



Bat Survey - Preliminary Roost Assessment

Site: Dyne House, Highgate School, North Road, London, N6 4AY

Client: Highgate School

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Executive summary

Arbtech Consulting Ltd. undertook a Preliminary Roost Assessment at Dyne House, Highgate School, North Road, London, N6 4AY on 13th February 2017. The aim of the assessment was to consider the value and suitability of the structures for roosting bats.

The development proposals are for a 'three-storey front extension with single-storey new basement extension to the front of the existing Dyne House building including refurbishment and recladding of existing Dyne House building, a new bridge link and a new three- storey rear extension with a single-storey plant room.' No planning application has been submitted at the time of writing this report.

Recommendations - This is work you will need to commission (if any) to obtain planning permission or comply with legislation for other consent.

Ref	Survey assessment conclusions (with justification)	Recommendations	Enhancements
			The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99
B1	This building has a negligible likelihood of supporting roosting bats.	No further surveys.	The installation of a minimum of two Schwegler bat boxes on mature trees around the site boundaries (particularly the southern boundary) will provide additional roosting habitat for bats e.g. 2F Schwegler Bat Box 1FF Schwegler Bat Box 2FN Schwegler Bat Box One 1FR Schwegler Bat Tube / Habitat Bat Box inserted into the fabric of the new building during construction. Bat boxes should be positioned 3-5m above ground level facing in a south/south-westerly direction with a clear flight path to and from the entrance.
B2	This building has a negligible likelihood of supporting roosting bats.	No further surveys.	

			Bat tubes should be positioned high on the building, close to the eaves, away from windows and other artificial light sources.
B1 and B2	The buildings provide negligible habitat for barn owls or breeding birds, however birds may nest on the trees on site.	Any building/tree and scrub removal should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the building/trees and scrub to be removed should be undertaken immediately prior to clearance. All active nests will need to be retained until the young have fledged.	Install three Schwegler bird boxes on retained trees/buildings on site e.g. Schwegler No 17 swift nest box Schwegler 1SP Sparrow Terrace Schwegler 1B nest boxes Schwegler 2H Robin Boxes Nest 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.
Trees on site	The site provides negligible habitat value for roosting bats in the trees around the site.	No further surveys.	[As above] The installation of a minimum of two Schwegler bat boxes on mature trees around the site boundaries (particularly the southern boundary) will provide additional roosting habitat for bats e.g. 2F Schwegler Bat Box 1FF Schwegler Bat Box 2FN Schwegler Bat Box One 1FR Schwegler Bat Tube / Habibat Bat Box inserted into the fabric of the new building during construction.

			Bat boxes should be positioned 3-5m above ground level facing in a south/south-westerly direction with a clear flight path to and from the entrance.
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For full justification of these recommendations, please go straight to section [4.0 Conclusions, Impacts and Recommendations](#). Otherwise, the full report starts below.

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1.0 Introduction and Context

1.1 Background

Arbtech were commissioned by Highgate School to undertake a Preliminary Roost Assessment (PRA) at Dyne House, Highgate School, North Road, London N6 4AY. The assessment is informed by the Bat Conservation Trust publication *Bat Surveys for Professional Ecologists – Good Practice Guidelines* (Collins, J. (Ed) 2016).

A Preliminary Ecological Appraisal was undertaken by Arbtech Consulting Ltd in April 2015.

1.2 Site Context

The site is located at National Grid Reference TQ 2840 8752, and has an area of approximately 0.7ha. The site consists of two large school buildings with associated ornamental shrubs, overgrown tall ruderal habitat, hard standing and mature trees along the boundaries of the site.

1.3 Scope of the report

This report provides a description of all features suitable for roosting 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 constraints to the proposals as a result of roosting 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.

The aim of the assessment was to determine the presence or evaluate the likelihood of the presence of roosting bats, and to gain an understanding of how they could use the site. To achieve this, the following steps have been taken:

- A desk study has been carried out, including a request for information from the Greenspace Information for Greater London (GiGL)
- A field survey has been undertaken, including an external survey and internal inspection where possible.
- An outline of likely impacts on any known roosts has been provided, based on current development proposals
- Recommendations for further survey and assessment have been made, along with advice on European Protected Species Mitigation Licensing if appropriate

A survey plan is presented in Appendix 1, the proposed Project Plan is included in Appendix 2 (where available), desk study results are provided in the Appendix 3 and a summary of relevant legislation can be found in Appendix 4.

1.4 Project Description

This report is prepared in support of a planning application that is being prepared for submission to Haringey Council.

The development proposals are for a 'three-storey front extension with single-storey new basement extension to the front of the existing Dyne House building including refurbishment and recladding of existing Dyne House building, a new bridge link and a new three- storey rear extension with a single-storey plant room.' No planning application has been submitted at the time of writing this report.

The proposed site plan is included in Appendix 2 (where available).

2.0 Methodology

2.1 Desk Study methodology

Existing bat records relating to the site and a surrounding 2km radius (the study area) are required to conform to national guidelines and these have been requested from Greenspace Information for Greater London (GiGL). The data search is confidential information that is not suitable for public release.

A review of the following information sources has also been undertaken to inform the assessment:

- Landscape structure using aerial images from Google Earth and OS maps
- Designated sites, habitat and granted EPSL records held on Magic.gov.uk.

2.2 Site Survey methodology

The survey was undertaken by Lauren Fear (Natural England Bat Licence Number 2015-18912-CLS-CLS) on 13th February 2017.

All features that will be impacted by the project proposals were assessed for their bat roosting and/or commuting habitat. The surveyor systematically surveyed all features suitable for-bats and signs of bat activity.

For any surveyed buildings:

A non-intrusive visual appraisal from the ground using binoculars, inspecting the external features of the building(s) for potential access/egress points, and for signs of bat use. An internal inspection of the building was also made, including the living areas of derelict or abandoned buildings and the accessible roof spaces of all buildings, using an endoscope, torch and ladders. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows, and carried out a detailed search of numerous features within the roof space.

For any surveyed trees

A visual inspection from ground level using binoculars and where accessible an internal inspection of suitable roosting features using an endoscope, torch and ladders.

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

All affected survey features on site were categorised according to the likelihood of bats being present, in line with best practice guidelines (Collins, J. (ed) 2016). The features that dictate the likelihood of roosting bats are summarised in Tables 1 and 2 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

Likelihood of bats being present	Feature of building and its context
Higher	Buildings/structures with features of particular significance for 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).
Lower	A small number of possible roost sites/features, used sporadically by more widespread species. 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.

Table 2: Features of a tree that are correlated with use by bats

Likelihood of bats being present	Feature of tree and its context
Higher	A 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 potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.
Lower	A tree of sufficient size and age to contain potential roosting features but with none seen from the ground or features seen with only very limited roosting potential.

2.5 Limitations – evaluation of the methodology

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 the 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.

There were no specific limitations to the survey regarding internal access, exterior visibility, safety from biotic (e.g. wasps) or abiotic (e.g. asbestos) sources or adverse weather. Therefore, the survey was carried out to its fullest extent, and the conclusions based on the maximum range of evidence.

3.0 Results and Evaluation

3.1 Desk Study Results

A summary of desk study results are provided below; full details are included in Appendix 4.

3.2 Designated sites

There are three statutory designated sites within the study area. Their location and extent are illustrated in Appendix 4. Table 3 provides details of the designated sites including their reasons for notification.

Table 3: Designated sites within 2km radius of the site

Designated Site Name	Distance from Site (approx.)	Reasons for Notification from Natural England and/or BRD or LPA policy maps
Statutory Sites		
Queen's Wood - Local Nature Reserve (LNR)	740m north	'The wood is an ancient oak-hornbeam woodland. English oak and occasional beech stand above hornbeam, midland hawthorn, hazel, mountain ash, field maple, cherry, holly and both species of lowland birch. The ground flora is particularly rich for somewhere so close to central London. It includes a large population of wood anemone, native bluebells, wood goldilocks and a thriving population of wood sorrel. Over one hundred species of spiders have been spotted and a nationally rare jewel beetle is widespread.' Natural England accessed via Magic Maps on 13/02/2017.
Parkland Walk - LNR	620m north-east	'The predominant habitat at Parkland Walk is secondary woodland. A large area of naturalised wild plum are present in the Islington section of Parkland Walk. English elm is occasionally present and most abundant in the Islington section. The Islington stretch is also very important for a range of wildlife and includes the borough's only area of acidic grassland which is home to several rare plants and insects.' Natural England accessed via Magic Maps on 13/02/2017.
Hampstead Heath Woods – Site of Special Scientific Interest (SSSI)	1.2km south-west	'Hampstead Heath Woods are examples of long-established high forest woodlands with an exceptional structure comprising an abundance of old and over-mature trees providing dead wood habitat for a range of invertebrate species. The site also includes an adjacent small valley containing an acidic flush with developing bog-moss communities.' Natural England accessed via Magic Maps on 13/02/2017.

3.3 Landscape

A review of the designated sites, aerial photographs (Figure 1), the Magic database and OS maps has been undertaken. Collated together, the site's local habitat is described below:

The site is located in a residential and urban area of north London. The landscape around the site is dominated by urban development with small areas of green space, particularly to the west of the site. There are areas of ancient and semi-natural woodland located approximately 750m north of the site, which provide an excellent refuge and foraging habitat for bat species. There are also large expanses of good quality habitats to the south-west of the site which include lowland heathland, lowland fens, good quality semi-improved grassland and deciduous woodland. The ancient woodland habitat to the north of the site is known to support a wide variety of invertebrates, and the lowland fens and heathland to the south-west will also provide good quality habitat for invertebrates, which are a food source for bats.

Priority habitats within 2km of the site are listed in Table 4.

Table 4: Priority Habitat Inventory within 2km (Magic.gov.uk):

Habitat	Closest distance from site
Deciduous Woodland	~112m south-east
National Forest Inventory	~30m south-east
Ancient woodland	~760m north
Woodpasture and Parkland BAP Priority Habitat	~900m west
Good quality semi-improved grassland	~840m south-west
Lowland heathland	~1km south-west
Lowland fens	~1.6km south-west



Figure 1: Aerial photo of site, showing landscape structure

3.4 Historical records

Greenspace Information for Greater London (GiGL) has provided bat records for within 2km of the site. These can be provided on request and are summarised in Table 5. The biological records show that there are widespread and common species present in the landscape around the site.

Table 5: Historical records of bats within 2km of the site

Common name	Scientific binomial	Number of records	Number of roost records	Maternity roost records
Serotine	<i>Eptesicus serotinus</i>	9	Insufficient detail supplied.	
Daubenton's bat	<i>Myotis daubentonii</i>	108		
Natterer's bat	<i>Myotis nattereri</i>	82		
Lesser noctule	<i>Nyctalus leisleri</i>	32		
Common noctule	<i>Nyctalus noctula</i>	229		
Nathusius' pipistrelle	<i>Pipistrellus nathusii</i>	15		
Common pipistrelle	<i>Pipistrellus pipistrellus</i>	149		
Soprano pipistrelle	<i>Pipistrellus pygmaeus</i>	183		
Brown long-eared	<i>Plecotus auritus</i>	23		

A search of the magic database for granted European Protected Species Mitigation Licences (EPSMLs) for bats within a 2km radius found one licenced site and details are provided in Table 6 below.

Table 6: Granted EPSMLs (bats) within 2km of the site

Case reference of granted application	Approx. distance from site	Species Effectd	Licence Start Date:	Licence End Date:	Impacts allowed by licence
EPSM2012-4532	1.2km west	S-PIP	06/08/2012	31/08/2015	Destruction of a breeding site

3.5 Field Survey Results

The site of the proposed development include two existing buildings and areas of hard standing, ornamental planting and tall ruderal habitat, and is illustrated in the map in Appendix 1. The environmental variables recorded at the time of the survey are shown in Table 7.

Table 7: Environmental variables during the survey

Date: 13/02/2017	
Temperature	7°C
Humidity	86°C
Cloud Cover	5%
Wind	1.0km/h
Rain	None

3.6 Site Feature descriptions and photos

Building B1

The building has been split into two sections for the purposes of this report. The two sections are connected by a single storey, flat roof section.

The different sections are described below.



Building B1 section A description

B1 section A is a two storey, brick built school building with a pitched roof which is covered in clay tiles. The tiles are in generally good condition with none that are obviously displaced or raised. Raised or displaced tiles can create crevices for bats to roost underneath.

The roof tiles of B1 section A are clay tiles in a Spanish-style, reducing the likelihood of any tiles being lifted or displaced, reducing the likelihood of any potential crevices for roosting bats to exploit, with the exception of the final row of guttering which provides large gaps for bats to enter the roof structure.



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Dyne House, Highgate School, N6 4AY

B1 section A has a brick cornice across most elevations of the building. The metal frames of the windows and brick cornice are all intact, with no gaps underneath the frames or roof to provide bats with habitat value.



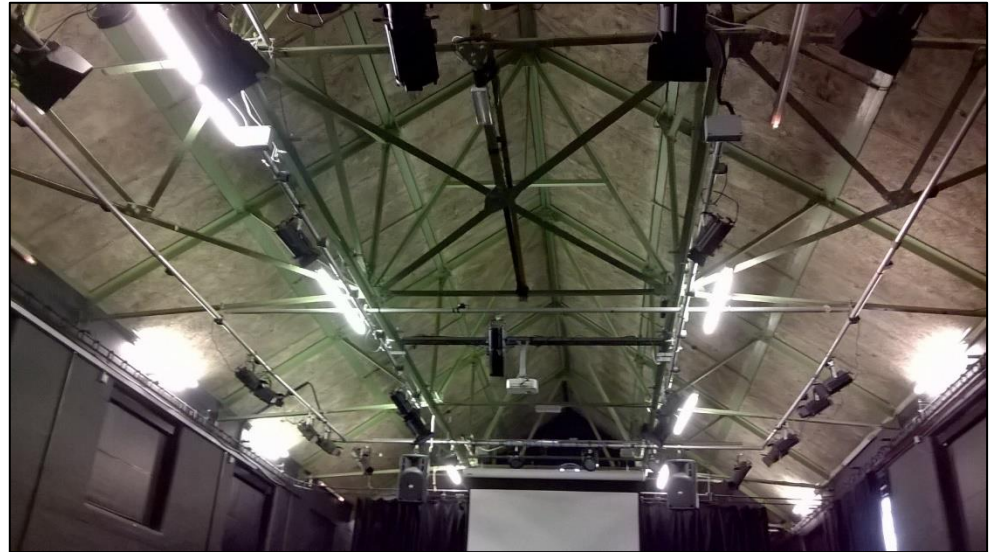
The brick walls and brick chimney stack on B1 section A are intact, with no gaps for crevice-dwelling species such as *Pipistrellus* spp. and *Myotis* spp. bats to exploit for roosting. There are timber soffit and fascia boards on the northern elevation of B1 section A, which appear intact with no gaps or holes to provide habitat value for roosting bats.



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The interior of B1 section A has an open apex roof with cladding across the ceiling, with no voids to provide habitat value for void-dwelling species such as long-eared bats. This greatly reduces the likelihood of void-dwelling bats using the building.

Dyne House, Highgate School, N6 4AY



Building B1 section B description

B1 section B is a two storey brick built school building with a pitched roof covered in slate tiles. The slate tiles are in good condition with none that are obviously lifted or displaced.



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B1 section B has timber soffit and fascia boards across most elevations of the building. The boards are intact and have no obvious gaps or crevices to provide habitat value for roosting bats.

B1 section B has a pitched roof covered in slate tiles. The tiles are in good condition with no obvious lifted or displaced tiles for crevice-dwelling bats to exploit. The building has three large chimney stacks which are brick built with clay chimney pots on the top. These chimney stacks appear in good condition with no gaps or crevices in the bricks or mortar for bats to exploit. There is a flat roof section on the western elevation which has a brick cornice and no habitat value for roosting bats.

Dyne House, Highgate School, N6 4AY



The building has three large chimney stacks which are brick built with clay chimney pots on the top. These chimney stacks appear in good condition with no gaps or crevices in the bricks or mortar for bats to exploit.

Flat roof area



The loft in B1 section B has timber sarking boards across the roof structure, which are intact and tight-fitting. No gaps between the boards were observed, reducing the likelihood of bats being able to access the loft space from under any lifted tiles.



The loft is a narrow shape approximately 1m in height at the central apex with a length of 20m and a width of 6m. The loft space is completely covered in dusty cobwebs, reducing the likelihood that void-dwelling bats have been flying inside recently. The loft has large metal containers situated near the middle of the loft space which reduce the connectivity of the internal flying space.

Metal containers



The floor of the loft is covered in displaced timber boards which are very dusty and create a good surface for bat evidence to be identified upon.

Metal containers



Northern end of loft

Cobwebs

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Dyne House, Highgate School, N6 4AY

Evidence of bats

No evidence of bats was located internally or externally during the survey.

Building B2 description

B2 is a large school building built in the 1960s located on a steep slope. The building has a flat roof which is inaccessible. B2 has a brick cornice across all elevations of the building and metal framed windows in good condition.



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Dyne House, Highgate School, N6 4AY

B2 has areas of stone-wash walls and exposed brick walls, all of which appear in good condition with no obvious gaps or crevices.



The brick walls of B2 are intact with metal-framed windows in good condition, reducing the likelihood of crevices for roosting bats to exploit.



Highgate School

Dyne House, Highgate School, N6 4AY

The building is overall in good condition with no habitat value for roosting bats.



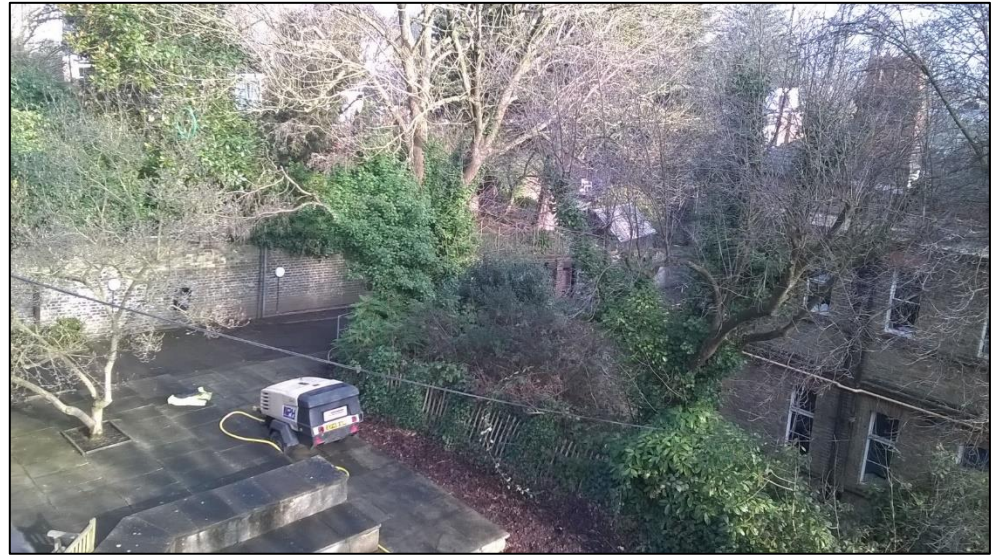
Evidence of bats

No evidence of bats was located internally or externally during the survey.

Trees on site

Trees on site

The trees were assessed for bat habitat value. The tree species included oak *Quercus robur*, sycamore *Acer pseudoplatanus*, cypress *Cupressus* spp., fruit trees *Prunus* spp. and hawthorn *Crataegus monogyna*. None have any cracks or crevices of roosting potential for bats.



Breeding birds and other incidental observations

No evidence of birds using either building was identified. No habitat value for nesting birds was found on either building.

Birds could nest in the trees on site.

4.0 Conclusions, Impacts and Recommendations

4.1 Informative guidelines

Bats are protected under the Wildlife and Countryside Act and Conservation Regulations; see Appendix 3 for a summary of legislation protecting bats in the UK. 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.

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) recommends 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 a European Protected Species Mitigation Licence (EPSML) application with 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 (Collins, J. 2016).

Low, moderate or high likelihood of a bat roost present

Best practice survey guidelines (Collins, 2016) recommends 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/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 of the surveys should be a dawn re-entry survey (Collins, J. 2016). The survey effort recommended at this stage is iterative and if bats are recorded emerging from the buildings, a further survey will be required to provide sufficient information to inform an EPSML application to Natural England.

Negligible likelihood of a bat roost present

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

Appropriate justification for this assessment is provided in Section 3 and Tables 1 and 2 of this report.

4.2 Evaluation

Taking the desk based assessment and site survey results into account, the following value for roosting bats has been placed on each site survey feature.

Table 8: Evaluation of buildings on site

Ref	Survey assessment conclusions (with justification)	Foreseen impacts	Recommendations	Enhancements
				The Local Planning Authority has a duty to ask for enhancements under the NPPF and circular 06/2005: Biodiversity and Geological Conservation. Para.99
B1	This building has a negligible likelihood of supporting roosting bats.	Bats are very unlikely to be roosting within this building and as such, there are not anticipated to be any impacts on bats as a result of the proposed works.	No further surveys.	The installation of a minimum of two Schwegler bat boxes on mature trees around the site boundaries (particularly the southern boundary) will provide additional roosting habitat for bats e.g.
B2	This building has a negligible likelihood of supporting roosting bats.	Bats are very unlikely to be roosting within this building and as such, there are not anticipated to be any impacts on bats as a result of the proposed works.	No further surveys.	2F Schwegler Bat Box 1FF Schwegler Bat Box 2FN Schwegler Bat Box One 1FR Schwegler Bat Tube / Habibat Bat Box inserted into the fabric of the new building during construction. Bat boxes should be positioned 3-5m above ground level facing in a south/south-westerly direction with a clear flight path to and from the entrance. Bat tubes should be positioned high on the building, close to the eaves, away from windows and other artificial light sources.

B1 and B2	The buildings provide negligible habitat for barn owls or breeding birds, however birds may nest on the trees on site.	There is a likely absence of breeding birds using either building as there is no evidence of use and no habitat value for nesting birds. As such, there is no expected impact from the proposed plans on these buildings for breeding birds. However breeding birds may use the trees around the boundaries of the site and therefore active nests may be disturbed or damaged during development.	Any building/tree and scrub removal should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the building/trees and scrub to be removed should be undertaken immediately prior to clearance. All active nests will need to be retained until the young have fledged.	Install three Schwegler bird boxes on retained trees/buildings on site e.g. Schwegler No 17 swift nest box Schwegler 1SP Sparrow Terrace Schwegler 1B nest boxes Schwegler 2H Robin Boxes Nest 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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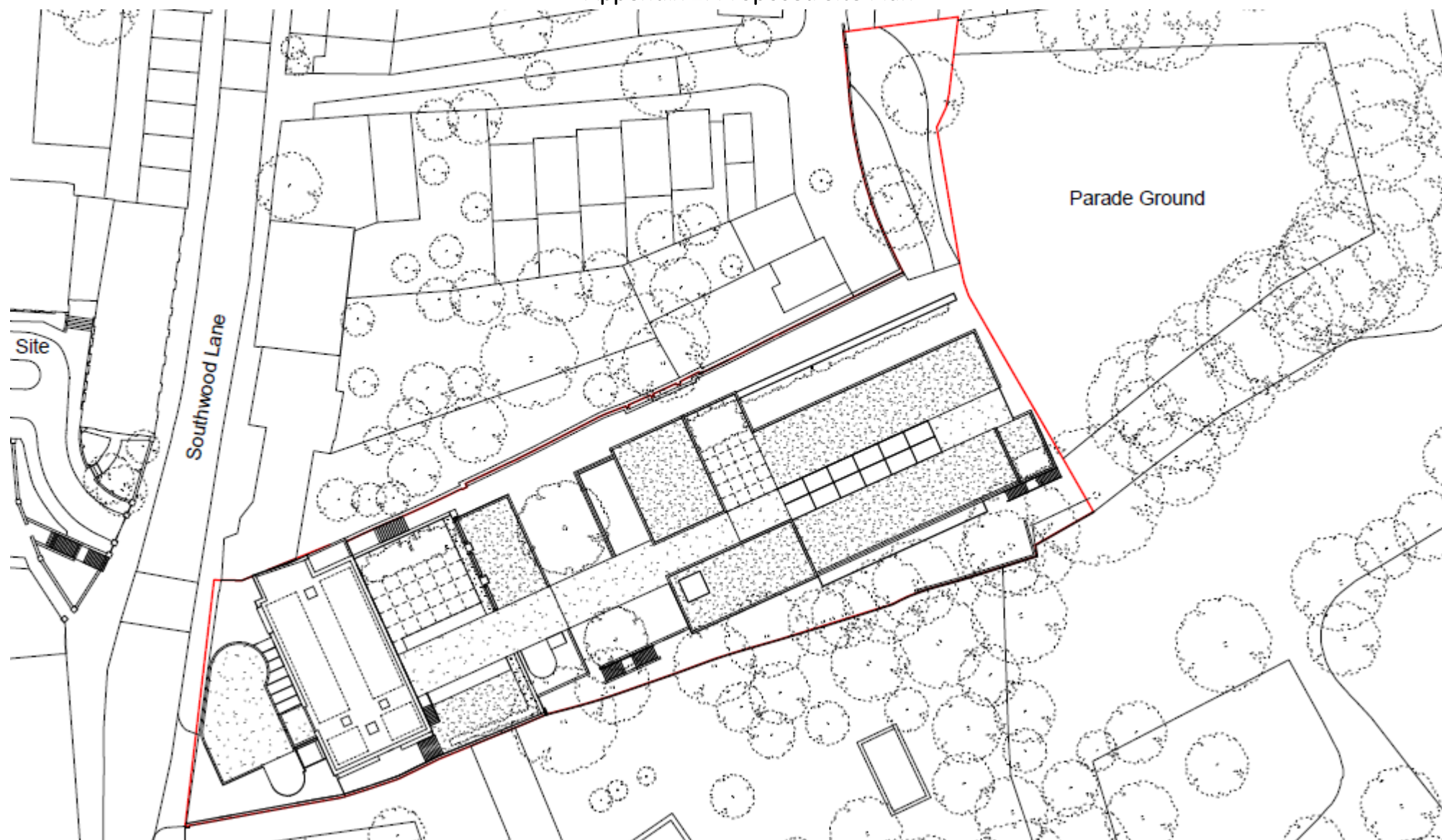
5.0 Bibliography

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- Collins, J. (ed.) (2012). Bat Surveys for Professional Ecologists — Good Practice Guidelines, 3rd edition, Bat Conservation Trust, London.
- Garland & Markham (2008) Is important bat foraging and commuting habitat legally protected?
- Google Earth (2017) accessed on 13th February 2017.
- Magic database (2017) <http://www.magic.gov.uk/MagicMap.aspx> accessed on 13th February 2017.
- Mitchell-Jones, A.J. (2004). Bat Mitigation Guidelines. English Nature, Peterborough.

Appendix 1: Survey Plan



Appendix 2: Proposed Site Plan



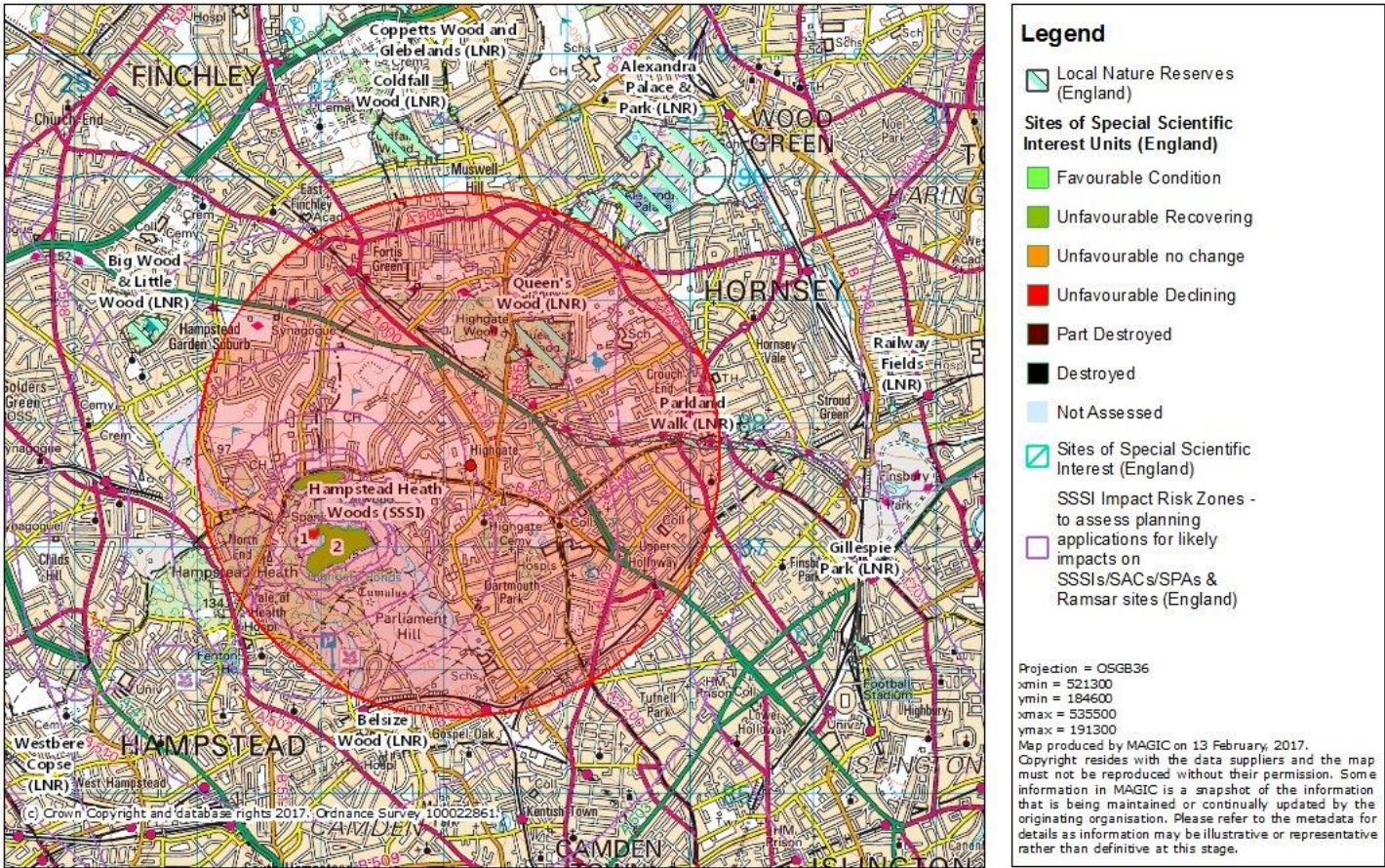
Appendix 3: Desk Study Information

Full historical records can be provided on request.

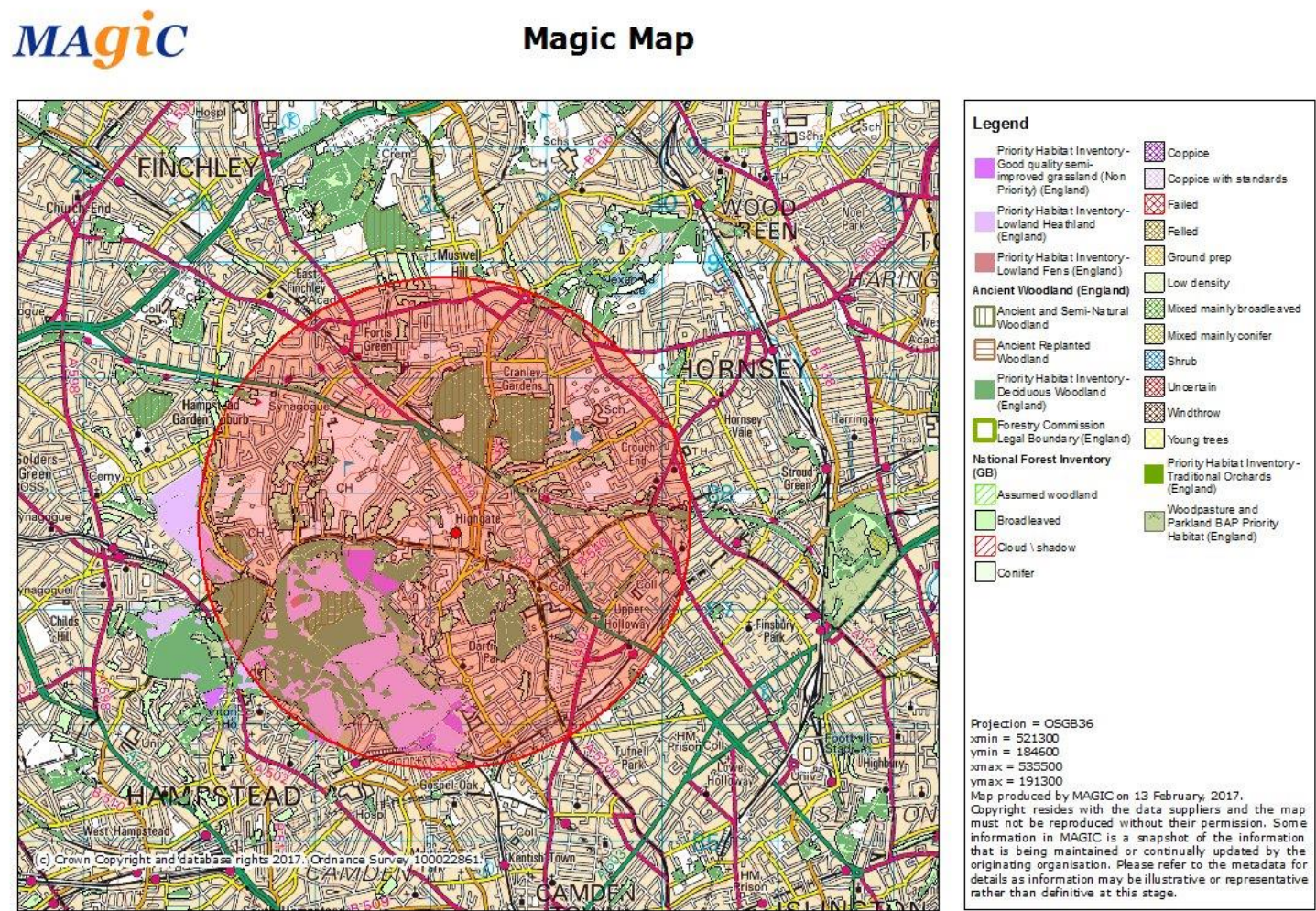
Magic Map showing designated sites:

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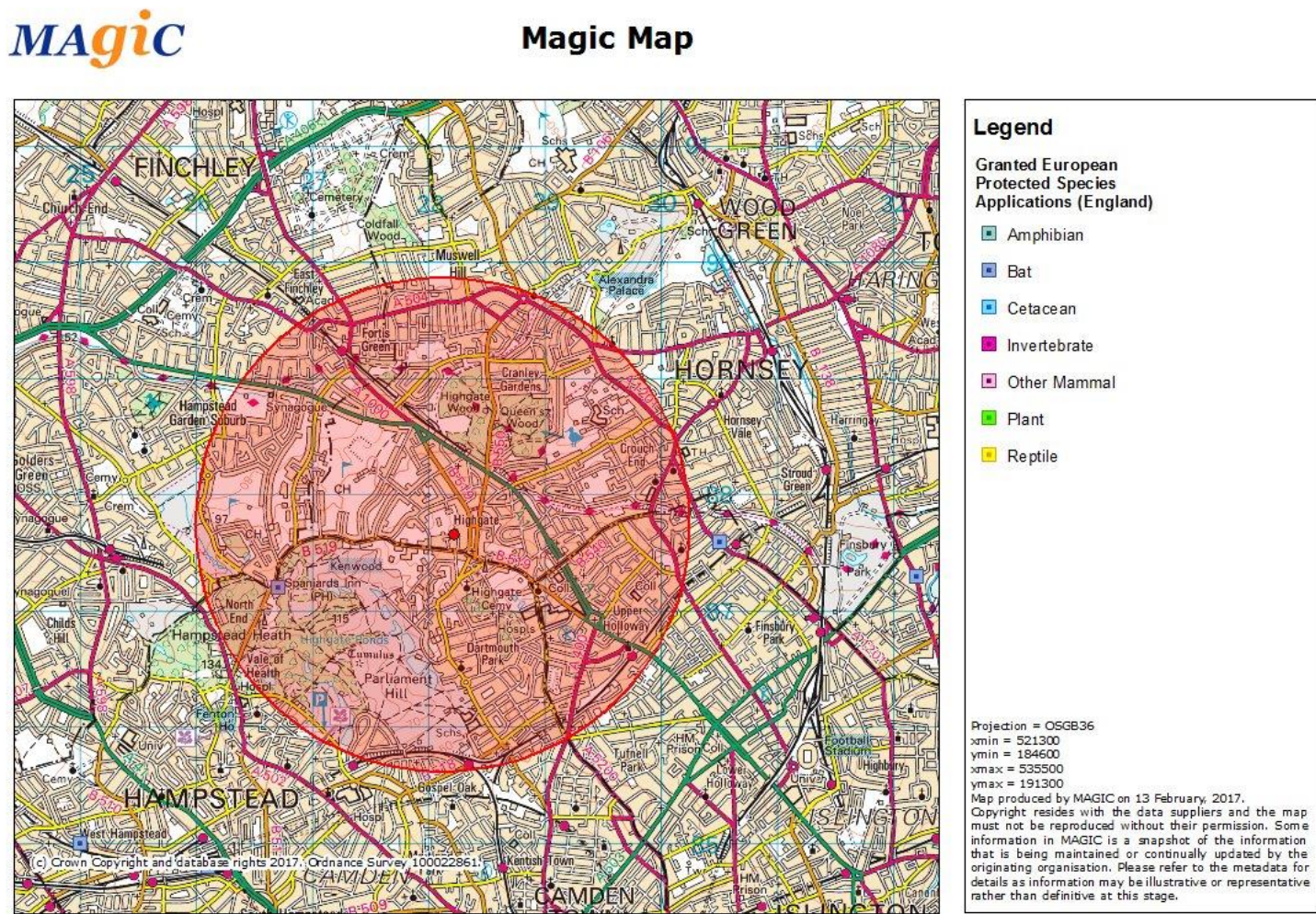
Magic Map



Magic Map showing Priority habitats:



Magic Map showing EPSL records:



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 2010 (as amended) through their inclusion on Schedule 2.

Regulation 41 prohibits:

- Deliberate killing, injuring or capturing of Schedule 2 species (e.g. all bats)
- Deliberate disturbance of bat species as:
 - a) to impair their ability:
 - (i) to survive, breed, or reproduce, or to rear or nurture young
 - (ii) to hibernate or migrate
 - b) to affect significantly the local distribution or abundance of the species
- Damage or destruction of a breeding site or resting place

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

Effect on development works:

A European Protected Species Mitigation (EPSM) Licence issued by the relevant statutory authority (e.g. 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).

NATIONAL PLANNING POLICY (ENGLAND)

National Planning Policy Framework

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 UK Biodiversity Action Plan priority species) 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; opportunities to incorporate biodiversity in and around developments are encouraged; 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 (Section 42 in Wales) 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.