

Extended Phase 1 Habitat Survey

Land at Hanburys and The Old Orchard

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1 Introduction

1.1 Ecoconsult Ltd has been commissioned to carry out an extended phase 1 habitat survey for a proposed residential development at Hanburys and The Old Orchard, Berkhamsted, Hertfordshire.

1.2 The following work has been undertaken to inform this report:

- an ecological data search for the site and 1km from site boundary
- an extended phase 1 habitat survey of the site

1.3 Information has been used to describe habitats of nature conservation interest at the site and provide information on protected and notable species.

2 Survey Methodology

Desk study

- 2.1 The Hertfordshire Biological Records Centre (HBRC) was contacted to provide ecological data for the site and land within 1km from the site boundary.
- 2.2 The Magic website was searched to provide information regarding Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) for the site and within 5km from the site boundary.
- 2.3 Aerial photographs and 1:10,000 Ordnance Survey maps were used to determine the location of ponds within 500m of the site.

Field surveys

Phase 1 habitat survey

- 2.4 The extended phase 1 habitat survey was carried out on 29th May 2013 and followed the methodology in *Handbook for Phase 1 Habitat Survey* (Joint Nature Conservation Committee, 2003) and *Guidelines for Baseline Ecological Assessment* (Institute of Environmental Management and Assessment, 1995)

3 Results of data search

3.1 Results of the data search can be seen in Appendix A.

Statutory Nature Conservation Sites

3.2 Chilterns Beechwoods Special Area of Conservation (SAC) is located 2.7km to the north of the site boundary. The site supports a mosaic of different habitats including ancient semi-natural and secondary woodland, plantation, scrub and grassland. The site has a particularly rich breeding bird community. The proposed development will not negatively affect Chilterns Beechwoods SAC.

Non-Statutory Nature Conservation Sites

3.3 Three non-statutory nature conservation sites are located within 1km of the site boundary. They include the following;

- Brickhill Green Wildlife Site is a 3.12ha mixed old secondary woodland located 300m to the southeast of the site boundary. The woodland supports a semi-natural canopy and a varied structure with a number of woodland indicator species.
- Hockeridge Wood Wildlife Site is a 5.69ha former ancient woodland located 350m to the southwest of the site boundary. The woodland has largely been replanted with beech and a variety of exotic broadleaved and coniferous species and is now an arboretum. A variety of woodland indicator species are present.
- Hockeridge Wildlife Site is an 8.6ha ancient semi-natural woodland located 490m to the south of the site boundary. The ancient woodland supports some semi-natural canopy and field evidence suggests an ancient origin. A variety of woodland indicator species are present.

Protected Species

Bats

- 3.4 HBRC currently holds a two old bat records for pipistrelle and brown long-eared bats. The bats were recorded between 1991-92 during activity surveys. No bats roosts were included in the HBRC list of records.

Badgers

- 3.5 HBRC currently holds a 1985 record for a single badger within 1km of the site boundary.

Dormouse

- 3.6 HBRC currently holds a 1985 record for dormouse within 1km of the site boundary.

Other mammals

- 3.7 HBRC currently holds a single 1985 record for hedgehog within 1km from the site boundary.

Reptiles

- 3.8 HBRC currently holds a single 1993 common lizard record located 1km to the northeast of the site at Berkhamsted Railway Cutting. records for grass snake and slow-worm within 1km from the site boundary.

Amphibians

- 3.9 HBRC does not currently hold any great crested newt records within 1km from the site boundary. Amphibians recorded within 1km from the site include common toad.

Birds

- 3.10 HBRC do not currently hold any records for protected / notable bird species within 1km from the site boundary.

Invertebrates

- 3.11 HBRC currently holds eight records for notable invertebrates within 1km of the site boundary. The majority of records are very old (dating from between 1933 and 1938), but two butterfly records are more recent (dating from 1999 and 2009). None of the records are from the site.

Plants

- 3.12 HBRC currently holds ten records for seven different protected / notable plant species within 1km of the site boundary.

4 Results of Field Surveys

Local context

- 4.1 The site is located on the southern boundary of Berkhamsted with large to medium sized residential properties to the north and commercial buildings to the east. Immediately to the south is an agricultural field currently used for arable and amenity grassland to the west. The busy A41 road runs within 195m of the southern boundary of the site beyond the arable field. Hockeridge Wood is located 350m south and west of the site. The site is located at grid reference: SP 98196 06927.

Habitats

- 4.2 The site supports a number of semi-natural habitats, with a large proportion dominated by semi-improved neutral grassland. The habitats are shown on the phase 1 habitat map below in Figure 2.

- 4.3 The following habitat types are represented on site:

- semi-natural broadleaved woodland
- planted mixed woodland
- planted broadleaved woodland
- dense scrub
- scattered scrub
- semi-improved neutral grassland
- amenity grassland
- pond
- tall ruderal
- garden shrubbery
- intact species-rich hedgerow with trees
- intact species-poor hedgerow
- tree-line
- buildings and hard-standing

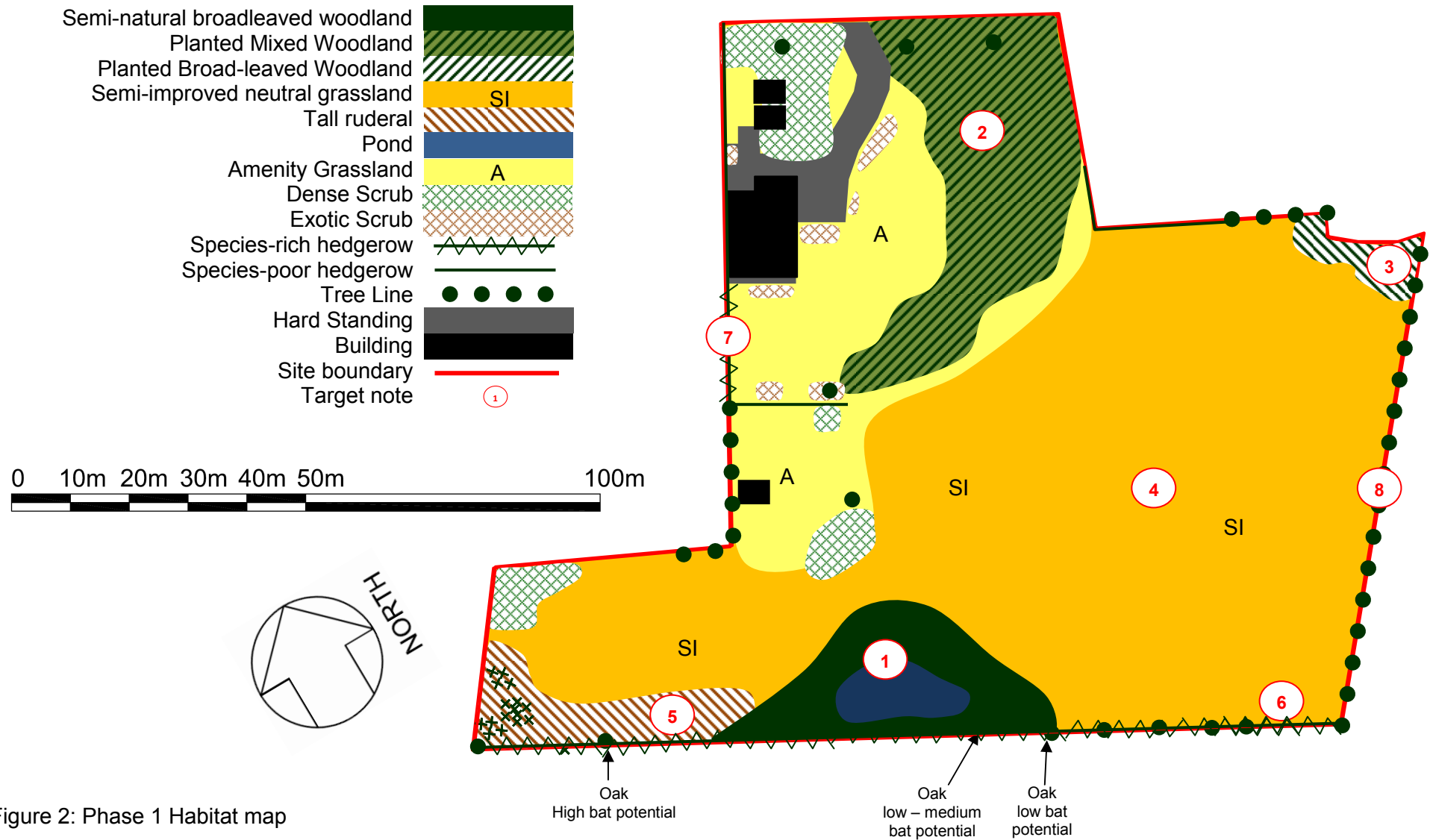


Figure 2: Phase 1 Habitat map

Semi-natural broadleaved woodland

4.4 A 0.1ha area of semi-natural broadleaved woodland has developed from the southwest boundary hedge around a pond (see Figure 2, target note 1). Two mature pedunculate oak *Quercus robur* are present, originally forming part of the hedgerow. The majority of the canopy is immature and



supports locally abundant grey willow *Salix cinerea* and frequent pedunculate oak and ash *Fraxinus excelsior*. The understorey supports locally abundant blackthorn *Prunus spinosa*, dog rose *Rosa canina* and bramble *Rubus fruticosus* alongside frequent hawthorn *Crataegus monogyna*, holly *Ilex aquifolium*, grey willow and ash. The field-layer is species-poor supporting locally abundant common nettle *Urtica dioica*, locally frequent cleavers *Galium aparine* and occasional rough-stalked meadow-grass *Poa trivialis* and hedge woundwort *Stachys sylvatica*.

Planted mixed woodland

4.5 A 0.2ha area of planted mixed woodland is located in the northeast of the site (see Figure 2, target note 2). The woodland supports both native and exotic species and garden shrubs have been planted along the northern edge. Two mature pedunculate oak and a single mature exotic oak *Quercus* sp



are present. The canopy supports locally abundant beech *Fagus sylvatica* and occasional pedunculate oak, Leyland cypress *Cupressus leylandii* and cedars *Cedrus* sp. The understorey supports locally frequent holly and occasional cherry laurel *Prunus laurocerasus*, hawthorn and rhododendron sp. The field-layer supports a number of native woodland plants including locally abundant dog's mercury *Mercurialis perennis* and pignut *Conopodium majus* and occasional bluebell *Hyacinthoides non-scripta*. Large patches of the field-layer are dominated by garden bluebell *Hyacinthoides non-scripta* x *H. Hispanica* with less frequent Spanish bluebell *Hyacinthoides hispanica*.

Planted broadleaved woodland

- 4.6 A small patch of mid-aged planted broadleaved woodland is located in the eastern corner of the site (see Figure 2, target note 3). The canopy supports locally frequent aspen *Populus tremula*, pedunculate oak and ash, with an understorey dominated by bramble. The field-layer is generally species-poor with locally abundant common nettle *Urtica dioica*, frequent cleavers and occasional herb Robert *Geranium robertianum*.



Dense scrub

- 4.7 Two patches of dense scrub are present on site (see Figure 2), both of which support locally dominant to abundant blackthorn. The patch on the western boundary of the site is beginning to develop into semi-natural broadleaved woodland with frequent ash (see image to right). Common nettle is frequent in both areas of scrub. Dense scrub provides suitable habitat for nesting birds.



Dense scrub provides suitable habitat for nesting birds.

Semi-improved neutral grassland

- 4.8 The majority of the central and southern section of the site is dominated by semi-improved neutral grassland (see Figure 2, target note 4). The field is managed as a hay meadow with a single hay cut with no aftermath grazing. The botanical composition of the grassland resembles MG5 *Cynosurus cristatus* – *Centaurea nigra* grassland; however the sward is a poor example and relatively species-poor. The sward supports abundant to locally abundant sweet vernal grass



Anthoxanthum odoratum, red fescue *Festuca rubra*, Yorkshire fog *Holcus lanatus* and meadow foxtail *Alopecurus pratensis*, alongside frequent to locally frequent black knapweed *Centaurea nigra*, field woodrush *Luzula campestris*, red clover *Trifolium pratense*, meadow buttercup *Ranunculus acris*, common bird's-foot-trefoil *Lotus corniculatus*, common sorrel *Rumex acetosa*, lady's smock *Cardamine pratensis* and pignut.

Amenity grassland

- 4.9 Amenity grassland is present around residential properties on site and intensively managed as a lawn with frequent mowing and a short sward (see Figure 2). The botanical composition resembles the semi-improved grassland although grasses are more abundant.



Pond

- 4.10 A pond is present within the semi-natural broadleaved woodland located along the southwest boundary of the site (see Figure 2, target note 1). The surface area measures approximately 100m² with a maximum depth of 0.5m and it appears there is a relatively large drawdown zone. No fish were present and wildfowl impact was considered minimal. The majority of the banks are heavily shaded, however floating sweet-grass *Glyceria fluitans* is abundant in the centre of the pond and a small stand of yellow flag iris *Iris pseudacorus* is present. Common duckweed *Lemna minor* was abundant.



- 4.11 A great crested newt survey was carried out in 2010. No great crested newts were recorded.
- 4.12 An additional small plastic pond is located in one of the gardens. The pond does not provide suitable habitat to support breeding great crested newts.

Tall ruderal

- 4.13 A small area of tall ruderal habitat has developed in the western corner of the site (see Figure 2, target note 5). A section of the habitat has recently been cut-back and regeneration of tall ruderal and scattered scrub is vigorous. Himalayan balsam *Impatiens glandulifera* has been recorded in this



area and is beginning to spread into the nearby hedgerow. Additional species include locally abundant common nettle and cleavers and frequent to locally frequent Russian comfrey *Symphytum x uplandicum* and bramble.

Garden shrubbery

- 4.14 Garden shrubberies are frequent around the residential properties. The habitat supports typical non-native shrubs including rhododendron, mock orange *Choisya* sp, barberry *Berberis* sp and *Hebe* sp. The shrubbery provides suitable habitat to support nesting birds.

Intact species-rich hedgerow with trees

- 4.15 A 165m long stretch of species-rich hedgerow with trees runs along the southwest boundary of the site (see Figure 2, target note 6). The hedgerow supports frequent mature and over-mature pedunculate oaks including a single tree with high potential to support roosting bats and two additional trees



with low to medium potential. Features associated with trees with potential to support bats include natural holes, hollows and cavities and flaking bark. The hedgerow supports locally abundant holly and frequent pedunculate oak, hazel *Corylus avellana*, hawthorn, elder *Sambucus nigra*, blackthorn and ash. The field-layer is species-poor supporting locally frequent common nettle, common ivy *Hedera helix*, dog's mercury *Mercurialis perennis* and barren brome *Anisantha sterilis*.

- 4.16 An additional 30m long stretch of intact species-rich hedgerow with tress is located partway along the northwest boundary of the site (see Figure 2, target note 7). The planted hedgerow is regularly clipped and includes a number of non-native species including locally abundant garden privet *Ligustrum ovalifolium* and infrequent cultivated



apple *Malus domestica*. Native species include abundant beech, occasional field maple *Acer campestre* and infrequent holly, pedunculate oak, ash and hawthorn. The field-layer supports abundant common ivy and occasional herb Robert.

Intact species-poor hedgerow

- 4.17 Two sections of intact non-native species-poor hedgerow are present on site (see Figure 2), both of which are frequently clipped. The longer of the two hedgerows measures 70m and supports locally abundant cherry laurel and Leyland cypress.

Tree-line

- 4.18 Two sections of tree-line are present on site (see Figure 2). The longer of the two sections measures 75m and runs along the southeast boundary of the site (see Figure 2, target note 8). The line supports locally abundant pedunculate oak and occasional ash, beech and whitebeam *Sorbus aria*. A single oak



located in the southwest of the line is over-mature and has recently dropped a major limb; however the tree does not include features suitable to support roosting bats. The field-layer supports locally abundant common ivy and pignut frequent to locally frequent ground elder *Aegopodium podagraria*, common nettle and bramble. Additional woodland plants recorded included infrequent bluebell, woodruff *Galium odoratum* and lords-and-ladies *Arum maculatum*.

Building

- 4.19 Two residential properties are present on site, both of which are currently inhabited. The buildings have pitched roofs with gaps beneath tiles and loft spaces are present in Hanburys. Additional outbuildings include garages and sheds. The buildings provide suitable habitat to supports roosting bats.

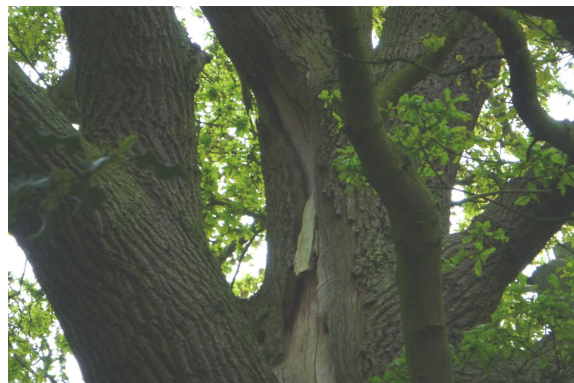


Species

Bats

- 4.20 The house at Hanburys supports brown long-eared bats in the loft space (what appears to be small numbers over many years) and pipistrelle species between tiles and felt. The house, carports and garden room at The Old Orchard have potential to support bats.

- 4.21 The hedgerow running along the southwest boundary of the site supports a pedunculate oak single tree with high potential to support roosting bats and two additional oak trees with low to medium potential (see Figure 2, target note 6). Features associated with trees with potential to support bats include natural holes, hollows and cavities and flaking bark (see image above).



- 4.22 Bat species will use woodland and grassland for foraging and commute along site boundaries and through the site.
- 4.23 All bats and their roosts are protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and by The Conservation of Habitats and Species Regulations 2010. Further enforcement has been provided by The Countryside and Rights of Way Act 2000.

Badger

- 4.24 No badger setts or evidence of use by badgers was recorded within the site boundary or close proximity to the site during the extended phase 1 habitat survey. The Hertfordshire Biological Records Centre does not currently hold any recent badger records for the site or within 1km from the site boundary.
- 4.25 Badger is a protected species under the Protection of Badgers Act 1992 which makes it an offence to wilfully kill, injure, take, possess or cruelly ill-treat a badger, or to attempt to do so; or to recklessly interfere with a sett. Further enforcement has been provided by The Countryside and Rights of Way Act 2000.

Dormouse

- 4.26 The species-rich hedgerow running along the southwest boundary of the site and associated semi-natural broadleaved woodland immediately adjacent to the hedgerow provide suitable habitat to support dormouse. The Hertfordshire Biological Records Centre holds a 1985 record for dormouse within 1km from the site boundary. No recent records exist within 1km.

Reptiles

- 4.27 Potential habitats on site that provide suitable reptile habitat include semi-improved neutral grassland, hedge, scrub and woodland edge and tall ruderal.
- 4.28 Common species of British reptiles (grass snake, slow-worm, common lizard and adder) are protected against killing and injury under the Wildlife and Countryside Act 1981 (as amended). Further enforcement has been provided by The Countryside and Rights of Way Act 2000.

Amphibians

- 4.29 A pond is present in the semi-natural broadleaved woodland located along the southwest boundary of the site (see Figure 2, target note 1). The pond provides suitable habitat to support great crested newts and a great crested newt habitat suitability index was scored for the pond. The pond scored 0.60 indicating that it has average suitability to support great crested newts (see Table 1 below).

Table 1: Habitat suitability index score

| Suitability indices | Pond (target note 1) |
|----------------------|----------------------|
| SI1 - Location | 1 |
| SI2 - Pond area | 0.2 |
| SI3 - Pond drying | 1 |
| SI4 - Water quality | 0.67 |
| SI4 - Shade | 0.2 |
| SI6 - Fowl | 1 |
| SI7 - Fish | 1 |
| SI8 - Ponds | 0.37 |
| SI9 - Terr'l habitat | 1 |
| SI10 - Macrophytes | 0.6 |
| HSI | 0.60 |

- 4.30 Great crested newt surveys carried out for the pond by *CSa Environmental Planning* between April and May 2010 and in May and June 2013 concluded that great crested newts were not present.
- 4.31 A small plastic garden pond is present on site. The pond does not provide suitable habitat to support great crested newts. An additional single pond is located 420m to the southeast of the site boundary. Dispersal barriers are located between the site and the pond including amenity grassland, buildings and an arable field. Due to the distance and dispersal barriers it is highly unlikely that great crested newts will use the site if present in the pond.
- 4.32 Great crested newt is protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and by The Conservation of Habitats and Species Regulations 2010. Common species of British amphibians (common frog, common toad, smooth newt and palmate newt) are protected against killing and injury under the Wildlife and Countryside Act 1981 (as amended). Further enforcement has been provided by The Countryside and Rights of Way Act 2000.

Birds

- 4.33 A number of birds were recorded during the phase 1 habitat survey including great tit, greenfinch, blackbird and blue tit. Song thrush (Red List Bird of Conservation Concern) was recorded in the species-rich hedgerow running along the southwest boundary of the site. Habitats on site that provide suitable nesting habitat include grassland, woodland, scrub, garden shrubbery, hedgerows / tree-lines and buildings.

- 4.34 Nesting birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended).

Invertebrates

- 4.35 The habitats recorded on site are relatively common and widespread and the semi-improved neutral grassland is relatively species-poor. Therefore these habitats are likely to support common and widespread species of invertebrates.
- 4.36 Rot holes and cavities within mature trees provide suitable deadwood habitat which will support saproxylic invertebrates.

5 Conclusions and Recommendations

- 5.1 An extended phase 1 habitat survey and ecological data search have been carried out to identify ecological resources and assess impacts for the proposed development of the site.

Habitats

- 5.2 Habitats present on site include semi-improved neutral grassland currently managed as a hay meadow, semi-natural broadleaved woodland, planted mixed woodland, planted broadleaved woodland, dense and scattered scrub, amenity grassland, pond, tall ruderal, garden shrubbery, species-rich hedgerow with trees, species-poor hedgerow, tree-line, buildings and hard-standing.

Grassland

- 5.3 The grassland is a poor example of MG5 *Cynosurus cristatus* – *Centaurea nigra* grassland. Lowland meadow is a UK Biodiversity Action Plan (UKBAP) Priority Habitat – Lowland meadow. Although the sward diversity is easily re-creatable, an appropriate level of biodiversity offsetting is likely to be required.

Hedgerows and tree-lines

- 5.4 The species-rich hedgerow with trees running along the southwest boundary will be retained. Mature trees within hedgerows and tree-lines will be retained. Additional boundaries will be strengthened with new planting of native tree and shrub species representative of the geographical area.

Woodland

- 5.5 Where possible, areas of semi-natural woodland and planted woodland will be retained. Mature trees within these habitats will be retained. Areas of new tree and shrub planting will be incorporated into the landscape plan. A high percentage of the planting will include the use of native species representative of the geographical area.

Pond

- 5.6 The pond will be retained and enhanced. Shading of the perimeter will be reduced and the depth of the pond will be increased while ensuring that an irregular shelving margin is retained.

Species

- 5.7 Species with potential to be affected by the proposals include bats, dormouse, reptiles and nesting birds.

Bats

- 5.8 Evidence of roosting brown long-eared bats has been recorded in Hanburys. Potential bat roosting habitat is also present in The Old Orchard.
- 5.9 Prior to registering a planning application further bat surveys of buildings to be affected by the proposals will be required to determine presence / absence, species, number of bats and status of roost sites and a mitigation strategy produced. If bat roosts are affected a Natural England EPS licence will be sought after planning permission has been granted and prior to the start of works.
- 5.10 A mature pedunculate oak tree located within the species-rich hedgerow along the southwest boundary of the site has high potential to support roosting bats (see Figure 2). Two additional pedunculate oak trees in the same hedgerow have low to medium potential to support roosting bats (see Figure 2). The trees and hedgerow will be retained and therefore no further survey work will be required. Should these trees be affected then further surveys will be required to determine presence / absence, and if present then the species, numbers and status of roosts and a mitigation strategy produced. If bat roosts are affected a Natural England EPS licence will be sought after planning permission has been granted and prior to the start of works.

Dormouse

- 5.11 If woodland and hedgerows are affected, dormice surveys may be required to ascertain presence / absence and produce a mitigation strategy if necessary.

Reptiles

- 5.12 Habitats on site that provide suitable reptile habitat include semi-improved neutral grassland, hedge, scrub and woodland edge and tall ruderal. A reptile survey will be required to determine presence / absence, species present and size of populations. If present, a reptile mitigation strategy will be required.

Nesting birds

- 5.13 Habitats on site that provide suitable nesting habitat include grassland, woodland, scrub, garden shrubbery, hedgerows / tree-lines and buildings.
- 5.14 Nesting birds and their nests are protected under the Wildlife and Countryside Act 1981 (as amended). Disturbance to nesting birds can be avoided by carrying out site clearance and demolition work outside the main bird nesting season (March to August inclusive). Birds may nest outside the main nesting period and any work that could result in nest disturbance must be delayed until birds have fledged.

Appendix A: Data Search Results



| SITE REFERENCE | SITE NAME | GRID REFERENCE | AREA(ha) | RATIFIED | DESCRIPTION |
|----------------|-----------------|----------------|----------|----------|--|
| 64/012 | Hockeridge Wood | SP979064 | 5.69 | 1997 | Former ancient woodland on Chiltern plateau of Clay-with-Flints over chalk. The woodland has largely been replanted with Beech (<i>Fagus sylvatica</i>) and a wide variety of exotic broadleaved and coniferous species, creating an arboretum. Species present include Tulip Tree (<i>Liriodendron tulipifera</i>), Holm Oak (<i>Quercus ilex</i>), Red Oak (<i>Q. rubra</i>), Scots Pine (<i>Pinus sylvestris</i>), Norway Spruce (<i>Picea abies</i>), Corsican Pine (<i>Pinus nigra</i> ssp. <i>laricio</i>) and larch (<i>Larix</i> spp.). Some relict mature Beech, Ash (<i>Fraxinus excelsior</i>) and Pedunculate Oak (<i>Quercus robur</i>) remain. A diverse remnant woodland ground flora is recorded including Bluebell (<i>Hyacinthoides non-scripta</i>), Dog's Mercury (<i>Mercurialis perennis</i>), Moschatel (<i>Adoxa moschatellina</i>), Yellow Archangel (<i>Lamium galeobdolon</i>), Wood Sorrel (<i>Oxalis acetosella</i>), Primrose (<i>Primula vulgaris</i>), Broad Buckler-fern (<i>Dryopteris dilatata</i>) and Wood Spurge (<i>Euphorbia amygdaloides</i>). Wildlife Site criteria: Ancient woodland fragment with restorable elements of its semi-natural character including some semi-natural canopy and ancient features; a small wood fragment is shown on Bryant (1822); woodland indicators. |
| 64/016 | Brickhill Green | SP986067 | 3.12 | 1997 | Mixed old secondary woodland with several different stand types and many ancient woodland indicators. The wood is bisected by a road and is composed mainly of Pedunculate Oak (<i>Quercus robur</i>), Beech (<i>Fagus sylvatica</i>), Silver Birch (<i>Betula pendula</i>), Ash (<i>Fraxinus excelsior</i>) and Sycamore (<i>Acer pseudoplatanus</i>) with an understorey of Holly (<i>Ilex aquifolium</i>), Elder (<i>Sambucus nigra</i>), Blackthorn (<i>Prunus spinosa</i>) and Hawthorn (<i>Crataegus monogyna</i>). The ground flora is dominated by Bramble (<i>Rubus fruticosus</i> agg.), Bracken (<i>Pteridium aquilinum</i>) or Common Nettle (<i>Urtica dioica</i>) with a number of indicator species recorded, mainly Bluebell (<i>Hyacinthoides non-scripta</i>) with additional species such as Dog's Mercury (<i>Mercurialis perennis</i>), Giant Fescue (<i>Festuca gigantea</i>), Wood Meadow-grass (<i>Poa nemoralis</i>), Wood Sedge (<i>Carex sylvatica</i>) and Hairy-brome (<i>Bromopsis ramosa</i>). A pond and small dry pits add habitat diversity. Wildlife Site criteria: Old secondary woodland with a semi-natural canopy and varied structure; >2 ha; woodland indicators. |
| 64/017 | Hockeridge | SP982058 | 8.6 | 1997 | Ancient semi-natural woodland strip with a mixed canopy mainly of Beech (<i>Fagus sylvatica</i>), Sycamore (<i>Acer pseudoplatanus</i>) and Common Lime (<i>Tilia x</i> |

| SITE REFERENCE | SITE NAME | GRID REFERENCE | AREA(ha) | RATIFIED | DESCRIPTION |
|----------------|-----------|----------------|----------|----------|--|
| | Bottom | | | | <p>europaea) with occasional English Elm (<i>Ulmus procera</i>), Ash (<i>Fraxinus excelsior</i>), Hornbeam (<i>Carpinus betulus</i>), Pedunculate Oak (<i>Quercus robur</i>) and Horse-chestnut (<i>Aesculus hippocastanum</i>). Common Lime, Hornbeam and English Elm are present also as coppice, with some Hazel (<i>Corylus avellana</i>) coppice in the understorey. Some planted larch (<i>Larix sp.</i>) is present. The wood supports a diverse ground flora with many woodland indicators recorded including Bluebell (<i>Hyacinthoides non-scripta</i>), Giant Fescue (<i>Festuca gigantea</i>), Yellow Archangel (<i>Lamiastrum galeobdolon</i>), Wood Melick (<i>Melica uniflora</i>), Wood Millet (<i>Milium effusum</i>), Wood Meadow-grass (<i>Poa nemoralis</i>), Pignut (<i>Conopodium majus</i>), Wood Sorrel (<i>Oxalis acetosella</i>), Woodruff (<i>Galium odoratum</i>) and Moschatel (<i>Adoxa moschatellina</i>). A ditch and bank is present along the eastern boundary. Wildlife Site criteria: Ancient woodland with some semi-natural canopy and field evidence suggesting an ancient origin; shown on Bryant (1822) and 1st Ed 1 to 1 mile OS; >1 ha; woodland indicators.</p> |

| Common Name | Scientific Name | Group | Sample Location | Location Name | Date | European | UK_Legal | NERC | BAP2007 | IUCN |
|-------------------------|--|-----------------------|--------------------------------|----------------------------------|-------------|----------|-------------------------|---------|-------------------|--------------------|
| Common Toad | Bufo bufo | amphibian | SP90T | | 1985 | | | Sect.41 | BAP:2007 | |
| Box | Buxus sempervirens | flowering plant | SP90T | Rossway | 1988 | | | | | NR(vp), RLGB.DD |
| White Helleborine | Cephalanthera damasonium | flowering plant | SP90Y | Berkhamsted: garden, by beech | Jun-96 | | | Sect.41 | BAP:2007 | RLGB.VU |
| Hound's-tongue | Cynoglossum officinale | flowering plant | SP90Y | Berkhamsted: pavement | 1995 | | | | | RLGB.Lr(NT) |
| Dwarf Spurge | Euphorbia exigua | flowering plant | SP90Y | Ashlyns area | 1987 - 1988 | | | | | RLGB.Lr(NT) |
| Bluebell | Hyacinthoides non-scripta | flowering plant | SP90T | Rossway (east) | 1987 - 1999 | | WCA8 | | | |
| Bluebell | Hyacinthoides non-scripta | flowering plant | SP90Y | Ashlyns area | 1987 - 1999 | | WCA8 | | | |
| Bluebell | Hyacinthoides non-scripta | flowering plant | SP90X No VC | Harriott's End area | 1987 - 1999 | | WCA8 | | | |
| Garden Solomon's-seal | Polygonatum multiflorum x odoratum = P. x hybridum | flowering plant | SP90T | Hockeridge Bottom | 1988 | | | | | |
| Lime | Tilia platyphyllos x cordata = T. x europaea | flowering plant | SP90X No VC | Harriott's End area | 1987 - 1999 | | | | | |
| Lime | Tilia platyphyllos x cordata = T. x europaea | flowering plant | SP90Y | Ashlyns area | 1987 - 1999 | | | | | |
| Small Heath | Coenonympha pamphilus | insect - butterfly | | Coppins Close, Berkhamsted | 16/08/2009 | | | Sect.41 | BAP:2007 | RLGB.Lr(NT) |
| White-letter Hairstreak | Satyrrium w-album | insect - butterfly | | March Chapel Farm | 26/07/1999 | | | Sect.41 | BAP:2007 | RLGB.EN |
| Dusky Thorn | Ennomos fuscantaria | insect - moth | Hockeridge Wood | | 1938 | | | Sect.41 | BAP:2007 | |
| Galium Carpet | Epirrhoe galiata | insect - moth | Hertfordshire | Berkhamsted | 1937 | | | Sect.41 | BAP:2007 | |
| Autumnal Rustic | Eugnorisma glareosa | insect - moth | Hertfordshire | Berkhamsted | 1933 | | | Sect.41 | BAP:2007 | |
| Spinach | Eulithis mellinata | insect - moth | Hertfordshire | Berkhamsted | 1937 | | | Sect.41 | BAP:2007 | |
| Barred Tooth-striped | Trichopteryx polycommata | insect - moth | Northchurch Common | | 1937 | | | Sect.41 | BAP:2007 | |
| Cinnabar | Tyria jacobaeae | insect - moth | Long Green | | 26/07/2002 | | | Sect.41 | BAP:2007 | |
| Fountain Pocket-moss | Octodicerias fontanum | moss | Hertfordshire | Berkhamsted, GUC, Rising Sun | 21/06/2006 | | | | | |
| Common Lizard | Zootoca vivipara | reptile | Berkhamsted Railway Cutting | | 1993 | | WCA5/9.1k/l | Sect.41 | BAP:2007 | |
| West European Hedgehog | Erinaceus europaeus | terrestrial mammal | SP90Y | | 1985 | | | Sect.41 | BAP:2007 | |
| Eurasian Badger | Meles meles | terrestrial mammal | SP90X | | 1985 | | PBA | | | |
| Hazel Dormouse | Muscardinus avellanarius | terrestrial mammal | SP90Y | | 1985 | HSD4 | WCA5/9.1k/l, WCA5/9. | Sect.41 | BAP:2007, LBAP | |
| Pipistrelle | Pipistrellus pipistrellus | terrestrial mammal | Greenland Stud Farm Area | | 27/06/1992 | HSD4 | WCA5/9.1k/l, WCA5/9. | | | |
| Brown Long-eared Bat | Plecotus auritus | terrestrial mammal | Hockeridge Wood | | 12/07/1991 | HSD4 | WCA5/9.1k/l, WCA5/9. | Sect.41 | BAP:2007 | |

Appendix B: Bibliography

- Bat Conservation Trust (2012) *Bat Surveys – Good Practice Guidelines*.
- Bibby, C. J., Burgess, N. D., Hill, D. A. and Mustoe, S. H. (2005) *Bird Census Techniques*.
- Department for Communities and Local Government (2012) *National Planning Policy Framework*
- English Nature (2001) *Great crested newt mitigation guidelines*.
- English Nature (2004) *Bat mitigation guidelines*.
- EEC *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive, 92/43/EEC*
- Foster, J and Barr, J (1998) *The Herpetofauna Worker's Guide 1998*. Froglife, Halesworth.
- Harris *et al* (1989) *Surveying Badgers*.
- Hill, D., Fasham, M., Tucker, G., Shewry, M. and Shaw, P. (2005) *Handbook of Biodiversity Methods*.
- HMSO (1995) *Biodiversity: The UK Steering Group Report*.
- HMSO *Protection of Badgers Act 1992*.
- HMSO *The Conservation of Habitats and Species Regulations 2010*
- HMSO *The Natural Environment & Rural Communities Act 2006*.
- HMSO *Wildlife & Countryside Act 1981* (as amended).
- Institute of Ecology and Environmental Management (2006) *Guidelines for Ecological Impact Assessment in the United Kingdom*.
- Institute of Ecology and Environmental Management (2007) *Guidance on Survey Methodologies*.
- Institute of Environmental Management and Assessment (1995) *Guidelines for Baseline Ecological Assessment*.
- Joint Nature Conservation Committee (1990) *Handbook for Phase 1 Habitat Survey: A Technique for Environmental Audit*.
- Joint Nature Conservation Committee (revised 2003) *Herpetofauna Workers' Manual*.
- RSPB (1998) *Bird Monitoring Methods*.
- RSPB *et al* (2009) *The Population Status of Birds in the UK Birds of Conservation Concern*.
- EEC *Guidance document on the strict protection of animal species of Community interest under the Habitats Directive, 92/43/EEC*