



Preliminary Roost Assessment

Description: *An assessment of the bat specific ecological features present, or potentially present, within the site and its surrounding area.*

Site: 5 Aldbourne Avenue, Earley, Reading, RG6 7DB.

Client: Billy Johal.

Status	Issue	Name	Date
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Acknowledgements

Not applicable for this report.

Industry Guidelines and Standards

This report has been written with due consideration to:

- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.

Proportionality

The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation, and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary, and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate. This approach is enshrined in Government planning guidance, for example, paragraph 174 of the National Planning Policy Framework for England. The desk studies and field surveys undertaken to provide a Preliminary Ecological Appraisal (PEA) might in some cases be all that is necessary. (BS 42020, 2013)

Executive Summary

Matthew Game Consultancy was instructed to undertake a Preliminary Roost Assessment (PRA) at 5 Aldbourne Avenue, Earley, Reading, RG6 7DB. (hereafter referred to as “the site”). The survey was required to support a planning application for the redevelopment of the site (hereafter referred to as “the proposed development”).

The following is work you will need to commission to obtain planning permission and to comply with legislation. Further information, along with opportunities for biodiversity enhancement, are outlined in Table 10 of this report.

Feature	Foreseen impacts	Recommendations <i>Measures required to adhere to guidance, legislation and planning policies.</i>
Roosting bats (Building B1 & B2)	The proposed development will result in the demolition/renovation/repairs to these buildings. This could result in damage/modification/destruction of any bat roosts present and could cause disturbance, death or injury to bats.	Two bat emergence and re-entry surveys are required during the active bat season (May – September) to confirm presence or likely absence of a bat roost in the building. Both of the surveys should be completed during the optimal survey period mid-May to August inclusive.
Foraging and commuting bats	The proposed development will result in the loss of small areas of hedgerow and trees but given the presence of more extensive areas of foraging and commuting habitat in the locality, this is likely to be inconsequential for bats. The proposed development will include the use of lighting which could spill on to bat roosting, foraging or commuting habitat and deter bats from using these areas.	A low impact lighting strategy will be adopted for the site during and post-development.
Nesting birds	None	None

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1.0 Introduction and Context

1.1 Background

Matthew Game Consultancy was instructed to undertake a Preliminary Roost Assessment (PRA) at 5 Aldbourne Avenue, Earley, Reading, RG6 7DB. (hereafter referred to as “the site”). The survey was required to support a planning application for the redevelopment of the site (hereafter referred to as “the proposed development”).

The aim of the PRA was to determine the presence or evaluate the likelihood of the presence of roosting bats, and to gain an understanding of how bats could use the site for roosting, foraging or commuting. This has been undertaken with due consideration to the “Bat Surveys for Professional Ecologists —Good Practice Guidelines” publication (Collins, 2016).

No previous ecology reports have been produced for this site by Matthew Game Consultancy or, to the author’s knowledge, by any other consultancy.

1.2 Site Context

The site is located at 5 Aldbourne Avenue, Earley, Reading, RG6 7DB. National Grid Reference SU 74535 71854, The site has an area of approximately 0.1ha comprising buildings and associated driveway / parking areas and garden. It is surrounded by residential buildings on all aspects, with the university of Reading to the west and areas of woodland and green space in the wider landscape. A site location plan is provided in Appendix 2.

1.3 Scope of the Report

This report provides a description of all features suitable for roosting, foraging and commuting bats and evaluates those features in the context of the site and wider environment. It further documents any physical evidence collected or recorded during the site survey that establishes the presence of roosting bats. It provides information on possible constraints to the proposed development as a result of bats and summarises the requirements for any further surveys to inform subsequent mitigation proposals, achieve planning or other statutory consent and to comply with wildlife legislation.

To achieve this, the following steps have been taken:

- A desk study has been carried out.
- A field survey has been undertaken, including an external survey and internal inspection of built structures and a ground-level assessment of trees where possible, to determine the presence or the suitability of any features which bats could use for roosting and to assess the suitability of the site's bat foraging and commuting habitat.
- An outline of potential impacts on any confirmed or unidentified roosts has been provided, based on the proposed development.
- Recommendations for further surveys and mitigation have been made, along with advice on the requirements for a European Protected Species Licence (EPSL) application if appropriate.
- Opportunities for the enhancement of the site for roosting, foraging and commuting bats have been set out.

2.0 Methodology

2.1 Desk Study

The desk study included a 2km radius review of statutory designated sites with bat qualifying interests and granted EPSL records for bats held on magic.gov.uk database. An assessment of the surrounding landscape structure was also completed using aerial images from Google Earth and OS maps.

2.2 Field Survey

The survey was undertaken on the 11th of November 2024 by Lewis Smith BSc (Hons) (NE Bat Class Licence: WML-CL17 & Accredited Agent, NE Bat Class Licence: WML-CL18) who has over 5 years' experience in consultant ecology.

The PRA focussed on two built structures, the dwelling and the associated garage which will be affected by the proposed development as well as providing an overview of the wider site and the surrounding landscape for bat roosting, foraging and commuting habitat.

Any trees or buildings present onsite were assessed for their suitability for roosting bats using the protocol set out in Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th ed). Where necessary this included the use of binoculars to allow for a ground level assessment to search for signs such as staining and/or droppings sometimes found around roost entrances. Internal inspections of buildings or loft voids were undertaken where possible, using ladders and crawling boards if appropriate.

It is noted that a lack of evidence of roosting bats, such as presence of bats, droppings, or staining, does not correlate to a lack or presence or a lack of suitability. Habitats were assessed for their suitability for foraging and commuting bats, as set out in Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th ed).

For any surveyed buildings:

A non-intrusive visual appraisal was undertaken from the ground, using binoculars to inspect the external features of the building for features which bats could use for roosting, including access or egress points and for signs of bat use including droppings, scratch marks, insect remains and urine smear marks. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows.

European Protected Species

Following the UK exit from the European Union (EU), species formerly protected under the Habitat Regulations are now considered to be protected under The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019¹² and will continue to be referred to as European Protected Species (EPS). Further legislative details regarding protected species are included in Appendix 4.

2.3 Breeding Birds and Other Incidental Observations

The surveyor also made note of any other ecological constraints observed during the survey, notably the likelihood of presence or signs of breeding birds, and the suitability of the site for barn owls *Tyto alba*.

2.4 Suitability Assessment

Built structures were categorised according to the likelihood of bats being present and the types of roost that the identified features could support. This is summarised in Table 1 for buildings below. Roost suitability is classified as high, moderate, low and negligible and dictates any further surveys required before works can proceed.

Table 1: Features of a building that are correlated with use by bats.

Classification	Feature of building and its context
Moderate to high	Buildings or structures with features of particular significance for larger numbers of roosting bats e.g. mines, caves, tunnels, icehouses and cellars. Habitat on site and surrounding landscape of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland. Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river and or stream valleys and hedgerows. Site is proximate to known or likely roosts (based on historical data). Buildings with high suitability could support roosts of high conservation value such as maternity or hibernation roosts.
Low	A small number of possible roost sites or features, used sporadically by individual or small numbers of bats. Potential roost features may be suboptimal for reasons such as shallow depth, poor thermal qualities or upwards orientation with exposure to inclement weather or predators. Habitat suitable for foraging in close proximity but isolated in the landscape. Or an isolated site not connected by prominent linear features. Few features suitable for roosting, minor foraging or commuting.
Negligible	Unsuitable for use by bats.

2.5 Limitations

It should be noted that whilst every effort has been made to describe the baseline conditions within the survey area, and evaluate these features, this report does not provide a complete characterisation of the site. This assessment provides a preliminary view of the likelihood of protected species being present. This is based on suitability of the habitats on the site and in the wider landscape, the ecology and biology of species as currently understood, and the known distribution of species as recovered during the searches of historical biological records.

Building(s) were inspected from ground level; a full assessment could not be made of areas out of view from ground level.

As part of standard practice, a data search has been undertaken from the local biological record centre. This is not considered to be a complete list of species present and is better considered to be a list of species recorded, with many species known to be under recorded.

These limitations are produced in accordance with BS 42020; Clause 6.7.

This report does not purport to provide legal advice. This report provides baseline ecological conditions for the site and is considered relevant for a period of no more than 12 months from the date of the Site Visit.

However, these limitations are not considered to have affected the accuracy of the assessment or the recommendations provided in this report and, where considered necessary, recommendations for further survey have been made to overcome these limitations. This report presents conditions and recommendations for the Site based on the state of the Site during the survey visit. Any changes to the Site prior to development, including changes in the management of the Site habitats will therefore potentially invalidate this report and its recommendations.

3.0 Results and Evaluation

3.1 Desk Study Results

A summary of desk study results is provided below.

3.2 Designated Sites

The site falls within the impact risk zone for the Lodge Wood & Sandford Mill Site of Special Scientific Interest (SSSI), as well as the Stanford End Mill and River Loddon (SSSI).

No statutory designated sites with bat qualifying interests were identified within 2km of the site.

3.3 Landscape

A review of aerial photographs (Google Earth) the magic.gov.uk database and OS maps has been undertaken. Collated together, the value of the landscape for bats is described below:

The habitats on the site comprise buildings, hard standing and associated garden, these habitats on this site have low value for commuting and foraging bats due to connectivity locally to areas of trees, woodland and linear features; this means the site is thought suitable to support foraging and commuting bats. The immediately adjacent areas around the site are considered to have habitats with suitability to support foraging or commuting bats, being dominated by residential dwellings with hedgerows, scattered trees and woodland. The wider area is dominated by residential development and has some barriers for bats to access trees and lines of trees in the surrounding area. Bats use linear features, typically lines of trees and hedgerows, to commute and to forage. Gaps, such as roads, act as barriers to bats crossing and utilising these linear features; with larger gaps being more detrimental and acting as more of a barrier. A large area of woodland is present directly west of the dwelling between Wilderness Road and the University of Reading campus.

3.4 Historical Records

A search of the magic.gov.uk database for granted European Protected Species Licences (EPSLs) within a 2km radius of the site has been completed. Displaced bats from licensed sites <2km away from the survey site will find alternative habitat either within the mitigation measures implemented as part of the licence or will relocate to other known roosts sites near the licensed site. EPSL records for bats are summarised in Table 2.

Table 2: Granted EPSLs for bats within 2km of the site.

<i>EPSL reference</i>	<i>Approx. distance from site</i>	<i>Bat species affected</i>	<i>Licence start date:</i>	<i>Licence end date:</i>	<i>Impacts allowed by licence</i>
EPSM2012-4478	600 metres west	Soprano Pipistrelle, Common Pipistrelle	03/09/2012	30/09/2016	Destruction of a resting place.
EPSM2010-2266	1000 metres west	Common Pipistrelle, Brown-long eared	01/09/2010	28/02/2011	Destruction of a resting place, Destruction of a breeding site.
2014-441-EPS-MIT	1050 metres north	Common Pipistrelle, Soprano pipistrelle	14/04/2014	30/09/2019	Destruction of a resting place, Damage of a resting place.
EPSM2012-4390	1200 metres east	Brown-long eared	10/05/2012	30/09/2015	Destruction of a resting place, Destruction of a breeding site.
EPSM2010-2126	1250 metres west	Common Pipistrelle	02/09/2010	31/08/2012	Destruction of a resting site.
2014-3941-EPS-MIT	1900 metres west	Common Pipistrelle, Soprano pipistrelle	21/10/2014	30/11/2019	Destruction of a resting place.

The data search returned 157 records of six bat species either relating to bats or bat roosts from 1985 to 2024 within 2km of site. A summary of the results is presented in Table 3 below.

Table 3: Summary of data search results.

Species	Distance and Orientation	Date	Record Type	Notes
C. Pipistrelle	700 metres north	2022	Field record	
Noctule	700 metres north	2022	Field record	
S. Pipistrelle	700 metres north	2022	Field record	
Serotine	700 metres north	2022	Field record	
Daubenton's bat	1900 metres east	2022	Field record	
N. Pipistrelle	1900 metres north	2020	Field record	

3.5 Field Survey Results

The PRA focussed on the built structure which will be affected by the development as well as providing an overview of the wider site and the surrounding landscape for bat roosting, foraging and commuting habitat. The results of the field survey are illustrated in Appendix 3. The weather conditions recorded at the time of the survey are shown in Table 4.

Table 4: Weather conditions during the survey

Date: 11/11/2024	
Temperature	14°C
Humidity	45%
Cloud Cover	20%
Wind	5mph
Rain	None

Building B1 Exterior (Western elevation)

B1 is a detached three-storey brick built building with a cross-pitched and hip tiled roof. The roof tiles are in good condition with no raised tiles under which bats could roost, mortar was in good condition all around this aspect,

The brickwork is in good condition with no gaps or cracks in which crevice-dwelling bats could roost.

The doors and windows are uPVC framed and appear in good condition with no suitable bat roosting sites.

The decorative hanging tiles at the front of the property are in okay condition with multiple loose/ broken tiles identified which could allow crevice dwelling bat species access to roost.

**Building B1 Exterior (Eastern elevation)**

The roof tiles are in generally good condition with one loose tile just below the ridge tiles adjacent to the chimney on the main building and a single missing tile below the lead sheeting on the extension under which bats could roost.

The soffit boxes are tight against the wall and offer no gaps.

The windows appear in good condition with no suitable bat roosting sites.

Brickwork is in excellent condition with no gaps or cracks which could be utilised by bat species.



Building B1 Exterior (Northern elevation)

The roof tiles are in good condition with no raised tiles under which bats could roost, mortar was in good condition all around this aspect,

The brickwork is in good condition with no gaps or cracks in which crevice-dwelling bats could roost.

The doors and windows are uPVC framed and appear in good condition with no suitable bat roosting sites.



Building B2 Exterior (Western Elevation)

B2 is a single storey brick built garage structure with a cross pitched and open gable tiled roof,

The roof tiles are in good condition with no raised tiles under which bats could roost, mortar was in good condition all around this aspect. The brickwork is in good condition with no gaps or cracks in which crevice-dwelling bats could roost.



Potential Roost Features on the building

On the western elevation a single hanging tile had slipped, Circled red.



Tiles on the eastern elevation have lifted allowing potential crevices. Circled red.



B1 Interior

B1 – roof space (pictured opposite).

There is a single roof space within the main roof void of B1. The roof structure is built from modern timber beams including the ridge beam. The floor of the loft space is lined with mineral wool insulation and there are timber boards in places. There are cobwebs around the ridge beam and roof to floor cobwebs which could indicate a lack of internal flying activity from void dwelling bats, such as brown long-eared bats.

**B2 Interior**

B1 – loft space (pictured opposite).

The roof space above the garage is open with mineral wool insulation lined across timber beams, the garage has some access holes in the window however these were covered with cobwebs as well as cobwebs in the garage space itself, indicating a potential lack of internal flying activity from void dwelling bats



B1 Evidence of bats There was no evidence of bats located externally or internally (where surveyed) on the survey building. B1 Breeding birds and other incidental observations. There was no evidence of nesting birds located externally or internally (where surveyed) on the survey building.	
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4.0 Conclusions, Impacts and Recommendations

4.1 Informative Guidelines

A summary of the relevant legislation and planning policies is provided in Appendix 4.

Bats

Bats are protected under the Wildlife and Countryside Act and the Conservation of Habitats and Species Regulations 2017 (amended by the Conservation of Habitats and Species Regulations (amendment) (EU Exit) Regulations 2019).

There are three possible outcomes of this survey, each with specific recommendations. These are outlined below:

Confirmed bat roost:

Best practice survey guidelines (Collins, 2016) recommend additional surveys for confirmed roosts. Three further surveys are required to characterise the bat roost present including species, roost type and access points to inform an EPSL application to Natural England. Surveys must be completed during the active bat season (May – September). At least two of the surveys should be completed during the optimal survey period mid-May to August.

Low, moderate or high likelihood of a bat roost present:

Best practice survey guidelines (Collins, 2016) recommend additional surveys for features assessed as having low to high suitability for roosting bats. One, two or three further surveys are required to confirm presence or likely absence of a bat roost, based on a low, medium, or high roost likelihood evaluation. Surveys must be completed during the active bat season (May – September).

If more than one survey is recommended, at least one of them should be completed during the optimal survey period mid-May to August. If two or one further survey is recommended these surveys must be completed during the optimal survey period (mid-May to August). For low and moderate roost likelihood evaluation the survey effort recommended at this stage is iterative and if bats roosts are confirmed in the building, a further survey will be required to provide sufficient information to inform an EPSL application to Natural England.

Negligible likelihood of a bat roost present:

Buildings assessed as comprised of negligible suitability for roosting bats do not normally require further surveys. However, if bats are found during any stage of development, work should stop immediately, and a suitably qualified ecologist should be contacted for further advice.

Birds

Legislation protects all wild birds whilst they are breeding, and prohibits the killing, injuring, or taking of any wild bird or their nests and eggs. Certain species of bird, including the barn owl, are subject to special provisions; it is an offence to disturb any bird or their young during the breeding season.

4.2 Evaluation

Taking the desk study and field survey results into account, Table 5 presents an evaluation of the value of the site for bats and also details any other ecological constraints identified such as nesting birds in relation to the proposed development.

Table 5: Evaluation of the site for bats and any other ecological constraints

Feature	Survey conclusions (with justification)	Foreseen impacts	Recommendations Measures required to adhere to guidance, legislation and planning policies.	Biodiversity Enhancements
Roosting bats (B1 & B2)	B1 has moderate value for roosting bats due to several potential roost features. Six EPSL records within 2km were returned during the desk study as well as over 100 records of bat species within the local area. With local habitats available to support bat species, it is likely that bat species are present in the local area. B2 is deemed unlikely to support bat species due to a lack of potential roosting features.	The proposed development will result in the demolition/renovation/repairs to these buildings. This could result in damage/modification/destruction of any bat roosts present and could cause disturbance, death or injury to bats.	Two bat emergence and re-entry surveys are required during the active bat season (May – September) to confirm presence or likely absence of a bat roost in the building. Both of the surveys should be completed during the optimal survey period mid-May to August inclusive. Three surveyors are required to provide full coverage of the building with three NVAs (Night Vision Aids) to meet guidelines. If bat roosts are confirmed in the building one additional survey will be required to inform an EPSL application to Natural England. The EPSL application requires that surveys have been undertaken within the most recent active bat season and planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission.	To be confirmed upon completion of the surveys

Foraging and commuting bats	There are low / moderate value habitats on-site and adjacent to the site which could be used by bats for foraging or commuting. None of these habitats are affected by the proposed development.	The proposed development will result in the loss of small areas of hedgerow and trees but given the presence of more extensive areas of foraging and commuting habitat in the locality, this is likely to be inconsequential for bats. The proposed development will include the use of lighting which could spill on to bat roosting, foraging or commuting habitat and deter bats from using these areas.	A low impact lighting strategy will be adopted for the site during and post-development, which will include the following measures: • Use narrow spectrum light sources to lower the range of species affected by lighting. • Use light sources that emit minimal ultra-violet light. • Avoid white and blue wavelengths of the light spectrum to reduce insect attraction and where white light sources are required in order to manage the blue shortwave length content they should be of a warm / neutral colour temperature <4,200 kelvin. • Not use bare bulbs and any light pointing upwards. The spread of light will be kept in line with or below the horizontal. Light spill will be reduced via the use of low-level lighting used in conjunction with hoods, cowls, louvers and shields. Lights will also be directional to ensure that light is directed to the intended areas only. External lighting will be on PIR sensors that are sensitive to large objects only (so that they are not triggered by passing bats) and will be set to the shortest time duration to reduce the amount of time the lights are on. Wall lights and security lights will be 'dimnable' and set to the lowest light intensity settings. There are several products on the market that allow the control of the light intensity and the duration that the lights are on. All lighting on the developed site will make use of the most up to date technology available.	None
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Nesting birds	The building offers no opportunities for nesting birds.	None	None	The installation of a minimum of one bird box on mature trees around the site boundaries will provide additional nesting habitat for birds e.g. Schwegler No 17 Swift Nest Box (buildings) Schwegler 1SP Sparrow Terrace (buildings) Swift and sparrow boxes should be positioned at the eaves of a building and can be incorporated into the fabric of the building during construction.
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5.0 Bibliography

- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Collins, J. (2016). Bat Surveys for Professional Ecologists —Good Practice Guidelines, 3rd edition, Bat Conservation Trust, London.
- Garland, L. & Markham, S. (2008) Is Important Bat Foraging and Commuting Habitat Legally Protected? <http://biodiversitybydesign.co.uk/cmsAdmin/uploads/protection-for-bat-habitat-sep-2007.pdf>
- Google Earth. Accessed on 18/11/2024.
- Institution of Lighting Professionals (2018). Guidance Note 08/18 Bats and Artificial Lighting in the UK. Bats and the Built Environment Series Publication: http://www.bats.org.uk/news.php/406/new_guidance_on_bats_and_lighting.
- Magic Database. <http://www.magic.gov.uk/MagicMap.aspx> Accessed on 18/11/2024.
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.
- National Planning Policy Framework (2021) <https://www.gov.uk/government/publications/national-planning-policy-framework--2>
- Natural England Designated Sites View. <https://designatedsites.naturalengland.org.uk/SiteSearch.aspx> Accessed on 18/11/2024.
- Wray, S., Wells, D., Long, E., Mitchell-Jones, T (2010) Valuing Bats in Ecological Impact Assessment. IEEM In-Practice. Number 70 (December 2010). Pp. 23-25.

Appendix 1: Proposed Development Plan

Not available at the time of writing this report

Appendix 2: Site Location Plan



Appendix 3: Bat Survey Plan



Appendix 4: Legislation and Planning Policy Related to Bats

LEGAL PROTECTION

All species of bat are fully protected under *The Conservation of Habitats and Species Regulations 2017* (as amended) through their inclusion on Schedule 2.

Regulation 43: Protection of certain wild animals - offences

(1) A person is guilty of an offence if they:

- (a) Deliberately captures, injures or kills any wild animal of a European protected species,
- (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,

(2) For the purposes of paragraph (1) (b), disturbance of animals includes in particular any disturbance which is likely—

- (a) To impair their ability:
 - (i) To survive, to breed or reproduce, or to rear or nurture their young; or
 - (ii) In the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- (b) To affect significantly the local distribution or abundance of the species to which they belong.

Bats are also protected under the *Wildlife and Countryside Act 1981* (as amended) through their inclusion on Schedule 5. Under this Act, they are additionally protected from:

- Intentional or reckless disturbance (at any level)
- Intentional or reckless obstruction of access to any place of shelter or protection
- Selling, offering or exposing for sale, possession or transporting for purpose of sale

NATIONAL PLANNING POLICY (ENGLAND)

National Planning Policy Framework 2021

The National Planning Policy Framework promotes sustainable development. The Framework specifies the need for protection of designated sites and priority habitats and species. An emphasis is also made on the need for ecological infrastructure through protection, restoration and re-creation. The protection and recovery of priority species (considered likely to be those listed as species of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006) is also listed as a requirement of planning policy.

In determining a planning application, planning authorities should aim to conserve and enhance biodiversity by ensuring that: designated sites are protected from harm; there is appropriate mitigation or compensation where significant harm cannot be avoided; measurable gains in biodiversity in and around developments are incorporated; and planning permission is refused for development resulting in the loss or deterioration of irreplaceable habitats including aged or veteran trees and also ancient woodland.

The Natural Environment and Rural Communities Act 2006 and the Biodiversity Duty

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006, requires all public bodies to have regard to biodiversity conservation when carrying out their functions. This is commonly referred to as the 'biodiversity duty'.

Section 41 of the Act requires the Secretary of State to publish a list of habitats and species which are of 'principal importance for the conservation of biodiversity'. This list is intended to assist decision makers such as public bodies in implementing their duty under Section 40 of the Act. Under the Act these habitats and species are regarded as a material consideration in determining planning applications. A developer must show that their protection has been adequately addressed within a development proposal.

EFFECT OF LEGISLATION AND POLICY ON DEVELOPMENT WORKS

A European Protected Species Licence (EPSL) issued by Natural England will be required for works likely to affect a bat roost or for operations likely to result in a level of disturbance which might impair their ability to undertake those activities mentioned above (e.g. survive, breed, rear young and hibernate). The licence is to allow derogation from the relevant legislation but also to enable appropriate mitigation measures to be put in place and their efficiency/success to be monitored. The legislation may also be interpreted such that, in certain circumstances, important foraging areas and/or commuting routes can be regarded as being afforded *de facto* protection, for example, where it can be proven that the continued usage of such areas is crucial to maintaining the integrity and long-term viability of a bat roost (Garland & Markham, 2008).

There are 17 species of bat breeding in England and Natural England issues licences under Regulation 55 of the Habitats Regulations to allow you to work within the law.

Licences are issued for specific purposes stated in the Regulations, if the following three tests are met:

- The purpose of the work meets one of those listed in the Habitats Regulations (see below);
- That there is no satisfactory alternative;
- That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status (FCS) in their natural range

The Habitats Regulations permits licences to be issued for a specific set of purposes including:

1. include preserving public health or public safety or other imperative reasons of over-riding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;
2. scientific and educational purposes;
3. ringing or marking; and,
4. conserving wild animals.

Development works fall under the first purpose and Natural England issues bat mitigation licences for developments.

EUROPEAN PROTECTED SPECIES POLICIES

In December 2016 Natural England officially introduced the four licensing policies throughout England. The four policies seek to achieve better outcomes for European Protected Species (EPS) and reduce unnecessary costs, delays and uncertainty that can be inherent in the current standard EPS licensing system. The policies are summarised as follows:

- Policy 1; provides greater flexibility in exclusion and relocation activities, where there is investment in habitat provision;
- Policy 2; provides greater flexibility in the location of compensatory habitat;
- Policy 3; provides greater flexibility on exclusion measures where this will allow EPS to use temporary habitat; and,
- Policy 4; provides a reduced survey effort in circumstances where the impacts of development can be confidently predicted.

The four policies have been designed to have a net benefit for EPS by improving populations overall and not just protecting individuals within development sites. Most notably Natural England now recognises that the Habitats Regulations legal framework now applies to 'local populations' of EPS and not individuals/site populations.

Appendix 5: Standard Guidance for Mitigation, Compensation and Enhancement

Bat tubes, bat bricks and bat boxes

To compensate for the loss of roosts used by crevice dwelling species or to provide enhancement measures, thought should be given to utilising proprietary products from recognised manufacturers such as: Bird Brick Houses, The Nest Box Company, Schwegler, Habibat, Causa and Vincent.

Bat tubes and integrated bat bricks are artificial roost features that can be incorporated into building structures. Bat boxes are generally fitted externally to mature trees or structures. The site's value to bats could be enhanced by installing any of these features. Any bat tubes and bat bricks used for enhancement would need to be in addition to any required to compensate for the loss of the roosts.

Bat tubes, bat bricks or bat boxes should be located at least 5m above ground level facing southeast – southwest and to allow for clear flight paths and should not be directly lit by artificial lighting. Bat boxes should be woodcrete designs as they are long lasting compared to wooden boxes and insulate occupants from extremes of temperature and condensation.

Breathable roof membrane

Breathable roof membranes (BRMs) have been shown to entangle roosting bats, leading to mortality, sometimes of entire colonies. Therefore, it is recommended that only bitumen roofing felt that does not contain polypropylene filaments (e.g. bitumen felt type 1F) should be used to reduce the risk of bat mortality.

Bats and lighting

While different species of bat react differently to nighttime lighting, research has found that bats overall are sensitive to artificial lighting. Excessive and/or poorly directed lighting may delay bats in emerging from their roosts; shortening the time available for foraging, as well as causing bats to move away from suitable foraging grounds, movement corridors or roosting sites, to alternative dark areas (Jones, 2000).

To minimise indirect impacts from lighting associated with the proposed development it is recommended that artificial lighting is only directed where necessary for health and safety reasons. Lighting should not illuminate any trees and hedgerows on site or suspected or confirmed bat roosting sites. Lighting should only be used for the period of time for which it is required. This can be achieved by following accepted best practice (Bat Conservation Trust 2018):

- Where appropriate, professional lighting designers should be consulted, and the need for quantitative lighting measurements should be considered;
- Lighting mitigation should be based on robust baseline surveys of bat behaviour and existing light levels on site wherever possible;
- The level of artificial lighting including flood lighting should be kept to an absolute minimum;
- Where this does not conflict with health and safety and/or security requirements, the site should be kept dark during peak bat activity periods (0 to 1.5 hours after sunset and 1.5 hours before sunrise);
- Variable lighting regimes (VLR) can be utilised to lower lighting levels during periods of low human activity (e.g. 00:30-05:30);
- Lighting required for security or safety reasons should use a lamp of no greater than 2000 lumens (150 Watts) and should comprise sensor-activated lamps;
- Use narrow-spectrum light sources that peak higher than 550 nanometres, avoiding lights with UV, white and blue wavelengths;
- Lights utilising LED technology are the preferred option as these lights do not emit on the UV spectrum, are easily controllable in terms of direction/spill and can be turned on and off instantly;
- Avoid the use of sodium or metal halide lamps, these gas lamps require a lengthy period in which to turn off and the diffuse nature of the light emitted makes light spillage a significant problem.

- Lights required for nighttime deliveries or security patrols could be set to activate with pressure activated sensors set into the ground;
- Lighting should be directed to where it is needed to minimise light spillage. This can be achieved by limiting the height of the lighting columns and by using as steep a downward angle as possible and/or an integrated shielding that directs the light below the horizontal plane and restricts the lit area;
- Usually using lower lighting columns and increasing the spacing between them reduces light intensity and spill;
- Plant vegetation to form light barriers and dark corridors. Use close-boarded fencing to screen light until vegetation matures. Dark corridors should be well connected to commuting routes;
- Artificial lighting should not directly illuminate any confirmed or potential bat roosting features or habitats of value to commuting/foraging bats. Similarly, any newly planted linear features or compensatory bat roosting features should not be lit; and
- The use of reflective surfaces under lights should be avoided