



Preliminary Roost Assessment

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

Site: 49 Longwater Road, Finchampstead, Wokingham, RG40 3TS

Client: Daniel Joyce

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 by Daniel Joyce to undertake a Preliminary Roost Assessment (PRA) at 49 Longwater Road, Finchampstead, Wokingham, RG40 3TS (hereafter referred to as “the site”). The survey was required to inform a planning application for the demolition of existing outrigger and erection of a single storey rear extension and loft conversion with a rear dormer (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.

<i>Feature</i>	<i>Foreseen impacts</i>	<i>Recommendations Measures required to adhere to guidance, legislation and planning policies.</i>
Roosting bats (Building B1)	The proposed development will result in the demolition/renovation of this building. This could result in damage/modification/destruction of any bat roosts present and could cause disturbance, death or injury to bats.	One bat emergence or re-entry survey is required during the active bat season (May – September) to confirm presence or likely-absence of a bat roost in the building. The survey can be either a dusk emergence or dawn re-entry survey. Two surveyors with Night Vision Aids (NVAs) are required to provide full coverage of the building. The survey is likely to be required before planning permission can be granted. If bat roosts are confirmed in the building two additional surveys 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.
Foraging and 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

Matthew Game Consultancy was instructed by Daniel Joyce to undertake a Preliminary Roost Assessment (PRA) at 49 Longwater Road, Finchampstead, Wokingham, RG40 3TS (hereafter referred to as “the site”). The survey was required to inform a planning application for the demolition of existing outrigger and erection of a single storey rear extension and loft conversion with a rear dormer (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

49 Longwater Road is a two storey, mid-terrace property. The property has an original outrigger to the rear and a pitched roof. It is located at National Grid Reference SU 79584 62865 and has an area of approximately 0.1ha comprising buildings, hardstanding, and associated gardens. It is surrounded by residential dwellings to all aspects, with an area of public open space to its west. The site is located at the southern approach to Finchampstead, with Wokingham to the north, Bracknell extending to the northeast and Aldershot to the southeast. Reading sits some 9km to the northwest. The site is not subject to any nature conservation designations.

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 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 one built structure, the dwelling, 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. No trees are present on site, nor adjacent that will be affected by the development.

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.

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 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 the 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.

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

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 Bramshill Site of Special Scientific Interest (SSSI), also Longmoor Bog SSSI, Broadmoor to Bagshot Woods and Heaths SSSI, Sandhurst to Owlsmoor Bogs and Heaths SSSI, Wellington College Bog SSSI, Blackwater Valley SSSI and Heath Lake SSSI. It also sits within 3km of the Thames Basin Heath Special Protection Area (SPA). 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 gardens, these have low/moderate value for commuting and foraging bats due to scattered tree lines and hedgerows; this means the site is thought suitable to support foraging and commuting bats. The immediately adjacent areas around the site are not considered to have habitats with high suitability to support foraging or commuting bats, being dominated by residential building with scattered trees. 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, 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. The river Blackwater runs approx. 500 metres south of the site, and feeds grazing marsh situated to the southwest. Both bodies of water which can be utilised by foraging bats, and the river being a linear feature which could be used by commuting bats, are located less than 500m to the south of the site. A stand of trees is present to the east of the site, with woodland present to the west. Both are connected to the wider more rural landscape by lines and groups of connected trees.

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.

EPSL reference	Approx. distance from site	Bat species affected	Licence start date:	Licence end date:	Impacts allowed by licence
2019-40646-EPS-MIT	240 metres north	Nathusius' Pipistrelle	22/05/2019	19/05/2024	Destruction of a resting place
2014-3877-EPS-MIT	950 metres northeast	Common Pipistrelle	03/10/2014	02/10/2019	Destruction of a resting place
EPSM2009-535	1000 metres northeast	Common Pipistrelle, Brown Long Eared	25/03/2009	30/09/2010	Impact on a breeding site Destruction of a breeding site Destruction of a resting place
2014-1055-EPS-MIT	1130 metres east	Brown Long Eared	22/05/2014	31/08/2016	Destruction of a resting place
2018-36978-EPS-MIT	1340 metres east	Brown Long Eared, Common Pipistrelle, Soprano Pipistrelle	06/10/2018	01/10/2023	Impact on a breeding site Destruction of a resting place
EPSM2012-4842	1570 metres northeast	Common Pipistrelle, Soprano Pipistrelle	29/09/2012	01/11/2012	Destruction of a resting place

2019-41720-EPS-MIT	1630 metres west	Brown Long Eared, Common Pipistrelle	23/09/2019	22/09/2024	Impact on a breeding site Destruction of a breeding site Destruction of a resting place
2019-39174-EPS-MIT	1650 metres north	Brown Long Eared, Common Pipistrelle, Soprano Pipistrelle	13/03/2019	13/03/2029	Impact on a breeding site Damage of a breeding site Destruction of a breeding site Destruction of a resting place
2019-44291-EPS-MIT	1670 metres northeast	Common Pipistrelle, Soprano Pipistrelle	17/03/2020	31/11/2020	Damage of a resting place Destruction of a resting place
2016-20359-EPS-MIT-3	1670 metres south	Soprano Pipistrelle	09/04/2018	01/02/2021	Destruction of a resting place
2018-34986-EPS-MIT	1680 metres southwest	Brown Long Eared, Common Pipistrelle, Soprano Pipistrelle	23/05/2018	31/05/2019	Destruction of a resting place
2014-3970-EPS-MIT	1840 metres north	Brown Long Eared, Common Pipistrelle	29/10/2014	31/10/2019	Damage of a resting place
2015-7094-EPS-MIT	1840 metres north	Brown Long Eared, Common Pipistrelle	06/03/2015	31/03/2015	Destruction of a resting place

The data search returned 94 records of five bat species either relating to bats or bat roosts from 1994 to 2023 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
S. Pipistrelle	200m south	2009	Field record	
Brown Long Eared	260m north	2003	Field record	
C.Pipistrelle	450m south	2021	Field record	
Nathusius' Pipistrelle	1.7km west	2007	Field record	
Noctule	1.9km east	2009	Field record	
C.Pipistrelle	1.9km east	2019	Field record	

3.5 Field Survey Results

The PRA focussed on one built structure (the dwelling) 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: 25/04/2024	
Temperature	13°C
Humidity	52%
Cloud Cover	10%
Wind	9mph
Rain	None

Building B1 Exterior (Western elevation)

B1 is a terraced, two-storey brick-built building with a cross-pitched clay tiled roof. The roof tiles are in good condition with only a minor number of raised tiles under which bats could roost.

The brickwork is in good condition with only minimal 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 porch roof has some gaps in which crevice-dwelling bat species could roost (see picture)



Building B1 Exterior (Eastern elevation)

The roof tiles are generally in good condition with only a minor number of raised tiles under which bats could roost. (Shown below)

The brickwork is in good condition with only minimal gaps or cracks in which crevice-dwelling bats could roost, saving for one large hole between the ground and first floor, although unsuitable for bats.

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

The outrigger is flat roofed, and in good condition. The brickwork is in good condition and the single window is uPVC and again in good condition. The soffit boxes are gappy, which could provide opportunities for crevice-dwelling species. (See picture opposite).

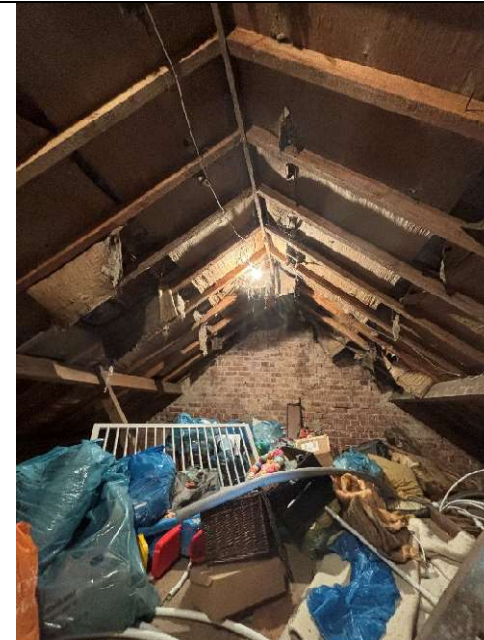


Some of the lead flashing around the chimney is lifting, which could provide a feature which crevice-dwelling bat species could utilise for roosting or resting. (See picture opposite).



Building B1 Interior

There is one loft space within the main roof void of B1. The roof structure is built from timber beams including the ridge beam. The roof is not lined. The floor of the loft space is lined with 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. The loft space has natural light entering through gaps in the tiles and liner, which could provide access for void and crevice dwelling bat species.



Pictured opposite is one of the gaps in the tiles, with daylight coming through the tiles.

**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 internally on the survey building.

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, and at least one of the surveys should be a dawn re-entry survey.

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, and at least one the surveys should be a dawn re-entry survey. 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 <i>Measures required to adhere to guidance, legislation and planning policies.</i>	Biodiversity Enhancements
Roosting bats (B1)	Building B1 has low value for roosting bats. There are features present that could provide roosting opportunities for crevice dwelling bat species. There are also a large number of bat records within the local area, both data records and EPSL which confirm that bats are present in and around the local habitats.	The proposed development will result in the demolition/renovation of this building. This could result in damage/modification/destruction of any bat roosts present and could cause disturbance, death or injury to bats.	One bat emergence or re-entry survey is required during the active bat season (May – September) to confirm presence or likely-absence of a bat roost in the building. The survey can be either a dusk emergence or dawn re-entry survey. Two surveyors with Night Vision Aids (NVAs) are required to provide full coverage of the building. The survey is likely to be required before planning permission can be granted. If bat roosts are confirmed in the building two additional surveys 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.

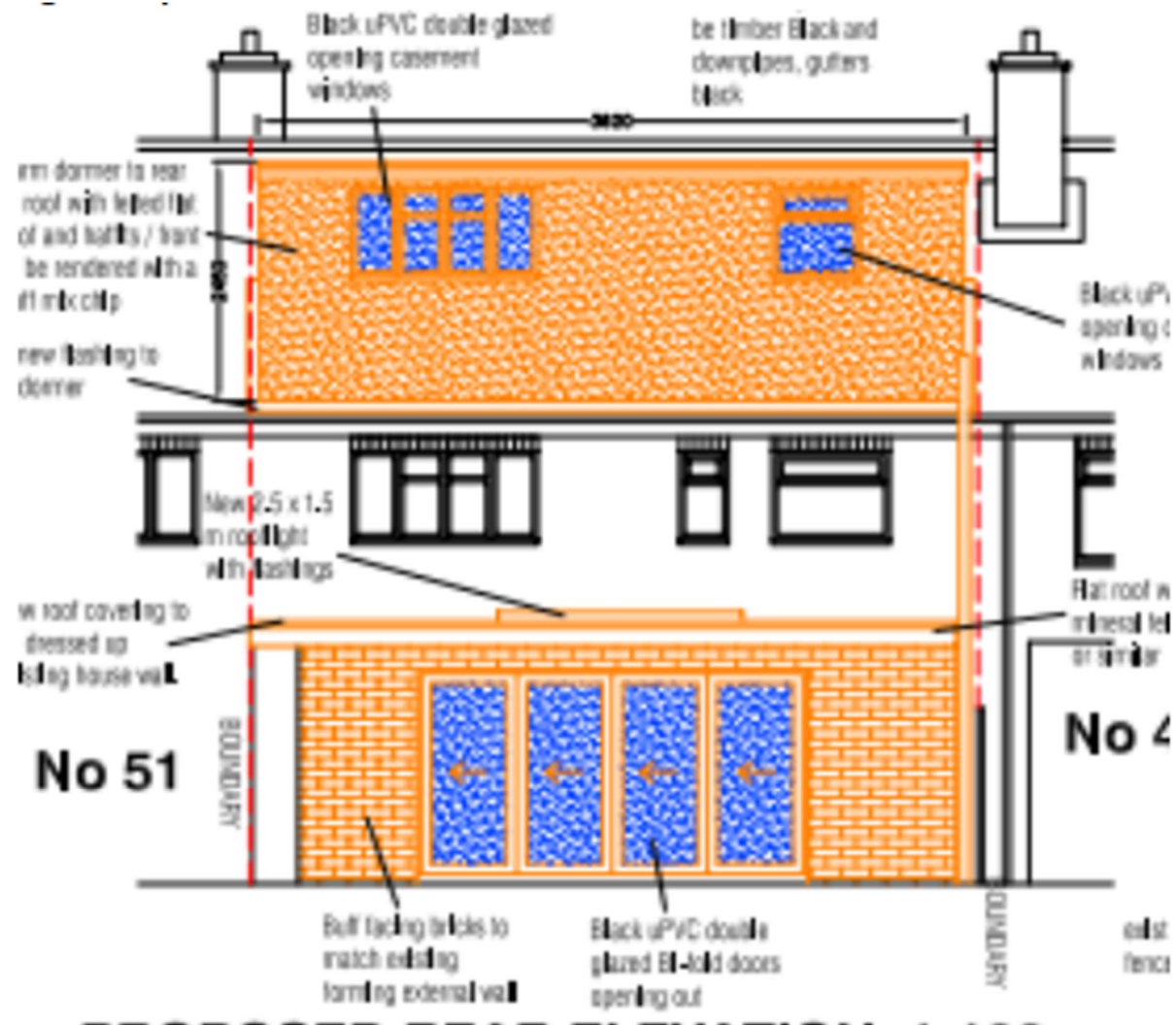
Foraging and commuting bats	Tree and hedge lines could be used by local bat populations for foraging and commuting. These could also be used by bats dispersing from nearby roosts outside of the site.	The proposed development will not result in the removal of any habitats which could be used by foraging 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, 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.	The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for foraging bats: • Planting of native tree, shrub and hedgerows to increase foraging opportunities.
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Nesting birds	The building could be used by nesting birds	The proposed development could result in the destruction or the disturbance and subsequent abandonment of active bird nests.	None	The installation of a minimum of two bird boxes on mature trees around the site boundaries or on retained buildings will provide additional nesting habitat for birds e.g. Schwegler No 17 Swift Nest Box (buildings) Schwegler 1SP Sparrow Terrace (buildings) Schwegler 1B Nest Boxes (trees) Schwegler 2H Robin Boxes (trees) Woodstone Nest Box (buildings or trees) 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.
Other ecological constraints	None identified	N/A	N/A	N/A

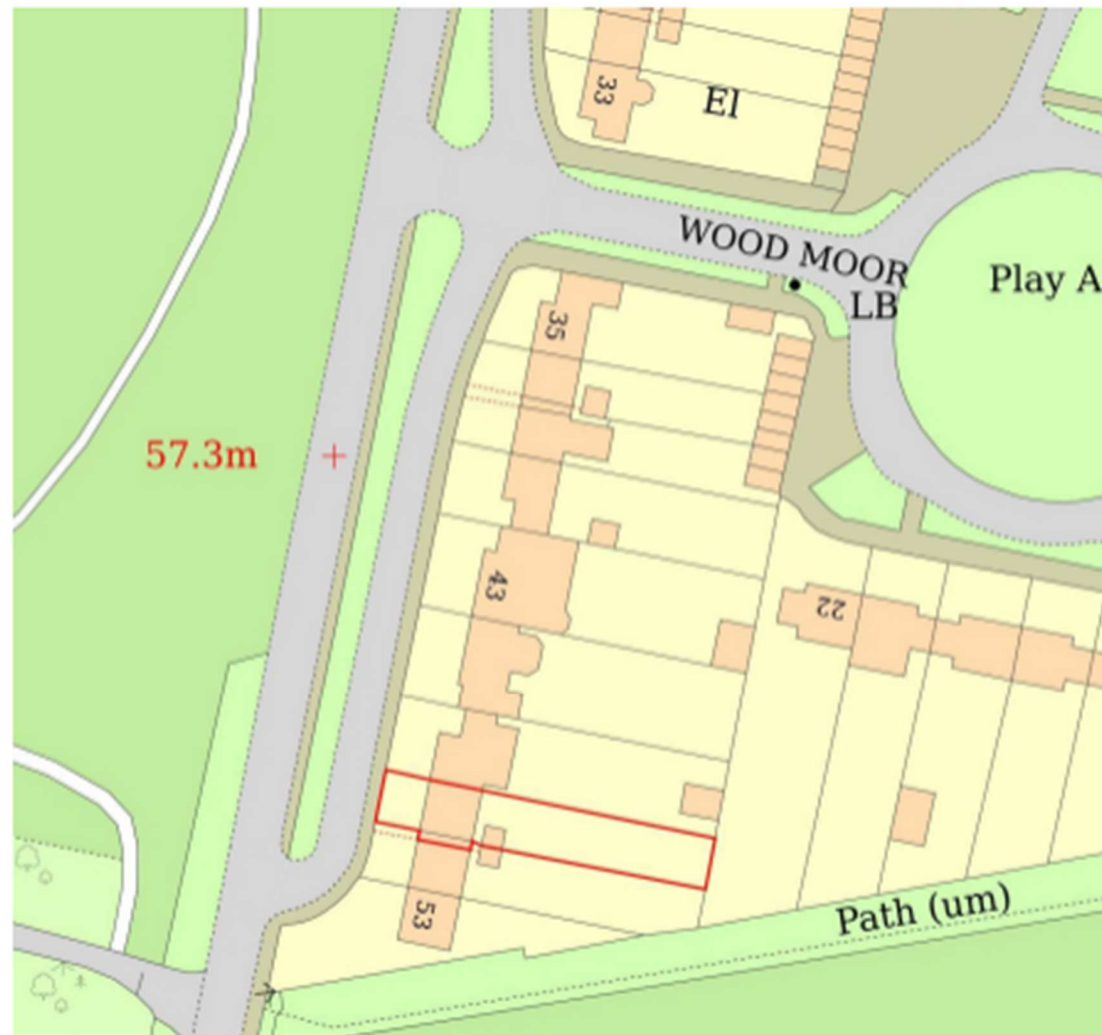
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Appendix 1: Proposed Development Plan



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.

LOCAL PLANNING POLICY

Proposals should not cause harm to priority species and habitats identified under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Development will only be permitted where it can be demonstrated that the justification for the proposal clearly outweighs the need to safeguard the nature conservation value of the priority habitat, and/or the priority species or its habitat. In such cases the Local Planning Authority will impose conditions and/or seek the completion of a legal agreement in order to: (i) secure the protection of individual members of the priority species and/or habitats; (ii) minimise the disturbance to the priority species and/or habitats; and (iii) provide adequate alternative habitats to sustain at least the current levels of population for protected species and/or provide a compensatory habitat to offset potential loss or disturbance of a priority habitat. In addition to the UK Biodiversity Action Plan, proposals for development should have regard to Local Biodiversity Action Plans, including those produced at District and County level.

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 night time 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