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# Medhurst St Mary Bourne

## Bat Survey

A series of dusk emergence and dawn re-entry surveys on the dwelling at Medhurst, St Mary Bourne, prior to the proposed demolition and construction work.

Version 1 dated 22<sup>nd</sup> June 2023

**Report for:**

Ms Lucy Macnamara  
Medhurst  
St Mary Bourne  
Andover  
SP11 6AR

**Our Project Reference:**

20 23/5 535 /A





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### Quality Management

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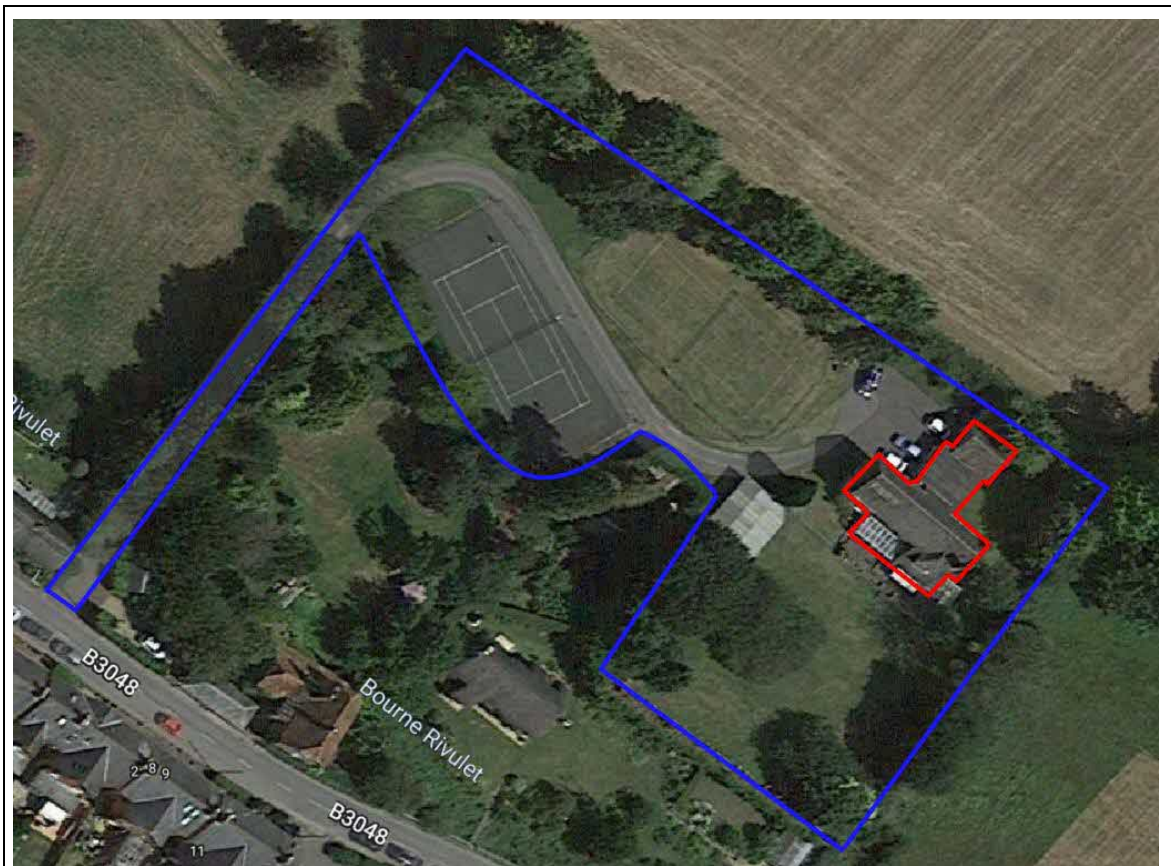
# 1.0. Introduction

## 1.1. Background

- 1.1.1. J Taylor Ecology Consulting were commissioned by Lucy Macnamara to conduct a series of bat surveys on the dwelling at Medhurst, St Mary Bourne, SP11 6AR (Ordnance Survey grid reference SU 41888 50737).
- 1.1.2. The requirement for a series of bat surveys was identified following an initial visit conducted on 6<sup>th</sup> January 2023, which concluded that due to the presence of a number of potential roost features (PRF 's) that could be used by bats and evidence of roosting bats in the roof void, the building would have a high likelihood of use by bats. In accordance with the guidance (Collins J. [Ed.] 2016), buildings assessed as having a high likelihood of use should be preceded by a series of three dusk emergence and/or dawn re-entry surveys to ascertain if and how the building is used by bats.
- 1.1.3. An initial dusk bat survey conducted on 4<sup>th</sup> May 2023 however had to be abandoned after heavy rain set in shortly after the survey commenced. While some data was gained, a further three complete surveys were subsequently carried out. The proposed work will involve the complete demolition of the existing dwelling, followed by the construction of a replacement dwelling.

## 1.2. Site Context

- 1.2.1. The site, Medhurst, comprised a plot with a dwelling and attached garage set in the eastern corner and surrounded by a mature garden, accessed via a long driveway. The garden comprised of managed grassland, mature trees, tennis courts and shed structures. The boundaries of the site were formed by lines of mature trees. The local area included Bourne Rivulet to the south, and blocks of woodland, arable fields and pasture fields.



**Figure 1:** Location of the dwelling (red) within the Medhurst site (blue). (Google Images, 2023).

The building was of brick construction, with a flat roof section joining the pitched and gable end design house and garage. The house supports both clay roof tiles and hanging tiles, and a catslide roof section to the south from which extends a pitched and hipped dormer window. Two chimneys extend from the dwelling, one on the northern roof face and one on the eastern gable end.



**Photograph 1.** General view of the southern elevation of the dwelling.



**Photograph 2.** Northern and eastern elevations of the dwelling, and eastern elevations of the extension adjoining to the garage.

### 1.3. Pre-existing information

- 1.3.1. Based on our current knowledge, prior to the Preliminary Roost Assessment (J Taylor Ecology Consulting 2023), no bat survey work has been conducted on the dwelling. However, J Taylor Ecology Consulting has previously undertaken bat emergence and dawn re-entry surveys on domestic buildings within this part of St Mary Bourne. As a result, the area is known to support a range of bat species, with the habitat along the river corridor considered optimum for use by bats.

### 1.4. Legislation Summary

- 1.4.1. All seventeen species of bat, their roosts and resting places are protected in the UK under Schedules 5 & 6 of the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2017. The relevant sections of this legislation make it an offence 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, or intentionally or recklessly obstruct access to a bat roost. Offences under this legislation carry a maximum penalty of imprisonment for up to six months and/or a fine not exceeding Level 5 on the standard scale (currently up to £5000), or both.
- 1.4.2. Causing 'damage' to a roost, even when the animal is not present, is an absolute offence, with no defences available in law. Disturbance however is only considered an offence when caused intentionally or recklessly. A person would be acting recklessly if they could reasonably have been expected to foresee that an operation could cause disturbance or harm to a protected species but took no action to assess the risk and consider what to do about it.

### 1.5. Purpose

- 1.5.1. The purpose of the bat surveys was as follows.

To gain further and up to date information on any possible use of the building by bats.

To assess the value of the building for roosting bats, and to conduct an updated impact assessment to determine the likely impact the proposed work would have on any bat species that may be present.

To identify any associated potential ecological constraints relating to bats arising from the proposed work, and identify appropriate mitigation measures and determine the necessity for a European Protected Species Mitigation licence.

## 2.0. Methodology

### 2.1. Personnel

- 2.1.1. The survey of the site was designed and supervised by Jonathan Taylor BEng (Hons) PGCert MSc MCIEEM, who also managed the project. Jonathan is a fully qualified Ecological Consultant with over 15 years' experience as a professional ecologist and a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). He has substantial experience of undertaking surveys for protected species and an expert knowledge of bat ecology and legislation, gained over many years from both regular formal training and working alongside experienced bat surveyors. Jonathan holds Natural England Class Licence for bats (2019-39970 -CLS-CLS), and frequently designs and implements mitigation under European Protected Species Development Licenses.
- 2.1.2. As a full member of the Chartered Institute of Ecology and Environmental Management (MCIEEM), Jonathan adheres to the Institute's Code of Professional Conduct and professional ethics and maintains a standard of knowledge and experience in accordance with the CIEEM Continuing Professional Development Policy.
- 2.1.3. Assisting with the survey of Medhurst was Imogen Taylor BA(Hons), who is an experienced bat surveyor for J Taylor Ecology Consulting, Katy Goddard BSc (Hons) MSc who is a Consultant Ecologist and holds a Natural England Class Licence for bats (2021 -51994 -CLS-CLS), along with Kelly Jones BSc (Hons) MSc MCIEEM and Evie Bates BSc (Hons) MSc who are freelance bat surveyors.

### 2.2. Dusk Emergence and Dawn Re-Entry Surveys

- 2.2.1. The bat surveys were conducted in accordance with the guidance included in the Bat Conservation Trust Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition (Collins J. [Ed.] 2016) and Bat Workers Manual (Mitchell-Jones & McLeish, 2010).
- 2.2.2. In accordance with the recognised guidance, a series of surveys for a building assessed as having a high likelihood of use by bats comprises of three survey visits. The guidance requires the series to include at least one dawn survey, however updated interim guidance (Bat Conservation Trust, 2022) highlighted that the use of night vision aids (NVAs) to support dusk surveys can be beneficial over a dawn survey due to the variable return times of bats. Given the potential for bats to return to roost prior to a dawn survey commencing and the good visibility NVAs offer for the duration of a dusk survey, a series of bat surveys comprising of three dusk surveys with NVAs was considered to be the best method to characterise roosts. However, given that only one roost had been identified during the first dusk surveys despite the amount of evidence in the roof void and the activity around the site, a dawn survey was considered appropriate for the final survey to potentially provide swarming behaviour to aid further roost identification, if present.
- 2.2.3. Two dusk emergence surveys and a dawn re-entry survey were conducted on the 18<sup>th</sup> May, 1<sup>st</sup> June and 21<sup>st</sup> June 2023 respectively. Three surveyors were positioned at locations to view all elevations of the building, with an additional surveyor present during the first survey on 18<sup>th</sup> May 2023. After conducting the first complete survey with four surveyors, it was established that three would be sufficient to provide complete coverage of the building with NVA's, so the second dusk survey and the dawn survey were conducted with three surveyors. Clear survey zones were established for each surveyor to avoid double counting or overlap. The surveyors were positioned close enough to the building to identify late emerging or quiet calling species with particular focus on possible roost features that were identified during the Preliminary Ecological Appraisal.
- 2.2.4. The initial abandoned dusk emergence survey took place on 4<sup>th</sup> May 2023, and ceased after 25 minutes. Bats were observed emerging from the building and foraging within the garden during this time, however due to the rain conditions, the cameras could not be used. As such, the ability to record late emerging species would have been limited and not sufficient to provide accurate data.

- 2.2.5. Each surveyor was either equipped with a Wildlife Acoustics Echo Meter Touch Pro 2 full spectrum bat detector, a Petterson u384 USB Ultrasound Microphone attached to an Android device, or an Elekon Batlogger. All echolocation calls were recorded, with species identified in the field where possible and subsequently analysed with Kaleidoscope Pro software to confirm the species observed and type of activity where needed. The parameters were compared to those published within British Bat Calls - A Guide to Species Identification (Russ, 2012) and Social Calls of the Bats of Britain and Ireland (Middleton *et al.*, 2014).
- 2.2.6. The equipment set up for each surveyor location is shown below (photographs 3, 5 and 7), along with the corresponding still image taken from the respective infra-red camera at the darkest point of the survey (photographs 4, 6 and 8).

**Surveyor Position 1**



**Photographs 3 & 4.** Camera set up to support the visibility of the eastern elevation of the dwelling, and IR still image.

**Surveyor Position 2**



**Photographs 5 & 6.** Camera set up to support the visibility of the southern elevation, along with a still IR image.

**Surveyor Position 3**



**Photographs 7 & 8.** The western and northern elevations and corresponding IR image.

- 2.2.7. Each surveyor was supported by either a Canon XF100s, Cannon XA11 or a Sony HD digital hard disk camcorder with infrared recording. The cameras were focussed on the same viewpoints as the surveyors. Infrared wide angle high power LED array illuminators were used and set to 850nm wavelength, which is below the human visible spectrum and not visible by bats.
- 2.2.8. Each surveyor was supplied with a plan of the site on which to mark bat activity. The following information was recorded for any bats seen or heard: species, time, behaviour (whether it was feeding, commuting, social calling or swarming) and if seen, direction of flight, and if it emerged or re-entered the building. Behaviour was identified by flight patterns and call characteristics as recorded.
- 2.2.9. Weather conditions (temperature, wind speed/direction, cloud cover, rainfall in the last hour) were also recorded at the start and end of each survey. The dusk surveys commenced 15 minutes before sunset and lasted for 1.5 hours after sunset. The dawn survey commenced 1.5 hours before sunrise and ended 15 minutes sunrise.
- 2.2.10. All of the dusk emergence surveys were carried out during the time considered to be the active bat period. Details of the timings of the surveys are given in Table 1.

**Table 1: Timing of Surveys**

	Date	Start	End	Sunset/Sunrise
<b>Dusk Emergence (abandoned)</b>	4 <sup>th</sup> May 2023	20:21	20:46	20:34
<b>Dusk Emergence</b>	18 <sup>th</sup> May 2023	20:39	22:24	20:54
<b>Dusk Emergence</b>	1 <sup>st</sup> June 2023	20:57	22:42	21:12
<b>Dawn Re-Entry</b>	21 <sup>st</sup> June 2023	03:20	05:05	04:50

- 2.2.11. A summary of weather conditions is given in Table 2. The weather conditions on all survey visits were considered optimum for bat activity and meet the recommended requirements (Collins J. [Ed.] 2016). Insects (*Chironimidae* and *Ceratopogonidae*) were noted flying during all survey visits.

**Table 2: Weather Conditions**

	Start Temp. (°C)	End Temp. (°C)	Cloud cover (%)	Wind (Beaufort)	Rainfall / Conditions
<b>4<sup>th</sup> May 2023 (abandoned)</b>	13	13	100	0	Rain from 10mins past sunset
<b>18<sup>th</sup> May 2023</b>	15	14	100	0	Dry
<b>1<sup>st</sup> June 2023</b>	16	15	0	3	Dry
<b>21<sup>st</sup> June 2023</b>	12	13	0	0	Dry

## 2.3. Limitations

- 2.3.1. Conditions were good during the complete survey visits. The minimum temperature recorded during the surveys was 12°C, which is above the minimum required for bat activity surveys (approximately 8°C). Hence the conditions are considered to be suitable for the purposes of the survey.

It should be acknowledged that bats are highly mobile and may move between different roost sites throughout the year. In addition, new features such as cracks, crevices or openings may appear at any time. Bats need different roosting conditions at different times of the year, and they will often move around to find a roost that meets their needs. Hence the results of this survey and assessment are considered to be valid only at the time the survey was conducted.



## 3.0. Bat Survey Results

### 3.1. Dusk Survey Results 4<sup>th</sup> May 2023 (abandoned)

- 3.1.1. The first dusk survey was hindered by persistent rain. The surveyors started on time but delayed setting up most of the camera equipment while there was heavy rain, with just one camera (surveyor 3) recording from the beginning. Data was collected however the rain got heavier and the survey was abandoned as it could not be carried out without all equipment in use.
- 3.1.2. During the short survey period, a single bat was recorded emerging from the building. This comprised a soprano pipistrelle (*Pipistrellus pygmaeus*) bat which emerged from under corner hanging tiles on the north-eastern corner of the main section of the dwelling (E1) at 20:37 before flying towards the trees to the north-east.
- 3.1.3. Pipistrelle bats were then visible foraging over the north-eastern trees between 20:38 and 20:41. At 20:40 a common pipistrelle (*Pipistrellus pipistrellus*) bat commuted along the south-western elevation of the house from the west before turning to the north-eastern corner. At 20:44 a common pipistrelle commuted along the eastern boundary tree line to the north-eastern corner also.
- 3.1.4. After abandoning the survey, as surveyors were packing up equipment, numerous large bats were observed commuting from the east, along the driveway and towards the rear garden to the south of the dwelling.

### 3.2. Dusk Survey Results 18<sup>th</sup> May 2023

- 3.2.1. During the first complete dusk survey, activity levels were high with consistent recordings throughout.
- 3.2.2. Two bats were recorded emerging from the building. The first comprised a soprano pipistrelle bat which emerged from under hanging tiles on the easternmost corner of the dwelling (E1) at 21:01 before flying north-east towards the boundary tree lines. The second emergence comprised a common pipistrelle bat emerging from a gap to the left of the south-eastern chimney (E2) at 21:27 before flying towards the north-eastern tree lines also.
- 3.2.3. Prior to this, the first bat recorded was a noctule (*Nyctalus noctula*) bat which was recorded as heard not seen at 20:40 by one of the north-eastern surveyors. Two further registrations of noctules were recorded, again as heard not seen, at 21:32 by the north-eastern surveyors, and 22:08 by the north-western surveyor.
- 3.2.4. The majority of the activity during the survey was from pipistrelle bats which were recorded foraging and commuting around the site between 21:01 and 22:23, the last bat recorded. Both common and soprano pipistrelle bats were recorded all around the building, but particularly using the northern and eastern tree line boundaries. Social activity occurred with two soprano pipistrelles recorded flying in close proximity past the south-western elevation of the house while social calling, at 21:17 and 21:43.
- 3.2.5. Serotine (*Eptesicus serotinus*) bats were also regularly recorded during the survey, particularly by the western surveyors, between 21:27 and 22:02. They were seen foraging around the house and over the tennis court to the west of the house, with up to three individuals seen at anyone time.
- 3.2.6. Low levels of activity were recorded of *Myotis*, barbastelle (*Barbastella barbastellus*) and long-eared (*Plecotus*) type bats. Five registrations of *Myotis* bats, likely Natterer's (*Myotis nattereri*) were recorded during the survey between 20:48 and 21:53, all as heard not seen. Three registrations of barbastelle were recorded heard not seen at 22:05, 22:11 and 22:19. Long-eared type bats, likely brown long-eared (*Plecotus auritus*) were recorded by the north-eastern surveyors at 21:35, 22:01 and 22:12, with the former seen commuting over the garage west to north-east.

### 3.3. Dusk Survey Results 1<sup>st</sup> June 2023

- 3.3.1. During the final dusk survey, activity levels were lower than previously, with fewer registrations and species recorded. No bats were recorded emerging from the building.
- 3.3.2. The first bats recorded were both a common pipistrelle and soprano pipistrelle bats which were seen commuting along the south-western elevation of the house before heading north-east. Two further registrations of soprano pipistrelles were recorded as heard not seen at 21:48 and 21:52 by the north-eastern and south-eastern surveyors respectively. Common pipistrelles were recorded intermittently throughout the survey and seen foraging around the building until 22:22, the last bat recorded.
- 3.3.3. Between 21:41 and 21:45, and at 21:50 and 21:52, individual serotine bats were recorded commuting and foraging around the house.
- 3.3.4. A single registration of a Natterer's bat was recorded at 22:13, when it was observed foraging in the garden by the south-western surveyor.

### 3.4. Dawn Survey Results 21<sup>st</sup> June 2023

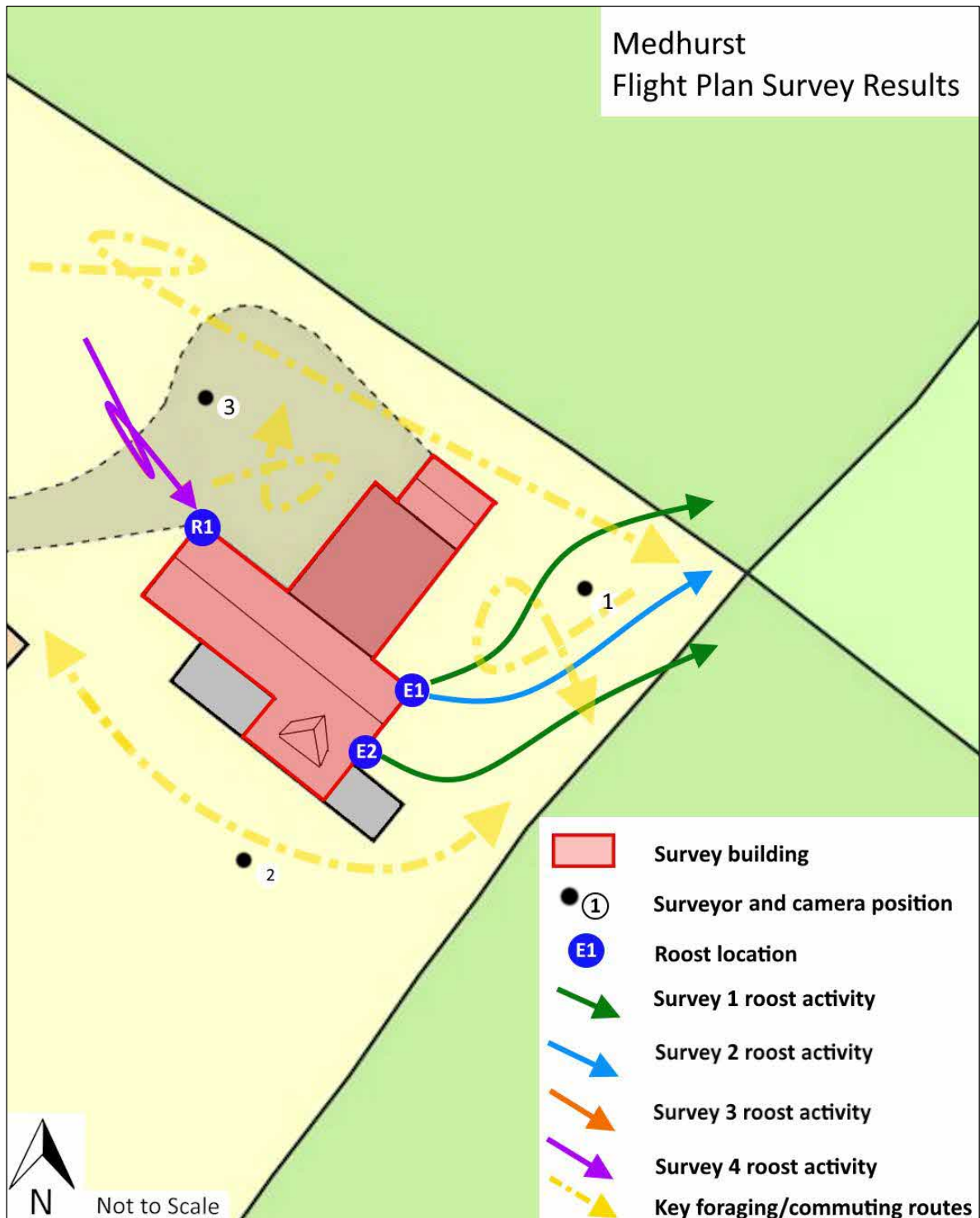
- 3.4.1. During the dawn survey, the overall activity on site was low, with most activity occurring during the first hour of the survey and in the north-eastern corner of the site. At least five species were recorded during the survey. Two bats, both soprano pipistrelles, were recorded re-entering the building during the survey. The first bat re-entered directly at 04:04, while the second re-entered following a short period of swarming behaviour at 04:22, the last bat recorded. The roost location was under a lifted hanging tile on the northernmost corner of the dwelling (R1).
- 3.4.2. On arrival, the southern surveyor heard bats being active during set up, with common pipistrelle and serotine bats passing through the garden from the north-east as they foraged between 03:07 and 03:11. For the southern surveyor, this pattern of activity continued with no bats foraging continually overheard, instead passing over. Between 03:19 and 03:33, common pipistrelle and serotine continued to pass over occasionally, as well as one pass by a soprano pipistrelle bat and two passes, recorded as heard not seen, by a long-eared bat. The north-eastern surveyor also recorded two serotine passes; the first at 03:24 overlapped with the southern activity, with an additional commute seen north-east to south at 04:13. *Nyctalus* bats were recorded as heard not seen commuting overheard on seven occasions by the northern surveyors between 03:22 and 03:56.
- 3.4.3. Common and soprano pipistrelle bats were recorded foraging and commuting around the northern areas of the building between 03:23 and 04:18. Foraging activity occurred above both the northern surveyors, with bats crossing over the garage between them and utilising the boundary tree lines.



**Photograph 9:** Infrared image taken by surveyor 3 in the early part of the dawn survey.

### 3.5. Flight Path Survey Results

3.5.1. Figure 2 below details the locations of the identified routes and flight paths, along with main foraging and commuting routes observed during the survey.



## 4.0. Ecological Evaluation and Identification of Potential Impacts

### 4.1. Evaluation – Presence/Absence

- 4.1.1. The surveys confirmed the presence of two soprano pipistrelle bat roosts under hanging tiles at both the northern corners of the main section of the dwelling (photographs 10, 11 and 12), and one common pipistrelle bat roost to the left of the easternmost chimney (photographs 13 and 14).
- 4.1.2. Roost E1 was used by a single soprano pipistrelle bat on two out of the four survey visits, roost E2 was used by a single common pipistrelle bat on one dusk survey, and roost R1 was used by two soprano pipistrelle bats on one occasion, the dawn survey.



**Photograph 10.** Two roost locations on the eastern elevation of the building.



**Photograph 11.** Soprano pipistrelle recorded on the IR camera emerging from roost location E1, 21:03 18/05/23.



**Photograph 12.** Common pipistrelle recorded on the IR camera emerging from roost location E2, 21:27 18/05/23.



- 4.1.3. The roosts recorded during the dusk and dawn surveys were all for crevice dwelling species. Evidence of a void dwelling roost was recorded during the preliminary survey in the form of long-eared bat type droppings, however no long-eared bats were recorded roosting during the emergence/re-entry surveys.
- 4.1.4. Given the intermittent use over the survey period, and that no more than two bats were using each roost location, it was therefore considered that all roosts identified are most likely to be transient day roosts used by adult males and non-breeding females. The dwelling is considered to support three crevice roosts and one void roost.
- 4.1.5. Bats use a variety of roost sites throughout the year and will investigate buildings, trees and other structures for their suitability as roost sites (Altringham, 2003), which would explain the inconsistent use by bats during the survey visits. Given the habit of bats to shift their roost sites, it is likely that the identified roosts are being used in conjunction with other roosts within the local area.
- 4.1.6. Away from the roost locations there was a good level of activity noted during the surveys, particularly from common pipistrelle, soprano pipistrelle and serotine bats. The site had good connectivity to suitable habitat with mature tree lines leading directly to the dwelling. In addition, the site had minimal artificial lighting, providing optimal foraging and commuting opportunities. Based on the visual results of the large bats commuting away from the treeline along the driveway and the good serotine activity during the survey, it is likely a serotine roost is present in the wider area.
- 4.1.7. Other species were recorded on site: *Nyctalus*, *Myotis*, brown long-eared and barbastelle. As a UK Biodiversity Action Plan species, the barbastelle bat is a conservation priority at both local and national level.
- 4.1.8. It was noted during the surveys that the eastern and northern tree lines were in particular use by foraging and commuting bats. Excessive artificial lighting can cause disruption to bats, causing them to avoid or move away from suitable foraging and commuting routes (Bat Conservation Trust, 2018), incurring an additional energetic burden and potentially limiting their access to their preferred foraging habitat. Hence the dark site was optimal for bats to utilise, particularly light adverse species such as barbastelle, brown long-eared and *Myotis* bats.

## 4.2. Site Assessment and Potential Short Term Impacts

- 4.2.1. The conducted surveys confirm the presence of four transient day roosts: two soprano pipistrelle roosts at the northern corners of the dwelling, one common pipistrelle roost adjacent to the easternmost chimney, and a brown long-eared roost in the roof void. These roosts should be considered fully protected under the legislation (Section 7).
- 4.2.2. The proposed demolition of the building will directly impact bats through the loss of all four identified roosts preventing their future use, as well as having the potential to disturb, injure or kill any bats present when the works are carried out.

- 4.2.3. While it is only one structure, it is a large structure filling the north-eastern corner of the site. The demolition will alter the local environment which may indirectly impact foraging and commuting bats which have been observed around the building.
- 4.2.4. Common pipistrelles, soprano pipistrelles and brown long-eared bats are three of the most common species of bat in the UK, and in accordance with the Bat Mitigation Guidelines (Mitchell-Jones, A.J. 2004), a summer day roost or transitional/occasional roost such as that identified, which support non-breeding individual or small numbers of bats, is considered to have a low conservation importance, being of conservation value at the local level only. Therefore, given that any impact from disturbance would be limited to one or two bats in day or transitional roosts, this would be of low conservation value.
- 4.2.5. All species of bat that are known to be resident within the UK are protected under the Wildlife and Countryside Act 1981 (as amended), the Conservation (Natural Habitats & Conservation) Regulations 1994 (as amended) and the Countryside and Rights of Way Act 2000 (Section 7). Therefore, given that the work is likely to result in direct impact to the roost locations and a high likelihood of disturbance of individual bats, it will be necessary to gain a European Protected Species Mitigation Licence from Natural England before work commences. It will be necessary to mitigate the direct impact on the loss of four roost locations through the provision of replacement roosts in direct compensation.

### **4.3. Longer Term Impacts**

- 4.3.1. In the long term, the work should not result in increased levels of artificial lighting, which would have the potential to impact on the use of the site by both roosting and commuting bats over a period of time. Given bats are particularly sensitive to artificial lighting, the presence of a dark area on site, is considered critical to the use of the four identified bat roosts, and the presence of barbastelle, long-eared and *Myotis* bats.
- 4.3.2. Hence it is important that the dark corridors of the boundaries, which connects the site, and therefore the roosts, to the woodland and stream in the local area, must be maintained. Hence no additional lighting in this area should be permitted, unless further advice from an ecologist is sought, and the lighting is installed in accordance with Bat Conservation Trust/ Institute of Lighting Professionals Guidance Note 08/18 on Bats and artificial lighting guidance note (Bat Conservation Trust 2018).

## 5.0. Required Mitigation

### 5.1. Recommendations for further work

- 5.1.1. No further ecological survey work is considered necessary in relation to determining the impacts of the proposed work on bats.

### 5.2. Mitigation Overview

- 5.2.1. In order for the proposals to comply fully with applicable legislation, it is necessary to mitigate and compensate for the ecological impacts as identified in the previous section to ensure that no bats are harmed during the works and that there is no net loss of use of the site by bats following the implementation of the proposals. The required mitigation has been designed to address the following, in accordance with the Bat Mitigation Guidelines (Mitchell-Jones, A.J. 2004).

Avoidance of deliberate, killing, injury or disturbance – it will be necessary to take all reasonable steps to ensure works do not harm individuals by altering working methods or undertaking the work at an appropriate time of year.

Roost creation, restoration or enhancement – it will be necessary to provide appropriate direct replacements for roosts that will be lost.

Long-term habitat management and maintenance – to ensure the population will persist.

Post-development population monitoring – to assess the success of the scheme and to inform management or remedial operations.

- 5.2.2. Given the strict legislation protecting bats and their roosts (Section 7), and that the proposed demolition will result in the loss of four transient day roosts, the work must be subject to a European Protected Species Mitigation Licence to derogate from the legislation protecting bats.

### 5.3. Bat Mitigation Licensing

- 5.3.1. Prior to work commencing, it will be necessary to gain a European Protected Species Mitigation (EPSM) Licence from Natural England to derogate from the legislation protecting bats. With the assistance from an appointed bat ecologist, it will be necessary to devise a mitigation strategy and demonstrate through a method statement that the proposals will not be detrimental to the maintenance of the bat populations concerned, at a favourable conservation status in their natural range.
- 5.3.2. Once submitted, Natural England allows 30 working days to determine an application. Submitting an application to Natural England does not guarantee that the licence will be granted; they may request further information or refuse the application, and resubmissions may be subject to a further 30-working-day determination period. The licence is normally only valid for the proposed duration of the work (i.e. the dates that the work is to be done needs to be submitted with the application – you cannot get a licence and then do the work at some point later).
- 5.3.3. Natural England have started to make a charge for determining EPSM Licence applications from April 2019, although there are some exemptions. Generally, work subject to planning permission and is classed as development, and hence subject to the charge, whereas work for the purpose of maintenance or refurbishment, where planning permission is not required, is generally exempt from the charge.
- 5.3.4. The level of charge depends on the complexity of the licence application, which will determine whether the charge will be fixed (£500) or variable (based on an hourly rate). The applicability and level of charge is determined by Natural England on submission of the licence application.

## 5.4. Timing of the Work

- 5.4.1. For transient day roosts used in the summer, it is preferable for the work to avoid the summer period when the roost is most likely in use (April to September). However, Natural England will normally issue a licence for work impacting day roosts at any time of the year.

## 5.5. Mitigation Requirements

- 5.5.1. The following mitigation strategy will be required.

Item	Requirement
1.	All works must be undertaken using best practice methodology to ensure minimal risk to bats. Mitigation must be in line with the requirements set out in the Bat Mitigation Guidelines (Mitchell-Jones, 2004) and the Bat Workers Manual (Mitchell-Jones & McLeish, 2004).
2.	The method statement for works affecting bats as detailed in the site specific European Protected Species Licence will need to be present on site at all times and supplied to all contractors and staff working. In addition, this bat survey report and mitigation strategy must be handed over to the contractor, and the relevant requirements incorporated into the construction plan for the work.
3.	Prior to the commencement of works, a site briefing must be conducted by the Named Ecologist on the legal protection afforded to bats, measures that will be used to protect bats, good working practices, the licence activities within the submitted EPSM Licence method statement and what to do should bats be found. A written record that this has been undertaken must be kept on site.
4.	Prior to the commencement of work, four suitable temporary bat boxes, comprising wooden bat boxes should be erected on mature trees nearby to accommodate any bats that may be displaced by the work. The boxes should be installed as close as possible to the existing roosts. As the proposals involve the demolition of the building, these boxes will provide an alternative roost in the short term for bats encountered during the destructive search. Upon completion of the work, permanent bat boxes will also need to be installed on the new dwelling (Section 5.6).
5.	Prior to destructive works, an inspection of the identified roost areas using torches and/or an endoscope must be performed by the named ecologist externally and internally to search for the presence of bats. Focus should be placed on the locations of known roosts identified during the survey. However, all features with potential for bat roost must be investigated. This will include a void inspection.
6.	Following the inspection, a destructive search of the working area around the identified roost locations will be conducted by the Named Ecologist. The removal of any feature with bat roost potential will be carried out by hand in suitable weather conditions and under direct ecological supervision by the named ecologist. The hanging tiles must be lifted slowly and carefully by hand, with each material visually inspected for the presence of bats. As works progress outside of the identified roost locations, careful removal of further materials, e.g. roof tiles, should continue.
7.	Should any bats be encountered during the destructive search, they must either be relocated to one of the bat boxes suitable for the species, or where bats are held for later release, this must be done safely and bats released on site at dusk in, or adjacent to, suitable foraging/ commuting habitat in safe areas within or directly adjacent to the pre-works habitat.
8.	Should the Named Ecologist conclude that the bat is injured, it should be immediately taken into care (Mitchell-Jones & McLeish, 2010). Any injured or dead bats must be reported to Natural England on the licence return (see Section 5.3.2) for further information.
9.	Work to or in the vicinity of the identified roosts must only take place after the structure has been declared free of bats by the Named Ecologist or their Accredited Agent.
10.	A written record will be kept of the capture efforts undertaken, including weather conditions (including overnight minimum temperature and rainfall), numbers and species of bats captured/taken and duration.



## Unexpected discovery

- 5.5.2. If individual bats are discovered unexpectedly, including during periods of adverse weather, then the following steps must be taken:


Works to that building/structure will stop immediately. If the Named Ecologist or an Accredited Agent is not on site, they will be contacted immediately to attend the site. The bat must not be exposed or be encouraged to fly out of the roost on its own accord.

The bat must only be handled by the Named Ecologist or an Accredited Agent unless it is in immediate danger. The bat must be carefully placed in a lidded ventilated box with a piece of clean cloth and a small shallow container with some water. The box must be kept in a safe, quiet location. The Named Ecologist or an Accredited Agent will then transfer the bat to one of the temporary bat boxes, or advise otherwise.

Any underweight or injured bats will 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.

## 5.6. Permanent Replacement Bat Roosts

- 5.6.1. The temporary bat boxes required to house any displaced bats found during the works can be simple wooden bat boxes such as the Kent bat box design.
- 5.6.2. In order to replace the roosts that will be lost, it will be necessary to provide four suitable permanent replacement roosts within the new building. Ideally, the roosts should be replaced on a like for like basis. Pipistrelle bats predominantly roost in crevices while long-eared bats predominantly roost in voids, hence replacement bat boxes suitable for both crevice and void dwelling species will be required. It is recommended that three single crevice bat tubes and one hollow box are installed (as below), available from WildCare and Greenwood's Ecohabitats respectively.
- 5.6.3. The tube is designed to be installed built into an external elevation and can be either bricked in or rendered over into the façade. While the hollow bat box can be fixed onto an external elevation. The replacement roosts must be stalled as high as possible (at least 3m).
- 5.6.4. Temperature is known to be an important factor influencing the success of artificial roost features (Mitchell-Jones, 2004). Hence, the replacement roosts will be sited on different aspects of the new dwelling to provide a range of temperature and humidity conditions. For the bat tubes, two will be sited on a different southerly aspects to receive maximum amounts of sunlight and warmth and one will be sited on a northerly aspect. The hollow box will be installed on a southerly aspect also.

		
<p><b>Schwegler 1FR bat tube</b> Built in to the external wall.</p>	<p><b>Schwegler 1FR bat tube</b> built in and rendered over on the external building elevation.</p>	<p><b>Hollow Bat Box</b> External wall mounting</p>

But tube images: [www.wildcare.co.uk](http://www.wildcare.co.uk). Hollow box image: [www.greenwoodsecohabitats.co.uk](http://www.greenwoodsecohabitats.co.uk)

## **5.7. Lighting**

- 5.7.1. It was evident from the surveys that bats were benefitting from the dark corridors of the site. External lighting should be limited to only what is absolutely necessary for safety reasons, both during the construction works and upon completion.
- 5.7.2. No lighting is to be installed along the treeline boundaries. If external lighting is required, energy efficient directional luminaires, preferably with a hood, that allows the light to be directed solely downwards to where it is needed should be used. The light could then be directed to where it is needed only, rather than illuminating forwards and to the side where it is not needed. Ideally, the lighting would be on sensors that are not so sensitive that they may be triggered by passing bats.
- 5.7.3. This would be in line with the Bat Conservation Trust and Institution of Lighting Professionals guidance on bats and artificial lighting, published in September 2018 (Bat Conservation Trust, 2018). This would be of benefit to a range of nocturnal and crepuscular species, in addition to bats.

## **5.8. Monitoring and Long-term Maintenance**

- 5.8.1. Monitoring is not required for impact to individual bats of common species (Mitchell-Jones, A.J. 2004).
- 5.8.2. All replacement roosts installed as part of the EPSM licences will need to be retained and maintained to ensure their continued function. However, given the type of replacement roosts proposed, they should be largely maintenance free for a considerable period.

## **5.9. Bat Survey Validity**

- 5.9.1. Owing to the highly mobile nature of bats, and the inherently unpredictable nature of their roosting habits, this assessment will be valid for 12 to 18 months. Beyond this period, the resident roosts may have grown, or dispersed to another site, or new species may have found and utilised the site for roosting. Hence the data should be considered valid until the end of 2024.
- 5.9.2. For the purposes of gaining a licence from Natural England, where bats have been assessed as being impacted by the work, Natural England require the survey data to be from the current or previous survey season.

## **5.10. Enhancements**

- 5.10.1. Biodiversity enhancements on developments sites is encouraged by the National Planning Policy Framework (NPPF) and Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006.
- 5.10.2. Opportunities for enhancements which are proportionate for the proposals are recommended below:
- 5.10.3. The replacement dwelling should incorporate additional roost features for bats to utilise upon completion. These are dependent on the final design of the replacement dwelling but could include:
  - Permanently lifted roof or hanging tiles for crevice dwelling species – using a wooden peg or mortar, tiles should be lifted to create a 20mm high gap under the tiles. Two lifted would be sufficient.
  - Modified ridge tiles for void dwelling species – using a batten measuring at least 20mm high by 50mm wide inserted into the wet mortar, a gap in the mortar line below ridge tiles will be created once the batten is removed. Two modified ridge tiles would be sufficient.
- 5.10.4. The addition of bird nesting opportunities incorporated into the building design. Two Manthorpe Swift Bricks built into a northern or eastern gable end, at least 5m high, would be appropriate.

## 6.0. References

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## 7.0. Appendix

### 7.1. Full Legislative Protection for Bats

- 7.1.1. All bat species and their roosts and resting places are protected in the UK under Schedules 5 & 6 of the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2017. Offences under this legislation carry a maximum penalty of imprisonment for up to six months and/or a fine not exceeding Level 5 on the standard scale (currently up to £5000), or both. The relevant sections of this legislation make it an offence to:
- Damage, destroy or obstruct access to any structure or place used for shelter or protection, such as a bat roost.
  - Deliberately, intentionally or recklessly disturb a bat whilst it is occupying a structure or place which it uses for that purpose, in such a way as to be likely to significantly affect the ability of any significant group of bats of that species to survive, breed, or rear or nurture their young or to hibernate or migrate in such a way as affect the local distribution of abundance of that species.
  - Deliberately (or intentionally) kill, injure or capture (or take) a bat.
- 7.1.2. Where it is considered likely that the proposals would result in an offence being committed, it is necessary to apply for a European Protected Species Licence from Natural England (the Government's statutory nature conservation agency), to derogate from the legislation protecting bats, in order for the activity to proceed.
- 7.1.3. Natural England will only grant European Protected Species Licences where the following three tests are satisfied in respect of the development: to preserve public health and safety or other imperative reasons of overriding public interest; there is no satisfactory alternative; and that the proposals will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.
- 7.1.4. Not only is the presence of European Protect Species, such as bats, a material consideration in a planning application, but additional obligations are imposed on local planning authorities and applicants by the Conservation of Habitats and Species Regulations (Habitat Directive), which were most recently consolidated with minor amendments following the UK's exit from the European Union into The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019. The extent of these obligations was considered by the Supreme Court in R. (Morge) v Hampshire CC [2011] Env. L.R. 19 and in a number of subsequent decisions.
- 7.1.5. The 2017 Regulations provide, in Regulation 9(3), that "*a competent authority, in exercising any of their functions, must have regard to the requirements of the [Habitats Directive] so far as they may be affected by the exercise of those functions.*"
- 7.1.6. The Supreme Court held that the duty of the local planning authority is limited to that set out in Regulation 9(5). It is the function of Natural England, and not of the planning authority, to enforce compliance with the Directive, by prosecuting those who had committed offences.
- 7.1.7. The duty of a local planning authority under reg. 9(5) is simply "*to have regard to the requirements of the directives so far as they may be affected by the exercise of those functions.*" As such, there is no need for a planning committee to carry out its own shadow assessment as to whether there would be a breach of Article 12(1) of the Directive, or whether derogation from that Article would be permitted and a licence granted. Instead, planning permission should ordinarily be granted save only in cases where the planning committee conclude that the proposed development would both be likely to offend article 12(1) and be unlikely to be licensed pursuant to the derogation powers.



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