The Ecology Co-op
ENVIRONMENTAL CONSULTANTS
Building B, Lords Wood Barns, Petworth, GU28 9BS

Tel: 01798 861 800 - E-Mail: info@ecologyco-op.co.uk - Web: www.ecologyco-op.co.uk

Bat Scoping Report and Ecological Assessment

32 – 34 Avenue Road, London

Author: Owen Crawshaw BSc (Hons) MCIEEM
Reviewed by: Emma Baker MSc ACIEEM

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The Ecology Co-operation Ltd
Registered Office: Greens Court, West Street, Midhurst, West Sussex, GU29 9NQ
Company number: 8905527

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Report Summary

1. The Ecology Co-op was commissioned by SHH Architecture & Interior Design to undertake a Bat Scoping Assessment and Preliminary Ecological Appraisal at 32 – 34 Avenue Road, London. The purpose of this report is to present the findings of the appraisal and identify potential ecological constraints and opportunities in relation to a proposal to demolish the existing dwelling and garage and construct a replacement dwelling.

2. An assessment of the site was carried out by Owen Crawshaw BSc (Hons) MCIEEM: a Natural England Level 2 class bat licence holder on the 6th April 2022. This included a ground-based external inspection of the building(s), an internal inspection of potential roost features, such as enclosed loft spaces (subject to access), and an appraisal of the surrounding habitats, to evaluate the site for its potential to support bats. All bat species are European Protected Species (Annex IV, 'Habitats Directive').

3. The site comprises of a large residential dwelling set within an area of private gardens. Additional structures within the property include a partially underground garage and a simple shed. The property exists within an urban environment and is surrounded by residential development. Primrose Hill presents an area of greenspace within the landscape approximately 75m north-east of the site.

4. No evidence of roosting bats was recorded within (or in association with the exterior) of the dwelling during the inspection, and the dwelling was assessed as having 'low' bat roosting potential on account of gaps beneath slate roof tiles.

5. No further surveys of the dwelling are required; however, it is recommended that construction work may only commence following a soft strip of the accessible ridge tiles. The soft strip must be overseen by a suitably qualified and licensed ecologist. Should any bats or signs of bats be identified, the work would have to cease until appropriate surveys have been undertaken and an EPS licence obtained to legally proceed with the development.

6. Recommendations are made with regard to the need for careful supervised habitat clearance to avoid impacts on reptiles (if present) and sheltering/hibernating hedgehogs (if present).

7. Recommendations are also made with regard to planting of native species as well as species-specific enhancements through provision of integrated bat roosting features and swift nesting features.

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1 INTRODUCTION

1.1 Purpose of the Report

The Ecology Co-op has been commissioned to undertake a Bat Scoping Assessment and Preliminary Ecological Appraisal of 32 – 34 Avenue Road, London by SHH Architecture & Interior Design. This report presents the findings of a walkover survey and building inspection for occupation by bats, undertaken by Owen Crawshaw BSc (Hons) MCIEEM and Natural England Level 2 bat survey class licence holder on 6th April 2022. Whilst this report has maintained a focus on assessing potential impacts upon roosting bats and bat activity within the proposal's zone of influence, it has also considered the potential for any other protected/notable species and/or habitats to be adversely affected.

There is a proposal to demolish the existing dwelling and garage and construct a replacement dwelling on a similar footprint. Recommendations for further surveys that are likely to be required to inform a planning application and Ecological Impact Assessment are provided, if necessary. Where appropriate, measures to avoid, mitigate and/or compensate for significant adverse effects are outlined.

This report is intended to inform the client and the appropriate planning authority of the potential impacts that this development proposal may have upon roosting bats as well as identifying potential impacts to commuting routes and foraging habitat of value. Where bat roosting potential, or physical evidence of bats has been identified, further survey effort will be required in order to complete an impact assessment to inform a planning application.

1.2 Background

The site is located at 32 – 34 Avenue Road, London NW8 6BU. The central grid reference for the site is TQ 2716 8372.

The site comprises of a large residential dwelling set within an area of private gardens. Additional structures within the property include a partially underground garage and a simple shed. The property exists within an urban environment and is surrounded by residential development. Primrose Hill presents an area of greenspace within the landscape approximately 75m north-east of the site.

The location of the study buildings is based on a site plan provided by SHH Architects & Interior Design, and is illustrated in Figure 1.

The proposed development/project includes demolition of the existing dwelling followed by the construction of a replacement dwelling together with alterations and associated hard and soft landscaping works (see Figure 2).

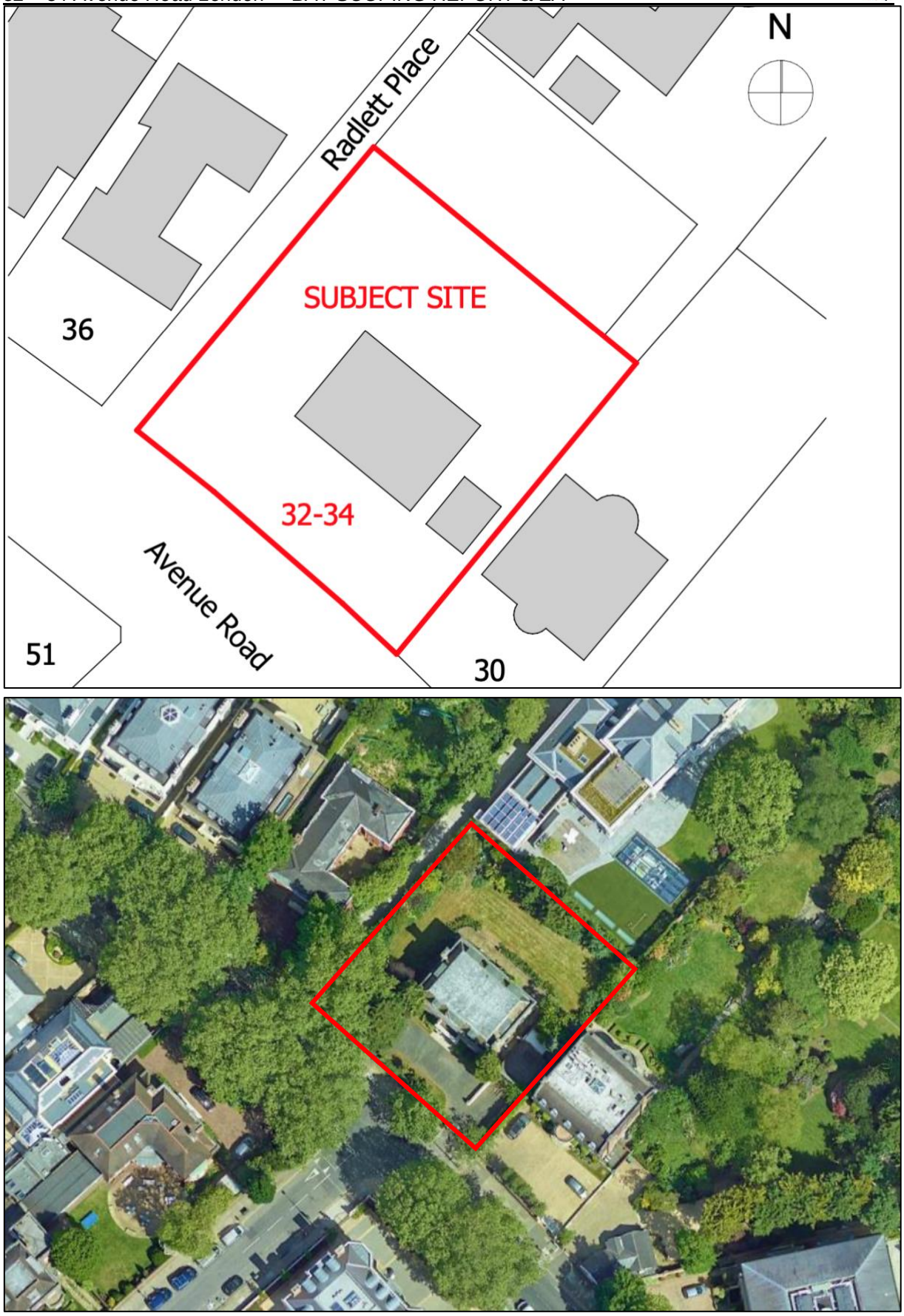

Figure 1. Top – an existing block plan of 32 – 34 Avenue Road London, reproduced courtesy of SHH Architecture

& Interior Design. Bottom – an aerial image showing the location of the site (outline in red). Image produced courtesy of Google maps (map data ©2022 Google).

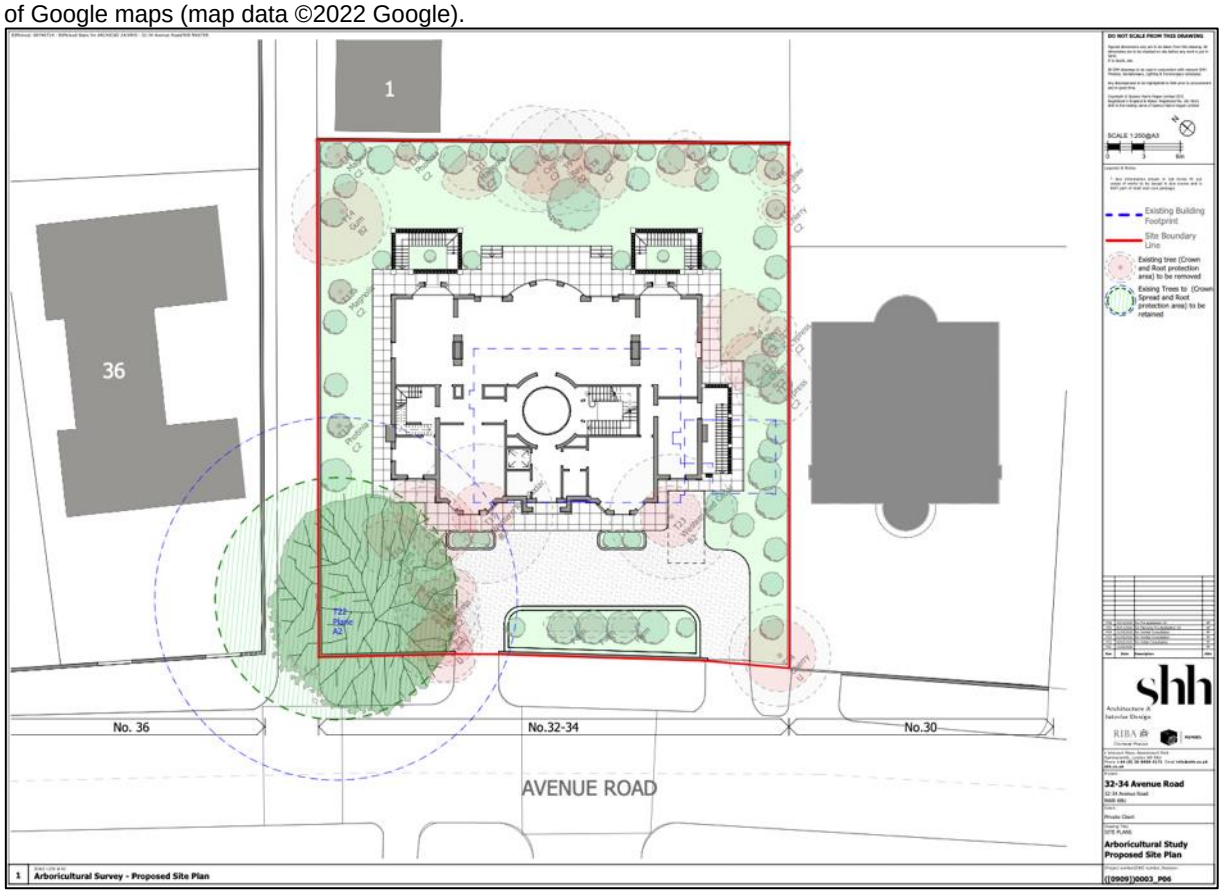

Figure 2. A proposed layout plan of the development at 32 -34 Avenue Road, London. Reproduced courtesy of SHH Architecture & Interior Design (Drawing No. ([0909]0003_P06).

1.3 Policy and Legislation

Legal protection applying to all bat species in the UK and any other species relevant to this appraisal, is outlined in Appendix 1 of this report.

The results of this survey will be used to determine the need for further surveys, impact avoidance measures and/or an appropriate mitigation/compensation strategy to ensure compliance with UK wildlife legislation, policy and best practice.

2 METHODOLOGY

The methodologies used for this survey are in accordance with the bat survey guidelines produced by the Bat Conservation Trust[1]. Where there has been any deviation from the guidelines due to any site-specific constraints or other circumstances, reasoning and justification has been provided. This survey has also considered the Guidelines for Preliminary Ecological Appraisal produced by CIEEM[2], where

[1] Collins, J.(ed.) (2016*) Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London.
[2] CIEEM (2017) *Guidelines for Preliminary Ecological Appraisal, 2nd edition.* Chartered Institute of Ecology and

the potential for impacts to species other than bats has been identified.

2.1 Desk Study

The Greenspace Information for Greater London CIC (GIGL) was contacted to request data on statutory/non-statutory designated sites and protected/notable species from within a 1km radius of the site.

The MAGIC website resource (www.magic.gov.uk) has been used to identify European Protected Species (EPS) licences granted within a 1km radius of the survey site. Priority habitats and ancient woodland, upon the site and within the proposal's zone of influence, have also been identified due to their ecological value and potential to act as important foraging resources for bats.

A search of online mapping resources has been undertaken to characterise the local context of the site with respect to semi-natural habitats and linear features of value to foraging and commuting bats.

Priority habitats and ancient woodland are classified as habitats of principal importance. Habitats of principal importance are listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006[3], which places a duty on Local Planning Authorities to have due regard to biodiversity.

2.2 Field Survey

2.2.1 Roosting Potential

Bats can use a wide range of features for roosting purposes including loft spaces, cavity walls, loose tiles, mortice joints and cracks/gaps in a variety of built structures. They can also be found in trees with holes, splits, cracks, cavities, ivy and loose bark.

A detailed building inspection was carried out, looking for potential access points and Potential Roosting Features (PRFs) that bats could use and any evidence indicating the presence of bats using the building, such as rub marks, feeding remains, staining or droppings. This included a ground-based external inspection around the building and internal inspection of PRFs, such as enclosed loft spaces or roof voids or basements, where safe access was possible. A high-powered torch was used for the internal and external assessment.

The suitability of each feature, or group of features, to support roosting bats has been assessed as either negligible, low, moderate, or high, in accordance with best practice guidance[1] (see Table 1) Any evidence confirming the presence of bats was clearly recorded including photos and samples taken (e.g. droppings), where appropriate. Further surveys have been recommended in accordance with best practice guidance and the surveyor's professional judgement, where evidence of a bat roost or PRFs have been identified that would be adversely impacted by the proposal and where precautionary

Environmental Management, Winchester.

[3] HM Government (2006). Natural Environment and Rural Communities Act 2006. Available online at: https://www.legislation.gov.uk/ukpga/2006/16/section/41.

mitigation alone cannot ensure that bats would not be potentially disturbed or harmed.

Table 1. Guidelines for assessing suitability buildings and trees to support bat roosts.

Suitability	Description of roosting habitats
Negligible	A structure or tree that does not support any features that could be used by roosting bats.
Low	A structure that has one or more potential roosting features that could support individual roosting bats opportunistically. These features however lack the space, shelter or appropriate conditions, to support larger numbers of bats (such as a maternity roost). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter and suitable conditions for roosting, but are unlikely to support a roost of high conservation significance.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potential for longer periods of time due to their size, shelter, protection and conditions.

2.2.2 Hibernation Potential

The structure and its associated features were assessed for their suitability to be used by hibernating bats. The assessment was carried out in accordance with guidelines produced by BatAbility[4] and the bat survey guidelines produced by the Bat Conservation Trust[1]. To determine the potential for features to support hibernating bats the following aspects were considered:

- the suitability of features to support roosting bats or to allow access for roosting bats;
- the temperature and humidity conditions likely to be present within the feature during the winter period and the suitability in this respect for it to be used by bats for hibernating;
- the surrounding habitat, in terms of its potential for use by bats outside of the hibernation period for commuting and/or foraging purposes; and
- the presence of known roosts within the structure, or adjacent structures, or surrounding area during the active season.

The potential for use by hibernating bats for each feature, or group of features was assessed as either negligible, low, moderate, or high, in accordance with best practice. Further surveys are recommended where appropriate, considering the feasibility of a hibernation survey for certain PRFs.

2.2.3 Foraging and Commuting Potential

The habitats surrounding the site and wider landscape were broadly assessed for their potential to support foraging and commuting bats, and were categorised as negligible, low, moderate or high

[4] Middleton. N. (2019). *Assessing Sites for Hibernation Potential. A Practical Approach, including a Proposed Method & Supporting Notes. Version' Draft/V2.2019*. BatAbility.

potential suitability in line with published guidance[1].

2.3 Other Protected and/or Notable Species

Any birds identified, or evidence of nesting birds discovered during the site visit, were recorded. Special attention was paid to notable species such as red-listed Birds of Conservation Concern[5] and those species afforded special protection on Schedule 1 of the Wildlife and Countryside Act (1981), such as barn owl *Tyto alba.*

Whilst this survey has focussed on bats and no specific searches were made with respect to other protected/notable species, any evidence of such species that was encountered during the site visit was also recorded. This included badgers, dormice *Muscardinus avellanarius*, great crested newts *Triturus cristatus*, or reptiles.

3 RESULTS/OBSERVATIONS

3.1 Desk Study and Granted EPS Licences

GIGL did not identify any statutory sites within the search radius. The records centre did however identify two Local Nature Reserves (LNRs) and six non-statutory designated sites within the search area. Full details of the designated sites are provided in Table 2 below.

Table 2. Local Nature Reserves and non-statutory designated sites within 1km of 32 – 34 Avenue Road, London.

Site name/reference	Designation	Features listed on citation	Proximity to the site
Primrose Hill (CaBII05)	Site of Importance for Nature Conservation (SINC)	Habitats • mature trees	70m NE
London's Canals (M006)	SINC	Habitats: • canals/rivers • wet woodland	500m SE
Regents Park (M097)	SINC	Habitats: • ponds/lake • woodland Species • pochard *Aythya ferina*	550m SE
London Zoo (WeB105)	SINC	Species: • common pipistrelle *Pipistrellus pipistrellus*	550m SE

[5] Stanbury, A., Eaton, M., Aebischer, N., Balmer, N., Douse, A., Lindley, P., McCulloch, N., Noble, D., and Win I. (2021). Birds of Conservation Concern 5: the status of bird populations: the fifth Birds of Conservation Concern in the United Kingdom, Channel Islands and Isle of Man. British Birds 114, pp 723-747..

		• soprano pipistrelle *P. pygmaeus* • Daubenton's bat *Myotis daubentonii* • turtle dove *Streptopelia turtur* • black redstart *Phoenicurus ochruros*	
St John's Wood Church Grounds (WeBI03)	SINC & LNR	Habitats: • hedgerows Species: • song thrush *Turdus philomelos* • dunnock *Prunella modularis*	645m S
Chalk Farm Embankment and Adelaide Local Nature Reserve (CaBI05)	SINC & LNR	Habitats: • ponds/lake • woodland	725m NE

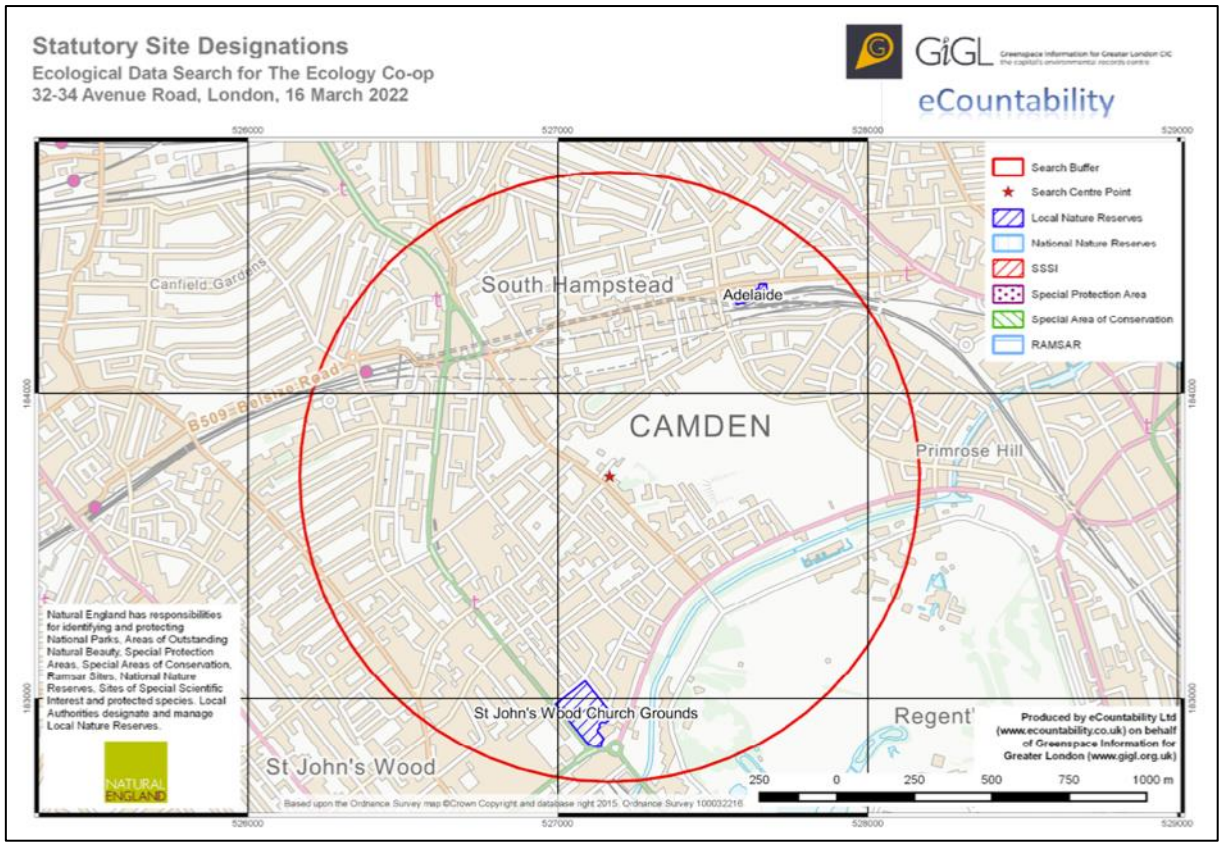

Figure 3. Statutory designated sites within a radius of 1km of the application site. Images produced courtesy of GIGL.

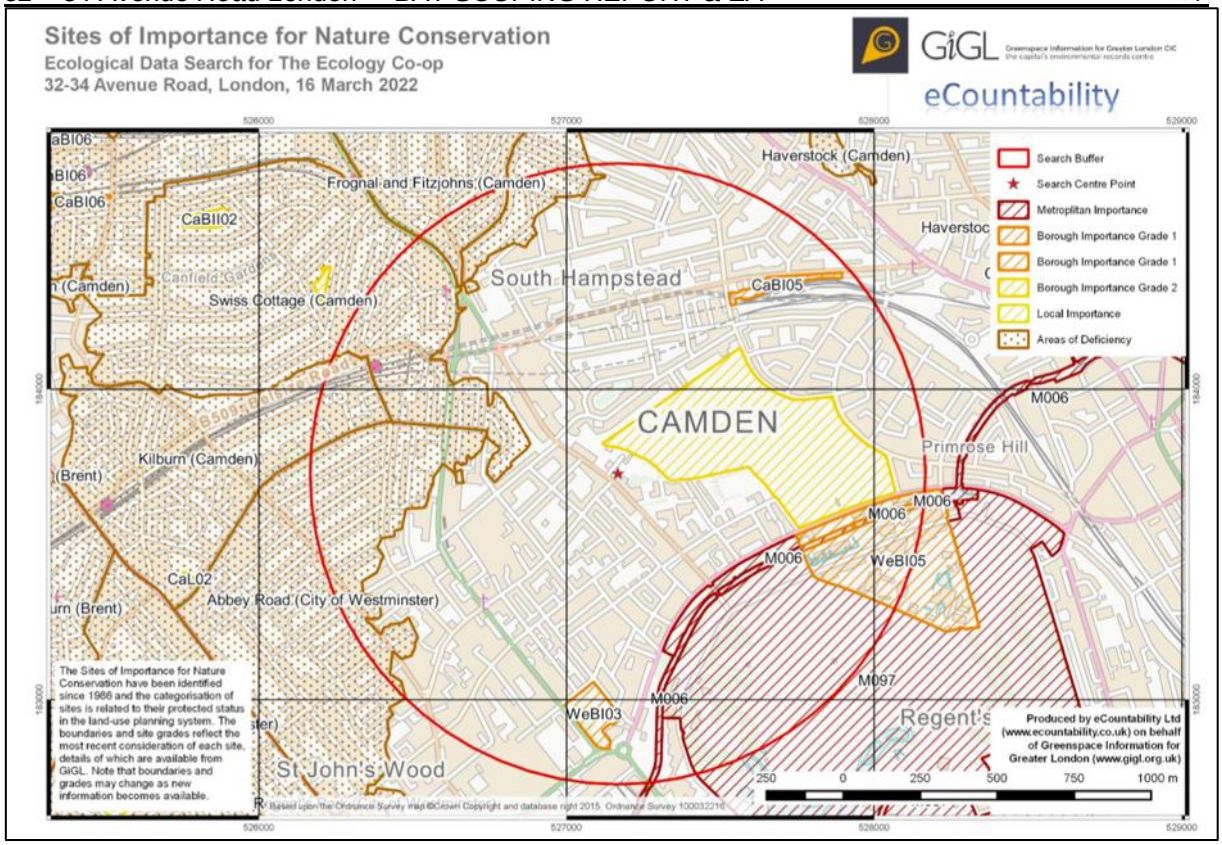

Figure 4. Non-statutory designated sites within a radius of 1km of the application site. Images produced courtesy of GIGL.

A linear belt of priority woodland habitat exists approximately 75m north-east of the site within Primrose Hill (see Figure 5).

Figure 5. Priority woodland (shown in green) relative to 32 – 34 Avenue Road, London. Image produced courtesy of Magic maps (http://www.magic.gov.uk/, contains public sector information licensed under the Open Government Licence v3.0).

There are three EPS licences granted for mitigation projects concerning bats within 1km of the site shown on the Magic Maps website (see Figure 6). Details of the licences are provided in Table 3 below.

Table 3. Details of granted EPS licences within 1km of 32 – 34 Avenue Road, London.

Reference number	Proximity to site	Species	Period covered	Other information
EPSM2012-4961	450 SE	Common pipistrelle Soprano pipistrelle	16/10/2012 – 30/11/2012	Destruction of a resting place only
2015-9230-EPS-MIT	510 SW	Common pipistrelle Soprano pipistrelle	30/04/2015 – 29/04/2020	Destruction of a resting place only
2015-10291-EPS-MIT	670m W	Common pipistrelle	08/05/2015 – 28/04/2020	Destruction of a resting place only

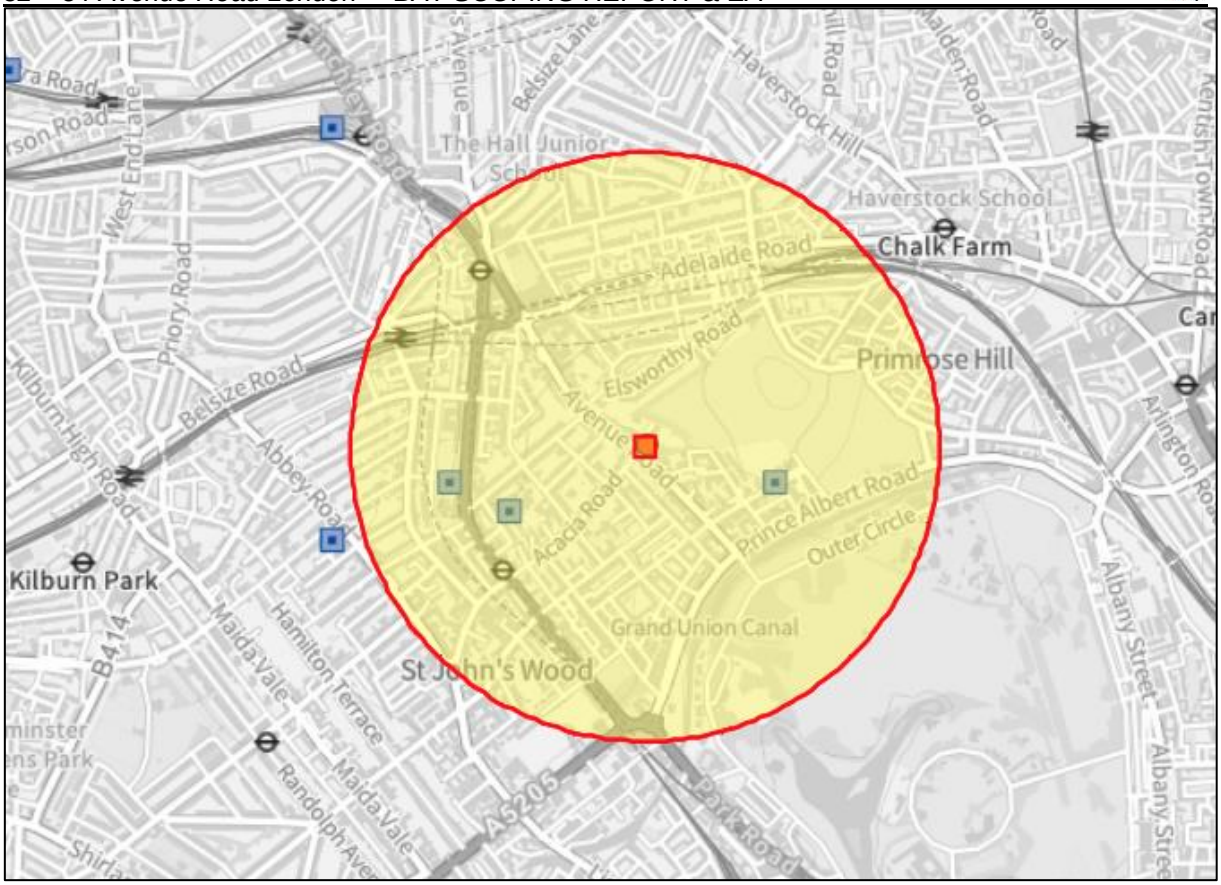

Figure 6. European Protected Species Licences (shown as blue squares) within a radius of 1km of the application site. Images produced courtesy of Magic maps (http://www.magic.gov.uk/, contains public sector information licensed under the Open Government Licence v3.0).

3.2 Site Context and Surrounding Habitats

The site exists in an urban environment within London. The site is surrounded by rows of residential properties with small associated garden spaces, set amongst the city's busy network of roads. Primrose Hill and Regents Park create notable areas of greenspace within the local environment and exist approximately 75m north-east, and 550m south-east of the site respectively.

The site supports a large residential dwelling set within an area of private gardens. A detached garage exists to the south-east of the dwelling and is set down in the ground. The boundaries of the site are marked by brick walls, garden hedging and lines of planted trees. An area of lawn dominates the rear gardens, and whilst it is likely to have been heavily managed in the past, a recent lack of regular mowing has resulted in an approximate sward height of 30cm. Species present amongst the grass include creeping buttercup *Ranunculus repens,* cats-ear *Hypochaeris radicata*, ragwort *Senecio jacobaea* and daisy *Bellis perennis*. A small area of short-sward grassland is present to the front of the property and was noted to contain primrose *Primula vulgaris*, chickweed *Stellaria media* daisy and self-heal *Prunella vulgaris*.

Ornamental tree planting serves to screen the property, the most significant of these is a mature London plane *Platanus x hispanica* located at the western corner of the site. Other species of tree recorded include: *Eucalyptus* sp., acacia, cedars *Cedrus* sp. *Magnolia* sp. and cabbage palm *Cordyline australis*.

Ornamental species present within areas of formal flowerbed planting include: laurels *Laurus* spp., roses *Rosa* spp., *Gernaium* spp., paper plant *Fatsia japonica*, *Alium* sp., *Euonymus* spp., *Hydrangea* spp., bramble *Rubus fruticosus*, *Cotoneaster* sp., thorny olive *Elaeagnus pungens*, *Choisya* spp., lilac *Syringa vulgaris*, buddleia *Buddleja davidii*, cherry *Prunus* spp., mugwort *Artemesia vulgaris* and goose-foot *Chenopodium bonus-henricus.*

3.3 Badgers

No evidence of badgers was recorded on-site. The species is considered to be absent from the survey area.

3.4 Bats

3.4.1 Roost Potential

The dwelling is a large neo-Georgian mansion arranged over three levels with a square footprint. The walls are constructed from solid brick. The roof is a flat-topped mansard design with tapering aspect of slate tiles and three dormer windows set within each of the south-western and north-eastern aspects and single dormers at the south-eastern and north-western elevations. The plateau is lined by lead flashing.

The garage, located to the south-east of the dwelling, is a partially underground structure with its flat-roof protruding approximately 1m above ground level. The walls are created from concrete rendering of brickwork and the roof is coated by a felt adhesive. A subterranean boiler room exists within the garage and is completely flooded with approximately 1m of water.

A small wooden shed is located to the immediate north-east of the garage. The shed is constructed from wall of wooden shiplap boarding with a flat roof which has been partially removed.

Details of any potential roost features identified are listed in Table 4 below along with assessments of their bat roosting potential.

Table 4. Assessment of the bat roosting potential associated with buildings at 32 - 34 Avenue Road, London.

Building section	Description of features	Assessment of suitability[1]
Dwelling - interior	The only void contained within the roof of the dwelling is a small 3m (l) x 1m (w) x 1m (h) space accessed beneath a raised water tank within the south-eastern side of the roof. The space is obstructed by timber trusses and insulation is visible between the rafters. No evidence of bats was recorded within the space.	Negligible
Dwelling - exterior	A number of loose slate tiles are visible at the south-western aspect of the roof. Additional naturally occurring gaps between slates exist amongst the tiling at the north-eastern aspect.	Low
Garage	No potential roosts features were observed in association with the	Negligible

Building section	Description of features	Assessment of suitability[1]
	garage; the structure is considered unsuitable for roosting bats.	
Shed	No potential roosts features were observed in association with the shed; the structure is considered unsuitable for roosting bats.	Negligible

Overall, the bat roost suitability at this site is assessed as 'low', considering the condition of the building and its context within low-value foraging habitat for bats. The lack of hedgerows and tree-lines approaching the building used by bats for commuting and navigation may also reduce the potential for bats establishing roosts at this site.

No PRFs were recorded in association with any of the site's trees and all specimens were assessed as having 'negligible' bat roosting potential.

3.4.2 Hibernation Potential

Each structure/feature was assessed for its hibernation potential. The potential for each structure/feature is described in Table 5 below and illustrated in the following photographs section.

Table 5. Assessment of hibernation roost potential.

Building section	Description of features	Assessment of hibernation potential[1 & 3]
Dwelling - interior	The small eaves space is not considered suitable for hibernation. No evidence was observed during the inspection and if the space was in use by roosting bats some evidence would likely be visible.	Negligible
Dwelling - exterior	The relatively exposed nature of the identified crevice between tiles, as well as the poor thermal capacity of slate material is not considered akin with suitable hibernation conditions for bats. The crevice is likely to experience significant temperature fluctuations throughout the winter and may drop below freezing during periods of significantly cold weather.	Negligible
Garage	Whilst the garage is a partially underground structure, the space is well-lit through a skylight set within the roof. The garage is not considered suitable for hibernating bats.	Negligible
Shed	The shed is not considered suitable for hibernating bats.	Negligible

3.4.3 Foraging and Commuting Potential

Habitats within the site and the immediate surroundings are considered to be of low value for foraging and commuting bats. The urban landscape surrounding the site is likely to limit bat activity to that of species which are tolerant of human disturbance e.g. common pipistrelles. The tree belt within Primrose Hill is considered to present a suitable foraging/commuting corridor for such species within the wider surroundings.

3.4.4 Pre-existing Records

The GIGL records centre provided numerous records of bats from within the search area, these are summarised in Table 6 below.

Table 6. Number of pre-existing records of each bat species within 1km of 32 -34 Avenue Road, London.

Species	No. of records
Common pipistrelle	191
Soprano pipistrelle	170
Nathusius' pipistrelle *Pipistrellus nathusii*	15
Unidentified pipistrelle *Pipistrellus* spp.	145
Serotine *Eptesicus serotinus*	1
Noctule *Nyctalus noctula*	30
Leisler's bat *N. leisleri*	2
Nyctalus spp.	33
Daubenton's Myotis	1
Myotis spp.	51
Unidentified bat species etc…	140

3.5 Breeding Birds

No evidence of nesting birds was recorded in association with any of the site's buildings. Trees and shrubs within the site are considered to provide suitable nesting opportunities for common and widespread species including several priority (NERC Act, 2006) species such as dunnock *Prunella modularis* and house sparrow *Passer domesticus*.

3.6 Great Crested Newts

There are no ponds within the site or within 500m of the site boundary. The GIGL records centre did not return any records of great crested newts from within the search area. The species is considered to absent from the site.

3.7 Reptiles

The garden habitats within the site are considered to be suitable, yet largely sub-optimal for reptiles; primarily slow worms *Anguis fragilis*. Whilst the grassland is likely to have been managed in the past it has 'grown up' recently and the area of piled brash and grass cutting at the western corner of the site is potentially a suitable area of refuge for slow worms. However, the urban context of the site is considered to significantly reduce the likelihood of reptiles being present.

The GIGL records centre did not return any records of reptiles within 1km of the site.

3.8 Other Protected and/or Notable Species

The area of piled grass cuttings and brash is considered to create suitable shelter/hibernation opportunities for hedgehogs *Erinaceus europaeus*.

3.9 Invasive Non-native Species

Several species of cotoneaster are listed on Schedule 9 of the Wildlife and Countryside Act, 1981. The species present on-site could not be identified.

3.10 Survey Limitations

An initial site assessment such as this is only able to act like a 'snapshot' to record any flora or fauna that is present at the time of the survey. It is therefore possible that some species may not have been present during the survey but may be evident at other times of the year. Bats will commonly roost in small inaccessible crevices, such as spaces underneath ridge tiles that are impossible to inspect during a scoping assessment. For this reason, habitats and features are assessed for their potential to support bats, even where no direct evidence (such as droppings) has been identified.

3.11 Photographs

Photograph 1. The dwelling at 32 -34 Avenue Road, London viewed from the south-west.

Photograph 2. An area of loose slate tiles at the south-western aspect of the dwelling's roof.

Photograph 3. The dwelling viewed from the north-east.

Photograph 4. The small accessible eaves space within the roof of the dwelling.

Photograph 5a (left) & 5b (right). Left – the garage viewed from the south-west. Right – roof of the garage viewed from the north-west.

Photograph 6. The rear gardens of the property located to the north-east of the dwelling.

Photograph 7. An area of piled brash and grass cuttings located at the western corner of the property.

4 ECOLOGICAL CONSTRAINTS AND OPPORTUNITIES

4.1 Designated Sites

The proposed development is small in scale and considered to be low in impact with the proposed footprint currently comprising of existing buildings and managed gardens. However, given the proximity of the site to Primrose Hill there is the potential for construction works to adversely impact the SINC through dust production. Best working practices relating to dust suppression through damping and surface water management will help to minimise this risk.

The proposals will not see an increase in the residential capacity of the site, therefore there is not considered to be any indirect impacts on Primrose Hill SINC through increased visitor numbers.

4.2 Bats

4.2.1 Roost Potential

In accordance with the Bat Conservation Trust guidelines, the overall suitability of the dwelling to support bats is rated as 'low'. The guidelines state "If the structure has been classified as having low suitability for bats, an ecologist should make a professional judgement on how to proceed based on all of the evidence available"[1]. In this instance no further surveys are recommended. However, as a precautionary measure a licensed bat ecologist should be present to inspect and oversee the soft stripping of the roof tiles prior to demolition, so that in the highly unlikely event a bat is present the risk of injury/killing or destruction of a roost is avoided. The stripping of this feature should be undertaken carefully by hand under the supervision of the licensed ecologist. In the event a bat is discovered, the feature should be made good where possible and works would need to cease immediately. Work would likely not be able to continue until an EPS mitigation licence has been obtained. It is likely that any license application would need to be supported by further surveys to classify the nature of the roost (day/maternity/transitional).

4.2.2 Hibernation Potential

The dwelling is assessed as having 'negligible' hibernation potential and no specific timing constraints are recommended with regard to the hibernation period.

4.2.3 Foraging and Commuting Suitability

As the site and zone of influence may be used by foraging and commuting bats, it is important that the potential for disturbance from artificial lights is considered. The proposed development should include an 'ecologically sensitive lighting scheme' in accordance with guidance produced by the Bat Conservation Trust (summarised in Appendix 2).

4.3 Reptiles

Given the urban context of the site, and the lack of records from within the local area, the risk of killing/injury of reptiles is considered to be relatively low. However, a precautionary approach is

recommended to negate the risk as far as possible.

The brash and cuttings pile will be dismantled by hand under the direct supervision of an Ecological Clerk of Works (ECoW). In the event any reptiles are encountered they will be captured by the ecologist and moved to an adjacent off-site area (Primrose Hill).

The grassland will be subject to a two-phase strim. The two-phase process involves initially strimming grass down to 10cm from ground level to encourage reptiles to migrate away from the construction zone, followed by a second strim of the area where the grass is taken as low as possible to remove any suitable habitat for reptiles. A suitably qualified ecologist must oversee the process so that any wildlife that is found can be safely moved into suitable habitat. The area will need to remain cut short until works commence to ensure that reptiles are not encouraged to move back onto the construction zone.

No further surveys for reptiles are recommended.

4.4 Other Protected and/or Notable Species

As stated in the above section, the area of brash and piled grass cuttings must be cleared carefully and by hand under the supervision of ECoW. This should be undertaken outside of the hedgehog hibernation season (October – April) to avoid disturbing animals in hibernation.

4.5 Biodiversity Enhancement Opportunities

The proposed development represents an opportunity for habitat enhancement to benefit insects, birds, and bats. Any planting scheme should include native shrub species and flowering species known to encourage insect diversity. Such enhancement measures are in line with the recommendations of the NPPF and as such would be considered favourably when determining the planning application.

The developer is also encouraged to consider including integral bat roosting opportunities into the building fabric such as bat tiles and internal voids/access points for bats. For example, three Schwegler 2FR bat tubes could be built into the south, west and east facing elevations.

Furthermore, it is strongly recommended that the new dwelling incorporates a minimum of two integrated swift *Apus apus* nest boxes (swift bricks). These should be integrated into the walls directly below the eaves on the northern and/or eastern elevations.

If any bats or other protected species are found during the development, work should be stopped immediately, and an ecologist must be contacted for advice.

Should you need any further advice on the information provided above, please do not hesitate to contact The Ecology Co-op.

APPENDIX 1 – Wildlife Legislation and National Planning Policy

The following text is intended for general guidance only and does not constitute comprehensive professional legal advice. It provides a summary of the current legal protection afforded to bats.

All bat species in the UK are included in Schedule II of the Habitats Regulations 2017, which transpose Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora ("The EC Habitats Directive"). As such all bat species in the UK are defined as 'European Protected Species (EPS).

Four species of bat (Bechstein's bat *Myotis bechsteinii*, Barbastelle bat *Barbastella barbastellus*, greater and lesser horseshoe bats, *Rhinolophus ferrumequinum* and *R. hipposideros*) are also listed on Annex IV of the EC Habitats Directive. This requires the designation of a series of sites which contain important populations of these species as Special Areas of Conservation (SACs).

All species of British bat are also fully protected under the Wildlife and Countryside Act (1981), as amended, through inclusion in Schedule V.

All species of bat are listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). Section 41 of the NERC Act lists the habitats and species of principle importance. This places a statutory duty on all public bodies, including planning authorities, under Section 40, to take, or promote the taking by others, steps to further the conservation of habitats and species of principal importance for the conservation of biodiversity in England (commonly referred to as the 'Biodiversity Duty'). This duty extends to all public bodies the biodiversity duty of Section 74 of the Countryside and Rights of Way (CROW) Act 2000, which placed a duty only on Government and Ministers.

Under the above legislation it is an offence to:

- kill, injure or take any individual bat of any species;
- possess any part of an individual bat, either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by bats for shelter, rest, protection, or breeding;
- intentionally or recklessly disturb these species whilst using any place of shelter or protection; or
- deliberately disturb bats in such a way as to be likely to impair their ability to:
    - survive, to breed or reproduce, to rear or nurture their young; to hibernate or migrate; or to affect significantly the local distribution or abundance of the species to which they belong;
- keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead bat, or any part of, or anything derived from a bat.

It is also an offence to set and use articles capable of catching, injuring, or killing bats (for example a trap or poison), or knowingly cause or permit such an action. There is also protection under Schedule 6 of The Wildlife and Countryside Act 1981 (as amended) relating specifically to trapping and direct pursuit of bats.

A European Protected Species Licence (EPSL) in relation to bats is required from Natural England for any work that would result in an otherwise unlawful activity (e.g. damage to a bat roost). A license can only be issued to permit otherwise prohibited acts if Natural England are satisfied that all the following three tests are met:

- the proposal is for 'preserving public health or public safety, or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment';
- there is no satisfactory alternative; and
- the action authorised by the license will not be detrimental to the maintenance of bat populations at a favourable conservation status in their natural range.

A bat roost is defined by the Bat Conservation Trust's Bat Surveys—Good Practice Guidelines 3rd Edition as "the resting place of a bat". In general, the word roost is interpreted as "any structure or place, which any wild bat uses for shelter or protection."

Bats tend to re-use the same roosts; therefore, legal opinion is guided by recent case law precedents, that a roost is protected, whether or not the bats are present at the time. This includes summer roosts used for resting during the day and/or breeding; or winter roosts, used for hibernating.

APPENDIX 2 – Reducing Impacts of Artificial Light

Bright external lighting can have a detrimental impact upon foraging and commuting bat flight paths, but more importantly can also cause bats to remain in their roosts for longer. Artificial lighting can also cause significant impacts to other nocturnal species, most notably moths and other nocturnal insects. It can also result in disruption of the circadian rhythms of birds, reducing their fitness.

Guidelines issued by the Bat Conservation Trust[6] should be referred to when designing the lighting scheme. Note that lighting designs in very sensitive areas should be created with consultation from an ecologist and using up-to-date bat activity data where possible. The guidance contains techniques that can be used on all sites, whether a small domestic project or larger mixed-use, commercial or infrastructure development. This includes the following measures:

Avoid lighting key habitats and features altogether

There is no legal duty requiring any place to be lit. British Standards and other policy documents allow for deviation from their own guidance where there are significant ecological/environmental reasons for doing so. It is acknowledged that in certain situations lighting is critical in maintaining safety, such as some industrial sites with 24-hour operation; however, in the public realm, while lighting can increase the perception of safety and security, measurable benefits can be subjective. Consequently, lighting design should be flexible and be able to fully consider the presence of protected species.

Apply mitigation methods to reduce lighting to agreed limits in other sensitive locations – lighting design considerations

Where bat habitats and features are considered to be of lower importance or sensitivity to illumination, the need to provide lighting may outweigh the needs of bats. Consequently, a balance between a reduced lighting level appropriate to the ecological importance of each feature and species, and the lighting objectives for that area will need to be achieved. The following are techniques which have been successfully used on projects and are often used in combination for best results:

- dark buffers, illuminance limits and zonation;
- sensitive site configuration, whereby the location, orientation and height of newly built structures and hard standing can have a considerable impact on light spill;
- consideration of the design of the light and fittings, whereby the spread of light is minimised ensuring that only the task area is lit. Flat cut-off lanterns or accessories should be used to shield or direct light to where it is required. Consideration should be given to the height of lighting columns. It should be noted that a lower mounting height is not always better. A lower mounting height can create more light-spill or require more columns. Column height should be carefully considered to balance task and mitigation measures. Consider no lighting solutions where possible such as white lining, good signage, and LED cats eyes. For example, light only high-risk stretches of roads, such as crossings and junctions, allowing headlights to provide any necessary illumination at other times;
- screening, whereby light spill can be successfully screened through soft landscaping and the installation of walls, fences and bunding;
- glazing treatments, whereby glazing should be restricted or redesigned wherever the ecologist

[6] Bat Conservation Trust and Institute for Lighting Professionals (2018) Guidance note 8. Bats and Artificial Lighting. https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/

and lighting professional determine there is a likely significant effect upon key bat habitat and features;

- creation of alternative valuable bat habitat on site, whereby additional or alternative bat flightpaths, commuting habitat or foraging habitat could result in appropriate compensation for any such habitat being lost to the development;
- dimming and part-night lighting. Depending on the pattern of bat activity across the key features identified on site it may be appropriate for an element of on-site lighting to be controlled either diurnally, seasonally or according to human activity. A control management system can be used to dim (typically to 25% or less) or turn off groups of lights when not in use.

Demonstrate compliance with illuminance limits and buffers

- *Design and pre-planning phase*; it may be necessary to demonstrate that the proposed lighting will comply with any agreed light-limitation or screening measures set as a result of your ecologist's recommendations and evaluation. This is especially likely to be requested if planning permission is required.
- *Baseline and post-completion light monitoring surveys*; baseline, pre-development lighting surveys may be useful where existing on or off-site lighting is suspected to be acting on key habitats and features and so may prevent the agreed or modelled illuminance limits being achieved.
- *Post-construction/operational phase compliance-checking;* as a condition of planning, post-completion lighting surveys by a suitably qualified person should be undertaken and a report produced for the local planning authority to confirm compliance. Any form of non-compliance must be clearly reported, and remedial measures outlined. Ongoing monitoring may be necessary, especially for systems with automated lighting/dimming or physical screening solutions.

Lighting Fixture Specifications

The Bat Conservation Trust recommends the following specifications for lighting on developments to prevent disturbance:

- Lighting spectra: peak wavelength >550nm
- Colour temperature: <2700K (warm)
- Reduction in light intensity
- Minimal UV emitted
- Upward light ratio of 0% and good optical control

Further reading:

Buglife (2011) A review of the impact of artificial light on invertebrates.

Royal Commission on Environmental Pollution (2009) Artificial light in the environment. HMSO, London. Available at: https://www.gov.uk/government/publications/artificial-light-in-the-environment

Rich, C., Longcore, T., Eds. (2005) Ecological Consequences of Artificial Night Lighting. Island Press. ISBN 9781559631297.

CPRE (2014) Shedding Light: A survey of local authority approaches to lighting in England. Available

at: http://www.cpre.org.uk/resources/countryside/dark-skies/item/3608-shedding-light

Planning Practice Guidance guidance (2014) When is light pollution relevant to planning? Available at: https://www.gov.uk/guidance/light-pollution

Institution of Lighting Professionals (2021) Guidance Notes for the Reduction of Obtrusive Light GN01:2011. Available at: https://www.theilp.org.uk/resources/free-resources/

Voigt, C.C., Azam, C., Dekker, J., Ferguson, J., Fritze, M., Gazaryan, S., Hölker, F., Jones, G., Leader, N., Lewanzik, D. and Limpens, H., 2018. *Guidelines for consideration of bats in lighting projects*. Unep/Eurobats. Available at: https://cdn.bats.org.uk/uploads/pdf/Resources/EUROBATSguidelines8_lightpollution.pdf?v=1542109376