



# WOLD ECOLOGY LTD

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## Manor Farm, Haisthorpe

Preliminary Bat Roost Assessment, August 2023.

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|---|---|------------|
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### **DOCUMENT CHECKING**

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| 1         | 16/08/2023 | Draft for internal review.                  | Abi Catherall M Sc.     |
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## 1.0 EXECUTIVE SUMMARY

1.1 In August 2023, Wold Ecology Ltd was commissioned by Mark Warkup to undertake a preliminary bat roost assessment at Manor Farm, Haisthorpe. The site is located at approximate National Grid Reference TA 12916 64352, in East Yorkshire.

1.2 The preliminary bat roost assessment results are summarised below:

|   |                 | Application Site Status   |
|---|-----------------|---|
| <b>Proceed with caution, timing constraints</b> | <b>Birds</b>    | Birds are afforded various levels of protection and levels of conservation status on a species by species basis. The most significant general legislation for British birds lies within Part 1 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation, it is an offence to, kill, injure or take any wild bird, take, damage or destroy the nest of any wild bird while that nest is in use or being built, take or destroy an egg of any wild bird. All nests should remain undisturbed and intact until after the breeding bird season – mid February to early September. Planning consent for a development does not provide a defence against prosecution under this act.<br>No bird's nests were observed in the workshop (refer to section 8.0). |
| <b>No further surveys required – Workshop</b>   | <b>Bats</b>     | There was no evidence to suggest the presence of bats and in its current condition; it is extremely unlikely that the workshop supports a bat roost. It is considered that the proposed development will have none/negligible impacts on bat species.   |
| <b>No constraints</b>                           | <b>Barn owl</b> | There was no evidence of barn owls <i>Tyto alba</i> roosting in the workshop. There was no suitable access for barn owls to roost in the workshop. No further surveys recommended.  |

1.3 Bat roosts are protected throughout the year, whether bats are present or not.

1.4 All bats and their roosts are fully protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000) and are further protected under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. Should any bats or evidence of bats be found prior to or during development, work must stop immediately, and Natural England contacted for further advice. This is a legal requirement under the aforementioned acts and applies to whoever carries out the work.

1.5 Planning consent for a development does not provide a defence against prosecution under this act.

1.6 Habitat enhancement for bats should be implemented as outlined in section 7.0, in order to improve foraging opportunities to bats in the local area.

1.7 The data collected to support the output of this report is valid for one year. This report is valid until **August 2024**. After this time, additional surveys need to be undertaken to confirm that the status of the workshop, as a bat roost, has not changed.

## 2.0 INTRODUCTION

### 2.1 Background Information

2.1.1 In August 2023, Wold Ecology Ltd was commissioned by Mark Warkup to undertake a preliminary bat roost assessment at Manor Farm, Haisthorpe. The site is located at approximate National Grid Reference TA 12916 64352, in East Yorkshire.

2.1.2 The Application Site comprises the following:

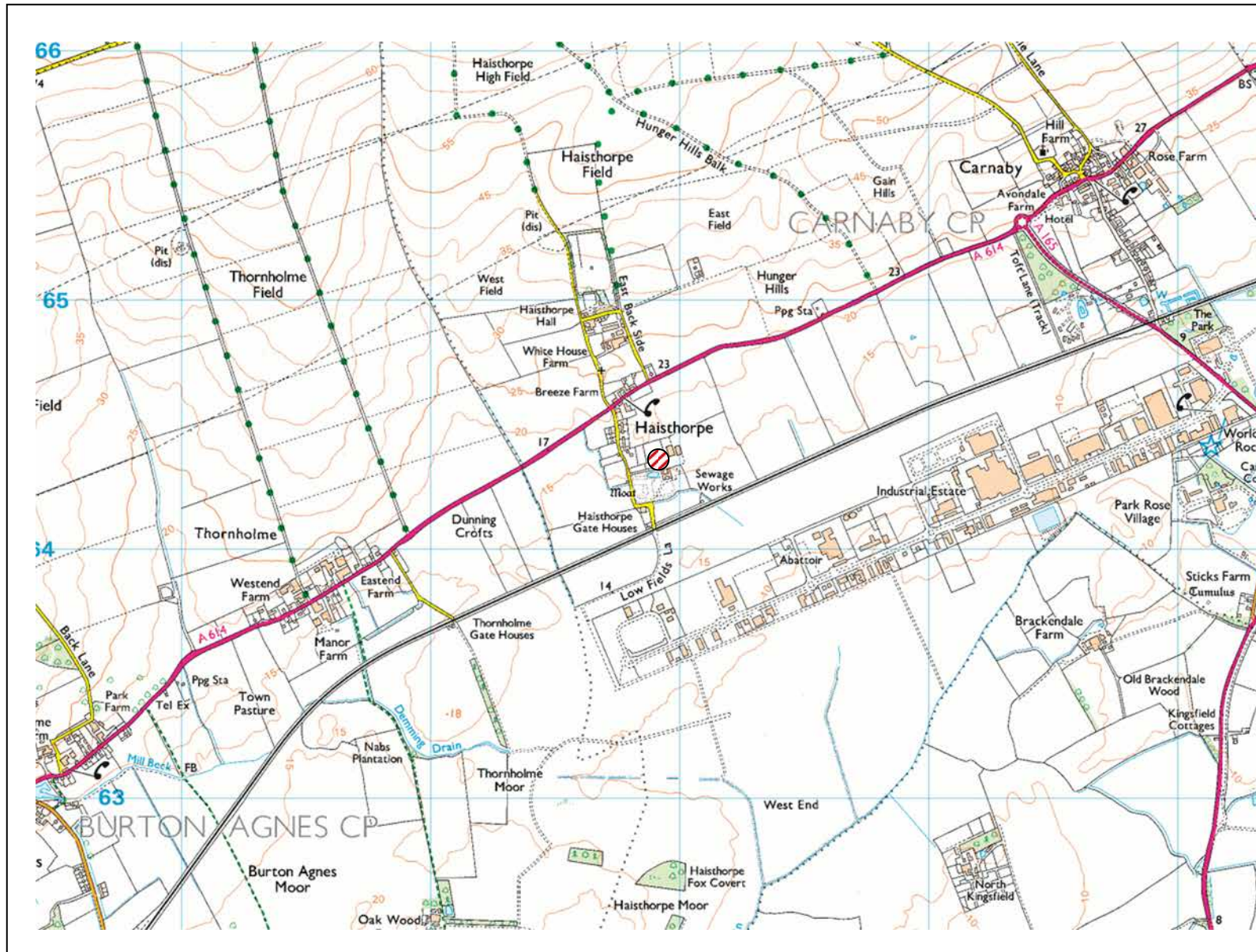
- Workshop

2.1.3 The proposed development includes the demolition and rebuild of the workshop.

### 2.2 Survey Objectives

2.2.1 The site was visited and assessed on 14<sup>th</sup> August 2023; this was to determine whether the workshop on site contained bat roosts or was suitable to support roosting bats during other times of the year. The work involved the following elements:

| Survey objective  | Yes/No | Comments  |
|---|--------|---|
| <b>Determine presence/absence of roosting bats</b>              | Yes    | A daytime, visual inspection for bat roosts and roosting bats.<br>Internal inspection of all roof voids.<br>An assessment of the on-site suitability for bats and the likelihood of their presence.<br>Desktop study. |
| <b>Determine bat usage e.g.s maternity roost, summer roosts</b> | Yes    | An assessment of whether bats are a constraint to the development.<br>Endoscope survey (where accessible)   |
| <b>Identify swarming, commuting, or mating sites</b>            | No     | N/A   |
| <b>Other</b>  | Yes    | The production of a non-technical summary of the legal implications behind bat presence.<br>Report the findings of the field survey work and identify recommendations for a potential mitigation strategy.            |
| <b>Birds</b>  | Yes    | The visual inspection also recorded any other visible active/disused nests and bird activity within the building.   |



NORTH 

Scale: 1:25,000

Drawing title:  
Location Map

KEY

 Application Site

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## **3.0 BACKGROUND TO SPECIES**

### **3.1 Ecological overview**

3.1.1 There are seventeen species of bat that currently breed in the UK. There is a wide variety of roost type and ecological characteristics between species and for this reason it is necessary to determine the species of bat and the type of roost resident in a structure prior to development. Roosts are utilised by different species of bat, at different times of year for different purposes i.e. summer, breeding, hibernating, and mating etc. (for more detailed information see section 9.0).

3.1.2 Bat populations have undergone a significant decline in the latter part of the 20<sup>th</sup> century; the main factors cited for causing loss and decline include:

- A reduction in insect prey abundance, due to high intensity farming practice and inappropriate riparian management.
- Loss of insect-rich feeding habitats and flyways, due to loss of wetlands, hedgerows, and other suitable prey habitats.
- Loss of winter roosting sites in buildings and old trees.
- Disturbance and destruction of roosts, including the loss of maternity roosts due to the use of toxic timber treatment chemicals.

### **3.2 Legal Framework**

3.2.1 A bat survey is required prior to planning permission being granted for a development, in order to prevent the potential disturbance, injury and /or death of bats and the disturbance, obstruction and/or destruction of their roosting places. This is in compliance with the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, provision 41 states an offence is committed if a person:

- (a) Deliberately captures, injures, or kills any wild animal of a European protected species (i.e. bats),
- (b) Deliberately disturbs wild animals of any such species,
- (c) Deliberately takes or destroys the eggs of such an animal, or
- (d) Damages or destroys a breeding site or resting place of such an animal.

3.2.2 Section 9 of the Wildlife and Countryside Act (1981) states:

- It is an offence for anyone without a licence to kill, injure, disturb, catch, handle, possess or exchange a bat intentionally. It is also illegal for anyone without a licence to intentionally damage or obstruct access to any place that a bat uses for shelter or protection.

3.2.3 Bat roosts are protected throughout the year, whether or not bats are occupying a roost site.

### **3.3 Planning Policy Guidance**

3.3.1 A bat survey is a requirement of the Local Planning Authority (LPA), as part of the planning application process. This is specified in the following legislation:

- National Planning Policy Framework (NPPF): Conserving and Enhancing the Natural Environment.

3.3.2 To protect and enhance biodiversity and geodiversity, plans should:

- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national

and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation.

- b) 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.
- c) Protect and enhance 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).
- d) recognise the intrinsic character and beauty of the countryside, and the wider benefits from natural capital and ecosystem services – including the economic and other benefits of the best and most versatile agricultural land, and of trees and woodland.
- e) Minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures.
- f) Prevent new and existing development from contributing to, being put at unacceptable risk from, or being adversely affected by, unacceptable levels of soil, air, water or noise pollution or land instability. Development should, wherever possible, help to improve local environmental conditions such as air and water quality, taking into account relevant information such as river basin management plans.

3.3.3 When determining planning applications, local planning authorities should apply the following principles:

- a) 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;
- b) 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.
- c) 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; and
- d) 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.

3.3.4 The LPA has to assess whether the development proposal would breach Article 12(1) of the Habitats Directive. If Article 12(1) would be breached, the LPA would have to consider whether Natural England was likely to grant a European protected species licence for the development; and in so doing the LPA would have to consider the three derogation tests:

- a) ‘Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment’.

In addition, the LPA must be satisfied that:

- (b) ‘That there is no satisfactory alternative’

- (c) ‘That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range’.

3.3.5 Relevant Case Law

- Woolley v Cheshire East Borough (2009).
- R. (Morge) v Hampshire County Council (2011).
- Prideaux v. Buckinghamshire County Council and Fcc Environmental UK Limited (2013).

3.3.6 The rulings summarise that if it is clear or perhaps very likely that the requirements of the Directive cannot be met because there is a satisfactory alternative or because there are no conceivable ‘other imperative reasons of over-riding public interest’ then the authority should act on that and refuse permission.’

3.3.7 The conclusion of the judgement is that LPAs must ensure that the option/alternative that best takes into account all the relevant considerations (not just EPS) should be the preferred option assuming that the other two tests specified in Article 16 (1) are also met.

3.3.8 The judgements also clarified that it was not sufficient for planning authorities to claim that they had discharged their duties by imposing a condition on a consent that requires the developer to obtain a licence from Natural England. Natural England considers it essential that appropriate survey information supports a planning application prior to the determination. Natural England does not regard the conditioning of surveys to a planning consent as an appropriate use of conditions.



## 4.0 ASSESSMENT METHODOLOGY

### 4.1 Status of species present in Yorkshire

| Bat Specie              | UK Status      | UK Distribution   | Yorkshire Distribution                                     |
|-------------------------|----------------|---|--|
| Common Pipistrelle      | Not threatened | Common & widespread   | Common & widespread.                                       |
| Soprano pipistrelle     | Not threatened | Common & widespread   | Less common than common pipistrelle but fairly widespread. |
| Nathusius's pipistrelle | Rare           | Restricted. Throughout British Isles.                       | Scarce, bat detector records only.                         |
| Brown long-eared        | Not threatened | Widespread  | Widespread.  |
| Daubenton's             | Not threatened | Widespread  | Widespread.  |
| Natterer's              | Not threatened | Widespread (except N & W Scotland)                          | Present  |
| Brandt's                | Endangered     | England and Wales   | Few confirmed records.                                     |
| Whiskered               | Endangered     | England, Wales, Ireland & S Scotland.                       | Present.   |
| Noctule                 | Vulnerable     | England, Wales, S Scotland.                                 | Widespread   |
| Leisler                 | Vulnerable     | Widespread throughout the British Isles, except N Scotland. | Rare (locally common in West Yorkshire).                   |
| Barbastelle             | Rare           | England.  | No records since 1950's.                                   |

Source - <http://www.yorkbats.freeseve.co.uk/bats.htm>

### 4.2 Data Review and Desk Study

4.2.1 Currently, there is no pre-existing information on bats at the site.

4.2.2 Wold Ecology employees, field surveyors and network of associate ecologists have recorded brown long-eared *Plecotus auritus*, noctule *Nyctalus noctula*, Natterer's *Myotis nattereri*, soprano pipistrelle *Pipistrellus pygmaeus* and common pipistrelle *Pipistrellus pipistrellus* within 5km of the Application Site. Wold Ecology bat records date from 2006 and include over 1500 bat activity surveys.

4.2.3 There are no known Natural England development licenses relating to bats within 2km of the Application Site (source – [www.magic.gov.uk](http://www.magic.gov.uk)).

### 4.3 Daytime and Visual Inspection

4.3.1 The daytime assessment identified whether the area had any signs of occupancy and/or bat usage. This took the form of a methodical search, both internally and externally, for actual roosting bats and their signs. Specifically, the visual survey involved:

- Assessment for droppings on walls, windowsills and in roof spaces.
- Scratch marks and staining on beams, other internal structures and potential entrance and exit holes.
- Wing fragments of butterfly and moth species underneath beams and other internal structures.
- The presence of dense spider webs at a potential roost can often indicate absence of bats.
- Assessment of crevices and cracks in the buildings to assess their importance for roosting bats.

#### 4.3.2 Summary of daytime inspection and visual survey

| Date of each survey visit   | Structure reference/location | Equipment used/available  | Weather   |
|---|------------------------------|---|---|
| 14/08/23  | Workshop                     | Binoculars, 1million candle power clu-lite torch, micro Dart endoscope, Dewalt DW03050 Laser Measure. 3.9m telescopic ladders | 19°C, 90% cloud. Beaufort 1, S. No recent rain. |
| <b>Comments (to include # of surveyors used for each visit):</b> 1 surveyor undertook the visual inspection.          |                              |   |   |
| <b>Personnel:</b><br>Chris Toohie (Class 2 bat license - 2019-44215-CLS-CLS and RC027) – 14 <sup>th</sup> August 2023 |                              |   |   |

#### 4.3.3 Personnel

|                        |   |                              |
|------------------------|---|------------------------------|
| Chris Toohie<br>MCIEEM | Project Manager of Wold Ecology with over 16 years' experience surveying bats. Chris has conducted over 950 bat activity surveys since 2006, held over 150 Natural England development licenses and is one of only 221 (January 2022) Natural England Registered Consultants who can hold a Bat Mitigation Class Licence. | RC027 and 2019-44215-CLS-CLS |
|------------------------|---|------------------------------|

## 5.0 RESULTS

### 5.1 Habitat description

5.1.1 The Application Site is located within the village of Haisthorpe, in a rural location. The Application Site is less than 0.25 ha and the studied building is immediately surrounded by residential dwelling and a farmyard. There are no other structures within the red line boundary which have bat roosting potential.

#### 5.1.2 Adjacent Landscapes

5.1.2.1 The village of Haisthorpe is surrounded by mixed agricultural land dominated by arable with grazed pastures. Woodland cover within 2km is limited and occurs as shelterbelts adjacent to farms and small holdings, semi natural woodland, and plantations. Whilst the Application Site is not directly connected to any optimum bat foraging habitat, connectivity within 500m is provided by hedgerows that bound most arable fields.

5.1.2.2 Wold Ecology concludes that the immediately adjacent habitats could be used by small numbers of commuting and foraging bats. These habitats are not extensive and are similar to surrounding village habitats and consequently, the Application Site and immediately adjacent habitats are not considered to be integral to the favourable conservation status of local bat populations.

#### 5.1.3 Habitat Summary

5.1.3.1 A summary of the surrounding habitat is (radius of < 2km from the site):

- Buildings – farm buildings and residential properties
- Hedgerow
- Hedgerows with trees
- Mature trees and woodland
- Arable
- Mature private gardens
- Ponds and watercourses
- Grazed pasture
- Nabs Plantation
- Toft Lane Wood
- Haisthorpe Fox Covert
- Demming Drain




**NORTH** 

**Scale:** 1:25,000

**Drawing title:**  
Aerial Photograph

**KEY**

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## 5.2 Building description

5.2.1 The bat survey and assessment targeted the following (see section 5.5):

- a. **Workshop** – is single storey and comprises a telegraph pole frame with breezeblock and corrugated cement fibre board walls and a mono pitched roof also covered with corrugated cement fibre boards. The roof is supported by smooth sawn timbers and is not lined. The building is used as a workshop.

5.2.2 **Workshop** (see 5.5 plates 1 - 3) - no roosting opportunities were present within the fabric of the building due to the following:

- Gaps behind wall timbers and corrugated cement fibre boards were thick with cobwebs and debris.
- The eaves are too wide to support roosting bats and there are no gaps in the external mortar suitable for roosting bats.
- There was no open doors/window access into the building.
- The building is well-lit with skylights.
- No evidence of bats was observed.
- The workshop has been assessed as having a **NEGLIGIBLE SUITABILITY** to support bats.

5.3 Based on the field survey and the criteria in table 4.1 (Bat Surveys for Professional Ecologists – 3<sup>rd</sup> Edition, p35. Bat Conservation Trust, 2016), the Application Site and studied building has the following suitability for bats:

|                                  | Negligible | Low | Moderate | High |
|----------------------------------|------------|-----|----------|------|
| Application Site habitats (<2km) |            | X   |          |      |
| Workshop                         | X          |     |          |      |

**Table 4.1 Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.**

| Suitability | Description<br>Roosting habitats   | 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         | <p>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<sup>a</sup> 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<sup>b</sup>).</p> <p>A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.<sup>c</sup></p> | <p>Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat.</p> <p>Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.</p>  |
| Moderate    | A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions <sup>a</sup> and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).  | <p>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.</p> <p>Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.</p>  |
| High        | A structure or tree 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 <sup>a</sup> and surrounding habitat.   | <p>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.</p> <p>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.</p> <p>Site is close to and connected to known roosts.</p> |

Source - Bat Surveys for Professional Ecologists – 3<sup>rd</sup> Edition, p35. Bat Conservation Trust, 2016.

## 5.4 Results of Activity Surveys

5.4.1 There is no current (with the previous 2 years) bat activity survey data available for this site.

5.5

Photographs of key features – August 2023

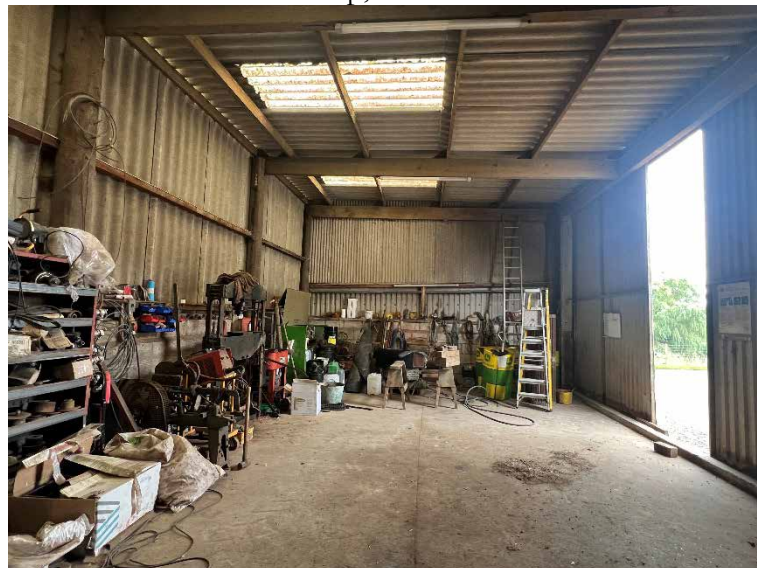
Plate 1 – Workshop, west and south elevation



Plate 2 – Workshop, east and south elevation



Plate 3 – Workshop, internal roof structure.



## 5.6 Summary of field surveys conducted in 2023

| Date     | Type of survey     | Results   | Building Dimensions (m) |     |     |
|----------|--------------------|---|-------------------------|-----|-----|
|          |                    |   | L                       | W   | H*  |
| 14/08/23 | Habitat assessment | World Ecology concludes that the immediately adjacent habitats could be used by small numbers of commuting and foraging bats. These habitats are not extensive and are similar to surrounding village habitats and consequently, the Application Site and immediately adjacent habitats are not considered to be integral to the favourable conservation status of local bat populations. |                         |     |     |
|          | Visual inspection. | <i>Workshop</i><br>There were no signs of roosting bats or bat activity, and the workshop has no features to support roosting bats. Consequently, the workshop has a NEGLIGIBLE SUITABILITY to support roosting bats (see 5.5 plates 1 - 3).  | 18.5                    | 5.8 | 4.5 |

\* Height from ground floor to ridge

## 5.7 Interpretation and Evaluation of Survey Results

### 5.7.1 Presence/absence

5.7.1.1 The information collected to date is based on the findings of one visit to the site in August 2023. No bats or signs of bat activity were observed during the field survey.

5.7.1.2 Currently, from the data collected during one visit, the likelihood that bats are present within the workshop to be demolished is negligible. This is supported by the fact that the building is in good condition with no roosting opportunities for bats observed. The daytime assessment detected no signs of bat usage or activity and consequently, the impact to bats from the demolition of this building is considered to be **negligible**.

### 5.7.2 Site Status Assessment

5.7.2.1 The assessment is based on one daytime survey conducted in August. During this time of year bats are active. However, due to the absence of suitable features likely to support bats, the workshop has been assessed as having a NEGLIGIBLE SUITABILITY for roosting bats.

### 5.7.3 Constraints

5.7.3.1 There are no survey constraints.



## 6.0 IMPACT ASSESSMENT – in the absence of mitigation

- 6.1 It is not always possible to predict the full pre-, mid-development and long-term impacts on bat populations based on a single daytime survey conducted in August. Based on the current information, the workshop does not support a bat roost. However, bats are by nature highly mobile and secretive mammals and there is always a possibility that bats may turn up at a site at any time. Therefore, taking into consideration all the information collected to date, it has been determined that the proposed development would pose none/negligible impacts to local bat populations.

## 7.0 MITIGATION & COMPENSATION

### 7.1 Legal Protection

- 7.1.1 Legal obligations towards bats are generally concerned with roost protection. All developments, known to contain bat roosts, require a development licence from Natural England. Under the Wildlife and Countryside Act (1981) and the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019, it is an offence for anyone without a licence to:

- Deliberately take, injure or kill a wild bat
- Intentionally or recklessly disturb a bat in its roost or deliberately disturb a group of bats.
- Damage or destroy a place used by bats for breeding or resting (roosts) (even if bats are not occupying the roost at the time)
- Possess or advertise/sell/exchange a bat of a species found in the wild in the EU (dead or alive) or any part of a bat.
- Intentionally or recklessly obstruct access to a bat roost.

- 7.1.2 Planning consent for a development does not provide a defence against prosecution under these acts.

### 7.1.3 **Bat roosts are protected throughout the year, whether bats are present or not.**

- 7.1.4 As no bat roosts or signs of bat activity were detected during the daytime inspection and the workshop has negligible suitability to support roosting bats, building work can commence with adherence to the following Method Statement (see 7.2 below).

### 7.2 Method Statement

- 7.2.1 **This statement should be copied to contractors and all those involved with demolition, timber treatment, roofing and building works, whose work may affect bats and their roosts on site.**

#### 7.2.2 Timing

- 7.2.2.1 There are no mandatory timing constraints as roosting bats have not been found and the workshop has negligible suitability to support roosting bats.

- 7.2.3 In the highly unlikely event that bats are discovered, the following will be implemented:

- Immediately stop the work that you are undertaking.

- Do not expose the bat or cause it to fly out of the roost on its own accord.
- Contact Wold Ecology on 01377 200242 or 07795 071504 for advice.
- Advise colleagues in the vicinity of your work why you have stopped and advise them to be aware of the potential for bats being disturbed, injured or killed.
- Immediately report the matter to your site manager/line manager who will inform relevant personnel.
- Grounded bats should be covered with a box (not airtight), and all works within 5m should cease until a bat ecologist arrives to move the bat. The box must be kept in a safe and quiet location.
- A clean cloth or tea towel for the bat to hide in should be placed in the box.
- A plastic bottle cap or similar for a small amount of water for the bat to drink from should also be placed in the box.
- Grounded bats must be carefully placed in a lidded, ventilated box with a piece of clean cloth and a small shallow container with some water.
- Any underweight or injured bats must be taken into temporary care by an experienced bat carer and looked after until such time that the bat can be transferred to a suitable replacement roost at the same site, or weather conditions are suitable for release at the same site.

7.2.4 Bats will only be handled by a licensed bat ecologist, wearing gloves, who has received a rabies vaccination. The bat will be placed either into a holding box, with water provided, and re-released close to the farm at dusk, or placed into a bat box located on site.

7.2.5 Injured bats will be taken into care (as directed by the Bat Workers Manual, section 7.3, pages 64 – 66: 3<sup>rd</sup> edition 2004) and fed and cared for until such time when conditions are suitable (night time temperature are  $>6^{\circ}\text{C}$ ) for them to be released at dusk in the mitigation area.

### 7.3 Bat boxes

7.3.1 Specially designed bat boxes can be located on site. Schwegler Bat Boxes are recommended and well tested boxes. The following bat boxes provide additional roost habitats and are available from Wold Ecology:

- The **1FQ** is an attractive box designed specifically to be fitted on the external wall of a house, barn, or other building. Equally appealing to bats as a roost or a nursery, it features a special porous coating to help maintain the ideal temperature inside along with a rough sawn front panel to enable the bats to land securely.
- Bat Tube (**1FR** and **2FR**) system. The tube is designed to meet behavioural requirements of the types of bats that roost in buildings i.e. pipistrelle spp. This design can be installed flush to external walls and beneath a rendered surface.
- Alternative bat boxes are available, these should comprise woodcrete and not timber.

7.3.2 The majority of these boxes are self-cleaning as they are designed so that the droppings fall out of the entrance. This reduces the possibility of smell during the summer months. For more information on designs and installation of bat boxes see: [www.schwegler-natur.de](http://www.schwegler-natur.de) and [www.bct.org.uk](http://www.bct.org.uk).

7.3.3 Wold Ecology recommends that at least 1 bat box is sited on the new building. Bat boxes should be erected on south, east or west elevations; 3-5 metres above ground level or close to roof lines.

## 7.4 Lighting

7.4.1 Lighting has a detrimental effect on bat activity; many bats will actually avoid areas that are well lit. Lighting can cause habitat fragmentation by preventing bats from commuting between roosts and foraging grounds (A.J Mitchell-Jones 2004).

7.4.2 It is recommended that a lighting consultant is employed to design a lighting plan based on the following principles:

- Luminaire and light spill accessories - Lighting should be directed to where it is needed, and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only.
- If applicable, the height of lighting columns in general should be as short as is possible as light at a low level reduces the ecological impact. However, there are cases where a taller column will enable light to be directed downwards at a more acute angle and thereby reduce horizontal spill. For pedestrian lighting, this can take the form of low level lighting that is as directional as possible and below 1 lux at ground level.
- Aim for lighting column of 5m or less, hooded and cowled to prevent light spill, for main lighting columns.
- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.
- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used.
- Luminaires should always be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.
- Light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding

7.4.3 At this site, new lighting design will ensure lights will **not** be mounted where they will shine directly on to bat boxes. A light intrusion lux level besides bat boxes will be 1 lux or below.

## 7.5 Timber treatment

- 7.5.1 It is good practice, where bats may come into contact with roof timbers, to carry out timber treatment using Permethryn type chemicals on the Natural England list of approved safe chemicals. New pre-treated timbers i.e. tanalised timber will be allowed to dry thoroughly before use, if applicable. A list of Natural England approved paints and timber treatments is available at <https://www.gov.uk/guidance/bat-roosts-use-of-chemical-pest-control-products-and-timber-treatments-in-or-near-them>

## 8.0 BIRDS

8.1 Birds are afforded various levels of protection and levels of conservation status on a species by species basis. The most significant general legislation for British birds lies within Part 1 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation, it is an offence to, kill, injure or take any wild bird, take, damage or destroy the nest of any wild bird while that nest is in use or being built, take or destroy an egg of any wild bird.

8.2 The daytime assessment identified whether the studied building had any signs of residency and/or barn owl usage. Specifically, the visual survey involved:

- An assessment of the suitability of buildings or stone feature to enable access for breeding barn owls.
- A thorough check for pellets, feathers or signs of old nest remains in the form of pellet debris and/or old broken egg shells.

8.3 The visual inspection also recorded any other visible active/disused nests and bird activity within the building.

8.4 Field survey results

8.4.1 There was no evidence of barn owls *Tyto alba* roosting in the building and there was no suitable access for barn owls to roost in the building. No further surveys are recommended.

8.4.2 No birds' nests were observed in the building.

8.5 Biodiversity Gains and Recommendation

8.5.1 All nests should remain undisturbed and intact until after the breeding bird season – mid February to early September. Any destructive building works (e.g. demolition, roof stripping, internal conversion, pointing of masonry etc.) and removal of trees, shrubs, scrub and tall vegetation should be undertaken outside of the bird nesting season which is between the months of mid-September and early February inclusive or be carefully checked by an ecologist to confirm no active nests are present. If nesting birds are found during the watching brief, destructive works will need to stop until the young have fledged.

8.5.2 In order to increase nesting opportunities for birds, it is recommended that Schwegler bird boxes are erected throughout the site. Local Authority guidance recommends that 25% of houses within a development should contain a bird box.

8.5.3 Bird boxes will target species of conservation concern. A summary of recommended bird boxes are listed below:

| Name                     | Description            | Number |
|--------------------------|------------------------|--------|
| Schwegler swift box #16S | Building box for eaves | 2      |

8.5.4 Boxes should be placed so that the entrance does not face the prevailing wind, rain and strong sunlight. The sector from north to south east should be used, with south facing boxes positioned in more shaded areas.

- 8.5.5 Many species will use boxes at a wide variety of heights however to give the box protection in areas with a lot of human or mammalian predator activity they should be placed approximately 3-4 metres above ground level. A clear flight path should be available to and from the nest box.

## 9.0 REFERENCES

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## 10.0 APPENDICES

### 10.1 Background to Bats - Bat Biology.

- 10.1.1 Bats roost in a variety of places such as caves, mines, trees, and buildings. Woodlands, pasture, ponds and slow flowing rivers or canals provide suitable feeding areas for bats as they support an abundance of suitable insect forage. Bats tend to feed during the first two to three hours after sunset and again before dawn, when insect activity is at its most intense (JNCC 2004).
- 10.1.2 Bat activity over the course of a year reflects the seasonal climate and the availability of food as follows (The Bat Conservation Trust, undated):  
**January - March** - insect prey is scarce, and bats will hibernate alone or in small groups.  
**April - May** - insects are more plentiful and bats will become active. They may become torpid (cool and inactive) in bad weather. Females will start to form groups and will roost in several sites.  
**June - July** - females gather in maternity roosts and give birth to young, which are suckled for several weeks. Males roost alone nearby.  
**August - September** – mothers leave the roost before the young. Bats mate and build up fat for the winter.  
**October - December** – Bats search for potential hibernacula. They become torpid for longer periods and then hibernate.
- 10.1.3 Bats do not stay in the same roost throughout the year. They have different requirements of roosts at different times of the year. During late April/May the bats leave their winter roosts and the females come together to form ‘nursery roosts’, these usually consist of pregnant females along with a few non-breeding and immature females. At this time, the males roost either singly or in small numbers. The single offspring is born during late June early July and can fly within 3-5 weeks.
- 10.1.4 Typical roost sites are cracks and crevices in buildings and other structures but more typically under hanging tiles, slates, soffits and cavity walls of fairly modern buildings or holes and splits in trees.
- 10.1.5 The conditions needed by bats for hibernation require the maintenance of a relatively stable low temperature (2 – 6<sup>o</sup>). Suitable sites include; old trees, caves, cellars, tunnels, and icehouses.
- 10.1.6 Whilst the summer roosts consist of single species (although 2 – 3 species can be found within one large structure but occupying separate roost sites), winter sites often consist of 4 – 6 different species of bat, although there is often niche separation.
- 10.1.7 Bats have a complex social structure based on ‘meta populations’ and also utilise other transitional or intermediate roost sites. The several different types of roost, which bats occupy throughout the year, are as follows:
- **Day roost:** a place where individual bats, or small groups of males, rest or shelter in the day but are rarely found by night in the summer.
  - **Night roost:** a place where bats rest or shelter in the night but are rarely found in the day. May be used by a single individual on occasion or it could be used regularly by the whole colony.



- **Feeding roost:** a place where individual bats or a few individuals rest or feed during the night but are rarely present by day.
- **Transitional/occasional roost:** used by a few individuals or occasionally small groups for generally short periods of time on waking from hibernation or in the period prior to hibernation.
- **Swarming site:** where large numbers of males and females gather during late summer to autumn. Appear to be important mating sites
- **Mating sites:** sites where mating takes place from later summer and can continue through winter.
- **Maternity roost:** where female bats give birth and raise their young to independence.
- **Hibernation roost:** where bats may be found individually or together during winter. They have a constant cool temperature and high humidity. These have to be cold and free from any temperature fluctuation with high humidity. The coldness enables bats to lower their body temperature and become torpid. This saves a lot of energy, enabling them to survive on the fat stores within their bodies that they have built up throughout the summer.
- **Satellite roost:** an alternative roost found in close proximity to the main nursery colony used by a few individual breeding females to small groups of breeding females throughout the breeding season.

10.1.8 The main threats to bats include:

- Habitat loss (e.g. deforestation)
- Loss of feeding areas as a result of modern forestry and farming practices.
- Use of toxic agrochemicals and remedial timber treatment chemicals.
- Disturbance and damage to bat roosts.

10.1.9 Bats have been in decline both nationally and internationally during the latter part of the 20<sup>th</sup> Century. Bats require a variety of specific habitats in order to meet the basic needs of feeding, breeding, and hibernating and are therefore extremely vulnerable to change such as the loss of flight lines through the removal of hedgerows. It is thought that even the two most common and widespread bats, the common pipistrelle and the soprano pipistrelle, have declined by an estimated 70% (1978-1993 figures). There are a number of bat species, which are now considered seriously threatened with one species, the greater mouse-eared bat being classed as extinct as it is no longer breeding in the U.K.

10.1.10 All European bats are listed in Annex IV of the EC Directive 92/94/EEC ‘The Conservation of Natural Habitats and of Wild Fauna and Flora’ as needing “strict protection”. This is translated into British Law under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. British bats are included under Schedule 5 of the Wildlife & Countryside Act 1981. They can therefore be described as a ‘fully protected’ or ‘protected’ species.

10.1.11 A summary of the legal protection afforded to bats under both European and British law is provided by the Bat Conservation Trust (BCT, 2010): ‘All European bat species and their roosts are listed in Annex IV of the EC Directive 92/94/EEC ‘The Conservation of Natural Habitats and of Wild Fauna and Flora’ as needing “strict protection”. This is implemented in Britain under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. In summary, in the UK, it is an offence to:

- Deliberately capture, injure, or kill a bat;

- Deliberately disturb a bat in a way that would affect its ability to survive, breed or rear young, hibernate or migrate or significantly affect the local distribution or abundance of the species;
  - Damage or destroy a roost (this is an absolute offence); and
  - Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat.’
- 10.1.12 The species is also listed in Appendix II of the Bonn Convention (and its Agreement on the Conservation of Bats in Europe) and Appendix II of the Bern Convention (and Recommendation 36 on the Conservation of Underground Habitats). Although these are recommendations and not statutory instruments.
- 10.1.13 Natural England is the Government body responsible for nature conservation. Local planning authorities must consult them before granting planning permission for any work that would be likely to result in harm to the species or its habitat. Natural England issue “survey” licenses for survey work that requires the disturbance or capture of a species for scientific purposes. They also issue “conservation” licenses that are required for actions that are intended to improve the natural habitat of a European protected species or to halt the natural degradation of its habitat.
- 10.1.14 ‘Development’ licences are issued by Natural England for any actions that may compromise the protection of a European protected species, including bats, under the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. This includes all developments and engineering schemes, regardless of whether or not they require planning permission.
- 10.1.15 The UK Biodiversity Action Plan states that although the pipistrelle is one of the most abundant and widespread bat species in the UK, it is still thought to have undergone a significant decline in the latter part of this century. The main factors cited for causing loss and decline include:
- A reduction in insect prey abundance, due to high intensity farming practice and inappropriate riparian management.
  - Loss of insect-rich feeding habitats and flyways, due to loss of wetlands, hedgerows, and other suitable prey habitats.
  - Loss of winter roosting sites in buildings and old trees.
  - Disturbance and destruction of roosts, including the loss of maternity roosts due to the use of toxic timber treatment chemicals.

**10.2 Significance of bat roosts, appraising the nature conservation value;**

- 10.2.1 The significance of bat roosts should be appraised against the following table. Where the extent of the bat roost is unclear a precautionary approach should be taken in evaluating the significance of the roost and the highest potential category should be selected.

Table 9.2.1 Appraisal of significance of bat roosts.

| Scale         | Summary   | Examples   |
|---------------|---|--|
| International | Any significant roosting sites for European Annex 2 species | Barbastelle bat roosts are only known applicable feature in East Anglia. |
| National      | Any roosts qualifying as SSSI under the EN criteria.        | Details of criteria are given in   |

|          |  |   |
|----------|--|---|
|          |  | 9.1.2 Site Selection Guidelines for Biological SSSI's.                      |
| Regional | Any significant bat roosts and features, equivalent in interest to qualifying a site as a Country Wildlife Site. | Breeding and hibernation roosts of most species.                            |
| Local    | All other sites supporting feeding bats as Wildlife and Countryside Act protected species.                       | Bats foraging within a structure, night roosts and minor transition roosts. |

10.3 Summary of conservation significance of roost types (Bat Mitigation Guidelines, 2004).

| Roost type        | Development effect                               | Scale of impact |        |      |
|-------------------|--|-----------------|--------|------|
|                   |  | Low             | Medium | High |
| Maternity         | Destruction                                      |                 |        | ✓    |
|                   | Isolation caused by fragmentation                |                 |        | ✓    |
|                   | Partial destruction; modification                |                 | ✓      |      |
|                   | Temporary disturbance outside breeding season    | ✓               |        |      |
|                   | Post-development interference                    |                 |        | ✓    |
| Major hibernation | Destruction                                      |                 |        | ✓    |
|                   | Isolation caused by fragmentation                |                 |        | ✓    |
|                   | Partial destruction; modification                |                 | ✓      |      |
|                   | Temporary disturbance outside hibernation season | ✓               |        |      |
|                   | Post-development interference                    |                 |        | ✓    |
| Minor hibernation | Destruction                                      |                 |        | ✓    |
|                   | Isolation caused by fragmentation                |                 |        | ✓    |
|                   | Partial destruction, modification                |                 | ✓      |      |
|                   | Modified management                              |                 | ✓      |      |
|                   | Temporary disturbance outside hibernation season | ✓               |        |      |
|                   | Post-development interference                    |                 | ✓      |      |
|                   | Temporary destruction, then reinstatement        | ✓               |        |      |
| Mating            | Destruction                                      |                 | ✓      |      |
|                   | Isolation caused by fragmentation                |                 | ✓      |      |
|                   | Partial destruction                              | ✓               |        |      |
|                   | Modified management                              | ✓               |        |      |
|                   | Temporary disturbance                            | ✓               |        |      |
|                   | Post-development interference                    | ✓               |        |      |
|                   | Temporary destruction, then reinstatement        | ✓               |        |      |
| Night roost       | Destruction                                      | ✓               |        |      |
|                   | Isolation caused by fragmentation                | ✓               |        |      |
|                   | Partial destruction                              | ✓               |        |      |
|                   | Modified management                              | ✓               |        |      |
|                   | Temporary disturbance                            | ✓               |        |      |
|                   | Post-development interference                    | ✓               |        |      |
|                   | Temporary destruction, then reinstatement        | ✓               |        |      |

**NB** This is a general guide only and does not take into account species differences. Medium impacts, in particular, depend on the care with which any mitigation is designed and implemented and could range between high and low.