked to the wider green infrastructure network.

3.15. The relevant saved policy from the South East Plan regarding ecology, nature conservation or development and relevant ones comprise:

3.16. *Policy NRM6: Thames Basin Heaths Special Protection Area.*

- New residential development, which is likely to have a significant effect on the ecological integrity of the Thames Basin Heaths Special Protection Area (SPA), will be required to demonstrate that adequate measures are put in place to avoid or mitigate any potential adverse effects. Such measures must be agreed with Natural England.
- Priority should be given to directing development to those areas where potential adverse effects can be avoided without the need for mitigation measures. Where mitigation measures are required, local planning authorities, as Competent Authorities, should work in partnership to set out clearly and deliver a consistent approach to mitigation, based on the following principles:
 - A zone of influence set at 5km linear distance from the SPA boundary will be established, where measures must be taken to ensure that the integrity of the SPA is protected

- Within this zone of influence, there will be a 400m "exclusion zone" where mitigation measures are unlikely to be capable of protecting the integrity of the SPA. In exceptional circumstances, this may vary with the provision of evidence that demonstrates the extent of the area within which it is considered that mitigation measures will be capable of protecting the integrity of the SPA. These small locally determined zones will be set out in local development frameworks (LDFs) and SPA avoidance strategies, and agreed with Natural England
- Where development is proposed outside the exclusion zone but within the zone of influence, mitigation measures will be delivered prior to occupation and in perpetuity. Measures will be based on a combination of access management and the provision of Suitable Accessible Natural Greenspace (SANG).
- Where mitigation takes the form of provision of SANG, the following standards and arrangements will apply:
 - A minimum of 8 hectares of SANG land (after discounting to account for current access and capacity) should be provided per 1,000 new occupants
 - Developments of fewer than 10 dwellings should not be required to be within a specified distance of SANG land, provided it is ensured that a sufficient quantity of SANG land is in place to cater for the consequent increase in residents prior to occupation of the dwellings
 - Access management measures will be provided strategically to ensure that adverse impacts on the SPA are avoided and that SANG functions effectively
 - Authorities should cooperate and work jointly to implement mitigation measures. These may include, inter alia, assistance to those authorities with insufficient SANG land within their own boundaries, co-operation on access management and joint development plan documents
 - Relevant parties will co-operate with Natural England and landowners, and stakeholders in monitoring the effectiveness of avoidance and mitigation measures and monitoring visitor pressure on the SPA, and review/amend the approach set out in this policy, as necessary
 - Local authorities will collect developer contributions towards mitigation measures, including the provision of SANG land and joint contributions to the funding of access management and monitoring the effects of mitigation measures across the SPA
 - Large developments may be expected to provide bespoke mitigation that provides a combination of benefits, including SANG, biodiversity enhancement, green infrastructure and, potentially, new recreational facilities.
- Where further evidence demonstrates that the integrity of the SPA can be protected using different linear thresholds or with alternative mitigation measures (including

standards of SANG provision different to those set out in this policy) these must be agreed with Natural England.

Berkshire Biodiversity Action Plan

- 3.17. The Biodiversity Action Plan is the key pillar of the natural environment theme of our Environment and Climate Strategy, which seeks to protect and enhance the natural environment, green our towns and urban areas and increase awareness of biodiversity. Therefore, the overarching approach is based on those objectives. The overarching vision for our Biodiversity Action Plan is:

‘To reverse the decline in our natural environment and through better data, partnerships and direct action to increase biodiversity across the borough’.

- 3.18. In support of this, we will work with the other Berkshire Authorities to support the Berkshire, Buckinghamshire and Oxfordshire Wildlife Trust (BBOWT) ‘Wilder’ target to have **30% of land for nature by 2030**. We will also support the national commitment that has been made to well-connected and effectively managed systems of Protected Areas which are protected to support the recovery of nature.
- 3.19. This Biodiversity Action Plan features the following Habitat Action Plans (HAPs) covering broad habitat types. These were developed and agreed in partnership with our key stakeholders and community groups:
- | | |
|------------------|-----------------------|
| 1. Woodland HAP | 4. Waterways HAP |
| 2. Grassland HAP | 5. Standing Water HAP |
| 3. Farmland HAP | 6. Urban HAP |

Wokingham Biodiversity Action Plan

- 3.20. The local biodiversity action plan relevant to the site is the Wokingham Biodiversity Action Plan. It aims to set out a long-term strategy for biodiversity conservation within Wokingham and provide a series of objectives and actions for achieving successful conservation of habitats and species across the county.
- 3.21. The new Wokingham Biodiversity Action Plan retains the structure of the former plan, featuring the five Habitat Action Plans (HAPs) including a Communities, Towns and Villages HAP, Woodland HAP, Grassland and Hedgerow HAP, Wetland HAP and Heathland HAP.
- 3.22. All the HAPs include targets for the protection, management/enhancement and creation of their respective broad habitats types across the Borough. The management/enhancement elements of the HAPs will be measured through the statutory national indicator on management of Local Wildlife Sites (LWS), known as Single Data List 160. The HAPs will set a target to achieve 60% of LWS in appropriate management by 2024.
- 3.23. The targets for habitat creation have been set with regard to SDL SANG proposals that are likely to come forward within the plan period.

4. METHODOLOGY

Desk Study

- 4.1. A desk study was undertaken for designated sites, and protected species and habitat records within 2km of the site:
- The MagicMap website was reviewed, to obtain information on any designated sites of nature conservation interest within 2km of the site and details of any EPS licences issued within 1km, extended to 2km for bats;
 - The Wokingham Borough Council Planning Portal was searched for past and pending planning applications that may have associated ecological documents detailing results of bat surveys; and
 - Google Maps and Ordnance Survey (OS) Leisure Maps was utilised to view aerial photographs and maps to assess the ecological context of the site within the wider landscape.
- 4.2. Natural England has developed a tool to help assess the potential risks to SSSIs by proposed developments. These are known as 'Impact Risk Zones' (IRZs) and they define the area around a SSSI that could be sensitive to development, considering the particular sensitivities of the feature for which the site is designated.
- 4.3. The IRZs help inform whether a development proposal may affect a SSSI and if so, whether it is necessary for the Local Planning Authority (LPA) to seek pre-application advice from Natural England. Information on the IRZs was determined from the MAGIC website to determine if the LPA is required to seek consultation for the current development.

Habitat Walkover Survey

- 4.4. Licensed Ecologist Eleanor Kemp² BSc (Hons) MSc and Assistant Ecologist Jordan Holman-Thatcher BSc (Hons) conducted a walkover survey at Poundland cottage on 27th of November. The weather conditions at the time of the survey were overcast with light rain, a light breeze, and approximately 13°C.
- 4.5. The walkover survey assessed habitats present within the application red line boundary for their potential to support protected species, including:
- Bats;
 - Great crested newt *Triturus cristatus* and common amphibians;
 - Reptiles;
 - Dormouse *Muscardinus avellanarius*;
 - Other terrestrial mammals, including hedgehog *Erinaceus europaeus* [REDACTED] [REDACTED]
[REDACTED]

² Class I Bat Licence: 2025-84506-CL17-BAT

- Schedule 1 birds, including but not limited to; barn owl *Tyto alba*, lapwing *Vanellus vanellus* and skylark *Alauda arvensis*
 - Breeding birds; and
 - Invertebrates.
- 4.6. As there is no running water within the site, in combination with their nationally sparse distribution, it is considered highly unlikely that white clawed crayfish *Austropotamobius pallipes* would be using the site and they are therefore not considered further in this report.
- 4.7. Otter *Lutra lutra* and water vole *Arvicola amphibious* are not considered further in this report due to the lack of running water on site and within the wider area. The site also does not offer any suitable habitat for these species.
- 4.8. The site was also searched for non-native, invasive plant species, with particular care to search for the most commonly occurring and problematic species, such as Japanese knotweed *Fallopia japonica*, Indian balsam *Impatiens grandiflora* and giant hogweed *Heracleum mantegazzianum*.

Limitations

- 4.9. Ecological surveys are limited by factors that affect the presence of plants and animals such as the time of the year, weather, and migration patterns. The survey was undertaken in November and therefore represents a valid sample of ecological evidence present on that date/season.
- 4.10. Surveying for UK plant species in November is sub-optimal, as many target species have declined or lost key diagnostic features by this time of year, limiting the accuracy and reliability of ecological assessments. Considering the context of the site and the habitats to be impacted by the proposals, it is considered unlikely that this timing would have a significant impact on the reliability of the survey results or conclusions.
- 4.11. The desk study does not include data from the local environmental records centre (LERC). However, following CIEEM guidelines (2017) it is possible to conduct a robust assessment without the need of LERC data, for example, for small-scale projects or on sites such as;
- A field in active arable cultivation where there is no impact on any hedges, trees or water bodies;
 - A small area of cultivated garden/amenity grassland, as above; or
 - A small urban site comprising mostly asphalt or compacted hardstanding.
- 4.12. The site is a small plot set comprising an area of ruderal vegetation. Therefore, the lack of LERC data is not considered a limitation to the ecological assessment of the site.
- 4.13. No other limitations were encountered, or assumptions made during either the desk study or the field survey and it is considered that with the access gained and recording undertaken, an accurate assessment of the site's ecological importance has been made.

5. SURVEY RESULTS

Desk Study

- 5.1. There are no statutory designated sites within 2km of the site boundaries. Additionally, the site does not lie within the buffer zone of any internationally designated sites.
- 5.2. The site falls within the IRZ for Lodge Wood and Stanford Mill SSSI.
- 5.3. The Wokingham Borough Council Planning Portal was consulted for relevant planning applications concerning protected species within the locality from the past two years and returned the following results:
 - Planning application 232351 found confirmation of bat roosts (likely long-eared and pipistrelle) at The Warren, Pound Lane, Hurst, Reading, Berkshire, RG10 0RS, 40m south of the application site
 - Planning application 242566 found confirmation of a bat roost (likely long-eared) at Hurst Grange Farm House, Pound Lane, Wokingham, RG10 0RS, 70m north-east of the application site
- 5.4. There are 12 areas of priority deciduous woodland site, the closest of which is located 580m south-west of the site. These areas of woodland are also registered on the National Forest Inventory (Woodland - Broadleaved). Further priority habitats within 1km of the site comprise two areas of wood pasture and parkland, located 530m and 600m southwest.
- 5.5. There are five areas of ancient woodland within 1km of the application site, comprising two unnamed areas (720m southwest and 880m east), North Ockett Wood (840m east), Beech Wood (890m east), and Ashridge Wood (905m south).

Habitat Walkover Survey

- 5.6. The habitats identified on site include developed land; sealed surface, sparsely vegetated urban land, two species-rich native hedgerows with trees, and bramble scrub. This section is to be read in conjunction with **Figure 3. Table 1** below outlines the summary of habitats identified on site, as well as their applicable secondary codes.

Table 1: Habitat applicable codes

Primary Habitat	UK Hab Primary Code	Applicable Secondary Code(s) used	Secondary Code(s) description
Buildings	u1b5	825	Ruined Building
Developed land; sealed surface	u1b	800	Road
Sparsely vegetated urban land	u1f	10	Scattered Scrub
		16	Tall Forbs
		81	Ruderal vegetation
		510	Bare Ground
		847	Introduced Shrub
Species-rich native hedgerow	h2a5	11	Hedgerow with Trees
Bramble scrub	h3d	-	-

u1b5 Building (secondary code: 825)

- 5.7. A derelict shed, situated on a concrete foundation, is present within the southwestern corner of the site. The shed has become heavily covered by encroaching bramble and ruderal vegetation.
- 5.8. The building had entirely collapsed, creating a pile of timber, concrete, and corrugated felt. The roof of the structure was almost entirely covered by moss. The structure did not offer any suitable roosting opportunities for bats.

u1b Developed land; sealed surface (secondary code: 800)

- 5.9. A hardstanding track is present along the eastern edge of the site. This track is of tarmac construction and is in good condition, with no areas of significant damage and only low levels of encroaching vegetation recorded.

u1f Sparsely Vegetated Urban Land (secondary codes: 10, 16, 81, 510, 847)

- 5.10. The majority of the site comprises an area of sparsely vegetated urban land. Ruderal vegetation dominates this habitat, with the ground cover comprising approximately 60% vegetation. Patches of bare ground covered by rubble were scattered throughout the habitat, accounting for approximately 40% of the ground cover. Additionally, large pieces of plastic lining are present under the rubble and vegetation.
- 5.11. Three distinct piles were present within the centre of this habitat, comprising a rubble pile, a pile of heras fencing with concrete bases, and a pile of timber.
- 5.12. The vegetation was predominantly low lying, with an average height of 40cm-50cm. However, variation in height was recorded, with a range of 5cm and 1.5m noted. The vegetation was patchy throughout the habitat, comprising dense parcels of vegetation interspersed by patches of bare earth.
- 5.13. The habitat was dominated by tall forb species and species commonly found on disturbed ground. A high species diversity was noted throughout the habitat, with no single species dominating the species composition. Several ornamental species were also recorded within this habitat parcel. Recorded species include Yorkshire fog *Holcus lanatus*, perennial ryegrass *Lolium perenne*, annual meadow grass *Poa annua*, evening primrose *Oenothera biennis*, creeping buttercup *Ranunculus repens*, rosebay willowherb *Chamaenerion angustifolium*, common nettle *Urtica dioica*, bristly oxtongue *Helminthotheca echinoides*, round-leaved cranesbill *Geranium rotundifolium*, dandelion *Taraxacum officinale*, spear thistle *Cirsium vulgare*, ribwort *Plantago lanceolata*, ragwort *Jacobaea vulgaris*, bramble *Rubus fruticosus*, square stalked willow herb *Epilobium tetragonum*, common poppy *Papaver rhoeas*, black medic *Medicago lupulina*, stone parsley *Sison amomum*, toadflax *Linaria vulgaris*, mugwort *Artemisia vulgaris*, scentless mayweed *Tripleurospermum inodorum*, forget-me-nots *Myosotis alpestris*, cleavers *Galium aparine*, buddleia *Buddleia* sp., common sorrel *Rumex acetosa*, hollyhock *Alcea* sp., teasel *Dipsacus fullonum*, broad leaved plantain *Plantago major*, common knapweed *Centaurea nigra*, snapdragon *Antirrhinum majus*, small fleabane *Pulicaria vulgaris*, hedge mustard *Sisymbrium officinale*, white clover *Trifolium repens*, and red clover *Trifolium pratense*.
- 5.14. Several pieces of fallen deadwood are also present within this habitat. A concrete curb runs from east to west through the centre of this habitat.

h2a5 species-rich native hedgerow (secondary codes: 11)

- 5.15. There are two species-rich native hedgerows with trees present bounding the western and northern boundaries of the site.
- 5.16. A gap of over 5m in length separates the two hedgerows.

Northern Hedgerow with Trees

- 5.17. The shrub storey of the hedgerow measures approximately 3m in height and 1.5m in width on average throughout its length. A number of emergent trees are present within the hedgerow, reaching up to 10m in height.
- 5.18. The hedgerow is of a moderate density, with numerous small gaps recorded throughout its length. However, no gaps larger than 1m in length were noted. The hedgerow shows signs of occasional management, holding a fairly uniform appearance at the time of the survey. The shrub storey was fairly young with no mature shrubs recorded. The emergent trees were of varying ages, with young, semi-mature, and mature trees noted.
- 5.19. The species recorded within the hedgerow include hawthorn *Crataegus monogyna*, field maple *Acer campestre*, elder *Sambucus nigra*, and dog rose *Rosa canina*. The trees within the hedgerow include hybrid poplar *Populus x canadensis*, Scots pine *Pinus sylvestris*, cypress *Cupressus sp.*, and an pedunculate oak *Quercus robur*.
- 5.20. The hedgerow understory comprised a continuation of the neighbouring sparsely vegetated land habitat.

Western Hedgerow with Trees

- 5.21. The hedgerow measures approximately 2m in height and 1.5m in width on average throughout its length. Several emergence trees are present within the hedgerow, ranging between 4m-6m in height.
- 5.22. The hedgerow is of a moderate density, with a couple of medium-sized gaps noted. However, none of the recorded gaps exceeded 1.5m in length. The hedgerow has been left unmanaged, and is fairly young with no mature shrubs or trees recorded.
- 5.23. The species recorded within the hedgerow include smooth-leaved elm *Ulmus minor*, blackthorn *Prunus spinosa*, hawthorn, bramble, elder, dog rose, pedunculate oak, field maple, and wild cherry *Prunus avium*.
- 5.24. The hedgerow understory comprised a continuation of the neighbouring sparsely vegetated land habitat.

h3d Bramble Scrub

- 5.25. A parcel of bramble scrub surrounds the building within the southwestern corner of the site. The scrub measures approximately 1.25m in height on average across the parcel, ranging between 0.5m and 2m in height. Bramble is the dominant species, comprising 80% of the species composition. Scattered stands of ruderal vegetation are also present within the bramble scrub, with the species matching those identified within the neighbouring parcel of sparsely vegetated urban land. Recorded species include common knapweed, spear thistle, common nettle, mugwort, broad-leaved dock *Rumex obtusifolius*, field rose *Rosa arvensis*, and rosebay willowherb.



Contains OS data © Crown copyright (2025) **NOTE:** Areas are indicative and are not shown to exact scale.

Legend

 Red Line Boundary

HEDGEROWS

 Species-rich native hedgerow with trees

HABITATS

 Bramble scrub

 Buildings

 Developed land; sealed surface

 Ruderal/Ephemeral

Google Satellite



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ECOLOGY

integrating nature conservation

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Figure 3: Habitat Walkover Map

Date: December 2025

Habitat Walkover Survey Photos



Image 1: Ruderal vegetation facing westwards.



Image 2: Pile of rubble from building materials.



Image 3: Pile of logs, heras fencing, and wooden panelling.



Image 4: Plastic lining present towards the western aspect of the site.



Image 5: Gap between northern and western hedgerow



Image 6: Northern hedgerow with trees, facing east.

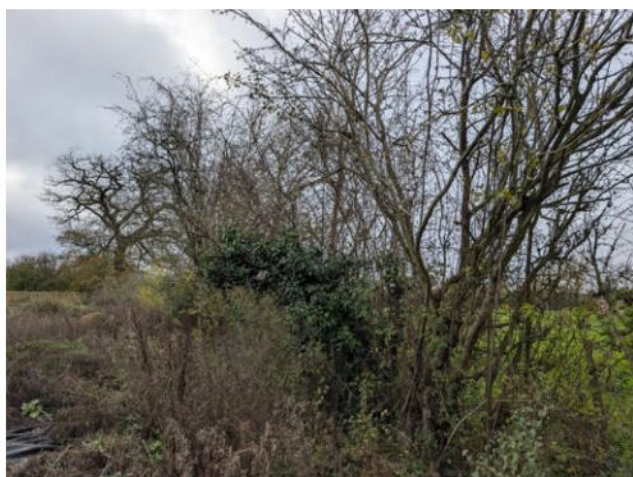


Image 7: Western hedgerow.



Image 8: Area of ruderal vegetation, facing northwest



Image 9: Collapsed shed with bramble scrub.



Image 10: Bramble scrub.



Image 11: Ruderal vegetation facing eastwards.



Image 12: Concrete foundation running along the middle of the ruderal vegetation.

Protected Species

Bats

- 5.26. A search of MagicMap identified three records of EPS licences for bats within 2km of the site boundary. These are detailed in **Table 2**.

Table 2: ESP licences granted for bats within 2km of the site

Case Reference	Licence dates	Species designation	Licensable Impact	Approximate distance from site
2015-8658-EPS-MIT-1	18/04/2019 - 30/04/2019	Common pipistrelle <i>Pipistrellus pipistrellus</i> , brown long eared <i>Plecotus auritus</i>	Destruction of a breeding site and a resting place	440m south-east
2017-32001-EPS-MIT	01/01/2018 - 30/04/2018	Common pipistrelle	Destruction of a resting place	1.55km north-west
EPSM2012-4899	04/10/2012 - 01/10/2014	Common pipistrelle, brown long eared	Destruction of a resting place	1.85km north-west

- 5.27. The site contained suitable habitat to support foraging and commuting bats, with the species-rich native hedgerows with trees offering good foraging and commuting opportunities for these species. The ruderal vegetation and bramble scrub offer some low-value foraging opportunities for bats. The hedgerows, and associated trees, along the boundary of the site are likely to be frequently used by commuting bats, as these habitats provide good linear features within the wider landscape. The site is well connected to the wider landscape through a network of hedgerows and tree lines.
- 5.28. The wider landscape contains large quantities of suitable habitat to support bats within the local area, with the wider landscape containing several areas of deciduous broadleaved woodland, areas of ancient woodland, waterbodies, and fields bounded by hedgerows and mature lines of trees. It is considered likely that the habitats within the wider landscape support a variety of bat species.
- 5.29. Due to the presence of suitable foraging and commuting habitat on site, and the high level of connectivity to further areas of suitable habitat within the wider landscape, it is considered likely that a variety of bat species access and utilise the site regularly.
- 5.30. None of the trees identified on site were assessed to be of the age or character to support potential roosting features, and no potential roosting features were identified from the ground. The trees on site were assessed to hold negligible potential to support roosting bats.

Great Crested Newt and Common Amphibians

- 5.31. A search of MagicMap identified no records of EPS licenses for great crested newts or records of great crested newt pond surveys 2017-2019 with positive results within 1km of the site.

- 5.32. MagicMap holds a single record of a great crested newt class survey licence return within 1km of the site boundary, located 930m southeast of the site. The licence return reported the presence of great crested newt at this location in May 2016.
- 5.33. No waterbodies were present on site. Four waterbodies were identified via OS Maps to be within 500m of the site boundaries, comprising three ponds and a ditch. Three of these (two ponds and the ditch) are located within 250m of the site boundaries.
- 5.34. The waterbodies were located on third party land which could not be accessed during the habitat walkover survey. As such, a Habitat Suitability Index assessment could not be undertaken on these waterbodies. To account for this lack of access, it has been assessed that all ponds within 500m of the site boundaries hold potential to support breeding populations of great crested newt and common amphibians.



Figure 4: Waterbody locations within 250m of the redline boundary. Copyright MagicMap (Dec 2025)

- 5.35. The areas of ruderal vegetation on site would provide some good foraging opportunities for amphibians. However, due to the patchy nature of the vegetation cover, this habitat is unlikely to provide effective cover to provide suitable resting and commuting opportunities for amphibian species.
- 5.36. The hedgerows and bramble scrub on site would provide good foraging, resting, and commuting opportunities for local amphibians.
- 5.37. The rubble and timber piles, alongside the areas of fallen deadwood, would provide suitable refugia and hibernacula opportunities for amphibians. Additionally, the derelict building may offer suitable refugia and hibernacula opportunities.

- 5.38. Due to the low-moderate value of the opportunities present, the small size of the site, and the lack of waterbodies on site, it is considered significantly unlikely that the site would support populations of great crested newts or common amphibians.
- 5.39. The wider landscape contains suitable habitat to support individuals and populations of amphibians, with the waterbodies, woodland areas, hedgerows, and field margins all offering good foraging, commuting, and resting opportunities for these species. It is considered likely that individuals and populations of amphibian species are present within the wider landscape.
- 5.40. The site has a high level of connectivity to the wider landscape via a network of hedgerows and tree lines. It is considered likely that any individual amphibians present within the wider landscape would be able to access the site.
- 5.41. Due to this high level of connectivity, and the presence of some suitable opportunities for amphibians on site, it is anticipated that individual amphibians may access and utilise the site on occasion. Due to the sparse nature of the ruderal vegetation, it is considered likely that amphibian presence on site is predominantly restricted to the boundary habitats.

Reptiles

- 5.42. A search of MagicMaps identified no records of EPS licences for reptiles within 1km of the site.
- 5.43. The area of bramble scrub and the hedgerows on site would provide suitable foraging, commuting, and resting opportunities for reptiles. The ruderal vegetation habitat would provide some suitable foraging opportunities for reptiles. However, the sparse nature of the vegetation would result in a lack of protective cover for reptiles. As such, it is considered that the value of the foraging, commuting, and resting opportunities presented are limited. The areas of bare ground would provide suitable basking opportunities for reptiles.
- 5.44. The derelict shed, the rubble and timber piles, and the pieces of fallen dead wood would provide suitable refugia and hibernacula opportunities for reptiles.
- 5.45. Due to the low-moderate value of opportunities on site, in combination with the small size of the site, it is considered significantly unlikely that the site would support populations of reptile species.
- 5.46. The wider landscape contains areas suitable habitat to support individuals and populations of common reptiles, with the areas of woodland, field margins, and hedgerows offering good foraging, commuting, and resting opportunities for these species. It is anticipated that individuals and populations of common reptile species would be present within the landscape surrounding the site.
- 5.47. The wider landscape does not contain suitable habitat to support smooth snake *Coronella austriaca* or sand lizard *Lacerta agilis*.

- 5.48. The site has a high level of connectivity to the wider landscape via a network of hedgerows and tree lines, and it is considered likely that any reptiles present within the wider landscape would be able to access and utilise the site. Therefore, it is anticipated that individual reptiles may access and utilise the site on occasion.
- 5.49. Due to the sparse nature of the ruderal vegetation, it is considered likely that reptile presence on site is predominantly restricted to the boundary habitats.

Dormouse

- 5.50. A search of MagicMaps identified no records of EPS licences for dormouse within 1km of the site.
- 5.51. No evidence of dormouse, in the form of chewed nuts or nests, was identified on site.
- 5.52. The ruderal vegetation on site does not provide any suitable foraging, resting, nesting, or commuting opportunities or resources for dormouse.
- 5.53. The hedgerows and bramble scrub on site provide some suitable opportunities to support dormouse. The foraging opportunities offered by the hedgerows and bramble scrub would be seasonally dependent due to the limited species diversity, and are limited due to the size of these habitats. Additionally, the nesting opportunities present are sub-optimal due to the lack of suitable plants used for nesting, such as hazel *Corylus avellana* or honeysuckle *Lonicera periclymenum*, being present.
- 5.54. The hedgerows were of a moderate density with small gaps being present throughout both hedgerow. A large gap of between 4m-5m separated the two hedgerows, reducing the connectivity between these linear features and limiting the ability of dormouse to commute through the site.
- 5.55. The wider landscape contains some areas of suitable habitat to support populations of dormouse, with large areas of woodland being scattered throughout the landscape. It is considered that populations of dormouse may be present within the areas of woodland in the wider landscape. Whilst the site has a high level of connectivity to the wider landscape, the connectivity between the site and areas of woodland habitat is limited, with all woodland habitats within the wider landscape being divided from the site by roads and urban developments.
- 5.56. Due to the low quantity and the low value of foraging and nesting resources present within the hedgerows on site, in combination with the limited connectivity on-site and between the site and areas of woodland within the wider landscape, it is considered significantly unlikely that populations of dormouse would be present on site.
- 5.57. Due to the lack of connectivity between the site and areas of suitable dormouse habitat within the wider landscape, it is not anticipated that individual dormouse could access and utilise the habitats on site. This species is not considered further within this report.

Other Terrestrial Mammals

- 5.58. Evidence of mammal activity in the form of rabbit droppings was identified at the centre of ruderal vegetation. No mammal trails, hairs, snuffle holes, scatt, prints, or mammal holes were recorded on site. [REDACTED]
- 5.59. The site offers suitable habitat to support terrestrial mammals, with the bramble scrub habitat and the hedgerows providing good foraging, commuting, and resting opportunities for these species. The ruderal vegetation on site had offered some low-moderate value commuting and foraging opportunities for terrestrial mammals. It is considered unlikely that the site would support populations of terrestrial mammals due to its small size.
- 5.60. The wider landscape contains areas of high-value habitat for terrestrial mammals, with the woodland habitats, hedgerows, field margins, and pastoral fields providing good foraging, commuting, and resting opportunities for these species. It is considered likely that individuals and populations of terrestrial mammals are present within the wider landscape.
- 5.61. The site had a high level of connectivity to the wider landscape, and no significant barriers to dispersal were recorded at the time of the survey. It is considered that any individual terrestrial mammals within the wider landscape would be able to easily access the site. As such, it is anticipated that the site is utilised on occasion by individual terrestrial mammals.

Breeding Birds

- 5.62. The hedgerows, ruderal vegetation, and bramble scrubs all offered suitable foraging and commuting opportunities for a variety of bird species. Additionally, the hedgerows, trees and bramble scrub on site offered suitable nesting opportunities for breeding birds.
- 5.63. A defunct bird nest was recorded in the western hedgerow at the time of the survey. Additionally, the following species were recorded on site and during the survey: red kite *Milvus milvus*, robin *Erithacus rubecula*, wren *Troglodytes troglodytes*, and a little owl *Athene noctua* perched in one of the trees along the northern hedgerow.
- 5.64. It is likely that the site supports an assemblage of common woodland and garden birds. Common farmland birds may pass over the site on occasion due to the high quantity of agricultural land within the wider landscape. However, the site itself does not contain suitable habitat to support these species.

Barn Owl

- 5.65. The habitats on site did not provide suitable hunting opportunities for barn owls, and it is considered unlikely that barn owls would access and utilise the site for hunting. No evidence of features suitable to support roosting barn owls were identified on site. It is therefore considered unlikely that barn owls would be roosting on site.

- 5.66. It is likely that the woodland habitat within the surrounding landscape provides roosting opportunities for barn owls, and it is considered likely that barn owls are present within the wider landscape.

Invertebrates

- 5.67. The hedgerows, trees, bramble scrub, and ruderal vegetation all provide suitable foraging, resting and commuting opportunities for a variety of invertebrate species.
- 5.68. It is considered that the site would support an assemblage of common invertebrates.
- 5.69. Due to the lack of suitable habitat on site it is considered significantly unlikely that Roman snail *Helix pomatia* or stag beetle *Lucanus cervus* would be present on site.
- 5.70. Stag beetle are likely to be present within the wider landscape due to the presence of large areas of broadleaved woodland.

6. IMPACT ASSESSMENT

Designated Sites and Priority Habitats

Baseline

- 6.1. There are no statutory designated sites within 2km of the site.
- 6.2. The site is situated within the IRZ for Lodge Wood and Stanford Mill SSSI. The site does not fall within the buffer zones of any internationally designated sites.
- 6.3. Priority habitats within 1km include priority deciduous woodland, wood pasture and parkland, and ancient woodland.

Potential impacts

- 6.4. The site falls within the IRZ for an SSSI, which applies restrictions to infrastructure relating to aviation, minerals, oil, and gas exploration or extractions, air pollution relating to large livestock and poultry units, and general combustion processes. However, the proposed works do not come under a description which would require the local authority to consult Natural England.
- 6.5. The proposals, due to their small scale and localised nature, are not anticipated to impact any designated sites, priority habitats or ancient woodlands through land take, mechanical damage, or other direct effects of the development.
- 6.6. It is not anticipated that the development will impact any statutory designated sites or ancient woodlands indirectly or incidentally due to the distance between the development area and these sites, alongside the small-scale and localised nature of the works.
- 6.7. There will be no net increase in residential units and therefore no resulting impacts to surrounding designated sites, priority habitats, ancient woodlands, or green spaces through increased footfall or amenity pressures.

Habitats

Status of Habitats on Site

- 6.8. The habitats on site comprise developed land; sealed surface, sparsely vegetated urban land (ruderal vegetation), bramble scrub, and two species rich native hedgerows with trees.
- 6.9. The areas of developed land; sealed surface is of negligible intrinsic ecological value.
- 6.10. The ruderal vegetation and bramble scrub are of low intrinsic ecological value.
- 6.11. The species-rich native hedgerows with trees are habitats of moderate intrinsic ecological value.

Potential Impacts

- 6.12. The proposals will result in the loss of the entirety of the ruderal vegetation and bramble scrub. Additionally, small sections of the species-rich hedgerow with trees will be lost as

part of the works. However, large sections of these linear features will be retained. The hardstanding track on the eastern boundary will be retained.

- 6.13. The loss of the ruderal vegetation and bramble scrub will have a low-level negative impact on the local scale. As the majority of the native hedgerow will be retained, the loss of a couple of meters of the native hedgerow will have a low-level negative impact on the local scale. Overall, the works will have a low-level negative impact on the local scale.
- 6.14. The proposals for the site will result in the creation of an area of grazing paddock, the planting on new species-rich native hedgerows with trees and individual native trees, and the creation of areas of mixed scrub. These habitats will help to compensate for the loss of habitat as a result of the development, and will provide opportunities for protected and notable species on site following the completion of the development. Following this new planting and habitat creation, it is anticipated that the works will have no significant negative impact on the local level.
- 6.15. Buddleia, a non-native invasive species, is present within the site boundary. It is an offence to cause the spread of non-native invasive species.

Mitigation

- 6.16. *Tree root protection zones:* All retained trees at site boundaries will be protected in accordance with British Standards BS 5837:2012. Root protection areas will be 12x the diameter at breast height (DBH) or the reach of the longest branch (whichever is greater), unless otherwise advised by a qualified arboriculturist. Trees located off site but with their roots on site should also be protected. No materials should be allowed to be stored within these root protection areas and no heavy machinery should run over them.
- 6.17. *Infill planting:* If trees are to be removed, the landscaping proposals should aim to replace removed trees like-for-like where possible, using native species. Ash trees should be avoided due to the potential for ash dieback.
- 6.18. *Boundary hedgerow planting:* It is recommended that areas of native scrub and hedgerows are provided within the landscape proposals, particularly around the boundaries, to provide opportunities for nesting birds, and foraging and sheltering habitat for a range of protected species.
- 6.19. This will be achieved by planting a mixture of native scrub species such as hawthorn, blackthorn and spindle *Euonymus europaeus*, along with complementary species such as honeysuckle *Lonicera periclymenum* and dog rose *Rosa canina*. These habitats can be managed to provide an edge habitat along the boundaries of the site. Bramble should also be allowed to establish, to create a well-structured scrub habitat along the site boundaries. A strip of rough grass should be established along the edge of the new scrub to provide additional structural diversity.

- 6.20. Where UK native species cannot be used, the species planted should not include non-native invasive species (such as *Rhododendron ponticum*, *Cotoneaster spp*, or cherry laurel), and should favour fruiting and flowering species.
- 6.21. Where any additional new planting is considered in the plan, native tree and shrub species should be used to enhance the ecological value of the site. Ash trees should be avoided due to the potential for ash dieback.
- 6.22. The landscape proposals for the site should include at least 60% native species. No invasive non-native species should be used within the landscape proposals for the site (including those not listed in Schedule 9, such as cherry laurel).
- 6.23. *Invasive species:* If invasive species on site are due to be removed as part of the proposals, these should be removed appropriately so as to prevent the spread of these species.
- 6.24. Given the above mitigation strategies, it is considered likely that there will be no residual impacts on habitats in the local area.

Protected Species

Bats

Baseline

- 6.25. The habitats on site offer good foraging and commuting opportunities for bats, and it is considered likely that variety of bat species would regularly access and utilise the site.
- 6.26. The trees present on site were not of the age and character to support potential roosting features, and no potential roosting features were observed from the ground. These trees were assessed to hold negligible potential to support roosting bats.
- 6.27. The building on site did not provide any suitable roosting opportunities for bats.

Potential impacts

- 6.28. The loss of a small section of the native hedgerow will results in the loss of suitable and commuting habitat on site. However due to the small size of the area being lost, the inclusion of new hedgerow and native tree planting within the proposals, and the high quantity of suitable habitat in the wider landscape, it is not anticipated that the loss of these habitats would have a significant negative impact on local bat populations.
- 6.29. Light spill throughout the works and from any new artificial lighting on site may impact bat flight paths and foraging sites, potentially resulting in habitat fragmentation. It is therefore important to consider lighting impacts in proposed plans.

Mitigation

- 6.30. *Lighting:* Any new external lighting should be directed to avoid light spillage onto vegetation, particularly linear habitat features such as woodland edges or potential roosting sites within

trees and buildings. Bats are sensitive to light and could potentially avoid the area if access points or the surrounding areas become lit. Appropriate lighting options will prevent a negative impact on bats potentially using the habitats on site and should be approved by a suitably qualified and licensed bat ecologist. Lighting plans should follow the latest guidance from the Institution of Lighting Professionals (ILP), which considers the impact upon bats when designing lighting schemes (BCT, 2023). If appropriate measures are taken to reduce light spillage from the development, it is likely that there will be no negative impacts on local bat populations.

- 6.31. All works throughout the development period should be undertaken during daylight hours to minimise the requirement for artificial lighting during the period when bats may be active. Where artificial lighting is required on site during the construction phase, shielding must be used, and a sensitive lighting plan must be developed to minimise the amount of light spill during the construction phase. Artificial lighting must not be left on whilst the construction site is not in operation.
- 6.32. See **the Appendices** for further information on designing lighting to minimise impacts on bats.

Amphibians and Reptiles

Status on Site

- 6.33. It was determined that the site was unlikely to support populations of reptiles or amphibians.
- 6.34. However, due to the high level of connectivity between the site and areas of suitable habitat within the wider landscape, and the presence of some suitable foraging, commuting, and resting opportunities for these species on site, it is considered likely that individual reptiles and amphibians may access and utilise the site on occasion.

Potential Impacts

- 6.35. If amphibians and reptiles are able to access the site during proposed works, they may become injured during construction or trapped in any excavations.
- 6.36. The proposals will result in the loss of the ruderal vegetation and bramble scrub habitats on site, alongside small sections of the hedgerows. The loss of these habitats will result in a small reduction in areas of suitable habitat to support reptiles and amphibians within the local area. However, given the small size of these habitats, the inclusion of new hedgerow planting within the proposals, and as the wider landscape contains high quantities of suitable habitat to support these species, it is not considered that the proposed works will result in a significant loss of suitable foraging, resting, or commuting opportunities for

reptiles or amphibians within the local area. As such, it is considered unlikely that the works would result in any significant negative impact to reptiles or amphibians.

Mitigation

- 6.37. Given the likely low impact of the proposals, it is considered disproportionate to recommend further surveys for these species. If any amphibians or reptiles are present within the development area during the works period, it is considered that standard mitigation and reasonable avoidance measures should be sufficient to protect these species.
- 6.38. It is proposed that the mitigation measures employed include the following measures (as appropriate):
- An Ecological Clerk of Works (ECoW) will be appointed to provide a watching brief during all site works which have potential to impact amphibians and reptiles. The ECoW will be a suitably experienced ecologist who is a member of the Chartered Institute of Ecologists and Environmental Managers (CIEEM).
 - A toolbox talk will be delivered by the ECoW to the Site Manager and all site operatives prior to commencement of work within the site. The toolbox talk will detail the protection measures required during construction and will induct contractors on the potential to encounter protected species such as reptiles, amphibians, birds and hedgehogs, where they may be found, what they look like, the legal protection afforded and best practice methodologies.
 - Timings: All works which may impact reptiles and amphibians should be undertaken during the day and in suitable weather conditions (above 10°C, light breeze, and dry).
 - Hibernacula identification: No existing hibernacula (rubble piles, timber piles, and the derelict building) with the potential to support hibernating amphibians and reptiles can be disturbed during the months of November to January. Hibernacula that fall within the designated works area will either need to be fenced off during this period or it will need to be identified, dismantled and moved off-site under ECoW supervision outside of these critical months to ensure that hibernating individuals are not disturbed.
 - In order to avoid creating suitable refuges for reptiles and amphibians during construction, all stored materials should be raised off the ground on pallets or skids. Aggregates, such as gravel or sand, must be delivered in bulk bags and stored on pallets.
 - Maintaining Unsuitable Habitats: The ruderal vegetation on site will be maintained as mown short (sward <200mm) until construction commences to maintain the sub-optimal nature of these habitats for amphibians and reptiles. Should the areas of vegetation grow to longer than 30cm in height, they will be cleared via a two-stage cut under supervision by a suitably qualified ecologist. This will involve strimming under the careful supervision of a suitably qualified ecologist during temperatures above 10°C. The strimming will be carried out in a two-stage cut, with the first cut to 15 centimetres and the second to

ground level. This cut will take place in one direction from north to south, towards the areas of suitable habitat to the north and west of the site in order to give any amphibians or reptiles a chance to leave the area and disperse to the wider landscape.

- All arisings from the strimming and clearance will be immediately removed from the works area to prevent any newts sheltering within it.
- All hedgerows on site will be retained. A buffer of at least 5m will be maintained around these features to prevent any damage occurring in the event that reptiles and amphibians disperse through the site.
- Fingertip search: A fingertip search of the development area will be conducted by a suitably qualified ecologist immediately prior to the works to ensure an absence of amphibians within the development boundary. If any individuals are found, they will be removed by hand and placed in an area of suitable habitat within the wider site area.
- Excavations: Any excavations or trenches on site must be covered whilst works are paused (such as overnight), or a ramp should be provided in order to prevent animals from becoming trapped. Open excavations should be sloped to prevent entrapment.

- 6.39. Given the above avoidance and mitigation strategies, it is considered likely that there will be no residual impacts on amphibians or reptiles.

Other Terrestrial Mammals

Status on Site

6.40.



- 6.41. Evidence of mammal activity in the form of rabbit droppings was recorded in centre of the ruderal vegetation habitat.

- 6.42. The site offered suitable habitat to support terrestrial mammals, with the majority of habitats on site providing good foraging, commuting, and resting opportunities. Due to a lack of evidence on site, in combination with the small size of the site, it is anticipated that the site does not currently support a population of terrestrial mammals.

- 6.43. Due to the presence of suitable habitat to support populations of terrestrial mammals within the wider landscape, and the high connectivity between the site and the wider landscape, it is likely that individual terrestrial mammals access and utilise the site on occasion.

Potential Impacts

- 6.44. If terrestrial mammals are able to access the site during the proposed works, they may be injured due to the destructive activity, or trapped in any excavations.
- 6.45. The loss of the ruderal vegetation, hedgerows, and bramble scrub will result in a loss of suitable foraging habitat for terrestrial mammals within the local area.

- 6.46. However, due to the small size of the areas of suitable habitat to be lost, the inclusion of new native hedgerow planting within the proposals, and the presence of areas of suitable habitat to support these species within the wider landscape, it is not anticipated that the proposals will result in a significant loss of suitable habitat to support terrestrial mammals within the local area. As such, it is not considered that the proposals would have a significant negative impact on local populations of terrestrial mammals.

Mitigation

- 6.47. General mitigation measures are considered sufficient to protect terrestrial mammals during construction works within the application area. It is considered that the methods outlined under the amphibian and reptile section (above) will be sufficient to protect terrestrial mammals should they be present on site.
- 6.48. As a precautionary measure, during construction all trenches and holes are to be covered overnight to prevent wildlife falling in and becoming trapped. Contractors should also ensure that ramps are installed at any excavations or trenches, which must be checked before filling takes place.
- 6.49. The hedgerow removal should occur as a two-stage cut. The initial cut should be done by hand and reduce the vegetation to a height of 15cm. This should then be left overnight to allow for the dispersal of any small mammals present. The second cut should occur the next day in weather suitable.
- 6.50. All new hard boundaries (i.e. wooden panel fences) will have holes of 20cm X 20cm cut into the base to allow for the movement of terrestrial mammals throughout the site.
- 6.51. In the event a hedgehog [REDACTED] is discovered on site during the construction phase then all works must stop and:
- Primarily, the individual should be allowed to disperse naturally, with works being halted until they are outside the development area.
 - Alternatively, if the individual appears injured or is not moving, a suitably qualified ecologist should be contacted.

- 6.52. Given the above mitigation strategy, it is considered likely that there will be *no residual impacts* on terrestrial mammals.

Breeding Birds

Status on Site

- 6.53. The hedgerows with trees, bramble scrub, and ruderal vegetation provide suitable foraging opportunities for local birds. Additionally, the hedgerows with trees and bramble scrub provide good nesting opportunities for a variety of bird species. A defunct nest was observed at the time of the survey.

- 6.54. It is likely that the site is frequented by an assemblage of common garden and woodland bird species.
- 6.55. No suitable trees or structures to support roosting and nesting barn owls were identified on site or around the boundary of the site. It was determined that the habitats on site did not offer suitable hunting opportunities for barn owl. It is considered unlikely that barn owls would utilise the site.

Potential Impacts

- 6.56. The proposals will result in the loss of a small section of the native hedgerow and the entirety of the bramble scrub. This will result in a small loss of nesting and foraging opportunities on site. The loss of the area of ruderal vegetation will result in a small loss of foraging opportunities on site.
- 6.57. Due to the small size of the areas of suitable habitat which will be lost as part of the proposals, the inclusion of new hedgerow and tree planting within the proposals, and the high quantity of suitable habitat present in the wider landscape it is not considered that the proposals will not result in a significant loss of suitable habitat to support nesting and foraging birds within the local area.
- 6.58. It is not anticipated that the works will result in a significant negative impact on local birds.

Mitigation

- 6.59. Where any vegetation removal is required (such as the removal of the hedgerow), this removal should occur outside of the breeding bird season (March - August inclusive).
- 6.60. If any vegetation removal is required during the breeding bird season (March - August), a pre-works check by a suitably qualified ecologist will be conducted no more than 24 hours before the removal to ensure that no active nests are present. If active nests are recorded, a suitable buffer will be retained around these until all chicks have fledged (to be confirmed by a suitably qualified ecologist).
- 6.61. A wildlife-friendly landscaping scheme is recommended to enhance the site and provide suitable foraging habitat for birds.
- 6.62. Given the above mitigation strategies, it is considered likely that there will be no residual impacts on birds.

Invertebrates

Status on Site

- 6.63. The hedgerows, trees, bramble scrub, and ruderal vegetation provide suitable foraging, commuting, and resting opportunities for invertebrate species. It is considered that the site likely supports an assemblage of common invertebrate species.

- 6.64. The site is considered unlikely to support stag beetle and roman snail due to a lack of suitable habitat on site.

Potential Impacts

- 6.65. The loss of the ruderal vegetation, bramble scrub, and small sections of native hedgerow will result in a small loss of suitable invertebrate habitat within the local area.
- 6.66. However, it is not anticipated that the loss of suitable habitat on site resulting from the works will have a significant negative impact on local populations of invertebrates due to the small size of the site, the presence of high-value habitat within the surrounding landscape, and the inclusion of new hedgerow and tree planting within the proposals.

Mitigation

- 6.67. Where possible, areas of species-rich grassland which will be attractive to invertebrates should be incorporated into the landscaping of the site. Some areas of grassland should also be allowed to grow longer (for example, a 1m strip along the hedgerows) to help improve structural diversity on site. This strip could also be sown with an appropriate seed mix such as Emorsgate EM10 for a sward of tussocky grassland, or Emorsgate EM1 for a wildflower grassland, or similar as available.
- 6.68. Where new planting is considered in the plan, native tree and shrub species should be used to enhance the ecological value of the site. Areas of planting incorporated within the scheme should include a wide combination of fruiting and flowering species, with native species being preferred where possible. The incorporation of fruiting and flowering species would provide a variety of pollen and nectar species for invertebrates.
- 6.69. Given the above strategies, it is considered likely that there will be *no residual impacts* on invertebrates.

7. ENHANCEMENT RECOMMENDATIONS

- 7.1. National planning policy states that all developments should seek to enhance onsite biodiversity whether impacts on protected species are recorded or not. Incorporating enhancement features into new or renovated buildings should be carefully considered. These features can be simple and inexpensive, please see below for specific recommendations.

Wildlife Beneficial Landscaping Scheme

- 7.2. Any future landscape planting should seek to enhance biodiversity, improve connectivity to the surrounding habitats and provide food and shelter for a wide range of wildlife. All amenity planting and formally landscaped areas should be designed using a variety of plant species beneficial for wildlife. These do not necessarily have to be native but should be chosen for their ability to provide nectar or fruit and should be non-invasive species. There are a number of specialist seed mixes available specific to certain soil types, growing conditions and designed to benefit different groups of species such as bees or butterflies and moths.
- 7.3. All habitats should be managed in a suitable way to encourage a wide variety of insects and other wildlife to use the site.
- 7.4. Further information regarding habitat creation, enhancement and management can be provided on request and submitted with further survey results for the final planning application.

Bats

- 7.5. To provide additional roosting opportunities for bats within the local area, one bat box, such as the Greenwoods Small Hollow, Vincent Pro Wooden Slot Box, Schwegler 2FN (Double Front Panel) or Vivara Pro Beaumaris bat box can be installed on any mature trees on site. Bat boxes should be installed at a height of at least 4m, preferably on a southern un-cluttered aspect with good connectivity to linear features such as other mature trees and hedgerows. The location should be determined by a licensed bat ecologist to ensure likelihood of repeated use is increased (see the **Appendix**).

Reptiles and amphibians

- 7.6. To provide new resting and hibernating habitat for reptile and amphibians, small deadwood piles or hibernaculum features can be incorporated at appropriate areas of the site, such as at the base of hedgerows (see Appendices for further details).
- 7.7. Longer grass and habitat diversity, such as through the sowing of an appropriate seed mixture, will also benefit this species group

Birds

- 7.8. To enhance the site for birds, a generalist bird box could be installed on one of the mature trees bordering the site.
- 7.9. Tree-mounted bird boxes suitable for garden and rural species can be installed on any trees or building on site (see **Appendix**). Bird boxes should be installed at least 4m from ground level and with unobstructed air space in front.
- 7.10. Within the development, wildlife friendly landscaping and the inclusion of native hedgerow planting at the perimeter of the site will provide additional nesting and foraging opportunities for bird species (see **Appendix** for further information).

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APPENDICES

- 1. PROPOSED PLANS**
- 2. BATS AND LIGHTING**
- 3. MOUNTED BAT AND BIRD BOXES**
- 4. DEADWOOD PILES AND HIBERNACULA**
- 5. INVERTEBRATE ENHANCEMENTS**
- 6. WILDLIFE FRIENDLY LANDSCAPING**

Tree Protection Areas - Construction Exclusion Zones

EXISTING PROTECTIVE BARRIERS (as approved), must be installed before any material or machinery is brought onto the site and before the commencement of any excavation, ground works, ground or construction works of any description.

THE PROTECTIVE BARRIERS (as approved) must remain fully intact, undamaged and maintained at all times. Any damage to the barriers must be repaired immediately and any associated landscaping work. Any approved planting of protective measures must be fully observed and completed with.

RESTRICTIONS: The Protection Areas/Construction Exclusion Zones are to remain completely undisturbed for the duration of all development works. No construction activity of any description including but not limited to the following shall occur within these areas at any time.

- No excavation of any description.
- No alterations to existing levels or ground conditions.
- No vehicle access, parking or use of any tracked or wheeled machinery of any description.
- No tree work, without the written consent of the Council's Tree Service.
- No removal of temporary structures of any description.
- No storage of materials or use of any chemicals including cement.
- No burning or lighting of any description including lighting, signage etc shall be installed in any part of a tree.
- No lighting shall be installed within 10 metres of the canopy of any tree or ground of any height.
- No chemicals, fuel, liquid waste or refuse of any other description to be stored or disposed of within these areas or on or around the protective barriers.
- No chemicals, fuel, liquid waste or refuse of any other description to be stored or disposed of within these areas or on or around the protective barriers.

PROTECTIVE BARRIERS: A weather resistant barrier (as approved) shall be installed to protect the barriers at regular intervals (maximum spacing 10m) throughout the area and maintained until completion of all development works.

PLANTING COMPENSATION: The protective measures detailed on the drawings are a legal requirement, it is the responsibility of the developer to ensure that the approved measures are fully implemented and maintained in full accordance with the approved scheme may lead to enforcement action being taken by the Local Authority.



EXISTING PLANTING
TO BE CUT BACK
AND MADE GOOD

INDICATIVE TREES
TO BE RETAINED

5m BUFFER ZONE
TO PROTECT TREE
ROOTS

PROPOSED DOUBLE
GATES TO
ENTRANCE
OF SITE

PROPOSED
PLANTING

DASHED RED LINE
DENOTES SITE
BOUNDARY FOR
APPLICATION

RANCH STYLE
FENCING

SINGLE 5 BAR
WOODEN GATE FOR
ACCESS TO
AGRICULTURAL
AREA

DASHED BLUE LINE
DENOTES PREVIOUS
POSITION
OF SHEDS

PROPOSED
GRAVEL
TRACK

SHED A
EQUIPMENT
STORE

PROPOSED
PLANTING

SHED B
AGRICULTURAL FEED

GREEN HATCHED
AREA DENOTES
AGRICULTURAL AREA
(GRAZING)

EXISTING 1.8m
HIGH CONCRETE
POST & RAIL FENCE
RETAINED

DASHED CYAN HATCH
DENOTES PREVIOUS
HARDSTANDING



KEY - TREES

- PROTECTIVE BARRIER - X TREES
- PROTECTIVE BARRIER - Y TREES
- PROTECTIVE BARRIER - Z TREES
- PROTECTIVE BARRIER - W TREES
- PROTECTIVE BARRIER - V TREES
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- PROTECTIVE BARRIER - E TREES
- PROTECTIVE BARRIER - D TREES
- PROTECTIVE BARRIER - C TREES
- PROTECTIVE BARRIER - B TREES
- PROTECTIVE BARRIER - A TREES

BS5837 TREE PROTECTION PLAN

Client:
DALEY PHILLIPS

Site:
Land at Pound Lane
Hurst
Berkshire
RG10 0RS

The position of trees on the site has been determined by a qualified person and is considered to be a good representation of the trees on the site and proposed building works.

PLANTING COMPENSATION: The protective measures detailed on the drawings are a legal requirement, it is the responsibility of the developer to ensure that the approved measures are fully implemented and maintained in full accordance with the approved scheme may lead to enforcement action being taken by the Local Authority.

Drawn by: Sarah Duckworth
Approved by: Sarah Duckworth
sarah@duckworth-arboriculture.com
01235 310140
Scale: 1:200 @ A2
Date: December 2015
File: LAND AT POUND LANE TPO 00001 2015



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ARBORICULTURE LTD.



THE IMPACT OF LIGHTING ON BATS

Bats favour a dark environment for both roosting and foraging as they are adapted to low-light conditions. Artificial lighting will disturb bats if the lighting covers roost access points, flight paths or foraging habitats.

The main peak of nocturnal insect abundance occurs at dusk and a delay in emergence results in a lower foraging rate for bats.

Artificial lighting creates a 'vacuum effect' for nocturnal insects. During the night nocturnal insects use the light of the moon* to navigate. However, artificial lighting and even sky glow above cities obscures the natural moonlight as it is closer

and radiates light in multiple directions.

Some species of bats have been recorded foraging around street lights such as *Pipistrellus* species and *Nyctalus* species. However, species that are less tolerant of artificial light are at a disadvantage when foraging as insects are drawn away from these species usual foraging grounds into the zones of artificial light.

Lighting must be considered in context to any development as increased lighting may cause roost abandonment, reduced reproductive success, and reduced foraging. Mitigation to reduce the impacts of lighting for bats is therefore of great importance in bat conservation.

Table 1: Summary of predicted impact of lighting for each species/genus

Impact	High	Medium	Low
Behaviour			
Maternity roost	All species	-	-
Night roost	<i>Rhinolophus hipposideros</i> <i>Rhinolophus ferrumequinum</i> <i>Myotis</i> spp. <i>Plecotus</i> spp.	<i>Pipistrellus</i> spp. <i>Nyctalus</i> spp. <i>Eptesicus serotinus</i> <i>Barbastella barbastellus</i>	-
Emergence	All species	-	-
Foraging	<i>Rhinolophus hipposideros</i> <i>Rhinolophus ferrumequinum</i> <i>Myotis</i> spp. <i>Plecotus</i> spp.	-	<i>Pipistrellus</i> spp. <i>Nyctalus</i> spp. <i>Eptesicus serotinus</i> <i>Barbastella barbastellus</i>
Commuting	<i>Rhinolophus hipposideros</i> <i>Rhinolophus ferrumequinum</i> <i>Myotis</i> spp. <i>Plecotus</i> spp.	-	<i>Pipistrellus</i> spp. <i>Nyctalus</i> spp. <i>Eptesicus serotinus</i> <i>Barbastella barbastellus</i>
Swarming	All species	-	-
Hibernation	All species	-	-

*For more information see Warrant, E., and Dacke, M. (2016) Visual Navigation in Nocturnal insects. *Physiology*, 31, 182-196.



Sources of light that can disturb bats include; light spill via windows, sport floodlighting, car headlights, roadside lighting, security lighting, aesthetic lighting of waterways, and aesthetic illumination of buildings. Glare will affect bats over greater distance than the target area directly illuminated.

Avoidance is the most effective method, but if this is not possible the following measures should be considered.

What lighting should I use?

- Low pressure sodium lights or 'warm' LEDs
- Wavelength above 540nm
- Colour temperature below 2700K
- Shielded lights that prevent light spill above a 70 degree angle
- Passive infrared (PIR) motion sensors



What to avoid:

- Lighting roost entrances, flightpaths, and foraging or commuting routes
- Reflective surfaces beneath lighting
- High level lights
- Non-directional lighting

Lighting should be considered at an early stage allowing impacts to be minimised through the design of the site.

Key Points

- Keep lighting intensity to the minimum level required
- Limit the times that lights are on to provide some dark periods (e.g. switching installations off between midnight and 5am)
- Dim lighting according to demand
- As an alternative to lighting pathways use paving materials that reflect moonlight
- Low level lighting allows darkness to be retained within higher vegetation
- Set dark habitat buffers - lighting should always be a minimum of 25m from vegetated margins and 40m from waterbodies
- Incorporate dark corridors within the site
- Compensate for the loss of dark areas by enhancing other dark areas
- Consider building design - install internal lighting away from windows



TYPES OF BAT BOXES



Schwegler 2F Double Front Panel

- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for pipistrelle and Myotis species
- A second inner wooden panel is fitted adjacent to the front panel imitating a cavity wall



Schwegler 1FD Double Front Panel

- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for pipistrelle and Myotis species
- A second inner wooden panel is fitted adjacent to the front panel imitating a cavity wall
- Small entrance hole discourages birds from using the box



Vincent Pro Bat Box

- Manufactured from timber and recycled plastic
- The front and the top of the box is black, which helps heat absorption
- Suitable for a range of species including pipistrelle species, Myotis species, and brown long-eared bats.
- No maintenance required



Schwegler 2FN

- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for pipistrelle species, Myotis species, serotine, brown long-eared, noctule and Leisler's bats
- Dual entrance
- Birds and dormice have also been found using this box
- A newer model is now available, Schwegler 3FN, designed with smaller entrance holes which discourage birds and dormice



Schwegler 1FS Large Colony Box

- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for a range of bats including pipistrelle species, Myotis species, Noctule, and brown long-eared bats
- Three grooved inner wooden panels are connected to the front panel, which are ideal for bats to cling to.
- Accommodates large summer colonies



Schwegler 1FF Colony Box

- Manufactured from long-lasting woodcrete
- Lifetime - 20-25 years
- Suitable for a range of crevice dwelling bats including pipistrelle species, barbastelle, noctule, and brown long-eared bats
- Rough wooden surface for bats to cling onto and climb



Greenwoods Ecohabitats Small Hollow Bat Box

- Manufactured from long-lasting ecostyrocete
- Lifetime - 20-25 years
- Suitable for a range of bats preferring a cavity space, including pipistrelle species, myotis species, noctule, and brown long-eared bats
- Suitable for hibernating bats



TYPES OF BIRD BOXES



Vivar Pro Seville 32mm WoodStone Nest Box

- Manufactured from woodstone - increases longevity and provides a consistent internal temperature
- The nest box compensates for the lack of natural cavities that are found in trees
- Suitable for blue tits, tree sparrows, house sparrows, great tits, crested tits, nuthatches, coal tits and pied flycatchers
- Should be installed between 1.5m and 3m high



House Martin Nest Cups



Swallow Nest Bowl

- Suitable nest building mud is difficult for house martins and swallows to find
- Alterations to house construction and roof design have resulted in a decrease of suitable nesting sites
- Install swallow nest bowls within an outbuilding or garage that has flight access - 6cm below the ceiling
- Install house martin nest cups under the eaves of a house - minimum of 2m high



Swift Nest Box

- Swift numbers are declining partly due to a loss of nesting sites
- The entrance hole discourages other birds such as starlings and sparrows
- Install a minimum of 5m high with unobstructed airspace in front of the nest
- Integrated models of swift nest boxes are also available



5KL Schwegler Nuthatch Nest Box

- Manufactured from woodcrete
- Nuthatches prefer nest boxes with larger cavities. They will often occupy owl nest boxes and fill the entrance hole with mud reducing the size to approximately 32mm
- Nuthatches plaster mud on the internal walls of the cavity and line the floor with wood chipping and leaves to nest
- To discourage nuthatches from using owl nest boxes try installing the 5KL immediately adjacent



Open-fronted Nest Box

- Manufactured from woodstone - lifetime of 20-25 years
- Suitable for robin, wren, spotted flycatchers, and black redstart
- Best installed hidden from view on the wall of a building or hidden within ivy/honeysuckle as the boxes open-front may attract predators
- Install at a height of 1-3m



Sparrow Terrace Nest Box

- Sparrow populations are decreasing due to a lack of nesting sites
- Sparrows are a sociable species and prefer to nest in a colony
- Likelihood of uptake is increased if more nesting chambers are available (the example nest box shown contains three nesting chambers)
- Various other nest box designs are available
- Install at a minimum of 2m high



Tawny Owl Nest Box

- Install on a mature tree within a woodland (not on the outskirts)
- Install a minimum of 3m high
- Face the box entrance away from prevailing wind (generally avoiding west/south-west)



Little Owl Nest Box

- Prefer areas of mixed farmland and orchards
- Essential features; small entrance hole (70mm), narrow tunnel, and a dark nesting chamber
- Install on a horizontal tree branch/wall top or beam so that owlets can walk in/out prior to fledging
- Can be installed on any tree species apart from cherry - the cherry harvest coincides with the little owl breeding season
- Entrance hole should face the tree trunk
- Install at a minimum height of 3m



Design and creation

Deadwood habitat piles offer valuable habitats for an array of saprophytic (deadwood eating) invertebrates that will in turn provide food for a wide range of predatory species of insects, birds, mammals, reptiles and amphibians.



On sites where vegetation structure is limited, brash and log piles provide an instant enhancement. Deadwood habitat piles also provide shelter and refuge opportunities for larger animals, particularly reptiles and amphibians.

They can also be suitable hibernation sites during the winter for reptiles, amphibians and small mammals including hedgehogs. Think bonfire!

Habitat piles should be located in sunny or part shaded sites. A compact central core, with larger woody material in contact with the ground is recommended to provide the damp and decomposing wood conditions that are most suitable for benefiting saprophytic invertebrates. The outer layers should be laid more loosely on top. This provides a diverse structure within the habitat pile and provides suitable cover and basking opportunities for reptiles.

Habitat piles should be maintained by adding material every few years as the pile decomposes and do not require much management.



To provide optimal conditions for reptiles, amphibians and mammals, log piles should contain a mixture of sizes and shapes with plenty of small diameter material included. This introduces voids of different sizes and creates a complex internal structure.

They can be created to be an attractive feature of the landscape where a more formal appearance is required.



Creation and design



Hibernacula offer sheltering opportunities for reptile and amphibian species, providing them with essential habitat in which to hibernate during the winter temporary shelter in the summer during the warmer months.

Hibernacula can be both naturally-occurring and artificial, and can be constructed of a range of materials. Our ecologists can advise on the best locations and materials for the placement of artificial hibernacula.

The optimum locations for hibernacula are on south-facing slopes within freely-draining soils. It is imperative that the hibernacula are exposed to direct sunlight for the majority of the day to ensure maximum thermal capacity.

It is also important that hibernacula are created within a mosaic of habitat types for example open areas of grassland adjacent to sheltered areas of scrub / hedgerow. This ensures excellent basking areas are available adjacent to well connected habitat and areas of shelter.



Hibernacula can range from underground chambers to sheltered areas at ground level, akin to refugia.

By digging a shallow pit and filling it with materials such as rocks and logs, a chamber can be created which contains several gaps within. Access can be enabled by placing entrance tubes at ground level that go into and out of the chamber.

When the chamber and access has been constructed, soil can be piled on top of the hibernacula to seal it. Plant wildflower seeds on top to further benefit local biodiversity!



Hibernacula



Insect boxes and bug hotels



The provision of insect boxes and bug hotels provide a valuable resource for invertebrates, providing suitable nesting habitat for important native pollinators such as mason bees and leafcutter bees. They can also provide opportunities for a wide range of species to shelter and over-winter during the colder months.

Bug hotels are highly adaptable, and are therefore suitable for almost all developments and habitats. They can be made easily from a range of waste and plant materials, and more specialist items such as bee bricks can be purchased in order to target specific species.



Bug Hotel

These are easily implemented in almost any situation as bug hotels can be made from a range of materials, such as bricks, plant pots, tree cuttings, logs and broken tiles.

Bug hotels can also be adapted to benefit specific species, such as bees, woodlice, and ladybirds.

Other terrestrial species such as hedgehogs, reptiles and amphibians can also benefit from sheltering in a bug hotel.



Insect boxes

A range of prefabricated insect boxes such as the Green & Black Bee Brick (left) and the Woodstone Insect Box (above) are available and can be incorporated into or onto buildings or on trees to provide nesting habitats for a range of solitary bee species.



Wildflower Turf

Wildlife Friendly Landscaping



Wildflower turf is suitable for use in a wide range of applications to provide a naturalistic and attractive meadow landscape and provides a more reliable result compared with traditional seeding methods.

The seeded turf contains a diverse mix of native wildflower meadow species including grasses and flowering plants characteristic of lowland meadows on a range of soil types.

As the grassland matures, the meadow develops a characteristic composition with species that thrive on the local soil.



Wildflower turf provides an instant enhancement to any landscaping project with low maintenance and reliable establishment of native wildflower grassland.

Darwin Ecology Ltd are Accredited Partners of Wildflower Turf Ltd.

Accredited partners are trained in the use and installation of Wildflower Turf Ltd. products to deliver attractive and successful wildflower landscapes.



The flowers in the turf have been chosen to ensure that flowering plants are present from early spring through to autumn.

A diverse and thriving meadow will attract a huge range of invertebrates and pollinators to birds, reptiles and mammals.

Darwin Ecology can help you maximise the impact of your wildflower areas by designing and creating additional habitats for the species you will attract including rustic and visually pleasing deadwood habitats or hibernacula as shown.