

**BUILDING X9, QINETIQ SITE,
FORT HALSTEAD, KENT**

BAT MITIGATION STRATEGY

A Report to: QinetiQ

Report No: RT-MME-153704-01 Rev B

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REPORT VERIFICATION AND DECLARATION OF COMPLIANCE

This study has been undertaken in accordance with British Standard 42020:2013 “Biodiversity, Code of practice for planning and development”.

| Report Version | Date | Completed by: | Checked by: | Approved by: |
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The information which we have prepared is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management’s Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions.

DISCLAIMER

The contents of this report are the responsibility of Middlemarch Environmental Ltd. It should be noted that, whilst every effort is made to meet the client’s brief, no site investigation can ensure complete assessment or prediction of the natural environment.

Middlemarch Environmental Ltd accepts no responsibility or liability for any use that is made of this document other than by the client for the purposes for which it was originally commissioned and prepared.

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1. INTRODUCTION

1.1 PROJECT BACKGROUND

In October 2020 QinetiQ commissioned Middlemarch Environmental Ltd to develop a Bat Mitigation Strategy for Building X9, QinetiQ Site, Fort Halstead, Kent. This document is required to inform a bat mitigation licence application to Natural England associated with the refurbishment of building X9.

A range of ecological surveys were completed by Waterman Group between 2006 and 2013 and by Middlemarch Environmental Ltd in 2018, with further updated surveys in 2020, to inform a separate hybrid planning application associated with the redevelopment of the wider Fort Halstead site. Land surveyed as part of these assessments included QinetiQ owned land.

Middlemarch Environmental Ltd was subsequently instructed to undertake a full suite of targeted surveys of the QinetiQ owned land, comprising:

- Preliminary Arboricultural Assessment (Report RT-MME-150872-01);
- Arboricultural Impact Assessment (Report RT-MME-150872-02 Rev B);
- Preliminary Ecological Appraisal (Report RT-MME-150872-03 Rev B);
- Preliminary Bat Roost Assessment (Report RT-MME-150872-04 Rev B);
- Badger Survey (Report RT-MME-150872-05 Rev B); and,
- Dusk Emergence and Dawn Re-Entry Bat Surveys (Report RT-MME-153340-01 Rev C); and,
- Winter Hibernation Bat Survey (Report RT-MME-153704-02 Rev B).

An Ecological Mitigation Strategy (Report RT-MME-150872-06 Rev B) and a Bat Protection Strategy for Building X78 (Report RT-MME-150872-08 Rev A) have also been prepared.

Middlemarch Environmental Ltd has also prepared a Construction Ecological Management Plan (CEcMP, Report RT-MME-153844-03 Rev C), undertaken a Biodiversity Net Gain Assessment (Report RT-MME-153844-02 Rev B) and prepared a Landscape and Ecological Management Plan (LEMP, Report RT-MME-153844-03 Rev B) for the QinetiQ redevelopment.

Middlemarch Environmental Ltd have also been commissioned by QinetiQ to complete a Natural England Bat Mitigation Licence application for the site.

The requirement for a Bat Mitigation Strategy was identified following the suite of bat surveys detailed within the Dusk Emergence and Dawn Re-entry Bat Surveys report (RT-MME-153340-01 Rev C), completed by Middlemarch Environmental Ltd in August and September 2020.

All UK bat species are European protected species and they are capable of being material considerations in the planning process. A summary of the legislation protecting bats is included within Appendix 1. This section also provides some brief information on the ecology of British bat species.

1.2 SITE DESCRIPTION AND CONTEXT

The wider Fort Halstead site is located off Star Hill Road in Halstead, Kent, centred at National Grid Reference TQ 4970 5922. It is an irregular shaped parcel of land that measures 131.89 ha in size. The wider Fort Halstead site is bordered by the A224 Polhill to the north-east and Star Hill Road to the south-west. A mixture of arable and pastoral fields, pockets of woodland and farm buildings surround the site. The wider landscape is dominated by a rural setting, consisting of agricultural land interspersed with pockets of woodland and small settlements.

The planning application site extends to 15.8 ha and sits within the wider Fort Halstead site. The site is known as the QinetiQ enclave and is located on the southern-most boundary of the wider Fort Halstead site. The application site is bound by Crow Road to the north, the Scheduled Ancient Monument to the east, ancient woodland to the west and the existing site perimeter fence to the south.

At the time of the survey, the QinetiQ enclave comprised a defence research facility which contained a number of buildings with associated areas of hardstanding, surrounded by parcels of semi-natural and

plantation woodland. Areas of neutral grassland, calcareous grassland and amenity grassland were also present, as well as patches of scrub and tall ruderal vegetation.

1.3 PROPOSED WORKS

The wider proposals for the QinetiQ site are as follows:

Works to the proposed QinetiQ enclave comprising the erection of perimeter security fence, erection of a new reception building, creation of a new main site entrance along Crow Road, refurbishment of existing buildings including plant installation, creation of a new surface level car park and access, installation of two new explosive magazine stores and surrounding pendine block walls, demolition of existing buildings, installation of 6no. storage containers, installation of new site utilities and landscaping works.

It is understood that the proposed works on site relate to the refurbishment of Building X9 in order to bring the building back into operation as an explosives testing chamber after being unused for a number of years.

1.4 DOCUMENTATION PROVIDED

The conclusions and recommendations made in this report are based on information provided by the client regarding the scope of the project. Documentation made available by the client is listed in Table 1.1.

| Document Name / Drawing Number | Author |
|--|-------------|
| Proposed Site Plan / 30002236-BHK-00-XX-DR-A-003 | Baker Hicks |

Table 1.1: Documentation provided by client

2. ECOLOGICAL BASELINE

2.1 DESK STUDY

As part of the Preliminary Ecological Appraisal completed for the wider Fort Halstead site in 2018 (Report RT-MME-127947-01) an ecological desk study (which included a search for records of bats) was undertaken within a 2 km radius. The consultee for the desk study was Kent and Medway Biological Records Centre.

Middlemarch Environmental Ltd then assimilated and reviewed the desk study data provided by this organisation. Relevant bat data are discussed in Chapter 3. In compliance with the terms and conditions relating to its commercial use, the full desk study data are not provided within this report.

The following bat species records – outlined in Table 2.1 – were identified within a 2 km radius of the wider Fort Halstead site.

| Species | No. of Records | Most Recent Record | Proximity of Nearest Record to Study Area | Species of Principal Importance? | Legislation |
|--|----------------|--------------------|---|----------------------------------|------------------------------|
| Natterer's bat <i>Myotis nattereri</i> | 4 | 2016 | On site | - | ECH 4, WCA 5, WCA 6 |
| Unidentified myotis <i>Myotis</i> sp. | 3 | 2016 | On site | # | ECH 2 #, ECH 4, WCA 5, WCA 6 |
| Common pipistrelle <i>Pipistrellus pipistrellus</i> | 17 | 2014 | On site | - | ECH 4, WCA 5, WCA 6 |
| Brown long-eared bat <i>Plecotus auritus</i> | 5 | 2012 | On site | ✓ | ECH 4, WCA 5, WCA 6 |
| Leisler's bat <i>Nyctalus leisleri</i> | 1 | 2007 | On site | - | ECH 4, WCA 5, WCA 6 |
| Serotine bat <i>Eptesicus serotinus</i> | 20 | 2015 | 840 m south-east | - | ECH 4, WCA 5, WCA 6 |
| Unidentified bat <i>Chiroptera</i> sp. | 5 | 1999 | 960 m south-west | # | ECH 2 #, ECH 4, WCA 5, WCA 6 |
| Pipistrelle species <i>Pipistrellus</i> sp. | 5 | 2005 | 1,150 m north | # | ECH 4, WCA 5, WCA 6 |
| Noctule <i>Nyctalus noctula</i> | 4 | 2011 | 1,410 m west | ✓ | ECH 4, WCA 5, WCA 6 |
| Soprano pipistrelle <i>Pipistrellus pygmaeus</i> | 2 | 2013 | 1,580 m east | ✓ | ECH 4, WCA 5, WCA 6 |
| Long-eared bat <i>Plecotus</i> sp. | 1 | 2002 | 1,960 m north-west | # | ECH 4, WCA 5, WCA 6 |
| Key: #: Dependent on species. ECH 4: Annex IV of the European Communities Council Directive on the Conservation of Natural Habitats and Wild Fauna and Flora. Animal and plant species of community interest in need of strict protection. WCA 5: Schedule 5 of Wildlife and Countryside Act 1981 (as amended). Protected animals (other than birds). WCA 6: Schedule 6 of Wildlife and Countryside Act 1981 (as amended). Animals which may not be killed or taken by certain methods. Species of Principal Importance: Species of Principal Importance for Nature Conservation in England. | | | | | |

Table 2.1: Bat Species Records Within 2 km of Survey Area

The desk study also included a search for statutory nature conservation sites designated for bats within a 10 km radius of the site. Westerham Mines SSSI, which is designated for supporting hibernating bats, is located 6.93 km south-west of the QinetiQ site.

2.2 SUMMARY OF PRELIMINARY BAT ROOST ASSESSMENT 2020

During the assessment of Building X9 numerous features were recorded around the building which could be utilised by bats to gain entry or potential roost locations. No evidence of roosting bats, e.g. droppings, urine staining, feeding remains or scratch marks, was recorded during the survey of the building. However, the features present both internally and externally indicate that the building has high potential to support roosting bats. The Preliminary Bat Roost Assessment and Dusk Emergence and Dawn Re-entry Bat Surveys completed on site by Middlemarch Environmental Ltd in 2018 (Report RT-MME-127947-02 Rev B and Report RT-MME-127947-03 Rev A respectively) did not identify any bat roosts within Building X9.

2.3 SUMMARY OF BAT SURVEYS 2020

Middlemarch Environmental Ltd have completed bat surveys of Building X9 in 2018 and 2020. The Preliminary Bat Roost Assessment and Dusk Emergence and Dawn Re-entry Bat Surveys completed on site by Middlemarch Environmental Ltd in 2018 (Report RT-MME-127947-02 Rev B and Report RT-MME-127947-03 Rev A respectively) did not identify any bat roosts within Building X9. Bat surveys completed on site in 2020 identified a bat roost used by a low number of brown long-eared bats in Building X9.

First Nocturnal Emergence Survey

The first nocturnal emergence survey of Building X9 was completed on 24th August 2020. Common pipistrelle foraging activity was recorded along the woodland edge opposite building X8-9 to the south intermittently throughout the survey period, with the first detection at 20:11 and the last detection at 21:01. No bats were recorded emerging from the building.

Two soprano pipistrelle foraging passes were recorded along the woodland edge opposite building X8-9 to the south at 20:30 and 20:41. No bats were recorded emerging from the building.

No other species of bat were detected or observed during this survey. Analysis of the sound recordings did not detect any further species of bat.

Second Nocturnal Emergence Survey

The second nocturnal emergence survey of Building X9 was completed on 14th September 2020. Two common pipistrelle foraging passes were recorded along the woodland edge opposite building X8-9 to the south at 19:43 and 19:55. No bats were recorded emerging from the building.

No other species of bat were detected or observed during this survey. Analysis of the sound recordings did not detect any further species of bat.

Dawn Re-entry Survey

The dawn re-entry bat survey of Building X9 was completed on 28th September 2020. Two brown long-eared bats were recorded re-entering blast chamber X9 at 06:33 and 06:37. Both bats swarmed around the entrance to the blast chamber prior to re-entering their roost site. The exact roost locations could not be identified due to the blast chamber being located behind a large wooden blast wall, resulting in complete darkness within the chamber.

No other species of bat were detected or observed during this survey. Analysis of the sound recordings did not detect any further species of bat.

2.4 SUMMARY OF PREVIOUS BAT SURVEYS

Middlemarch Environmental Ltd completed a Preliminary Bat Roost Assessment and Dusk Emergence and Dawn Re-entry Bat Surveys on site in 2018 (Report RT-MME-127947-02 Rev B and Report RT-MME-127947-03 Rev A respectively). During the Preliminary Bat Roost Assessment of Building X9 numerous features were recorded around the building which could be utilised by bats to gain entry or potential roost locations. No evidence of roosting bats, e.g. droppings, urine staining, feeding remains or scratch marks, was recorded during the survey of the building. The Dusk Emergence and Dawn Re-entry Bat Surveys did not identify any bat roosts within Building X9.

2.5 SITE VALUE TO BATS

The areas of semi-natural and plantation woodland, as well as the scattered trees, scrub and various grasslands, on site offer suitable foraging and commuting opportunities for bats, linking the site to alternative roosting, foraging and commuting features in the surrounding area. Therefore, the habitats on site were considered to have high potential to be used by bats.

Habitats within 1 km of the site suitable for roosting, commuting and foraging include:

- Residential houses and associated gardens;
- Farm houses and associated agricultural buildings;
- Standing waterbodies;
- Pockets of woodland;
- Agricultural fields with tree and hedge lined boundaries;
- Churches and associated grounds; and,
- Railway lines with vegetated banks.

3. SUMMARY OF POTENTIAL IMPACTS

3.1 SUMMARY OF SURVEY FINDINGS

Following the suite of survey work undertaken on site it can be confirmed that Building X9 contains a bat roost used by brown long-eared bats. Due to the observation of two brown long-eared bats re-entering the building during surveys in 2020 it is considered that this building is used as a transitional roost by this species.

3.2 TRANSITIONAL ROOST

3.2.1 Pre- and mid-development impacts

A transitional roost supporting low numbers of brown long-eared bats has been identified within Building X9. Relatively limited initial impacts are anticipated. Potential impacts would be due to the preliminary site works such as increased human presence, site lighting installation and pre-refurbishment inspections of the site. It is anticipated that there will be an increase in noise, vibrations (very low level) and human presence in the short term prior to refurbishment works commencing on site. These factors would be likely to have an impact, albeit a low-level impact, upon any day roosts present as the site is currently unused and has limited levels of human disturbance.

Natural England Bat Mitigation Guidelines (2004) states that the most effective way to reduce impacts upon a transitional roost of bats is to carry out works at an appropriate time of year. For transitional bat roosts spring and autumn should be avoided wherever possible, with works ideally completed between June and August inclusive or November and February inclusive.

3.2.2 Long-term impacts (roost loss)

Without mitigation, the proposed works would impact any brown long-eared bats using the building as a roost. Should any bats roosting on site not be safely captured or excluded prior to works commencing, a high impact on these individual bats at a local level due to potential injury or death is expected.

In the absence of mitigation, a bat population on site would not be maintained during or after proposed works. At a local, county or regional level, it is considered that given the local environment and proximity to suitable habitat surrounding the site, any negative impacts on wider bat populations would be low.

3.2.3 Long-term impacts (fragmentation and isolation)

Building X9 is currently unused, with only limited levels of human activity, such as security patrols, occurring in or around the building. It is therefore expected that the proposed refurbishment works on site will lead to an increase in noise, vibration and periodic spells of short-term air pollution (e.g. smoke) from testing operations, light levels and human activity in and around Building X9 as the building will be brought back into operation after a substantial period of being unused. This has the potential to impact upon dark corridors for bats, notably along boundaries features including woodland edge and scattered trees.

Boundary features surrounding Building X9, including woodland edge and scattered trees, were used with varying levels of frequency by commuting and foraging bats throughout the surveys undertaken. As such any proposed lighting along these boundaries will need to be designed to ensure foraging and commuting bats are not adversely impacted. A recommendation with respect to lighting has been provided in the Dusk Emergence and Dawn Re-entry Bat Surveys Report RT-MME-153340-01 Rev B and within Chapter 5 of this report.

3.2.4 Post-development interference impacts

It is anticipated that noise, vibration and light levels will increase, in addition to periodic spells of short-term air pollution (e.g. smoke), due to the proposed refurbishment, resulting in Building X9 becoming operational again after a period of being unused. As such it is anticipated that the increased noise, vibration and light levels, in addition to periodic spells of short-term air pollution (e.g. smoke), on site will have post-development impacts upon the bats using the site. A recommendation with respect to noise, vibration, lighting and pollution has been provided within Chapter 5 of this report.

4. MITIGATION STRATEGY

4.1 INTRODUCTION

The following section details the mitigation that must be implemented for bat roosts found on site. As bat roosts have been identified, prior to any works commencing a Natural England (NE) Development License would need to be obtained. This license will contain specific details regarding mitigation and post-development works, based on the roosts found to be present on site. A NE license can only be applied for once the full suite of required bat surveys has been undertaken, full planning permission for the development has been obtained and all planning conditions have been discharged.

4.2 TIMING OF DEMOLITION/CONSTRUCTION WORKS

Works to small transitional roosts can be undertaken at any time of the year but the optimal recommended time is between June and August inclusive or November and February inclusive.

4.3 PRE-COMMENCEMENT CHECKS

A Natural England Licence is required for the proposed works on site, and as such a pre-works survey will be carried out immediately prior to works to ensure that the status of the site has not changed since the initial survey work. This will include an internal and external daytime assessment and a nocturnal emergence survey (during bat activity season only) of Building X9. If the status has not altered, works will proceed as per any mitigation strategy/Natural England Development Licence. In the unlikely event that the status has altered, then works will cease and the next steps will be discussed with Natural England.

4.4 INSTALLATION OF BAT BOXES

Building X9 Brown Long-Eared Bat Transitional Roost

Prior to any works being undertaken one Miramare woodstone bat box, one Schwegler 1FW hibernation bat box, three Schwegler 2F bat boxes and three Schwegler 2F DFP bat boxes (or suitable alternatives) will be installed on an appropriate mature tree within the semi-natural broadleaved woodland adjacent to the development area. The location of the bat boxes will be identified on site by a suitably experienced ecologist, with the boxes subsequently retained as part of the proposed development. Bat boxes will be placed on a tree/s or similar alternative at approximate angles of 120 degrees to provide a variety of climatic conditions (i.e. sun and shade at different times of the day). All bat boxes will be situated higher than 3 m from the ground to prevent any negative interference. These bat boxes include one Schwegler 2F bat box and one Schwegler 1FW hibernation bat box as direct mitigation for the Natural England Bat Licence Application and the rest of the bat boxes as enhancement measures for planning purposes.

4.5 'TOOLBOX TALK'

Prior to any works taking place on the building containing the bat roost, a 'toolbox' talk by a suitably experienced ecologist will be held with the refurbishment teams in order to ensure that the contractors are aware of the bat issues associated with the site. This 'toolbox' talk will discuss the appropriate methodologies to remove the features around the building to ensure that no harm to bats occurs. Both the site manager and the suitably experienced ecologist should keep a record of this 'toolbox talk' to confirm that it was undertaken in line with this method statement.

4.6 ECOLOGICAL CLERK OF WORKS

A Natural England Licence is required due to presence of a bat roost. As such, supervision by an Ecological Clerk of Works, who is a licensed bat worker, will be required during the demolition of any bat roosts within Building X9. All features with potential to support roosting bats present on the building will also be removed under their supervision.

4.6.1 Unexpected Bats

If a bat is discovered unexpectedly when the Ecological Clerk of Works is not present, work must stop

immediately and the named ecologist or accredited agent on the licence granted will attend the site. The bat worker will relocate any bats using the method detailed below. The site will be reassessed and an amendment to the licence may be required to prevent breaches of the original Natural England licence.

4.7 ROOST CLOSURE

4.7.1 Capture

If a roost needs to be permanently closed ahead of demolition, a licensed ecologist will inspect the roost and any bats will be removed by hand and placed within the newly installed bat boxes.

Works to the roosts will not be undertaken when it is raining to ensure that bats do not get wet during relocation. The bat boxes to be installed on site are suitable for year round use by crevice dwelling bats. Any recovered bat droppings found during the works will also be relocated to the bat boxes and in the unlikely event that a bat becomes injured, any injured bats will be immediately taken into care (as directed by the Bat Workers Manual, 2004).

Guidance from Natural England states that it is possible to transfer up to three bats in a state of torpor. The bat worker on site will in this instance reassess the site and discuss the findings with the named ecologist on the licence. This will establish if works must temporarily cease to avoid disturbance, or if an amendment to the licence is required.

If a bat is discovered unexpectedly during the works i.e. during periods of adverse weather during the demolition/site works, the following steps will be taken. Works to the building will stop immediately (to prevent any bat being disturbed or harmed) and the named ecologist or accredited agent on the licence granted will attend the site. The mitigation installed on site is appropriate for year round use and the bat worker will relocate any discovered bat using the methodologies detailed above. The site will be reassessed and an amendment to the licence may need to be submitted to prevent breaches of the licence originally granted by Natural England.

4.7.2 Exclusion

If capture methods are not possible and where appropriate (this scenario is unlikely if the roost is used by a low number of a crevice dwelling species), bats will be excluded from the roost through installation of one-way exclusion gates on all roosting features to allow bats to exit the roost location without re-entering it. The exclusion mechanisms will depend upon the width of the access points but will include:

- Sections of 32 mm diameter push fit polytubes protruding 250 mm from the entrance. These are to be placed at a 45° downwards angle to prevent bats re-entering the roosts, and;
- Plastic sleeves with the bottom cut out.

The one-way gates are required to be in place for a minimum of three days where the temperature is above 10°C at emergence time, or seven days if the temperature fluctuates (but does not drop below 6°C) between 6°C and 10°C to ensure any remaining bats have had chance to emerge. Should the temperature drop below 6°C at emergence for a short period (less than five days, which should not send bats into a deep torpid state), the temperature is required to increase to above 6°C for five consecutive days prior to works commencing. This is to ensure that any remaining bats have had chance to awake from a torpid state and leave the roost. Following any monitoring, all features will be permanently sealed by a licensed bat worker.

4.8 PERMANENT MITIGATION

Building X9 Brown Long-Eared Bat Transitional Roost

The proposed refurbishment works to Building X9 will result in the building being brought back into operation and used as a testing chamber, with operational activities including explosives testing and research. As such, no permanent mitigation can be incorporated into Building X9 due to the high risk of injury or death to bats. Therefore, permanent mitigation will include the installation of one Schwegler 1FW hibernation bat box and one Schwegler 2F bat box on an appropriate mature tree within the semi-natural broadleaved woodland adjacent to the development area prior to works commencing. These bat boxes are to be included as direct mitigation for the Natural England Bat Licence Application, with two Schwegler 2F bat boxes, three Schwegler 2F DFP bat boxes and one Miramare woodstone bat box to be installed as enhancement for

planning purposes. All bat boxes will be retained and maintained in perpetuity, with any damaged boxes to be replaced like for like.

4.9 MONITORING

As the bat roost identified within Building X9 comprise a transitional roost for low numbers of a common bat species no post-development monitoring is required.

5. RECOMMENDATIONS

All recommendations provided in this section are based on Middlemarch Environmental Ltd's current understanding of the site proposals, correct at the time the report was compiled. Should the proposals alter, the conclusions and recommendations made in the report should be reviewed to ensure that they remain appropriate.

R1 Natural England Bat Development Licence

As a bat roost/resting place has been identified in building X9, no unlicensed work can be undertaken which will contravene the legislation outlined in Appendix 1.

Examples of works which will breach this legislation include:

- Roof modifications/repairs/removal;
- Timber treatment;
- Noise, vibrations and storage of odorous and dangerous chemicals;
- Alterations to bat entrance/exit points;
- Investigations works in the roof as this can cause bats to abort their young/awake from hibernation and can alter the roof temperature/humidity; and,
- Works in the main body of the building.

N.B. This is not an exhaustive list and a bat worker should be consulted to determine if the works are likely to breach any legislation.

Prior to any works being undertaken which are likely to result in a breach of the legislation, a development licence must be obtained from Natural England. The licence application process will include the submission of a method statement detailing the current status of bats on site and how the favourable conservation status of the bat population will be maintained. Prior to a licence being issued, planning permission must be granted and relevant conditions relating to protected species and habitat issues must be discharged.

R2 Bat Boxes

Bat boxes as described in Section 4.9 in this Mitigation Strategy are to be installed on site and retained and maintained in perpetuity.

R3 Lighting

In accordance with best practice guidance relating to lighting and biodiversity (Miles et al, 2018; Gunnell et al, 2012), any new lighting should be carefully designed to minimise potential disturbance and fragmentation impacts on sensitive receptors, such as bat species. Examples of good practice include:

- Avoiding the installation of new lighting in proximity to key ecological features, such as along the western and eastern boundaries which are being used as commuting pathways for both common pipistrelles and soprano pipistrelles.
- Using modern LED fittings rather than metal halide or sodium fittings, as modern LEDs emit negligible UV radiation.
- The use of directional lighting to reduce light spill, e.g. by installing bespoke fittings or using hoods or shields. For example, downlighting can be used to illuminate features such as footpaths whilst reducing the horizontal and vertical spill of light.
- Where the use of bollard lighting is proposed, columns should be designed to reduce horizontal light spill.
- Implementing controls to ensure lighting is only active when needed, e.g. the use of timers or motion sensors.
- Use of floor surface materials with low reflective quality. This will ensure that bats using the site and surrounding area are not affected by reflected illumination.

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APPENDIX 1

LEGISLATION

Bats and the places they use for shelter or protection (i.e. roosts) receive legal protection under the Conservation of Habitats and Species Regulations 2017 (Habitats Regulations 2017) and the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) Regulations 2019 (Habitats Regulations 2019). They receive further legal protection under the Wildlife and Countryside Act (WCA) 1981, as amended. This protection means that bats, and the places they use for shelter or protection, are capable of being a material consideration in the planning process.

Regulation 41 of the Habitats Regulations 2017, states that a person commits an offence if they:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats; or
- damage or destroy a bat roost (breeding site or resting place).

Disturbance of animals includes in particular any disturbance which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong.

It is an offence under the Habitats Regulations 2017 for any person to have in his possession or control, to transport, to sell or exchange or to offer for sale, any live or dead bats, part of a bat or anything derived from bats, which has been unlawfully taken from the wild.

Changes have been made to parts of the Habitats Regulations 2017 so that they operate effectively from 1st January 2021. The changes are made by the Habitats Regulations 2019, which transfer functions from the European Commission to the appropriate authorities in England and Wales.

All other processes or terms in the 2017 Regulations remain unchanged and existing guidance is still relevant.

The obligations of a competent authority in the 2017 Regulations for the protection of species do not change. A competent authority is a public body, statutory undertaker, minister or department of government, or anyone holding public office.

Whilst broadly similar to the above legislation, the WCA 1981 (as amended) differs in the following ways:

- Section 9(1) of the WCA makes it an offence to *intentionally* kill, injure or take any protected species.
- Section 9(4)(a) of the WCA makes it an offence to *intentionally or recklessly** damage or destroy, or *obstruct access to*, any structure or place which a protected species uses for shelter or protection.
- Section 9(4)(b) of the WCA makes it an offence to *intentionally or recklessly** disturb any protected species *while it is occupying a structure or place which it uses for shelter or protection*.

*Reckless offences were added by the Countryside and Rights of Way (CROW) Act 2000.

As bats re-use the same roosts (breeding site or resting place) after periods of vacancy, legal opinion is that roosts are protected whether or not bats are present.

The reader should refer to the original legislation for the definitive interpretation.

The following bat species are Species of Principal Importance for Nature Conservation in England: barbastelle bat *Barbastella barbastellus*, Bechstein's bat *Myotis bechsteinii*, noctule *Nyctalus noctula*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared bat *Plecotus auritus*, greater horseshoe bat *Rhinolophus ferrumequinum* and lesser horseshoe bat *Rhinolophus hipposideros*. Species of Principal Importance for Nature Conservation in England are material considerations in the planning process. The list of species is derived from Section 41 list of the Natural Environmental and Rural Communities (NERC) Act 2006.

ECOLOGY

At present, 18 species of bats are known to live within the United Kingdom, of which 17 species are confirmed as breeding. All UK bat species are classed as insectivorous, feeding on a variety of invertebrates including midges, mosquitoes, lacewings, moths, beetles and small spiders.

Bats will roost within a variety of different roosting locations, included houses, farm buildings, churches, bridges, walls, trees, culverts, caves and tunnels. At different times of the year the bats roosting requirements alter and they can have different roosting locations for maternity roosts, mating roosts and hibernation roosts. Certain bat species will also change roosts throughout the bat activity season with the bat colony using the site to roost for a few days, abandoning the roost and then returning a few days or weeks later. This change can be for a variety of reasons including climatic conditions and prey availability. Bats are known live for several years and if the climatic conditions are unfavourable at a particular roost, they may abandon it for a number of years, before returning when conditions change. Due to the matriarchal nature of bat colonies, the locations of these roosts can be passed down through the generations.

Bats usually start to come out of hibernation in March and early April (weather dependent), when they start to forage and replenish the body weight lost during the hibernation period. The female bats then start to congregate together in maternity roosts prior to giving birth and a single baby is born in June or July. The female then works hard to feed her young so that they can become independent and of a sufficient weight to survive the winter before the weather gets too cold and invertebrate activity reduces. Males generally live solitary lives, or in small groups with other males, although in some species the males can be found living with the females all year. The mating season begins in the autumn. During the winter bats hibernate in safe locations which provide relatively constant conditions, although they may venture outside to forage on warmer winter nights.