

# Horse & Groom, Sudbury, Suffolk, CO10 2TU

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## Preliminary Roost Assessment Report

October 2021

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Hampshire Ecological Services Ltd  
*Consultant Ecologists*

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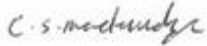


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**Preliminary Roost Assessment Report**  
**Horse & Groom, Sudbury, Suffolk, CO10 2TU**  
**for**  
**Cordage 32 Ltd**

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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.

# Contents

<b>1</b>	<b>EXECUTIVE SUMMARY .....</b>	<b>5</b>
<b>2</b>	<b>INTRODUCTION.....</b>	<b>7</b>
2.1	GENERAL .....	7
2.2	SITE DESCRIPTION .....	7
2.3	PROPOSED ACTIVITIES .....	7
2.4	CURRENT PLANNING STATUS.....	7
2.5	OBJECTIVES OF THE SURVEY AND REPORT.....	7
2.6	STRUCTURE OF THIS REPORT .....	8
<b>3</b>	<b>METHODS.....</b>	<b>9</b>
3.1	DESK STUDY.....	9
3.2	FIELD SURVEY .....	9
3.2.1	<i>Date(s), times and weather</i>	9
3.2.2	<i>Personnel</i>	9
3.2.3	<i>Assessment of current bat roost suitability</i>	10
3.2.4	<i>Systematic inspection for bats or evidence of bats</i>	10
<b>4</b>	<b>RESULTS.....</b>	<b>13</b>
4.1	DESK STUDY.....	13
4.1.1	<i>Designated sites</i>	13
4.1.2	<i>Bats</i>	13
4.2	SURVEY OF BUILDINGS .....	14
4.3	EXTERNAL POTENTIAL BAT ACCESS POINTS.....	17
4.3.1	<i>Main pub</i>	17
4.3.2	<i>Outbuilding</i>	17
4.4	COMMUTING AND FORAGING HABITAT.....	18
4.5	EVIDENCE OF BATS.....	18
<b>5</b>	<b>INTERPRETATION AND EVALUATION .....</b>	<b>19</b>
5.1	CONSTRAINTS .....	19
5.1.1	<i>Constraints on survey data</i>	19
5.1.2	<i>Constraints on the mitigation, compensation and enhancement measures</i>	19
5.2	POTENTIAL IMPACTS OF THE PROPOSED DEVELOPMENT ON BAT ROOSTS.....	19
5.2.1	<i>Desk study</i>	19
5.2.2	<i>Commuting and foraging bats</i>	20
5.2.3	<i>Buildings</i>	20
	Main pub	20
	Outbuilding	20
5.3	ALTERNATIVE ROOSTING POTENTIAL .....	20
5.4	SURVEY REPORT EXPIRY.....	21
5.5	FURTHER SURVEY .....	21
5.6	OUTLINE MITIGATION AND ENHANCEMENT MEASURES .....	21
5.6.1	<i>General</i>	21
5.6.2	<i>Tile strip</i>	22
5.6.3	<i>Lighting</i>	22
5.6.4	<i>Planting</i>	23
5.6.5	<i>Bird boxes</i>	23

5.6.6	<i>Insects</i>	24
5.7	REQUIREMENT FOR HABITATS REGULATIONS LICENCE.....	25
<b>6</b>	<b>FIGURES .....</b>	<b>27</b>
<b>7</b>	<b>REFERENCES .....</b>	<b>30</b>
<b>8</b>	<b>APPENDIX A: LEGISLATION .....</b>	<b>31</b>
8.1	LEGAL CONTEXT .....	31
8.2	NATIONAL PLANNING CONTEXT .....	31
8.2.1	<i>General</i>	31
8.2.2	<i>National Planning Policy Framework (NPPF)</i>	32
<b>9</b>	<b>APPENDIX B: BAT ECOLOGY .....</b>	<b>34</b>
<b>10</b>	<b>APPENDIX C: SEED MIX COMPOSITION.....</b>	<b>35</b>
<b>11</b>	<b>APPENDIX D: OTHER ENHANCEMENTS FOR WILDLIFE .....</b>	<b>37</b>
11.1	ORNAMENTAL PLANTING TO ATTRACT WILDLIFE .....	37
11.2	BIRD BOXES.....	39

1. This report provides details from an initial bat survey carried out by Hampshire Ecological Services Ltd for Cordage 32 Ltd in connection with a proposal to convert the outbuilding into a dwelling at Horse & Groom, Sudbury, Suffolk, CO10 2TU (approximate Ordnance Survey Grid Reference TL876416). The site consists of a two-storey pub with an outbuilding and carpark to the rear and a small patio area to the south-west. The location of the site is shown in *Figures 1 and 2* and a plan of the site is shown in *Figure 3* (see *Section 6*).
2. An internal and external survey of the buildings was carried out by licensed bat ecologist John Poland CEnv MCIEEM CBiol MRSB on the 19<sup>th</sup> March 2021.
3. The main pub is a two-storey brick building with pitched slate roof with a single-storey flat roof extension on the north-west elevation and another single-storey pitched roof extension on the south-west elevation. Full details of the building are given in *Table 4.2.1* in *Section 4.2*. No evidence of bats was found during the survey. Due to the lack of suitable roosting features on the building, and limited foraging habitat within close proximity, this building has negligible bat roost suitability. Therefore, if the proposed works effect the building, these may commence without further survey or constraints regarding bats (subject to any planning constraints).
4. The outbuilding is a single-storey brick building spilt into two sections with different height pitched tiled roofs. Full details of the building are given in *Table 4.2.1* in *Section 4.2*. Details of potential bat access points are illustrated in *Image 4.3.2.1*. No evidence of bats was found during the survey. The lack of evidence in combination with the built-up and well-lit environment with limited foraging habitat within close proximity, this building has low-negligible bat roost suitability (closer to negligible). However, as a precautionary measure given any delay in implementing the planning consent, the tiles should be stripped under ecological supervision or a pre-works emergence check undertaken to ensure protected species compliance.
5. The vegetation in the neighbouring gardens provides limited sheltered bat foraging habitat in the immediate vicinity of the buildings. The area is well-lit and built-up but the vegetation connects to a limited network of hedges and tree-lines through gardens and urban green spaces. These in turn connect the site to areas of high quality foraging habitat in the wider landscape such as nearby woodland and waterways. These areas will be unaffected by the development and all links will be maintained.
6. 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 retained or planted vegetation, and security lights should operate on a timer, to avoid any negative impact on bats. Any lighting installed should avoid spillage of greater than 1 lux onto any retained or planted vegetation. The use of non-UV LED lighting (preferably using warm spectrum wavelengths) is strongly recommended to avoid the most deleterious impacts of lighting on biodiversity and bats in particular.

7. No other ecological constraints were found during the survey.
8. It is a requirement under national planning policy to provide ecological enhancements to sites requiring planning permission. Therefore, the following outline enhancements are proposed:
  - The landscaping on site will be enhanced to increase the biodiversity for wildlife. This will include the following:
    - hedgerows will be planted around all edges of the site using native species shown in *Section 5.6.4*;
    - all new hedges will be under-sown with Emorsgate seed mix EH1 Hedgerow mixture (or equivalent);
    - the lawns will be sown with species-rich seed mix for lawns such as Emorsgate seed mix EL1 or EG1 (or equivalent)
  - The site will be enhanced for birds as follows:
    - one multi-chamber box suitable for house sparrows, such as a Vivara Pro WoodStone House Sparrow Nest Box; and
    - two or more swift boxes, such as Ibstock Eco-habitat, either incorporated into the build structure or mounted on the buildings.
  - The site will also be enhanced for invertebrates by providing at least two insect hotels or towers. These should be in a sunny location close to vegetation. Examples are shown in *Table 5.6.6.1*.
9. The proposed bird boxes are summarised in *Table 5.6.5.1*
10. 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.
11. 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 elapses it may be advisable to conduct further survey work to obtain up-to-date information, thereby ensuring protected species compliance.
12. 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 three local nature reserves within 2km of the site. None of these will be directly affected by this small-scale development and all links will be maintained.
13. There have been two bat European Protected Species (EPS) licences granted within 2km of the site, which are both *c.*775m west of the site. It is unlikely that the current proposals will impact these bat populations.

## 2 INTRODUCTION

### 2.1 General

This report provides information from an initial bat survey carried out by Hampshire Ecological Services Ltd for Cordage 32 Ltd in connection with a proposal to convert the outbuilding into a dwelling at Horse & Groom, Sudbury, Suffolk, CO10 2TU (approximate Ordnance Survey Grid Reference TL876416). The location of the site is shown in *Figures 1 and 2* in *Section 6*.

### 2.2 Site description

The site consists of a two-storey pub with an outbuilding and carpark to the rear and a small patio area to the south-west. The buildings surveyed is shown on the building plan in *Figure 3* in *Section 6*.

The site lies on the north-west side of East Street on the junction with Upper East Street, in the centre of Sudbury. The immediate surroundings consist of residential housing. In the wider landscape the urban centre of Sudbury is to the south-west, the industrial area to the north-east and a cemetery to the east. In addition, the River Stour is c.625m to the west.

### 2.3 Proposed activities

This survey was carried out in connection with a proposal to convert the outbuilding into a dwelling.

### 2.4 Current planning status

Planning permission is being applied for at this site.

### 2.5 Objectives of the survey and report

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

The survey and the report writing were carried out in accordance with *Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3<sup>rd</sup> edition* (Collins, 2016). 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.
- *Section 7* lists the references;
- *Appendix A* gives information on relevant legislation;
- *Appendix B* gives information on bat ecology;
- *Appendix C* lists the proposed seed mixes composition.
- *Appendix D* lists other enhancements for wildlife (for information, not part of the planning application).



### 3 **METHODS**

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#### 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. The search area is also 500m for County Wildlife Sites (CWS) 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 Suffolk Biodiversity Information Service (SBIS) has not been commissioned by the client in relation to this site.

#### 3.2 **Field survey**

##### 3.2.1 *Date(s), times and weather*

An external and internal inspection of the buildings was conducted during the daytime on the 19<sup>th</sup> March 2021. The weather conditions during the survey were mild and dry.

##### 3.2.2 *Personnel*

The initial survey was carried out by John Poland CEnv MCIEEM CBiol MRSB who is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). He has over 20 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). He is a multi-species licence holder and holds a Natural England licence allowing the disturbance and handling of bats for the purposes of survey in all counties of England (current Bat Class Licence Registration number 2015-11159-CLS-CLS).

This report was reviewed by Victoria Russell MCIEEM who is a full member of the CIEEM and multi-species licence holder with over 23 years of experience in ecological consultancy, with a second review by John Poland CEnv MCIEEM CBiol MSB.

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 was 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
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>i.e.</i> 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>i.e.</i> not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland) or a patch of scrub.
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only)	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. 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.  High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland.  The site is close to and connected to known roosts.

## 4 RESULTS

### 4.1 Desk study

#### 4.1.1 Designated sites

According to the *Multi-Agency Geographic Information for the Countryside* website ([www.magic.gov.uk](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	-	-
National	SSSI	-	-
		-	-
	NNR	-	-
County	LNR	Shawlands Wood	c.1271m east
		Sudbury Common Lands	c.658m west
		The Railway Walks	c.1206m west
Local	SINC	-	-
	Ancient woodland	-	-

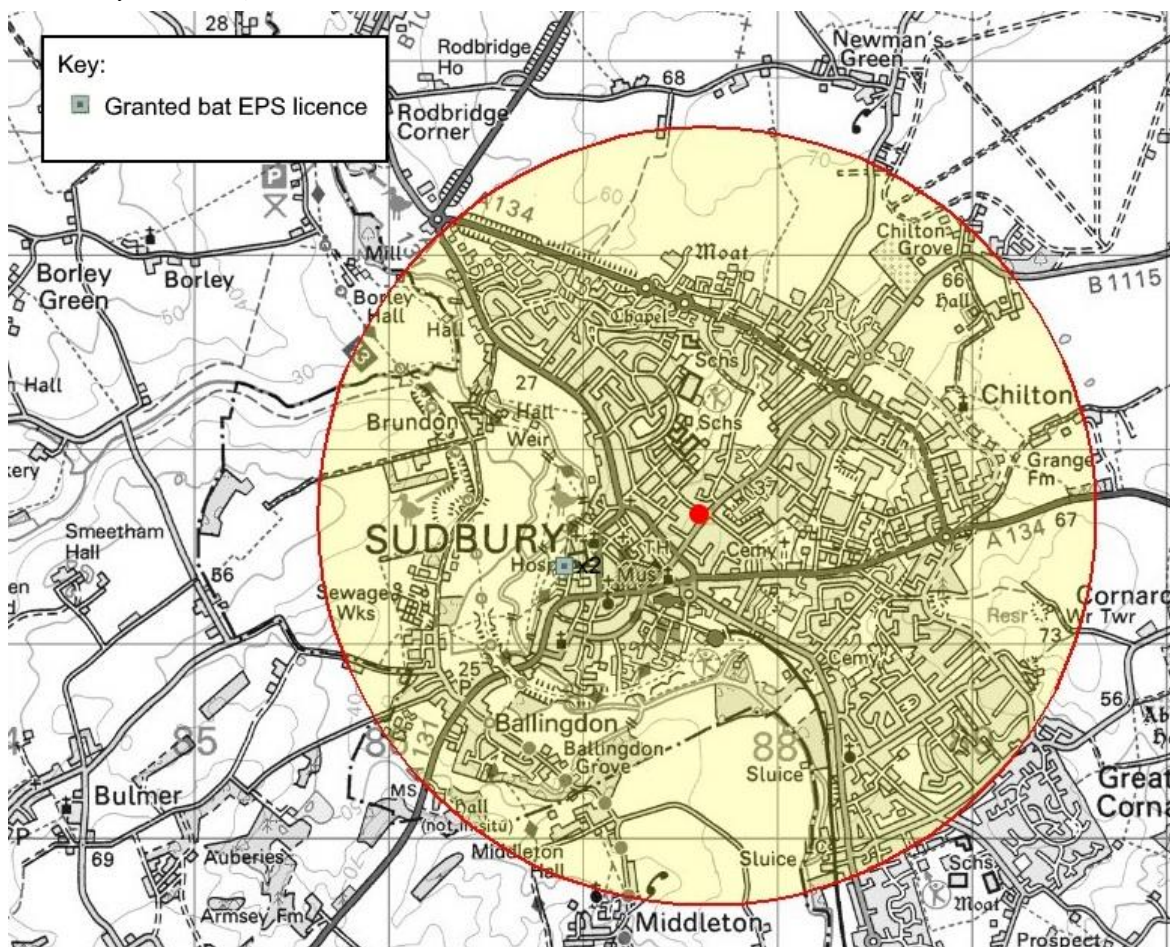
#### 4.1.2 Bats

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

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

Species subject of licence	Type of habitat affected	Date licence was granted	Distance & direction from site
Soprano pipistrelle, brown long-eared	Resting place and breeding site	26/09/2016	c.775m west
Soprano pipistrelle, brown long-eared	Resting place and breeding site	26/08/2017	

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



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## 4.2 Survey of buildings

The construction details and photographs of the buildings are summarised in *Table 4.2.1*.

*Table 4.2.1. Summary of the buildings construction details.*


Type/Name	Main pub	Outbuilding
<b>Description</b>	A two-storey brick building with pitched slate roof with a single-storey flat roof extension on the north-west elevation and another single-storey pitched roof extension on the south-west elevation.	A single-storey brick building spilt into two sections with different height pitched tiled roofs.
<b>No. of storeys</b>	1 and 2	1
<b>Roof type</b>	Pitched and flat	Pitched
<b>Roof cladding</b>	Slate and felt	Tile
<b>Ridge</b>	Slate	Tile
<b>Wall type</b>	Rendered	Brick

<b>Exterior</b>	Soffits (all elevations), chimneys, lead-flashing	Bargeboards (North-east and south-west elevations), wooden cladding (north-east elevation)
<b>Photos</b>	<p>North-east elevation</p> 	<p>North-east elevation</p> 
	<p>North-west elevation</p> 	<p>North-west elevation</p> 
	<p>South-east elevation</p> 	<p>South-east elevation</p> 
	<p>South-west elevation</p> 	<p>South-west elevation</p> 

<b>Building dimensions</b>	c.17.5m wide x c.18.5m long	c.6m wide x c.17.5m long
<b>Roof void description</b>	Main roof void: partially cluttered with structural beams and the floor is lined with fibreglass insulation.	Northern roof void: unknown – no access
	North-west extension: no roof void	Southern roof void: open to the building
	South-west extension: unknown - no access	
<b>Frame</b>	Wooden beams and ridge beam	Wooden beams and ridge beam
<b>Roof lining</b>	Bitumen roofing felt	Northern roof void: unknown – no access
		Southern roof void: none
<b>Roof void dimensions</b>	Main roof void: c.9.5m wide x c.12m long	Northern roof void: c.6m wide x c.8m long
		Southern roof void: open to the building
	North-west extension: no roof void South-west extension: c.9m wide x c.6.5m long	
<b>Roof void height</b>	Main roof void: c.2.5m	Northern roof void: unknown – no access
	North-west extension: no roof void	Southern roof void: open to the building
	South-west extension: unknown - no access	





<b>Potential roosting locations</b>	Against the ridge beam and between the roof tiles and the internal lining. 	Against the ridge beam
<b>Bat evidence</b>	None	None
<b>Bat suitability</b>	<b>Negligible</b>	<b>Low-negligible</b>
<b>Further surveys needed?</b>	None	Precautionary ecological supervision during tile strip or pre-works emergence check

### 4.3 *External potential bat access points*

#### 4.3.1 *Main pub*

The majority of the roof appears well-sealed and in good condition. However, there are a few potential bat access points into the roof voids.

Due to the lack of these potential access points, and suitable roosting locations, the building is classed as having negligible suitability to be used by roosting bats, following the criteria in *Table 3.2.4.1*.

#### 4.3.2 *Outbuilding*

There are multiple potential bat access points (mostly missing tiles) into the building, as well as some exterior features that also provide potential roosting locations for bats. The locations and details of these are illustrated in *Image 4.3.2.1*.

Even though there is the presence of these potential access points, and suitable roosting locations, the building is classed as having low-negligible suitability (closer to negligible) for roosting bats due to the unsuitable commuting and foraging habitat surrounding the site, following the criteria in *Table 3.2.4.1*.

*Image 4.3.2.1. Location of bat access points on the south-east elevation of the outbuilding.*



#### **4.4** *Commuting and foraging habitat*

The vegetation in the neighbouring gardens provides limited sheltered bat foraging habitat in the immediate vicinity of the buildings. The vegetation connects to a limited network of hedges and tree-lines through gardens and urban green spaces. These in turn connect the site to areas of high quality foraging habitat in the wider landscape such as nearby woodland and waterways.

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

#### **4.5** *Evidence of bats*

No bats or evidence of bats was found.

#### **4.6** *Other ecological constraints*

No other ecological constraints were found during the survey.

## 5 ***INTERPRETATION AND EVALUATION***

### 5.1 ***Constraints***

#### 5.1.1 *Constraints on survey data*

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

The site visit was undertaken in March, outside the active bat season. However, it is possible to assess the buildings and their suitability for roosting bats.

The hayloft in the outbuilding could not be accessed due to the outside hatch being locked and no stairs to provide access elsewhere. However, this is not thought to have affected the outcome due to the unsuitable surrounding area.

The lower extension on the main pub could not be accessed due to having no access. This is not thought to have affected the outcome as the slates on this section are tightly sealed.

#### 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. In addition, there are no trees on site that would be suitable for bird and/ or bat boxes to be attached and the surrounding habitat is also unsuitable for most protected species so would be unsuitable to provide enhancements.

### 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 three local nature reserves within 2km of the site. None of these will be directly affected by this small-scale development and all links will be maintained.

According to the *Multi-Agency Geographic Information for the Countryside* website ([www.magic.gov.uk](http://www.magic.gov.uk)), there have been two bat European Protected Species (EPS) licences granted within 2km of the site, which are both c.775m west of the site. It is unlikely that the current proposals will impact these bat populations.

### 5.2.2 *Commuting and foraging bats*

The vegetation in the neighbouring gardens provides limited sheltered bat foraging habitat in the immediate vicinity of the buildings. The vegetation connects to a limited network of hedges and tree-lines through gardens and urban green spaces. These in turn connect the site to areas of high quality foraging habitat in the wider landscape such as nearby woodland and waterways. Woodland and waterways provide high quality foraging habitat for a number of different species of bat. These areas will be unaffected by the development and all links will be maintained.

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 retained or planted vegetation, and security lights should operate on a timer, to avoid any negative impact on bats. Any lighting installed should avoid spillage of greater than 1 lux onto any retained or planted vegetation. The use of non-UV LED lighting (preferably using warm spectrum wavelengths) is strongly recommended to avoid the most deleterious impacts of lighting on biodiversity and bats in particular.

### 5.2.3 *Buildings*

#### *Main pub*

Due to no bats or evidence of bats being found, the limited number of suitable roosting features on the building and the limited suitability of foraging habitat nearby, the building has negligible bat roost suitability.

Therefore, if the proposed works effect the building, these may commence without further survey or constraints regarding bats (subject to any planning constraints).

#### *Outbuilding*

Due to no bats or evidence of bats being found, the low number of suitable roosting features on the building and the limited suitability of foraging habitat nearby, the building has low-negligible bat roost suitability.

However, as a precautionary measure, the tiles should be stripped under ecological supervision and/or a pre-works emergence check should be undertaken.

### 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 elapses 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 March 2022.

## 5.5 *Further survey*

No further surveys are proposed.

## 5.6 *Outline mitigation and enhancement measures*

### 5.6.1 *General*

From the 19<sup>th</sup> February 2019, the Government published the revised National Planning Policy Framework (Ministry of Housing, Communities and Local Government, 2019). 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 March 2012. 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 net gain will be in the form of planting to enhance the site for bats (and other wildlife), lighting, new bird nesting provision and insect hotels and towers. 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 mitigation and enhancement measures are subject to supplied plans.

### 5.6.2 *Tile strip*

The removal of the roof coverings should ideally commence in either September/October before bats have begun to hibernate; or in March/ April after bat have come out of hibernation. However, work at any time of year may be acceptable providing the work is carried out in mild spells (above 5°C) in winter or a pre-works check does not suggest the building is now a bat roost. The slates and other affected features with bat roost suitability (such as soffits and lead-flashing) will be removed carefully by hand under strict ecological supervision to ensure bats are not using these areas.

If bats, or evidence of bats, are found during the destructive search, all work will stop and a bat licence from Natural England will be applied for.

In the event that an injured bat is encountered during the destructive search, it will be taken to a veterinary surgeon so that the extent of its injuries can be assessed. If not life-threatening it will be taken to one of Hampshire Bat Group's designated carers.

Once the supervising ecologist is satisfied that all affected areas that may provide bat roosting opportunities have been safely searched and removed or made unsuitable for bat habitation, the remaining works will proceed without further supervision by a suitably qualified ecologist. The action to take if any bats are discovered during unsupervised works will also be made clear.

### 5.6.3 *Lighting*

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 retained or planted vegetation (particularly the new hedge) and any lighting installed should avoid spillage of greater than 1 lux near to or directly onto the vegetation so that light disturbance is not a problem. 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 are able to be separately aimed.
- **Timers** If the light is fitted with a timer this should be adjusted to the minimum to reduce the amount of 'lit time'.
- **Alternatives** The requirement for security lighting in each instance should be carefully considered and only used where absolutely necessary to deter crime.

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

#### 5.6.4 *Planting*

A new hedge will be planted to separate the development site from the pub. This will 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.

All new hedges will be under-sown with Emorsgate seed mix EH1 Hedgerow mixture (or equivalent). This will provide cover for wildlife such as hedgehogs as well as providing an attractive feature while the new hedges become established.

Areas of amenity grassland (verges and lawns) will be sown with a species-rich seed mix for lawns such as Emorsgate seed mix EL1 and EG1 (or equivalent). This will increase the plant diversity on site.



The seed mix EL1 will be sown mainly around the edges of lawns and on verges, where it can be mown less frequently without interfering with the amenity value of the grassland. The seed mix EG1, as a purely grass mix, will be sown in the centre of the grassland.

Details of the species present in the proposed seed mixes are given in *Appendix C*.

#### 5.6.5 *Bird boxes*

Bird boxes will be attached to the exterior walls of the main pub and outbuilding to provide new nest sites. The bird boxes are detailed in *Table 5.6.5.1*.

Table 5.6.5.1. Bird boxes to be erected within the site with additional details on siting them to increase chances of occupancy.

Type & quantity	Typical species	No.	Height	Additional information
Vivara Pro WoodStone House Sparrow Nest Box 	House sparrows	1	≥ 2m	<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>
Ibstock Eco-habitat 	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>






### 5.6.6 Insects

At least one insect hotel or tower should be installed in the garden. This should be 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 5.6.6.1 (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 5.6.6.1. Examples of insect hotels and towers that could be erected on site.

Type	Species	No.	Height	Additional information
 <p>BeePot Bee Hotel</p>	Solitary bees	2	>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
 <p>Insect Tower</p>	Butterflies, solitary bees, lacewings and ladybirds	2	>1m from the ground	The different sections of the Insect Tower have been designed to provide a habitat for a variety of insect species. Suitable for mounting on buildings, trees or fences.
 <p>Urban Bee Nester</p>	Solitary bees and a range of other insects	2	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.
 <p>Urban Insect Hotel</p>	A wide range of insects	2	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.
 <p>Bee and Bug Biome</p>	A wide range of insects	2	>1m from the ground	Best placed near vegetation. Provides plenty of nooks and crannies for insects such as ladybirds, earwigs and lacewings.

## 5.7 Requirement for Habitats Regulations licence

A bat Licence from Natural England is not necessary before work commences on the pub or outbuilding. In the unlikely event that bats are found either during the pre-works emergence check or ecological supervision, work will stop and a bat licence will be applied for.

A licence permits activities that may otherwise be offences under the *Conservation of Habitats & Species Regulations 2017*, such as the destruction of roost sites.

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

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

Natural England takes a minimum of 30 working days to process licence applications following receipt of all the relevant documentation. This includes an application form, a Reasoned Statement 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.*

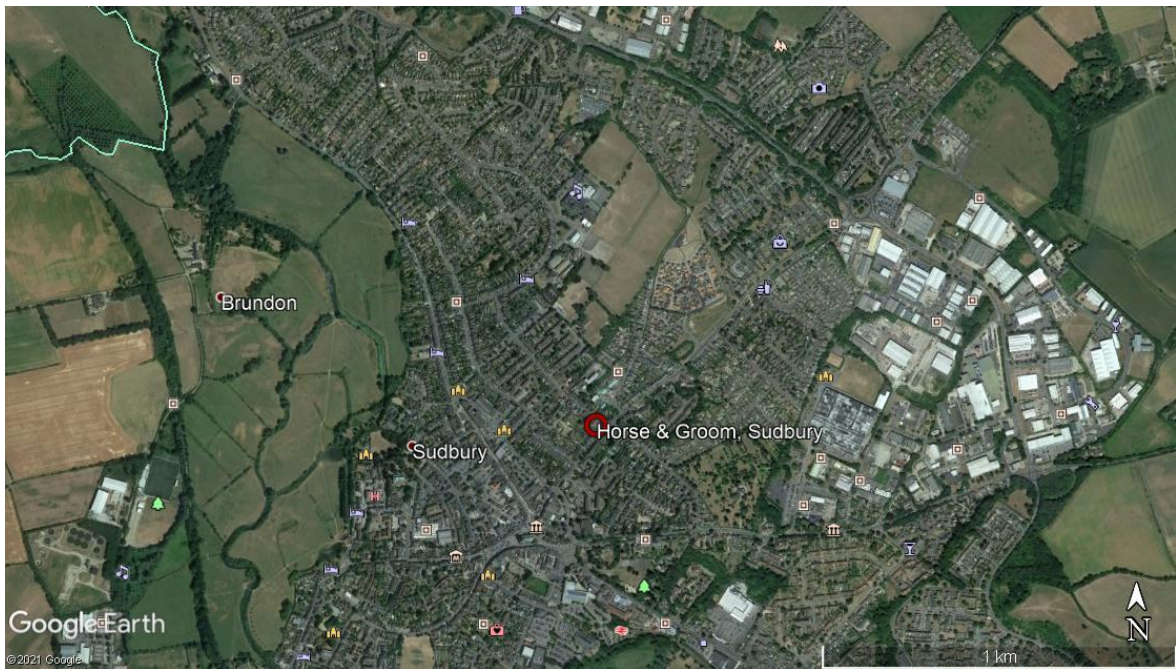
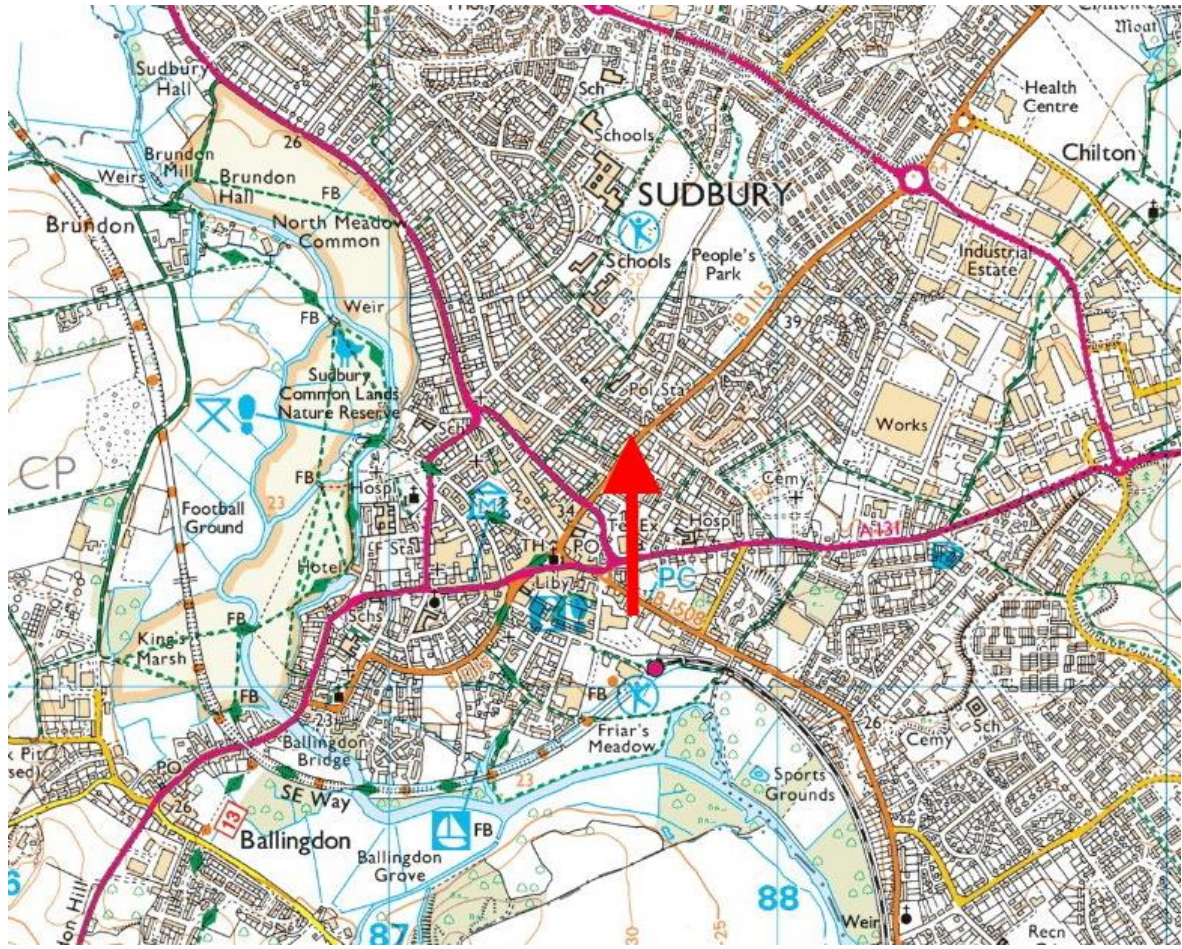


Figure 2. An Ordnance Survey map showing the site location, as indicated by the red arrow.



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



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## 8.1 *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).

## 8.2 *National planning context*

### 8.2.1 *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.

### 8.2.2 *National Planning Policy Framework (NPPF)*

From the 19<sup>th</sup> February 2019, 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 March 2012. It states: "*at the heart of the Framework is a presumption in favour of sustainable development (paragraph 11).*"

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

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

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

Planning policies and decisions should contribute to and enhance the natural and local environment by “*protecting and enhancing valued landscapes, sites of biodiversity or geological value and soils (in a manner commensurate with their statutory status or identified quality in the development plan)*” and “*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*”.

If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.

Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted.

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



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

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

The NPPF also encourages "*minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*" and aims to "*promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity*". This applies to non-statutory designated sites including Sites of Importance for Nature Conservation (SINCs) and equivalent county wildlife sites.

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

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

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

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

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

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

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

**APPENDIX C: SEED MIX COMPOSITION**

<b>EH1</b>	
<b>Species</b>	<b>Common Name</b>
<b>Wild Flowers</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>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

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**11 APPENDIX D: OTHER ENHANCEMENTS FOR WILDLIFE**

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

**11.1 Ornamental planting to attract wildlife**

Plants that attract insects are generally helpful and trees, shrubs and flowering plants can provide cover for wildlife. Therefore, to enhance the ecological value of the site, any replacement landscaping in the gardens should incorporate a mixture of native and non-native species of value to wildlife. This mixture will encourage a diversity of insects, which in turn will attract different species. Flowers that bloom throughout the year, including both annuals and herbaceous perennials, are beneficial. Night-flowering blossoms attract night-flying insects, which in turn provide prey for bats. Examples of suitable plant species that could be planted to encourage wildlife include those in *Tables 11.1.1.* and *11.1.2.* Approximate flowering periods are listed in the tables.

Table 11.1.1. Native and non-native species that could be incorporated into the landscaping.

<b>Species</b>	<b>Common Name</b>	<b>Approximate flowering period</b>
<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</i> species	Mallow	Summer to autumn
<i>Matthiola longipetala</i>	Night-scented stock	Summer
<i>Myosotis sylvatica</i>	Wood forget-me-not	Spring
<i>Nicotiana</i> species	Tobacco plant	Summer
<i>Oenothera</i> species	Evening primroses	Summer to autumn
<i>Papaver rhoeas</i>	Corn poppy	Summer
<i>Phacelia</i> species	Phacelia	Summer to autumn
<i>Primula vulgaris</i>	Primrose	Spring
<i>Rosa</i> species	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</i> species	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</i> species	Vervain	Summer to autumn
<i>Viburnum lantana</i>	Wayfaring-tree	Spring to summer
<i>Viburnum opulus</i>	Guelder-rose	Summer




Table 11.1.2. 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</i> species	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</i> species	Bergamot	Summer to early autumn
<i>Nicotiana</i> species	Tobacco-plant	Spring to autumn
<i>Oenothera</i> species	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

## 11.2 Bird boxes

To maximise the number of species of bird attracted, several different types of bird boxes will be placed in various locations within the site. It is not advisable to place many boxes with identical dimensions, because individuals of the same species may not tolerate each other's presence. The possible bird boxes are summarised in *Table 11.2.1*.

Table 11.2.1. Bird boxes with additional details on siting them to increase chances of occupancy.

Type & quantity	Typical species	Height	Additional information
Vivara Pro Seville 28mm Woodstone Nest Box 	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>
Vivara Pro Seville 32mm Woodstone Nest Box 	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>
Vivara Pro Barcelona WoodStone Open Nest Box 	Robins, wrens	$\leq 2m$	<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>