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The Bungalow, Woodhouse Lane, Botley, Hampshire, SO30 2EZ

Ecological Assessment Report

October 2010

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Ecological Assessment Report

The Bungalow, Woodhouse Lane, Botley, Hampshire, SO30 2EZ

for

WYG Environment Planning Transport Ltd

on behalf of

Mrs D Hedges

Reference: The Bungalow, Botley					
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This report represents sound industry practice; reports and recommends correctly, truthfully and objectively; is appropriate given the local site conditions; scope of works proposed and resources allocated to us by the client; and avoids invalid, biased, and exaggerated statements.

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1 EXECUTIVE SUMMARY

1. This report provides information from ecological surveys for WYG Environment Planning Transport Ltd on behalf of Mrs D Hedges in connection with a proposal to demolish the existing building and build a new dwelling on the site at The Bungalow, Woodhouse Lane, Botley, Hampshire, SO30 2EZ (approximate Ordnance Survey Grid Reference SU502135).

2. An ecological assessment of the site was carried out on the 9th August 2010 by John Poland CEnv MIEEM CBiol MSB.

3. The removal of any vegetation with the potential to support nesting birds should be undertaken outside the bird breeding season (late February to August inclusive) to avoid destruction of active bird nests, which is prohibited under the *Wildlife and Countryside Act 1981* (as amended). If this is not possible, and vegetation has to be removed during the nesting season, then it should be inspected (by an ecologist) for nests immediately prior to removal of the vegetation. If there are active nests then they should be retained and work must be delayed until the young have fledged and left the nest.

4. Forty reptile refugia (heavy-duty roofing felt) were placed in suitable habitat on the site on the 21st August 2010 with a further five added on the 23rd August 2010. Seven visits to determine presence/ absence of reptiles were carried out between the 6th and 22nd September 2010.

5. A single grass snake (*Natrix natrix*) was recording using the rough grassland at the edge of the site. As the rough grassland is separated from the house by hardstanding it is unlikely that small localised works such as rebuilding in the footprint of the existing house will impact the grass snake. However, precautionary measures will be taken including fencing the rough grassland off with reptile fencing and carrying out a destructive search under ecological supervision of the area around the building. In the unlikely event any reptiles are found they will be transferred to the fenced area.

6. Two bat emergence surveys were carried out in the 31st August and 2nd September 2010. No bats were observed emerging from the building, but common pipistrelle (*Pipistrellus pipistrellus*) and a *Myotis* bat (*Myostis* species) were observed commuting and foraging on site. The raw data is given in *Table 4.3.1.1.* and bat activity maps are given in *Figures 4* and *5* in *Section 6.*

7. If demolition takes place in the winter/ early spring then there should be no impacts on bats (the building was not suitable as a hibernation roost). However, if there is a delay in the demolition then it would be advisable to have pre-demolition emergence check and/ or ecological supervision.

8. Changes in lighting can also affect foraging and roosting bats. Therefore there should be no lighting directed onto the woodland of Bottom Copse SINC, or any retained trees or scrub.

9. Although there are several lakes to the north-west of the site (the nearest approximately 390m) the combination of flowing water, potential predation by fish and the large size of the lakes make them unsuitable and unlikely to contain great crested newts.

10. There is some suitable terrestrial habitat for great crested newt on site (the rough grassland) but there is more suitable habitat off-site (within the woodland). No newts were found during the reptile surveys (they will use roofing felt artificial refugia). In addition, there are no records for great crested newt within 1km of the site. Therefore, there is no need for further surveys.

11. Water voles are unlikely to be using the heavily wooded stream adjacent to the site and if they do there will be minimal impact, if any, as the woodland and stream are outside the boundary of the site.

12. The stream adjacent to the site (within Bottom Copse) is suitable habitat for otters and connects to the fishing lakes to the north-west which would provide suitable foraging. In addition, the data provided by HBIC had a record for otter within 1km. However, even if otters are using the stream localised works such as rebuilding on the same site should have minimal impact.

13. As a precautionary measure against otters using the site, it is suggested that works only take place during the day (*i.e.* no night working with artificial lighting) and that any trenches are either covered overnight or a plank is angled from the base to the top to enable any animals that might fall in to escape.

14. No badger setts or evidence of badger was found.

15. The site is of low value for nature conservation botanically, as it consists of amenity grassland, species-poor rough grassland and hardstanding. A species list is given in *Appendix A*. No non-native plant species listed on *Schedule 9* of the *Wildlife and Countryside Act 1981* were found.

16. Information on statutory and non-statutory designated; notable species, and any other additional details that may be relevant to the project, were requested from the local biological records centre (Hampshire Biodiversity Information Centre) for a search area of up to 1km of a central grid reference for the building.

17. There are no statutory designated sites within 1km of this site. However, there are two Sites of Importance for Nature Conservation (SINCs) within 1km of this site according to Hampshire Biodiversity Information Centre (HBIC). These are: Bottom Copse/Bushy Copse; and Woodhouse Gully Wood.

18. Bottom Copse SINC is immediately adjacent to the site to the east. It is approximately 6.44ha of ancient semi-natural woodland with a record for *Convallaria majalis* (Lily-of-the-valley).

Any affects from these small scale localised construction works on the SINC are likely to be minimal and temporary. However, in order to provide protection from any possible affects from dust during construction of the new building and demolition of the existing building, a buffer zone along the site boundary near the SINC will be fenced off with Heras fencing covered in dust sheets for the duration of works.

19. Any affects from construction and demolition on the SINC are likely to be minimal and temporary. However, in order to provide protection from any possible affects from dust, a temporary buffer zone will be created along the site boundary near the SINC. This will be fenced off with Heras fencing covered in dust sheets for the duration of works.

20. Of the notable species recorded within 1km of the site: one is an amphibian (common toad); one is a reptile (grass snake (*Natrix natrix*)); five are birds; four are fish; five are vascular plants; eight are invertebrates; and five are terrestrial mammals (including long-eared bat and otter). A full list of notable species with details of their respective protection and/or designations is provided in *Appendix D*.

21. Under Planning Policy Statement 9 (or PPS9), there is a requirement for biodiversity enhancement. This could include simple bat mitigation features designed into the new building, such as access into soffit boxes (via 50x50mm gaps), or using hanging tiles or timber cladding offset with 30mm gaps for bats to roost behind.

2 INTRODUCTION

2.1 Purpose of this report

This report presents the results of ecological surveys carried out by John Poland CEnv MIEEM CBiol MSB of Hampshire Ecological Services Ltd for WYG Environment Planning Transport Ltd on behalf of Mrs D Hedges in connection with a proposal to demolish the existing building and build a new dwelling on the site at The Bungalow, Woodhouse Lane, Botley, Hampshire, SO30 2EZ (approximate Ordnance Survey Grid Reference SU499135).

Aerial photographs showing the location of the site are given in *Figure 1*; a map showing the location of the site is given in *Figure 2*; a Phase 1 Habitat map is given in *Figure 3*; maps showing the bat activity during the two emergence surveys are given in *Figures 4* and *5*; and a map showing the location of the reptile refugia is given in *Figure 6* (see *Section 6*).

A site visit was carried out on the 9th August 2010. In addition, two bat surveys were carried out on the 31st August and the 2nd September 2010; and seven visits to determine presence/ absence of widespread species of reptile were carried out between the 6th and 22nd September 2010.

2.2 Ecological context

The site is a rectangular plot that consists of hardstanding, amenity grassland and rough grassland, with the woodland SINC of Bottom Copse on its north and north-eastern boundaries. It lies on the north side of Woodhouse Lane in the rural outskirts of Botley and Hedge End, Hampshire. On its west and south-west boundary there is a field that separates it from other residential properties along Woodhouse Lane. On the opposite side of the road the woodland continues as scrub along Woodhouse Gully with fields on either side. The surrounding area is a small area of farmland surrounded by urban and sub-urban residential housing. Further to the north and east lies a railway line; while to the west lies the M27 motorway.

2.3 Proposed activities

The surveys were carried out in connection with a proposal to demolish the existing building and build a new dwelling on the site.

2.4 Current planning status

Planning permission is being applied for at this site.

2.5 Structure of this report

This report is structured as follows:

- *Section 1* contains the executive summary;

- *Section 2* contains an introduction;
- *Section 3* describes the survey methods;
- *Section 4* describes the results;
- *Section 5* evaluates the findings;
- *Section 6* contains the figures including:
  - *Figure 1* shows the site location;
  - *Figure 2* gives a map showing the location of the site;
  - *Figure 3* gives a Phase 1 Habitat map;
  - *Figures 4* and *5* are maps showing the bat activity during the two emergence surveys; and
  - *Figure 6* shows the location of the reptile refugia.
- *Section 7* gives photographs of the site;
- *Section 8* lists the references;
- *Appendix A* lists the plant species recorded on site;
- *Appendix B* lists key legislation and regulations;
- *Appendix C* gives information on bat ecology; and
- *Appendix D* gives the results of the local records centre data search.

3 METHODS

3.1 Desk study

A search was made of all available reference materials relating to the ecology of the site. Information on statutory (those that are internationally and nationally important sites for ecology) and non-statutory designated sites (those that are important in a local context); notable species, and any other additional details that may be relevant to the project, were requested from the local biological records centre (Hampshire Biodiversity Information Centre) for a search area of up to 1km of a central grid reference for the site. Additional sources on the internet, such as the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk) were also consulted.

Species included in the search parameters are:

- species that are protected by international law;
- species listed in European directives and legislation;
- nationally protected species under *The Wildlife & Countryside Act 1981, Badgers Act 1992* and *The Deer Act 1991*;
- all species listed on the RSPB *Birds of Conservation Concern 2002-2007* as Red or Amber;
- plant species that are Nationally Rare or Nationally Scarce; and
- species that have Action Plans under the UK Biodiversity Action Plan (UKBAP) or are Priority Species under the Hampshire Biodiversity Action Plan (LBAP).

Hampshire Biodiversity Information Centre holds copies of the following datasets:

- Botanical Society of the British Isles' (BSBI) vascular plant database for Hampshire;
- Butterfly Conservation's butterfly and moth database for Hampshire;
- Hampshire Ornithological Society (HOS) bird records (from 1990 to present);
- Hampshire Bat Group (HBG) Records of bat roost visits and sightings; and
- Data administered by the Hampshire Wildlife Trust (HWT) on behalf of the species recording groups below:
  - Hampshire Amphibian and Reptile Group (HARG);
  - Hampshire Invertebrate Network (HNIC); and
  - Hampshire Mammal Group (HMG) (excluding records for bats and badgers).

The data includes protected and notable species records from the above datasets within the search area recorded since 1978.

The Hampshire Badger Group has not been approached for records in relation to this site.

3.2 *Field survey*

3.2.1 *General*

A site scoping survey was completed within the site boundary. This type of survey is not designed to prove presence or absence of significant or protected species; it is used to highlight habitat that is suitable and to identify where further work to show presence or absence is required. However, in some circumstances species can be ruled out because there is unsuitable habitat or barriers to inward migration.

Significant species were defined as follows:

- European Protected Species (listed on *Schedules 2* and *5* of the *Conservation of Habitats & Species Regulations 2010*;
- nationally protected species under *Schedules 1, 5* and *8* of the *Wildlife & Countryside Act 1981,* the *Protection of Badgers Act 1992* (as amended) and the *Deer Act 1991*;
- non-native pest species listed on *Schedule 9* of the *Wildlife & Countryside Act 1981* (as amended);
- species listed as Critically Endangered, Endangered or Vulnerable on the *IUCN Red List*
- all species listed on the RSPB *Birds of Conservation Concern 2002-2007* as Red or Amber;
- Nationally Rare or Nationally Scarce species; and
- species that have Action Plans under the UK Biodiversity Action Plan (UKBAP) or are Priority Species under the Local Biodiversity Action Plan.

3.2.2 *Date(s), times and weather*

The initial site visit was carried out during the daytime on the 9th August 2010, with the refugia set out on the 21st and 23rd August 2010. Two bat surveys were carried out on the 31st August and the 2nd September 2010; and seven visits to determine presence/ absence of widespread species of reptile were carried out between the 6th and 22nd September 2010. The weather was warm and sunny during the initial visit. The weather conditions for the subsequent surveys are given in the relevant sections.

3.2.3 *Personnel*

The surveys were carried out by John Poland CEnv MIEEM CBiol MSB, who is a full member of the Institute of Ecology and Environmental Management (IEEM), a Chartered Environmentalist (CEnv), a Chartered Biologist (CBiol) and holds a Natural England licence (survey licence number 20090887) allowing the disturbance and handling of bats for the purposes of survey in all counties of England. He has over 10 years experience in ecological consultancy and is a highly competent botanist trained in Phase 1 Habitat Survey techniques. He is also the senior author of *The Vegetative Key to the British Flora* (Poland & Clement 2009) and has significant botanical expertise in *Schedule 9* species.

The emergence survey on the 31st August 2010 was carried out by Andy Gibson MSc and Frank Southee MSc. The emergence survey on the 2nd September 2010 was carried out by Victoria Russell MSc MIEEM and Louise Fairless BSc AMSB. All are experienced in carrying out bat surveys using detectors as well as undertaking roost surveys with licensed bat ecologists.

The reptile surveys between the 6th and 22nd September 2010 were carried out by Martyn Drabik-Hamshare BSc who is experienced in carrying out reptile surveys and collecting biometric data. The weather conditions are given in the relevant section.

3.3 Botanical surveys

The botanical assessment in this report is based on the Phase 1 Habitat Survey methodology (Joint Nature Conservation Committee 2003) and involves an assessment of the habitats present and any features of possible botanical interest.

Plant nomenclature in this report follows Poland & Clement (2009) for native, naturalised and garden species of vascular plant. Plant names in the text are given with scientific names first, followed by the English name in brackets. Uncertain identifications are preceded by 'cf.' placed before the specific epithet where the plant is very probably the species indicated, but it is impossible to distinguish it from similar members of the genus with certainty.

3.4 Animal surveys

3.4.1 General

The habitat was assessed to determine whether or not it is suitable for those protected vertebrates that occur in the region. Scoping surveys do not usually confirm species presence or absence, but obvious signs and incidental sightings of protected species would have been noted had they been encountered.

An assessment was made of the likelihood of protected vertebrates using the site. Taking into consideration the geographical region and habitat type, species and groups that might be encountered are:

- bats;
- great crested newt;
- otter;
- water vole;
- badger;
- nesting birds; and
- reptiles.

Details of initial survey methods for each of the relevant species that might have been encountered are given below and an overview of the legal protection of the species and groups is provided in *Appendix A*.

3.4.2 *Bats*

Assessment of current bat roost potential

Because bats are crevice-dwelling mammals it is often difficult to thoroughly inspect buildings for bats and evidence of bats without a destructive search, which is not generally practical or acceptable. Examples are where bats roost between the roofing felt and tiles, around window frames and behind barge boards. These areas cannot be inspected, but a surveyor would know that bats might roost here because there are places where bats could gain entry. A pipistrelle bat is small enough to fit into a match box and can roost in gaps just 14-20mm wide.

The building was assessed for its **bat roost potential** according to the following factors that influence the likelihood of bat roosting:

- Surrounding habitat: whether there are potential flight-lines and bat foraging areas nearby.
- Construction detail: the type and construction of architectural features such as attics, barge boards, soffit boxes, lead flashing, cavity walls and hanging tiles that could be used by roosting bats. Some construction details and materials are more favourable to bat occupation than others.
- Building condition: whether the building has no roof or has a sound roof without any potential bat access points.
- Internal conditions: bats favour sheltered locations with a stable temperature regime, protection from the elements and little wind/light/rain penetration.
- Potential bat access points: whether there is flight and crawl access.
- Potential roosting locations: the presence of bat-accessible voids, cracks and crevices.

The risk of bat roosts being present will be lower where structures have:

- Urban setting with little greenspace.
- Heavy disturbance.
- Small, cluttered roof void (particularly for brown long-eared).
- Modern construction with few gaps or crevices that bats can fly or crawl through (although pipistrelles may still be present).
- Prefabricated of steel or sheet materials.
- Active industrial premises.

The above list provides generic criteria and there are exceptions to consider. For example, pipistrelle roost sites are often found in modern housing estates and therefore the absence of bats from such locations should not always be assumed.

Some information on bat ecology is included in *Appendix B*.

Detailed surveys of individual trees were not required. If any mature trees need to be removed in the future, or if tree surgery (e.g. crown-lifting) is required, then a bat survey at an appropriate time of year may be required. However, no bat surveys of the trees are currently necessary.

Systematic inspection for bats or evidence of bats

The building was assessed for its suitability to support roosting bats using the following access and inspection equipment: high quality 10x42 binoculars; a 1,000,000 candlepower torch; a ProVision100™ fiberscope with a 45cm optic cable; and a 3.8m surveyors ladder. Binoculars were employed to view higher areas such as potential access points on the outside of the buildings. A description of the building was recorded on a survey sheet, and digital photographs were taken as a permanent record.

Visual, systematic examinations were made for bats and evidence of bats, both internally and externally, of the following:

- roof voids;
- roof beams, especially the top of ridge and hip beams;
- cracks, crevices and sheltered voids including mortise joints;
- the floors and stored items;
- external features such as soffits, barge boards, hanging tiles and lead flashing;
- roof slopes and the ridge;
- wall, window and door surfaces;
- window and door frames; and
- wall bases.

Evidence of roosting bats includes droppings, feeding remains and dead bats, but also staining from urine and fur-oils, scratch marks, odour, the presence of bat-fly (Nycteribiid) pupal cases, and in some cases the absence of cobwebs.

Bat droppings can prove beyond doubt that bats use a building and can help to identify roosting locations because piles often accumulate beneath roosting sites or entrance points. The location, size, shape, texture and colour of the droppings can be used to aid species identification. DNA analysis of droppings is also possible and samples will be taken where necessary. The number and condition (age) of droppings can indicate the size of the roost and when it was last used.

Emergence surveys

The surveys followed standard emergence survey protocol in *Bat Surveys – Good Practice Guidelines (*Bat Conservation Trust 2007).

Two evening emergence surveys were carried out by two bat ecologists on the 31st August and the 2nd September 2010. The surveys commenced at least fifteen minutes before sunset and continued for at least an hour and a half after sunset. The weather was suitable for bat emergence and foraging.

The surveyors were located with good views of potential bat access points identified during the initial site visit on the 9th August 2010. The timing of the visits, from early evening until after dark,

was aimed at detecting active bats in the vicinity. When it became too dark for visual observation, electronic bat detectors were used to listen for the ultrasonic sounds produced by bats either flying in the vicinity or emerging from within the building.

Surveyors were equipped with duel ultrasonic heterodyne and frequency-division bat detectors (BatBox Duet™) and observed all sides of the building with potential access points for emerging bats.

The surveyors recorded all bat activity encountered but particular attention was focused on any bats emerging from the building. The results were documented by noting the time, bat species and behaviour (*e.g.* commuting, foraging, social interaction *etc.*). Surveyors were in constant contact via hand-held radios and mobile phones so that information could be easily exchanged regarding bat emergences. The time on all surveyors wrist-watches and mobile phones were synchronised so time data was recorded precisely.

Bat detectors are used so that surveyors can identify most bat species in the field, using the heterodyne output in combination with bat shape, flight pattern and behaviour. In addition, solid-state recorders (Tascam® DR-07 and Roland™ R-05) and digital recorders (Olympus WS-331M) were employed to record bat calls for later sonogram analysis using BatSound™ computer software. Frequency-division (BatBox Duet™), whereby the ultrasound is divided by 10 into an audible range, has a considerable advantage over time-expansion for survey work as it allows recordings to be taken in real time. This ensures that all bat activity is recorded.

The discs were later replayed in full and analysed through BatSound™ software to ensure that any activity accidentally missed during the survey were recorded and times and location calculated. The species of bat was confirmed at this stage. Bat detector surveys provide one of the most effective methods of identifying bat species and activity patterns. However, it is not always possible to identify bats down to species level even with subsequent sound analysis. The building has clear sight lines for bat surveying, so it is unlikely that even quietly echolocating bats were missed.

3.4.3 Great crested newt

All water bodies on the site that could be used as breeding locations for this species were identified, and the suitability of terrestrial habitat for this species was considered. Great crested newts can travel up to 500m from pond to pond, and between ponds and terrestrial habitat. Suitability of terrestrial habitat was assessed with this in mind.

3.4.4 Otter and water vole

Initial surveys centre on identifying suitable habitat. Most watercourses and standing water could support either otter or water vole. Other areas where there is surface water for the majority of the year (including wet heath, marshland, rush-pasture, wetland, bogs, mires, ponds and other water bodies) has some potential to support water vole.

3.4.5 *Badger*

An initial assessment was carried out to identify areas that might be used by badger (*Meles meles*) for commuting, foraging and sett-building within at least 30m of all areas potentially affected by works (where access was possible).

3.4.6 *Birds*

Habitat that might be used by nesting birds was identified. Different bird species use buildings, trees and shrubs, undergrowth or even open fields to nest. Suitability of the site for use by a range of bird species was considered giving consideration to factors such as cover, food, disturbance and other habitat requirements.

3.4.7 *Widespread species of reptiles*

The site was assessed for widespread species of reptiles, with particular attention paid to those features that could be used as basking areas (e.g. south-facing slopes), hibernation sites (e.g. banks, walls, piles of hardcore) and opportunities for foraging (rough grassland and scrub). The site was assessed for its suitability for each of the four widespread reptile species which have broadly similar habitat requirements. However, more specific requirements include the following (Beebee & Griffiths 2000):

- common lizards (*Zootoca vivipara*) use a variety of habitats from woodland glades to walls and pastures, although one of their favoured habitats is rough grassland;
- slow-worms (*Anguis fragilis*) use similar habitats to common lizards, and are often found in rank grassland, gardens and derelict land;
- grass snakes (*Natrix natrix*) have broadly similar requirements to common lizards with a greater reliance on ponds and wetlands, where they prey on common frogs;
- adders (*Vipera berus*) use a range of fairly open habitats with some cover, but are most often found in dry heath.

Detailed surveys using 45 pieces of heavy-duty roofing felt (100 x 60cm) were undertaken (using artificial refugia is the best practice way to determine whether reptiles are actually present). Such surveys can only be conducted during the active season for reptiles (April to September inclusive) and comprise a series of at least seven visits during suitable weather conditions.

A total of 40 artificial refugia were put in suitable reptile habitat (species-poor neutral grassland) on the site on the 21st August 2010 and left to settle for several days before surveys commenced. An additional five artificial refugia were added on 23rd August 2010

The artificial refugia were checked on seven suitable days between the 6th and 22nd September 2010. Days with heavy rain are generally accepted as unsuitable, though sunny periods after rain may be ideal because reptiles may emerge from cover to bask.

4 RESULTS

4.1 Desk study

4.1.1 Sites

There are no statutory designated sites within 1km of this site according to the *Multi-Agency Geographic Information for the Countryside* website (www.magic.gov.uk).

However, there are two Sites of Importance for Nature Conservation (SINCs) within 1km of this site according to Hampshire Biodiversity Information Centre (HBIC). These are:

- Bottom Copse/Bushy Copse (SU50201370); and
- Woodhouse Gully Wood (SU50551330).

Bottom Copse is immediately adjacent to the site to the east. It is approximately 6.44ha of ancient semi-natural woodland with a record for *Convallaria majalis* (Lily-of-the-valley). There is a watercourse running through the woodland. Woodhouse Gully Wood is the opposite side of Woodhouse Lane, separated from the site by a large field.

4.1.2 Notable species records

Of the notable species recorded within 1km of the site: one is an amphibian (common toad); one is a reptile (grass snake (*Natrix natrix*)); five are birds; four are fish; five are vascular plants; eight are invertebrates; and five are terrestrial mammals (including long-eared bat and otter).

A full list of notable species with details of their respective protection and/or designations is provided in *Appendix D*.

4.2 Habitats and plant species

The site is a rectangular plot that consists of hardstanding, amenity grassland and rough grassland. A full species list for each of the habitats is given in *Appendix A* and a Phase 1 Habitat map is given in *Figure 3* in *Section 6*.

The amenity grassland is dominated by *Agrostis stolonifera* (Creeping Bent) and *Lolium perenne* (Perennial Rye-grass) with common forbs such as *Taraxacum* sect. *Ruderalia* (Dandelion) and *Trifolium repens* (White Clover).

The rough grassland was species-poor with a sward dominated by the grasses *Agrostis stolonifera* (Creeping Bent) and *Holcus lanatus* (Yorkshire-fog) with smaller amounts of *Agrostis gigantea* (Black Bent).

No plant species of note as defined in *Section 3.2.1* were recorded from the site.

4.3 *Protected vertebrates*

4.3.1 *Bats*

Survey of buildings

The house is constructed of corrugated metal with a pitched corrugated metal roof and two brick chimneys. The front of the building has horizontal wooden cladding. The building construction details are summarised in *Table 4.3.1.1.* below.

Table 4.3.1.1. Summary of the building construction details.

Type	Bungalow
No. of storeys	1
Cellar	No
Roof type	Pitched
Roof cladding	Corrugated plastic
Ridge	Plastic
Wall type	Corrugated metal
Exterior	Two chimneys with lead-flashing; and wooden cladding on part of the house

Bat roost potential

The building appears well-sealed. However, there are a few gaps where the corrugated roof meets the top of the wall and also around the chimneys. Therefore it has moderate bat roost potential, although its structure means that it is unlikely to be used as a hibernation roost.

Commuting and foraging bats

The site is a rectangular plot that consists of hardstanding, amenity grassland and rough grassland and suitable habitat for foraging bats is rather limited. However the woodland SINC of Bottom Copse on its north and north-eastern boundaries provides good quality foraging habitat as does the scrub along Woodhouse Gully on the opposite side of the road. The surrounding area is a small area of farmland surrounded by urban and sub-urban residential housing. However, there are good links through the landscape provided by strips of woodland, scrub, the Woodhouse Gully and the railway. Bats follow linear landscape features such as lines of trees, hedges, buildings and waterways in order to commute from their roost sites to their feeding grounds. Likewise they use these features to navigate between feeding areas and alternative roosts

Emergence surveys

No bats were observed emerged from the building. However, bats were observed flying in the vicinity of the building and foraging around the house and in the gardens. The only species recorded were common pipistrelle (*Pipistrellus pipistrellus*) and a *Myotis* bat (*Myostis* species). The raw data is given in *Table 4.3.1.1.* overleaf and bat activity maps are given in *Figures 4* and *5* in *Section 6.*

Table 4.3.1.1. Bat activity.

Date	31/08/2010		
Temp	13°C		
Ecologists	Andy Gibson and Frank Southee		
Observer	**Time**	**Species**	**Observation**
-	19:25	-	Ecologists commenced observations
-	19:49	-	Sunset
AG	20:13	Common Pipistrelle	Flying north-east over hardstanding located north of building
AG	20:15	Common Pipistrelle	Flying south-west over hardstanding located north of building
AG	20:16	Common Pipistrelle	Foraging in a north-south direction, flying over garden area past east corner and face of building until 20:19
FS	20:18	Common Pipistrelle	Foraging around east face of building, before flying north west around building
FS	20:24	Common Pipistrelle	Flying south-east past east face of building
AG	20:24	Common Pipistrelle	Heard but not seen
AG	20:25	Common Pipistrelle	Flying north-east over hardstanding located north of building
AG + FS	20:27	Common Pipistrelle	Two flying north-east past north corner of building. One continuing north-east, one turning north and continuing flight
FS	20:28	Unidentified	Flying south-east past east face of building.
AG	20:28	Pipistrelle	Heard but not seen
AG	20:29	Pipistrelle	Heard but not seen
FS	20:31	Common Pipistrelle	Flying north-east over building
FS	20:32	Pipistrelle	Flying north-west past east face of building
AG	20:32	Common Pipistrelle	Flying south-west over hardstanding located north of building
FS	20:33	Pipistrelle	Flying north-west past east face of building, foraging
AG	20:33	Pipistrelle	Heard but not seen
FS	20:35	Common Pipistrelle	Flying north-west past east face of building, foraging
FS	20:35	Common Pipistrelle	Flying north-west past east face of building, foraging
AG	20:35	Pipistrelle	Heard but not seen
FS	20:36	Pipistrelle	Flying north over building
FS	20:39	Pipistrelle	Heard but not seen
AG	20:39	Pipistrelle	Heard but not seen
FS	20:43	Common Pipistrelle	Heard but not seen
FS	20:44	Pipistrelle	Heard but not seen
AG	20:44	Unidentified	Flying south-east past east face of building.
FS	20:47	Unidentified	Heard but not seen
FS	20:49	Unidentified	Heard but not seen
FS	20:52	Pipistrelle	Heard but not seen
AG	20:53	Unidentified	Heard but not seen
-	21:00	-	Ceased observations

Date	02/09/2010		
Temp	20°C		
Ecologists	Victoria Russell and Louise Fairless		
Observer	**Time**	**Species**	**Observation**
-	19:30	-	Ecologists commenced observations
-	19:48	-	Sunset
LF	20:03	Noctule	One heard but not seen
LF	20:14	Common Pipistrelle	Two foraging to the north of the building
VR	20:15	Unidentified	One commuting south-east past the front of the building
VR	20:15	Pipistrelle	One commuting north-west away from the building
VR	20:15	Common Pipistrelle	One foraging to the north of the building
VR	20:16	Common Pipistrelle	One foraging in front of the building, flying south-east
VR	20:18	Common Pipistrelle	Two foraging in front of the building and flying north-west
VR	20:18	Common Pipistrelle	Two foraging to the north of the building
LF	20:18	Pipistrelle	One flying south-east over the building
LF	20:18	Common Pipistrelle	Two heard foraging continuously until 20:40
VR	20:19	Common Pipistrelle	One foraging on the south side of the building flying east into the adjacent woodland
VR	20:20	Common Pipistrelle	One foraging and feeding in front of the building and flying north-west
VR	20:21	Common Pipistrelle	One foraging in front of the building, flying backwards and forwards
VR	20:23	Common Pipistrelle	One foraging in front of the building, flying backwards and forwards
VR	20:23	Unidentified	One commuting south-east past the front of the building
VR	20:26	Unidentified	One commuting north-west past the front of the building
VR	20:26	Common Pipistrelle	One foraging in front of the building and flying south-east
VR	20:28	Unidentified	One foraging in front of the building and flying south-east
VR	20:29	Common Pipistrelle	One foraging over the building and then flying north-east
VR	20:29	Common Pipistrelle	One foraging in front of the building and flying north-west
LF	20:30	Soprano pipistrelle	One heard but not seen
VR	20:31	Common Pipistrelle	One foraging and feeding in front of the building and flying south-east
VR	20:31	Common Pipistrelle	One foraging in front of the building and flying north-west
VR	20:32	Common Pipistrelle	Two foraging and feeding in front of the building and flying south-east
VR	20:33	Common Pipistrelle	One foraging in front of the building, flying backwards and forwards

VR	20:35	Common Pipistrelle	One foraging in front of the building, flying backwards and forwards
VR	20:39	Noctule	One heard but not seen
LF	20:39	Noctule	One heard but not seen
VR	20:42	Common Pipistrelle	One foraging in front of the building and flying south-east
LF	20:56	Common Pipistrelle	One heard but not seen
VR	20:58	Common Pipistrelle	One heard feeding but not seen
LF	21:05	Common Pipistrelle	One heard but not seen
VR	21:06	Pipistrelle	One heard but not seen
LF	21:13	Common Pipistrelle	One heard but not seen
LF	21:15	Common Pipistrelle	One heard but not seen
-	21:20	-	Ceased observations

4.3.2 Great crested newt

According to aerial photographs (GoogleEarth™) and online Ordnance Survey 1:25,000 maps, there are several lakes to the north-west of the site, with the nearest approximately 390m from the site. However they appear to be fishing lakes fed by a stream. The combination of flowing water, potential predation by fish and the large size of the lakes make them unsuitable and unlikely to contain great crested newts.

Although there is some suitable terrestrial habitat on site (the rough grassland) there is more suitable habitat off site (within the woodland). No newts were found during the reptile surveys (they will use roofing felt artificial refugia).

In addition, there are no records for great crested newt within 1km of the site.

4.3.3 Otter and water vole

According to aerial photographs (GoogleEarth™) and online Ordnance Survey 1:25,000 maps, there is a watercourse (Woodhouse Gully) running through the woodland on the north and north-east boundary of the site (within approximately 15m of the site). The dense shading of the woodland makes the stream unsuitable for water voles and this is supported by the fact that there are no records for water vole within 1km (see *Appendix D*).

The stream is however suitable for otters as it connects to the fishing lakes to the north-west. In addition, there is a record for otter within 1km of the site (see *Appendix D*).

4.3.4 Badger

There was no evidence of badger found during the survey.

4.3.5 Birds

The scrub has the potential to support nesting birds during the breeding season.

There are many bird species on the UK and Local BAP (or in the RSPB *Birds of Conservation Concern*) that could be using this area of the site for nesting and foraging. These could include song thrush (*Turdus philomelos*) and house sparrow (*Passer domesticus*). None were recorded during the survey.

4.3.6 *Widespread species of reptiles*

The rough grassland and scrub on site was suitable habitat for slow-worm (*Anguis fragilis*). The rough grassland provides suitable foraging habitat while the scrub provides suitable foraging and hibernating habitat.

A single juvenile grass snake (*Natrix natrix*) was observed in the rough grassland on the eastern edge of the site (see *Figure 6* for the location). *Table 4.3.4.1.* below presents the results of the survey.

Table 4.3.4.1. Results of artificial refugia survey.

Site:	**The Bungalow, Botley**				**Surveyor:**	Martyn Drabik-Hamshare			
Date	**Time of check**	**Temp (°C)**	**Species**	**No.**	**Sex & Age**	**SV length (mm)**	**VT length (mm)**	**Refugia no.**	**General weather**
06/09/2010	13:30	20	Grass snake	1	Juvenile	380	60	23	Windy, 75% cloud cover
12/09/2010	13:00	20.3	-	-	-	-	-	-	Sunny, 30% cloud cover
14/09/2010	09:45	18.9	-	-	-	-	-	-	Overcast
16/09/2010	09:45	18.3	-	-	-	-	-	-	75% cloud cover
18/09/2010	09:45	19.9	-	-	-	-	-	-	Sunny, no cloud
20/09/2010	09:45	24.9	-	-	-	-	-	-	Sunny, no cloud
22/09/2010	10:00	26.1	-	-	-	-	-	-	Sunny, no cloud

5 INTERPRETATION AND EVALUATION

5.1 Constraints on survey

Detailed searches often result in the discovery of evidence of bats. However, although such surveys can identify the presence of bats it is more difficult to prove absence due to the crevice-dwelling nature of these elusive mammals.

During the reptile surveys, some of the mats were disturbed. This included some mats being moved and others being driven over (believed to have taken place when a boundary fence was erected). No reptiles were harmed and the mats were replaced.

5.2 Survey report expiry

If more than 12 months elapses after completion of all surveys, it may be advisable to conduct further survey work to obtain up-to-date information prior to commencement of the development thereby ensuring protected species compliance.

5.3 Legal context

Habitat has been identified on site that is suitable for protected species. Different species are afforded different levels of protection; as detailed in *Appendix B*.

The site is not designated for its wildlife interest at an international, national or local scale.

5.4 Potential impacts of proposed development

5.4.1 *Desk study*

Bottom Copse SINC is immediately adjacent to the site to the east. It is approximately 6.44ha of ancient semi-natural woodland with a record for *Convallaria majalis* (Lily-of-the-valley). Although this locally designated site will not be affected by these small scale localised works mitigation measures will be put in place to ensure there is no impact to this SINC (see *Section 5.5*).

5.4.2 *Habitats and plants*

The habitats present at this site are widespread and common and also contain common and widespread species. The habitats found on site are easily re-creatable and are of negligible nature conservation value from a botanical perspective.

No non-native plant species listed on *Schedule 9* of the *Wildlife and Countryside Act 1981* were recorded.

5.4.3 *Bats*

Roosting

If demolition takes place in the winter/ early spring then there should be no impacts on bats as the building in unsuitable as a hibernation roost. However, if there is a delay in the demolition then it would be advisable to have a pre-demolition emergence check and/ or ecological supervision.

Foraging and commuting

The woodland along the north and east boundaries and the rough grassland on site is suitable foraging habitat for bats and the emergence surveys showed that bats were using the site for foraging and commuting. Retaining connectivity along the edges of the site would ensure that habitat links are maintained.

Changes in lighting can also affect foraging and roosting bats. Therefore there should be no lighting directed onto the woodland or any retained trees or scrub.

5.4.4 *Great crested newt*

Although there are several lakes to the north-west of the site (the nearest approximately 390m) the combination of flowing water, potential predation by fish and the large size of the lakes make them unsuitable and unlikely to contain great crested newts.

There is some suitable terrestrial habitat on site (the rough grassland) but there is more suitable habitat off-site (within the woodland). No newts were found during the reptile surveys (they will use roofing felt artificial refugia).

In addition, there are no records for great crested newt within 1km of the site.

Therefore, there is no need for further surveys.

5.4.5 *Otter and water vole*

Water voles are unlikely to be using the stream adjacent to the site and if they do there will be minimal impact, if any, as the woodland and stream are outside the boundary of the site.

The stream adjacent to the site (within Bottom Copse) is suitable habitat for otters and connects to the fishing lakes to the north-west, which would provide suitable foraging. In addition, the data provided by HBIC had a record for otter within 1km. However, even if otters are using the stream localised works such as rebuilding on the same site should have minimal impact as the woodland and stream are both outside the boundary of the site.

As a precautionary against the unlikely event that otters were to enter, the site the mitigation measures described in *Section 5.5.2.* should be implemented to ensure protected species compliance.

5.4.6 Badger

Areas within 30m of development activities are usually searched for setts (where access is possible) as former guidelines suggest badgers and their setts could be disturbed by work using heavy machinery within 30m of a badger sett, light machinery within 20m, and light work (such as digging) within 10m.

As no badger setts were found on site, development works are free to proceed without further regard to this species, although if a badger sett is subsequently discovered within 30m of the proposed works then it may require a licence from Natural England to proceed. Guidance to what may be classed as disturbance to a badger (when occupying a sett) can be found at: http://www.naturalengland.org.uk/Images/WMLG16_tcm6-11814.pdf.

5.4.7 Birds

All trees and bushes on site could be used by nesting birds. Any affected vegetation with the potential to support nesting birds should be cut to near ground level (approximately 30cm) outside the bird breeding season (late February to August inclusive). The destruction of active bird nests is prohibited under the *Wildlife and Countryside Act 1981* (as amended). If this is not possible, and vegetation has to be removed during the nesting season, then it should be inspected (by an ecologist) for nests immediately prior to removal of the vegetation. If there are active nests then they should be retained and work must be delayed until the young have fledged and left the nest.

5.4.8 Widespread species of reptiles

The site has suitable habitat for reptiles and surveys using artificial refugia found a single juvenile grass snake using the rough grassland on the edge of the site. As the rough grassland is separated from the house by hardstanding and is outside of the development footprint, it is unlikely that small localised works such as rebuilding in the footprint of the existing house will impact reptiles. However, the mitigation measures described in *Section 5.4.8* should be undertaken to ensure protected species compliance.

5.5 Outline mitigation & enhancement measures

5.5.1 Bats

Under Planning Policy Statement 9 (or PPS9) (ODPM 2005), bat mitigation features should be designed into new buildings as enhancement. Additionally, the *IAPP Biodiversity Checklist* requests "*...proposals for enhancements of biodiversity*". This could be as simple as access into soffit boxes (via 50x50mm gaps), or using hanging tiles or timber cladding offset with 30mm gaps for bats to roost behind.

Bats are highly mobile and can be found in the most unexpected places. Should bats be encountered during unsupervised works (*i.e.* without an ecologist in attendance) then works should

stop and the ecological consultant for this project contacted immediately (alternatively Natural England 0845 600 3078 or the National Bat Helpline 08645 1300 228 may be contacted). Contractors and other unlicensed personnel are strictly forbidden from handling bats. However, if it a bat is found injured it should be taken to a veterinary surgeon immediately.

5.5.2 Otter

It is suggested that works only take place during the day (*i.e.* no night working with artificial lighting) and that any trenches are either covered overnight or a plank is angled from the base to the top to enable any animals that might fall in to escape.

5.5.3 Widespread species of reptiles

A low population of grass snakes has been identified on site within the rough grassland. This area is outside the development footprint and separated from the area around the building by hardstanding. However as a precautionary measure, reptile fencing should be erected to prevent them entering the area of works via adjacent vegetation. It is recommended that reptile fencing is maintained for the duration of the development to prevent any reptiles being injured or killed in the event they enter the development *e.g.* to utilise piles of soil or rubble created during the construction process. Once works have finished the fencing should be removed. This follows slightly modified best practice guidelines issued by the former Herpetofauna Groups of Britain and Ireland (HGBI) in 1998 in anticipation of the forthcoming *Reptile Mitigation Guidelines* (Natural England, in prep).

To allow the site to be cleared for development without harm to reptiles (so as to comply with the law – the *Wildlife and Countryside Act 1981* (as amended)) vegetation clearance and topsoil stripping to render cleared areas unsuitable for reptiles should be undertaken in the areas around the building. These works should be supervised by an ecologist. In the unlikely event that reptiles are found they should be captured and moved to the rough grassland.

It is necessary to carry out vegetation clearance and topsoil stripping at times of year when reptiles are active, *i.e.* between March/ April and October.

5.5.4 Bottom Copse SINC

Any affects on the SINC from demolition of the existing building and construction of the new building are likely to be minimal and temporary. However, in order to provide protection from any possible affects from dust, a temporary buffer zone will be created along the site boundary near the SINC. This will be fenced off with Heras fencing covered in dust sheets for the duration of works.

5.6 Requirement for Habitats Regulations licence – European Protected Species (EPS) licence

No Habitats Regulations licence is currently required. However, if bat roosts were subsequently found to be present during works, an EPS licence from Natural England would be required prior to

works continuing. The licence would permit activities that may otherwise be offences under the *Conservation of Habitats and Species Regulations 2010,* such as destruction of roost sites.

Additional supporting evidence would be required by conducting emergence surveys during the bat active season between April/ May and September in order to watch for bats leaving the buildings at dusk. This would gather enough information about bat populations (including species, numbers and status of roost sites) to support a bat EPS licence application.

Natural England takes 30 working days to process licence applications following receipt of all the relevant documentation. This includes an application form, a Reasoned Statement and a Method Statement in two sections: Background and Supporting Information (Part 1); and Delivery Information (Part 2). The latter includes a detailed mitigation strategy to eliminate or reduce impacts on bats.

It is not possible to apply for an EPS licence until full planning permission has been granted and any conditions relating to wildlife fulfilled, although Local Planning Authorities usually request the information prior to determining a planning application. Additional time will be required where any revisions to a proposed mitigation strategy are necessary to obtain the licence.

6 FIGURES

Figure 1. Aerial photographs showing the location of the site.



Figure 2. Site location plan.

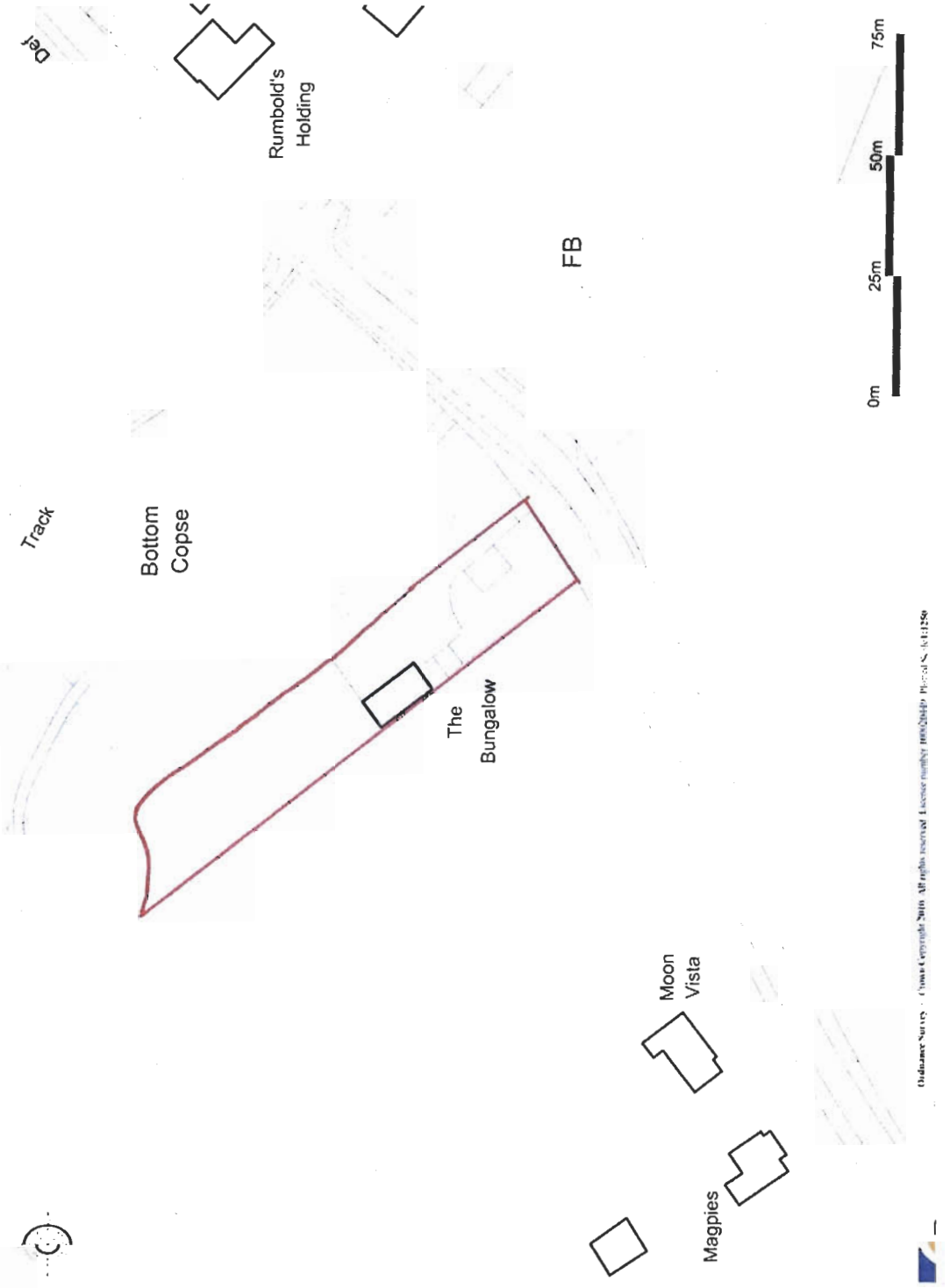


Figure 3. Phase 1 Habitat map of the site.

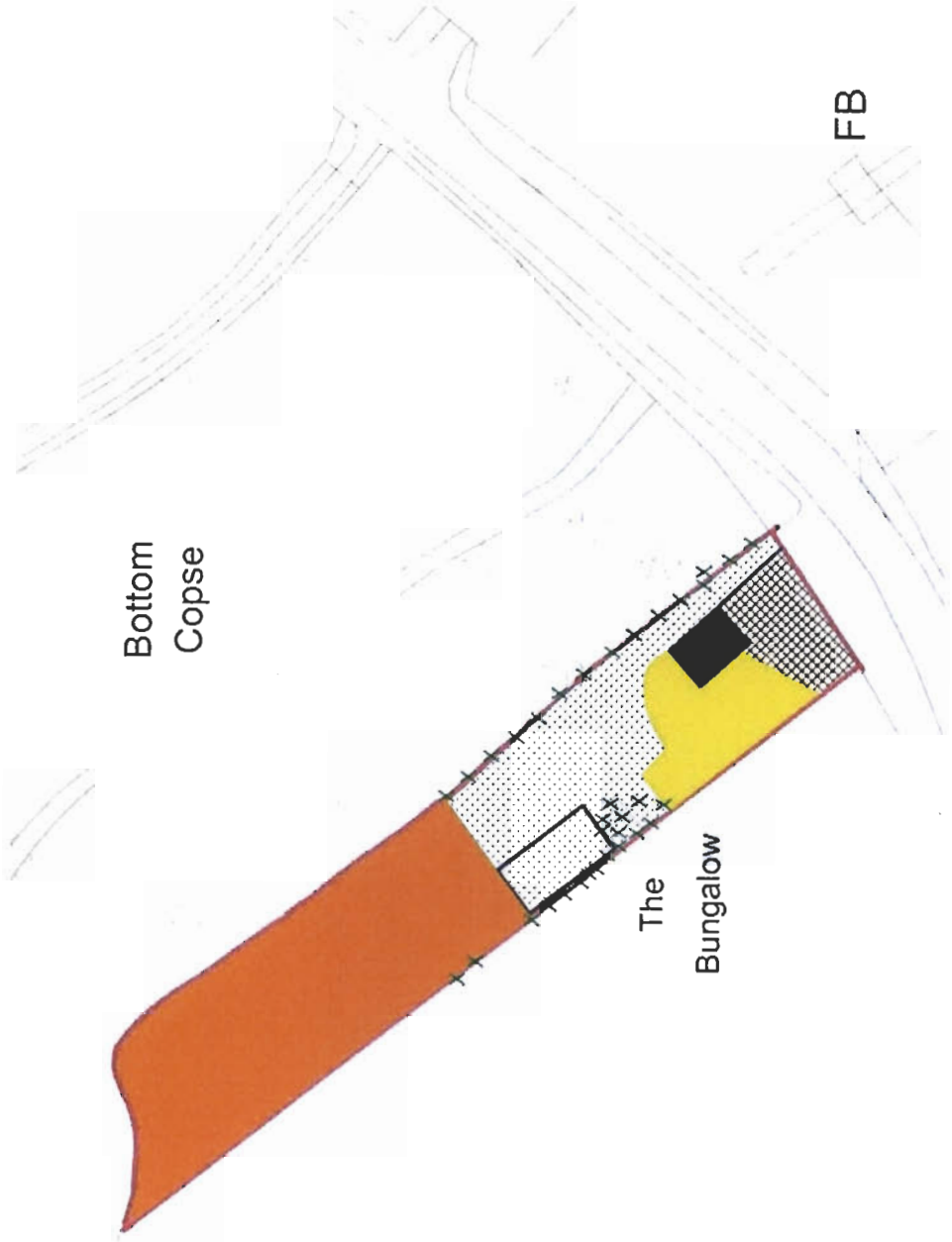


Figure 4. Plan showing bat activity, including foraging and commuting bats (solid blue lines – approximate due to erratic flight paths), for the emergence survey carried out on the 31st August 2010. Arrows show direction of flight (where known).

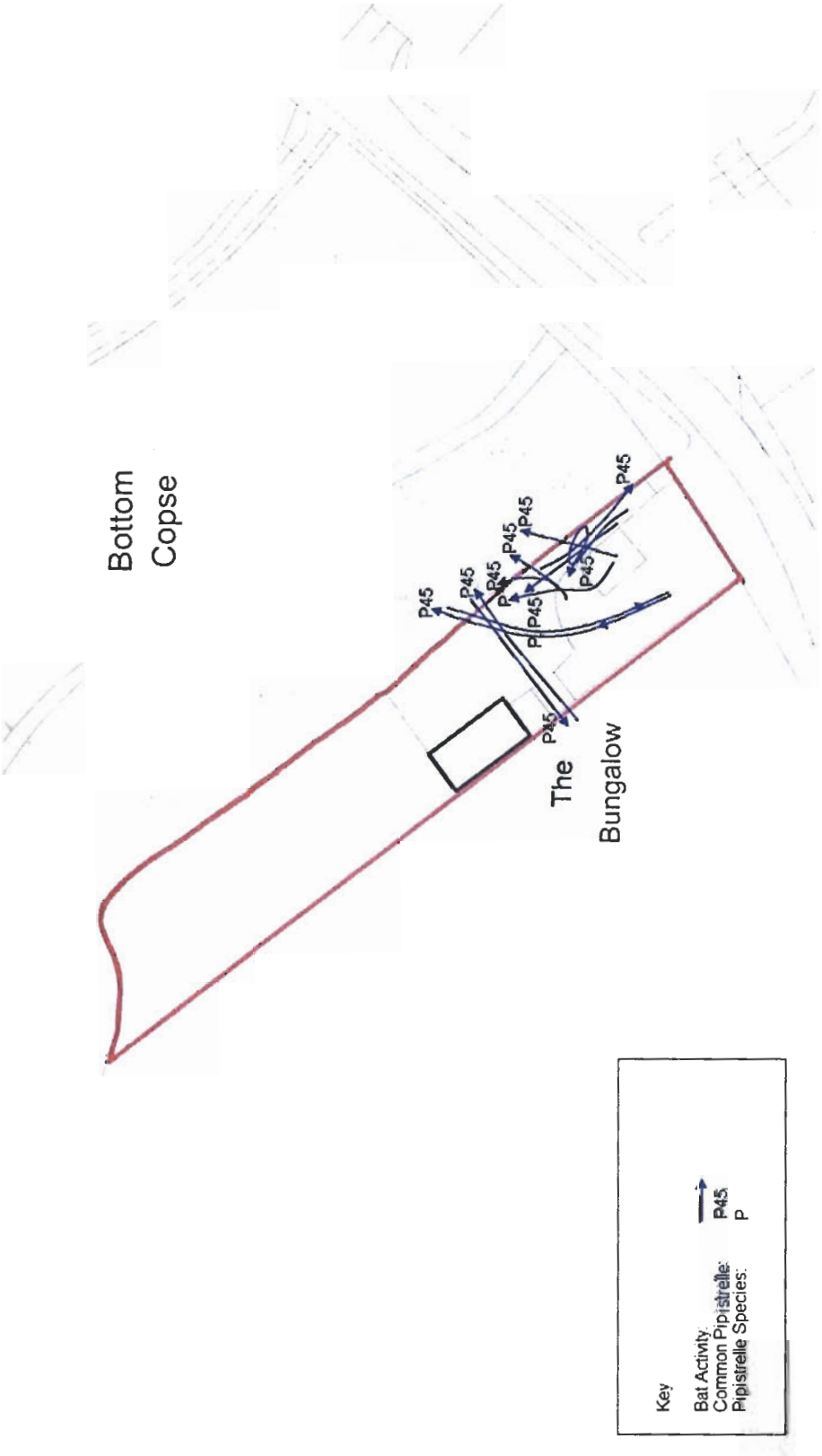


Figure 5. Plan showing bat activity, including foraging and commuting bats (solid blue lines – approximate due to erratic flight paths), for the emergence survey carried out on the 2nd September 2010. Arrows show direction of flight (where known).

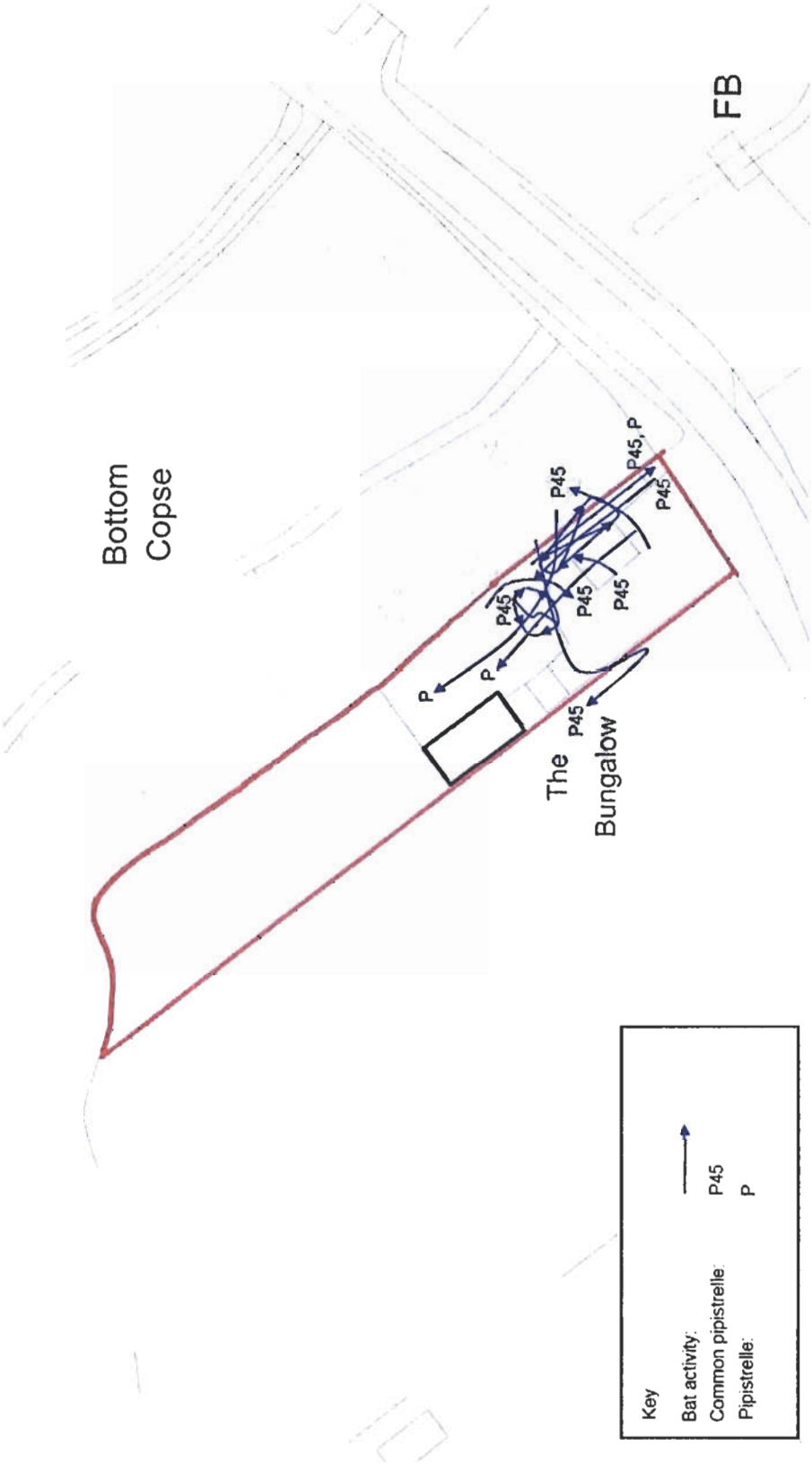
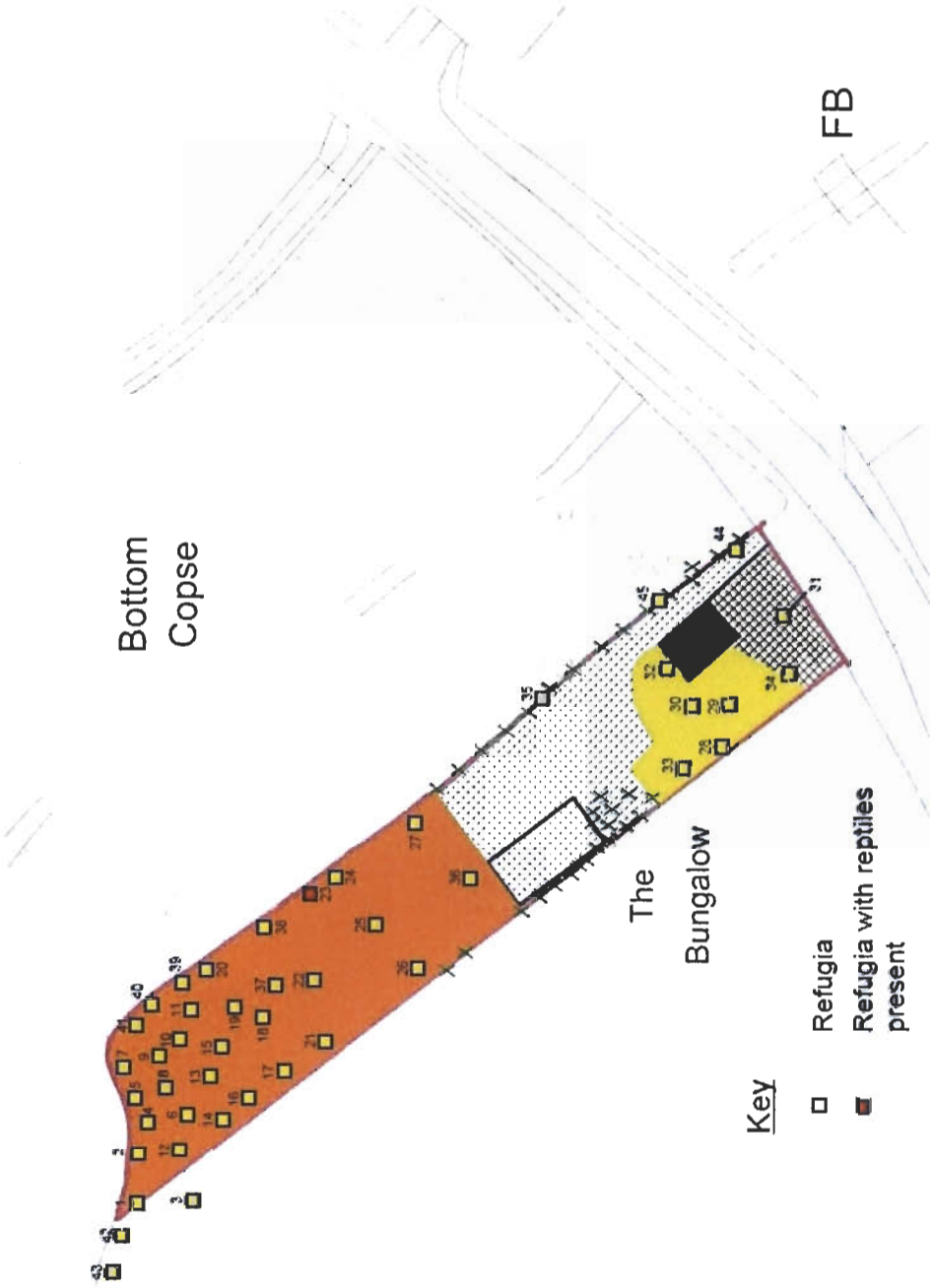


Figure 6. Location of artificial reptile refugia.



7 PHOTOGRAPHS

Photo 1. View of existing building looking north-west.



Photo 2. View of existing building looking south-east.



Photo 3. View of site from rear looking south-east with Bottom Copse SINC on the left.



Photo 4. View of rough grassland and trees and bushes on the edge of the site.



8 REFERENCES

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9 APPENDIX A – PLANT SPECIES LIST

Species	DAFOR
a) Woody species	
Arbutus unedo (Strawberry-tree)	r
Buddleja davidii (Butterfly-bush)	r
Buxus sempervirens (Box)	r
Corylus avellana (Hazel)	r
×*Cupressocyparis leylandii* (Leyland Cypress)	r
Fraxinus excelsior (Ash)	r
Hypericum species (an ornamental St John's-wort)	r
Lonicera nitida (Wilson's Honeysuckle)	r
Magnolia species (a Magnolia)	r
Mahonia ×*media* (Lily-of-the-valley-bush)	r
Mahonia aquifolium (Oregon-grape)	r
Malus domestica (Apple)	r
Pittosporum tenuifolium (Kohuhu)	r
Prunus lusitanica (Portugal Laurel)	r
Prunus spinosa (Blackthorn)	r
Syringa vulgaris (Lilac)	r
b) Herbs	
Achillea millefolium (Yarrow)	r
Agrostis gigantea (Black Bent)	o
Agrostis stolonifera (Creeping Bent)	ld
Bergenia ×*schmidtii* (Hybrid Elephant-ears)	r
Carex pendula (Pendulous Sedge)	r
Cirsium arvense (Creeping Thistle)	r
Cirsium vulgare (Spear Thistle)	r
Conyza sumatrensis (Guernsey Fleabane)	r
Dianthus species (a Pink)	r
Filago vulgaris (Common Cudweed)	r
Holcus lanatus (Yorkshire-fog)	la
Hypochaeris radicata (Cat's-ear)	r
Lychnis coronaria (Rose Campion)	r
Lysimachia punctata (Dotted Loosestrife)	r
Persicaria maculosa (Redshank)	r
Plantago major (Greater Plantain)	r
Pulicaria dysenterica (Common Fleabane)	r
Ranunculus repens (Creeping Buttercup)	r
Rumex obtusifolius (Broad-leaved Dock)	r

Senecio jacobaea (Common Ragwort)	r
Sonchus asper (Prickly Sow-thistle)	r
Taraxacum sect. *Ruderalia* (Dandelion)	r
Tripleurospermum inodorum (Scentless Mayweed)	r
Urtica dioica (Common Nettle)	r

10 APPENDIX B - PROTECTED SPECIES LEGISLATION

10.1 General

This section briefly describes the legal protection afforded to the protected species identified in this report. It is for information only and is not intended to be comprehensive or to replace specialised legal advice. It is not intended to replace the text of the legislation, but summarises the salient points.

10.2 Bats

All species of British bat are listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receive full protection under *Section 9*. Protection was extended by the *Countryside and Rights of Way Act 2000* (the CRoW Act). This legislation makes it an offence to:

- intentionally kill, injure or take a bat;
- possess or control a bat;
- intentionally or recklessly damage, destroy or obstruct access to a bat roost; and
- intentionally or recklessly disturb a bat whilst it occupies a bat roost.

Bats are also European protected species listed on *Schedule 2* of the *Conservation Habitats & Species Regulations 2010* which gives them full protection under *Regulation 39*. This legislation makes it an offence to:

- deliberately capture, injure or kill a bat;
- deliberately disturb a bat (in such a way as to be likely to significantly affect: (i) the ability of a significant group of bats to survive, breed or rear/nurture their young; or (ii) the local distribution or abundance of the species concerned);
- damage or destroy a breeding site or resting place of a bat; and
- possess, control, transport, sell, exchange a bat, or offer a bat for sale or exchange.

All bat roosting sites receive legal protection even when bats are not present (bats tend to reuse the same roost).

Several species of bat are included as a Priority Species in the UK Biodiversity Action Plan (UKBAP - JNCC (2003) and also as species of principal importance for the conservation of biological diversity in England under *Section 74* of the CRoW Act.

All species of British bat are also protected under *Schedule 6* of the *Wildlife and Countryside Act 1981* (as amended). This protection relates specifically to trapping and direct pursuit of the species.

10.3 *Great crested newt*

Great crested newt (*Triturus cristatus*) is listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receives full protection under *Section 9*. This species is also listed as a European Protected Species on *Schedule 2* of the *Conservation Habitats & Species Regulations 2010* which gives it full protection under *Regulation 39*. Protection was extended by the *Countryside and Rights of Way Act 2000* (the CRoW Act).

Under the above legislation it is an offence to:

- kill, injure or take an individual of such a species;
- possess any part of such species either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by such species for shelter, rest, protection or breeding;
- intentionally or recklessly disturb such a species whilst using any place of shelter or protection; or
- sell or attempt to sell any such species.

The great crested newt is included as a Priority Species in the UK Biodiversity Action Plan (UKBAP) and also as a species of principal importance for the conservation of biological diversity in England under *Section 74* of the CRoW Act.

10.4 *Otter*

Otter (*Lutra lutra*) is listed on *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), and receives full protection under *Section 9*. This species is also listed as a European Protected Species on *Schedule 2* of the *Conservation Habitats & Species Regulations 2010* which gives it full protection under *Regulation 39*. Protection was extended by the *Countryside and Rights of Way Act 2000* (the CRoW Act).

Under the above legislation it is an offence to:

- kill, injure or take an individual of such a species;
- possess any part of such species either alive or dead;
- intentionally or recklessly damage, destroy or obstruct access to any place or structure used by such species for shelter, rest, protection or breeding;
- intentionally or recklessly disturb such a species whilst using any place of shelter or protection; or
- sell or attempt to sell any such species.

The otter is included as a Priority Species in the UK Biodiversity Action Plan (UKBAP) and also as a species of principal importance for the conservation of biological diversity in England under *Section 74* of the CRoW Act.

The otter is also protected under *Schedule 6* of the *Wildlife and Countryside Act 1981* (as amended). This protection relates specifically to trapping and direct pursuit of the species.

The European sub-species is also listed as globally threatened on the IUCN/WCMC RDL.

10.5 Water Vole

Water vole (*Arvicola terrestris*) is protected under *Section 9 (4)* of *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), which affords protection to its places of shelter. This protection was extended by the CRoW Act 2000. Under this legislation, it is an offence to intentionally or recklessly damage, destroy or obstruct access to any structure or place that water voles use for shelter or protection, or to intentionally or recklessly disturb water voles while they are using such a place. The water vole is included as a Priority Species in the UK Biodiversity Action Plan (UKBAP) and also as a species of principal importance for the conservation of biological diversity in England under *Section 74* of the CRoW Act.

10.6 Badger

Meles meles (badger) is protected in Britain under the *Protection of Badgers Act 1992* (as amended) and *Schedule 6* of the *Wildlife and Countryside Act 1981* (as amended).

The legislation affords protection to badgers and badger setts, and makes it a criminal offence to:

- wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so;
- interfere with a sett by damaging or destroying it;
- to obstruct access to, or any entrance of, a badger sett; or
- to disturb a badger when it is occupying a sett.

Guidance to what may be classed as disturbance to a badger (when occupying a sett) can be found at: http://www.naturalengland.org.uk/Images/WMLG16_tcm6-11814.pdf

10.7 Birds

10.7.1 Birds - general protection

All species of bird are protected under *Section 1* of the *Wildlife and Countryside Act 1981* (as amended). The protection was extended by the CRoW Act.

The legislation makes it an offence to intentionally:

- kill, injure or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use or being built; or
- take or destroy an egg of any wild bird.

10.7.2 Birds - specially protected species

Certain species of bird are listed on *Schedule 1* of the *Wildlife and Countryside Act 1981* (as amended) and receive protection under *Sections 1(4)* and *1(5)* of the Act. The protection was

extended by the CRoW Act. The legislation confers special penalties where the above mentioned offences are committed for any such bird and also make it an offence to intentionally or recklessly:

- disturb any such bird, whilst building its nest or it is in or near a nest containing dependant young; or
- disturb the dependant young of such a bird.

10.8 Widespread species of reptiles

Zootoca vivipara (common lizard), *Natrix natrix* (grass snake), *Anguis fragilis* (slow-worm), and *Vipera berus* (adder) are listed under *Schedule 5* of the *Wildlife and Countryside Act 1981* (as amended), in respect of *Section 9(5)* and part of *Section 9(1)*. This protection was extended by the CRoW Act.

Under the above legislation it is an offence to:

- intentionally or deliberately kill or injure any individual of such a species; or
- sell or attempt to sell any part of the species alive or dead.

10.9 European Protected Species Licences

Where it is necessary to carry out an action that could result in an offence under the *Conservation Habitats & Species Regulations 2010* it is possible to apply for a European Protected Species (EPS) licence from Natural England. Licences are only issued where Natural England are satisfied that three derogation tests are met. These are that the activity is for **imperative reasons of overriding public interest**, that there must be **no satisfactory alternative** and that **favourable conservation status of the species must be maintained**.

Consideration of these three derogation tests was previously left to Natural England as part of their deliberations on whether to grant a licence for the development activity after a planning consent has been issued. However, the regulations now require that **all** public bodies, i.e. **Local Planning Authorities** (LPAs), have regard to the requirements of the European Habitats Directive when carrying out their functions. As a result, LPAs **must** address the three derogation tests when considering a planning application that that could impact upon any European Protected Species (EPS).

10.10 National planning context

10.10.1 General

Surveys should be completed in line with Natural England's South-east Region *Standing Advice for Local Authorities* (http://www.naturalengland.org.uk/regions/south_east/ourwork/standingadvice/), which states:

- Natural England will not comment on applications that are submitted without the relevant protected species surveys (see flowchart) if there are no other issues (i.e. in relation to SSSIs or landscape).

- Natural England will not comment on scoping surveys that recommend further surveys where these have not been undertaken and submitted with the scoping reports.

Planning Policy Statement 9 (or PPS9 - ODPM 2005) states that '*the re-use of previously developed land for new development makes a major contribution to sustainable development*', but that: '*where such sites have significant biodiversity...interest...local planning authorities, together with developers, should aim to retain this interest or incorporate it into any development*'.

The key principles outlined in PPS9 are that sound and up-to-date evidence should be available with regards the biodiversity interests of a site; impacts should ideally be avoided by careful design; but where this is not possible, mitigation or compensation measure should be implemented to minimize impacts (ODPM, 2005).

"Plan policies and planning decisions should aim to maintain, and enhance, restore or add to biodiversity and geological conservation interests...." Key Principle 1 (ii), p. 3

"Plan policies should promote opportunities for the incorporation of beneficial biodiversity and geological features within the design of development" Key Principle 1 (iv), p. 3

"The aim of planning decisions should be to prevent harm to biodiversity and geological conservation interests. Where a planning decision would result in significant harm to biodiversity and geological interests which cannot be prevented or adequately mitigated against, appropriate compensation measures should be sought. If that significant harm cannot be prevented, adequately mitigated against, or compensated for, then planning permission should be refused" Key Principle 1 (vi), p. 3

PPS9 recognises that many wildlife species receive statutory protection but that other species have been identified as being of '*principal importance for the conservation of biodiversity in England*'. The document states that '*planning authorities should ensure that these species are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations*'. These UK Biodiversity Action Plan (UK BAP) species include barbastelle, Bechstein's bat, brown long-eared bat, common lizard, grass snake, greater horseshoe bat, greater mouse-eared bat, hedgehog, lesser horseshoe bat, noctule, slow-worm, soprano pipistrelle and toad.

In addition to the above, *Section 40* of the *Natural Environment and Rural Communities Act* (2006) imposes a new duty on all public authorities to have regard for biodiversity.

11 APPENDIX C – BAT ECOLOGY

Bats use different roosting sites throughout the year according to their life cycle requirements.

Hibernation during the winter months requires roosting sites that are cool and humid. As conditions improve through the spring, bats become increasingly active and tend to use transitional roosting sites. During the summer months, females give birth in maternity roosts. Maternity roosts tend to be warm and temperature-stable, which aids rapid development of the young, which are weaned in late summer. In the autumn, adult bats congregate in mating roosts and also use transitional roosting sites. Autumn is the time when both adults and juveniles have to build up fat reserves in preparation for hibernation through the winter months.

Bats also use roosts during the night as feeding perches. Species that catch large prey items such as moths (*e.g.* brown long-eared bat) often enter buildings to hang up and eat the prey before emerging again to forage. Such feeding perches tend to be obvious from scatterings of bat droppings with moth wings, which the bats discard.

Bats are at their most vulnerable during the summer in their maternity roosts, when disturbance can jeopardise their breeding success. Bats give birth to only one pup per year and young do not breed until the second or third year after birth. This means that if maternity colonies are disturbed there can be serious implications for the conservation status of populations.

Bats are also vulnerable during the winter hibernation period, when disturbance can reduce the chance of survival through the winter at a time when food is in short supply.

This is why there are often only narrow timeframes for bat survey and mitigation work.

12 APPENDIX D - RESULTS OF DATA SEARCH FOR PROTECTED AND NOTABLE SPECIES RECORDS

Search Area: 1km radius of The Bungalow SO30 2EZ (SU50221361)
Date: 24 August 2010

HBIC has its own extensive database of habitat and higher plant data for the County. In addition, HBIC hold copies of datasets belonging to partner organisations. Through data exchange agreements with these organisations HBIC is provided with regular database updates and can supply species information on their behalf. HBIC currently holds copies of the following datasets:

- Botanical Society of the British Isles' (BSBI) vascular plant database for Hampshire
- Butterfly Conservation's butterfly and moth database for Hampshire
- Hampshire Ornithological Society (HOS) bird records
- Hampshire Bat Group (HBG) Records of bat roost visits and sightings
- Data administered by the Hampshire Wildlife Trust (HWT) on behalf of the species recording groups below:
- Hampshire Amphibian and Reptile Group (HARG)
- Hampshire Invertebrate Network (HNIC)
- Hampshire Mammal Group (HMG) (excluding records for bats and badgers)
- UK Bees, Wasps and Ants Recording Society (BWARS) trial dataset records for Hampshire

It is important that these species recording groups (where relevant to the data provided) are acknowledged in any document produced by the data requester where data is incorporated into the document, as a matter of course.

The following are protected and notable species records from the above datasets within the search area recorded in the last 15 years:

Taxon Name	Common Name	Status	Grid Ref.	Location	First Year	Last Year	No. of Records	Max Count
Amphibians & Reptiles								
Bufo bufo	Common Toad	UKBAP NERC_s41	SU51101310	Eastleigh Garden	2007	2007	1	1
Natrix natrix	Grass Snake	UKBAP WCA_s5p91(k) NERC_s41	SU50971281	Pudbrook Lake	2008	2008	2	1
Birds								
Falco peregrinus	Peregrine Falcon	Sensitive EU_Bird_1 WCA_s1p1 CR	SU41	Sensitive	1996	1996	1	1
Passer domesticus	House Sparrow	BOCC_Red UKBAP NERC_s41	SU4914	Hedge End	2008	2008	1	30
Streptopelia turtur	Turtle Dove	EU_Bird_22 BOCC_Red UKBAP HBAP NERC_s41	SU50901287	Pudbrook Meadow	2002	2002	1	
Turdus iliacus	Redwing	EU_Bird_22 WCA_s1p1	SU5013	Boorley Green	2005	2005	2	210
Turdus pilaris	Fieldfare	EU_Bird_22 WCA_s1p1	SU5114	Botley	2008	2008	1	150
Fish								
Anguilla anguilla	European eel	UKBAP	SU5013	Botley Grange Hotel	1999	1999	1	0

Taxon Name	Common Name	Status	Grid Ref.	Location	First Year	Last Year	No. of Records	Max Count
		NERC_s41	SU5113	U/s Botley Mill	1999	1999	1	0
			SU5114	U/s Maddoxford Farm	1999	1999	1	0
Cottus gobio	Bullhead	EC_Hab_2np HBAP	SU5114	U/s Maddoxford Farm	1999	1999	1	0
Salmo trutta	Brown/Sea trout	UKBAP NERC_s41	SU5013	Botley Grange Hotel	1999	1999	1	0
			SU5114	U/s Maddoxford Farm	1999	1999	1	0
Thymallus thymallus	grayling	HBAP	SU5114	U/s Maddoxford Farm	1999	1999	1	0
Higher plants (Flowering Plants)								
Anthemis arvensis	Corn Chamomile	IUCN (2001) - EN CS	SU5014	Boorley Green	1998	1998	1	1
Chrysanthemum segetum	Corn Marigold	IUCN (2001) - VU	SU5113	Botley(n)	1997	1997	1	1
Crepis biennis	Rough Hawk's-beard	CR	SU5113	Botley(n)	1997	1997	1	1
Hyacinthoides non-scripta	Bluebell	WCA_s8	SU50001442	Bushy Copse North	2002	2002	1 *	
			SU5012	Botley Sw	1998	1998	1	1
			SU5014	Boorley Green	1998	1998	1	1
			SU503136	Bottom Copse, Hedge End	2000	2000	1 *	
			SU50501330	Woodhouse Gully	2000	2000	1 *	
			SU505133	Woodhouse Gully	2000	2000	1	
			SU5113	Botley(n)	1997	1997	1	1
Saxifraga tridactylites	Rue-leaved Saxifrage	CS	SU5113	Botley(n)	1997	1997	1	1
Invertebrates (Coleoptera)								
Lucanus cervus	Stag Beetle	EC_Hab_2np NS UKBAP	SU495132	6 Stockton Cl, Hedge End, Southampton, Hants, So30 2fe	1998	1998	2	5
			SU495132	6 Stockton Cl, Hedge End, Southampton, Hants, So30 2fe	1998	1998	1	4
			SU495132	Southampton City	1998	1998	1	1

Taxon Name	Common Name	Status	Grid Ref.	Location	First Year	Last Year	No. of Records	Max Count
		HBAP NERC_s41	SU507133	Village Community Centre, Butley, Southampton, Hampshire.	1998	1998	1	1
Invertebrates (Lepidoptera)								
Amphipyra tragopoginis	Mouse Moth	UKBAP NERC_s41	SU5012	Manor Farm Water Meadows	2007	2007	1	1
Eulamprotes unicolorella		CR	SU5012	Manor Farm Water Meadows	2007	2007	1	1
Euphyia unangulata	Sharp-angled Carpet	CS	SU5012	Manor Farm Water Meadows	2007	2007	2	7
Meganola albula	Kent Black Arches	NS	SU5012	Manor Farm Water Meadows	2007	2007	1	1
Spilosoma lubricipeda	White Ermine	UKBAP NERC_s41	SU5113	1-km Square Su5113	2000	2000	1	0
Timandra comae	Blood-vein	UKBAP NERC_s41	SU5012	Manor Farm Water Meadows	2007	2007	2	1
Tyria jacobaeae	The Cinnabar	UKBAP NERC_s41	SU505136	Botley	2007	2007	1	1
Mammals (Terrestrial)								
Apodemus flavicollis	yellow-necked mouse	HBAP	SU509133	Holmsland Drive	2004	2004	1	1
			SU509134	Holmesland Drive	2004	2004	2	1
Chiroptera sp.	Bat sp.	Sensitive EU_Hab_4 WCA_s5p91(k) WCA_s5p91(t) WCA_s5p94a WCA_s5p94b EPS	SU508136	Sensitive	2004	2004	1	1
Erinaceus europaeus	West European Hedgehog	UKBAP NERC_s41	SU492136	So30 4ar	2007	2007	1	1
			SU493132	Lewry Close, Hedge End	2007	2007	1	2

Taxon Name	Common Name	Status	Grid Ref.	Location	First Year	Last Year	No. of Records	Max Count
			SU494136	Missenden Acres, Hedge End	2007	2007	1	1
			SU494143	54 Stirling Crescent, Hedge End, So30 2sb	2007	2007	1	0
			SU494143	54, Stirling Crescent, Hedge End	2007	2007	1	2
			SU495134	Hedge End Back Garden So30 2fl	2008	2008	2	1
			SU497131	Stubbs Drove, So30 4ft	2007	2007	1	0
			SU504131	Broad Oak, Botley	2007	2007	1	1
			SU505130	Cobbett Way, Botley	2007	2007	1	0
			SU510134	Amberley Close, Botley	2007	2007	1	1
			SU511133	Garden Of Park View, Botley	2008	2008	1	1
			SU511135	75 Winchester Street, Botley	2007	2007	1	1
Lutra lutra	Otter	Sensitive EU_Hab_2np EU_Hab_4 UKBAP HBAP WCA_s5p91(k) WCA_s5p91(t) WCA_s5p94a WCA_s5p94b EPS NERC_s41	SU41W	Sensitive	2006	2006	1	0
			SU51B	Sensitive	2006	2006	1	0
Plecotus sp.	Long-Eared bat	Sensitive EU_Hab_4 WCA_s5p91(k) WCA_s5p91(t) WCA_s5p94a WCA_s5p94b	SU496144	Sensitive	2009	2009	1	0

Taxon Name	Common Name	Status	Grid Ref.	Location	First Year	Last Year	No. of Records	Max Count
		EPS						

* Indicates some of these records are unconfirmed

Confidential records

HBIC holds a small number of records that are to be treated as confidential. Confidentiality can be for a variety of reasons and may relate to a whole site or only to specific species. These records may be withheld or released depending on the nature of the data request and in accordance with the Environmental Information Regulations 2004.

Sensitive species

A small number of species are considered as sensitive by the relevant specialist species recording groups and will be indicated as such on all lists. Species may be considered sensitive for a variety of reasons. Location details for these records will not disclosed unless the relevant species recording group has given their permission. Grid references will be altered to give a less precise position. Contact HBIC if further information is needed on these records.

Common species

The following species are included in the list because they have a national status. However, they are relatively common in Hampshire and are not used in the identification of SINCs which meet Section 6 of the Hampshire SINC criteria:

- *Hyacinthoides non-scripta* (Bluebell)

Records of species such as the Nationally Rare Box (*Buxus sempervirens*) may not appear on the list as there may be many records but their provenance is not known.

Further notes

- The location names, where shown, are the originals given by the recorders and may not match any formal name for the location or other colloquial names by which the location may also be known.
- The grid references, where shown, are the originals given by the recorders and may indicate the specific location of the species, a central grid reference representing a larger survey area, or a grid square.
- Where species have been deemed as 'sensitive' by the relevant specialist species recording group the location name will not be shown and the grid reference will have been altered to give a less precise position specified by the species recording group.
- Many of the records have been supplied by specialist species recording groups. Whilst every reasonable effort is made to validate information supplied to the Hampshire Biodiversity Information Centre the accuracy or comprehensiveness of this information cannot be guaranteed.
- Records do not necessarily represent evidence of breeding at a site; please contact HBIC if further details are required for any of these records.
- Whilst a species may have been recorded at a site, this does not indicate that the species is still present. Equally, the absence of a species from a site does not signify that it is absent, only that it has not been recorded, that the site has not been surveyed for this species, or that HBIC has not been informed of its presence.
- Quantities of '0' (zero) indicate that the species was 'present' but the number of individuals seen was not recorded. Negative quantities correspond to the DAFOR scale (plus very rare and 'locally' criteria) as follows:
    - -1 = Dominant (DAFOR)
    - -2 = Abundant (DAFOR)
    - -3 = Frequent (DAFOR)
    - -4 = Occasional (DAFOR)
    - -5 = Rare (DAFOR)
    - -6 = Very Rare
    - -21 = Locally Dominant
    - -22 = Locally Abundant
    - -23 = Locally Frequent
- Negative quantities of '-7' (minus seven) indicates that the species was 'not found'. These records are not included in protected and notable species lists.
- Max_Count values of '0' (zero) indicate that none of the records had a positive quantity count and hence the highest count numerical value was '0' (indicating 'present'). Max_Count values of blank indicate that none of the records had a numerical count value and instead they all had frequency values (e.g. using the DAFOR scale).

Status codes and abbreviations:

EU_Bird_1	Annex I of the Birds Directive
EU_Bird_21	Annex II/1 of the Birds Directive
EU_Bird_22	Annex II/2 of the Birds Directive
EU_Hab_2	Annex II of the Habitats Directive (priority species)
EU_Hab_2np	Annex II of the Habitats Directive (non-priority species)
EU_Hab_4	Annex IV of the Habitats Directive
EU_Hab_5	Annex V of the Habitats Directive
IUCN_(pre 94)	See IUCN (pre 1994) guidelines
IUCN_(1994)	See IUCN (1994) guidelines
IUCN_(2001)	See IUCN (2001) guidelines
BOCC_Red	Birds of Conservation Concern Red list
NR	Nationally rare (occurring in 15 or fewer 10km squares in Great Britain)
NS	Nationally scarce (occurring in 16 - 100 10km squares in Great Britain)
NN	Nationally notable (occurring in 16 - 100 10km squares in Great Britain or less than 20 Vice Counties)
UKBAP	UK Biodiversity Action Plan priority species
HBAP	Hampshire Biodiversity Action Plan species
WCA_s1p1	Schedule 1 Part 1 of the Wildlife and Countryside Act 1981 (as amended)
WCA_s5s91(k)	Schedule 5 Section 9 Part 1 (killing/injuring) of the Wildlife and Countryside Act 1981 (as amended)
WCA_s5s91(t)	Schedule 5 Section 9 Part 1 (taking) of the Wildlife and Countryside Act 1981 (as amended)
WCA_s5s94a	Schedule 5 Section 9 Part 4a of the Wildlife and Countryside Act 1981 (as amended)
WCA_s5s94b	Schedule 5 Section 9 Part 4b of the Wildlife and Countryside Act 1981 (as amended)
WCA_s8	Schedule 8 of the Wildlife and Countryside Act 1981 (as amended)
PBA	Protection of Badgers Act 1992
EPS	European Protected Species
NERC_s41	Section 41 of the Natural Environment and Rural Communities Act 2006

NI	National Interest
CR	County Rare
CS	County Scarce
CI	County Interest
nHR	North Hampshire Rare (VC12)
sHR	South Hampshire Rare (VC11)
nHS	North Hampshire Scarce (VC12)
sHS	South Hampshire Scarce (VC11)