



Ecological Impact Assessment

Pear Tree Cottage, Sandy Lane, Henfield, West Sussex, BN5 9UX

October 2024

Client: Chris Morris

Quality Assurance		
Report date:	Version:	Author:
28 th October 2024	1	Emily Luck, Bsc (Hons), MCIEEM, MRSB
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1. Executive Summary

Site Details
- Pear Tree Cottage, Sandy Lane, Henfield, West Sussex, BN5 9UX - Central grid reference: TQ20741540
Scope of Works
Imprint Ecology was commissioned by Chris Morris to undertake an Ecological Impact Assessment to accompany a planning application to Horsham District Council for the construction of a single-storey extension.
Key Ecological Constraints
Legal protection is afforded to particular habitats, species and designated sites. The legislation, and the habitats and species listed, vary between the different jurisdictions.
Baseline Ecological Conditions
- The plot consists of ornamental garden habitats, hardstanding, gravel, well-maintained large lawns, introduced shrubs, small trees and buildings. - No evidence of bats or suitability for bats was found within the construction impact zone. No further surveys are recommended at this time given the current proposals. - However, the building supports a confirmed bat roost for brown long-eared <i>Plecotus auritus</i> bats. These are void-dwelling bats, species confirmed by DNA-analysis, roosting within the main loft which lies outside of the construction impact zone. - The wider site has suitability for bats, nesting birds, and occasional reptiles, amphibians, and hedgehog <i>Erinaceus europaeus</i>.
Key Mitigation Measures
- A bat mitigation licence from Natural England is not required but a Precautionary Working Method Statement (PWMS) for bats will be followed. In the event of a bat being found in the areas directly affected by the proposal, work would need to pause while a licence is sought from Natural England. - External lighting will be avoided where possible and directed away from key habitats. - Breathable Roofing Membranes (BRM) will not be used. - Vegetation clearance will be done outside of the bird nesting season or immediately following a nesting bird check by a qualified ecologist.
Compensation and Enhancement Recommendations
Enhancements for bats, birds and other wildlife on site accord with national planning policies as well as adhering to Policies 25 and 31 of the Horsham District Planning Framework (2015).

2. Introduction

2.1 Background and Proposed Development

Imprint Ecology was commissioned by Chris Morris to undertake an Ecological Impact Assessment at Pear Tree Cottage, Sandy Lane, Henfield, West Sussex, BN5 9UX, located around central grid reference: TQ20741540, to accompany a planning application to Horsham District Council for the construction of a single-storey extension.

2.2 Experience of Ecologists

This assessment has been conducted by Senior Ecologist Emily Luck, BSc (Hons), MCIEEM, MRSB, Natural England Level 2 Class Survey Licence holder for Bats (2024-12034-CL18-BAT).

2.3 Purpose of this Ecological Impact Assessment Report

This report contains the findings of an ecological assessment of the building and surrounding habitat. The purpose of the report is as follows:

- To identify and describe all potentially significant ecological effects associated with the proposed development
- To set out the mitigation measures required to ensure compliance with nature conservation legislation and to address any potentially significant ecological effects
- To identify how mitigation measures will/could be secured
- To provide an assessment of the significance of any residual effects
- To identify appropriate enhancement measures
- To set out the requirements for any post-construction monitoring if required

This report is valid for a maximum of 24 months from the date of issue.

2.4 Site Description

The site is in the village of Henfield. The wider landscape is typified by pasture fields and paddocks, lines of trees, hedgerows, waterbodies, grazing marshes, and blocks of woodland. See Figure 2.1 for the location and 2.2 for an aerial view of the site.

Figure 2.1 – Location © OpenStreetMap contributors, licensed under ODbL. Tiles by OpenStreetMap contributors,

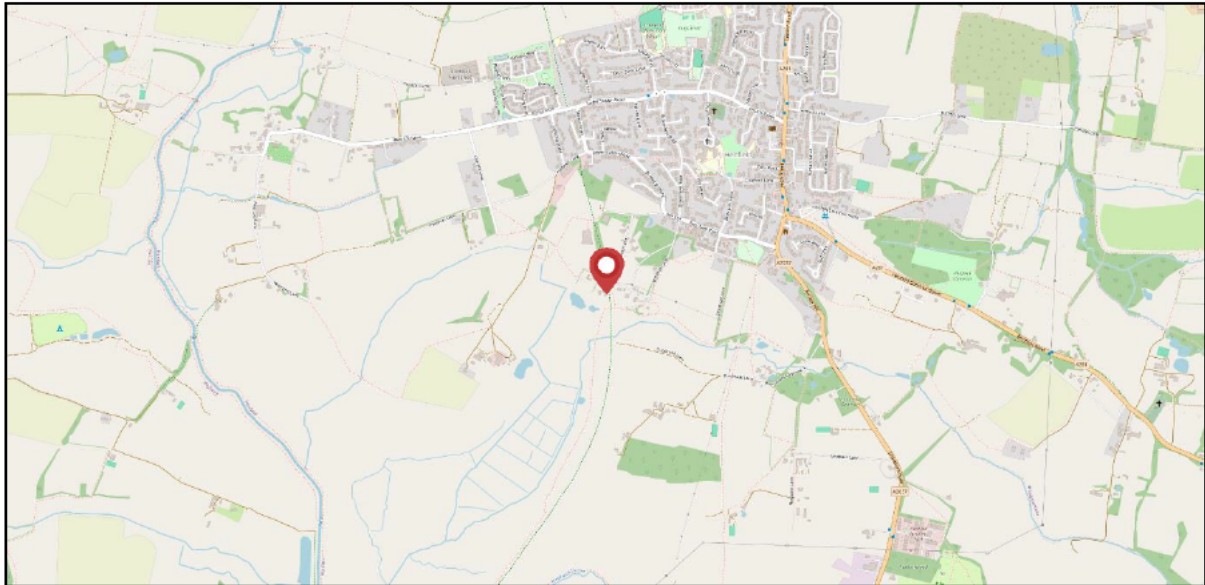


Figure 2.2 – Location aerial view © Google Earth 2024.



3. Conservation Legislation and Local and National Planning Policy

3.1 National Planning Policy

In England, planning decisions related to biodiversity are guided by the National Planning Policy Framework (NPPF) 2023. The NPPF specifies that the presence of protected species is a material consideration for planning authorities when evaluating development proposals. Key points include:

- Paragraph 11: Planning decisions should generally favour sustainable development, except where a plan or project is likely to significantly affect a habitats site. In such cases, approval requires an assessment confirming no adverse impacts on site integrity.
- Paragraph 180: The planning system should aim to minimize biodiversity impacts and achieve net gains by creating resilient ecological networks.
- Paragraph 186: Biodiversity principles include:
 - Avoiding harm where possible, mitigating it when necessary, or compensating as a last resort.
 - Ensuring benefits outweigh any adverse effects on nationally designated sites, with a focus on protecting irreplaceable habitats like ancient woodland.
 - Refusing planning permission for projects affecting irreplaceable habitats, except for exceptional reasons with adequate compensation.
 - Supporting developments that conserve or enhance biodiversity and encouraging measures to secure measurable net gains.
 - Granting protection to proposed SPAs, SACs, and Ramsar sites, similar to designated habitat sites.

Circular 06/05 further clarifies that the presence of a protected species must be considered before planning permission is granted, ensuring that the species and their habitats are assessed for potential impacts.

3.2 Local Planning Policy

Relevant key points within Policies 25 and 31 from the Horsham District Planning Framework are summarised follows:

- Policy 25 - Strategic Policy: The Natural Environment and Landscape Character:

- Supports development that protects, conserves, and enhances the district's landscape and maintains distinct settlement boundaries.
- Prioritises maintaining and enhancing the district's green infrastructure to address ecological needs.
- Aims for no net biodiversity loss, safeguarding protected sites and species, and promoting net biodiversity gains.
- Policy 31 - Green Infrastructure and Biodiversity:
 - Development must preserve or enhance existing green infrastructure, with mitigation for any loss.
 - Requires contributions to biodiversity, including creating habitats, green spaces, and connecting ecological networks.
 - Supports tree replacement where felling occurs and protection of high-value sites (e.g., SPAs, SACs, SSSIs).
 - Requires justification and mitigation for development impacting biodiversity; certain impacts, especially on the Arun Valley SPA and Mens SAC, need a Habitat Regulations Assessment (HRA).

3.3 Bats

British bats are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Additionally, all bat species are protected under Schedule 2 of the Conservation of Habitats and Species Regulations 2017 which defines European Protected Species (EPS). Bats and their habitats receive additional protection via the Countryside and Rights of Way (CRoW) Act, 2000, under the Bonn Convention (Agreement of Bats in Europe), and in Appendix II and III of the Bern Convention. Seven British bat species are listed under Section 41 of the NERC Act 2006.

This combined legislation means that it is a criminal offence to:

- Deliberately kill, injure or capture a bat
- Deliberately disturb bats, including in particular any disturbance which is likely to impair their ability to survive, to reproduce or to rear or nurture their young, or their ability to hibernate or migrate, or which is likely to affect significantly their local distribution or abundance
- Damage or destroy a breeding site or resting place of a bat

- Damage or destroy, or obstruct access to, any structure or place which any bat uses for shelter or protection
- Disturb bats while occupying a structure or place used for that purpose

A bat roost is a place or structure which a bat uses for shelter or protection. Bats are loyal to roosts, returning annually to the same place. Therefore, the legislation protects bat roosts regardless of whether or not bats are present at the time of survey or construction work.

If proposed development work is likely to destroy or disturb bats or a bat roost, Natural England would be consulted to obtain a European Protected Species Mitigation Licence (EPSML), which would be subject to appropriate measures to safeguard bats. With suitable approved mitigation, exemptions can be granted from the protection afforded to bats under Regulation 39 by means of a EPSML.

The Natural Environment and Rural Communities Act (NERC Act) 2006, requires due consideration be given to biodiversity and its potential enhancement when considering proposed developments. The NERC Act defines a number of bat species as species of principal importance for consideration during planning.

3.4 Nesting Birds

Nesting birds are protected under several key pieces of legislation to prevent their disturbance or harm, particularly during the breeding season. The Wildlife and Countryside Act 1981 (as amended) makes it illegal to intentionally kill, injure, or take any wild bird, and to damage or destroy the nest of any wild bird while it is in use or being built. Some species, listed under Schedule 1 of the Act, receive additional protection. The Conservation of Habitats and Species Regulations 2017 further implements protections for bird species considered of European importance, particularly through the designation of Special Protection Areas (SPAs). The term "nesting" encompasses all stages from adults building a nest or gathering nest materials to the point when the chicks have fledged. Disturbing a nesting bird during any of these stages, such as interfering with eggs or a nest with chicks, can lead to significant stress or even the abandonment of the nest, leading to the failure of that breeding attempt.

3.5 Hedgehogs

Hedgehogs are protected under the Wildlife and Countryside Act 1981 (as amended), which makes it illegal to intentionally kill, injure, or take a hedgehog. Additionally, they are listed as a Species of Principal Importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. This status requires public authorities, such as local planning

authorities, to have regard to the conservation of these species when carrying out their functions. Hedgehogs are particularly vulnerable during the winter months when they are in hibernation, and during spring when building and sheltering in nests with dependent young.

3.6 Reptiles

Widespread reptiles, such as slow worms *Anguis fragilis* and common lizards *Zootoca vivipara*, are protected under the Wildlife and Countryside Act 1981 (as amended). This legislation makes it an offence to intentionally kill, injure, or take these reptiles. Additionally, they are listed as Species of Principal Importance under Section 41 of the NERC Act 2006, requiring public bodies to consider their conservation. While these reptiles are not protected from habitat disturbance, developers must take reasonable steps to avoid direct harm during activities such as site clearance.

3.7 Amphibians

In the UK, great crested newts (GCN) are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. It is illegal to kill, injure, capture, or disturb great crested newts or to damage or destroy their breeding sites or resting places. This protection extends to activities that may impact their natural habitats, and any work likely to affect great crested newts or their habitats typically requires a European Protected Species Licence (EPSL) from Natural England.

Other native amphibians, such as common toads and common frogs, do not benefit from the same level of legal protection as great crested newts. While they are not fully protected under UK law, they are afforded partial protection under the Wildlife and Countryside Act, which prohibits their sale.

4. Methods

4.1 Desk Study

The desk study included a review of online geographical databases and mapping tools to determine the site's relationship with relevant ecological features, including designated and non-designated sites, priority or protected habitats, European Protected Species licences (EPSL), and nearby water bodies such as ponds, within a 1km radius of the site. The following resources were consulted during the desk study:

- Multi-Agency Geographic Information for the Countryside (MAGIC)
- Ordnance Survey (OS) "Explorer" mapping at a 1:25,000 scale (1 cm = 250 m)
- Google Earth Pro satellite imagery

4.2 Site Assessment

A walkover survey was conducted on 4th October 2024 where habitats, land management type, flora and fauna were recorded at the proposed development site. Since the impact zone for the scheme is relatively small in scale and contains limited semi-natural habitat diversity, it was not considered necessary to undertake comprehensive Phase 1 Habitat Mapping of the site. All habitat types contained within the site, together with the dominant botanical species and indicators of important habitat types have simply been listed and described where identified.

4.3 Preliminary Bat Roost Assessment

A visual inspection of the site was undertaken during daylight hours on 4th October 2024. A 20,000 lumen LED torch, 8x42 binoculars, telescopic ladders, inspection mirror, and camera were used to search for evidence of bats and determine the potential for the building to support bats and other protected species.

An 8mm Teslong Endoscopic Inspection Camera with dual lenses was also used. This is a powerful endoscope which allows for high-definition, split-screen viewing, with detailed inspection from both front-facing and side-mounted cameras each with built-in LED lights. The camera has a focal depth of 2-8cm, making it ideal for examining small gaps and it is encased in a flexible, waterproof, 5m cable. The endoscopic exercise was conducted from telescopic ladders to gain access to the flashing and to ensure no significant features were overlooked.

The presence of PRFs and access/exit routes which bats could use to enter these features were surveyed. Evidence of use by bats was also looked for, such as scratch marks, urine stains, lack

of cobwebbing, feeding remains e.g. moth wings, droppings, and actual bats. An assessment of potential commuting routes and surrounding habitat was also undertaken to determine their potential to support bats.

Bat PRFs are usually found in specific areas, such as joints, cracks, gaps and cavities within structures like mature trees and buildings. These were prioritised as areas to check for bat evidence. Roosting bat evidence is not easy to find and not always visible, so any potential roosting locations were also noted.

Following inspection, building(s) were categorised as having the following suitability for bats: 'high', 'moderate', 'low', 'negligible' or 'none'. These categories are based on observations made during the survey and in the context of the descriptions laid out in Table 1.

Table 1 - Categorisation of bat roosting potential of structures (adapted from Collins, J. 2023.)

Suitability	Description
Confirmed bat roost or resting place	Presence of bats or evidence of bats.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only, such as maternity and hibernation – the categorisation described in this table is made irrespective of species conservation status, which is established after presence is confirmed).
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
None	No habitat features on site likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).

4.4 Limitations and Constraints

No significant limitations to the surveys were experienced during the various assessments. It is important to acknowledge that some species may not have been detected during the survey period but may still be present at other times of the year. Therefore, habitats have been assessed for their potential to support specific species, even in the absence of direct evidence. As detailed in Section 4.1, local protected species records from a Local Environmental Records Centre (LERC) were not obtained, in line with CIEEM guidance for sites of this scale, especially those consisting primarily of ornamental and well-maintained habitats. The decision was made that the absence of such data would not materially affect the conclusions of this assessment.

4.5 Ecological Impact Assessment

In accordance with the Guidelines for Ecological Impact Assessment (CIEEM, 2018), the methodology used to assess the potential impacts of the proposed development follows a structured approach. Initially, all important ecological features identified during the baseline surveys are evaluated based on their geographic level of importance, whether that be at an international, national, regional, county, or site level. This ensures that the assessment focuses on the features that are most vulnerable or critical to the local and wider ecological landscape.

The impacts are then characterised by considering their magnitude (the scale of the effect), extent (the area affected), duration (short-, medium-, or long-term), reversibility (whether the impact is permanent or temporary), and timing (taking into account seasonal factors such as breeding or migration periods). Using this information, the significance of the impacts is assessed by combining the importance of the ecological feature with the scale and likelihood of the impact. This determines whether the impact is significant in terms of its potential to affect conservation status or ecological function.

The assessment follows the CIEEM mitigation hierarchy, aiming first to avoid impacts through design alterations, then mitigating impacts that cannot be avoided, and finally compensating for any residual impacts where avoidance or mitigation is not possible. Residual impacts are those that remain after mitigation measures are applied, and their significance is evaluated to ensure that the overall ecological impact is minimised. Additionally, cumulative impacts from other nearby developments are considered to provide a comprehensive understanding of the wider ecological effects. This methodology ensures compliance with wildlife legislation and best practice guidelines while aiming to achieve a balance between development needs and ecological protection.

5. Baseline Ecological Conditions

5.1 Designated Sites

The site does not lie within any designated sites and there are no designated sites within 1km of the site.

5.2 Habitats

The following protected/priority habitats lie within 2km of the site:

- Deciduous Woodland
- Ancient and Semi-Natural Woodland
- Ancient Replanted Woodland
- Traditional Orchard
- Good Quality Semi-Improved Grassland
- Coastal and Floodplain Grazing Marsh

The site consists primarily of a large, frequently mown lawn with common grass species, including perennial rye grass *Lolium perenne*, white clover *Trifolium repens*, daisy *Bellis perennis*, and dandelion *Taraxacum officinale*. Surrounding the main dwelling, there are extensive hardstanding areas, offering minimal ecological value.

The proposed single-storey extension will impact a small lawn, well-maintained box hedges *Buxus sempervirens*, and low number of shrubs near the building to the west. On the western boundary of the site is a line of leylandii *Cupressus × leylandii*.

There is a climbing rose *Rosa spp.* on the south elevation of the main house in the location of the proposed extension which may offer suitability for small nesting garden birds.

Photo 1: East elevation of main dwelling.



Photo 2: View looking southwest from entrance.



Photo 3: Hardstanding, box hedging and line of leylandii.



Photo 4: View looking south across lawns.



5.3 Protected Species Assessment

5.3.1 Amphibians

Four ponds are located within 500m of the site, which have the potential to support amphibians, including European Protected Species such as great crested newts (GCN). Two ponds lie within 100m of the site; 50m to the south and 69m to the southwest, with an additional two ponds situated beyond 350m to the south. However, there are no European Protected Species Licenses (EPSLs) for GCN within a 500m radius of the site.

The site itself does not contain any suitable aquatic habitats for GCN. The well-maintained lawns and introduced shrub beds may offer suitability for individual, commuting GCN but do not

provide optimal habitat features for their residence or breeding. While the lawns might be used as a commuting route, the likelihood of GCN frequently crossing the site remains low

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[REDACTED]

[REDACTED]

5.3.3 Bats

Desk Study

The following European Protected Species Licences (EPSL) for bats have been granted within 2km of the site, as follows:

- 1.7km east of the site. Licence no. 2017-29484-EPS-MIT. Destruction of a common pipistrelle and soprano pipistrelle bat resting site, granted in 2017.

Site Assessment

The roost assessment focused on the area proposed for a single-storey extension, specifically impacting a small section of hanging tiles up to the first-floor windows on the southwest corner. The hanging tiles in the section of the building proposed with construction, and the surrounding areas, were found to be in excellent condition. The hanging tiles were found to be flat against the wall with no gaps. A thorough inspection from a ladder, supported by an endoscopic inspection, confirmed the absence of crevices or cavities suitable for bat roosting. Minor lifting was observed on a low number of tiles, but these areas were fully cobwebbed and did not extend beyond 6-8mm, indicating they are not being used by bats. The main loft of the property was inspected and scattered bat droppings were found in the central areas of the loft below the ridge line. The droppings were morphologically consistent with those of brown long-eared bats and this was confirmed with DNA analysis (Appendix 1). The loft area will not be impacted by the proposed extension, as the works are confined to the ground floor.

The proposed extension will not affect the building's eaves or soffits which are in good condition. Given the lack of suitable roosting features within the affected area, this section of the building is considered to offer negligible roosting potential for bats in line with BCT guidelines.

Photo 5: Corner of house proposed with extension.



Photo 6: Gable of hanging tiles affected..



Photo 7: Flat hanging tiles.



Photo 8: Flat hanging tiles.



Photo 9: Tight hanging tiles and soffits.



Photo 10: Tightly fitted tiles..



Photo 11: Loft void.



Photo 12: Brown long-eared bat droppings.



5.3.4 Dormice

The site is unsuitable for dormice *Muscardinus avellanarius* due to the absence of suitable habitat, such as dense, species-rich hedgerows, scrub, or woodland edge, which are crucial for their foraging, nesting, and hibernation (Bright et al., 2006). The leylandii and box hedging are unlikely to support dormice due to their limited plant diversity and lack of native flowering and fruiting species, which provide essential seasonal food resources. The mown lawns on this site lack the structural complexity suitable for dormice, and there are no woodland or scrub habitats that could support their needs. Dormice are not considered further.

5.3.5 Hedgehogs

Hedgehogs *Erinaceus europaeus* may occasionally traverse the site, as the open edges and gaps in the boundary allow for easy passage. However, the buildings, patios, and regularly mown lawns do not provide suitable nesting sites or cover for hedgehogs, and the absence of features like log piles or leaf litter further limits habitat suitability. Despite these limitations, hedgehogs may still move through the site, particularly along the garden edges where there is some potential for foraging and sheltering, given that they are locally abundant in the area.

5.3.6 Nesting birds

The main dwelling does not have suitability for nesting birds. The shrubs, and climbing rose on the house do have suitability for nesting birds.

5.3.7 Reptiles

Widespread, common species of reptile, such as slow worms *Anguis fragilis*, may cross the lawns and use the shrub borders occasionally. They would not use the buildings, hard surfaces or

gravel. The site is unlikely to support a reptile population in its own right due to the absence of long grass, scrub, and undisturbed areas that they use for thermoregulation, shelter, and foraging (Edgar et al., 2010). Gaps in the site borders do allow for movement, but this would likely occur in low numbers as the short grass does not provide the necessary cover for protection from predators (Reading & Jofré, 2013).

6. Impact Assessment and Mitigation

This section outlines the potential impacts of the proposed development on each relevant ecological feature identified in the Baseline Conditions (Section 5). The assessment considers all phases of the development, including but not limited to construction, operation, restoration, and decommissioning. Each impact is carefully described and justified, taking into account the scale, duration, and nature of the effect on the ecological receptors.

Mitigation measures are clearly presented to demonstrate how significant impacts can be avoided or reduced, following the CIEEM (2018) mitigation hierarchy. Any residual impacts, those remaining after mitigation has been applied, are assessed to ensure their significance is minimised and fully accounted for in the overall ecological assessment.

6.1 Designated Sites

Potential impacts

The proposed development is highly unlikely to have any significant impact designated sites. The scale of the works is small and localised to the plot boundaries.

Mitigation measures

None required.

Significance of residual effects

With mitigation measures in place, there will be no residual effects.

6.2 Habitats

Potential impacts

Dust generated by construction activities may settle on surrounding vegetation, including the lawns, trees and shrubs, which can affect plant health. Heavy machinery and increased foot and equipment traffic may compact soil, making it less hospitable for plant growth. A small area of lawn will be lost to the development.

Mitigation measures

- All construction will be undertaken in accordance with best practice advice with regards to control of dust, noise and emissions.
- Contractor vehicles will remain on hardstanding and gravel where possible and temporary coverings could be used on grassland or softer areas of ground.

- The lawns surrounding the building will be kept short to prevent animals from sheltering within it.
- Grassland, hedging or shrubs lost or damaged will be replaced post-construction with plants chosen from the Royal Horticultural Society’s “Plants for Pollinators” [list](#).

Significance of residual effects

With mitigation measures in place, there will be no residual effects.

6.3 Protected Species

6.3.1 Bats

Potential impacts

Lighting on site poses a risk of disrupting the flightlines associated with foraging and commuting habitats for bats. The brown long-eared bat roost within the main loft may be susceptible to light, noise and vibration from development activities. These impacts will be effectively minimised by implementing a Precautionary Working Method Statement (PWMS) for bats.

PWMS for Bats

- The soffits, eaves, and main loft will remain undisturbed throughout the construction works, as they are outside the scope of the proposed extension. No elements of these areas will be altered or impacted by the project to protect the bat roost in the loft from construction activities.
- Works will avoid the winter hibernation season for bats (November to February inclusive).
- If a bat or evidence of bat activity is identified at any stage of the construction or tile removal process, all works will stop immediately. A licensed bat ecologist will be promptly contacted to assess the situation and determine the appropriate course of action, which may include further surveys or applying for a bat mitigation licence from Natural England.
- Where possible, works in close proximity to identified Potential Roost Features (PRFs) will be scheduled outside of the bat hibernation season, which spans from November to February inclusive. This timing precaution reduces the risk of disturbing any bats in torpor.

In the unlikely event that any ill or injured bats are found, the Bat Conservation Trust (BCT) will be contacted immediately to obtain details for a local registered bat carer. The ecologist will take responsibility for transferring the bat to the carer. Natural England will be informed immediately about the incident.

- Breathable Roofing Membranes (BRMs) cannot be used in buildings that are being used by bats. BRMs are non-woven, and bat claws can loosen the fibres, leading to the fatal entanglement of wings and feet. This risk applies to all non-woven membranes, including modern bitumen felts with polypropylene filaments (e.g., type 5U). To mitigate this, any new roofing membrane used must be either traditional hessian-reinforced bitumen felt, which poses minimal risk to bats, or a Natural England-approved BRM that has passed the required snagging propensity test. Traditional bitumen felt complies with Building Regulations (Parts C and L) when paired with appropriate ventilation.
- External lighting will not be installed on-site. If lighting is to be installed in future, it will follow a carefully designed scheme in line with guidance from the Institution of Lighting Professionals (ILP) Guidance Note 08/23 (2023). Artificial Light At Night (ALAN) can have significant negative effects on bats, invertebrates, and other nocturnal wildlife by disrupting their natural foraging and commuting patterns. To minimise these impacts, the following lighting mitigation measures will be implemented: All external lighting will be directed downwards and shielded to prevent upward and horizontal light spill.
 - The mitigation hierarchy of avoidance, minimisation, and mitigation will guide the lighting design to ensure the least possible disruption to wildlife.
 - No lighting will be directed at bat boxes, known bat roosts, hedgerows, trees, waterbodies, or other sensitive habitat features. Avoiding light on these areas is crucial to prevent disturbance to foraging and commuting bats.
 - Exterior lighting will be kept to a minimum, using lamps with a brightness of 500 lumens or less. A warm white light source (2700 Kelvin or lower) will be adopted to reduce the blue light component, which is known to be particularly disruptive to bats, as advised by the ILP.
 - Red spectrum lighting to be considered in place of white lighting, as bats are more sensitive to white light. Red light can reduce disturbance to bats while still providing the necessary illumination for human use.
 - Lighting will be placed away from sensitive habitats, such as hedgerows, trees, and waterbodies. Motion sensors and timers will be installed. For residential and

commercial purposes, timers will be set for a 1–2-minute delay after the last detected movement, following ILP recommendations.

- o LED luminaires will be used due to their sharp cut-off, lower intensity, and dimming capabilities. All luminaires will be UV-free, and metal halide or compact fluorescent sources will not be used. LEDs provide better control over light direction and intensity, reducing potential impacts on bats and other nocturnal wildlife.

Significance of residual effects

With mitigation measures in place, there will be no residual effects.

6.3.2 Nesting Birds

Potential impacts

Birds and their nests, eggs or dependent young may be harmed, injured, or killed during any vegetation clearance of the ornamental shrubs to accommodate construction vehicles or machinery.

Mitigation measures

- The removal of any climbing plants or shrubs within the construction impact zone should be undertaken outside the breeding bird season, which runs from 1st March to 31st August. If this is not possible, the plants must first be checked by hand by a suitably qualified ecologist immediately before removal. If a nest is found to be being built by adults, contain bird eggs, young chicks, or fledglings, it will be left alone and a 5m undisturbed buffer will be in place until the young have fledged.

Significance of residual effects

With mitigation measures in place, there will be no residual effects.

6.3.3 Hedgehogs, Reptiles, Amphibians

Potential impacts

Construction phase activities have the potential to inadvertently harm or kill hedgehogs, reptiles, amphibians, and other small animals that may occasionally cross the site, especially at night.

Mitigation measures

- All excavations and trenches should either be covered overnight or have escape routes (such as ramps, scaffold boards, or roughened timber planks) installed to prevent hedgehogs from becoming trapped.
- Construction materials, such as pipes and equipment, should be stored securely off the ground (on pallets or hard surfaces) to prevent hedgehogs from seeking shelter beneath them (Morris, 2018).
- Site checks should be conducted at the start of each working day, especially around any areas of disturbance or material storage, to ensure no hedgehogs are present.
- If any wild animal is found onsite, it should be left to escape naturally and not disturbed. If an injured wild animal is found, works will stop until an ecologist, vet or wildlife hospital has been contacted for advice.

Significance of residual effects

With mitigation measures in place, there will be no residual effects.

7. Enhancements

Adherence to Horsham's Policies 25 and 31 requires development proposals to demonstrate a positive impact on wildlife, through measures that protect and enhance biodiversity. The enhancements outlined below aim to support this policy by providing additional habitat opportunities, promoting the ecological value of the site, and ensuring the development contributes to the conservation of local wildlife.

The following ecological enhancements will be included in the new extension designs:

- At least two new habitat provisions for bats will be included on site. These may be integrated bat boxes incorporated into the new designs, or external* bat boxes fitted onto mature trees. Bat boxes will be erected 3-5m above ground, facing between southwest and southeast, receiving sunlight for several hours a day. No artificial lighting will shine on any new bat roosting opportunities. If installed near eaves, ensure that the opening of the box is not located immediately above a window or a door. See Figures 7.1 to 7.4 for examples.

Figure 7.1 – External Chillon Woodstone Bat Box



Figure 7.2 – Integrated Schwegler 1FR Bat Tube



Figure 7.3 – External Schwegler 2F universal bat box



Figure 7.4a (left) and 7.4b (right) – [BirdBrickHouses](https://www.birdbrickhouses.com/)
[Integrated Bat Boxes](https://www.birdbrickhouses.com/)

(7.4b is suitable to install behind timber cladding)



- Two bird boxes will be installed, on a tree or building, facing between northwest and northeast. See Figures 7.5 to 7.8 for suitable examples of bird nesting opportunities.

Figure 7.5 – Schwegler 1SP Nest Box – External Sparrow Terrace



Figure 7.6 – Vivara Pro External Bird Box



Figure 7.7a (left) and 7.7b (right) – BirdBrickHouses Integrated Sparrow Terrace Boxes



(7.7b is suitable to install behind timber cladding)

Figure 7.8 – Open-fronted External Bird Box – this style is suitable for wrens/robins and can be installed in a hedge/behind foliage



**WoodStone/Woodcrete boxes are recommended for external habitat/nesting boxes, rather than timber boxes. They safeguard against attacks from predators and the durable material insulates the box which creates a more consistent internal temperature.*

- To enhance the site for bats and support their insect prey, a variety of nectar-rich plants, trees, and shrubs will be introduced. Suitable nectar-rich plants include lungwort *Pulmonaria officinalis*, primrose *Primula vulgaris*, honesty *Lunaria annua*, common knapweed *Centaurea nigra*, corncockle *Agrostemma githago*, lavender *Lavandula angustifolia*, red campion *Silene dioica*, and ox-eye daisy *Leucanthemum vulgare*. Additionally, planting night-scented plants can help attract moths and other nocturnal insects to support foraging bats. These may include the following: evening primrose *Oenothera biennis*, night-scented stock *Matthiola longipetala*, jasmine *Jasminum officinale*, and honeysuckle *Lonicera periclymenum*.

- Planting native UK trees and shrubs such as hawthorn *Crataegus monogyna*, rowan *Sorbus aucuparia*, guelder-rose *Viburnum opulus*, silver birch *Betula pendula*, crab apple *Malus sylvestris*, and willow *Salix caprea* provide both shelter and food sources for insects, including caterpillars and moths, which are a primary food source for bats. These native fruiting and nut trees also provide foraging opportunities for a variety of small mammals and birds.
- Retaining leaf litter, dead wood, and scrub on site will provide essential shelter for hedgehogs that are thought to be locally present (Morris, 2018). Scrub areas, particularly brambles, will be maintained or replanted as needed. Log piles of varying sizes can also be added in sheltered locations to enhance habitat quality.

8. Conclusion

The proposed development at Pear Tree Cottage, Sandy Lane, Henfield, West Sussex, BN5 9UX (Central grid reference: TQ20741540) has been assessed for ecological impacts. The site is primarily comprised of ornamental gardens, a well-maintained lawn, introduced shrubs, and no further surveys are required.

Appropriate measures will be taken to minimise impacts to local biodiversity, including controlling dust, noise, and emissions, and avoiding unnecessary vegetation clearance during the bird nesting season. Enhancement measures, such as installing bat and bird boxes and planting pollinator-friendly vegetation, align with national planning policies and Policies 25 and 31 of the Horsham District Planning Framework (2015).

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Appendix 1: DNA Results from bat droppings in loft



Results

Sample ID: EG-1862-1

Sample information:

Sample type: Faecal	Species group: Bats
Suspected species: BLE	Site Location: Pear Tree Cottage, Henfield
Comments:	

Laboratory information:

DNA Extraction Code: EG-2024-2315	Identification method: qPCR
Analysis Procedure Notes: All UK bat species tested for - only a single species detected in this sample.	
Laboratory Comments: None	

Species Identified:

Species 1: Plecotus auritus (Brown long-eared bat)	qPCR Ct Value: 20
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Ecotype Genetics Limited.
Registered in England. **Company No:** 11328606. **VAT:** 295 2037 94
Registered office: Parkers Cornelius House, 178-180 Church Road, Hove, East Sussex, BN3 2DJ
e: orders@ecotypegenetics.co.uk **t:** 01273704505 **w:** ecotypegenetics.co.uk

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