



The Ecology Co-op

ENVIRONMENTAL CONSULTANTS

Unit 4, Langham Stables, Langham Lane, Lodsworth, Petworth, West Sussex, GU28 9BU.

Tel: 01798 861 800 – E-Mail: info@ecologyco-op.co.uk – Web: www.ecologyco-op.co.uk

Bat Scoping Report and Preliminary Ecological Appraisal

Site Name

Town House Farm

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Client

Mr Mike Gibson

Author

Ben Small MSc

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The Ecology Co-operation Ltd

Registered Office: Unit 4, Langham Stables, Langham Lane, Lodsworth, West Sussex, GU28 9BU

Company number: 8905527





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About the Author

This report has been prepared by Ben Small MSc, an Assistant Ecologist at The Ecology Co-op with two years' experience. As a Qualifying member of the Chartered Institute for Ecology and Environmental Management (CIEEM) and as Chartered Ecologist through this body, he is bound by their code of professional conduct.

About the Reviewer

This report has been reviewed by Emma Baker, who is a Senior ecologist with eight year's experience. She holds Level 1 great crested newt and hazel dormouse survey licenses. As a Full member of the Chartered Institute for Ecology and Environmental Management (CIEEM), she is bound by their code of professional conduct.



Report Summary

Purpose	The Ecology Co-op was commissioned by Mr Mike Gibson to undertake a Bat Scoping Assessment and Preliminary Ecological Appraisal at Town House Farm, further to a proposal for a single-storey extension on the south-western corner of the building.
Context	The site is situated in a rural location and comprises a two-storey residential dwelling of brick construction, with an associated garden adjacent to the south and west, outbuildings (which are outside of the zone of impact) and road access. The site is surrounded by arable farmland to the east, south and west, and a small parcel of woodland to the north. Additional arable farmland and woodland parcels are present in the wider landscape.
Key findings	The building was assessed as having two confirmed roosts (one in a loft void and one under a hanging tile belonging to a Natterer's <i>Myotis nattereri</i> bat) with suitability to support roosting bats assessed as “moderate” within the zone of impact and “high” across the entire dwelling. A tree included within the zone of impact was considered to have “negligible” potential to support bats. Habitat within the zone of influence of the proposals was considered to be of potential value to bats for foraging/commuting/dispersal purposes.
Recommendations	As the zone of impact at the property has moderate suitability for roosting bats, and the methods of construction are as yet unspecified, in line with best practice guidance, two bat surveys between May and August are required to inform a suitable impact assessment. As the presence of bats has been confirmed, an EPS licence will be required for works which will disturb, modify or destroy a roost. The prescribed further surveys are required to inform a roost characterisation assessment to inform this licence application. However, if the construction methods can be clarified to confirm that the hanging tiles (except the bottom row) will not be impacted by the development, the works could potentially be completed under precautionary measures, without the requirement for a European Protected Species (EPS) licence.
Further survey requirements	Two bat emergence/re-entry surveys are required to characterise the existing roosts and identify any others present, as well as determine the use of the site by foraging and commuting bats. Two observers and two night vision cameras will be required to adequately cover all elevations.



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1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-op has been commissioned to undertake a bat scoping assessment and Preliminary Ecological Appraisal of Town House Farm by Mr Mike Gibson. This report presents the findings of a walkover survey and building inspection for occupation by bats, undertaken by Ben Small MSc, a qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and accredited agent under Rozel Hopkin's Natural England Level 1 bat survey class licence, on 5th June 2025. Whilst this report has maintained a focus on assessing potential impacts upon roosting bats and bat activity within the proposal's zone of influence, it has also considered the potential for any other protected/notable species and/or habitats to be adversely affected.

The proposal for the site comprises a single-storey extension on the south-western elevation of the building. Recommendations for further surveys that are likely to be required to inform a planning application and Ecological Impact Assessment are provided, if necessary. Where appropriate, measures to avoid, mitigate and/or compensate for significant adverse effects are outlined.

This report is intended to inform the client and the appropriate planning authority of the potential impacts that this development proposal may have upon roosting bats as well as identifying potential impacts to commuting routes and foraging habitat of value. Where bat roosting potential or physical evidence of bats has been identified, further survey effort will be required in order to complete an impact assessment to inform a planning application.

1.2 Background

The site is located at Town House Farm, Clemsfold, Horsham RH12 3PP. The central grid reference for the site is TQ 12351 32697.

The site is situated in a rural location and comprises a two-storey residential dwelling of brick construction, with an associated garden adjacent to the south and west, outbuildings (which are outside of the zone of impact) and road access. The site is surrounded by arable farmland to the east, south and west, and a small parcel of woodland to the north. Additional arable farmland and woodland parcels are present in the wider landscape. The location of the study building is shown in Figure 1.

The proposed development comprises a single-storey extension to the south and west elevations of the main dwelling, using similar materials as the building's construction (see Figure 2).



Figure 1. Aerial image showing the location of Town House Farm with the site boundary outlined in red. Image produced courtesy of Google maps (map data ©2025 Google).

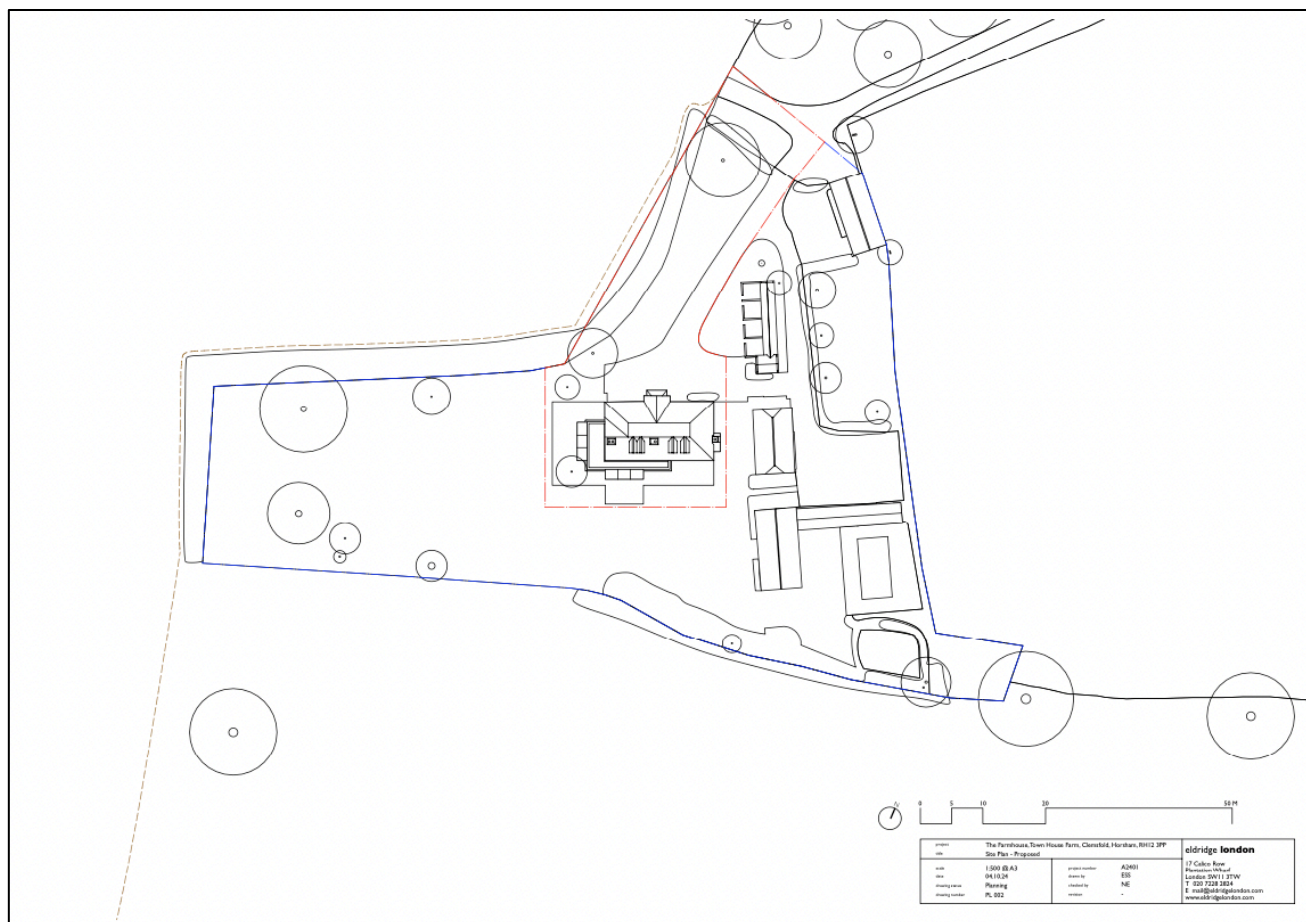


Figure 2. A plan of the proposed development at Town House Farm, Horsham, provided courtesy of Eldridge London (drawing no. PL 002, 04.10.24).

1.3 Policy and Legislation

Legal protection applying to all bat species in the UK and any other species relevant to this appraisal, is outlined in Appendix 1 of this report.

The results of this survey will be used to determine the need for further surveys, impact avoidance measures and/or an appropriate mitigation/compensation strategy to ensure compliance with UK wildlife legislation, policy and best practice.

2 METHODOLOGY

The methodologies used for this survey are in accordance with the bat survey guidelines produced by the Bat Conservation Trust¹. Where there has been any deviation from the guidelines due to any site-specific constraints or other circumstances, reasoning and justification has been provided. This survey has also considered the Guidelines for Preliminary Ecological Appraisal produced by CIEEM², where the potential for impacts to protected/notable species, other than bats, has been identified.

¹ Collins, J.(ed.) (2023) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (4th edn). The Bat Conservation Trust, London..

² CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal, 2nd edition*. Chartered Institute of Ecology and Environmental Management, Winchester.



2.1 Desk Study

A search of on-line mapping resources has been undertaken to characterise the local context of the site with respect to semi-natural habitats and linear features of value to foraging and commuting bats.

The MAGIC website resource (www.magic.gov.uk) has been used to identify the location of designated sites for nature conservation within 2km and European Protected Species (EPS) licences granted within a 1km radius of the survey site. Priority habitats and ancient woodland, upon the site and within the proposal's zone of influence, have also been identified due to their ecological value and potential to act as important foraging resources for bats.

Priority habitats and ancient woodland are classified as habitats of principal importance. Habitats of principal importance are listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006³, which places a duty on Local Planning Authorities to have due regard to biodiversity.

2.2 Field Survey

2.2.1 Roosting Potential

Bats can use a wide range of features for roosting purposes including loft spaces, cavity walls, loose tiles, mortice joints and cracks/gaps in a variety of built structures. They can also be found in trees with holes, splits, cracks, cavities, ivy and loose bark.

A detailed building and tree inspection was carried out, looking for potential access points and Potential Roosting Features (PRFs) that bats could use and any evidence indicating the presence of bats using the building and tree, such as rub marks, feeding remains, staining or droppings. This included a ground-based external inspection and internal inspection of PRFs, such as enclosed loft spaces or roof voids or basements, where safe access was possible. A high-powered torch was used for the internal and external assessment.

The suitability of each feature, or group of features, to support roosting bats has been assessed as either negligible, low, moderate, or high, in accordance with best practice guidance¹ (see Table 1) Any evidence confirming the presence of bats was clearly recorded including photos and samples taken (e.g. droppings), where appropriate. Further surveys have been recommended in accordance with best practice guidance and the surveyor's professional judgement, where evidence of a bat roost or PRFs have been identified that would be adversely impacted by the proposal and where precautionary mitigation alone cannot ensure that bats would not be potentially disturbed or harmed.

Table 1. Guidelines for assessing suitability of structures (buildings and trees etc) to support bat roosts.

Suitability	Description of roosting habitats in buildings
None	No habitat features on the structure likely to be used by any roosting bats at any time of year (i.e. a complete absence of crevices/suitable shelter at all ground/underground levels).
Negligible	A structure that does not have any obvious habitat features that are 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.

³ HM Government (2006). Natural Environment and Rural Communities Act 2006. Available online at: <https://www.legislation.gov.uk/ukpga/2006/16/section/41>.



Low	A structure that has one or more potential roosting features that could support individual roosting bats opportunistically. These features however lack the space, shelter or appropriate conditions, to support larger numbers of bats (such as a maternity roost).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter and suitable conditions for roosting, but are unlikely to support a roost of high conservation significance.
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 potential for longer periods of time due to their size, shelter, protection and conditions.
Suitability	Description of roosting habitats in trees
Negligible	A structure that does not support any features that could be used by roosting bats.
Low	A structure that has one or more potential roosting features that could support individual roosting bats opportunistically. These features however lack the space, shelter or appropriate conditions, to support larger numbers of bats (such as a maternity roost).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter and suitable conditions for roosting, but are unlikely to support a roost of high conservation significance.
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 potential for longer periods of time due to their size, shelter, protection and conditions.

2.2.2 Hibernation Potential

The structure and its associated features were assessed for their suitability to be used by hibernating bats. The assessment was carried out in accordance with guidelines produced by BatAbility⁴ and the bat survey guidelines produced by the Bat Conservation Trust¹. To determine the potential for features to support hibernating bats the following aspects were considered:

- the suitability of features to support roosting bats or to allow access for roosting bats;
- the temperature and humidity conditions likely to be present within the feature during the winter period and the suitability in this respect for it to be used by bats for hibernating;
- the surrounding habitat, in terms of its potential for use by bats outside of the hibernation period for commuting and/or foraging purposes; and
- the presence of known roosts within the structure, or adjacent structures, or surrounding area during the active season.

The potential for use by hibernating bats for each feature, or group of features was assessed as either negligible, low, moderate, or high, in accordance with best practice. Further surveys are recommended where appropriate, considering the feasibility of a hibernation survey for certain PRFs.

2.2.3 Foraging and Commuting Potential

The habitats surrounding the site and within the wider landscape were broadly assessed for their potential to support foraging and commuting bats, and were categorised as negligible, low, moderate or high potential suitability in line with published guidance¹.

⁴ Middleton. N. (2019). *Assessing Sites for Hibernation Potential. A Practical Approach, including a Proposed Method & Supporting Notes. Version 1 Draft/V2.2019*. BatAbility.



2.3 Other Protected and/or Notable Species

Any birds identified, or evidence of nesting birds discovered during the site visit, were recorded. Special attention was paid to notable species such as red-listed Birds of Conservation Concern⁵ and those species afforded special protection on Schedule 1 of the Wildlife and Countryside Act (1981), such as barn owl *Tyto alba* and swallow *Hirundo rustica*.

Whilst this survey has focussed on bats and no specific searches were made with respect to other protected/notable species, any evidence of such species that was encountered during the site visit was also recorded.

3 RESULTS/OBSERVATIONS

3.1 Desk Study and Granted EPS Licences

One statutory designated site is present within 2km of Town House Farm, which is Slinfold Stream and Quarry Site of Special Scientific Interest (SSSI) approximately 0.8km to the south of the application site (see Figure 3). The site is designated for its geological value only. Bats are not a listed feature of this designated site.

⁵ Stanbury, A., Eaton, M., Aebischer, N., Balmer, N., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). Birds of Conservation Concern 5: the status of bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man. British Birds 114, pp 723-747..

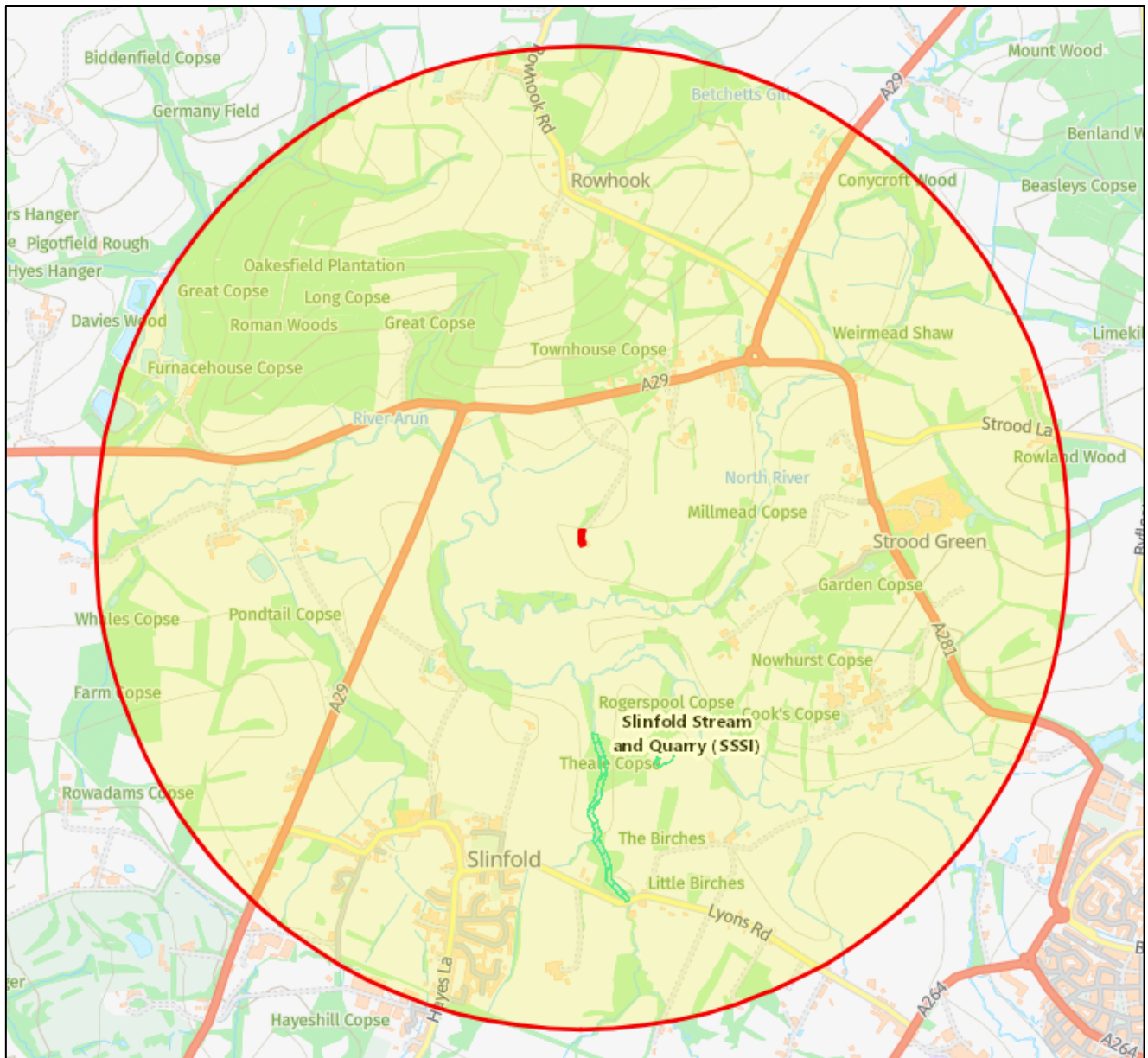


Figure 3. Designated sites within a radius of 2km of the application site. Images produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

There is ancient and semi-natural woodland located approximately 0.5m east of the site boundary (see

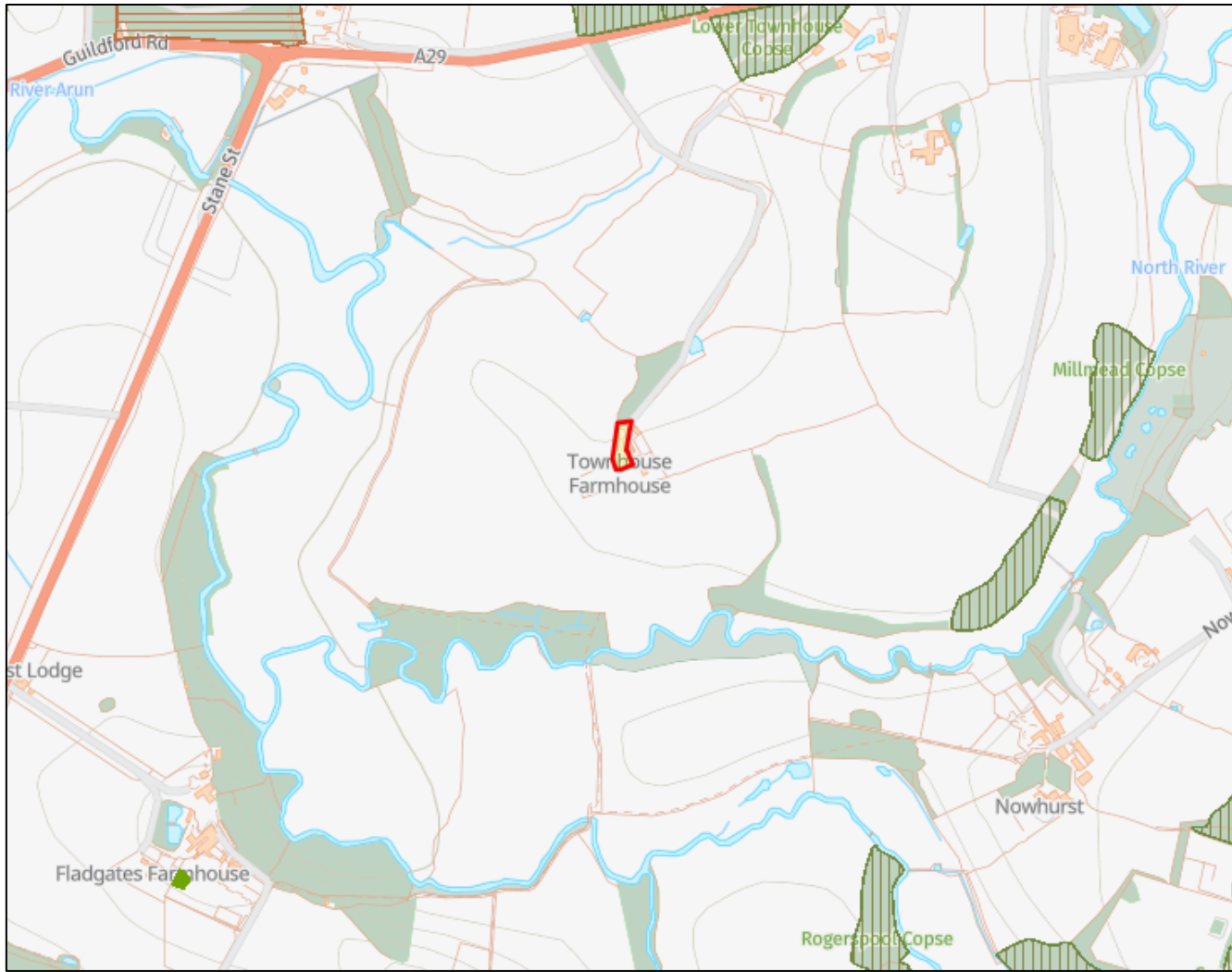
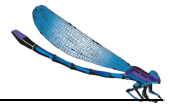


Figure 4). A small parcel of traditional orchard is additionally located 0.8km to the south-west of the site.

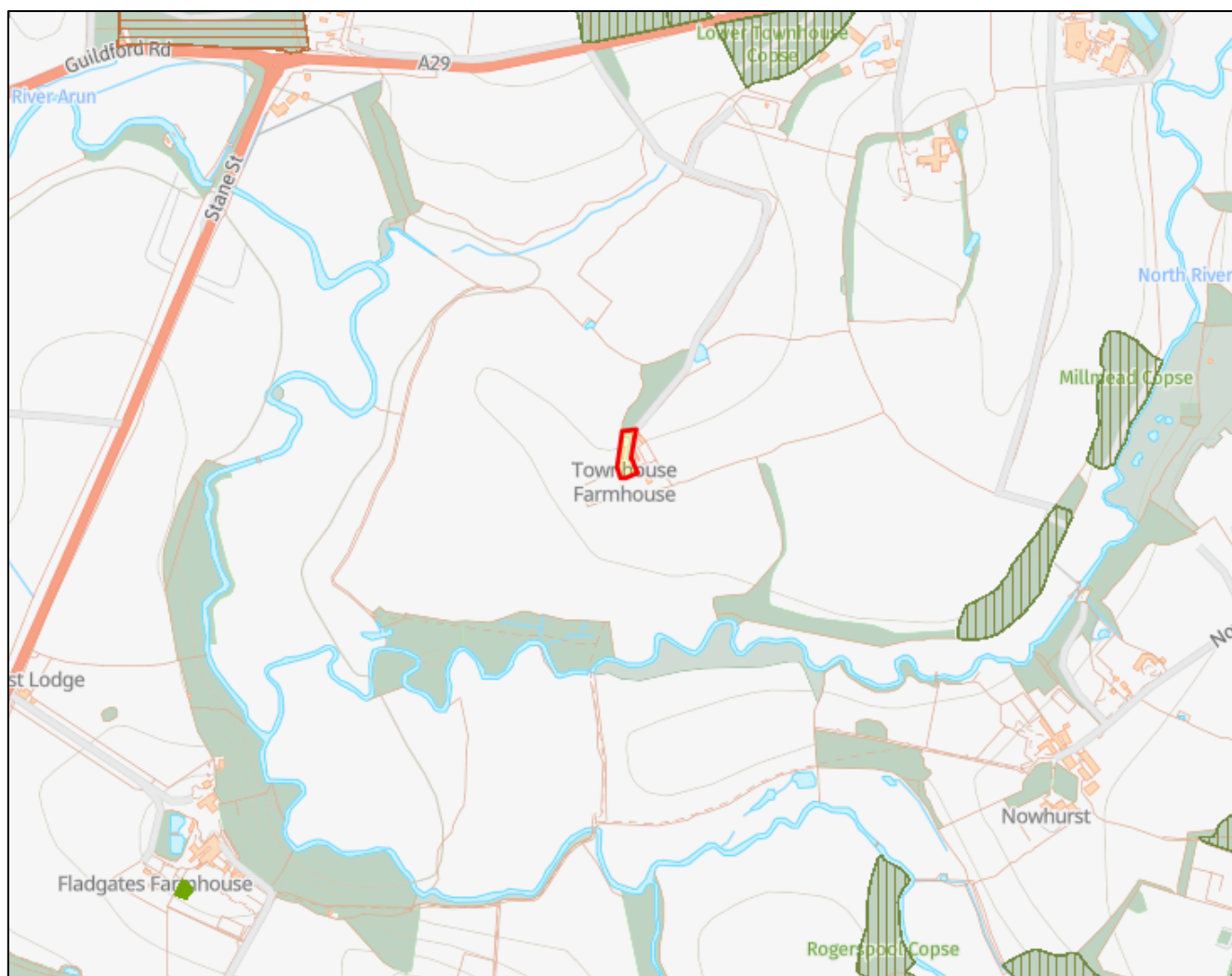


Figure 4. Ancient and semi-natural woodland (green hatching) relative to Town House Farm, Horsham (outlined in red). A small parcel of traditional orchard (block green) is present south-west of the site. Image produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0).

There are two EPS licences granted for mitigation projects concerning bats within 1km of the site shown on the Magic Maps website (see Figure 5 and Table 2), both located approximately 0.9km to the south-east. There are additionally four records of great crested newt survey licence returns within 1km of the site, with the closest of these approximately 0.4km north-east of the site.

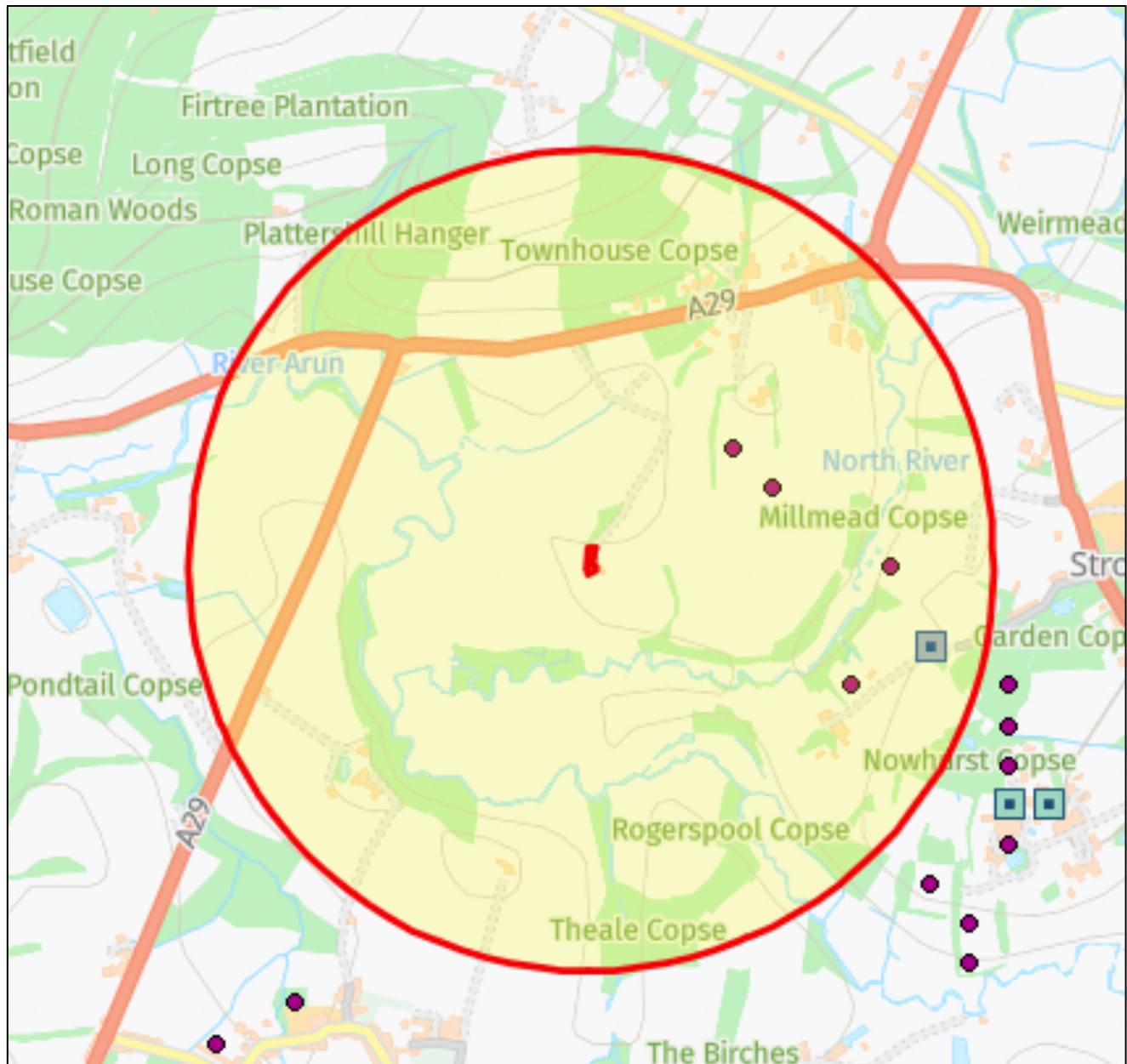
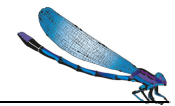


Figure 5. EPS licences (blue square), and great crested newt survey licence returns (purple dots) within a radius of 1km of the application site. Images produced courtesy of Magic maps (<http://www.magic.gov.uk/>, contains public sector information licensed under the Open Government Licence v3.0)

Table 2. EPS Licences granted with regards to bats within 1km of Town House Farm, Horsham.

Licence reference	Species	Dates	Actions permitted	Proximity to site
2019-43782-EPS-MIT-1	Brown long-eared bat <i>Plecotus auritus</i> , common pipistrelle <i>Pipistrellus pipistrellus</i> , Nathusius's pipistrelle <i>Pipistrellus nathusii</i> , and soprano pipistrelle <i>Pipistrellus pygmaeus</i> .	08/06/2020-05/06/2025	Destruction of a resting place.	0.9km south-east
2020-48059-EPS-MIT-2	Brown long-eared bat, common pipistrelle, Nathusius's pipistrelle, and soprano pipistrelle.	18/08/2020-05/06/2030	Destruction of resting place.	0.9km south-east



3.2 Site Context and Surrounding Habitats

The site is located in a rural location approximately 5.5km north-west of Horsham and comprises a main residential dwelling, with an associated section of garden that includes a small tree. The site is immediately bordered by the rest of the property at Town House Farm (including managed gardens and outbuildings not included within the proposed development) to the east, south and west with arable farmland beyond, and a small band of woodland to the north. The close surrounding habitats are considered to be of moderate value to bats, with the rest of the property and arable farmland providing a sub-optimal abundance of insect prey for bats, with most foraging opportunities located within the woodland to the north. Several hedgerows on the arable field boundaries provide connectivity to other woodland parcels and rivers within the wider landscape (including ancient woodland to the east), which combine to provide a mosaic of habitats that are likely to support a wide variety of bat species.

3.3 Inspection for Bats

3.3.1 Roost Potential

The building inspection identified confirmed at least two bat roosts through the presence of approximately 20 droppings in the southern side void, as well as approximately two droppings under a hanging tile in the south-western corner of the property. The droppings under the hanging tiles were later confirmed to belong to a Natterer's *Myotis nattereri* bat via DNA analysis.

The site contains a two-storey residential dwelling of brick construction, with a chimney smoke stack of matching construction built onto the eastern elevation. The dwelling supports a roof that is originally hipped in construction, although a separate roof extension has created gable ends on the northern and western elevations. There are additionally two dormer windows present on the southern elevation. The roof is covered in Horsham stone tiles, with timber soffits covering the eaves. The dwelling is partially cladded in machine-made clay tiles across all elevations.

The results of the internal and external inspection of the dwelling, as well as the tree present within the zone of impact are detailed in Table 3.

Table 3. Assessment of PRFs at Town House Farm.

Building section	Description of features	Assessment of suitability ⁶
Exterior	An external inspection revealed that the dwelling and the roof were in generally good condition. Gaps were identified under hanging tiles across all elevations, except along the very bottom row; additional gaps were also identified under the timber soffits on the western gable end and under the eaves on the northern elevation. Two droppings were identified western elevation of the dwelling (in the south-western corner), one on a hanging tile approximately five rows of tiles from the bottom (2.5m up) and one on the floor below. These later confirmed to belong to a Natterer's bat <i>Myotis nattereri</i> via DNA analysis.	High bat roost suitability
Interior – Void 1	The main void of the property has been partially converted, so only two side void	Negligible bat

⁶ Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. Bat Conservation Trust, London.



Building section	Description of features	Assessment of suitability ⁶
	spaces remain. One of these forms a “U” shape around the northern, eastern and southern elevations, with each section measuring approximately 5m (l) x 3m (w) x 1.5m (h), 9m (l) x 3m (1.5m) x 1.5m (h) and 5m (l) x 3m (w) x 1.5m (h) respectively. An additional “lip” section at the end of the void was also present, measuring 3m (l) x 1m (w) x 1.5m (h) and ending in concrete breeze block. Each section has a single pitch with timber supports and spray foam cladding on the underside of the roof tiles, as well as a partially boarded floor with rockwool insulation beneath. The void remains generally clean, except for heavy cobwebbing at the lip section. No evidence of bats was found, but a single daylight gap was identified on the eastern elevation.	roost suitability
Interior – Void 2	This section covers the east, south and west elevations of the property and has dimensions similar to Void 1. Each section has a single pitch with timber supports and spray foam cladding on the underside of the roof tiles, as well as a partially boarded floor with rockwool insulation beneath. Approximately 20 droppings were found by the void access on the western elevation, appearing to be morphometrically similar to long-eared <i>Plecotus</i> bats; as the loft void outside of the zone of impact these were not sent off for eDNA analysis. Part of the void was obstructed by piping which meant that the rest of the void beyond could not be fully explored, although this section could be observed visually. Heavy cobwebbing was present throughout the void, and while no daylight gaps could be observed the end of the void felt draughty.	Confirmed bat roost
Tree	A willow-leaf pear <i>Pyrus salicifolia</i> tree is present in the garden on the south-western corner. No potential roost features were identified on this tree.	Negligible bat roost suitability

Overall, the bat roost suitability at this site is assessed as “high”, however the zone of impact (likely limited to a few rows of hanging tiles, with the dropping found on the hanging tile outside of this) is considered to be “moderate”. While the immediate habitat (residential dwelling and garden) is sub-optimal for foraging bats, the woodland parcel to the north as well as in the wider landscape (connected to the site via multiple hedgerows) is highly suitable for foraging and commuting bats.

There were no trees contained within the zone of impact that have suitability for roosting bats and as such tree roosting bats would therefore not be a constraint to development.

3.3.2 Hibernation Potential

Although not regarded as “classic” hibernating sites, the loft voids and small gaps in the roof tiles of Town House Farm have some potential to support bats in small numbers. Overall, the property is assessed to have “low” potential to support hibernating bats.

3.4 Other Protected and/or Notable Species

A small section of the garden associated with the dwelling is also included within the zone of impact. This garden comprises regularly mown grassland maintained at a short length, dominated by perennial ryegrass *Lolium perenne* with false oat-grass *Arrhenatherum elatius* and Yorkshire fog *Holcus lanatus* at the fringes. Cinquefoil *Potentilla* sp. was also identified. Given the short sward height of this grassland, this habitat is not considered to be suitable for reptiles or great crested newts *Triturus cristatus* (despite their presence within the surrounding landscape). The tree on site has suitability to support nesting birds.



3.5 Survey Limitations

An initial site assessment such as this is only able to act like a ‘snapshot’ to record any flora or fauna that is present at the time of the survey. It is therefore possible that some species may not have been present during the survey but may be evident at other times of the year. Bats will commonly roost in small inaccessible crevices, such as spaces underneath ridge tiles that are impossible to inspect during a scoping assessment. For this reason, habitats and features are assessed for their potential to support bats, even where no direct evidence (such as droppings) has been identified.

A section of Void 2 was obstructed by piping, and therefore a section beyond was not able to be accessed. This section could still be visually assessed and will not be impacted by the development, and as such is not expected to have a significant impact on the results of the assessment.

Two droppings were identified on hanging tiles on the western elevation of property, later confirmed to belong a to Natterer's bat. It had rained heavily during the previous night and during the morning of the survey, and as such other bat droppings could have been washed away.

3.6 Photographs



Photograph 1a & 1b. A view of the largest section of Void 1 (left), with a smaller “lip” section present at the end of the void.



Photograph 2a, 2b & 2c. Views of Void 2, including an access section on the western elevation where the droppings were found (left), the largest section of the void (centre) and the end section of the void that was obstructed by piping and could not be fully explored (right).



Photograph 3a & 3b. The western (left) and southern (right) elevations of the main dwelling at Town House Farm. Two droppings belonging to a Natterer's bat were identified under hanging tiles in the south-west corner.



Photograph 4a & 4b. The eastern elevation of Town House Farm, with examples of suitable bat roost features through gaps under hanging tiles that are present across all elevations of the property.



Photograph 3a & 5b. A view of the residential garden at Town House Farm (left), with the willow-leaf pear tree included within the zone of impact (right).



4 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES

4.1 Bats

4.1.1 Roost Potential

In accordance with the Bat Conservation Trust guidelines, the dwelling supports two confirmed bat roosts, and the overall suitability of the building to support further bat roosts is “high”. However, the zone of impact from the proposed extension is likely to extend to a few rows of hanging tiles on the southern and western elevations, and these are assessed to have “moderate” potential to support bats. As the exact methods of construction have not yet been specified, the works to construct a single-storey extension on the south-western corner have the potential to disturb the two existing roosts within the property, with a possibility of affecting further bat roosts not yet identified.

Therefore, in accordance with the guidelines two bat emergence/re-entry surveys are required to determine the importance of this building to bats as without further surveys the level of impact upon bats cannot be fully assessed. To ensure adequate coverage of all potential roost features, it is estimated that two observers will be required for each survey visit to observe all suitable roost features. To ensure that the survey effort conforms with interim guidance on the use of night vision aids, produced by the Bat Conservation Trust⁷, two night vision cameras supported by infra-red lighting will be used to support surveyors.

These surveys can be undertaken between May and mid-September (although September is considered to be a sub-optimal survey month and surveys cannot be undertaken in September for low potential buildings). These surveys will be completed at dusk or at dawn, during suitable weather conditions for bat activity to observe any bats emerging or re-entering roosts. Surveyors will use ultrasonic recording equipment to try and establish the species of bat present. If bats are discovered, further surveys to classify the nature of the roost (day/maternity/social) may be required.

The identification of a bat roost also means that careful timing of the development may be required in order to avoid impacts on bats, a precautionary ‘soft strip’ of tiles supervised by a licensed and suitably qualified bat ecologist and provision of permanent bat roosting features into the development will also be required, the nature of which will be dependent on the outcome of the two surveys.

An EPS licence will be required for any actions that would directly disturb, modify or destroy a bat roost. This would include measures to replace the existing roosting habitat such as designing integral bat roosting opportunities into the building fabric such as bat tiles and internal voids/access points for bats, depending on the scale of impact.

If the proposed methods of construction can demonstrate that no rows/only the bottom row of hanging tiles will be removed as part of the development, these works may be able to proceed under precautionary measures and avoid the need for further surveys and an EPS Licence. In this case, a licensed bat ecologist should still be present to inspect and oversee the soft stripping of any hanging tiles prior to demolition, so that in the highly unlikely event a bat is present the risk of injury/killing or destruction of a roost is avoided. The stripping of this feature should be

⁷ Bat Conservation Trust (2022). Interim Guidance Note: Use of night vision aids for bat emergence surveys and further comment on dawn surveys.



undertaken carefully by hand under the supervision of the licensed ecologist. In the event a bat was to be discovered, the feature should be made good where possible and works would need to cease immediately. Work would likely not be able to continue until an EPS mitigation licence had been obtained. It is likely that any licence application would need to be supported by further surveys to classify the nature of the roost (day/maternity/transitional).

No potential roost features were identified on the tree within the zone of impact and this tree is considered to have “negligible” potential to support roosting bats.

4.1.2 Hibernation Potential

The dwelling is assessed as having low hibernation potential for bats. The features that could be used for hibernation include hanging and roof tiles which it would be impossible to fully investigate bat use over the winter period without dismantling the features, and hence potentially destroying a bat roost. Therefore, in this instance no further surveys for winter roost potential are recommended. Instead, mitigation must be implemented to reflect the risk that bats may be use this building for hibernating during the winter. This must include timing the works to the building between mid-March and the end of October to avoid disturbing bats that could be in hibernation.

4.1.3 Foraging and Commuting Suitability

As the site and zone of influence may be used by foraging and commuting bats, it is important that the potential for disturbance from artificial lights is considered. The proposed development should include an ‘ecologically sensitive lighting scheme’ in accordance with guidance produced by the Bat Conservation Trust (summarised in Appendix 2).

4.2 Other Protected and/or Notable Species

The garden on site is regularly mown and as such is not suitable for reptiles and great crested newts in its current state, and no further surveys are considered necessary. The sward height should be maintained at a height below 5cm to prevent this becoming suitable habitat for these species before works begin.

The tree on site is suitable for nesting birds and removal of this tree should be timed outside of the nesting bird season (avoiding 1st March–31st August). If this is not possible, the tree should be subject to nesting bird checks by a suitably qualified ecologist as appropriate to the works. If an active nest is identified, a minimum exclusion zone for all works within 5m radius of the nest must be established to protect it from disturbance until the young have fledged.

4.3 Biodiversity Enhancement Opportunities

The proposed development represents an opportunity for habitat enhancement to benefit insects, birds, and bats. Any planting scheme should include native shrub species and flowering species known to encourage insect diversity. Such enhancement measures are in line with the recommendations of the NPPF and as such would be considered favourably when determining the planning application.



The developer is also encouraged to consider installing bat boxes on the southern or eastern external faces of the building, close to the eaves or on retained trees on site to provide additional roosting opportunities for these species (see Figure 6 for examples). Bird boxes could also be installed on the main house or extension on the southern and eastern elevations, at a minimum height of 3m from the ground (see Figure 7 for examples). Please note any open nest boxes should be placed where they will be shielded by the surrounding vegetation.



Figure 6. 2FN (left) and 1FS (right) bat boxes produced by Schwegler, and a Beaumaris Woodstone Bat Box (right). These and other brands are available at many online wildlife stores. These are constructed of a mixture of cement and woodchip and are designed to be durable and replicate the stable thermal properties of trees and buildings. They may be attached to trees or buildings.



Figure 7. Examples of suitable bird nest boxes, including a swallow nest cup (left), Vivara Pro Seville 28mm Woodstone Nest Box (centre) and Vivara Pro Woodstone Open Nest Box (right).

If any bats or other protected species are found during the development, work should be stopped immediately, and an ecologist must be contacted for advice.

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op.



APPENDIX 1 – Wildlife Legislation and National Planning Policy

The following text is intended for general guidance only and does not constitute comprehensive professional legal advice. It provides a summary of the current legal protection afforded to bats.

All bat species in the UK are included in Schedule II of the Habitats Regulations 2017, which transpose Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora ("The EC Habitats Directive"). As such all bat species in the UK are defined as 'European Protected Species (EPS).

Four species of bat (Bechstein's bat *Myotis bechsteinii*, Barbastelle bat *Barbastella barbastellus*, greater and lesser horseshoe bats, *Rhinolophus ferrumequinum* and *R. hipposideros*) are also listed on Annex IV of the EC Habitats Directive. This requires the designation of a series of sites which contain important populations of these species as Special Areas of Conservation (SACs).

All species of British bat are also fully protected under the Wildlife and Countryside Act (1981), as amended, through inclusion in Schedule V.

All species of bat are listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). Section 41 of the NERC Act lists the habitats and species of principle importance. This places a statutory duty on all public bodies, including planning authorities, under Section 40, to take, or promote the taking by others, steps to further the conservation of habitats and species of principal importance for the conservation of biodiversity in England (commonly referred to as the 'Biodiversity Duty'). This duty extends to all public bodies the biodiversity duty of Section 74 of the Countryside and Rights of Way (CROW) Act 2000, which placed a duty only on Government and Ministers.

Under the above legislation it is an offence to:

- kill, injure or take any individual bat of any species;
- possess any part of an individual bat, either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by bats for shelter, rest, protection, or breeding;
- intentionally or recklessly disturb these species whilst using any place of shelter or protection; or
- deliberately disturb bats in such a way as to be likely to impair their ability to:
 - survive, to breed or reproduce, to rear or nurture their young; to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong;
- keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead bat, or any part of, or anything derived from a bat.

It is also an offence to set and use articles capable of catching, injuring, or killing bats (for example a trap or poison), or knowingly cause or permit such an action. There is also protection under Schedule 6 of The Wildlife and Countryside Act 1981 (as amended) relating specifically to trapping and direct pursuit of bats.

A European Protected Species Licence (EPSL) in relation to bats is required from Natural England for any work that would result in an otherwise unlawful activity (e.g. damage to a bat roost). A license can only be issued to permit otherwise prohibited acts if Natural England are satisfied that all the following three tests are met:



- the proposal is for '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';
- there is no satisfactory alternative; and
- the action authorised by the license will not be detrimental to the maintenance of bat populations at a favourable conservation status in their natural range.

A bat roost is defined by the Bat Conservation Trust's Bat Surveys—Good Practice Guidelines 3rd Edition as “the resting place of a bat”. In general, the word roost is interpreted as “any structure or place, which any wild bat uses for shelter or protection.”

Bats tend to re-use the same roosts; therefore, legal opinion is guided by recent case law precedents, that a roost is protected, whether or not the bats are present at the time. This includes summer roosts used for resting during the day and/or breeding; or winter roosts, used for hibernating.



APPENDIX 2 – Reducing Impacts of Artificial Light

Bright external lighting can have a detrimental impact upon foraging and commuting bat flight paths, but more importantly can also cause bats to remain in their roosts for longer. Artificial lighting can also cause significant impacts to other nocturnal species, most notably moths and other nocturnal insects. It can also result in disruption of the circadian rhythms of birds, reducing their fitness.

Guidelines issued by the Bat Conservation Trust⁸ should be referred to when designing the lighting scheme. Note that lighting designs in very sensitive areas should be created with consultation from an ecologist and using up-to-date bat activity data where possible. The guidance contains techniques that can be used on all sites, whether a small domestic project or larger mixed-use, commercial or infrastructure development. This includes the following measures:

Avoid lighting key habitats and features altogether

There is no legal duty requiring any place to be lit. British Standards and other policy documents allow for deviation from their own guidance where there are significant ecological/environmental reasons for doing so. It is acknowledged that in certain situations lighting is critical in maintaining safety, such as some industrial sites with 24-hour operation; however, in the public realm, while lighting can increase the perception of safety and security, measurable benefits can be subjective. Consequently, lighting design should be flexible and be able to fully consider the presence of protected species.

Apply mitigation methods to reduce lighting to agreed limits in other sensitive locations – lighting design considerations

Where bat habitats and features are considered to be of lower importance or sensitivity to illumination, the need to provide lighting may outweigh the needs of bats. Consequently, a balance between a reduced lighting level appropriate to the ecological importance of each feature and species, and the lighting objectives for that area will need to be achieved. The following are techniques which have been successfully used on projects and are often used in combination for best results:

- dark buffers, illuminance limits and zonation;
- sensitive site configuration, whereby the location, orientation and height of newly built structures and hard standing can have a considerable impact on light spill;
- consideration of the design of the light and fittings, whereby the spread of light is minimised ensuring that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Consideration should be given to the height of lighting columns. It should be noted that a lower mounting height is not always better. A lower mounting height can create more light-spill or require more columns. Column height should be carefully considered to balance task and mitigation measures. Consider no lighting solutions where possible such as white lining, good signage, and LED cat's eyes. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times;
- screening, whereby light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding;
- glazing treatments, whereby glazing should be restricted or redesigned wherever the ecologist and lighting professional determine there is a likely significant effect upon key bat habitat and features;
- creation of alternative valuable bat habitat on site, whereby additional or alternative bat flightpaths,

⁸ Bat Conservation Trust and Institute for Lighting Professionals (2018) Guidance note 8. Bats and Artificial Lighting. <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>



commuting habitat or foraging habitat could result in appropriate compensation for any such habitat being lost to the development;

- dimming and part-night lighting. Depending on the pattern of bat activity across the key features identified on site it may be appropriate for an element of on-site lighting to be controlled either diurnally, seasonally or according to human activity. A control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

Demonstrate compliance with illuminance limits and buffers

- *Design and pre-planning phase*; it may be necessary to demonstrate that the proposed lighting will comply with any agreed light-limitation or screening measures set as a result of your ecologist's recommendations and evaluation. This is especially likely to be requested if planning permission is required.
- *Baseline and post-completion light monitoring surveys*; baseline, pre-development lighting surveys may be useful where existing on or off-site lighting is suspected to be acting on key habitats and features and so may prevent the agreed or modelled illuminance limits being achieved.
- *Post-construction/operational phase compliance-checking*; as a condition of planning, post-completion lighting surveys by a suitably qualified person should be undertaken and a report produced for the local planning authority to confirm compliance. Any form of non-compliance must be clearly reported, and remedial measures outlined. Ongoing monitoring may be necessary, especially for systems with automated lighting/dimming or physical screening solutions.

Lighting Fixture Specifications

The Bat Conservation Trust recommends the following specifications for lighting on developments to prevent disturbance:

- Lighting spectra: peak wavelength >550nm
- Colour temperature: <2700K (warm)
- Reduction in light intensity
- Minimal UV emitted
- Upward light ratio of 0% and good optical control

Further reading:

Buglife (2011) A review of the impact of artificial light on invertebrates.

Royal Commission on Environmental Pollution (2009) Artificial light in the environment. HMSO, London. Available at: <https://www.gov.uk/government/publications/artificial-light-in-the-environment>

Rich, C., Longcore, T., Eds. (2005) Ecological Consequences of Artificial Night Lighting. Island Press. ISBN 9781559631297.

CPRE (2014) Shedding Light: A survey of local authority approaches to lighting in England. Available at: <http://www.cpre.org.uk/resources/countryside/dark-skies/item/3608-shedding-light>

Planning Practice Guidance guidance (2014) When is light pollution relevant to planning? Available at: <https://www.gov.uk/guidance/light-pollution>



Institution of Lighting Professionals (2021) Guidance Notes for the Reduction of Obtrusive Light GN01:2011.
Available at: <https://www.theilp.org.uk/resources/free-resources/>

Voigt, C.C., Azam, C., Dekker, J., Ferguson, J., Fritze, M., Gazaryan, S., Hölker, F., Jones, G., Leader, N., Lewanzik, D. and Limpens, H., 2018. *Guidelines for consideration of bats in lighting projects*. Unep/Eurobats.
Available at:
https://cdn.bats.org.uk/uploads/pdf/Resources/EUROBATsguidelines8_lightpollution.pdf?v=1542109376