

Orchards Paddock, Basingstoke Road, Swallowfield, Reading, Berkshire, RG7 1PT

Preliminary Roost Assessment Report

April 2025

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Preliminary Roost Assessment Report
Orchards Paddock, Basingstoke Road, Swallowfield, Reading, Berkshire, RG7 1PT
for
Chris & Julie Dearing

Reference: Orchards Paddock	
Revision	Issue date:
0	18/04/25

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This report represents sound industry practice; reports and recommends correctly, truthfully and objectively; is appropriate given the local site conditions, scope of works proposed and resources allocated to us by the client; and avoids invalid, biased, and exaggerated statements.

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EXECUTIVE SUMMARY

1. This report provides information from a preliminary roost assessment survey carried out by Hampshire Ecological Services Ltd for Chris & Julie Dearing in connection with a proposal to carry out works on the semi-detached garage and outbuilding at Orchards Paddock, Basingstoke Road, Swallowfield, Reading, Berkshire, RG7 1PT (approximate Ordnance Survey Grid Reference SU722651). The site consists of a house with a semi-detached garage and an outbuilding. There are also front and rear gardens. The location of the site is shown in *Figures 1 and 2* and the buildings surveyed are shown in *Figure 3* in *Section 6*.
2. An internal and external survey of the buildings was carried out by ecologist Adam Rye BSc (Hons) accredited under bat licence 2015-11159-CLS-CLS on the 7th April 2025.
3. The house is a two-storey brick building with a pitched, tiled roof. Full details of the building are given in *Table 4.2.1* in *Section 4.2*. Due to the presence of suitable roosting features on the building, and evidence of bats found in both roof voids during the survey, this building is a confirmed bat roost with moderate bat roost suitability. Details of potential bat access points and external roost locations are illustrated in *Images 4.3.1.1 & 4.3.1.2* and the locations of bat evidence are in *Figure 4* in *Section 6*.
4. The semi-detached garage is a single-storey building with a part pitched, tiled roof and part flat, felted roof. Full details of the building are given in *Table 4.2.1* in *Section 4.2*. No bats or evidence of bats was found during the survey. However, due to the presence of suitable roosting features on the building and the proximity of an adjacent roost, this building has low bat roost suitability under the below guidelines. Details of potential bat access points are illustrated in *Images 4.3.2.1 & 4.3.2.2*.
5. The outbuilding is a single-storey brick building with a pitched, tiled roof. Full details of the building are given in *Table 4.2.1* in *Section 4.2*. No bats or evidence of bats was found during the survey. However, due to the presence of suitable roosting features on the building and the proximity of an adjacent roost, this building has low bat roost suitability under the below guidelines. Details of potential bat access points are illustrated in *Images 4.3.3.1 & 4.3.3.2*.
6. As the semi-detached garage and outbuilding both have low bat roost suitability, in line with Gov.uk [Bats: surveys and mitigation for development projects](#) and BCT's [Bat Surveys for Professional Ecologists Good Practice Guidelines 4th edition](#), a further survey is required on both buildings to confirm the presence or likely absence of roosting bats (see *Section 5.4*).
7. The proposed works will not affect the house. Therefore, there will be no impact on any potential bat roost features. No further bat surveys will be required in relation to the house at this time. However, if the scope of works is to change to include the house in line with Gov.uk [Bats: surveys and mitigation for development projects](#) and BCT's [Bat Surveys for Professional Ecologists Good Practice Guidelines 4th edition](#), three bat activity (dusk emergence) surveys are

- required to gather enough information about bat populations (including species, numbers and status of roost sites) to support the bat licence application (see *Section 5.5*).
8. The hedges, shrubs, mature trees, and the pond in the gardens provide good bat foraging habitat in the immediate vicinity of the buildings; the lines of hedges and mature trees along the boundaries connect the site to a network of hedges, tree-lines, waterways, and woodland strips. This in turn gives the site a high degree of connectivity to areas of high-quality foraging habitat in the wider landscape such as woodland and nearby rivers. Woodland and waterways provide high-quality foraging habitat for a number of different species of bat. These areas will be unaffected, and all links will be maintained. The connectivity around the edges of the site will be retained and as such no impact to commuting and foraging bats (and hence bat populations in the local area) is anticipated.
 9. Changes in lighting can affect foraging and commuting bats. Therefore, no works should take place in the hours of darkness or under artificial lighting. In addition, no lighting should be directed onto any retained vegetation (particularly the trees), and security lights should operate on a timer, to avoid any negative impact on bats. Any lighting installed should avoid spillage of greater than 0.1 lux (typical moonlight/ cloudy sky) onto any retained vegetation. The use of non-UV LED lighting (preferably using warm spectrum wavelengths) is strongly recommended to avoid the most deleterious impacts of lighting on biodiversity and bats in particular.
 10. All of the trees, shrubs, and hedges provide suitable habitat for nesting birds. The destruction of active bird nests is prohibited under the *Wildlife and Countryside Act 1981* (as amended). Any affected vegetation with the potential to support nesting birds should be cut to near ground level (approximately 30cm) outside the bird breeding season (which is late February to August inclusive). If this is not possible, and vegetation has to be removed during the nesting season, then it should be inspected (by an ecologist) for nests immediately prior to removal of the vegetation. If any active nests are found during works, a 5m buffer zone should be established around them and be temporarily fenced off to prevent plant or personnel disturbing the nest until the end of the breeding bird season (or until the nest is no longer in use).
 11. It is a requirement under national planning policy to provide ecological enhancements to sites requiring planning permission in order to provide a net gain in biodiversity. Therefore, the following enhancement measures are proposed:
 - The site will be enhanced for bats using at least one bat box (*e.g.* Vivara Pro WoodStone Bat Box, Beaumaris Woodstone or similar) will be erected on a suitable mature tree within the site boundary. This bat box will be erected as high as possible (ideally between 2.5m and 5m, facing south or south-east) with a clear exit path. It will remain on site permanently (and shall be repaired or replaced as necessary).
 - One multi-use box (swifts and sparrows) will be attached to the exterior wall of the house. Swift boxes can be supplied and installed by Hampshire Swifts <https://www.hampshireswifts.co.uk> and a new soffit design is also available (this box is also suitable for sparrows which are also an IUCN Red List Bird of Conservation Concern and listed on *Section 41* of the *Natural Environment & Rural Communities Act 2006*).

- Two 32mm hole bird boxes, such as a Vivara Pro Seville 32mm Woodstone Nest Box, suitable for blue tits and great tits will be attached to the mature trees in the garden.
12. The bird boxes to be erected on the site, with additional details on siting them to increase chances of occupancy, are summarised in *Table 5.6.4.1*.
 13. Other enhancements for wildlife that the owners of the site may choose to employ are given in *Appendix C*. However, these are not proposed as enhancements for the purposes of the planning application, but only for information purposes.
 14. This survey data is valid for a maximum of 12 months. Bats frequently move around and adopt new roosting sites, therefore if more than 12 months elapse it may be advisable to conduct further survey work to obtain up-to-date information, thereby ensuring protected species compliance.
 15. According to the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk), the site is neither designated nor immediately adjacent to any designated areas of nature conservation. However, there are designated sites nearby (see *Table 4.1.1.1* in *Section 4.1.1*). None of these will be directly affected by these small-scale works and all links will be maintained.
 16. The site is within 5km of Thames Basin Heaths SPA (c.3000m south-east). As a result of its proximity to these designated sites, the impacts of these small-scale works on the SPA must be considered.
 17. According to the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk), there have been seven bat European Protected Species (EPS) licences granted within c.2km of the site. Due to their close proximity and connecting habitat, it is likely that any bats using the site for commuting and/ or foraging are part of the same meta-population. However, due to the small-scale of the proposed works, any impacts are considered to be minimal.

INTRODUCTION

2.1 General

This report provides information from a preliminary roost assessment survey carried out by Hampshire Ecological Services Ltd for Chris & Julie Dearing in connection with a proposal to carry out works on the semi-detached garage and outbuilding at Orchards Paddock, Basingstoke Road, Swallowfield, Reading, Berkshire, RG7 1PT (approximate Ordnance Survey Grid Reference SU722651). The location of the site is shown in *Figures 1 and 2* in *Section 6*.

2.2 Site description

The site consists of a house with a semi-detached garage and an outbuilding. There are also front and rear gardens. The rear garden is small area of amenity grassland (lawn) to the north-east of the buildings. There is a line of mature trees on the east boundary and a wooden fence on the north boundary, which separates the site from neighbouring agricultural land. The front garden is a large area of amenity grassland (lawn) with a variety of fruit trees scattered throughout. There are several small 'islands' of ornamental planting around the edges of the site as well as along the front of the house. There is a pond at the north-east end of the site, which is surrounded by a selection of trees and shrubs. The boundaries of the front garden are mature tree-lines and hedges which connect the site to neighbouring habitats. The buildings surveyed are shown on the plan in *Figure 3* in *Section 6*.

The site is on the north-east side of Basingstoke Road, on the northern side of Swallowfield. The immediate surroundings consist of agricultural fields, some residential housing and associated private gardens. In the wider landscape the urban area primarily occurs to the north in Reading; in all other directions there is a mosaic of rural housing and small villages, arable fields, grassland, and woodland. The A33 is c.1.6km to the west and there is a solar farm c.550m north.

2.3 Proposed activities

This survey was carried out in connection with a proposal to carry out works on the semi-detached garage and outbuilding.

2.4 Current planning status

Planning permission is being applied for at this site.

2.5 Objectives of the survey and report

The survey by Hampshire Ecological Services Ltd included internal and external inspections of the buildings to identify bat roost suitability and to systematically search for bats and evidence of bats. The aim was to identify if bats were present or likely to use the site for roosting.

The survey and the report writing were carried out in accordance with *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, 4th edition (Collins, 2023). Any deviations from the guidelines are justified in the relevant sections.

Additionally, all ecological surveys should be completed in line with Natural England's *Standing Advice for Local Authorities*

(<http://www.naturalengland.org.uk/ourwork/planningdevelopment/spatialplanning/standingadvice/advice.aspx>), which states:

- Natural England will not comment on applications that are submitted without the relevant protected species surveys if there are no other issues (i.e. in relation to SSSIs or landscape).
- Natural England will not comment on scoping surveys that recommend further surveys where these have not been undertaken and submitted with the scoping reports.

2.6 *Structure of this report*

This report is structured as follows:

- *Section 1* contains the executive summary;
- *Section 2* contains an introduction;
- *Section 3* describes the survey methods;
- *Section 4* describes the results;
- *Section 5* evaluates the findings;
- *Section 6* contains the figures including:
 - *Figure 1* gives aerial photographs showing the site location;
 - *Figure 2* gives an Ordnance Survey map showing the location of the site;
 - *Figure 3* gives a site plan showing the buildings surveyed; and
 - *Figure 4* gives the locations of bat evidence.
- *Section 7* gives photographs of the site;
- *Section 8* lists the references;
- *Appendix A* gives information on relevant legislation;
- *Appendix B* gives information on bat ecology; and
- *Appendix C* lists other enhancements for wildlife (for information, not part of the planning application).

METHODS

3.1 Desk study

The *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk) was used to search for designated sites on or adjacent to the site including Local Nature Reserves (LNRs), National Nature Reserves (NNRs), Sites of Special Scientific Interest (SSSIs), Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites. The search area was 5km for SAC and SPA sites and 2km for LNRs, NNRs, Ramsar sites and SSSIs. The search area is also 500m for Local Wildlife Sites (LWS) and ancient semi-natural and ancient replanted woodlands.

In addition, the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk) was used to search for granted European Protected Species (EPS) licences in relation to bats within 2km of the site.

A data search from the Thames Valley Environmental Records Centre (TVERC) has not been commissioned by the client in relation to this site.

3.2 Field survey

3.2.1 Date, time and weather

An external and internal inspection of the buildings was carried out during the daytime on the 6th of April 2025. The weather conditions during the survey were 15°C and dry with 20% cloud cover and a light air (Beaufort scale 1).

3.2.2 Personnel

The internal and external inspections were carried out by Adam Rye BSc (Hons) who is experienced in undertaking bat roost surveys and is accredited under Bat Class Licence Registration number 2015-11159-CLS-CLS.

This report was reviewed by John Poland CEnv MCIEEM CBiol MRSB, who is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM), a Chartered Environmentalist (CEnv), a Chartered Biologist (CBiol) and multi-species licence holder with 23 years of experience in ecological consultancy and Victoria Russell MCIEEM who is also a full member of the CIEEM and multi-species licence holder with over 25 years of experience in ecological consultancy.

All staff adhere to the Chartered Institute of Ecology and Environmental Management's (CIEEM) *Code of Professional Conduct*.

3.2.3 *Assessment of current bat roost suitability*

Because bats are crevice-dwelling mammals it is often difficult to thoroughly inspect buildings for bats and evidence of bats. Examples are where bats roost between the roofing felt and tiles or slates, around window frames and behind bargeboards. These areas cannot be inspected, but a surveyor would know that bats might roost here because there are places where bats could gain entry. A pipistrelle bat is small enough to fit into a match box and can roost in gaps just 14-20mm wide.

The buildings were assessed for their **bat roost suitability** according to the following factors that influence the likelihood of bat roosting:

- Surrounding habitat: whether there are potential flight-lines and bat foraging areas nearby.
- Construction detail: the type and construction of architectural features such as attics, bargeboards, soffit boxes, lead-flashing, cavity walls and hanging tiles that could be used by roosting bats. Some construction details and materials are more favourable to bat occupation than others.
- Building condition: whether the building has no roof or has a sound roof without any potential bat access points.
- Internal conditions: bats favour sheltered locations with a stable temperature regime, protection from the elements and little wind/light/rain penetration.
- Potential bat access points: whether there is flight and crawl access.
- Potential roosting locations: the presence of bat-accessible voids, cracks and crevices.

The risk of bat roosts being present will be lower where structures have:

- Urban setting with little greenspace.
- Heavy disturbance.
- Small, cluttered roof void (particularly for brown long-eared bats).
- Modern construction with few gaps or crevices that bats can fly or crawl through (although pipistrelles may still be present).
- Prefabricated steel or sheet materials.
- Active industrial premises.

The above list provides generic criteria and there are exceptions to consider. For example, pipistrelle roost sites are often found in modern housing estates and therefore the absence of bats from such locations should not always be assumed.

Some information on bat ecology is included in *Appendix B*.

3.2.4 *Systematic inspection for bats or evidence of bats*

The buildings were assessed for their suitability to support roosting bats using the following access and inspection equipment: high-quality 10x42 binoculars; a 1,000,000 candlepower Clulite™ CB2 torch; an LED pen torch and a 3.8m surveyors' ladder. Binoculars were employed to view higher areas such as potential access points on the outside of the buildings. A description of the buildings was recorded on a survey sheet and digital photographs were taken as a permanent record.

Visual, systematic examinations were made for bats and evidence of bats in the buildings, both internally and externally, of the following:

- roof beams, especially the ridge beam;
- cracks, crevices and sheltered voids;
- the floors and stored items;
- external features such as cracks and holes in the walls;
- wall and door surfaces;
- window and door frames; and
- wall bases.

Evidence of roosting bats includes droppings, feeding remains and dead bats, but also staining from urine and fur-oils, scratch marks, odour, the presence of bat-fly (Nycteribiid) pupal cases, and in some cases, the absence of cobwebs.

Bat droppings can prove beyond doubt that bats use a building and can help to identify roosting locations because piles often accumulate beneath roosting sites or entrance points. The location, size, shape, texture and colour of the droppings can be used to aid species identification. DNA analysis of droppings is also possible and samples are taken where necessary. The number and condition (age) of droppings can indicate the size of the roost and when it was last used.

Following the internal and external inspections, the buildings were assigned a level of suitability for being used by roosting bats. This was based on the criteria in *Table 3.2.4.1* (Collins, 2023).

Table 3.2.4.1. Bat Roost Suitability.

Suitability	Description of roosting habitats	Description of commuting and foraging habitats
None	No habitat features on site likely to be used by any roosting bats at any time of the year (<i>i.e.</i> a complete absence of crevices/suitable shelter at all ground/underground levels).	No habitat features on site likely to be used by any commuting or foraging bats at any time of the year (<i>i.e.</i> no habitats that provide continuous lines of shade/protection for flight-lines or generate/shelter insect populations available to foraging 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.	No obvious habitat features on site likely to be used as flight-paths or by foraging bats; however, a small element of uncertainty remains in order to account for non-standard bat behaviour.

Suitability	Description of roosting habitats	Description of commuting and foraging habitats
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>i.e.</i> unlikely to be suitable for maternity and not a classic cool/stable hibernation site, but could be used by individual hibernating bats).	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, <i>i.e.</i> not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland) or a patch of scrub.
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).	Continuous habitat connected to the wider landscape that could be used by bats for flight-paths, such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
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.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by bats for flight-paths such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.
*Negligible is defined as ‘so small or unimportant as to be not worth considering, insignificant’. This category may be used where there are places that a bat could roost or forage (due to one attribute) but it is unlikely that they actually would (due to another attribute).		

4

RESULTS**4.1 Desk study****4.1.1 Designated sites**

According to the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk), the site is not designated or immediately adjacent to any designated areas of nature conservation. However, there are designated sites nearby. These are listed in *Table 4.1.1.1*.

Table 4.1.1.1. Statutory designated sites; non-statutory designated sites and ancient semi-natural and ancient replanted woodlands within the designated search areas of the site.

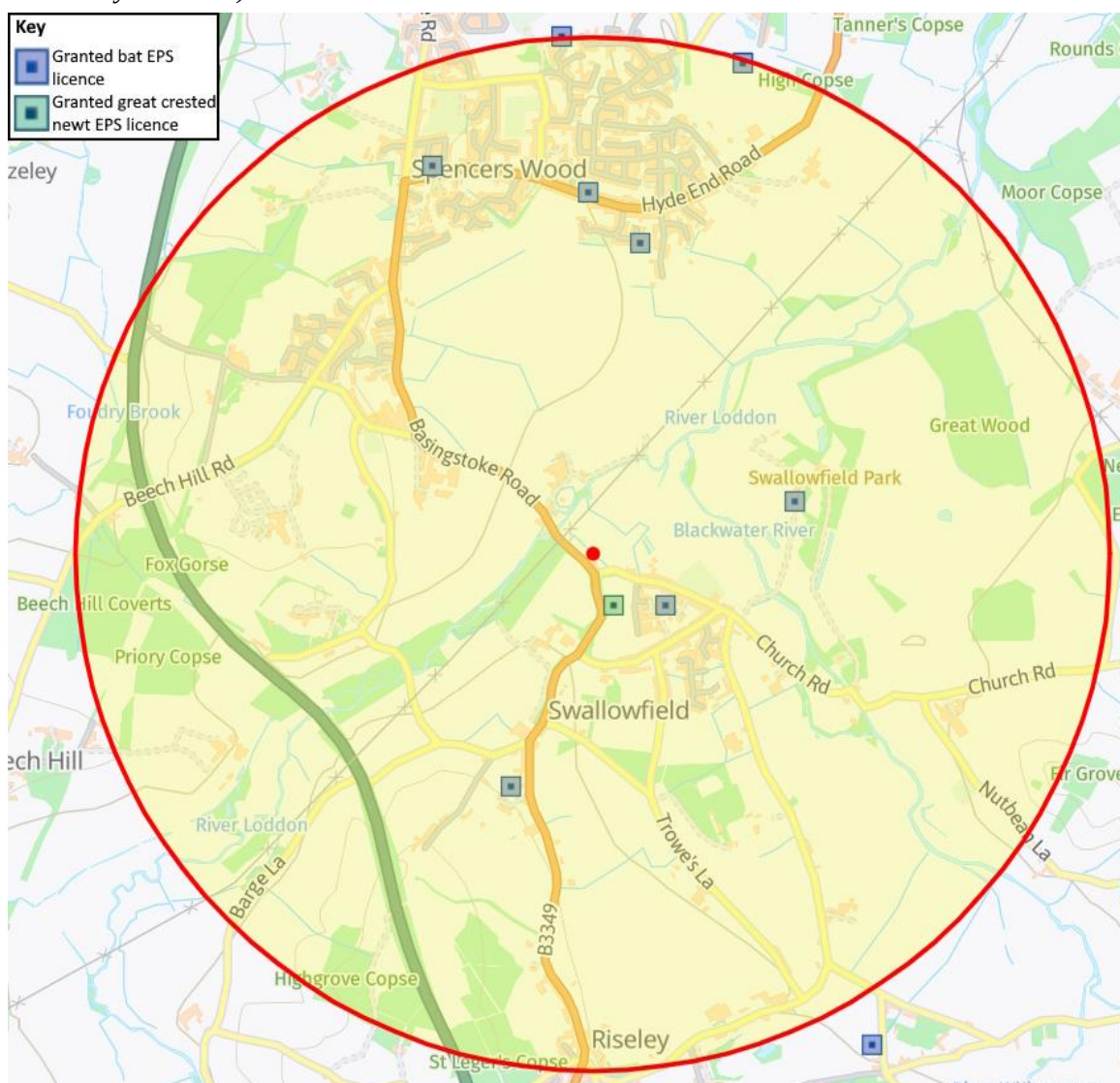
Level of designation	Designation	Name	Distance & direction from site
International	SPA	Thames Basin Heaths	c.3000m south-east
	Ramsar	-	-
	SAC	-	-
National	SSSI	Stanford End Mill and River Loddon	c.160m north-west
	NNR	-	-
County	LNR	Swallowfield Meadow	c.630m south-east
Local	LWS	-	-
	Ancient woodland	-	-

4.1.2 Bats

According to the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk), there have been seven bat European Protected Species (EPS) licences granted within 2km of the site. These are listed in *Table 4.1.2.1* and their locations are shown in *Figure 4.1.2.1*.

Table 4.1.2.1. Granted European Protected Species (EPS) licences within 2km of the site

Species subject of licence	Type of habitat affected	Date licence was granted	Distance & direction from site
Brown long-eared bat	Resting place	01/04/2010	c.350m south-east
Common pipistrelle	Resting place	04/10/2013	c.780m north-east
Brown long-eared bat	Resting place	07/10/2015	c.940m south-west
Brown long-eared bat, common pipistrelle, soprano pipistrelle	Resting place	11/02/2016	c.1180m north
Common pipistrelle, soprano pipistrelle	Resting place	10/07/2013	c.1380m north
Common pipistrelle, soprano pipistrelle	Resting place	12/07/2010	c.1600m north-west
Brown long-eared bat, common pipistrelle	Breeding site and resting place	23/07/2019	c.1998m north-east

Figure 4.1.2.1. Location of sites with granted bat EPS licences within 2km of the site (site location marked by a red dot).

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4.2 Survey of buildings

The construction details and photographs of the buildings are summarised in *Table 4.2.1*. Additional photographs showing the gardens are given in *Section 7*.

Table 4.2.1. Summary of the buildings' construction details.

Type/Name	House	Semi-detached garage	Outbuilding
Description	A two-storey brick building with a pitched, tiled roof.	A single-storey semi-detached garage with a part pitched, tiled roof and part flat, felted roof.	A single-storey brick outbuilding with a pitched, tiled roof.
No. of storeys	2	1	1
Roof type	Pitched	Pitched and flat	Pitched
Roof cladding	Tile	Tile and felt	Tile
Ridge	Tile	Tile	Tile
Wall type	Brick	Brick	Brick
Exterior	Dormers, chimney, lead-flashing, hanging tiles, damaged tiles	Lead-flashing, hanging tiles, damaged tiles, wooden cladding	Damaged tiles, cracks in the brickwork, wooden eaves
Photos	North-west elevation 	North-west elevation N/A semi-detached	North-west elevation 

North-east elevation



North-east elevation



North-east elevation



South-east elevation



South-east elevation



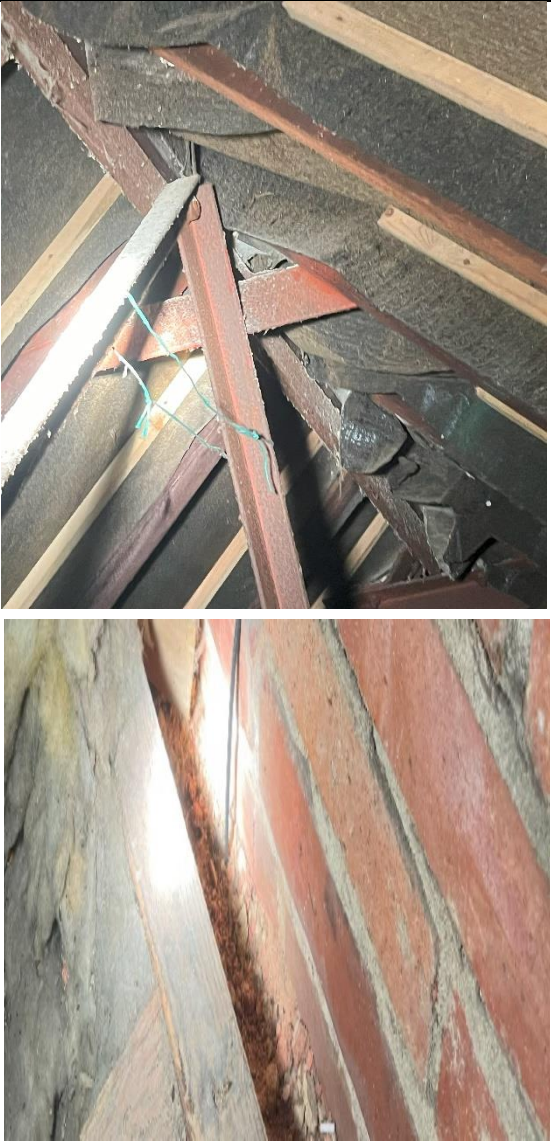
South-east elevation

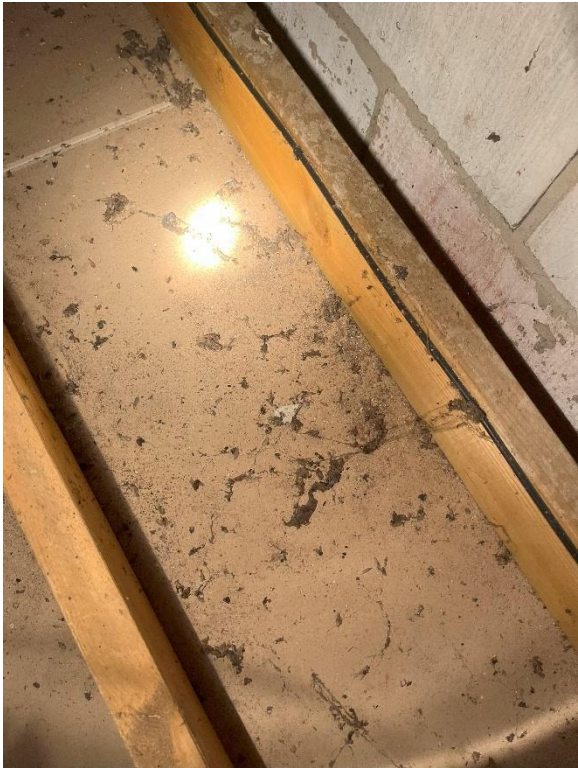


	South-west elevation 	South-west elevation 	South-west elevation 
Building dimensions	c.7.7m wide x c.19.2m long	c.7.7m wide x c.5.0m long	c.4.7m wide x c.6.9m long
Roof void description	Roof void 1: Uncluttered construction. The floor is lined with wooden boards.	N/A – open from the floor to the rafters	N/A – open from the floor to the rafters
	Roof void 2: Cluttered construction with wooden beams and fiberglass insulation.		
Frame	Wooden rafters and ridge beam	Wooden rafters and ridge beam	Wooden rafters and ridge beam
Roof lining	Bitumen roofing felt & breathable roof membrane	Bitumen roofing felt and wooden boards	Bitumen roofing felt

Roof void dimensions	Roof void 1: c.4m wide x c.5m long 	N/A – open from the floor to the rafters 	N/A – open from the floor to the rafters 
	Roof void 2: c.4m wide x c.15m long 		
Roof void height	Roof void 1: c.2.5m Roof void 2: c.2.25m	N/A – open from the floor to the rafters	N/A – open from the floor to the rafters

Potential roosting locations	• Against the ridge beam. • Between the roof tiles and the internal lining. • Within the brickwork where there is missing mortar. • The roof lining has ripped in places and could allow bats to access the roof void from under the tiles. 	Against the wooden beams and ridge. 	Against the wooden beams and ridge.  The roofing felt has ripped in places and could allow bats to access the building from under the roof tiles.
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Bat evidence	Yes 	None	None
Bat suitability	Moderate (confirmed bat roost)	Low	Low
Further surveys needed?	No, as the proposed works do not affect the house. However, if plans change the house becomes affected then three bat activity surveys will be required.	Yes, one bat activity survey	Yes, one bat activity survey

4.3 *Potential bat access points and potential external roost locations*

4.3.1 *House*

The majority of the roof appears in fairly good condition, although due to the shape and age of the tiles there are many potential access points and external roosting locations under the roof and hanging-tiles. Therefore, the building is classed as having moderate suitability to be used by roosting bats, following the criteria in *Table 3.2.4.1*. The locations and details of the potential bat access points and potential exterior roosting features are illustrated in *Images 4.3.1. & 4.3.1.2*.

Image 4.3.1.1. Location of potential bat access points and potential external roost locations on the north-east elevation of the house.



Image 4.3.1.2. Location of potential bat access points and potential external roost locations on the south-west elevation of the house.



4.3.2 Semi-detached garage

The majority of the garage appears well-sealed and in good condition. However, there are a few external roosting features and potential bat access points into the building. Therefore, the building is classed as having low suitability to be used by roosting bats, following the criteria in *Table 3.2.4.1*. The locations and details of the potential bat access points and exterior roosting features are illustrated in *Images 4.3.2.1 & 4.3.2.2*.

Image 4.3.2.1. Location of potential external roost locations on the north-east elevation of the semi-detached garage.



Image 4.3.2.2. Location of potential bat access points and potential external roost locations on the south-west elevation of the semi-detached garage.



4.3.3 Outbuilding

The majority of the building appears well-sealed and in good condition. However, there are a few external roosting features and potential bat access points into the building. Therefore, the building is classed as having low suitability to be used by roosting bats, following the criteria in *Table 3.2.4.1*. The locations and details of the potential bat access points and exterior roosting features are illustrated in *Images 4.3.3.1 & 4.3.3.2*.

Image 4.3.3.1. Location of potential bat access points and potential external roost locations on the north-west elevation of the outbuilding.



Image 4.3.3.2. Location of potential bat access points and potential external roost locations on the south-east elevation of the outbuilding.



4.4 Commuting and foraging habitat

The mature trees, shrubs, hedges, and the pond in the gardens provide bat foraging habitat in the immediate vicinity of the buildings. The lines of mature trees and hedges along the boundaries

connect the site to a network of hedges, tree-lines, waterways, and woodland strips, which in turn connects the site to areas of high-quality foraging habitat in the wider landscape such as woodland and nearby rivers. Therefore, the site has moderate commuting and foraging habitat, following the criteria in *Table 3.2.4.1*.

Bats follow linear landscape features such as lines of trees, hedges, buildings and waterways in order to commute from their roost sites to their feeding grounds. Likewise, they use these features to navigate between feeding areas and alternative roosts.

4.5 *Evidence of bats*

No bats or evidence of bats was found in the semi-detached garage and outbuilding.

Bat droppings were found in both roof voids of the house (see *Table 4.2.1* in *Section 4.2*). The droppings were consistent in size, shape and texture with those of pipistrelle and long-eared bat species. The locations of the bat droppings are illustrated in *Figure 4* in *Section 6*.

4.6 *Other ecological constraints*

4.6.1 *Birds*

All trees, hedges, and shrubs on site provide suitable nesting habitat for birds.

5 **INTERPRETATION AND EVALUATION**

5.1 **Constraints**

5.1.1 *Constraints on survey data*

Detailed searches often result in the discovery of evidence of bats. However, although such surveys can identify the presence of bats it is more difficult to prove absence due to the crevice-dwelling nature of these elusive mammals. Bat droppings may be missed where there is debris to obscure them (and also, very old droppings generally crumble away to dust).

Evidence of crevice-dwelling bats, such as pipistrelles, is often not discovered on preliminary roost appraisals.

It is often difficult to thoroughly inspect buildings for bats and evidence of bats without a destructive search, which is not generally legal, practical or acceptable.

5.1.2 *Constraints on the mitigation, compensation and enhancement measures*

There is a limit to the amount of enhancement measures that are possible (and reasonable) on a householder site. Also, no proposed plans have been provided. Therefore, the enhancements described in Section 5.2 are indicative and may need to be updated in the future.

One further bat activity (dusk emergence) survey on each of the affected buildings (garage and outbuilding) is required to inform the need for mitigation and compensation measures.

5.2 **Potential impacts of the proposed development on bat roosts**

5.2.1 *Desk study*

According to the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk), the site is neither designated nor immediately adjacent to any designated areas of nature conservation. However, there are designated sites nearby (see Table 4.1.1.1 in Section 4.1.1). None of these will be directly affected by works to the garage and outbuilding and all links will be maintained.

The site is within 5km of Thames Basin Heaths SPA (c.3000m south-east). This site is a network of heathlands designated for their internationally important bird populations of Dartford warbler, nightjar and woodlark. It has been shown that recreational use of the heathlands can affect the bird populations. As a result of its proximity, the impacts of the works on the SPA must be considered. However, as no plans have been provided it is not known whether the affected buildings (the garage and the outbuilding) will remain as non-residential or whether they will be converted to living space.

According to the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk), there have been seven bat European Protected Species (EPS) licences granted within c.2km of the site. Due to their close proximity and connecting habitat, it is likely that any bats using the site for commuting and/ or foraging are part of the same meta-population. However, as the boundaries are expected to be retained, any impacts are thought to be minimal.

5.2.2 *Commuting and foraging bats*

The mature trees, shrubs, hedges, and the pond in the gardens provide bat foraging habitat in the immediate vicinity of the buildings. The lines of mature trees and hedges along the boundaries connect the site to a network of hedges, tree-lines, waterways, and woodland strips, which in turn connects the site to areas of high-quality foraging habitat in the wider landscape such as woodland and nearby rivers. Therefore, the site has moderate commuting and foraging habitat. Woodland and waterways provide high-quality foraging habitat for a number of different species of bat. These areas will be unaffected, and all links will be maintained. The connectivity around the edges of the site is expected to be retained and as such no impact to commuting and foraging bats (and hence bat populations in the local area) is anticipated.

Changes in lighting can affect foraging and commuting bats. Therefore, no works should take place in the hours of darkness or under artificial lighting. In addition, no lighting should be directed onto retained vegetation (particularly the trees), and security lights should operate on a timer, to avoid any negative impact on bats. Any lighting installed should avoid spillage of greater than 0.1 lux (typical moonlight/ cloudy sky) onto any retained vegetation and should not increase the level currently experienced and, if at all possible, should reduce any light spill due to the type of lighting used and the use of protection such as hoods and cowls.

The use of non-UV LED lighting (preferably using warm spectrum wavelengths) is strongly recommended to avoid the most deleterious impacts of lighting on biodiversity and bats in particular.

5.2.3 *Buildings*

House

Due to the number of suitable roosting features on the building (lifted roof and hanging tiles), the building has moderate bat roost suitability. This was confirmed by the presence of bat droppings characteristic in size, shape and texture with those of pipistrelle and long-eared bat species. Therefore, the building is a confirmed bat roost.

The proposed works will not affect the house. Therefore, there will be no impact on any potential bat access points or potential external roost features and as such no further bat surveys will be required in relation to the house at this time. However, if the scope of works is to change to include the house, in line with Gov.uk [Bats: surveys and mitigation for development projects](#) and BCT's *Bat Surveys for Professional Ecologists Good Practice Guidelines 4th edition*, three bat activity (dusk emergence) surveys are required to gather enough information about bat populations (including species, numbers and status of roost sites) for roost characterisation and to provide the basis of the

information for a European Protected Species (EPS) licence (see *Section 5.5*). A bat licence from Natural England would be required before any work can take place on the house.

Semi-detached garage

Although no bats or evidence of bats was found, due to the presence of potential bat access points into the building and potential external roosting features on the building, the garage has low bat roost suitability. Therefore, in line with Gov.uk [Bats: surveys and mitigation for development projects](#) and BCT's *Bat Surveys for Professional Ecologists Good Practice Guidelines 4th edition*, a bat activity (dusk emergence) survey is required to confirm the presence or likely absence of roosting bats (see *Section 5.5*).

The need for mitigation and compensation measures for the garage will be informed by the results of the bat activity survey.

In addition, in order to provide biodiversity net gain, enhancement measures will need to be incorporated into the buildings and/ or wider site. The proposed enhancement measures are given in *Section 5.6*.

Outbuilding

Although no bats or evidence of bats was found, due to the presence of potential bat access points into the building and potential external roosting features on the building, the outbuilding has low bat roost suitability. Therefore, in line with Gov.uk [Bats: surveys and mitigation for development projects](#) and BCT's *Bat Surveys for Professional Ecologists Good Practice Guidelines 4th edition*, a bat activity (dusk emergence) survey is required to confirm the presence or likely absence of roosting bats (see *Section 5.5*).

The need for mitigation and compensation measures for the outbuilding will be informed by the results of the bat activity survey.

5.2.4 *Alternative roosting potential*

There are buildings nearby that could provide alternative roosting for bats (see *Figure 1* in *Section 6*) including the house, which is a confirmed bat roost. In addition, there are several mature trees in the vicinity which could provide bat roosting opportunities.

5.3 Other ecological constraints

5.3.1 *Birds*

All of the trees, shrubs, and hedges provide suitable habitat for nesting birds. The destruction of active bird nests is prohibited under the *Wildlife and Countryside Act 1981* (as amended). Any affected vegetation with the potential to support nesting birds should be cut to near ground level (approximately 30cm) outside the bird breeding season (which is late February to August inclusive).

If this is not possible, and vegetation has to be removed during the nesting season, then it should be inspected (by an ecologist) for nests immediately prior to removal of the vegetation.

If any active nests are found prior to or during works, a 5m buffer zone should be established around them and be temporarily fenced off to prevent plant or personnel disturbing the nest until the end of the breeding bird season (or until the nest is no longer in use).

5.4 *Survey report expiry*

This survey data is valid for a maximum of 12 months. Bats frequently move around and adopt new roosting sites, therefore if more than 12 months elapse it may be advisable to conduct further survey work to obtain up-to-date information to advise work, thereby ensuring protected species compliance.

Given the mobility of bats (and the presence of a bat roost in both roof voids of the house), it is recommended that a walkover of the site to update the survey information is undertaken prior to the development commencing if this does not occur before the end of April 2026.

5.5 *Further survey*

As the semi-detached garage and outbuilding have low bat roost suitability, at least one bat activity (dusk emergence) survey should be carried out on each building (using at least two surveyors per building to cover all aspects of these buildings) between mid-May and the end of August, when bats will be active. This gives sufficient information to either confirm that bats are likely not using the building or that there is a roost present.

If bats are recorded emerging, an additional two bat activity (dusk emergence) surveys are required (on the building where they emerged) by local planning authorities and Natural England for roost characterisation and to provide the basis of the information for a European Protected Species (EPS) licence (with at least one of the additional surveys carried out between mid-May and the end of August).

The proposed works will not affect the house. Therefore, no further bat surveys will be required in relation to the house at this time. However, if the scope of works is to change to include the house, three bat activity (dusk emergence) surveys must be carried out (using at least three surveyors to cover all aspects of this building) between May and September (with at least two carried out between mid-May and the end of August), when bats will be active (in line with *Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th edition* (Collins, 2023)). This gives sufficient information about bat populations (including species, numbers and status of roost sites) for roost characterisation and to provide the basis of the information for a European Protected Species (EPS) licence. A bat licence from Natural England is required before any work can take place on the house.

Presence or likely absence of bats is normally advised by a combination of internal and external assessment of the bat roost suitability of the structure and bat activity surveys (*Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4th edition* (Collins, 2023)).

5.6 **Enhancement measures**

5.6.1 *General*

Under the Environment Act 2021, all planning permissions granted in England (with a few exemptions) have to deliver at least 10% biodiversity net gain (BNG) (required since January 2024 and since April 2024 for small sites). BNG will be measured using Defra's biodiversity metric and habitats will need to be secured for at least 30 years. This sits alongside:

- a strengthened legal duty for public bodies to conserve and enhance biodiversity,
- new biodiversity reporting requirements for local authorities, and mandatory spatial strategies for nature: Local Nature Recovery Strategies or 'LNRS'.

From the 20th July 2021, the Government published the revised National Planning Policy Framework (Ministry of Housing, Communities and Local Government, 2021). The document sets out the government's planning policies for England and how these are expected to be applied. This replaces a previous version which was published in June 2019. It states: *"at the heart of the Framework is a presumption in favour of sustainable development (paragraph 11)."*

It also states *"opportunities to incorporate biodiversity in and around developments should be encouraged"* as part of the consideration for *"presumption in favour of sustainable development"*.

The updated National Planning Policy Framework (NPPF) also states (paragraph 170) that: *"Planning Policies and decisions should contribute to and enhance the natural and local environment by... minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures."*

The updated Planning Policy Guidance (PPG) for the Natural Environment, updated in July 2019 states (paragraph 020) that:

"Net gain in planning describes an approach to development that leaves the natural environment in a measurably better state than it was beforehand."

The updated PPG provides examples of how biodiversity net gain can be achieved. Measures suggested include *"creating new habitats"* and *"enhancing existing habitats"*.

It is proposed that the enhancements to provide biodiversity net gain will also be in the form of the following:

- new bat roost provision;
- sensitive lighting (for bats and other wildlife);
- new bird nesting provision.

These enhancements are detailed in the following sections.

Other enhancements for wildlife that the owners of the site may choose to employ are given in *Appendix C*. However, these are not proposed as enhancements for the purposes of the planning application, but only for information purposes.

All proposed enhancement measures are subject to supplied plans.

5.6.2 *Bats*

At least one bat box (*e.g.* Vivara Pro WoodStone Bat Box, Beaumaris Woodstone or similar) will be erected on a suitable mature tree within the site boundary. This bat box will be erected as high as possible (ideally between 2.5m and 5m, facing south or south-east) with a clear exit path. It will remain on site permanently (and shall be repaired or replaced as necessary).

5.6.3 *Lighting*

Changes in lighting can affect foraging and commuting bats. Therefore, no works should take place in the hours of darkness or under artificial lighting. In addition, no lighting should be directed onto retained vegetation (particularly the trees and hedges), and security lights should operate on a timer, to avoid any negative impact on bats. Any lighting installed should avoid spillage of greater than 0.1 lux (typical moonlight/ cloudy sky) onto any retained vegetation and should not increase the level currently experienced and, if at all possible, should reduce any light spill due to the type of lighting used and the use of protection such as hoods and cowls.

The use of non-UV LED lighting (preferably using warm spectrum wavelengths) is strongly recommended to avoid the most deleterious impacts of lighting on biodiversity and bats in particular.

Lighting can impact bat populations directly by disturbing roosts and reducing their foraging area, or indirectly by severing commuting routes from roosts. Therefore, the following (modified from *Bats and lighting in the UK* (ILP 2023)) should be undertaken:

- **Aim of light** The light should be aimed to illuminate only the immediate area required by using as sharp a downward angle as possible. This lit area must avoid being directed at, or close to, any retained vegetation. A shield or hood can be used to control or restrict the area to be lit. Avoid illuminating at a wider angle as this will be more disturbing to foraging and commuting bats, as well as people and other wildlife.

For any security lighting, the following should also apply:

- **Power** It is rarely necessary to use a lamp of greater than 2000 lumens (150W) in security lights. The use of a higher power is not as effective for the intended function and will be more disturbing for bats.
- **Movement sensors** Many security lights are fitted with movement sensors which, if well installed and aimed, will reduce the amount of time a light is on each night. This is more easily achieved in a system where the light unit and the movement sensor are able to be separately aimed.
- **Timers** If the light is fitted with a timer this should be adjusted to the minimum to reduce the amount of 'lit time'.
- **Alternatives** The requirement for security lighting in each instance should be carefully considered and only used where absolutely necessary to deter crime.

The use of non-UV LED lighting (preferably using warm spectrum wavelengths) is strongly recommended to avoid the most deleterious impacts of lighting on biodiversity and bats in particular.

5.6.4 Birds

One multi-use box (swifts and sparrows) will be attached to the exterior wall of the house. Swift boxes can be supplied and installed by Hampshire Swifts <https://www.hampshireswifts.co.uk> and a new soffit design is also available (this box is also suitable for sparrows which are also an IUCN Red List Bird of Conservation Concern and listed on *Section 41* of the *Natural Environment & Rural Communities Act 2006*). In addition, two woodstone bird boxes suitable for use by blue tits and great tits will be attached to the mature trees in the garden. These bird boxes will provide new nest sites. The bird boxes are detailed in *Table 5.6.4.1*.

Table 5.6.4.1. Bird boxes to be erected within the site with additional details on siting them to increase chances of occupancy.

Type & quantity	Typical species	No.	Height	Additional information
Vivara Pro Seville 32mm Woodstone Nest Box 	Blue tits, great tits	2	2-4m	- Position on a building or tree, angled north-east (away from prevailing winds) and tilt forward slightly. - Chances of occupation can be increased by positioning boxes near vegetation.
Ibstock Eco-habitat  or Swift boxes from Hampshire Swifts 	Swifts	1	≥ 5m	- Can either be incorporated into the build structure or mounted onto a building. - Position out of direct sunlight (below eaves on the north elevation), away from windows and in a straight line. - Should be in an open area so that it is less accessible to predators and birds are not obstructed as they leave the nest.

5.8 ***Requirement for Habitats Regulations licence***

The need for a bat European Protected Species (EPS) licence or Bat Earned Recognition (BER) licence or Bat Mitigation Class Licence (if qualifying) site registration from Natural England will be assessed following the bat activity (dusk emergence) surveys (see *Section 5.5*) on the garage and outbuilding.

The house is a confirmed bat roost, but the proposed works will not affect this building. If the scope of works changes to include the house, then bat activity (dusk emergence) surveys and a licence from Natural England will be necessary.

A licence from Natural England permits activities that may otherwise be offences under *The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019*, such as the destruction of roost sites. It cannot be applied for on a precautionary basis.

Evidence is required from bat activity surveys (emergence and/ or re-entry surveys) during the bat active season between May and September in order to gather enough information about bat populations (including species, numbers and status of roost sites) to support a bat licence application.

Survey data supporting licence applications must be up-to-date *i.e.* have been conducted within the current or most recent optimal survey season (May to September). Therefore, if surveys show bats are present and licensable work is delayed until, during or after the next survey season, updated survey(s) will be required to support an application.

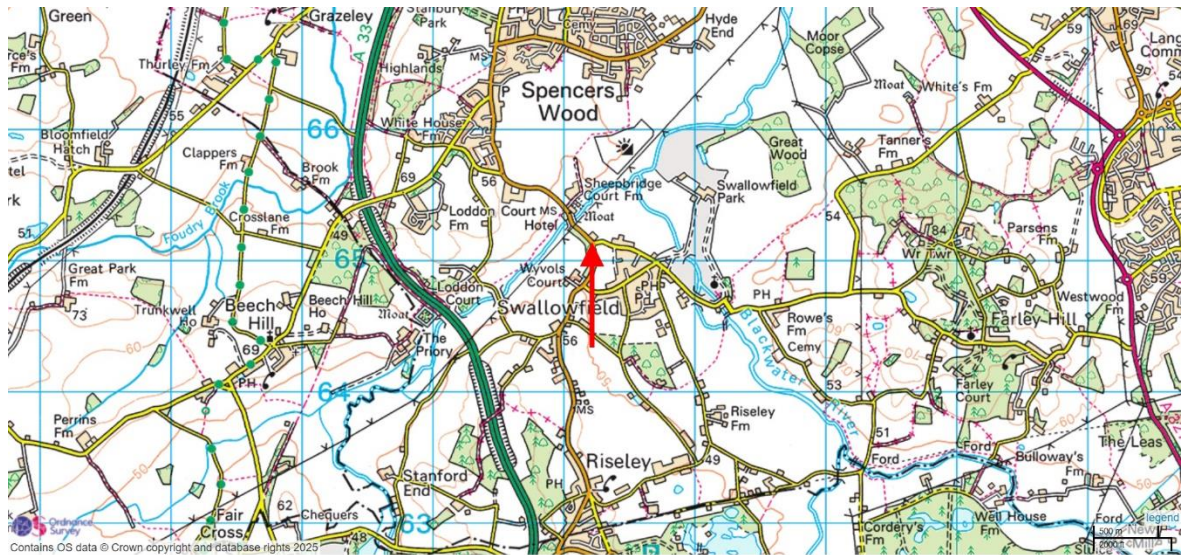
Natural England takes a minimum of 30-60 working days to process licence applications following receipt of all the relevant documentation. This includes an application form, a Reasoned Statement (where needed) and a Method Statement. This includes a detailed mitigation strategy to eliminate or reduce impacts on bats.

It is not possible to apply for a licence until full planning permission has been granted and any conditions relating to wildlife fulfilled, although Local Planning Authorities usually request the information prior to determining a planning application request. Additional time will be required where any revisions to a proposed mitigation strategy are necessary to obtain the licence.

Figure 1. Aerial photographs showing the location of the site.



Figure 2. An Ordnance Survey map showing the site location, as indicated by the red arrow.



Reproduced with permission of Ordnance Survey under licence no. 100049977.

Figure 3. Plan of the site with the buildings surveyed highlighted in red.

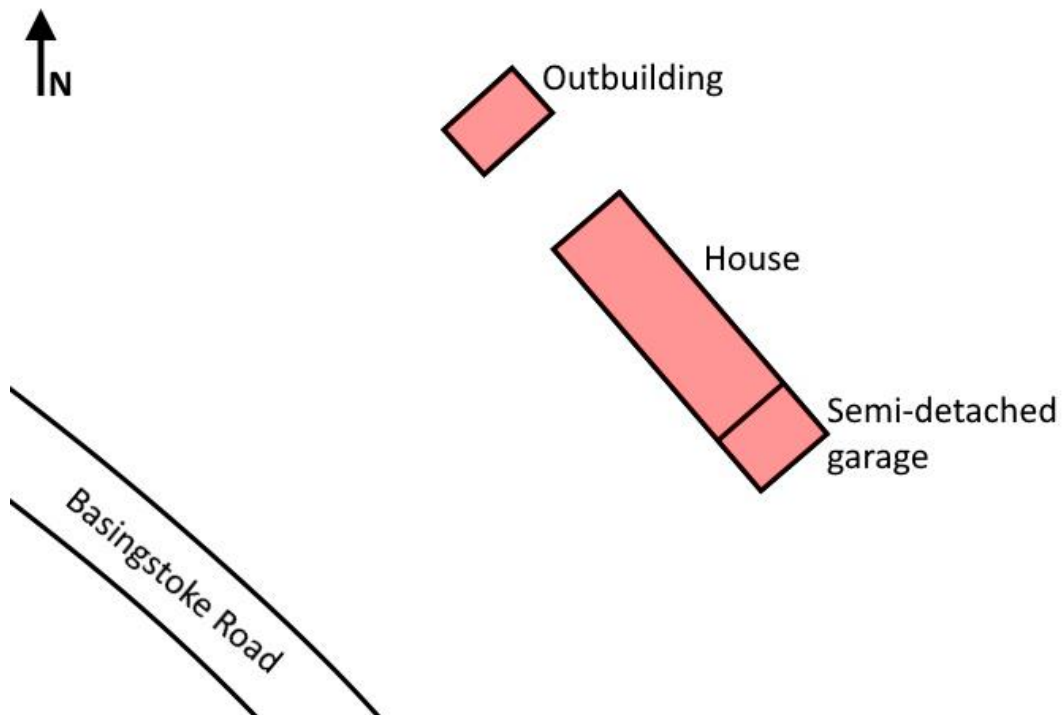
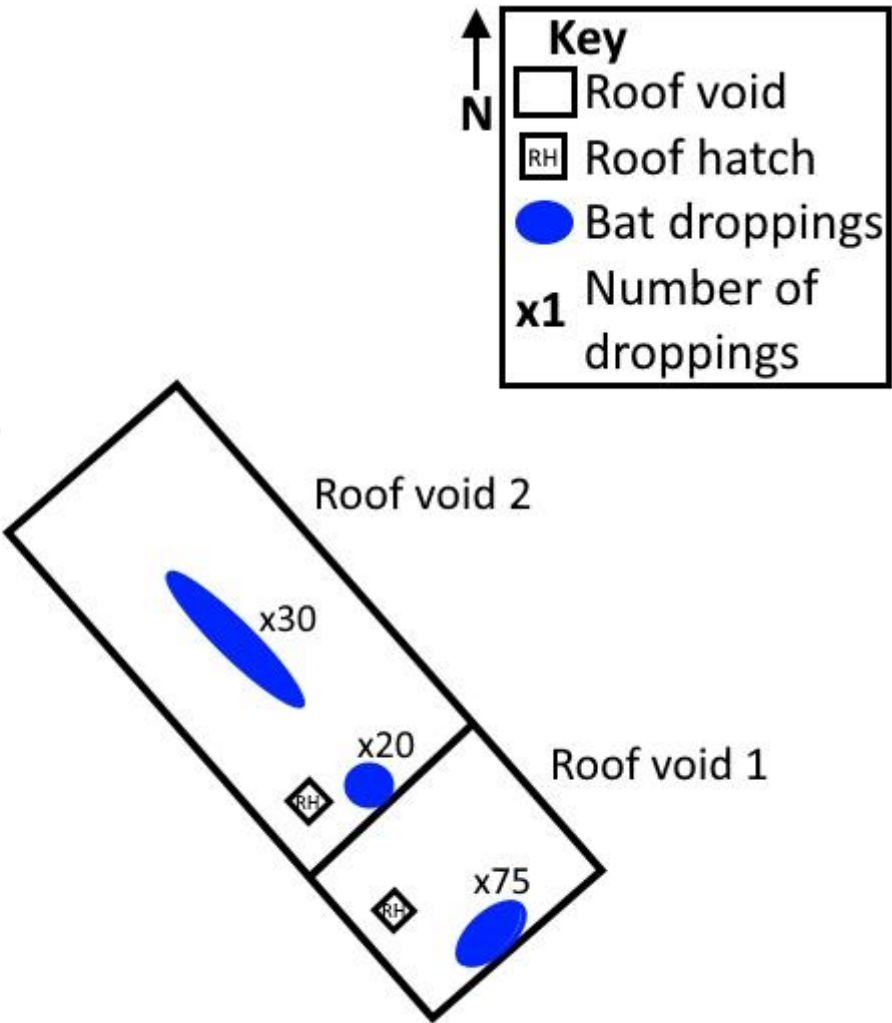


Figure 4. Plan showing the locations of bat droppings within the roof voids of the house (not to scale).



7 PHOTOGRAPHS

Photo 1. Front garden to the south-west of the site, containing gravel, lawn, and ornamental planting.



Photo 2. Rear garden to the north-east of the site, primarily consisting of lawn.



Photo 3. Garden to the north-west of the site, primarily consisting of lawn with mature trees.



Photo 4. Neighbouring habitat to the north-east of the site with mature trees in the distance, which provides foraging habitat for bats and nesting habitat for birds.



Photo 5. Hedges and mature trees in the gardens that provide foraging habitat for bats and nesting habitat for birds.



Photo 6. Hedges, shrubs, and mature trees in the gardens that provide foraging habitat for bats and nesting habitat for birds.



Photo 7. Mature trees in the gardens that provide foraging habitat for bats and nesting habitat for birds.



Photo 8. Hedges, shrubs, and mature trees in the gardens provide foraging habitat for bats and nesting habitat for birds.



Photo 9. The pond in the garden provides foraging habitat for bats.



Photo 10. Trees in the gardens provide foraging habitat for bats and nesting habitat for birds.



Photo 11. Mature trees in the gardens that provide foraging habitat for bats and nesting habitat for birds.



Photo 12. Mature trees in the gardens that provide foraging habitat for bats and nesting habitat for birds.



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9.1 Legal context

All species of British bat are protected by the *Wildlife and Countryside Act 1981* (as amended) extended by the *Countryside and Rights of Way Act 2000*. This legislation makes it an offence to:

- intentionally kill, injure or take a bat;
- possess or control a bat;
- intentionally or recklessly damage, destroy or obstruct access to a bat roost; and
- intentionally or recklessly disturb a bat whilst it occupies a bat roost.

Bats are also European Protected Species listed on the *Conservation of Habitats & Species Regulations 2017*. This legislation makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb a bat (in such a way as to be likely to significantly affect: (i) the ability of a significant group of bats to survive, breed or rear/nurture their young; or (ii) the local distribution or abundance of the species concerned);
- damage or destroy a breeding site or resting place of a bat; and
- possess, control, transport, sell, exchange a bat, or offer a bat for sale or exchange.

All bat roosting sites receive legal protection even when bats are not present (bats tend to reuse the same roost).

Where it is necessary to carry out an action that could result in an offence under the *Conservation of Habitats & Species Regulations 2017* it is possible to apply for a European Protected Species (EPS) licence from Natural England. Licences are only issued where Natural England are satisfied that three derogation tests are met. These are: that the activity is for **imperative reasons of overriding public interest**; that there must be **no satisfactory alternative**; and that **favourable conservation status of the species must be maintained**.

Consideration of these three derogation tests was previously left to Natural England as part of their deliberations on whether to grant a licence for the development activity after a planning consent has been issued. However, the regulations now require that **all** public bodies, i.e. **Local Planning Authorities** (LPAs), have regard to the requirements of the European Habitats Directive when carrying out their functions. As a result, LPAs **must** address the three derogation tests when considering a planning application that could impact upon any European Protected Species (EPS).

9.2 *National planning context*

9.2.1 *General*

Surveys should be completed in line with Natural England's *Standing Advice for Local Authorities* (<http://www.naturalengland.org.uk/ourwork/planningdevelopment/spatialplanning/standingadvice/default.aspx>), which states:

- Natural England will not comment on applications that are submitted without the relevant protected species surveys if there are no other issues (*i.e.* in relation to SSSIs or landscape).
- Natural England will not comment on scoping surveys that recommend further surveys where these have not been undertaken and submitted with the scoping reports.

In addition to the above, *Section 40* of the *Natural Environment and Rural Communities Act* (2006) imposes a new duty on all public authorities to have regard for biodiversity.

9.2.2 *Biodiversity Net Gain (BNG)*

Under the Environment Act 2021, all planning permissions granted in England (with a few exemptions) have to deliver at least 10% biodiversity net gain (BNG) (required since January 2024 and since April 2024 for small sites). BNG will be measured using Defra's biodiversity metric and habitats will need to be secured for at least 30 years. This sits alongside:

- a strengthened legal duty for public bodies to conserve and enhance biodiversity,
- new biodiversity reporting requirements for local authorities, and mandatory spatial strategies for nature: Local Nature Recovery Strategies or 'LNRS'.

From the 20th July 2021, the Government published the revised National Planning Policy Framework (Ministry of Housing, Communities and Local Government, 2021). The document sets out the government's planning policies for England and how these are expected to be applied. This replaces a previous version which was published in June 2019. It states: "*at the heart of the Framework is a presumption in favour of sustainable development (paragraph 11).*"

Achieving sustainable development means that the planning system has three overarching objectives, which are interdependent and need to be pursued in mutually supportive ways (so that opportunities can be taken to secure net gains across each of the different objectives):

- an economic objective;
- a social objective; and
- an environmental objective.

The environmental objective is to "*contribute to protecting and enhancing our natural, built and historic environment; including making effective use of land, helping to improve biodiversity, using natural resources prudently, minimising waste and pollution, and mitigating and adapting to climate change, including moving to a low carbon economy*".

Planning policies and decisions should contribute to and enhance the natural and local environment by "*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)” and “minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures”.

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.

Development on land within or outside a Site 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.

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.

It states that *"development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity"*.

It should be noted that the *“presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site”*.

The NPPF also encourages *"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 aims to *“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”*. This applies to non-statutory designated sites including Sites of Importance for Nature Conservation (SINCs) and equivalent county wildlife sites.

Early engagement with all necessary stakeholders, including expert bodies, is encouraged by the NPPF.

Bats use different roosting sites throughout the year according to their life cycle requirements.

Hibernation during the winter months requires roosting sites that are cool and humid. As conditions improve through the spring, bats become increasingly active and tend to use transitional roosting sites. During the summer months, females give birth in maternity roosts. Maternity roosts tend to be warm and temperature-stable, which aids rapid development of the young, which are weaned in late summer. In the autumn, adult bats congregate in mating roosts and also use transitional roosting sites. Autumn is the time when both adults and juveniles have to build up fat reserves in preparation for hibernation through the winter months.

Bats also use roosts during the night as feeding perches. Species that catch large prey items such as moths (*e.g.* brown long-eared bat) often enter buildings to hang up and eat their prey before emerging again to forage. Such feeding perches tend to be obvious from scatterings of bat droppings with moth wings, which the bats discard.

Bats are at their most vulnerable during the summer in their maternity roosts, when disturbance can jeopardise their breeding success. Bats give birth to only one pup per year and young do not breed until the second or third year after birth. This means that if maternity colonies are disturbed there can be serious implications for the conservation status of populations.

Bats are also vulnerable during the winter hibernation period, when disturbance can reduce their chance of survival through the winter at a time when food is in short supply.

This is why there are often only narrow timeframes for bat survey and mitigation work.

These are not proposed as enhancements for the purposes of the planning application, but only for information purposes.

11.1 *Lawn seed mix composition*

The seed mixes in *Table 11.1.1* are from Emorsgate Seeds and are suitable for lawns. Emorsgate are only given as an example, and a local supplier is preferable. The mixes contain slow growing grasses, some with a selection of wildflowers that respond well to regular short mowing. The EG9 grass mixture for hedges and woodland contains a selection of grasses that are tolerant of a degree of shade.

Table 11.1.1. Emorsgate seed mix species composition.

EL1	
Species	Common Name
Flowering Species	
<i>Galium verum</i>	Lady's Bedstraw
<i>Leontodon hispidus</i>	Rough Hawkbit
<i>Leucanthemum vulgare</i>	Oxeye Daisy
<i>Lotus corniculatus</i>	Birdsfoot Trefoil
<i>Primula veris</i>	Cowslip
<i>Prunella vulgaris</i>	Selfheal
<i>Ranunculus acris</i>	Meadow Buttercup
<i>Trifolium pratense</i>	Wild Red Clover
Grasses	
<i>Agrostis capillaris</i>	Common Bent
<i>Cynosurus cristatus</i>	Crested Dogtail
<i>Festuca rubra</i>	Slender-creeping Red-fescue
<i>Phleum bertolonii</i>	Smaller Cat's-tail
EG1	
Species	Common Name
<i>Agrostis capillaris</i>	Common Bent
<i>Cynosurus cristatus</i>	Crested Dogtail
<i>Festuca rubra</i>	Slender-creeping Red-fescue
<i>Phleum bertolonii</i>	Smaller Cat's-tail
<i>Poa pratensis</i>	Smooth-stalked Meadow-grass
EG9	
Species	Common Name
<i>Agrostis capillaris</i>	Common Bent
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass
<i>Brachypodium sylvaticum</i>	False Brome
<i>Cynosurus cristatus</i>	Crested Dogtail

<i>Deschampsia cespitosa</i>	Tufted Hair-grass
<i>Festuca rubra</i>	Red Fescue
<i>Poa nemoralis</i>	Wood Meadow-grass

11.2 Ornamental planting to attract wildlife

Plants that attract insects are generally helpful and trees, shrubs and flowering plants can provide cover for wildlife. Therefore, to enhance the ecological value of the site, any replacement landscaping in the gardens should incorporate a mixture of native and non-native species of value to wildlife. This mixture will be planted to encourage a diversity of insects, which in turn will attract different species. Flowers that bloom throughout the year, including both annuals and herbaceous perennials, are beneficial. Night-flowering blossoms attract night-flying insects, which in turn provide prey for bats. Examples of suitable plant species that could be planted to encourage wildlife include those in Tables 11.2.1 and 11.2.2. Approximate flowering periods are listed in the tables.

Table 11.2.1. Native and non-native species that could be incorporated into the landscaping.

Species	Common Name	Approximate flowering period
<i>Achillea millefolium</i>	Yarrow	Early summer
<i>Aubretia</i> species	Aubretia	Spring to early summer
<i>Berberis darwinii</i>	Darwin's Barberry	Spring
<i>Iberis sempervirens</i>	Candytuft	Summer to autumn
<i>Centaurea montana</i>	Cornflower	Spring to summer
<i>Centaurea scabiosa</i>	Knapweed	Summer to autumn
<i>Centranthus ruber</i>	Red valerian	Summer to autumn
<i>Cornus sanguinea</i>	Dogwood	Summer
<i>Dianthus barbatus</i>	Sweet William	Summer
<i>Echinacea</i> species	Echinacea	Summer to autumn
<i>Erysimum</i> species	Wallflowers	Spring to early summer
<i>Glebionis segetum</i>	Corn marigold	Spring to summer
<i>Hebe</i> species	Hebes	Summer to autumn
<i>Hedera helix</i>	Ivy	Autumn
<i>Hesperis matronalis</i>	Dame's-violet	Spring to summer
<i>Hyacinthoides non-scripta</i>	English Bluebell	Spring
<i>Hylotelephium spectabile</i>	Ice plant 'Pink lady'	Early autumn
<i>Hypericum</i> species	St John's wort	Spring
<i>Ilex aquifolium</i>	Holly	Spring to summer
<i>Jasminum officinale</i>	Common White Jasmine	Summer to autumn
<i>Lavandula angustifolia</i>	Garden Lavender	Summer
<i>Leucanthemum vulgare</i>	Ox-eye daisy	Summer
<i>Limnanthes douglasii</i>	Poached egg plant	Summer
<i>Lonicera caprifolium</i>	Perfoliate Honeysuckle	Summer
<i>Lonicera etrusca</i>	Italian Honeysuckle	Summer to autumn
<i>Lonicera japonica</i>	Japanese Honeysuckle	Spring

<i>Lonicera periclymenum</i>	Honeysuckle	Summer to autumn
<i>Lunaria annua</i>	Honesty	Spring
<i>Malus domestica</i>	Apple	Spring
<i>Malus sylvestris</i>	Crab Apple	Spring
<i>Malva species</i>	Mallow	Summer to autumn
<i>Matthiola longipetala</i>	Night-scented stock	Summer
<i>Myosotis sylvatica</i>	Wood forget-me-not	Spring
<i>Nicotiana species</i>	Tobacco plant	Summer
<i>Oenothera species</i>	Evening primroses	Summer to autumn
<i>Papaver rhoeas</i>	Corn poppy	Summer
<i>Phacelia species</i>	Phacelia	Summer to autumn
<i>Primula vulgaris</i>	Primrose	Spring
<i>Rosa species</i>	Rose	Summer
<i>Rubus fruticosus</i> agg.	Bramble	Spring to summer
<i>Saponaria officinalis</i>	Soapwort	Summer
<i>Saxifraga fortunei</i>	Cherry pie	Summer to autumn
<i>Scabiosa species</i>	Scabious	Summer
<i>Silene dioica</i>	Red campion	Spring
<i>Silene noctiflora</i>	Night-scented Catchfly	Summer to autumn
<i>Silene vulgaris</i>	Bladder Campion	Summer
<i>Verbena species</i>	Vervain	Summer to autumn
<i>Viburnum lantana</i>	Wayfaring-tree	Spring to summer
<i>Viburnum opulus</i>	Guelder-rose	Summer

Table 11.2.2. Examples of suitable garden herbs that could be planted in and around the site to encourage wildlife.

Species	Common Name	Approximate flowering period
<i>Angelica species</i>	Angelica	Summer to autumn
<i>Borago officinalis</i>	Borage	Spring to early autumn
<i>Calendula officinalis</i>	English marigolds	Summer to autumn
<i>Foeniculum vulgare</i>	Fennel	Summer to early autumn
<i>Hesperis matronalis</i>	Dame's-violet, often sold as Sweet Rocket	Spring to summer
<i>Hyssopus officinalis</i>	Hyssop	Summer to early autumn
<i>Matthiola bicornis</i>	Night-scented Stock	Spring to autumn
<i>Melissa officinalis</i>	Lemon balm	Summer
<i>Monarda species</i>	Bergamot	Summer to early autumn
<i>Nicotiana species</i>	Tobacco-plant	Spring to autumn
<i>Oenothera species</i>	Evening-primroses	Summer
<i>Origanum vulgare</i>	Marjoram	Summer
<i>Rosmarinus officinalis</i>	Rosemary	Spring
<i>Saponaria officinalis</i>	Soapwort	Summer to autumn
<i>Silene noctiflora</i>	Night-scented Catchfly	Summer to autumn

<i>Silene vulgaris</i>	Bladder Campion	Spring to summer
<i>Tanacetum parthenium</i>	Feverfew	Summer to early autumn
<i>Thymus</i> species	Thyme	Summer

New hedges could be planted around the edges of the site. These should consist of a mixture of native species such as *Acer campestre* (Field Maple), *Carpinus betulus* (Hornbeam), *Cornus sanguinea* (Dogwood), *Corylus avellana* (Hazel), *Crataegus monogyna* (Hawthorn), *Fagus sylvatica* (Beech), *Fraxinus excelsior* (Ash), *Prunus spinosa* (Blackthorn), *Quercus robur* (Pedunculate Oak), *Viburnum lantana* (Wayfaring-tree) and *Viburnum opulus* (Guelder-rose). These species will provide a mixture of leaf shapes and colours through the seasons. In addition, the hedges will contain *Ilex aquifolium* (Holly) and *Taxus baccata* (Yew) to provide an evergreen component for the winter months, and to provide a contrast to the colours of the other plants during the spring, summer and autumn.

Under-sowing new hedges with Emorsgate seed mix EH1 Hedgerow mixture (or equivalent) provides cover for wildlife such as hedgehogs as well as providing an attractive feature while the new hedges become established. Seed mixes suitable for shade are given in *Table 12.2.3*.

Table 11.2.3. Seed mixes suitable for shaded areas.

EH1	
Species	Common Name
Wild Flowers	
<i>Alliaria petiolate</i>	Garlic Mustard
<i>Arctium minus</i>	Lesser Burdock
<i>Centaurea nigra</i>	Common Knapweed
<i>Chaerophyllum temulum</i>	Rough Chervil
<i>Galium album</i>	Hedge Bedstraw
<i>Geum urbanum</i>	Wood Avens
<i>Lathyrus sylvestris</i>	Narrow-leaved Everlasting-pea
<i>Leucanthemum vulgare</i>	Oxeye Daisy
<i>Primula veris</i>	Cowslip
<i>Prunella vulgaris</i>	Selfheal
<i>Saponaria officinalis</i>	Soapwort
<i>Silene dioica</i>	Red Campion
<i>Silene latifolia</i>	White Campion
<i>Silene vulgaris</i>	Bladder Campion
<i>Torilis japonica</i>	Upright Hedge-parsley
Grasses	
<i>Agrostis capillaris</i>	Common Bent
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass
<i>Brachypodium sylvaticum</i>	False Brome
<i>Cynosurus cristatus</i>	Crested Dogtail
<i>Deschampsia cespitosa</i>	Tufted Hair-grass

<i>Festuca rubra</i>	Slender-creeping Red-fescue
<i>Poa nemoralis</i>	Wood Meadow-grass
EW1	
Species	Common name
<i>Alliaria petiolata</i>	Garlic Mustard
<i>Allium ursinum</i>	Ramsons
<i>Anthriscus sylvestris</i>	Cow Parsley
<i>Arctium minus</i>	Lesser Burdock
<i>Arum maculatum</i>	Lords-and-Ladies
<i>Chaerophyllum temulum</i>	Rough Chervil
<i>Cruciata laevipes</i>	Crosswort
<i>Digitalis purpurea</i>	Foxglove
<i>Filipendula ulmaria</i>	Meadowsweet
<i>Geum urbanum</i>	Wood Avens
<i>Hyacinthoides non-scripta</i>	Bluebell
<i>Iris foetidissima</i>	Gladdon
<i>Prunella vulgaris</i>	Selfheal
<i>Silene dioica</i>	Red Campion
<i>Teucrium scorodonia</i>	Wood Sage
<i>Torilis japonica</i>	Upright Hedge-parsley
Grasses	
<i>Agrostis capillaris</i>	Common Bent
<i>Anthoxanthum odoratum</i>	Sweet Vernal-grass
<i>Brachypodium sylvaticum</i>	False Brome
<i>Cynosurus cristatus</i>	Crested Dogstail
<i>Deschampsia cespitosa</i>	Tufted Hair-grass
<i>Festuca rubra</i>	Red Fescue
<i>Poa nemoralis</i>	Wood Meadow-grass

11.3 Bird boxes

It is not advisable to place many boxes with identical dimensions, because individuals of the same species may not tolerate each other's presence, especially in built-up areas with limited food resources.

Table 11.3.1. Bird boxes with additional details on siting them to increase chances of occupancy.

Type/ example	Typical species	Height	Additional information
Vivara Pro WoodStone House Sparrow Nest Box  	House sparrows	$\geq 2\text{m}$	- Can either be incorporated into the build structure or mounted onto a building. - Should be fixed onto a sturdy building, not onto fences or garden sheds due to its weight. - Position away from windows. - Position out of direct sunlight (below eaves on the north elevation), especially if not built into the build structure.
Ibstock Eco-habitat  or Swift boxes from Hampshire Swifts 	Swifts	$\geq 5\text{m}$	- Can either be incorporated into the build structure or mounted onto a building. - Position out of direct sunlight (below eaves on the north elevation), away from windows and in a straight line. - Should be in an open area so that it is less accessible to predators and birds are not obstructed as they leave the nest.
Vivara Pro Seville 32mm Woodstone Nest Box 	Blue tits, great tits	2-4m	- Position on a building or tree, angled north-east (away from prevailing winds) and tilt forward slightly. - Chances of occupation can be increased by positioning boxes near vegetation.
Vivara Pro Barcelona WoodStone Open Nest Box 	Robins, wrens	$\leq 2\text{m}$	- Mount on a tree or large shrub - Conceal amongst foliage to keep well-hidden from predators.
Vivara Pro Seville 28mm Woodstone Nest Box 	Blue tits, coal tits	2-4m	- Position on a building or tree, angled north-east (away from prevailing winds) and tilt forward slightly. - Chances of occupation can be increased by positioning boxes near vegetation.

WoodStone Swallow Nest Bowl (Plywood board mounted) 	Swallows	$\geq 2\text{m}$	• Mount within a building with an open door or window • Leave a distance of at least 6cm between the top of the nest and the ceiling.
Vivara Pro WoodStone House Martin Nest 	House martins	$\geq 5\text{m}$	• Position out of direct sunlight (below eaves on the north elevation), away from windows and in a straight line. • Should be in an open area so that it is less accessible to predators and birds are not obstructed as they leave the nest.
Integrated barn owl roost/false dormer box 	Barn Owl	$\geq 3\text{m}$	• Integrated into the sloped roof ideally as a false dormer. • The base of the internal space must be flat and at least 45cm below the entrance hole. • There must be an easy-to-grip platform outside the hole for fledglings to stand. • The box must not allow owls access into the garage/ carport inside the building to prevent disturbance by human activity. • A closed access hatch into the box from inside the building is advised, to allow essential clearance of built up nest material or waste.
Barn Owl Trust Nest Box 	Barn Owl	$\geq 5\text{m}$	• Mounted on a 'telegraph style' pole. • Best positioned facing open grassland for foraging opportunities and away from the prevailing weather.

11.4 Insects

Insect boxes (hotels or towers) and bricks should be installed in a sunny location close to vegetation. Bee-friendly and insect friendly plants should be located nearby so that the bees and insects using the boxes have food. Lavender, honeysuckle and buddleia are all pollinator-friendly plants. The boxes suggested in *Table 11.4.1* (especially the BeePot planter) have been chosen so that they form an attractive feature as part of the landscaping. Solitary bees are non-aggressive and as such are suitable for gardens with pets and children.

Table 11.4.1. Examples of insect boxes that could be erected on site.

Type	Species	Height	Additional information
	Solitary bees	>1m from the ground	The Bee Brick should be positioned in a warm sunny spot, in a south-facing wall, with no vegetation in front of the holes
	Solitary bees	>1m from the ground	The BeePot should be positioned in a warm sunny spot, preferably on a south-facing wall, with no vegetation in front of the holes
	Butterflies, solitary bees, lacewings and ladybirds	>1m from the ground	The different sections of the Insect Tower have been designed to provide a habitat for a variety of insect species. Suitable for mounting on buildings, trees or fences.
	Solitary bees and a range of other insects	Between 0.75m and 1.5m above ground	The selected canes and the holes are the optimum size for solitary bees but other insects may overwinter in the nester.
	A wide range of insects	Between 0.75m and 1.5m above ground	Adding natural materials such as drilled canes, hollow stems or bark in the triangular spaces will encourage more insects to the hotel.

Bee and Bug Biome 	A wide range of insects	>1m from the ground	Best placed near vegetation. Provides plenty of nooks and crannies for insects such as ladybirds, earwigs and lacewings.
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