global environmental solutions

# Glossop Road, Gamesley

# Ecological Walkover and Bat Survey Report

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## NON-TECHNICAL SUMMARY

Andrew McCarthy Associates Ltd, which from 1st November 2010 has become part of the multidisciplinary environmental consultancy SLR Consulting Limited, was appointed by Astor Property Group to undertake an ecological walkover, building inspection and bat surveys on an area of ground located off Glossop Road, Gamesley.

The site consisted of an industrial unit and associated hard standing, surrounded by fields of intensively managed grass. The site was bordered to the north by Glossop Road and to the south by a railway line.

The land was considered to be of limited ecological value, consisting of intensively managed grassland and hard standing around the industrial unit. While the adjacent railway siding was considered to be suitable for reptiles, such as grass snake and common lizard, the application site itself does not contain habitat suitable for either species. The hedgerows and adjacent railway embankment that border the site were considered to be of value for foraging bats, and as such it is recommended that the hedgerows should be retained as part of the future development and where possible links to the railway embankment created and strengthened through appropriate landscape planting.

The industrial unit was assessed as having moderate potential to support roosting bats, due to a large number of boarded up windows, cracks within the walls where doorways have been bricked up, and gaps beneath the felt on the flat roof. In order to establish whether bat roosts were present, dusk and dawn bat detector surveys were undertaken, in combination with a repeat internal inspection. Surveys were undertaken on 19 May, 14 June and 15 June 2011. Common pipistrelle *Pipistrellus pipistrellus* was recorded foraging around the site during all three surveys, though no emergence or re-entry into roosts were recorded. While it was confirmed that bats were not roosting with the building it is recommended that a sensitive demolition protocol be followed when removing features that may support roosting bats, as a precaution and to accord with best practice.

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## 1.0 INTRODUCTION

### 1.1 Terms of Reference

AMA Environment Ltd, which from 1st November 2010 has become part of the multidisciplinary environmental consultancy SLR Consulting Limited, was commissioned by Astor Property Group to undertake a building inspection, ecological walkover survey and bat survey of the site off Glossop Road, Gamesley (approximate central OS grid reference SK 012 941)

### 1.2 Site Description

The site, located on the southern edge of Gamesley, consists of an industrial unit surrounded by grass and clover ley fields. The site boundary was defined by Glossop Road, located to the north, and a railway line to the south; small shrubs define the site boundary alongside young silver birch and pioneer weeds. The industrial unit was unoccupied with doors and windows boarded over.

### 1.3 Relevant Legislation & Policy[1]

#### *1.3.1 Legislation*

In England, all British bats and their roosts are protected under the Conservation of Habitats and Species Regulations 2010, which defines European protected species, and the Wildlife and Countryside Act 1981, as amended by the Countryside & Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006. These pieces of legislation combine to give substantial protection to bats and their roost sites, making it an offence to:

- Deliberately/intentionally kill, injure or take a bat.
- Damage, destroy or obstruct access to any place that a bat uses for shelter or protection (this is taken to mean all bat roosts whether bats are present or not).

[1] Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References & Bibliography section.

- Deliberately/intentionally or recklessly disturb[2] bats while they are occupying a structure or place that they use for shelter or protection.

The Natural Environment and Rural Communities Act 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

### *1.3.2 Policy*

Planning Policy Statement 9 and its accompanying document ODPM 06/2005 sets out government policy on biodiversity and nature conservation and places a duty on planners to make material consideration to the effect of a development on legally protected species when considering planning applications. PPS9 also promotes sustainable development by ensuring that developments take account of the role and value of biodiversity and that it is conserved and enhanced within the development.

The UK Biodiversity Action Plan (UKBAP) (Anon, 1995), organised to fulfil the Convention on Biological Diversity in 1992, to which the UK is a signatory, has produced a national priority species list with all species included having specific action plans defining the measures required to ensure their conservation. Regional and local BAPs have also been organised to develop plans for species of nature conservation importance at regional and local levels.

The UKBAP, as updated in 2007, lists seven bat species as conservation priorities:

- Barbastelle *Barbastella barbastellus*
- Bechstein's *Myotis bechsteinii*
- Noctule *Nyctalus noctula*
- Soprano pipistrelle *Pipistrellus pygmaeus*
- Brown long-eared *Plecotus auritus*
- Greater horseshoe *Rhinolophus ferrumequinum*
- Lesser horseshoe *Rhinolophus hipposideros*

[2] Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

## 2.0 METHODOLOGY

### *2.1 Desk Study*

The following websites were accessed to search for statutory designated sites and legally protected taxa within 2 km of the proposed development site:

- Multi-Agency Geographic Information for the Countryside - www.magic.gov.uk
- National Biodiversity Network Gateway – data.nbn.org.uk
- Nature on the map – www.natureonthemap.org.uk

### 2.2 Field Survey

#### *2.2.1 Building Inspection*

The initial building inspection was undertaken by Dale Broadbent, a bat licensed ecologist (License no: 20104079) with SLR Consulting on 27th October 2010.

All buildings were inspected internally and externally for field evidence of roosting bats including droppings, urine staining, feeding remains, potential roosting/access points and individual bats. Where necessary, an endoscope was used to facilitate the inspection of crevices.

#### *2.2.2 Flora*

*Habitats*

The walkover survey was undertaken on 27th October 2010, using standard Phase 1 Habitat survey methodology (JNCC, 2003).

*Species*

In addition to general habitat classification and mapping, a botanical species list was also compiled[3], with the abundance of each species being estimated for each main habitat-type using standard 'DAFOR' codes: **D**ominant, **A**bundent, **F**requent, **O**ccasional, **R**are (**L**ocally is used as a prefix where appropriate).

[3] Botanical nomenclature follows Stace (1997).

### *2.2.3 Fauna*

Habitats and features with potential to support protected and/or conservation priority fauna species, together with any field signs of such species, were recorded. This included a detailed internal and external inspection of the industrial unit for evidence of bat activity, an evaluation of trees on site in order to assess their bat roost potential and a walkover to search for evidence of, and habitat suitability for, other protected species.

### *2.2.4 Evening Emergence & Dawn Survey*

An evening bat emergence survey was undertaken on the 18 May 2011 and a further evening emergence and dawn survey on the 14 and 15 June 2011, respectively.

The evening emergence surveys commenced 15 minutes before sunset and continued for 2 hours after sunset. Dawn surveys commenced 1.5 hours before sunrise and ended 5 minutes after sunrise. During each survey the surveyors were strategically positioned around the building so as to be able to observe any bats leaving or entering potential roosts. All observed bat passes were recorded on a detailed plan of the site; noting the time, the location and, where possible, the direction of flight, species and behaviour of the bat (i.e. commuting, foraging, social calling). Particular importance was placed on noting the location of any points where bats were observed leaving or entering the building. Surveyors were all equipped with a Duet (Batbox Ltd,) combined frequency division and heterodyne bat detector, or Petterson D 240x (Pettersson Elektronik AB, Uppsala, Sweden): Heterodyne and time expansion detector, connected to a digital recording device; a Transcend MP860 and a ZEN nano plus.

Temperature, wind speed/direction and cloud cover were recorded at the beginning and end of the survey, along with any significant weather changes during the survey (e.g. heavy showers).

After completion of each survey session, the digital bat recordings were analysed using BatScan v8.7 (Batbox Ltd) sonogram analysis software to confirm species identification.

## 2.3 Limitations

### *2.3.1 Desk Study*

Desk study data is not likely to be exhaustive and is intended mainly to set a context for the study. It is therefore possible that protected species not identified during the data search do in fact occur within the vicinity of the proposed development site.

### *2.3.2 Field Survey*

The botanical survey was undertaken outside of the peak survey season. However due to the limited diversity of the habitats on and around the site this is not considered to be a significant limitation.

Access to the habitats along the adjacent railway embankment was not possible. This was not considered to be a limitation as the land falls outside of the site boundary and will not be directly affected by any future development. A visual inspection of this habitat was undertaken using binoculars, from within the site itself.

## 2.4 Quality Assurance & Environmental Management

All ecologists employed by SLR Consulting Ltd are members of, or are under application for, membership of the Institute of Ecology and Environmental Management (IEEM) and follow the Institute's code of professional conduct when undertaking ecological work.

All fieldwork was carried out in accordance with current best practice guidelines (Mitchell-Jones, 2004; Anon, 2007), under the supervision of senior staff and licensed bat ecologists.

## 3.0 RESULTS

### 3.1 Habitat Descriptions

#### *3.1.1 Overview*

The industrial unit was located in a fenced compound surrounded by hard standing, semi improved grassland and amenity tree planting with a sub-canopy of scattered scrub. The surrounding fields were primarily grassland, comprising of clover leys bordered by hedgerows along Glossop Road. The southern boundary was adjacent to a railway line with scattered scrub, ruderal vegetation and unmanaged grassland along the embankment.

#### *3.1.2 Habitats*

*Industrial unit and surroundings*



**Plate 1:** Typical habitats surrounding the industrial unit

The industrial unit was located within a fenced compound, consisting of hard standing and associated ephemeral communities. Tree planting around the perimeter consisted of semi-mature birch *Betual pendual*, guelder rose *Viburnum opulous,* cherry *Prunus sp*. and dogwood *Cornus sanguinea,* with a species poor semi improved grassland understory. The

species poor grassland was dominated by cocksfoot *Dactylys glomerata,* and false oat grass *Arrhenatherum elatus,* with bramble *Rubus fruticosus*, dandelion, *Taraxacum officinalle* agg, mares tail *Hipuris vulgaris*, and broad leaved dock *Rumex obtusifolius*. Saplings of oak *Quercus robur* and birch were also frequently distributed throughout the area. The ephemeral plant communities located around the edge of the building included fescue grasses *Festuca* sp*,* herb robert *Geranium robertianum*, groundsel *Senecio vulgaris* and ragwort *Senecio jacobaea;* no single species was dominant.

*Grassland & Arable*

The surrounding arable land was intensively managed grassland, consisting of clover ley, dominated by perennial rye grass *Lolium perenne* and white clover *Trifolium repense*. A small stand of Japanese knotweed *Fallopia japonica* was located on the eastern boundary of the field, located next to Orchard Drive; the stand measured approximately 16 metres by 5 metres (refer to Plate 3).



**Plate 2:** Grass clover ley, and adjacent railway embankment



**Plate 3:** Stand of Japanese Knotweed next to Orchard Drive

*Hedgerows & Hedgerow Trees*

The hedgerows bordering the northern boundary, to the east and west of the industrial unit, were of similar character, with no evidence of traditional management and flailed into a 2 metre high A-frame. The hedgerow to the west of the industrial compound was dominated by blackthorn *Prunus spinosa* with hawthorn *Carataegus monogyna*, ivy *Hedera helix sp*, bramble and holly *Ilex aquifolium*. The eastern hedgerow was of similar species composition except hawthorn rather than blackthorn was the dominant component. The understory vegetation of both hedgerows was dominated by stinging nettle *Urtica dioca*, and perennial rye grass, with cow parsley *Anthriscus sylvestris*, cocksfoot and false oat grass. All the trees on the site were semi mature or younger, and were assessed as having negligible potential to support roosting bats.

*Adjacent Railway Embankment*

The adjacent railway embankment consisted of semi improved grassland community similar in composition to the grassland community around the industrial unit. Scattered scrub was found throughout the adjacent railway embankment, increasing in density to the east until it became scrub woodland dominated by oak, birch and hawthorn.

### 3.2 Internal and External Inspection

The results of the building inspection are displayed in Table 1.

**Table 1: Building inspection results.**

| | |
|---|---|
| **Industrial Unit** |  |
| | Description: Two storey industrial unit, brick and steel clad over a steel frame, consisting of offices with a flat roof and a pitched glass roof over the factory floor. Doors and windows were boarded up. Gaps in the brickwork were apparent where doorways had been bricked up. No roof voids were present; the offices false ceilings had all been broken open. |
| | Potential Bat Features: Boarding over the windows and doors, cracks in the brickwork, gaps under felting on flat roof. |
| | Bat Evidence: None<br><br>**Bat Roost Potential: Moderate** |

### 3.3 Designated Sites

The nearest designated sites identified in the desk study were Hurst Clough Local Nature Reserve (LNR), located 2.2 km to the west, and Great Wood LNR located 2.5 km to the south west. Additionally the Peak District National Park is located approximately 1 km south of the site.

### 3.4 Protected Species

Relevant protected and conservation priority species and taxa with potential to present a constraint to development are listed in Table 2 (overleaf). Inclusion in this table is based upon:

a) Presence of suitable habitat for a species with a national distribution which suggests its presence is likely/possible;

b) Confirmed field evidence of individual species (e.g. presence of badger setts);

c) Records returned during the desk study, which confirm the presence of the species in the local area; and

d) Potential for the proposed development to have an adverse impact upon the species.

**Table 2: Key protected species records from Desk Study**

| Species | Legal Protection/ Conservation Priority Status[4] | Present in Desk Study Results | Suitable Habitat Within or Near Site | Evidence Within or Near Site | Notes |
|---|---|---|---|---|---|
| ***Bats*** | | | | | |
| Noctule *Nyctalus noctula* | HR, WCA, UKBAP | Y | Y | N | |
| Common pipistrelle *Pipistrellus pipistrellus* | HR, WCA | Y | Y | N | |
| ***Other Mammals*** | | | | | |
| Badger *Meles meles* | PBA | Y | Y | N | Suitable habitat on adjacent land |
| ***Birds*** | | | | | |
| Bullfinch *Pyrrhula pyrrhula* | WCA, UKBAP, Amber | Y | Y | N | |
| Starling *Sturnus communis* | WCA, UKBAP, Red | Y | Y | N | |
| Hedge Accentor *Prunella modularis* | WCA, Amber | Y | Y | N | |
| Hen harrier *Circus cyaneus* | Schedule 1, Red | Y | Y | N | |
| House Sparrow *Passer domesticus* | WCA, UKBAP, Red | Y | Y | Y | |
| Song thrush *Turdus philomelos* | WCA, UKBAP, Red | Y | Y | N | |
| Black Headed Gull *Larus melanocephalus* | WCA, Amber | Y | Y | Y | Spotted near industrial unit |
| Jackdaw *Corvus monedula* | WCA | Y | Y | Y | Spotted near industrial unit |
| Chaffinch *Fringilla coelebs* | WCA | Y | Y | Y | Spotted around hedgerow |
| Feral Pigeon *Columba sp.* | WCA | Y | Y | Y | Evidence within building |

[4] See Section 4 on relevant legislation and policy for further information on the terms used here.

| Species | Legal Protection/ Conservation Priority Status[4] | Present in Desk Study Results | Suitable Habitat Within or Near Site | Evidence Within or Near Site | Notes |
|---|---|---|---|---|---|
| ***Reptiles*** | | | | | |
| Grass snake *Natrix natrix* | WCA, UKBAP | Y | Y | N | Suitable habitat on adjacent land |
| Common lizard *Zootoca vivipara* | WCA, UKBAP | N | Y | N | Suitable habitat on adjacent land |

**Key to protection/status:**

| | |
|---|---|
| **HR** | Habitat Regulations |
| **WCA** | Wildlife & Countryside Act |
| **PBA** | Protection of Badgers Act |
| **UKBAP** | UK Biodiversity Action Plan |
| **LBAP** | Local (or Regional) Biodiversity Action Plan |
| **Red** | Red list bird of conservation concern (Eaton *et al*., 2009) |
| **Amber** | Amber list bird of conservation concern (Eaton *et al*., 2009) |
| **S1** | Schedule 1 |

### 3.4.1 Evening Emergence & Dawn Survey

During the dusk surveys, bat foraging activity commenced on the site at 21:35 on 19 May and at 21:58 on the 14 June. Activity during the dawn survey ceased at 04:08 hours. Analysis of the calls indicated that the majority of these calls were from common pipistrelle *Pipistrellus pipistrellus*. Activity was centred on the adjacent vegetation to the east of the site (Plate: 1) and outside the site, and within the surrounding fields and hedgelines (Plate: 2). No bats were recorded exiting from or returning to roosts within the building during the dusk and dawn surveys, and the levels of foraging activity around the building was low; the number of bats using the site indicates that it is only of modest value to local bat population.

## 4.0 RELEVANT LEGISLATION & POLICY[5]

### 4.1 Legislation

#### *4.1.1 Habitat Regulations*

The Conservation of Habitats and Species Regulations 2010 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb[6] wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

#### *4.1.2 Wildlife & Countryside Act*

The Wildlife and Countryside Act 1981, as amended by the Countryside and Rights of Way Act (CRoW) 2000 and the Natural Environment and Rural Communities Act (NERC) 2006, consolidates and amends existing national legislation to implement the Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) and Council Directive 79/409/EEC on the Conservation of Wild Birds (Birds Directive), making it an offence to:

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection; and
- Pick or uproot any wild plant listed under Schedule 8 of the Act.

[5] Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References & Bibliography section.

[6] Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

### *4.1.3 National Parks & Access to the Countryside Act*

National Nature Reserves (NNR's) and Local Nature Reserves (LNR's) are designated under the National Parks and Access to the Countryside Act 1949.

### *4.1.4 Natural Environment & Rural Communities Act*

The NERC 2006 places a duty on authorities to have due regard for biodiversity and nature conservation during the course of their operations.

## 4.2 Policy

### *4.2.1 Planning Policy Statement 9*

PPS9 and its accompanying document ODPM 06/2005 sets out current government policy on biodiversity and nature conservation and places a duty on planners to make material consideration to the effect of a development on legally protected species when considering planning applications. PPS9 also promotes sustainable development by ensuring that developments take account of the role and value of biodiversity and that it is conserved and enhanced within a development.

### *4.2.2 Biodiversity Action Plans*

The UK Biodiversity Action Plan (UKBAP) (Anon, 1995) was organised to fulfil the Rio Convention on Biological Diversity in 1992, to which the UK is a signatory. A list of national priority species and habitats has been produced with all listed species/habitats having specific action plans defining the measures required to ensure their conservation. Regional and local BAPs have also been organised to develop plans for species/habitats of nature conservation importance at regional and local levels.

### *4.2.3 Local Structure Plans*

County, District and Local Councils have Structure Plans and other policy documents that include targets and policies which aim to maintain and enhance biodiversity. These are used by Planning Authorities to inform planning decisions.

## 5.0 DISCUSSION & RECOMMENDATIONS

### *5.1 Potential Ecological Issues*

#### *5.1.1 Designated Sites*

None of the designated sites identified in the desk study are in sufficiently close proximity to be affected by any future development undertaken on the site.

#### *5.1.2 Species*

The industrial unit was assessed as having Moderate potential to support roosting bats, due to the boarded up windows, cracks in the walls, and gaps beneath roofing felt, however dusk and dawn surveys undertaken in the summer of 2011 have confirmed that that this building did not support a roost. The hedgerows along the northern boundary of the site, and the railway embankment to the east, were found to support modest levels of foraging bat activity, mainly by common pipistrelles. In order to protect and enhance the bat foraging resource, it is recommended that the hedgerows should be retained so they can continue to follow established flight paths. In order to enhance the site for foraging bats, links between them and the embankment should be created through appropriate landscape planting; such areas should also be subject to a sensitive lighting regime.

The adjacent railway embankment has potential for reptiles, such as grass snake and common lizard, however, the site itself does not contain habitat that is suitable for either of these species, and as such no further surveys are considered necessary.

Both the industrial unit and vegetation within the site have potential for nesting birds, it is therefore recommended that any demolition or scrub clearance works be undertaken outside of the bird breeding season, which is generally considered to run from March and August (inclusive). If this is not possible a breeding bird survey, undertaken by a suitably experienced ecologist, should be carried out immediately prior to clearance works taking place, or a 'watching brief' undertaken. If during this survey/watching brief an active bird nest is found, this nest, and a suitable buffer zone around it, will need to be protected until the young have fledged.

### 5.1.3 Mitigation & Compensation

#### *5.1.3.1 Timing of Works*

As the site was not found to support any bat roosts, strict timing restrictions need not apply (other than the recommended avoidance of the breeding bird season). However, if possible and as a precaution, features with potential to support roosting bats should not be dismantled within the main bat hibernation period (mid-November to mid-March), these being the boarded up windows, cracks in the walls, and gaps beneath roofing felt. Should works to features with bat potential need to take place at this time, it is recommended that the works are supervised by an experienced ecologist, or that an ecologist is on 'stand by'.

As a general precaution, it is recommended that all aspects of the demolition works are undertaken in accordance with a demolition protocol, an example of which is provided as Appendix 2.

## 6.0 CLOSURE

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of Astor Property Group; no warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the client and others in respect of any matters outside the agreed scope of the work.

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www.magic.gov.uk (Accessed 19/10/2010)

www.nbn.org.uk (Accessed 19/10/2010)

www.ukbap.org.uk (Accessed 1/11/2010)

**Web addresses for access to full UK legislation and policy text:**

Conservation of Habitats and Species Regulations 2010:
http://www.opsi.gov.uk/si/si2010/uksi_20100490_en_1

Habitats Directive:
www.europa.eu.int/eur-lex/en/lif/dat/1992/en_392L0043

Birds Directive:
eur-lex.europa.eu/LexUriServ/site/en/consleg/1979/L/01979L0409-20070101-en

Wildlife and Countryside Act 1981:
www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1981/cukpga_19810069_en_1

Countryside and Rights of Way Act 2000:
www.legislation.hmso.gov.uk/acts/acts2000/20000037

Natural Environment and Rural Communities Act 2006:
http://www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1

Protection of Badgers Act 1992:
http://www.opsi.gov.uk/ACTS/acts1992/ukpga_19920051_en_1

National Parks and Access to the Countryside Act 1949:
http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1949/cukpga_19490097_en_1

Planning Policy Statement 9:
www.communities.gov.uk/documents/planningandbuilding/pdf/147408

## APPENDIX 1 – BOTANICAL SPECIES LIST

| Common Name | Latin Name | DAFOR |
|---|---|---|
| Cocksfoot | *Dactylis glomerata* | D |
| False oat grass | *Arrhenatherum elatus* | D |
| Fescue sp. | *Festuca sp.* | LA |
| Hawks beard sp. | *Crepis sp.* | O |
| Common ragwort | *Senecio jacobaea* | O |
| Bramble | *Rubus fruticosus* | F |
| Silver birch | *Betual pendula* | F |
| English oak | *Quercus robur* | F |
| Goat willow | *Salix caprea* | O |
| Dandelion | *Taraxacum officinalle agg.* | A |
| Vetch sp. | *Vicia sp.* | R |
| Broad leaved dock | *Rumex obtusifolius* | O |
| Mares tail | *Hipuris vulgaris* | F |
| Creeping thistle | *Cirsium arvense* | O |
| Ribwort plantain | *Plantago lanceolata* | O |
| Soft rush | *Juncus effusus* | O |
| Ash | *Fraxinus excelsior* | R |
| Geulder rose | *Vibirnum opulous* | R |
| Crab apple | *Malus sylvestris* | R |

| | | |
|---|---|---|
| Sycamore | *Acer pseudoplatanus* | O |
| Dogwood | *Cornus sanguine* | R |
| Cherry sp. | *Prunus sp.* | R |
| Herb roberts | *Geranium robertianum* | O |
| Wavy bittercress | *Cardamine flexuosa* | O |
| Groundsel | *Senecio vulgaris* | R |
| Yorkshire fog | *Holcus lanatus* | R |
| White clover | *Trifolium repense* | R |
| Sun spurge | *Euphorbia helioscopia* | R |
| Hawthorn | *Crataegus monogyna* | D |
| Blackthorn | *Prunus spinosa* | D |
| Holly | *Ilex aquifolium* | O |
| Ivy | *Hedera helix sp.* | A |
| Stinging nettle | *Urtica dioca* | D |
| Cow parsley | *Anthriscus sylvestrys* | O |
| Perennial rye grass | *Lollium perenne* | D |
| Greater celandine | *Chilidonium majus* | O |
| Greater willowherb | *Epilobium hirsutum* | O |
| Couch | *Agropyron repens* | R |
| Timothy | *Phleum pratense* | R |
| Common knap weed | *Centaurea nigra* | O |

## APPENDIX 2 - PROTOCOL FOR WORKING IN AREAS THAT MIGHT SUPPORT BATS

### General Protocol for Demolition of Buildings

If bats are found, or reported to be present within a site being demolished /stripped, or if further advice is needed, it is recommended that contractors contact this practice on 0114 290 3628 or Gary Oliver (07971 462696)

In cases where specialist ecological surveys have indicated the possible presence of bats, but where bats themselves or signs of bats (such as droppings) have not been detected, it is essential that demolition is carried out in an appropriate and sensitive manner.

It should be noted that where bats roosts are found and have potential to be affected by site development, a license from Natural England is required. In this case, works would need to comply fully with the terms and conditions of this license and the attached 'method statement'. Conversely, where bats are strongly suspected to be present, but where they have not been detected, further surveys may be required to confirm whether or not they do occur. If additional surveys are not carried out as recommended by good practice, any bats that are subsequently killed or injured, or roosts damaged (even following the best practice guidance contained herein) might result in an offence being committed under the relevant legislation.

The protocol below provides general guidance on how to dismantle buildings, assuming that all other issues have been adequately addressed.

### Protocol to be followed during demolition

Bats are very small animals; the smallest British species weigh only a few grams and can easily fit inside a match box. Bats are able to conceal themselves in the smallest of gaps and crevices, such as beneath a boarded up window, behind a loose piece of lead flashing or under a missing section of mortar. However, most bats tend to prefer particular features, and by following the simple steps listed below, the likelihood of killing or injuring a bat can be significantly reduced. Should bats be found at any stage of demolition work must stop immediately and advice sought from the local Natural England office (see telephone numbers appended to this protocol).

The following steps should be taken by the demolition contractor, only after appropriate surveys have been carried out by a suitably qualified ecologist, and no bats, or evidence of bats, have been detected. Care should be taken even when buildings are considered to offer relatively low potential for bats.

### Search for signs of bats prior to and during works

Certain bats tend to inhabit sealed roof voids / loft spaces; the species most often encountered in this situation being the Brown long-eared bat. Brown long-eared bats are quite often found clinging to the main ridge beam, usually at the darkest or warmest end of the roof space and are usually comparatively easy to find. Where buildings are safe to enter,

an inspection of the roof space should be carried out prior to the start of demolition or stripping works. If bats are found work should stop and advice sought immediately.
When removing roof tiles (particularly ridge tiles), lead flashing or boards from windows all of which provide potential crevices, look for bats and their droppings. Most bat droppings are similar in size and shape to mouse droppings, but unlike mouse droppings they crumble into a fine, dry powder when 'rolled' between the fingers.

**Careful removal of materials that might support bats**

Most bats found in buildings are crevice-dwelling species, the commonest of which is the Pipistrelle (there are at least three species of Pipistrelle breeding in Britain). Any material with potential to form a crevice should be removed by hand with care in such a way that it is able to be replaced if bats are found. This is particularly important when working at or near the apex of buildings, along the ridge of a building or on a south-facing side of a building (the warmest part).

Stripping of the roof, in particular, should proceed with caution, and special care should be taken when working on under-felted sections or sections containing sarking board (as they may form pockets beneath the outer tiles). Extreme care should be taken when stripping areas with missing, raised or cracked tiles.

Ridge tiles; facia boards; soffit boxes; gaps in brickwork or mortar; hanging tiles; loose or missing roof tiles; lead flashing; boards over windows; sarking boards or under-felt should be removed very carefully, and an inspection made for bats and droppings at regular intervals. If possible, particularly suitable crevices / features should be searched using a fibrescope / endoscope or small torch and flexible mirror. All material potentially concealing a roost should be lifted vertically, without downward or side-ward pressure (as far as is practical), taking care not to crush bats should they be present, but not visible.
If bats or signs of bats (such as droppings) are found at any stage during the demolition works, work should stop locally and advice sought immediately.

**Appropriate timing for demolition works**

Mid-November to mid-March (and January and February in particular) should be avoided if possible, as bats may be hibernating and be particularly difficult to find. The safest working 'windows' in most cases are between mid-March and mid April, and from mid-September to mid-November. These dates are indicative only, as the 'sensitive period' may shift depending on prevailing weather conditions and location.

**Appropriate timber treatment (if relevant)**

If buildings are being renovated or retained or if new buildings are being constructed that might support bats, care should be taken not to use chemicals that might harm bats. If pre-treated wood is to be used; only wood treated by a copper-chrome-arsenic process such as Tanalith or Celcure is suitable, as this is harmless to bats when dry. Wood pre-treated by an organic solvent process can contain chemicals that are extremely toxic to bats and so should not be used.
If remedial timber treatment is necessary, only fluids containing permethrin, cypermethrin,

flufenoxuron or boron should be used to treat wood-boring insects. Compounds containing copper, zinc or boron, preferably in an emulsion or aqueous solution, should be used to treat rot. The local Natural England office should be contacted if there is any doubt over the suitability, or otherwise, of a particular chemical.

All appropriate contractors should be made aware of this advice; it is the responsibility of those commissioning or managing the work to ensure that the advice provided is passed on, and that this advice is followed.

**What to do if bats are found**

Bats are delicate and easily injured. They have also been found to carry a lyssavirus (similar to rabies); a bite from a bat in Scotland led to the death of a bat worker in 2003.
Unless equipped with thick gloves, do not attempt to handle bats under any circumstances.
Stop work immediately and call this practise (01142 903628), Gary Oliver (07971462696), or seek advice from the local the local Natural England contact.
If thick gloves are available and any bats are in imminent danger of death or injury, it may be appropriate to pick up and move them to a safe place. Handling should only be attempted by site workers who are confident in their ability to handle bats.

Where handling is carried out, the site worker involved must accept the risks associated with handling a potentially dangerous species – we repeat that handling is not advised unless bats are in clear danger and appropriate equipment, care and skill is used to handle them. If it is necessary to handle a bat, the animal should be placed in a secure, well-ventilated container and left in a cool, dark place. This might include a cupboard spare room or the boot of a car (parked in the shade); bats should not be placed in the fridge or freezer (even when it is suspected that they are dead).

Advice should then be sought from this practice (0114 290 3628) from Gary Oliver (07971462696), the local Natural England contact or from the local Wildlife Trust.