

# Bishopstoke Memorial Hall, Riverside, Bishopstoke, Eastleigh, SO50 6LQ

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## Bat Surveys and Ecological Update Report

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November 2023

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Hampshire Ecological Services Ltd  
*Consultant Ecologists*

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**Bat Survey and Ecological Update Report**  
**Bishopstoke Memorial Hall, Riverside, Bishopstoke, Eastleigh, SO50 6LQ**  
**for**  
**Eastleigh Borough Council**

|                                             |                    |
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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.

The author disclaims any responsibility to the client and others in respect of any matters outside the scope of the above. This report is confidential to the client and the author accepts no responsibility of whatsoever nature to third parties to whom this report, or any part thereof, is made known. Any such party relies on the report at their own risk.

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**EXECUTIVE SUMMARY**

1. This report provides details from bat surveys and an ecological update carried out by Hampshire Ecological Services Ltd for Eastleigh Borough Council in connection with a proposal to demolish the buildings and remove the adjacent tree-line at Bishopstoke Memorial Hall, Riverside, Bishopstoke, Eastleigh, SO50 6LQ (approximate Ordnance Survey Grid Reference SU465193). The site consists of a memorial hall, a parish office, a shed, a tree-line, and a small area of grassland to the front of the hall. The location of the site is shown in *Figures 1* and *2* and a plan of the site 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 Hannah Yates BSc (Hons) accredited under bat licence 2015-11159-CLS-CLS on the 3<sup>rd</sup> May 2023. Subsequently, in addition to bat activity surveys, an update ecological assessment of the wider site was carried out on the 22<sup>nd</sup> September 2023 by Jaqueline Thompson MCIEEM. This was in response to an expanded redline planning boundary.
3. The Memorial Hall is a brick/ timber framed building with a pitched roof constructed of asbestos cement sheets. Much of the roof appears well-sealed and in good condition. However, there are several potential bat access points into the roof void, as well as some exterior features that also provide potential roosting locations for bats. Details of potential bat access points are illustrated in *Images 4.3.1.1 – 4.3.1.3*. In addition, the River Itchen (which provides high-quality foraging habitat) is across the road. Therefore, the building is classed as having moderate suitability to be used by roosting bats. No bats or evidence of bats were found in the building.
4. The Parish Office is a prefab building with a pitched felted roof. Full details of this building are given in *Table 4.2.1* in *Section 4.2*. No bats or evidence of bats was found during the surveys and this building was assessed as having negligible bat roost suitability. Therefore, it can be demolished without further survey or constraints regarding bats (subject to any planning constraints).
5. The Shed is a single skinned wooden building with a pitched roof. Full details of this building are given in *Table 4.2.1* in *Section 4.2*. No bats or evidence of bats was found during the survey and this building was assessed as having negligible bat roost suitability. However, due to its construction it should be demolished carefully by hand.
6. All the trees on the western boundary of the site have negligible bat roost suitability (see *Photo 1* in *Section 7*). However this tree-line along the western boundary provides good sheltered bat foraging habitat in the immediate vicinity of the buildings. In addition, the site is across the road from the River Itchen, which is a high-quality foraging habitat for many species of bat. This western tree-line is proposed to be removed however the river and surrounding vegetation will be unaffected and as such a minimal impact to commuting and foraging bats (and hence bat populations in the local area) is anticipated.

7. Two bat activity surveys were carried out on the Hall. Details of the dates of the surveys, weather and personnel carrying out the surveys is given in *Sections 3.2.1* and *3.2.2*.
8. No bats were seen emerging or re-entering the Memorial Hall during the activity. Therefore, it can be demolished without further survey or constraints regarding bats (subject to any planning constraints). The full data from the bat activity surveys is given in *Appendix C* and plans showing the foraging and commuting bats (observations only) are given in *Figures 4-5* in *Section 6*.
9. Common pipistrelles, soprano pipistrelles, noctules, *Myotis* species, long-eared bat and serotine bats were observed flying in the vicinity of the buildings and foraging on the site, indicating the weather was suitable for bat activity on all occasions.
10. 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, any lighting on the site should avoid spillage of greater than 0.1 lux (typical moonlight/ cloudy sky) near to or directly onto the River Itchen. However, it is in a highly lit area and as such this may not be possible due to existing light spill. If this is the case any new lighting should not increase the level currently experienced and, if possible, should reduce any light spill due to the type of lighting used and the use of protection such as hoods and cowls. This is because lighting can impact bat populations directly by disturbing roosts and reducing their foraging area, or indirectly by severing commuting routes from roosts.
11. All the trees, shrubs and buildings provide suitable habitat for nesting birds. The destruction of active bird nests is prohibited under the *Wildlife and Countryside Act 1981* (as amended). Therefore, any affected vegetation with the potential to support nesting birds (such as the tree-line) 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 must be removed during the nesting season, then it should be inspected (by an ecologist) for nests immediately prior to removal of the vegetation. All building demolition works should take place outside the breeding bird season (which is late February to August inclusive). If this is not possible, and buildings must be removed during the nesting season, the building should be checked for nests (by an ecologist) immediately prior to works. 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).
12. The site is in a red great crested newt impact risk zone with a record of great crested newts across the road approximately 150m from the site. However, with the exception of some small areas the site is suboptimal for great crested newts. Therefore, the following precautions will be undertaken to minimise the risk that amphibians would be harmed during works (if present). Areas of long vegetation will initially be strimmed to a height of 6cm. This is likely to deter any amphibians in the vicinity but a second cut will be carried out at least 24 hours later to further reduce the vegetation height to no more than 3cm to deter anything from entering the area. This will be maintained for the duration of the works.

13. It is a requirement under national planning policy to provide ecological enhancements to sites requiring planning permission to provide a net gain in biodiversity. Therefore, the following enhancement measure is proposed:
  - One 32mm hole bird box, such as a Vivara Pro Seville 32mm Woodstone Nest Box, suitable for blue tits and great tits will be erected on a suitable mature tree within the site boundary/property ownership.
  - Should a building subsequently be built on the site, swift boxes should be built into its exterior wall (provided it is high enough). 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).
14. The bird box to be erected within the recreation grounds. Details on siting them to increase chances of occupancy, are summarised in *Table 5.6.3.1*.
15. The indicative locations of the proposed enhancement measures are shown in *Figure 6* in *Section 6*.
16. Other enhancements for wildlife that the owners of the site may choose to employ are given in *Appendix D*. However, these are not proposed as enhancements for the purposes of the planning application, but only for information purposes.
17. 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.
18. According to the *Multi-Agency Geographic Information for the Countryside* website ([www.magic.gov.uk](http://www.magic.gov.uk)), there is one internationally statutory designated site within 5km of the site, and one nationally designated site within 2km of the site. None of these areas should be affected by this small-scale development and all links will be maintained.
19. The site is within 5km of River Itchen SAC. However, based on the current proposals, the only work taking place is the demolition of the three buildings and the felling of the adjacent tree-line. Therefore, there should be no impact on the SAC.
20. There have been five granted bat European Protected Species (EPS) licences within 2km of the site. It is unlikely that the current proposals will impact these bat and great crested newts populations.

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## **INTRODUCTION**

### **2.1 General**

This report provides information from bat surveys and a walkover survey carried out by Hampshire Ecological Services Ltd for Eastleigh Borough Council in connection with a proposal to demolish the buildings and the adjacent tree-line at Bishopstoke Memorial Hall, Riverside, Bishopstoke, Eastleigh, SO50 6LQ (approximate Ordnance Survey Grid Reference SU465193). The location of the site is shown in *Figures 1 and 2 in Section 6*.

### **2.2 Site description**

The site consists of a memorial hall, a parish office, a shed, a tree-line, and a small area of grassland to the front of the hall. The buildings surveyed are shown on the plan in *Figure 3 in Section 6*.

The site is on the north side of Riverside in Bishopstoke, across the road from the River Itchen. The immediate surroundings consist of the river; recreation grounds to the north and west; and residential housing to the north, south and east. In the wider landscape, the town of Eastleigh is to the west. Beyond the immediate residential housing, there are areas of arable fields and there is an area of woodland (Stoke Park Woodland) c.665m east of the site.

### **2.3 Proposed activities**

This survey was carried out in connection with a proposal to demolish the existing memorial hall, parish office, shed and tree-line.

### **2.4 Current planning status**

Planning permission is being applied for at this site. The following comments were made internally by an EBC ecologist on the 11<sup>th</sup> September 2023 in response to an expanded redline area to the initial scope:

*“The site is across the road (approximately 20 m) from the River Itchen SAC and SSSI. It is in a red great crested newt impact risk zone with a record of great crested newts across the road approximately 150 m from the site. The tree line/hedge line on the western boundary of the site and the buildings are proposed to be removed. Although it is not likely that great crested newts would cross Church Road/Riverside, the impact of this work on great crested newt terrestrial habitat must be assessed before determination.*

*I have reviewed the Preliminary Roost Assessment report by Hampshire Ecological Services (June 2023). The Memorial Hall has been assessed as having moderate bat roost suitability and requires two bat activity surveys, at least two weeks apart during the survey season, which usually is considered to end at the end of September.*

*The two surveys have only recently been commissioned and are in progress (personal communication with John Poland of Hampshire Ecological Services, 11/9/23) however due to survey and reporting constraints, the survey report is not likely to be available until October. As the presence of protected species is a material condition, the application will not be able to be determined until this survey data has been reported.*

*The other two buildings, the Parish Office and the shed were assessed as having negligible bat roost suitability however the shed must be demolished carefully by hand due to its construction and the inability of the surveyor to access the interior. It is not clear whether the trees proposed to be removed have been checked for potential bat roost features, so this needs to be clarified.*

*Due to the proximity to the River Itchen SAC an HRA screening and a CEMP will be required prior to determination. The CEMP must include protective measures against pollution including surface water drainage, dust and air pollution. The roof of the Memorial Hall is constructed of asbestos cement sheets, and other asbestos has been identified on site so the asbestos removal procedures will also need to be included in the CEMP.*

*The PRA report states that all of the trees, shrubs and buildings on site have the potential to support nesting birds during the breeding season. If demolition is not done outside of the bird nesting season (normally considered to be late February through August inclusive) then a breeding bird check by a suitably qualified ecologist will be required immediately prior to the start of work. If any active nests are found, they must be protected from disturbance by a 5 m buffer until after the chicks have fledged and left the nest.*

*The lighting guidance outlined in the PRA report section 5.2.2 and 5.6.2 must be followed during the demolition, construction and operational phases.*

*Mitigation and biodiversity enhancement recommendations will be submitted with the updated bat survey report once the survey data is complete”.*

This report addresses these points with the exception of the HRA screening (supplied separately) and the CEMP.

## **2.5 Objectives of the surveys and report**

The surveys 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. Subsequently, two bat activity surveys were carried out were carried out. The aim was to identify if bats were present or likely to use the site for roosting.

The surveys and the report writing were carried out in accordance with *Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4<sup>th</sup> 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;
  - Figures 4-5 illustrate the bat activity recorded during the bat activity surveys; and
  - Figure 6 illustrates the location of the proposed enhancement measure.
- 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;
- Appendix C gives the data from the bat activity surveys; and
- Appendix D lists other enhancements for wildlife (for information, not part of the planning application).

### 3 METHODS

#### 3.1 Desk study

The *Multi-Agency Geographic Information for the Countryside* website ([www.magic.gov.uk](http://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, as specified in Hampshire's *Biodiversity Checklist*. The search area is also 500m for Sites of Importance to Nature Conservation (SINCs) and ancient semi-natural and ancient replanted woodlands.

In addition, the *Multi-Agency Geographic Information for the Countryside* website ([www.magic.gov.uk](http://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 Hampshire Biodiversity Information Centre (HBIC) has not been commissioned by the client in relation to this site.

#### 3.2 Field survey

##### 3.2.1 Dates, times, and weather

An external and internal inspection of the buildings was carried out during the daytime on the 3<sup>rd</sup> May 2023. The weather conditions during the survey were 12 °C and dry with 5% cloud cover and a light air (Beaufort scale 1).

Subsequently, a walkover survey was carried out on the 22<sup>nd</sup> September 2023. The weather conditions during the survey were 13 °C and dry with 30% cloud cover and a light breeze (Beaufort scale 2).

Two bat activity surveys (dusk emergence surveys) were carried out on the hall. Details of the weather, dates and times of these surveys are given in *Table 3.2.1.1*.

*Table 3.2.1.1. Dates, times, and weather conditions during the bat activity surveys.*

| Date     | Start time | End time | Sunset/<br>sunrise | Temperature<br>at start &<br>end (°C) | Wind<br>(Beaufort<br>scale) | Cloud<br>Cover (%) |
|----------|------------|----------|--------------------|---------------------------------------|-----------------------------|--------------------|
| 06/09/23 | 19:26      | 21:11    | 19:41              | 26.0 – 23.0                           | 0                           | 70                 |
| 22/09/23 | 18:49      | 20:34    | 19:04              | 13.0 – 12.0                           | 2                           | 30                 |

The surveys commenced fifteen minutes before sunset and continued for an hour and a half after sunset (long after bats would have exited). The weather was suitable for bat emergence and foraging during all the surveys.

### 3.2.2 Personnel

The external and internal inspection of the buildings was carried out by Hannah Yates BSc (Hons). She is experienced in undertaking roost surveys and accredited under level 2 class bat licence 2015-11159-CLS-CLS.

Subsequently, a walkover survey was carried out by Jaqueline Thompson MCIEEM who is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). She has over 17 years of experience in ecological consultancy and is a highly competent ecologist trained in Phase 1 Habitat Survey and National Vegetation Classification techniques and protected species surveys (including botanical expertise in *Schedule 9* species). She is experienced in undertaking roost surveys and accredited under level 2 class bat licence 2015-17894-CLS-CLS

Personnel carrying out the activity surveys are given in *Table 3.2.2.1*. All surveyors are trained in carrying out bat surveys using detectors. Adam Rye BSc (Hons) and Sophie Stirrat are also accredited under Bat Class Licence Registration numbers 2015-11159-CLS-CLS and 2015-17894-CLS-CLS respectively.

*Table 3.2.2.1. Personnel carrying out the activity surveys.*

| Date     | Surveyors                 |                     |                           |             |
|----------|---------------------------|---------------------|---------------------------|-------------|
| 06/09/23 | Finn Parker               | Oliver Sworder      | Mark Ison                 | Rachel Ison |
| 22/09/23 | Sophie Stirrat BSc (Hons) | Adam Rye BSc (Hons) | Jaqueline Thompson MCIEEM | Finn Parker |

This report was reviewed by John Poland CEnv MCIEEM CBiol MSB, 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 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 without a destructive search, which is not generally practical or acceptable. 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; an Explorer Premium™ wireless inspection camera with recordable monitor; 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 building and trees 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, 2016).

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.e. 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.e. no habitats that provide continuous lines of shade/protection for flight-lines or generate/shelter insect populations available to foraging bats).                                                                                                               |
| Negligible  | Negligible habitat features on site likely to be used by roosting bats                                                                                                                                                                                                                                                                                                                 | Negligible habitat features on site likely to be used by commuting or foraging bats                                                                                                                                                                                                                                                                                            |
| Low         | A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e., unlikely to be suitable for maternity or hibernation). | Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e., not very well connected to the surrounding landscape by other habitat.<br>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)                                                                                                                                | Continuous habitat connected to the wider landscape that could be used by bats for commuting, such as lines of trees and scrub or linked back gardens.<br>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.                                                                                                                       | Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.<br><br>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, |

|  |  |                                                                                                                 |
|--|--|-----------------------------------------------------------------------------------------------------------------|
|  |  | <p>tree-lined watercourses, and grazed parkland.</p> <p>The site is close to and connected to known roosts.</p> |
|--|--|-----------------------------------------------------------------------------------------------------------------|

### 3.2.5 *Bat activity surveys*

The activity surveys followed standard survey protocol in *Bat Surveys – Good Practice Guidelines, 4<sup>th</sup> edition* (Collins, 2023).

The surveyors were located with good views of the potential bat access points identified during the initial site visit. The timing of the visits, from early evening until after dark, was aimed at detecting active bats in the vicinity. When it was too dark for visual observation, electronic bat detectors were used to listen for the ultrasonic sounds produced by bats either flying in the vicinity or emerging from the building. Surveyors were also equipped with a Pulsar Axion XQ38 thermal imager to supplement observations when light levels were too low for human eyesight. This detects heat and is more effective than standard night-vision equipment.

The surveyors recorded all bat activity encountered, but particular attention was focused on any bats emerging or re-entering. The results were documented by noting the time, bat species and behaviour (*e.g.*, commuting, foraging, social interaction *etc.*). The surveyors were in constant contact via hand-held radios so that information could be easily exchanged regarding bat activity. The time between all surveyors' devices was synchronised so time data was recorded precisely.

Bat detectors are used so that surveyors can identify most bat species in the field, using the heterodyne output in combination with bat shape, flight pattern and behaviour. Surveyors were equipped with Echo Meter Touch™ detectors for real-time analysis and BatBox Duet™ detectors connected to solid-state recorders (Edirol Roland-05) to record bat calls for later sonogram analysis using BatSound™ computer software (should it be required). Frequency-division, whereby the ultrasound is divided by 10 into an audible range, has a considerable advantage over time-expansion for survey work as it allows recordings to be taken in real time. This ensures that all bat activity is recorded.

Queried recordings were later replayed and analysed through BatSound™ software to ensure that any activity accidentally missed during the survey was recorded and times and location calculated. The species of bat was confirmed at this stage where possible. Bat detector surveys provide one of the most effective methods of identifying bat species and activity patterns. However, it is not always possible to identify bats down to species level, even with subsequent sound analysis.

Sufficient survey effort has been gathered through activity surveys, which have given us a full appreciation of the bat species roosting at the site, and of the type and status of roosts they use on site and in the context of the immediate surrounding area. No pre-dawn surveys or further emergence surveys are considered necessary.

The latest *Bat Surveys for Professional Ecologists: Good Practice Guidelines, 4<sup>th</sup> edition* (September 2024) removes the need for pre-dawn surveys and support the use of night-vision equipment as used above.

**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](http://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              | -            | -                              |
|                      | Ramsar           | -            | -                              |
|                      | SAC              | River Itchen | c.20m south                    |
| National             | SSSI             | River Itchen | c.20m south                    |
|                      |                  | -            | -                              |
|                      | NNR              | -            | -                              |
| County               | LNR              | -            | -                              |
| Local                | SINC             | -            | -                              |
|                      | Ancient woodland | -            | -                              |
|                      |                  | -            | -                              |

**4.1.2 European Protected Species**

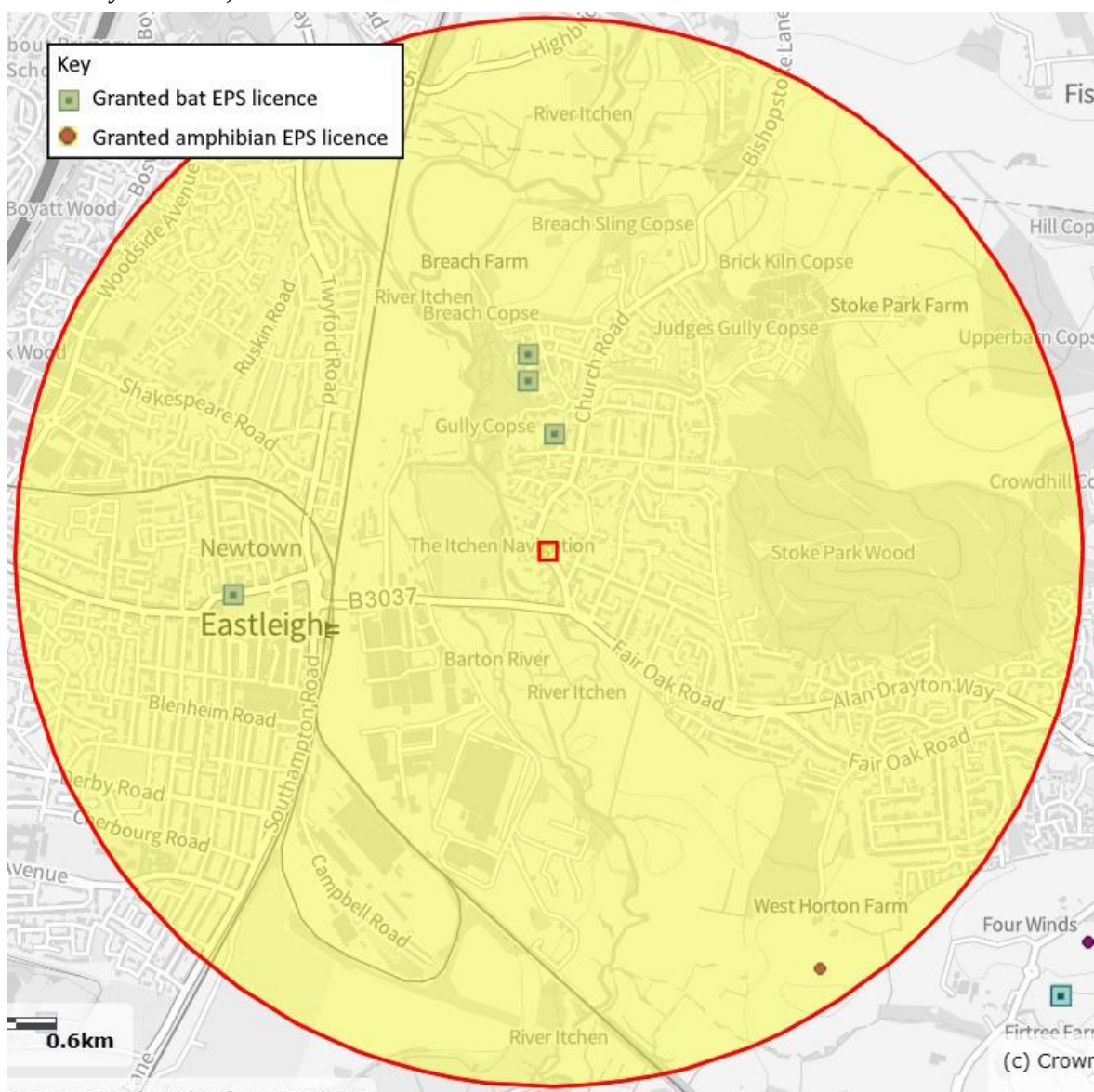
According to the *Multi-Agency Geographic Information for the Countryside* website ([www.magic.gov.uk](http://www.magic.gov.uk)), there have been five European Protected Species (EPS) licences granted within 2km of the site, of which four are for bats and one is for great crested newts. These are listed 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, common pipistrelle                      | Resting place and breeding site | 29/10/2019               | c.435m north                   |
| Brown long-eared, common pipistrelle, soprano pipistrelle | Resting place                   | 23/04/2012               | c.645m north                   |
| Brown long-eared, common pipistrelle, soprano pipistrelle | Resting place                   | 04/08/2015               | c.745m north                   |

|                    |               |            |                    |
|--------------------|---------------|------------|--------------------|
| Common pipistrelle | Resting place | 04/10/2018 | c.1170m west       |
| Common pipistrelle | Resting place | 03/05/2019 |                    |
| Common pipistrelle | Resting place | 20/04/2020 |                    |
| Great crested newt | Resting place | 31/03/2016 | c.1870m south-east |
| Great crested newt | Resting place | 19/05/2016 |                    |
| Great crested newt | Resting place | 12/05/2016 |                    |
| Great crested newt | Resting place | 04/05/2016 |                    |
| Great crested newt | Resting place | 26/05/2016 |                    |

Figure 4.1.2.1. Location of sites with granted 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 (nearby river and recreation ground) are given in *Section 7*.

Table 4.2.1. Summary of the buildings' construction details.

| Type/Name             | Memorial Hall                                                                                         | Parish Office                                                                                          | Shed                                                                                                    |
|-----------------------|-------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------|
| <b>Description</b>    | A two-storey brick/ timber framed building with a pitched roof constructed of asbestos cement sheets. | A single-storey pre-fab building with a pitched, felted roof.                                          | A single-storey wooden shed with a felt roof.                                                           |
| <b>No. of storeys</b> | 2                                                                                                     | 1                                                                                                      | 1                                                                                                       |
| <b>Roof type</b>      | Pitched                                                                                               | Pitched                                                                                                | Pitched                                                                                                 |
| <b>Roof cladding</b>  | Asbestos cement sheets                                                                                | Felt                                                                                                   | Wood                                                                                                    |
| <b>Ridge</b>          | Cement                                                                                                | Tile                                                                                                   | Felt                                                                                                    |
| <b>Wall type</b>      | Timber framed (South, east and west) and brick with steel cladding (north)                            | Timber frame and cladding                                                                              | Single skinned wooden cladding                                                                          |
| <b>Exterior</b>       | Fascia (north and south elevations), soffits east and west elevations).                               | -                                                                                                      | -                                                                                                       |
| <b>Photos</b>         | North elevation<br> | North elevation<br> | North elevation<br> |

|  |                                                                                                           |                                                                                                            |                                                                                                             |
|--|-----------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------|
|  | <p>East elevation</p>    | <p>East elevation</p>    | <p>East elevation<br/>Adjacent to neighbouring building.</p>                                                |
|  | <p>South elevation</p>  | <p>South elevation</p>  | <p>South elevation</p>  |

|                              |                                                                                                                                 |                                                                                                          |                                                                                                           |
|------------------------------|---------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------|
|                              | <p>West elevation</p>                          | <p>West elevation</p>  | <p>West elevation</p>  |
| <b>Building dimensions</b>   | c.11.5m wide x c.32.5m long                                                                                                     | c.3.5m wide x c.8.5m long                                                                                | c.3m wide x c.5.5m long                                                                                   |
| <b>Roof void description</b> | Cluttered and used as a storage room                                                                                            | No roof void                                                                                             | No access                                                                                                 |
| <b>Frame</b>                 | Wooden beams                                                                                                                    | Unknown – no access                                                                                      | Unknown – no access                                                                                       |
| <b>Roof lining</b>           | Corrugated metal covered with fibre glass board                                                                                 | Cladding                                                                                                 | Unknown – no access                                                                                       |
| <b>Roof void dimensions</b>  | <p>Roof void 1: c.11.5m wide x c.7m long</p>  | <p>No roof void</p>   | <p>Unknown – no access</p>                                                                                |

|                                     |                                                                                                                          |                   |                     |
|-------------------------------------|--------------------------------------------------------------------------------------------------------------------------|-------------------|---------------------|
| <b>Roof void height</b>             | c.3m                                                                                                                     | No roof void      | Unknown             |
| <b>Potential roosting locations</b> | Against the horizontal wooden beams<br> | N/A               | Unknown – no access |
| <b>Bat evidence</b>                 | None                                                                                                                     | None              | None                |
| <b>Bat suitability</b>              | <b>Moderate</b>                                                                                                          | <b>Negligible</b> | <b>Negligible</b>   |

### 4.3 External potential bat access points

#### 4.3.1 Memorial Hall

Much of the roof appears well-sealed and in good condition. However, there are several potential bat access points into the roof void, as well as some exterior features that also provide potential roosting locations for bats. In addition, the River Itchen (which provides high-quality foraging habitat) is across the road. 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 exterior roosting features are illustrated in *Images 4.3.1.1 – 4.3.1.3*.

*Image 4.3.1.1. Location of potential bat access points and potential external roost locations on the north elevation of the Memorial Hall.*



Image 4.3.1.2. Location of potential bat access points and potential external roost locations on the east elevation of the Memorial Hall.



Image 4.3.1.3. Location of potential bat access points and potential external roost locations on the south elevation of the Memorial Hall.



#### 4.3.2 *Parish office*

The felt roof appears well-sealed and in good condition. There are no internal or external features that provide potential roosting locations for bats. Therefore, the Parish office is classed as having negligible suitability to be used by roosting bats, following the criteria in *Table 3.2.4.1*.

#### 4.3.3 *Shed*

The shed is a single-skinned wooden building with a felt roof. Although there is a broken vent on the south elevation (See *Table 4.2.1*), it is made of plastic which bats cannot land on and cling to, so to gain access to the shed, a bat would have to fly directly through the gap which is unlikely. In addition to this, due to the construction of the shed, it will be subject to variations in temperature. Therefore, the shed is classed as having negligible suitability to be used by roosting bats, following the criteria in *Table 3.2.4.1*.

### 4.4 *Bat roost suitability of trees*

All the trees on the western boundary of the site have negligible bat roost suitability.

### 4.5 *Commuting and foraging habitat*

The tree-line along the western boundary of the site provides good, sheltered bat foraging habitat in the immediate vicinity of the buildings. In addition, the site is across the road from the River Itchen, which is a high-quality foraging habitat for many species of bat.

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

### 4.6 *Evidence of bats*

No bats or evidence of bats was found.

### 4.7 *Bat activity surveys*

No bats were observed emerging from or re-entering the Memorial Hall.

Common pipistrelles, soprano pipistrelles, long-eared bats, *Myotis* species and noctules were recorded flying in the vicinity of the buildings and on the site indicating the weather was suitable for bat activity on all occasions. The full data from the bat activity surveys is given in *Appendix C* and plans illustrating the bat activity (observations only) during the surveys are given in *Figures 4-5* in *Section 6*.

## **4.8**     ***Other ecological constraints***

### **4.8.1**     *Birds*

All the trees, shrubs and buildings on the site have the potential to support nesting birds during the breeding season.

### **4.8.2**     *Great crested newts*

The site is in a red great crested newt impact risk zone with a record of great crested newts across the road approximately 150m from the site.

## 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 (old droppings generally crumble away).

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.

It was not possible to access the interior of the shed. However, it was possible to assess it from the outside.

Due to the late commission of phase 2 surveys, the second bat activity survey was also carried out in September outside of the optimum survey period (May-August) however this was discussed with EBC ecology team in advance.

#### 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 such a small site.

Based on the current proposals, the only work taking place is the demolition of the three buildings and the felling of the adjacent tree-line. If a new building (or buildings) is subsequently built, enhancement measures should be incorporated into it (see *Section 5.6.4*).

As no bats were recorded emerging (or re-entering) the Memorial Hall during the bat activity surveys, no mitigation or compensation measures are needed.

### 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](http://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 this small-scale development.

The site is within 5km of the River Itchen SAC (c.20m south). This site is designated due to the types of wetland habitats it includes. As a result of its proximity, the impacts of this small-scale development on the SAC must be considered.

Based on the current proposals, the only work taking place is the demolition of the three buildings and the felling of the adjacent tree-line. Therefore, there should be no impact on the SAC.

According to the *Multi-Agency Geographic Information for the Countryside* website ([www.magic.gov.uk](http://www.magic.gov.uk)), there have been five bat European Protected Species (EPS) licences granted within 2km of the site. Given their locations it is unlikely that the demolition of the buildings and felling of the tree-line will impact these bat and great crested newts populations.

### 5.2.2 *Commuting and foraging bats*

The foraging habitat in the immediate vicinity of the Memorial Hall will decline due to the removal of the tree-line. However, the site is across the road from the River Itchen, which is a high-quality foraging habitat for many species of bat. Waterways provide high-quality foraging habitat for several species of bat. The river will be unaffected by the works as will the adjacent recreation ground. Therefore, no impact to commuting and foraging bats (and hence bat populations in the local area) is anticipated.

Changes in lighting can affect foraging and roosting bats. Therefore, no works should take place in the hours of darkness or under artificial lighting. In addition, no lighting should be directed onto nearby vegetation (particularly the trees and river), and any 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 moonlit/cloudy sky) onto any retained vegetation. However, it is by a road and as such subject to road lighting. Therefore, it may not be possible due to existing light spill. If this is the case any new lighting should not increase the level currently experienced and, if 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, particularly bats.

### 5.2.3 *Buildings*

#### *Memorial Hall*

Although no bats or evidence of bats was found, due to the number of suitable roosting features on the building, the surrounding intermittent vegetation, and the proximity of the River Itchen, the building has moderate bat roost suitability. However, no bats were recorded emerging from or re-entering the building. Therefore, it can be demolished without further survey or constraints regarding bats (subject to any planning constraints).

Enhancement measures will be required to be incorporated into the wider site (or new building(s), should one be subsequently built) to comply with national and local planning policy that requires a net gain in biodiversity. The proposed enhancement measures are given in *Section 5.6*.

#### *Parish Hall*

No bats or evidence of bats was found, and the building was assessed as having negligible bat roost suitability. Therefore, it can be demolished without further survey or constraints regarding bats (subject to any planning constraints).

#### *Shed*

No bats or evidence of bats was found, and the building was assessed as having negligible bat roost suitability. However, due to the holes in the walls, as a precautionary measure this building will be carefully demolished by hand.

### 5.2.4 *Birds*

All the trees, shrubs and buildings provide suitable habitat for nesting birds. The destruction of active bird nests is prohibited under the *Wildlife and Countryside Act 1981* (as amended). Therefore, any affected vegetation with the potential to support nesting birds (such as the tree-line) 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 must be removed during the nesting season, then it should be inspected (by an ecologist) for nests immediately prior to removal of the vegetation.

All building demolition works should take place outside the breeding bird season (which is late February to August inclusive). If this is not possible, and buildings must be removed during the nesting season, the building should be checked for nests (by an ecologist) immediately prior to works.

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).

### 5.2.5 *Great crested newt*

The grassland on and adjacent to the site has a very short sward with no cover. This is generally unsuitable terrestrial habitat for great crested newt, although they could use it for foraging.

The grassland around the south and west perimeters is slightly longer offering slightly more protection and potential foraging areas, which is more suitable habitat for great crested newts, as is the base of the tree-line along the western boundary. However, as these are only small areas within otherwise sub-optimal habitat, and the great crested newts record is for the opposite side of the road, the following precautions will be undertaken to minimise the risk that amphibians would be harmed during works (if present). Areas of long vegetation will initially be strimmed to a height of 6cm. This is likely to deter any amphibians in the vicinity, but a second cut will be carried out at least 24 hours

later to further reduce the vegetation height to no more than 3cm to deter anything from entering the area. This will be maintained for the duration of the works.

### 5.3 ***Alternative roosting potential***

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

### 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, 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 November 2024.

### 5.5 ***Further survey***

No further surveys are required.

### 5.6 ***Enhancement measures***

#### 5.6.1 ***General***

From the 20<sup>th</sup> 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 February 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:

- sensitive lighting (for bats and other wildlife); and
- 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 D*. 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 *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, any lighting on the site should avoid spillage of greater than 0.1 lux (typical moonlight/ cloudy sky) near to or directly onto the River Itchen. However, it is in a highly lit area and as such this may not be possible due to existing light spill. If this is the case any new lighting should not increase the level currently experienced and, if possible, should reduce any light spill due to the type of lighting used and the use of protection such as hoods and cowls. This is because 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 2018)) 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 can 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 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.

### 5.6.3 Birds

Following the demolition of the buildings and the felling of the adjacent tree-line, there will be no suitable location on which a bird box could be placed. Therefore, a woodstone bird box suitable for use by blue tits and great tits will be attached to one of the nearby mature trees (off site within the adjacent recreation ground). This bird box will provide a new nest site.

Should a building subsequently be built on the site, swift boxes should be built into its exterior wall (provided it is high enough). 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).

The bird boxes are detailed in *Table 5.6.3.1*.

*Table 5.6.3.1. Bird boxes to be erected within the site with additional details on siting them to increase chances of occupancy (swift boxes only proposed should a subsequent building be built).*

| Type & quantity                                                                                                                                                                                                                                | Typical species          | No. | Height | Additional information                                                                                                                                                                                                                                                                                                                                                                        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------|-----|--------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Vivara Pro Seville<br>32mm Woodstone<br>Nest Box<br>                                                                                                        | Blue tits,<br>great tits | 1   | 2-4m   | <ul style="list-style-type: none"> <li>Position on a building or tree, angled north-east (away from prevailing winds) and tilt forward slightly.</li> <li>Chances of occupation can be increased by positioning boxes near vegetation.</li> </ul>                                                                                                                                             |
| Istock Eco-habitat<br><br>or<br>Swift boxes from<br>Hampshire Swifts<br> | Swifts                   | 2   | ≥ 5m   | <ul style="list-style-type: none"> <li>Can either be incorporated into the build structure or mounted onto a building.</li> <li>Position out of direct sunlight (below eaves on the north elevation), away from windows and in a straight line.</li> <li>Should be in an open area so that it is less accessible to predators and birds are not obstructed as they leave the nest.</li> </ul> |

## 5.7 ***Requirement for Habitats Regulations licence***

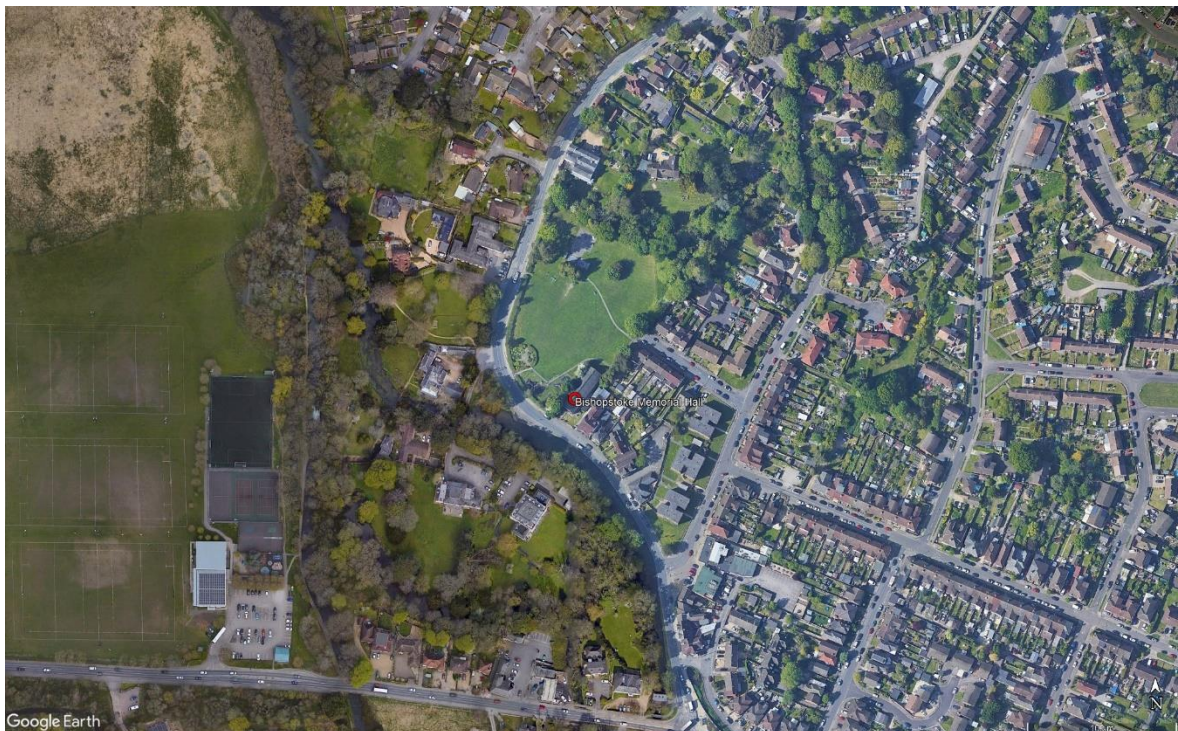
A bat European Protected Species (EPS) licence or Bat Mitigation Class Licence (formerly Bat Low Impact Class Licence, if qualifying) site registration from Natural England is not necessary before the buildings are demolished. In the unlikely event that bats are found during the demolition works, work will stop immediately and a bat licence will be applied for.

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).

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.

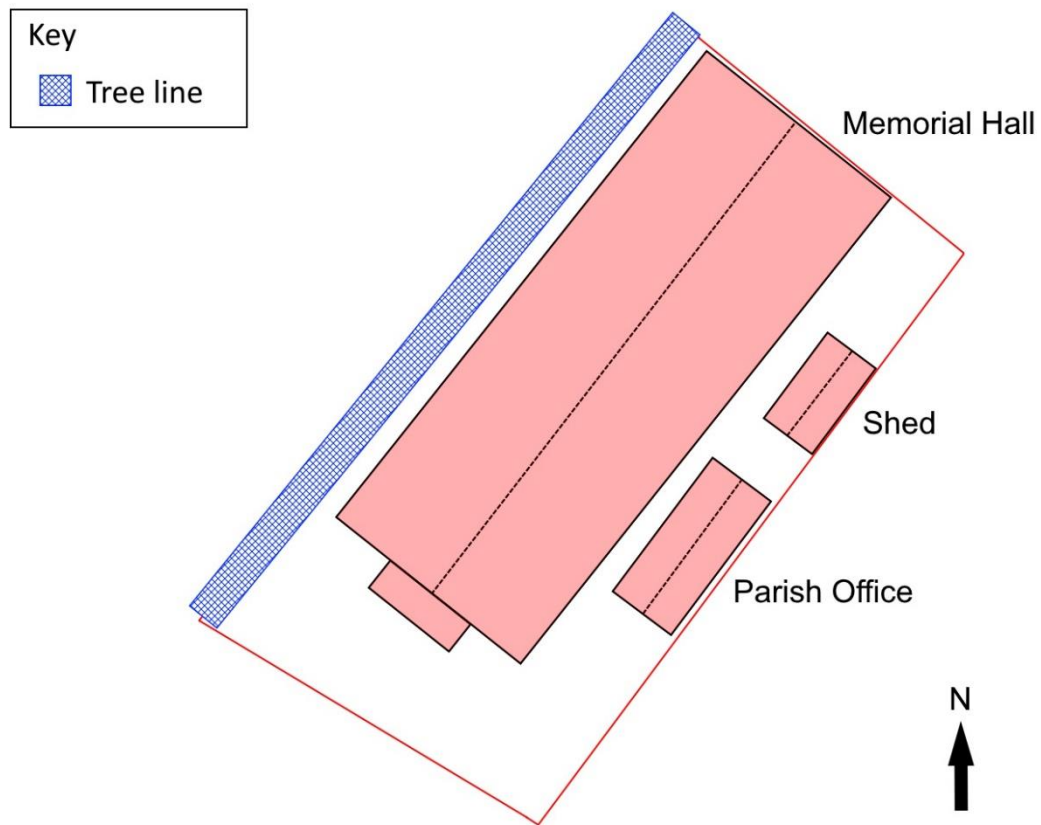


Figure 4. Plan showing bat activity (observations only) for the bat activity survey carried out on the 6<sup>th</sup> September 2023. Arrows show direction of flight (where known).

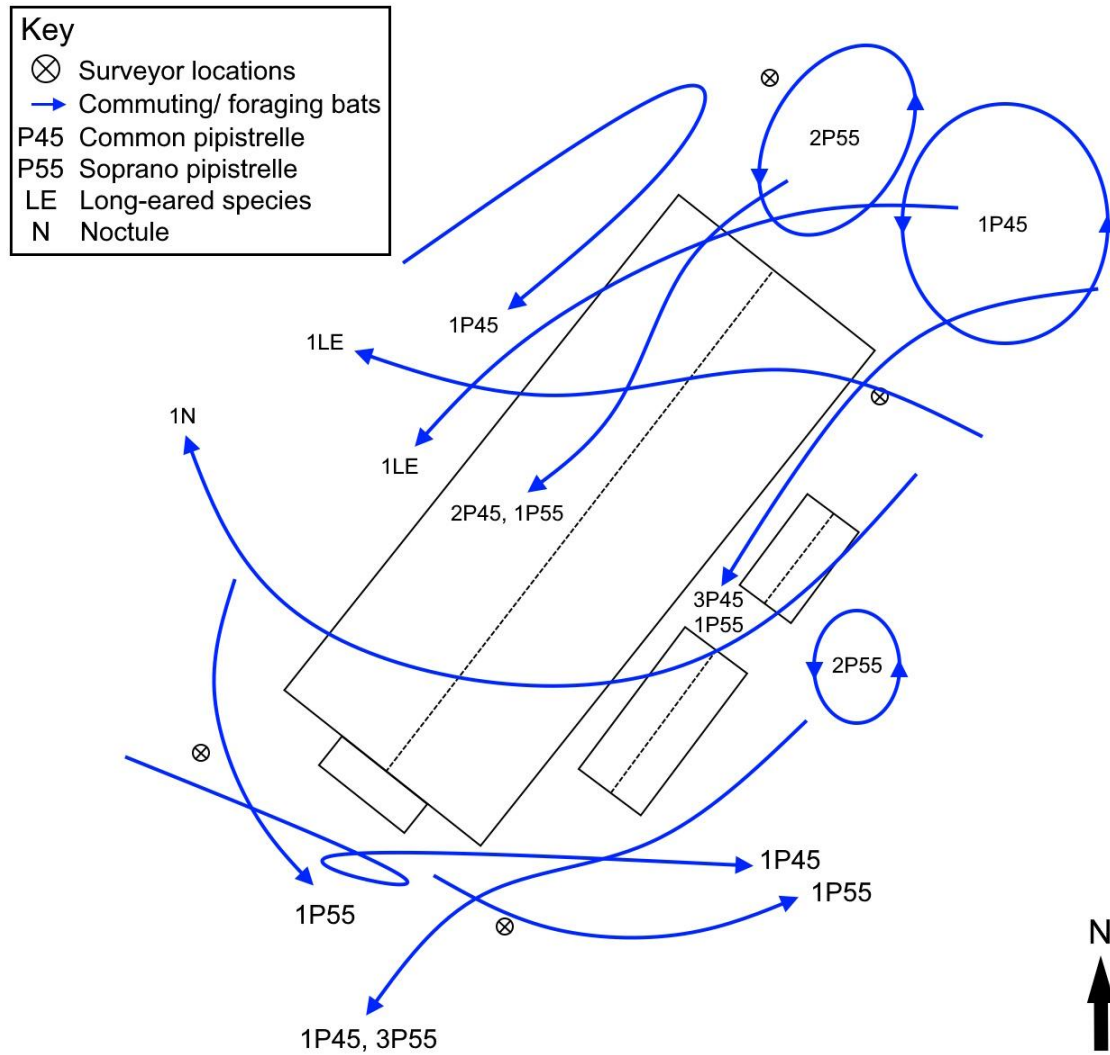


Figure 5. Plan showing bat activity (observations only) for the bat activity survey carried out on the 22<sup>nd</sup> September 2023. Arrows show direction of flight (where known).

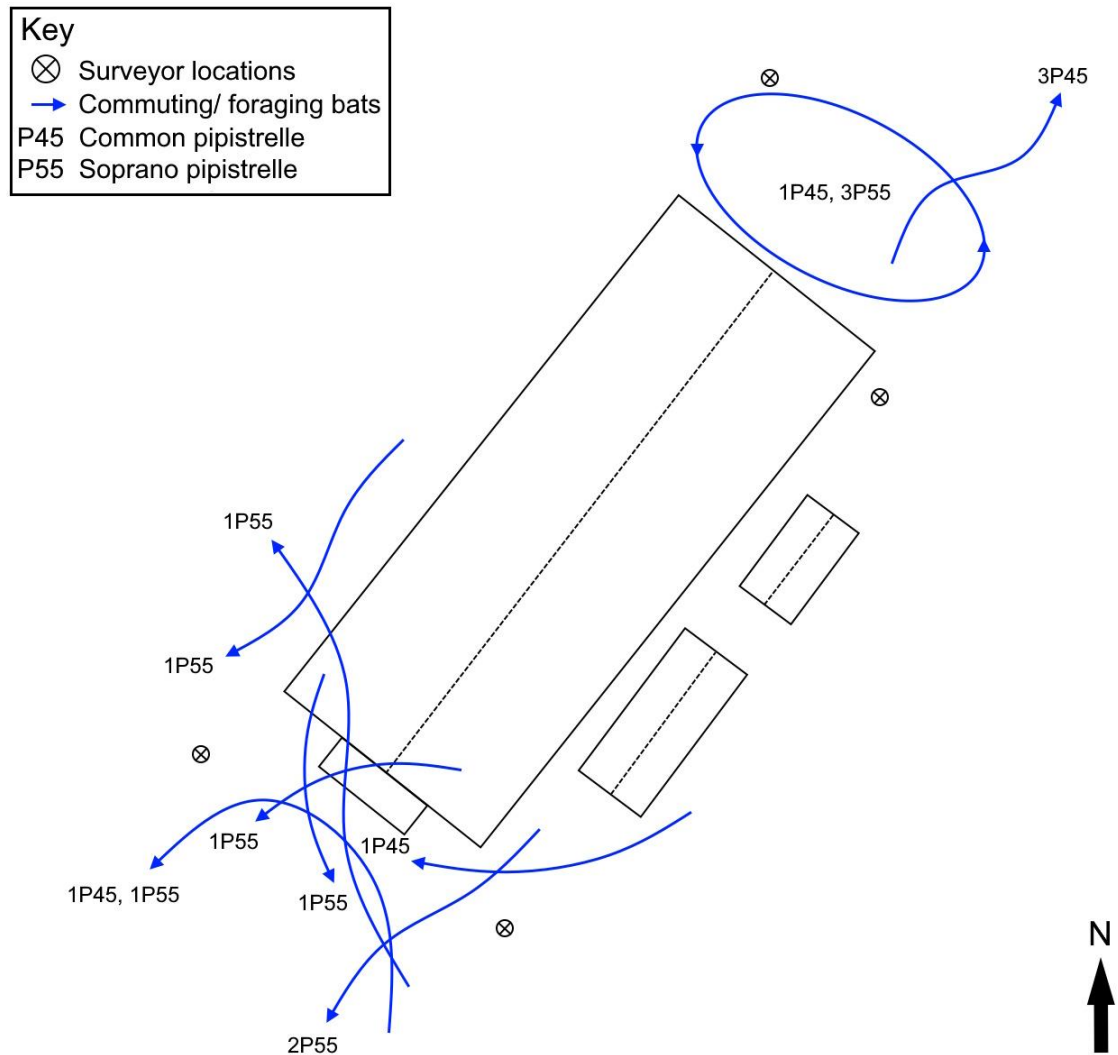
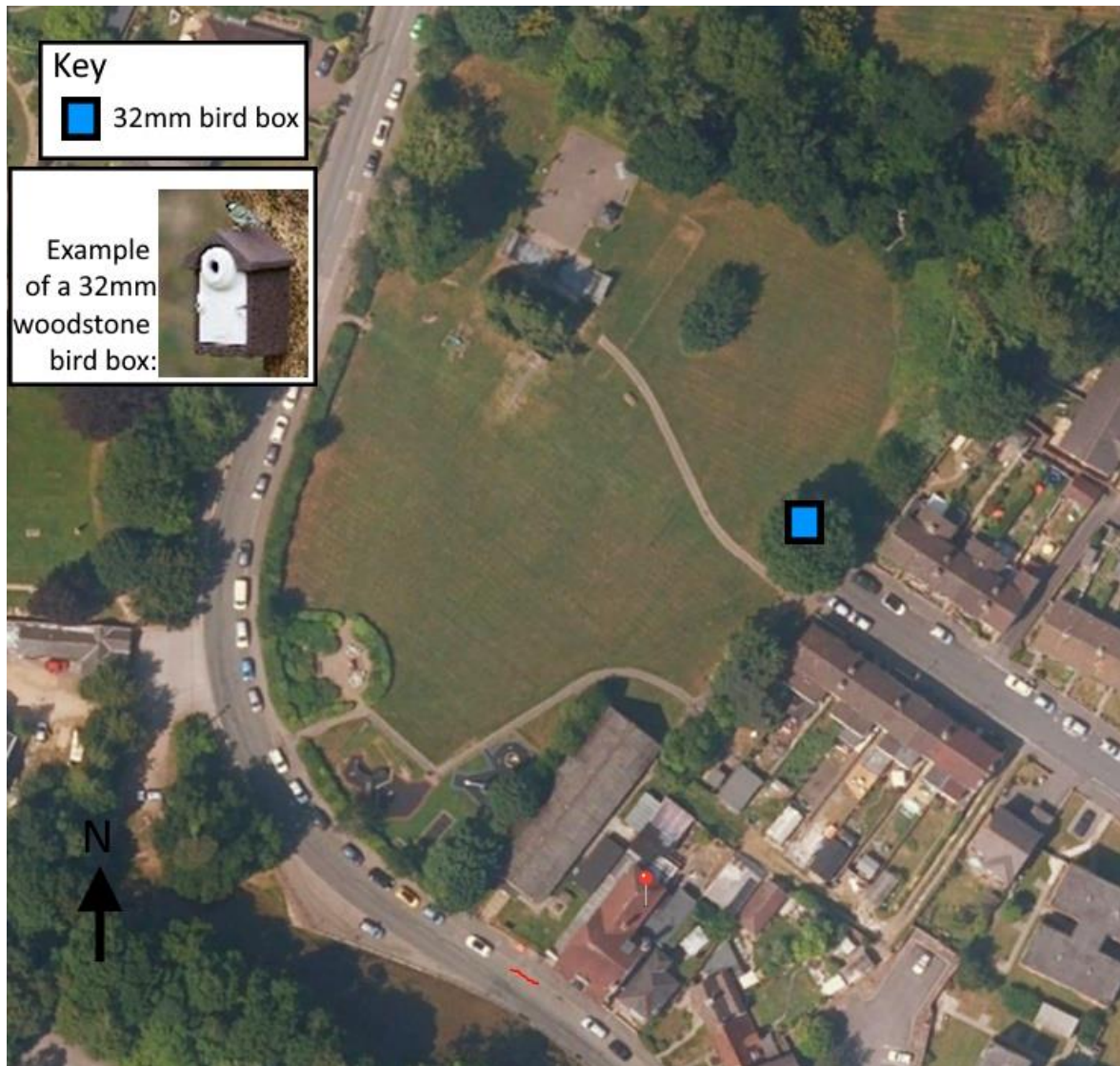


Figure 6. Plan showing the indicative location of the proposed enhancement measure (not to scale).



**PHOTOGRAPHS**

*Photo 1. The tree-line along the western boundary of the site (facing east from playing fields).*



*Photo 2. The River Itchen (facing south from the front of the Memorial Hall).*



*Photo 3. The recreation ground adjacent to the west and north of the site (facing north-west).*



*Photo 4. The recreation ground adjacent to the site (facing north).*



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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 *National Planning Policy Framework (NPPF)*

From the 20<sup>th</sup> July 2021, the Government published the revised National Planning Policy Framework. 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 use transitional roosting sites. Autumn is the time when both adults and juveniles must 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.

**APPENDIX C: BAT ACTIVITY SURVEY DATA**

|                   |                                                               |            |                     |                                                               |
|-------------------|---------------------------------------------------------------|------------|---------------------|---------------------------------------------------------------|
| <b>Date</b>       | <b>06/09/2023</b>                                             |            |                     |                                                               |
| <b>Temp</b>       | <b>26°C at start and 23°C at the end</b>                      |            |                     |                                                               |
| <b>Weather</b>    | <b>Warm and humid with 70% cloud cover (Beaufort scale 0)</b> |            |                     |                                                               |
| <b>Ecologists</b> | <b>Finn Parker, Oliver Swarder, Mark Ison, Rachel Ison</b>    |            |                     |                                                               |
| <b>Observer</b>   | <b>Time</b>                                                   | <b>No.</b> | <b>Species</b>      | <b>Observation</b>                                            |
| -                 | 19:26                                                         | -          | -                   | Ecologists commenced observations                             |
| -                 | 19:41                                                         | -          | -                   | Sunset                                                        |
| OS                | 19:53                                                         | 1          | Common pipistrelle  | Heard social calls but not seen                               |
| OS                | 19:54                                                         | 1          | Common pipistrelle  | Foraging high north-east of the hall                          |
| MI, RI            | 19:54                                                         | 1          | Common pipistrelle  | Commuting south over the hall                                 |
| FP                | 19:54                                                         | 1          | Soprano pipistrelle | Commuting south-east by the south end of the hall             |
| OS, RI            | 19:56                                                         | 1          | Soprano pipistrelle | Commuting south-west along the southern elevation of the hall |
| OS                | 19:57                                                         | 1          | Noctule             | Foraging west high over the hall                              |
| RI                | 19:57                                                         | 1          | Common pipistrelle  | Commuting south over the hall                                 |
| FP, OS            | 19:58                                                         | 1          | Soprano pipistrelle | Heard but not seen                                            |
| RI                | 19:59                                                         | 1          | Soprano pipistrelle | Commuting south over the hall                                 |
| MI                | 20:00                                                         | 1          | Soprano pipistrelle | Commuting south over the north-west edge of the hall          |
| RI                | 20:01                                                         | 1          | Soprano pipistrelle | Foraging north of the hall                                    |
| OS                | 20:03                                                         | 1          | Soprano pipistrelle | Foraging south-west past the southern end of the hall         |
| RI                | 20:06                                                         | 1          | Soprano pipistrelle | Commuting south over the hall                                 |
| OS, MI            | 20:07                                                         | 1          | Soprano pipistrelle | Heard but not seen                                            |
| OS                | 20:08                                                         | 1          | Soprano pipistrelle | Commuting south-west by the south-east corner of the hall     |
| RI                | 20:08                                                         | 1          | Soprano pipistrelle | Heard but not seen                                            |
| RI                | 20:08                                                         | 1          | Noctule             | Heard but not seen                                            |
| FP                | 20:09                                                         | 1          | Common pipistrelle  | Foraging south-west of the hall                               |
| OS                | 20:09                                                         | 1          | Common pipistrelle  | Heard but not seen                                            |
| RI                | 20:09                                                         | 1          | Soprano pipistrelle | Foraging north of the hall                                    |
| MI                | 20:10                                                         | 1          | Soprano pipistrelle | Heard but not seen                                            |
| RI                | 20:10                                                         | 1          | Common pipistrelle  | Commuting south over the hall                                 |
| MI                | 20:12                                                         | 1          | Common pipistrelle  | Foraging north-west of the hall                               |
| RI                | 20:13                                                         | 1          | Common pipistrelle  | Commuting north over the hall                                 |
| MI                | 20:14                                                         | 1          | Common pipistrelle  | Heard but not seen                                            |
| MI                | 20:16                                                         | 1          | Common pipistrelle  | Heard but not seen                                            |

|                   |                                                                                 |            |                     |                                                               |
|-------------------|---------------------------------------------------------------------------------|------------|---------------------|---------------------------------------------------------------|
| FP                | 20:21                                                                           | 1          | Soprano pipistrelle | Commuting east past the south end of the hall                 |
| OS                | 20:21                                                                           | 2          | Soprano pipistrelle | Foraging east of the hall                                     |
| OS                | 20:21                                                                           | 1          | Common pipistrelle  | Commuting south-west along the southern elevation of the hall |
| RI                | 20:21                                                                           | 1          | Long-eared bat      | Commuting west over the hall                                  |
| FP                | 20:23                                                                           | 1          | Common pipistrelle  | Heard but not seen                                            |
| FP, OS            | 20:25                                                                           | 1          | Long-eared bat      | Heard foraging but not seen                                   |
| MI                | 20:25                                                                           | 1          | Long-eared bat      | Foraging south over the north-west edge of the hall           |
| OS                | 20:27                                                                           | 1          | Soprano pipistrelle | Heard but not seen                                            |
| MI                | 20:32                                                                           | 1          | Common pipistrelle  | Heard but not seen                                            |
| FP, OS            | 20:35                                                                           | 1          | Long-eared bat      | Heard but not seen                                            |
| MI, RI            | 20:35                                                                           | 1          | Common pipistrelle  | Heard but not seen                                            |
| RI                | 20:36                                                                           | 1          | Soprano pipistrelle | Heard but not seen                                            |
| OS                | 20:36                                                                           | 1          | Common pipistrelle  | Heard but not seen                                            |
| FP, OS            | 20:37                                                                           | 1          | Long-eared bat      | Heard but not seen                                            |
| RI                | 20:39                                                                           | 1          | Soprano pipistrelle | Heard but not seen                                            |
| FP, OS            | 20:40                                                                           | 1          | Long-eared bat      | Heard but not seen                                            |
| FP, OS            | 20:44                                                                           | 1          | Long-eared bat      | Heard but not seen                                            |
| FP, OS            | 20:45                                                                           | 1          | Serotine            | Heard but not seen                                            |
| RI                | 20:48                                                                           | 1          | Common pipistrelle  | Heard but not seen                                            |
| FP, OS            | 20:49                                                                           | 1          | Long-eared bat      | Heard but not seen                                            |
| OS                | 20:50                                                                           | 1          | Soprano pipistrelle | Heard but not seen                                            |
| MI, RI            | 20:50                                                                           | 1          | Common pipistrelle  | Heard but not seen                                            |
| FP, OS            | 20:53                                                                           | 1          | Long-eared bat      | Heard but not seen                                            |
| OS                | 20:55                                                                           | 1          | Soprano pipistrelle | Heard but not seen                                            |
| FP                | 20:56                                                                           | 1          | Long-eared bat      |                                                               |
| RI                | 20:56                                                                           | 1          | Common pipistrelle  | Heard but not seen                                            |
| FP                | 20:57                                                                           | 1          | Common pipistrelle  | Heard but not seen                                            |
| OS                | 20:57                                                                           | 1          | Long-eared bat      | Heard but not seen                                            |
| RI                | 20:59                                                                           | 1          | Common pipistrelle  | Heard but not seen                                            |
| RI                | 21:02                                                                           | 1          | Noctule             | Heard but not seen                                            |
| RI                | 21:03                                                                           | 1          | Common pipistrelle  | Heard but not seen                                            |
| FP                | 21:06                                                                           | 1          | Soprano pipistrelle | Heard but not seen                                            |
| OS                | 21:07                                                                           | 2          | Soprano pipistrelle | Heard social calls but not seen                               |
| FP                | 21:08                                                                           | 1          | Common pipistrelle  | Heard but not seen                                            |
| -                 | 21:11                                                                           | -          | -                   | Ecologists ceased observations                                |
| <b>Date</b>       | <b>22/09/2023</b>                                                               |            |                     |                                                               |
| <b>Temp</b>       | <b>13°C at start and 12°C at the end</b>                                        |            |                     |                                                               |
| <b>Weather</b>    | <b>Damp and cool with a light breeze and 30% cloud cover (Beaufort scale 2)</b> |            |                     |                                                               |
| <b>Ecologists</b> | <b>Adam Rye, Sophie Stirrat, Finn Parker, Jackie Thompson</b>                   |            |                     |                                                               |
| <b>Observer</b>   | <b>Time</b>                                                                     | <b>No.</b> | <b>Species</b>      | <b>Observation</b>                                            |

|            |       |   |                     |                                                                          |
|------------|-------|---|---------------------|--------------------------------------------------------------------------|
| -          | 18:49 | - | -                   | Ecologists commenced observations                                        |
| -          | 19:04 | - | -                   | Sunset                                                                   |
| AR         | 19:24 | 1 | Soprano pipistrelle | Heard but not seen                                                       |
| AR         | 19:26 | 1 | Soprano pipistrelle | Foraging by the north-east end of the hall                               |
| AR, FP     | 19:27 | 2 | Soprano pipistrelle | Foraging by the north-east end of the hall with social calls until 20:37 |
| FP         | 19:28 | 1 | Common pipistrelle  | Heard but not seen                                                       |
| SS         | 19:28 | 1 | Soprano pipistrelle | Heard but not seen                                                       |
| JT         | 19:28 | 1 | Soprano pipistrelle | Commuting south-west over the roof of the hall                           |
| JT         | 19:29 | 1 | Soprano pipistrelle | Commuting south over the roof of the hall                                |
| AR, FP     | 19:32 | 1 | Common pipistrelle  | Foraging by the north-east end of the hall until 19:41                   |
| JT         | 19:34 | 1 | Soprano pipistrelle | Commuting north over the hall                                            |
| SS         | 19:35 | 1 | Soprano pipistrelle | Heard but not seen                                                       |
| SS         | 19:35 | 2 | Soprano pipistrelle | Chasing each other south-west over the road                              |
| JT         | 19:36 | 1 | Soprano pipistrelle | Commuting south-west along the western elevation of the hall             |
| SS         | 19:37 | 1 | Long-eared bat      | Heard but not seen                                                       |
| JT         | 19:38 | 1 | Soprano pipistrelle | Foraging south of the hall                                               |
| AR         | 19:39 | 1 | Noctule             | Foraging by the north-east end of the hall                               |
| SS, FP     | 19:39 | 1 | Soprano pipistrelle | Heard but not seen                                                       |
| AR, FP     | 19:41 | 1 | Common pipistrelle  | Foraging by the north-east end of the hall                               |
| JT         | 19:42 | 1 | Common pipistrelle  | Commuting south-west by the south end of the hall                        |
| SS         | 19:42 | 1 | Common pipistrelle  | Commuting west then north over the buildings east of the hall            |
| AR         | 19:43 | 1 | Common pipistrelle  | Heard but not seen                                                       |
| AR, SS, JT | 19:43 | 1 | Soprano pipistrelle | Heard but not seen                                                       |
| SS, JT     | 19:45 | 1 | Common pipistrelle  | Heard but not seen                                                       |
| AR         | 19:46 | 1 | Noctule             | Heard but not seen                                                       |
| AR, FP     | 19:46 | 3 | Common pipistrelle  | Commuting north-east away from the north-east elevation of the hall      |
| SS, JT     | 19:47 | 1 | Soprano pipistrelle | Heard but not seen                                                       |
| SS, FP, JT | 19:48 | 1 | Soprano pipistrelle | Heard but not seen                                                       |
| AR         | 19:48 | 1 | Long-eared bat      | Heard but not seen                                                       |
| FP         | 19:49 | 1 | Common pipistrelle  | Heard but not seen                                                       |
| SS         | 19:49 | 1 | Soprano pipistrelle | Heard but not seen                                                       |
| AR         | 19:50 | 1 | Noctule             | Heard but not seen                                                       |
| SS         | 19:50 | 1 | Long-eared bat      | Heard but not seen                                                       |
| SS, FP     | 19:50 | 1 | Common pipistrelle  | Heard but not seen                                                       |
| AR         | 19:51 | 1 | Common pipistrelle  | Heard but not seen                                                       |
| SS, JT     | 19:52 | 1 | Soprano pipistrelle | Heard but not seen                                                       |

|        |       |   |                       |                                            |
|--------|-------|---|-----------------------|--------------------------------------------|
| SS     | 19:52 | 1 | Common pipistrelle    | Heard but not seen                         |
| AR, FP | 19:54 | 1 | Common pipistrelle    | Heard but not seen                         |
| AR, FP | 19:56 | 1 | Soprano pipistrelle   | Heard but not seen                         |
| SS     | 19:57 | 1 | Long-eared bat        | Heard but not seen                         |
| JT     | 19:59 | 1 | Common pipistrelle    | Heard but not seen                         |
| SS     | 20:00 | 1 | Soprano pipistrelle   | Heard but not seen                         |
| FP     | 20:00 | 1 | Common pipistrelle    | Heard but not seen                         |
| AR     | 20:00 | 1 | Common pipistrelle    | Foraging by the north-east end of the hall |
| AR     | 20:01 | 1 | Noctule               | Heard but not seen                         |
| AR     | 20:02 | 1 | Common pipistrelle    | Heard but not seen                         |
| AR     | 20:02 | 1 | Soprano pipistrelle   | Heard but not seen                         |
| SS     | 20:02 | 1 | Long-eared bat        | Heard but not seen                         |
| JT     | 20:03 | 1 | Soprano pipistrelle   | Heard but not seen                         |
| AR     | 20:03 | 1 | Noctule               | Heard but not seen                         |
| SS     | 20:05 | 1 | Long-eared bat        | Heard but not seen                         |
| AR     | 20:05 | 1 | Common pipistrelle    | Heard but not seen                         |
| SS     | 20:06 | 1 | <i>Myotis</i> species | Heard but not seen                         |
| FP     | 20:07 | 1 | Long-eared bat        | Heard but not seen                         |
| AR     | 20:07 | 1 | Noctule               | Heard but not seen                         |
| AR, FP | 20:12 | 1 | Common pipistrelle    | Heard but not seen                         |
| SS, JT | 20:14 | 1 | Soprano pipistrelle   | Heard but not seen                         |
| AR, FP | 20:21 | 1 | Common pipistrelle    | Heard but not seen                         |
| AR, FP | 20:24 | 1 | Long-eared bat        | Heard but not seen                         |
| SS, JT | 20:25 | 1 | Soprano pipistrelle   | Heard but not seen                         |
| SS     | 20:28 | 1 | Soprano pipistrelle   | Heard but not seen                         |
| JT     | 20:29 | 1 | Soprano pipistrelle   | Heard but not seen                         |
| SS, JT | 20:33 | 1 | Soprano pipistrelle   | Heard but not seen                         |
| -      | 20:34 | - | -                     | Ecologists ceased observations             |

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

### 12.1 Seed mix composition

The seed mixes in Table 12.1.1 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 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 12.1.1. Emorsgate seed mix species composition.

| <b>EL1</b>                     |                             |
|--------------------------------|-----------------------------|
| <b>Species</b>                 | <b>Common Name</b>          |
| <b>Flowering Species</b>       |                             |
| <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             |
| <b>Grasses</b>                 |                             |
| <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          |
| <b>EG1</b>                     |                             |
| <b>Species</b>                 | <b>Common Name</b>          |
| <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 |
| <b>EG9</b>                     |                             |
| <b>Species</b>                 | <b>Common Name</b>          |
| <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 |

## 12.2 *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 12.2.1. and 12.2.2. Approximate flowering periods are listed in the tables.

Table 12.2.1. 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 12.2.2. 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 12.2.3. Seed mixes suitable for shaded areas.

| <b>EH1</b>                   |                               |
|------------------------------|-------------------------------|
| <b>Species</b>               | <b>Common Name</b>            |
| <b>Wildflowers</b>           |                               |
| <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         |
| <b>Grasses</b>               |                               |
| <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           |
| <b>EW1</b>                       |                             |
| <b>Species</b>                   | <b>Common name</b>          |
| <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       |
| <b>Grasses</b>                   |                             |
| <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           |

### 12.3 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 12.3.1. Bird boxes with additional details on siting them to increase chances of occupancy.

| Type                                                                                                                                                                                                                                              | Typical species       | Height           | Additional information                                                                                                                                                                                                                                                                                                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------|------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Ibstock Eco-habitat</p>  <p>or</p> <p>Swift boxes from Hampshire Swifts</p>  | Swifts                | $\geq 5\text{m}$ | <ul style="list-style-type: none"> <li>Can either be incorporated into the build structure or mounted onto a building.</li> <li>Position out of direct sunlight (below eaves on the north elevation), away from windows and in a straight line.</li> <li>Should be in an open area so that it is less accessible to predators and birds are not obstructed as they leave the nest.</li> </ul>               |
| <p>Vivara Pro WoodStone House Sparrow Nest Box</p>                             | House sparrows        | $\geq 2\text{m}$ | <ul style="list-style-type: none"> <li>Can either be incorporated into the build structure or mounted onto a building.</li> <li>Should be fixed onto a sturdy building, not onto fences or garden sheds due to its weight.</li> <li>Position away from windows.</li> <li>Position out of direct sunlight (below eaves on the north elevation), especially if not built into the build structure.</li> </ul> |
| <p>Vivara Pro Seville 28mm Woodstone Nest Box</p>                                                                                                              | Blue tits, coal tits  | 2-4m             | <ul style="list-style-type: none"> <li>Position on a building or tree, angled north-east (away from prevailing winds) and tilt forward slightly.</li> <li>Chances of occupation can be increased by positioning boxes near vegetation.</li> </ul>                                                                                                                                                           |
| <p>Vivara Pro Seville 32mm Woodstone Nest Box</p>                                                                                                              | Blue tits, great tits | 2-4m             | <ul style="list-style-type: none"> <li>Position on a building or tree, angled north-east (away from prevailing winds) and tilt forward slightly.</li> <li>Chances of occupation can be increased by positioning boxes near vegetation.</li> </ul>                                                                                                                                                           |
| <p>Vivara Pro Barcelona WoodStone Open Nest Box</p>                                                                                                            | Robins, wrens         | $\leq 2\text{m}$ | <ul style="list-style-type: none"> <li>Mount on a tree or large shrub</li> <li>Conceal amongst foliage to keep well-hidden from predators.</li> </ul>                                                                                                                                                                                                                                                       |

|                                                                                                                                              |          |                  |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|----------------------------------------------------------------------------------------------------------------------------------------------|----------|------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>WoodStone Swallow Nest Bowl (Plywood board mounted)</p>  | Swallows | $\geq 2\text{m}$ | <ul style="list-style-type: none"> <li>Mount within a building with an open door or window</li> <li>Leave a distance of at least 6cm between the top of the nest and the ceiling.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                |
| <p>Integrated barn owl roost/ false dormer box</p>          | Barn Owl | $\geq 3\text{m}$ | <ul style="list-style-type: none"> <li>Integrated into the sloped roof ideally as a false dormer.</li> <li>The base of the internal space must be flat and at least 45cm below the entrance hole.</li> <li>There must be an easy-to-grip platform outside the hole for fledglings to stand.</li> <li>The box must not allow owls access into the garage/ carport inside the building to prevent disturbance by human activity.</li> <li>A closed access hatch into the box from inside the building is advised, to allow essential clearance of built up nest material or waste.</li> </ul> |
| <p>Barn Owl Trust Nest Box</p>                            | Barn Owl | $\geq 5\text{m}$ | <ul style="list-style-type: none"> <li>Mounted on a 'telegraph style' pole.</li> <li>Best positioned facing open grassland for foraging opportunities and away from the prevailing weather.</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                      |

## 12.4 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 12.4.1* (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 12.4.1. 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, tress, 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.                                   |
|  | 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.                                                 |