



Preliminary Roost Assessment

5 Carlile Gardens, Twyford, RG10 9BU

Jo Mota

Status	Issue	Name	Date
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Final	2	Beth Ellison-Perrett BSc (Hons) MSc, MRSB, Consultant	20/02/2024

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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.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.

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.

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

Arbtech Consulting Limited was instructed by Jo Mota to undertake a Preliminary Roost Assessment (PRA) at 5 Carlile Gardens, Twyford, RG10 9BU (hereafter referred to as “the site”). The survey was required to inform a planning application for a loft conversion with rear skylights (hereafter referred to as “the proposed development”).

The following is work you will need to commission to comply with planning policy and legislation. Further information, along with opportunities for biodiversity enhancement, are outlined in Table 5 of this report.

Building	Survey Results Summary	Impact Assessment	Recommendations
Roosting bats (B1)	B1 has negligible value for roosting bats due to a lack of potential roost features.	Bats are very unlikely to be roosting within this building and as such, there are not anticipated to be any impacts on roosting bats as a result of the extension of this building.	In the unlikely event that a bat or evidence of bats is discovered during the development all work must stop and a bat licensed ecologist contacted for further advice.
Foraging and commuting bats	Species poor hedgerow and scattered trees could be used by local bat populations for foraging and commuting. These could also be used by bats dispersing from nearby roosts outside of the site.	The proposed development will not result in the removal of any habitats which could be used by foraging or commuting 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.

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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was instructed by Jo Mota to undertake a Preliminary Roost Assessment (PRA) at 5 Carlile Gardens, Twyford, RG10 9BU (hereafter referred to as “the site”). The survey was required to inform a planning application for a loft conversion with rear skylights (hereafter referred to as “the proposed development”). A plan showing the proposed development is provided in Appendix 1.

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 Arbtech Consulting Ltd or, to the author’s knowledge, by any other consultancy.

1.2 Site Location and Landscape Context

The site is located at National Grid Reference SU 78681 77031 and has an area of approximately 0.04ha comprising one dwelling with its associated vegetated garden, scattered trees and hedgerows. It is surrounded by residential dwellings within the village of Twyford, with arable fields and solar panel fields to the north, the river Thames to the north-west, the village of Charvil to the south and arable fields to the east. 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 inspection of built structures, 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 by Beth Ellison-Perrett BSc (Hons) MSc, MRSB, Consultant (2023-11066-CL17-BAT) on 19th February 2024.

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.

2.4 Suitability Assessment

The PRA comprised an assessment of each building to be impacted by the proposed development for potential to support roosting bats. The survey was led by an experienced ecologist and was based on current best practice guidelines (Collins 2023). All features that are likely to be impacted by the proposed development were assessed for their potential to support roosting bats. The surveyor systematically surveyed all features suitable for bats and signs of bat activity.

The PRA included a visual inspection (including the use of binoculars and torches where required) of the exterior and interior of each building for evidence of bat use (e.g. droppings, scratch marks, staining and sightings). Factors considered whilst undertaking the PRA comprised internal conditions, presence of features suitable for use by roosting bats, proximity to foraging habitats or cover and potential for disturbance. Notes were made relating to relevant characteristics of features providing potential access points and roosting opportunities for bats. Table 1 below details the rationale for determining bat roost value of buildings subject to the PRA.

Table 1: Rationale for assigning bat roost value.

Assigned Bat Roosting Habitat Value	Description/ Rationale
Confirmed roost	Evidence of roosting bats within the building.
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions, and surrounding habitat. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/ stable hibernation site.

Medium	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, condition and surrounding habitat but unlikely to support a roost of high conservation status, such as maternity and hibernation.
Low	A building with one or more potential roost sites that could be used by individual bats opportunistically at any time of year. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity and not a classic cool/ stable hibernation site, but could be used by individual hibernating bats).
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
None	No habitat features likely to be used by any roosting bats at any time of the year (i.e. a complete absence of crevices/ suitable shelter at all ground. Underground levels.

2.5 Limitations

It should be noted that whilst every effort has been made to describe the features on site in the context of their suitability for roosting bats, this does not provide a complete characterisation of the site. This survey provides a preliminary view of the likelihood of bats being present. This is based on suitability of the habitats on site and in the local area, the ecology and biology of bats as currently understood, and the known distribution of bats as recovered during the desk study. Bats are highly mobile creatures that switch roosts regularly and therefore the usage of a site by bats can change over a short period of time.

A search for historical bat records has not been undertaken. However, given the location of the site, the nature of the habitats present and the assessed suitability of the site for bats, it is not anticipated that the purchase of historical records data will add any significant weight or alter the conclusions and recommendations outlined in this report.

These limitations have been taken into account during the evaluation of the site and requirement for further surveys and mitigation.

3.0 Results and Evaluation

3.1 Designated Sites

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

3.2 Historical Records

A search of the magic.gov.uk database for granted 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 in close proximity to the licensed site. EPSL records for bats are summarised in Table 2.

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

EPSL reference	Bat species affected	Impacts allowed by licence
EPSM2010-2250	Brown long-eared bat	Destruction of a breeding site and resting place
2019-43241-EPS-MIT	Brown long-eared bat, common pipistrelle and soprano pipistrelle	Destruction of a resting place
2020-44644-EPS-MIT	Brown long-eared bat and common pipistrelle	Destruction of a resting place
2020-49294-EPS-MIT	Common pipistrelle and soprano pipistrelle	Destruction of a resting place
2014-2526-EPS-MIT	Soprano pipistrelle	Destruction of a resting place

3.3 Field Survey Results

The weather conditions recorded at the time of the survey are shown in Table 3. The results of the field survey are detailed in Table 4 and illustrated in Appendix 3.

Table 3: Weather conditions during the survey

Date:	19/02/2024
Temperature	9°C
Humidity	89%
Cloud Cover	100%
Wind	13mph
Rain	None

Table 4: PRA Results

Feature	Description	Photographs
Bat foraging and commuting habitat	The site has species poor hedgerows and scattered trees which could be utilised by foraging and commuting bats. There are pockets of woodland to the west and tree lined boundaries which could be utilised by roosting and commuting bats.	
B1 – southern and western elevations	B1 is a detached two-storey brick-built building with a cross-pitched and gabled roof clad in clay roof tiles. The roof tiles are in very good condition with no raised tiles under which bats could roost. The doors and windows are UPVC and appear in excellent condition with no suitable bat roosting sites. The brickwork around the building appears in excellent condition with no gaps or cracks within which crevice-dwelling bats could roost. There are dormer window extensions on the western elevation of the building. Both of the dormer windows are clad in hanging tiles. The hanging tiles are in very good condition with no gaps that are suitable for roosting bats.	

B1 – eastern elevation	There are UPVC soffits and bargeboards around the building which are in good condition. The building is clad in hanging tiles which are in good condition with no raised tiles under which bats could roost. There is one skylight on the eastern elevation which is in good condition with no raised tiles around or lifted lead flashing.	
B1 – northern elevation	There is one chimney located on the northern elevation of the building. The brickwork on the chimney is in good condition. There is lead flashing around the base of the chimney which is flat and without gaps.	

B1 – interior	There is one loft space within the main roof void of B1. The roof structure is built from modern timber beams, however, there is no ridge beam. The roof is lined with bitumen felt which is in very good condition with no gaps or tears. The floor of the loft space is lined with mineral wool insulation and there are timber boards in places. There are cobwebs around the beams and roof to floor cobwebs which could indicate a lack of internal flying activity from void dwelling bats, such as brown long-eared bats. No daylight enters the loft space which indicates that it is well sealed.	
B1 – suitability assessment	B1 has negligible habitat value for bats due to a lack of suitable roosting features for both void dwelling and crevice dwelling bats.	N/A
B1 - breeding birds	There was no evidence of nesting birds internally or externally on the survey building.	N/A

4.0 Conclusions, Impacts and Recommendations

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 which will comprise a loft conversion with rear skylights.

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

Building	Survey Results Summary	Impact Assessment	Recommendations	Biodiversity Enhancement Opportunities ¹
Roosting bats (B1)	B1 has negligible value for roosting bats due to a lack of potential roost features.	Bats are very unlikely to be roosting within this building and as such, there are not anticipated to be any impacts on roosting bats as a result of the extension of this building.	In the unlikely event that a bat or evidence of bats is discovered during the development all work must stop and a bat licensed ecologist contacted for further advice.	The installation of one bat box at the site will provide additional roosting habitat for bats. The bat box will be installed on a retained tree. Bat boxes should be positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the entrance, away from artificial light. The bat box will be a specification suitable for crevice dwelling bats such as a general-purpose bat box or a similar alternative brand.
Foraging and commuting bats	Species poor hedgerow and scattered trees could be used by local bat populations for	The proposed development will not result in the removal of any habitats which could be	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.	The following habitat creation and enhancement opportunities could be incorporated into the proposed

¹ The Local Planning Authority has a duty to ask for enhancements under the NPPF (2021).

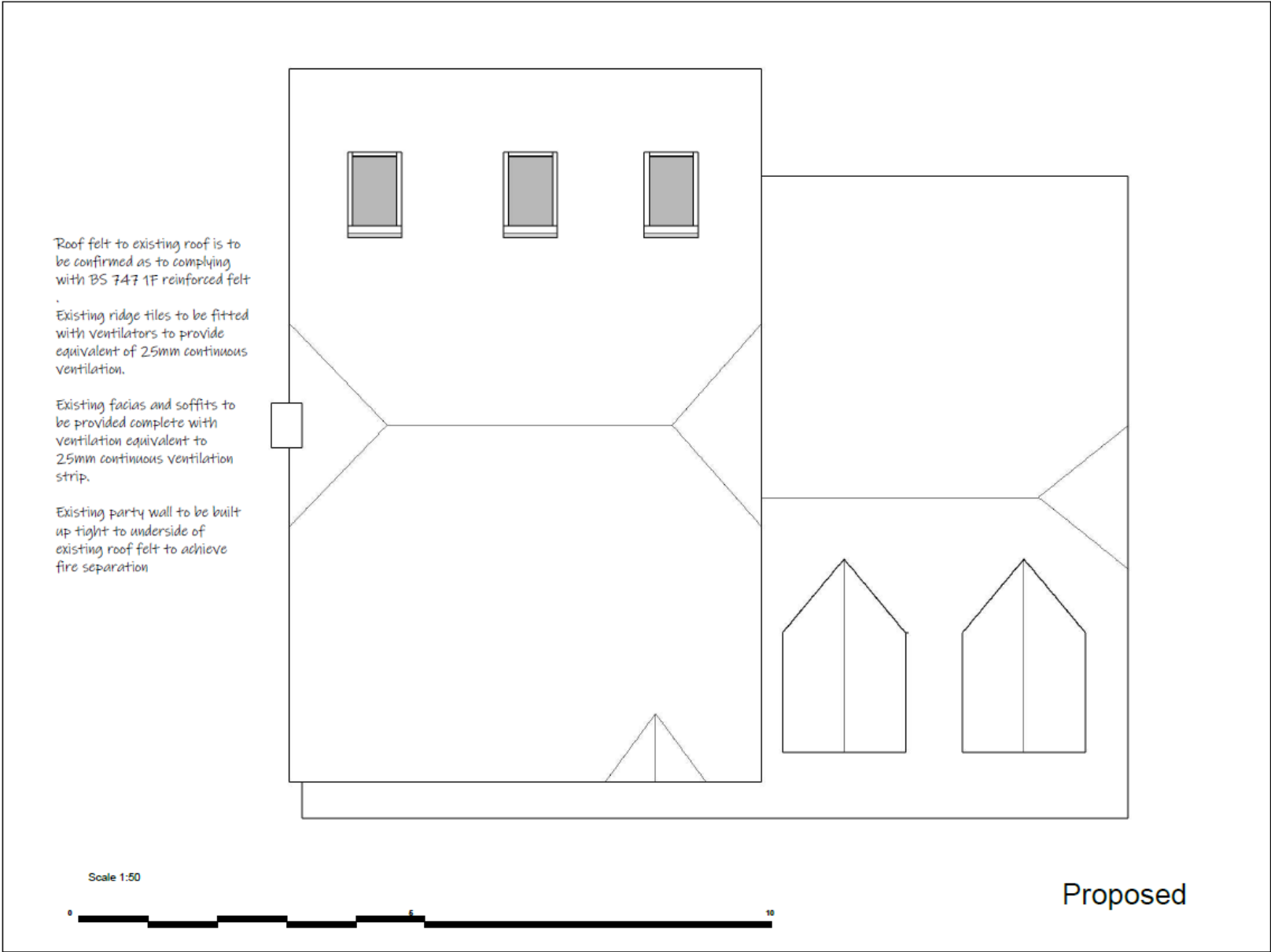
	foraging and commuting. These could also be used by bats dispersing from nearby roosts outside of the site.	used by foraging or commuting bats. The proposed development will include the use of lighting which could spill on to bat roosting, foraging or commuting habitat and deter bats from using these areas.	• 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 'dimmable' 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.	development which would be beneficial for foraging bats: • Planting of native tree, shrub and hedgerows to increase foraging opportunities.
Nesting birds (B1)	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. Woodstone Nest Box Or a similar alternative brand.

				Tree boxes should be positioned approximately 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight. Small-hole boxes are best placed approximately 1-3m above ground on an area of the tree trunk where foliage will not obscure the entrance hole.
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5.0 Bibliography

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Appendix 1: Proposed Development Plan



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PROJECT
Loft Conversion
PROJECT NO.
245.170

ISSUE
MM.DD.YY
DRAWN BY
NH, MB

Roof Plan

A.1

Appendix 2: Site Location Plan



Appendix 3: PRA 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

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.