

PRELIMINARY BAT ROOST ASSESSMENT OF:

THE FORMER ISIS HOUSE OXFORD BIOMEDICA TRANSPORT WAY OXFORD OX4 6LT

Client: Oxford Biomedica

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1.0 Introduction

Survey and reporting

- 1.1 This report details the results of a Preliminary Bat Roost Assessment of the former Isis House, Oxford Biomedica, Transport Way, Oxford, OX4 6LT.
- 1.2 The survey, carried out on 02 October 2020, was undertaken to inform a planning application for the site.

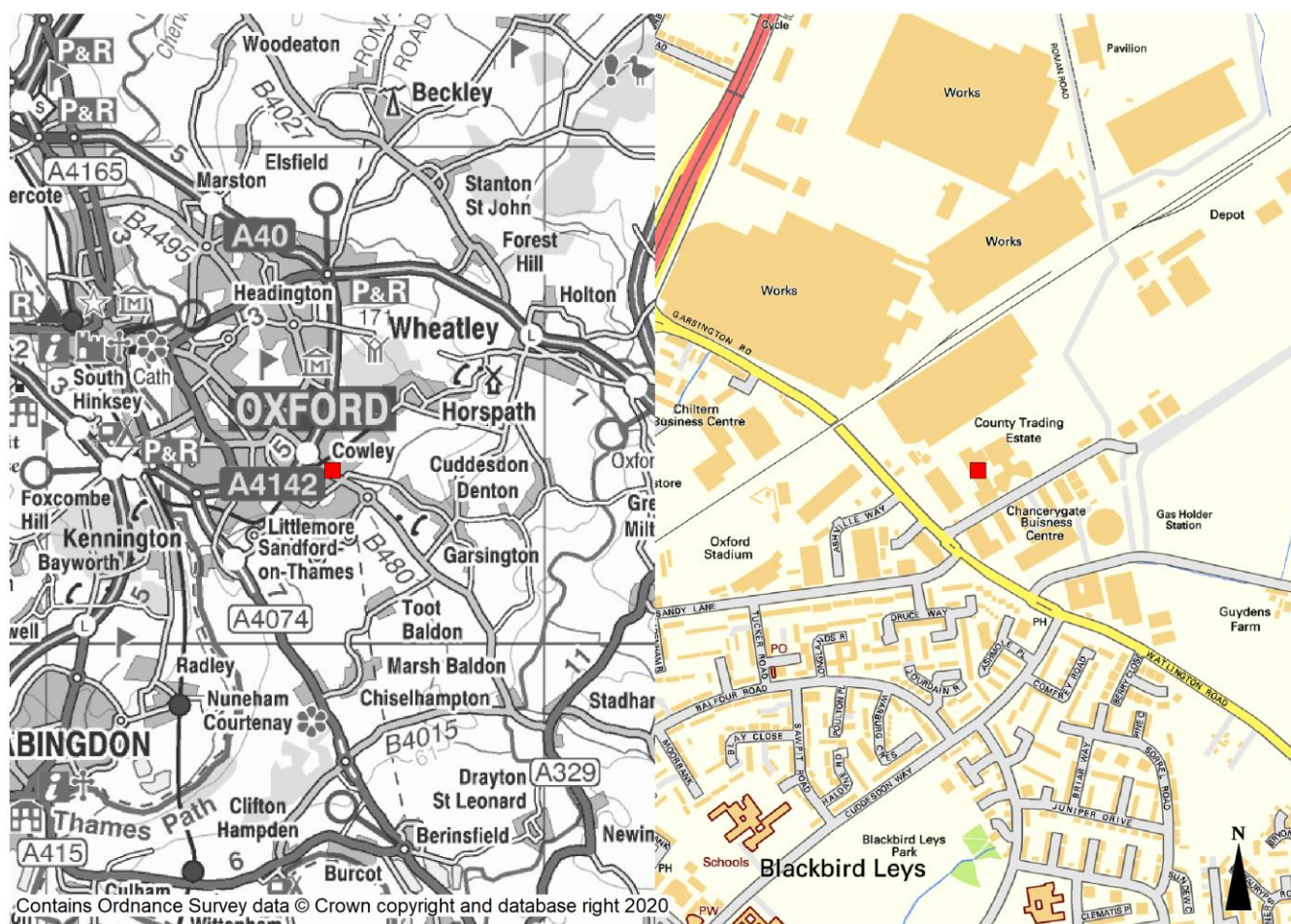
Application site

- 1.3 The application site is located towards the south western end of Transport Way, a main road running through the Cowley industrial area in south east Oxford (Grid Reference SP55740350, Figure 1).
- 1.4 The application site comprises a laboratory (not currently in use) within the Oxford Biomedica site and the surrounding hardstanding carpark.

Details of proposed works

- 1.5 It is proposed to demolish two thirds of the building, at its the north-western end, and erect a new laboratory building across a similar development footprint.
- 1.6 No trees will be affected by the proposed works.

Figure 1 – Site location



2.0 Methodology

Desk study

- 2.1 A desk study data search was undertaken. This involved reviewing publicly available datasets and citations of statutory designated sites of importance for nature conservation and Natural England's Ancient Woodland Inventory for sites within the zone of influence of the survey area (considered to be a maximum of 500m in this case).
- 2.2 In addition, species records (on the MAGIC website¹) were accessed, and aerial photographs and Ordnance Survey maps were studied for features of interest.

Preliminary Bat Roost Assessment

- 2.3 The preliminary bat roost assessment comprised a survey of the building, and any trees to be affected by the proposals (none on this case), for bats, signs of bats and features potentially suitable for use by roosting bats, and an assessment of the surrounding habitat in terms of its suitability for commuting and foraging bats.
- 2.4 The survey consisted of a detailed search of the interior and exterior of the building looking for bats and/or evidence of bats including droppings (on walls and windowsills and in roof and loft spaces), rub or scratch marks, staining at potential roosts and exit holes, live or dead bats and features, such as raised or missing tiles, potentially suitable for use by roosting bats. Binoculars, an endoscope, a ladder and a high-powered torch were used as required.
- 2.5 Buildings are classified according to their suitability for use by roosting bats. Classification is dependent on a number of factors including:
 - Bats and/or signs of bats
 - External and internal features potentially suitable for use by roosting bats (e.g. raised or missing tiles, gaps behind fascia boards)
 - Setting
 - Night time light levels
 - Disturbance levels
 - Proximity of suitable foraging habitat and commuting routes (e.g. ponds, streams, woodland, large gardens, hedgerows)
- 2.6 The categories used to classify buildings and trees and the survey effort required to determine the presence or absence of bats (as per the Bat Conservation Trust's Bat Survey Guidelines², referred to by Natural England in their standing advice to planning officers) are described in Table 1, and factors affecting habitat suitability in Table 2.

Surveyor details

- 2.7 The survey was undertaken by Ryan Davies BSc (hons) ACIEEM (senior ecologist) of GS Ecology Ltd. Ryan is an associate member of the Chartered Institute of Ecology and Environmental Management and holds a Natural England WML A34 Level 2 bat survey licence.

¹ <http://www.natureonthemap.naturalengland.org.uk/>

² Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn) Bat Conservation Trust

Table 1 – Description of the categories used to assess a building or tree’s bat roost potential and the survey effort required to determine the likely presence or absence of bats

Bat Roost Potential	Roost status	Description	Survey effort required to determine the likely presence or absence of bats
	Confirmed	Bats or evidence of bats found.	Surveys would be required to establish the status of the roost. Generally three dusk emergence and/or pre-dawn re-entry surveys between May and September. Optimum period May – August (two surveys should be undertaken during the optimal period and at least one survey should be a pre-dawn survey).
	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 potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Three dusk emergence and/or pre-dawn re-entry surveys between May and September. Optimum period May – August. Two surveys should be undertaken during the optimal period and at least one survey should be a pre-dawn survey.
	Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only i.e. irrespective of species conservation status, which is established after presence is confirmed).	Two surveys, comprising one dusk emergence and a separate pre-dawn re-entry survey between May and September (one of the surveys needs to be carried out between May and the end of August).
	Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation) A tree of sufficient size and age to contain features but with none seen from the ground or features seen with only very limited roosting potential	One dusk emergence or pre-dawn re-entry survey between May and the end of August (but only if features will be affected by the proposals). May not be required for trees with low roost suitability (dependent on case-specific conditions) as a precautionary approach to tree works can be taken to minimise the risk of harming bats.
	Negligible	Negligible habitat features on site likely to be used by roosting bats.	No further surveys required.

Table 2 – Habitat suitability scale for commuting and foraging bats

Suitability of habitat for commuting and foraging	Habitat Suitability	Description
	High	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts
	Moderate	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water
	Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
	Negligible	Negligible habitat features on site likely to be used by commuting or foraging bats

3.0 Results

Weather conditions

- 3.1 Weather conditions during the survey were 12°C, 8/8ths cloud cover with rain showers.

Desk study

Statutory sites of importance for nature conservation

- 3.2 There are no statutory sites of importance for nature conservation or areas of woodland listed on Natural England's Ancient Woodland Inventory within 500m of the application site.

Bat licence records

- 3.3 Within 2km of the site there are two records of licenses issued by Natural England for works affecting bat roosts on The MAGIC website. These records are summarised in Table 3 below.

Table 3 – Summary of Natural England bat licence records within 2km of the application site

Distance from development site	Species affected	Roost type	Year licence was issued
1.3km North-west	Common pipistrelle	Non-breeding	2011
1.6km South-west	Common pipistrelle	Non-breeding	2009

Surrounding land use

- 3.4 The application site is located towards the south western end of Transport Way, a main road running through the Cowley industrial area in south east Oxford. Directly adjacent to the site in all directions, and, further to the north, east and west, are large, light-industrial, and commercial units within the Cowley industrial area. Further to the south is an area of densely packed residential properties, some of which have small gardens with very few trees. Beyond to the east (approx. 250m) are large arable fields with few trees along their boundaries. The habitats surrounding the site are therefore of predominantly “low” suitability for commuting and foraging bats.

Habitats within the application site

- 3.5 The application site comprises a laboratory (not currently in use) within the Oxford Biomedica site and the surrounding hardstanding carpark. Adjacent to the north eastern elevation of the building there is a small square of very short amenity grassland. In addition, there are raised planters of ornamental shrub adjacent to the front of the building.

Bat survey (preliminary roost assessment)

- 3.6 The former Isis House has two distinct sections; the south eastern third of the building – which will be retained – and, the north western two thirds, which will be demolished. The south eastern section of the building has brick walls and a flat, parapet roof. Across the front and sides of the south eastern section are large, floor to ceiling windows. The north western section is a large commercial laboratory which has corrugated metal cladding above a brick base. The main roof has a shallow pitch which is also clad with corrugated metal. At the far northern end of the building there is a single-storey, brick and metal lean-to. In addition, at the south western elevation there are two metal canopies, both with bird “control” netting on their underside. All areas of the metal cladding across the building are tightly fitted and there were no potential points of ingress for bats observed on the exterior of the building.
- 3.7 Internally the north western section has a large roof space which is full of machinery. The roof has a metal frame, with no ridge board, and a plastic panel lining. The building has no features suitable for use by roosting bats, no bats or signs of bats were found inside or outside the building and it is assessed as having “negligible” potential to host a bat roost (see Table 1).

4.0 Assessment

Survey constraints

- 4.1 The survey was carried out at a time of year suitable for undertaking preliminary bat roost assessments and there were no constraints to the survey.

Site status

- 4.2 No bats or signs of bats were found inside or outside of the former Isis House. The building has no features potentially suitable for use by roosting bats and is therefore assessed as having “negligible” potential to host roosting bats (see Table 1).
- 4.3 It is therefore very unlikely that bats will be affected by the works, there is no need to undertake further surveys, and there should be no bat related constraints to the proposals to demolish the building.
- 4.4 Appendix 2 provides further information on bat ecology and legislation.

Nesting birds

- 4.5 All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended). Section 1 of this Act makes it an offence to kill, injure or take any wild bird, or intentionally to take, damage or destroy the nest of any wild bird while that nest is in use or being built.
- 4.6 No signs of nesting birds (bird nesting material, roosting birds, bird droppings or feathers) were observed inside or outside of the building and due to the bird netting under the canopies it is considered unlikely that birds will nest in these areas, or elsewhere in the building. As such, there should be no nesting bird-related constraints to the proposals.

Planning policy

- 4.7 Paragraph 99 of the Government Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within The Planning System (NB this document has not been revoked by the National Planning Policy Framework) states that:

“It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision. The need to ensure ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances, with the result that the surveys are carried out after planning permission has been granted. ”

- 4.8 In this case, because it has been established that the proposed development works are very unlikely to have any adverse impact upon bats (or other protected species) the proposals will be in accordance with the above planning policy.

5.0 Summary

- 5.1 The former Isis House does not have any features that are suitable for use by roosting bats and is assessed as having “negligible” potential to host a bat roost.
- 5.2 The proposed works are therefore very unlikely to have any adverse effect on bats (or other protected species) and there should be no bat related constraints to the proposals.
- 5.3 No signs of nesting birds were found inside or outside of the building and due to bird netting under the canopies it is considered unlikely that birds will nest in these areas, or elsewhere in the building. As such, there should be no nesting bird-related constraints to the proposals.

Appendix 1 - Photographs

Photo 1 - The south eastern section of the former Isis House viewed from the north west, and, Photo 2 – The north western section viewed from the south west



Photos 3 and 4 – The north western section of the building viewed from the north west and north east



Photos 5 and 6 – Inside the roof space of the north western section



Appendix 2 - Bat ecology and conservation status

Background

Bats are the only true flying mammals and belong to their own taxonomic group, the *Chiroptera*. Worldwide there are almost 1,000 species, with 16 in the UK. All species in the UK are insectivorous. They have a highly sophisticated echolocation system that allows them to avoid obstacles and catch invertebrates, either in flight or by picking them off water, the ground or foliage.

Bat species in the UK

There are 16 species of bat that are known to exist in the UK mainland, with a further two - the greater mouse eared bat *Myotis myotis*, and the parti-coloured bat *Vespertilio murinus* - that are thought to occur as rare migrants or to have small populations in the UK. Bats in the UK belong to one of two taxonomic families, the Rhinolophidae (horseshoe bats) and the Vespertilionidae (all other UK bats).

Bat Conservation Status

Bat populations have undergone a significant decline in the past sixty years. For example, estimates from the National Bat Colony Survey suggest that the UK pipistrelle population (one of our commonest bat species), declined by approximately 70% between 1978 and 1993. Factors contributing to this decline include:

- Loss of, and damage to, roosting sites, including buildings, trees, and underground structures (mines, tunnels, ice-houses, cellars, etc).
- Loss and fragmentation of suitable insect-rich feeding habitats such as wetlands and deciduous woodland.
- Reduction in the abundance and diversity of insect prey due to intensive agriculture, particularly over-grazing and the use of pesticides.
- Loss of linear features such as tree-lines and hedgerows, depriving bats of commuting routes between roosts and feeding areas.
- Loss of winter roosting sites in buildings and old trees.
- Disturbance and destruction of roosts, including the loss of maternity roosts due to the use of toxic timber treatment chemicals.

Roosts

Bats use a variety of roosts of different types including trees, buildings, caves, mines and other structures. Most species are colonial and roost in groups. This can make populations particularly vulnerable to loss of roosts as the loss of a single roost may affect the whole population. Some species hang in obvious locations, such as the timbers near to the apex of a roof, others roost in cracks and crevices, such as the gaps under tiles, and as such can be very difficult to locate.

During the winter (November to February), when there is a reduction in insect numbers, bats hibernate to conserve energy. They prefer sites with a constant low temperature and a high relative humidity. On mild winter's nights, bats may wake up and feed. However, bats are particularly vulnerable to disturbance at this time of year, as flying in winter uses up large quantities of energy that cannot easily be replaced.

In the spring, after emerging from hibernation, bats often move from site to site and may congregate in small groups. Female bats gather together in the summer (approximately May to August dependant on species) in maternity roosts. Once the young have stopped suckling, and the baby is independent, bats tend to disperse and use other roosts. Maternity roosts are particularly vulnerable to disturbance, as bats

may have come from a wide geographical area, and have a strong tradition of returning to the same roost year after year.

During the late summer and early autumn males occupy mating roosts which are visited by several females. After mating some species gather together at swarming sites to fatten up prior to hibernation.

Habitat associations

In addition to roosts, bats also need foraging habitats to find suitable food resources, and commuting routes to get to these areas. As would be expected, the highest numbers of bats are found in areas with abundant invertebrates. Some species specialise in catching small invertebrates in flight, whilst others specialise in catching larger invertebrates such as moths and beetles. The distances that bats travel to foraging areas varies between species; records have shown some greater horseshoe bats travel up to 22km to forage, although many species will typically feed within 1km of a roost.

Bats, especially the smaller species, tend to follow linear features (such as hedgerows and tree lines) to their foraging habitats and will often not cross open spaces. A gap of 10m in a linear feature will often not be crossed by bats, and it is important that developments do not create such gaps if linear features are used by bats.

Appendix 3 - Legislation and planning policy

Planning Authorities have a legal duty to consider biodiversity when assessing planning applications. Where there is a reasonable likelihood that a planning application might affect important protected sites, species or habitats, information on the species, habitat or site likely to be affected, together with an assessment of the impacts of the proposals, will almost certainly be required.

The legal duty for Planning Authorities to have regard to the conservation of biodiversity was introduced in the 2006 Natural Environment and Rural Communities Act (The NERC Act). This act clarified existing commitments with regard to biodiversity, raised the profile of biodiversity and aimed to make the consideration of biodiversity a natural and integral part of policy and decision making.

In addition to the NERC Act there is also national and international biodiversity legislation. This includes legislation in relation to protected species and sites which operates outside of the planning system. Local Authorities and developers have a duty to comply with this legislation.

National planning policy

Paragraph 99 of the Government Circular 06/05: Biodiversity and Geological Conservation - Statutory Obligations and Their Impact Within the Planning System (this document has not been revoked by the recently published National Planning Policy Framework) states that:

'It is essential that the presence or otherwise of protected species, and the extent that they may be affected by the proposed development, is established before the planning permission is granted, otherwise all relevant material considerations may not have been addressed in making the decision.'

As such, in line with national planning policy, most planning authorities will ask for this information to be provided before a planning decision is made and in many cases before it is registered.

Local planning policy

In addition to national planning policy, most councils have planning policies to protect biodiversity, and to enhance it where practicable within and adjacent to development sites.

European protected species

The United Kingdom hosts a number of European Protected Species (EPS) of animals (table 1) and plants (table 2). These species receive special protection under UK law and it is an offence under the Wildlife and Countryside Act 1981 (as amended) and the European Habitats and Species Directive (92/43/EC), enacted in the UK through The Conservation of Habitats and Species Regulations 2017, to deliberately or recklessly destroy or damage their habitat, or to disturb, kill or injure the species without first having obtained the relevant licence from Natural England.

Planning Authorities have a statutory duty under these regulations to have regard to the requirements of the Habitats Directive and need to be satisfied that the development is likely to receive a licence from Natural England, and therefore comply with the Habitats Directive, before granting planning permission.

Table 1 – European Protected Species of Animal found in the UK

Common name	Scientific name
Bats, Horseshoe (all species)	<i>Rhinolophidae</i>
Bats, Typical (all species)	<i>Vespertilionidae</i>
Butterfly, Large Blue	<i>Maculinea arion</i>
Cat, Wild	<i>Felis silvestris</i>
Dolphins, porpoises and whales (all species)	<i>Cetacea</i>
Dormouse	<i>Muscardinus avellanarius</i>
Frog, Pool	<i>Rana lessonae</i>
Lizard, Sand	<i>Lacerta agilis</i>
Moth, Fisher's Estuarine	<i>Gortyna borellii lunata</i>
Newt, Great Crested (or Warty)	<i>Triturus cristatus</i>
Otter, Common	<i>Lutra lutra</i>
Snail, Lesser Whirlpool Ram's-horn	<i>Anisus vorticulus</i>
Snake, Smooth	<i>Coronella austriaca</i>
Sturgeon	<i>Acipenser sturio</i>
Toad, Natterjack	<i>Bufo calamita</i>
Turtles, Marine	<i>Caretta caretta</i> <i>Chelonia mydas</i> <i>Lepidochelys kempii</i> <i>Eretmochelys imbricata</i> <i>Dermochelys coriacea</i>

Table 2 – European Protected Species of Plant found in the UK

Common name	Scientific name
Dock, Shore	<i>Rumex rupestris</i>
Fern, Killarney	<i>Trichomanes speciosum</i>
Gentian, Early	<i>Gentianella anglica</i>
Lady's-slipper	<i>Cypripedium calceolus</i>
Marshwort, Creeping	<i>Apium repens</i>
Naiad, Slender	<i>Najas flexilis</i>
Orchid, Fen	<i>Liparis loeselii</i>
Plantain, Floating-leaved water	<i>Luronium natans</i>
Saxifrage, Yellow Marsh	<i>Saxifraga hirculus</i>

Nationally protected species

Many species of animal are protected under the 1981 Wildlife and Countryside Act (as amended). 'Full protection' applies to EPS and some non EPS species such as the water vole. This prohibits the intentional killing, injuring or taking (capture. etc); possession; intentional disturbance whilst occupying a 'place used for shelter or protection' and destruction of these places; sale, barter, exchange, transporting for sale and advertising to sell or to buy. Many species, such as common species of reptile and amphibian, are protected from intentional killing and injuring and trading.

Badgers

Badgers and their setts are protected under the 1992 Protection of Badgers Act and the Wildlife and Countryside Act 1981 (as amended). It is illegal to intentionally or recklessly kill, injure or take badgers or to interfere with a badger sett. Interference with a sett includes blocking tunnels, or damaging the sett in any way, and could include blocking a badger pathway if it were to stop badgers entering or leaving a sett.

Penalties for offences can be severe, with fines of up to £5,000 plus up to six months' imprisonment, for each illegal sett interference, badger death or injury.

Work that disturbs badgers occupying a sett is illegal without the appropriate licence from the relevant statutory authority being held. Natural England issue licences for reasons including science, education or conservation, for development such as the building of houses and for investigation of offences against badgers. They also issue licences for the prevention of serious damage to land, crops or other form of property, as well as for agriculture, forestry, drainage operations and prevention of the spread of disease.

Birds

All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended), whilst they are actively nesting or roosting. Section 1 of this Act makes it an offence to kill, injure or take any wild bird, and to intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built. It is also an offence to take or destroy any wild bird eggs.

In addition, bird species listed under Schedule 1 of the Act receive extra protection. The Act states that 'it is an offence to intentionally or recklessly disturb any wild bird listed in Schedule 1 while it is nest building, or at (or near) a nest containing eggs or young, or disturb the dependent young of such a bird'.

In practice this means that in areas where birds are likely to be nesting works should not be undertaken during the nesting season, which is generally considered to be March to September, although this very much depends on weather conditions, habitats and the species involved. If works cannot be avoided then areas should first be checked for nesting birds. Habitats likely to host nesting birds include trees, hedgerows and dense scrub, buildings, reedbeds and riverine habitats and open areas with tussocky vegetation.

Appendix 4 - About GS Ecology

Established in 2009, GS Ecology is an independent [ecological consultancy in Berkshire](#). We carry-out surveys and ecological consultancy services for public and private sector clients including in Berkshire, Oxfordshire and Hampshire, London and the south of England. We can advise you on cost effective sustainable solutions for your project, whether it be a bat survey to inform a planning application, the ecology chapter of an Environmental Statement or a Woodland Management Plan.

Our work is undertaken by experienced and qualified ecologists, who are members of the [Chartered Institute of Ecology and Environmental Managers](#). Our services include:

- [Ecology surveying and reporting to inform planning applications](#), e.g.
 - [Preliminary Ecological Appraisal](#)
 - [Extended Phase 1 Habitat Survey in Hampshire](#), Berkshire, Oxfordshire, London and Southern England
 - [Protected species surveys](#), e.g. badgers, dormouse, great crested newts
 - [Bat surveys in Oxfordshire](#), Berkshire, Hampshire, London and Southern England
- [Code for sustainable homes or BREEAM ecology assessments](#) – to demonstrate the sustainability of a new building
- [Protected species licensing](#) such as bat and great crested newt licences for development sites after planning permission has been obtained
- Providing advice to land managers and writing ecological management plans, such as [woodland management plans](#) and farm environmental plans for [England woodland Grant Scheme](#) and Environmental Stewardship applications
- [Providing ecology advice to Local Authorities](#) and Local Planning Authorities