



EXTENDED PHASE 1 HABITAT SURVEY REPORT

BERRY HILL ROAD, ADDERBURY

REC REFERENCE: 103828EC1R1

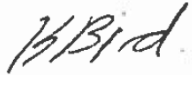




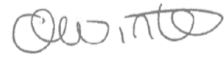


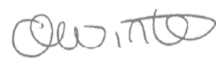
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EXECUTIVE SUMMARY

Site Address	Berry Hill Road, Adderbury, Banbury, OX17 3HF
Grid Reference	SP 469 348
Site Area	Approximately 3.9 ha
Current Site Use	The site is currently used for agricultural purposes as a horse paddock and stables.
Adjacent Site Use	The site lies on the edge of Adderbury along Berry Hill Road which forms the southern boundary. It is adjacent residential properties along part of the western boundary. The eastern boundary is defined by an existing established mature tree line with open field beyond that but limited by the A4260, which 'frames' the settlement to the west. A disused railway line is located approximately 180 m to the north of the site. The river Cherwell is located approximately 100 m to the north east of the site.
Designated Sites	It is not anticipated that this development will have any effect on any designated sites due to the distance and presence of anthropogenic barriers.
Habitat Features	<p>The following habitat features within the site and immediately adjacent to the site (within the 30m zone of influence) were identified:</p> <ul style="list-style-type: none">▶ Grassland;▶ Hedgerows;▶ Tall ruderal;▶ Bare ground;▶ Scattered Trees; and,▶ Buildings
Conclusions and Recommendations	<p>The site was found to have some ecological value for species groups of amphibians, bats, and birds. Mitigation requirements are detailed at the end of this report, as well as recommended enhancements.</p> <p>In line with the NPPF, the report also includes suggestions for a number of additional biodiversity enhancements that could be included, and these are detailed at the end of this report.</p>





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1. INTRODUCTION

1.1 Background

Resource and Environmental Consultants Ltd (REC) have been commissioned by Hollins Strategic Development to undertake an Extended Phase 1 Habitat Survey of the land off Berry Hill Road, Adderbury; hereafter referred to as the 'site'. The site is proposed to accommodate a residential development.

1.2 Objectives

The purpose of the updated Extended Phase 1 Habitat Survey was to identify:

- ▶ The major habitats present;
- ▶ The potential for legally protected species to be present; and,
- ▶ Additional ecological surveys likely to be required.

The updated Extended Phase 1 Habitat Survey included a desktop review, consultation and a site visit. The results of this review were used to assess the nature conservation importance of the site. The potential for each habitat to support protected species was also noted. An Extended Phase 1 Habitat Survey does not constitute a full survey for protected species to standard survey methodologies, but is used as a tool to recommend which surveys are required for protected species (or other species of significant nature conservation interest). Recommendations for further ecological surveys are made at the end of the report.

1.3 Site Description

The site lies on the edge of Adderbury along Berry Hill Road which forms the southern boundary. It is adjacent residential properties along part of the western boundary. The eastern boundary is defined by an existing established mature tree line with open field beyond that but limited by the A4260, which 'frames' the settlement to the west. A disused railway line is located approximately 180 m to the north of the site. The river Cherwell is located approximately 100 m to the north east of the site.

The site is currently used for agricultural purposes, with a horse paddock within the centre of the site and stables are located to the north east. The site is bordered by hedgerows and scattered trees.

Please refer to drawing 103828-001 for an approximate site location plan.





2. SURVEY METHODOLOGY

2.1 Data Study and Consultation

The desktop study involved conducting database searches for statutory and non-statutory designated sites, legally protected species and features of interest within and immediately surrounding the site within a 2km radius. The central grid reference of the parcel was used as the central point of all searches. The baseline conditions were based on a review of existing available

- ▶ MAGIC (Multi-Agency Geographical Information for the Countryside) website;
- ▶ Ordnance Survey mapping (to identify potentially notable habitats);
- ▶ Aerial photography (e.g. google mapping);
- ▶ UK Biodiversity Action Plan (UKBAP); and,
- ▶ Consultation with the local biological records centre.

2.2 Habitat Survey

The Extended Phase 1 Habitat Survey of the site was carried out on the 26th June 2017 by Katie Bird (MEnvSci, GradCIEEM) and Celia Barlow (BSc, MSc). Weather conditions on the day were warm and dry. The field survey comprised a walkover of the land and habitats present, with a classification of the habitats to Phase 1 Habitat Survey standard, following the 'Preliminary Ecological Appraisal' methodology as set out in the 'Guidelines for Preliminary Ecological Appraisal' (Chartered Institute of Ecology and Environmental Management [CIEEM], 2012), which is a development of the method described in the 'Handbook for Phase 1 Habitat Survey – a technique for environmental audit' (Joint Nature Conservation Committee, 2010). The Extended Phase 1 Habitat Survey provides information on the habitats in the survey area and identifies actual or potential presence of legally protected or otherwise notable species/habitats in or where appropriate, adjacent to the site.

The main habitats within the site were mapped and are shown at an appropriate scale on Drawing No. 103828-002 - Extended Phase 1 Habitat Plan.

Target notes (more detailed descriptions of a particular area in terms of habitat and species composition or means of highlighting a particular feature of ecological interest), are given in Appendix 1.

Plant names follow 'New Flora of the British Isles' (Stace, 2011). The common and scientific name of each of the botanical species is provided when first mentioned in the text, but only the common name is stated thereafter. All species identified during the site survey are listed in Appendix 2. In addition to establishing the baseline ecological interest within the area, the survey intended to identify areas where further surveys may be required, during the appropriate season.





2.3 Protected Species Assessment

The potential of the site to support legally protected or national/local BAP species was assessed from field observations carried out during the site walkover and combined with the results of the desk top study. The site was inspected for indications of the presence of protected species as follows:

- ▶ The presence of nesting habitat for breeding birds, such as mature trees, dense scrub, hedgerows and buildings and/or field margins suitable for ground nesting birds, and evidence of bird nesting including bird song, old nests, faecal marks etc;
- ▶ The presence of features in, and on trees, indicating potential for roosting bats such as fissures, holes, loose bark and ivy and those associated with buildings such as cavities, roof voids, hanging tiles, unenclosed soffits etc. Direct evidence such as the presence of bats, staining, droppings and feeding remains was also looked for;
- ▶ Evidence of badger, including setts, runs, snuffle holes and hairs;
- ▶ Scrub/grassland mosaic and potential hibernation sites for reptiles;
- ▶ Suitable habitat for dormice, such as woodland, scrub and dense/species-rich hedgerows, particularly when connected to suitable habitats across the wider landscape;
- ▶ Assessment of any on-site ponds and surrounding terrestrial habitat as to their potential to support great crested newts and other amphibians; and,
- ▶ Assessment of water bodies, such as ditches and streams as to their potential to support water vole and/or otter.

The likelihood of occurrence of any protected and/or invasive species is ranked as follows and relies on habitat suitability and an evaluation of existing data:

Rank	Evaluation
Negligible	While presence cannot be absolutely discounted, the site includes very limited or poor quality habitat for a particular species or species group. There may be no local returns from a data search and the surrounding habitats are considered unlikely to support wider populations of a species/species group. The site may also be outside or peripheral to the known natural range for a species/species group.
Low	Habitats within the site are of poor to moderate quality for a given species/species group. There are few or no returns from the data search, but presence cannot be discounted on the basis of national distribution, the nature of surrounding habitats, habitat fragmentation or recent on-site disturbance, etc.
Medium	Habitats within the site are of moderate quality providing opportunities for a given species/species group. Desk study reveals local occurrence or site is within the national distribution and with suitable surrounding habitat. Factors limiting the likelihood of





	occurrence may include small habitat area, habitat isolation, and/or disturbance.
High	Habitats within the site are of high quality for a given species/species group. Desk-top study provides evidence of local occurrence. The site is within/peripheral to a national or regional stronghold and/or has good quality surrounding habitat and good connectivity.
Confirmed Presence	Presence confirmed from the current survey or by recent, confirmed records.

Natural England's Great Crested Newt Mitigation Guidelines (English Nature, 2001) recommend that any waterbodies within 500 m of a site and sites with suitable terrestrial habitats within 500 m of a waterbody should be assessed for great crested newt potential. However, the great crested newt Rapid Risk Assessment (RRA; from Natural England's EPSL method statement for the species) assesses habitat losses of up to 5 ha of land situated greater than 250 m from a breeding pond as 'Green: offence highly unlikely'. Thus, for sites less than 5 ha, assessing ponds up to 250 m from the site boundary is more appropriate.

The CIEEM EcIA guidelines (2016) recommend that the value or potential value of an ecological resource or feature should be determined within a defined geographical context. They recommend that the following frame of reference be used (or adapted to meet local circumstances):

- ▶ International and European;
- ▶ National;
- ▶ Regional;
- ▶ County (or Metropolitan); or
- ▶ Local.

The purpose of this assessment is to identify whether sufficient information is available to accurately assess the nature conservation value of a site for a given protected species or whether more comprehensive Phase 2 surveys for protected species are necessary.

2.4 Limitations

Ecological surveys are limited by a variety of factors which affect the presence of flora and fauna (e.g. climatic variation, season and species behaviour). A lack of evidence of a protected species during a survey does not mean that the species is absent; hence the survey also records and assesses the ability of habitats to support such species. The time frame in which the survey is implemented provides a snapshot of activity within the survey area and cannot necessarily detect all evidence of use by a species. The survey was completed in June. The timings of the habitat surveys did not present any issues when classifying habitats in this circumstance. The surveyors undertaking the habitat surveys were suitably skilled at classifying habitats and identifying plants outside of the core flowering season.





It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation can ensure the complete characterisation of the natural environment. The Extended Phase 1 habitat survey does not constitute a full botanical survey. Plant species may have been under-recorded, unidentifiable or not visible due to a number of factors including the time of year the survey was carried out.

The protected species assessment provides a preliminary view of the likelihood of protected species occurring on the site. This is based on the suitability of the habitat, known distribution of the species in the local area (provided by data searches) and any direct evidence within the survey area. It should not be taken as providing a full and definitive survey of any protected species group. It is only representative of the time the survey was carried out. Additional surveys may be recommended if, on the basis of the preliminary assessment or during subsequent surveys, it is considered reasonably likely that protected species may be present. Desk study data is not likely to be exhaustive and it is therefore possible that protected species not identified during the data search do in fact occur within the vicinity of the site.





3. BASELINE CONDITIONS

3.1 Aerial Photography and OS Maps

Aerial photography shows the site predominantly comprises an agricultural field in use as a paddock with built stables located to the east of the site. The river Cherwell is located approximately 100 m to the north east of the site. The site is connected to the surrounding countryside in the form of tree and hedgerows like most fields on the edge of settlements. Residential properties lie to the west and north of the site. A disused railway line is located approximately 180 m to the north of the site and a public right of way exists immediately to the north of the site. The presence of these features increases the likelihood of avian animals (i.e. birds and bats) being present within the local area.

Natural England's Great Crested Newt Mitigation Guidelines (English Nature, 2001) recommend that any waterbodies within 500 m of a site and sites with suitable terrestrial habitats within 500 m of a waterbody should be assessed for great crested newt potential. Two waterbodies were identified within this search area and these are discussed in Section 5, below.

3.2 Statutory and Non-Statutory Designated Sites

One statutory site was located within 1 km of the search area; Adderbury Lake Local Nature Reserves (LNR) is located approximately 760 m to the north east of the site. Adderbury Lake contains a wide diversity of invertebrates, birds, mammals and flora.

The site lies within the Impact Risk Zone of Bestmoor Site of Special Scientific Interest (SSSI) located approximately 5.2 km to the south of the site boundary. Bestmoor is an area of semi-improved floodplain meadow which has the largest known British population of narrow-leaved water-dropwort (*Oenanthe silaifolia*).

No Non-statutory sites were identified within 1 km of the site boundary.

3.3 Biodiversity Action Plans (BAP)

Consultation with Natural England's 'Magic Map' website identified areas of UKBAP habitat within 1 km of the site boundary:

- ▶ An area of costal and floodplain grazing marsh was identified approximately 650 m to the north of the site;
- ▶ Multiple areas of broadleaved woodland are located within 1 km of the site boundary, the closest was located adjacent to the north east of the site;
- ▶ A number of traditional orchards were identified within 1 km of the site boundary, the closest was located approximately 520 m to the west of the site; and,
- ▶ An area of Woodpasture and Parkland BAP Priority Habitat is located approximately 650 m to the north east of the site boundary.





4. HABITATS

4.1 Site Summary

The main habitats within each parcel are described below. The location of each habitat is shown on the Extended Phase 1 Habitat Plan (see drawing number 103828-001 and 002) and target notes are listed in Appendix 1. An indication of the species present in each habitat is listed in Appendix 2.

4.2 Bare ground

An access road was located from the south of the site towards the stable area located to the east of the site. The stable area comprised of bare ground for parking and an outdoor arena (Target Note 3). Sporadic vegetation surrounded the areas of bare ground, species included; common dandelion (*Taraxacum officinale*), white clover (*Trifolium repens*), perennial rye grass (*Lolium perenne*), yorkshire fog (*Holcus lanatus*), common thistle (*Cirsium vulgare*), red poppy (*Papaver somniferum*), common nettle (*Urtica dioica*), ribwort plantain (*Plantago lanceolata*), broadleaved dock (*Rumex obtusifolius*) and rapeseed (*Brassica napus*).

4.3 Grassland Areas

The site predominantly comprised of grassland areas, including three areas of semi-improved grassland (Target Note 5) and an area of improved grassland within the centre of the site (Target Note 4).

At the time of the survey, the grassland was overgrown at a 1 metre sward height. It is understood that this area was previously managed as improved grassland and grazed by horses. The species identified included; red clover (*Trifolium pratense*), white clover, Yorkshire fog, perennial rye grass, ribwort plantain, false oat grass (*Arrhenatherum elatius*), hawksbeard (*Crepis vesicaria*), spear thistle (*Cirsium vulgare*), purple dead nettle (*Lamium purpureum*), meadow buttercup (*Ranunculus acris*), common hogweed (*Heracleum sphondylium*), yarrow (*Achillea millefolium*), birds foot trefoil (*Lotus corniculatus*), red fescue (*Festuca rubra*), nipple wort (*Lapsana sp.*), smooth sow thistle (*Sonchus oleraceus*), common nettle, ragwort (*Jacobaea vulgaris*), broadleaved dock, common thistle, red poppy, cocks foot (*Dactylis glomerata*), cranes-bill (*Geranium pyrenaicum*), doves foot (*Geranium molle*) and common cleavers (*Galium aparine*).

The area of improved grassland within the centre of the site is used for horse training purposes. As such, this area appeared managed and less species were present. Species present included; perennial rye grass, common hogweed, yarrow, common nettle, prickly sow thistle (*Sonchus asper*), broadleaved dock, red clover, white clover, common dandelion, ragwort and Yorkshire fog.

4.4 Hedgerows and Scattered Trees

The site was bordered by intact hedgerows with scattered trees.

H1 was located to the south was unmanaged and approximately 5-6 metres tall. Species present within the hedgerow included hawthorn (*Crataegus monogyna*), black thorn (*Prunus spinosa*), hazel (*Corylus avellana*), sycamore (*Acer pseudoplatanus*), poplar (*Populus sp.*), field maple (*Acer campestre*), horse chestnut (*Aesculus hippocastanum*) and cherry laurel (*Prunus laurocerasus*). The understorey predominately comprised of bramble (*Rubus fruticosus*), ground ivy (*Glechoma hederacea*), common





ivy (*Hedera helix*), hedge bind weed (*Calystegia sepium*), common nettle and lords and ladies (*Arum maculatum*).

Hedgerow 2 (H2) and Hedgerow 3 (H3) comprised of similar species as H1. H2 bordered the site to the east and was unmanaged with an approximate height of 3 m high and 3 m wide. English oak (*Quercus robur*) and ash (*Fraxinus excelsior*) were identified within this hedgerow. H3 was unmanaged and was approximately 5-6 m tall.

Hedgerow 4 (H4) bordered the buildings located on site, to the east. The hedgerow appeared managed. Species present included; hawthorn, sycamore saplings and alder (*Alnus glutinosa*). The understory species comprised of common nettle, spear thistle, common cleavers and common ivy.

4.5 Buildings

Two structures were located within the site boundary. Building 1 (B1) comprised of a wooden stable, which was in use at the time of the survey. The structure comprised of wooden boards and a metal roof. Old nests were located within the buildings.

Building 2 (B2) comprised of a wooden shed with a metal roof.

4.6 Tall Ruderal

Tall ruderal was interspersed within the semi-improved grassland area (Target Note 7), to the south of the site. Species present included; common nettle, spear thistle, ash saplings and common thistle.

4.7 Dry Ditch

To the south of the site, a dry ditch was located within the hedgerow (Target Note 6). Ground ivy, common nettle and bramble were located within the ditch.





5. PROTECTED SPECIES

5.1 Overview

The legislation that relates to the protected species referred to in this section is included in Appendix 3. Additional species/species groups have been considered as part of this report; however, only those that occur within the same geographical range and where suitable habitats are present within or adjacent to the site are included below.

5.2 Amphibians

Background

Consultation with Thames Valley Environmental Records Centre (TVERC) highlighted one record of great crested newt (*Triturus cristatus*) within the 1 km search area. This was located approximately 680 m to the north of the site boundary.

There were a total of three waterbodies identified within 250 m of site boundary. Please refer to Figure 5.1 for the location of the waterbodies.

Figure 5.1 Location of waterbodies within 250 m of the site boundary



Waterbody Description

WB1





Waterbody 1 was located approximately 105 m to north west of the site. It was dry at the time of the survey. No aquatic vegetation was identified within the pond area, as such it is presumed to be a historic pond. WB1 was assessed as having negligible value in regards to amphibians.

Figure 5.1 WB 1 image

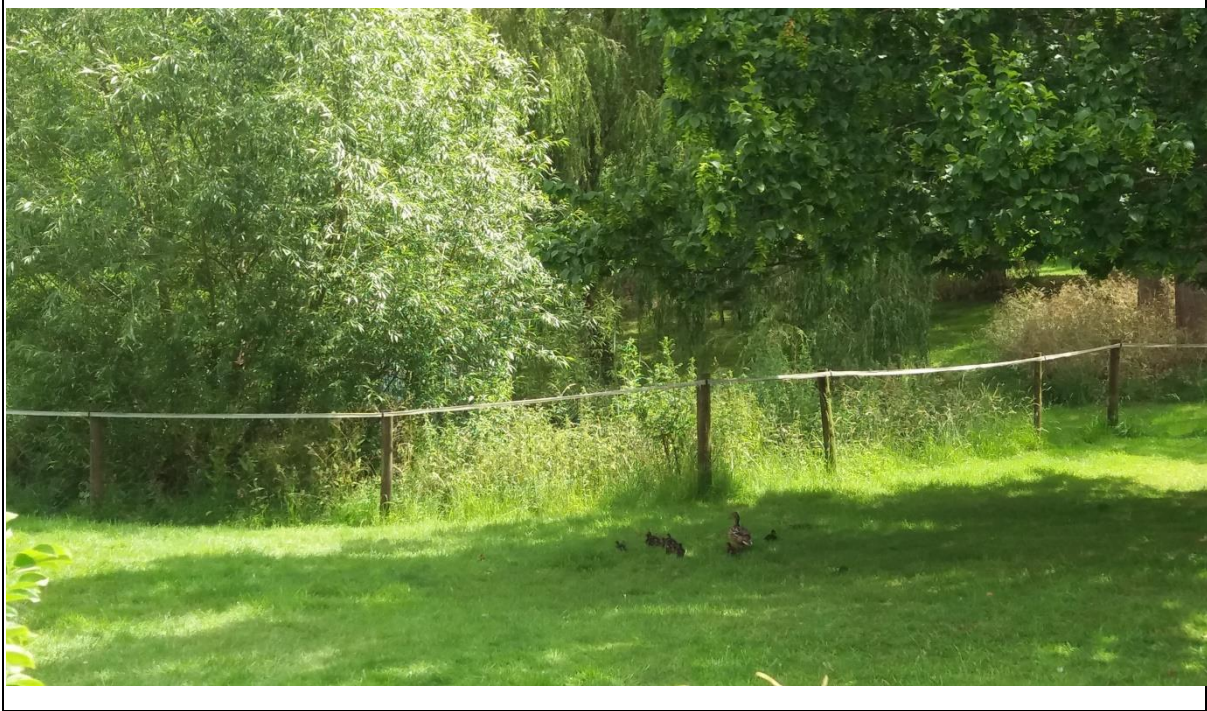


WB2

WB2 was located approximately 115 m to the north west of the site boundary. It was located within a residential garden and was surrounded by amenity grassland. Direct access could not be gained and a thorough inspection could not be carried out. Mallards were recorded utilising the pond during the time of the survey.

Figure 5.2 WB 2 image





WB3

WB3 was located approximately 130 m to the north west of the site boundary. It was located within a residential garden and was a small ornamental pond containing fish. The pond appeared man-made, bordered by stones. The waterbody was surrounded by ornamental planting and pebbled areas.

Figure 5.4 WB4 images





HSI Assessment

WB 2 & 3 were assessed for their potential to support great crested newts as per the Great Crested Newt Habitat Suitability Index (HSI; ARG UK, 2010). The HSI incorporates ten suitability indices, all of which are thought to affect the potential presence of great crested newts. Table 5.1 lists the score that the waterbodies achieved for each of these indices and calculates their subsequent HSI score.

Table 5.1 Habitat Suitability Index for Waterbodies

Pond	WB2		WB3	
SI1 - Location	A	1	B	0.5
SI2 - Pond area	10 m ²	0.1	5m ²	0.1
SI3 - Pond drying	Never	0.9	Never	0.9
SI4 - Water quality	Moderate	0.67	Moderate	0.67
SI4 - Shade	0%	1	0%	1
SI6 - Fowl	Minor	0.67	Minor	0.67
SI7 - Fish	Possible	0.67	Major	0.01
SI8 - Ponds	5	1	5	1
SI9 – Terr. habitat	Good	1	Poor	0.33
SI10 - Macrophytes	5%	0.3	5%	0.3
HSI Scores	0.57	Below Average	0.41	Poor

WB1 was assessed as having negligible ecological value in regards to amphibians. WB2 scored of 'Below Average'. It may have potential to support great crested newts and breeding amphibians but it is not of a high quality. WB3 scored 'Poor' and fish were identified within the pond. WB3 was assessed as having negligible value in regards to great crested newts. However, common amphibians may be present within WB3.

The site is connected to the waterbodies by the way hedgerows and tree lines. The unmanaged grassland features, site border features and log piles located on site (Target Note 1 and 2) could act as a sheltering and overwintering resource for the species. However, suitable habitats are located surrounding the offsite waterbodies, and it is assessed as more likely that should species exist that they would remain within those habitats, given there is limited motivation to commute south towards the site.

The site does not contain any waterbodies, and therefore does not have the potential to support species in their breeding phase. The site's value for amphibians is limited to overwintering opportunities, which in any event would be limited to the southern boundary. The majority of the site is improved grassland which is grazed by horses with negligible value for species. The ecological value of the site with regards to amphibians is within the zone of influence.

5.3 Avifauna

Consultation with TVERC identified several records of notable/protected bird species within the search area. These included kestrel (*Falco tinnunculus*), hobby (*Falco subbuteo*), golden plover (*Pluvialis apricaria*), barn owl (*Tyto alba*), swift (*Apus apus*), kingfisher (*Alcedo atthis*), green woodpecker (*Picus viridis*), swallow (*Hirundo rustica*), yellow wagtail (*Motacilla flava subsp. flavissima*), fieldfare (*Turdus pilaris*), redwing (*Turdus iliacus*), spotted flycatcher (*Muscicapa striata*), willow tit (*Poecile montana*),





marsh tit (*Poecile palustris*), lesser redpoll (*Acanthis cabaret*) and reed bunting (*Emberiza schoeniclus*).

During the site survey, a small number of common and widespread bird species were identified including blackbird (*Turdus merula*), robin (*Erithacus rubecula*), red kite (*Milvus milvus*) and magpie (*Pica pica*). In addition, a number of notable species were identified, including; swift (*Apus apus*) and swallow.

Due to the presence of hedgerows and trees, it is likely that the site supports common and widespread bird species. Based on the habitats present and the scale of the site, the site is considered to be of local importance, within the zone of influence only, with regards to birds.

5.4 Terrestrial Mammals

Consultation with the local records centre identified a number of records of Western European Hedgehog (*Erinaceus europaeus*) within the search area, the closest of which was identified approximately 350 m east of the site boundary. The site provides opportunities for shelter and foraging for hedgehog, though the habitats present on site are common within the wider area and therefore the ecological value of the site for hedgehog is assessed as local (within the zone of influence only).

Two records of otters (*Lutra lutra*) were identified in Sor Brook located approximately 340 m to the north of the site. The site does not support any water bodies and thus the likelihood of these species being present on site is negligible. The ecological value with regards to these species is negligible.

5.5 Bats

Consultation with TVERC recorded one historic record of a natterer's bat (*Myotis nattereri*) within the 1km search area. No exact location was detailed.

The site provides opportunities for foraging bats by way of the unmanaged hedgerows, scattered trees and grassland. It is anticipated that the range of vegetation on site will attract invertebrate prey for bats.

During the site survey a visual assessment of all trees and buildings within and adjacent to the site was undertaken to determine their potential to support bat roosts (as per the categories listed within the Good Practice Guidelines; Collins, 2016).

The majority of the trees within the site boundary were found to have negligible bat roosting potential, except for two mature oak trees located to the north of the site within H3. T1 was found to have number of crevices and holes on the trunk which could support roosting bats. This tree was assessed





as having moderate bat roosting potential. T2 was assessed as having low bat roosting potential based on the crevices within the tree.

B1 and B2 were made of the similar construction of wooden panelling and a metal roof. Both buildings were assessed as having negligible bat roosting potential as no bat roosting features were identified.

5.6 Reptiles

Consultation with TVERC did not find records of reptiles within the 1 km search area were found.

The majority of the site comprised of unmanaged grassland, with much of the grassland overgrown and rank which could provide opportunities for reptiles.

No signs of reptiles were observed during the site survey and no records of reptiles were identified within the search area. The site provides some opportunities for the species, and thus the ecological value of the site with regards to reptiles is therefore assessed as local (within the zone of influence only).

5.7 Invertebrates

Consultation identified one record of wall butterfly (*Lasiommata megera*) within 1 km of the search radius. This species favours short, open grassland where the ground is broken or stony. It is primarily found in coastal habitats. But can also be found on derelict land, farm tracks, railway embankments, and hedgerows.

The larval food plants of this species depends on certain grasses (family *Poaceae*), including various bents (*Agrostis* spp.), meadow grasses (*Poa* spp.), Yorkshire Fog (*Holcus lanatus*), Tor-grass (*Brachypodium pinnatum*) and Cock's-foot (*Dactylis glomerata*). The listed grass species were located on site and the habitats located on site provide optimum habitat for the species. Overall, the likelihood of the species being present within the site was assessed as moderate.

It is anticipated that the site will support a range of common invertebrates, which will be attracted to the site by grassland and boundary features. The habitats present within the site are not uncommon within the local area, and as such the sites value for notable invertebrates was assessed as of local importance.

5.8 Flora

No records of notable flora were identified within the 1 km search area. No notable species of flora were identified within the site.

The site was assessed as having negligible value for notable flora.

5.9 Invasive Species

Consultation with TVERC provided no records of invasive species within the search area.

No invasive species were identified within the site boundary during the survey.





Extended Phase 1 Habitat Survey Report
Land off Berry Hill Road, Adderbury
September 2017
103828EC1R2





6. CONCLUSIONS AND RECOMMENDATIONS

6.1 Development Proposals

Current development proposals include the construction of residential homes and associated amenity gardens. In addition, open space and a woodland corridor to the east will form part of the proposed. These areas will be managed as Ecological Enhancement Zones.

6.2 Statutory/Non-Statutory Designated Sites

It is not anticipated that the proposed development would impact upon any statutory or non statutory sites as described above due to the distance they are from the site, the presence of natural and/or anthropogenic barriers (e.g. existing residential and built up areas surrounding the site).

6.3 Habitats

The proposed development would result in the loss of common and widespread habitats, areas of grassland and bare ground which have negligible ecological value. The areas of high ecological value are to be retained to the north east of the site and will be managed to maintain and enhance the range habitats identified. An Ecological Enhancement Zone which is located to the east and south east of the site will be planted to enhance the sites ecology. This area will retain and enhance the broadleaved trees, as well as creating rides and glades to create a mosaic habitat.

All trees to be retained on site will be adequately protected using tree protection fencing following the guidance provided in 'BS 5837:20012 Trees in Relation to Design, Demolition and Construction – Recommendations'.

6.4 Protected Species

Below is a description of the potential impact to species and species groups that may be adversely affected as a result of development. The National Planning Policy Framework (NPPF) requires that developments should "contribute to conserving and enhancing the natural environment". Thus, where appropriate, recommendations have also been made to enhance the sites biodiversity for these species.

Amphibians

There are no ponds on site or in close proximity and as such the site does not have the potential to support amphibians in their breeding phase. It is possible that the site may contain a small number of common amphibians based on the connectivity features to the site and the waterbodies.

WB2 was assessed as 'Below Average' on the Habitat Suitability Index. As the site and the waterbodies are well connected, a Precautionary Working Method should be approached to minimise the any potential impacts on great crested newts and common amphibians which may utilise the hedgerows as shelter or hibernation.






Avifauna

It is not anticipated that the site supports significant numbers of notable bird species, however species such as swift and swallow were identified within the site. Nevertheless, the site provides some breeding opportunities for birds and thus, it is recommended that any vegetation removal is undertaken outside of the breeding bird season (generally considered to be March to September inclusive). However, should these works be required within the breeding bird season then it is recommended that a check for breeding birds is undertaken by a suitably experienced surveyor prior (within 24 hours) to works commencing. If a nest (or nest in construction) is found, a suitable stand-off area should be maintained until the young have fledged.

In line with the NPPF, it is recommended that any proposed tree and shrub planting for landscaping/screening purposes aims to include native fruit bearing specimens to increase foraging opportunities for birds within the site. Species such as dogwood (*Cornus sanguinea*), hazel (*Corylus avellana*), rowan (*Sorbus aucuparia*) and wild cherry (*Prunus avium*) are considered appropriate for this development as they have both aesthetic and nature conservation qualities.

Where possible, bird boxes should be installed in appropriate locations such as within landscaped areas and on retained mature. Bird boxes should include standard bird boxes as well as bird boxes specifically targeting swifts and swallows. The specifications for the proposed boxes are detailed in Table 6.2 below.

Table 6.2 Suggested Bird Boxes

Bird Box Specifications	Photograph
<p><u>Schwelger 26mm and 32mm Nest Box</u></p> <p>Height: 23cm Diameter: 16cm Weight: 3.6kg Material: Schwegler Woodcrete</p> <p>These nest boxes are appropriate for many different species of common and urban passerine bird species such as; tits, thrush and wren. They are made of woodcrete construction which is durable and long lasting, requiring significantly less cleaning than traditional nest boxes thereby lowering maintenance required. These boxes are designed to be easily hung from tree branches to make for easy installation, and are available in a range of styles and colours.</p> <p>Source: http://www.nhbs.com/title/158587/1b-schweglernest-box</p>	





<p><u>Schwegler Sparrow Terrace</u> Height: 24.5cm Diameter: 43cm Weight: 15kg Material: wood concrete</p> <p>The Schwegler Sparrow Terrace is made of a durable wood-concrete construction mix and can be fixed onto or incorporated into a wall of a building. The Sparrow Terrace can house up to three sparrow families, and 5 separate boxes, providing 15 nesting opportunities for house sparrows, will be provided. These should be incorporated into or surface fixed onto the southern or western elevations of the buildings at a minimum height of 2m.</p> <p>Source: http://www.nhbs.com/title/174850/1sp-schwegler-sparrow-terrace</p>	
<p><u>Schwegler Swift Nestbox (No. 16)</u> Height: 240mm Width: 430mm Depth: 220mm Weight: 11 kg</p> <p>This box can be installed within or on the surface of an external wall. It is to be installed an approximately 5 m from the ground. The boxes can be painted, if desired.</p> <p>https://www.arkwildlife.co.uk/Item/19157/SC-16/Schwegler_No._16_Swift_Nestbox.html?gclid=COWZvP9g9UCFdZsGwodQOYNVw</p>	

Bats

The site offers moderate resources for bats with roosting and foraging resources.

Development will result in the loss of the unmanaged habitats within the site which could result in a slight decrease in suitable foraging habitat for bats. However, it is anticipated that if the above native and species rich plants are used within landscaping proposals, that the site could actually increase in the number of invertebrates and increase as a foraging resource.


The site offers some roosting opportunities which could be lost through development. If these trees are to be lost to the development, it is recommended that the low potential bat trees are to be soft felled. The tree identified as having moderate bat roosting potential should have either a climbed inspection, or dusk emergence survey undertaken to determine if it is being utilised by roosting bats.





It is recommended to mitigate for the potential loss of bat roosting features within the site, bat boxes should be installed on the remaining mature trees along the sites boundaries. Proposed specifications for bat boxes are shown in Table 6.3 below.

Table 6. 3 Suggested Bat Boxes

Bat Box Specifications	Photograph
<p><u>1FF Schwegler Bat Boxes With Built-in Wooden Rear Panel</u></p> <ul style="list-style-type: none">• Height: 43.0 cm• Width: 27.0 cm• Depth: 14.0 cm• Entrance hole: 12.0 cm x 24.0 cm• Weight 9.5 kg <p>The Schwegler 1FF bat box is spacious enough for bats to use as a summer roost or nursery sites and is open at the bottom, allowing droppings to fall out so it does not need cleaning. The 1FF is manufactured from long-lasting Woodcrete, which is a blend of wood, concrete and clay which will not rot, leak, crack or warp, and will last for at least 20 - 25 years.</p> <p>Source: http://www.nhbs.com/title/158636/1ff-schwegler-bat-box-with-built-in-wooden-rear-panel</p>	

It is recommended that no lighting be directed at the boundary features during development, as this may discourage bats from using the features. In addition, security lighting should be pre fitted to the residential dwellings and this should be directed away from the boundary features to avoid unanticipated future impacts on the boundary features. The use of artificial lighting should aim to follow the protocols outlined in the Institute for Lighting Engineers document “Guidance for the Reduction of Obtrusive Lighting” (2005) and BCT’s “Artificial Lighting and Wildlife Interim Guidance: Recommendations to Help Minimise the Impact of Artificial Lighting” (2014) to minimise disturbance.

Reptiles

No records of reptiles were identified within the local area. However, the site offers limited resources with regards to reptiles with respect to the boundary features and log piles present at the time of survey. The Precautionary Working Method’s for GCN will appropriately mitigate for the low risk of reptiles being present within the site.





Invertebrates

One record of wall butterfly was identified within the search area. It is recommended the proposed area of open space to the north and east of the site are enhanced to maintain and improve the habitats for the species. The certain grasses (family *Poaceae*), are to be included within the Landscape Plan of the area of open space to the north and east of the site. In addition, the proposed public footpaths will provide bare ground stony habitats.

6.5 Further Biodiversity Enhancements

As required by the National Planning Policy Framework (NPPF), development should “contribute to conserving and enhancing the natural environment”. Development provides the opportunity to further enhance the site. Additional biodiversity enhancements could include:

- ▶ Provision of insect houses within retained/enhanced habitats and/or newly created gardens that increase opportunities for insects such as solitary bees, ladybirds and lacewings;
- ▶ Providing gaps under residential fences to facilitate the movement of mammals (e.g. hedgehogs) between the new gardens; and,
- ▶ Using environmentally safe wood preservatives within the new residential development (i.e. for sheds and fences etc).

6.6 Recommended Further Ecological Surveys and Mitigation

Table 6.2 summarises further ecological survey and mitigation requirements.

Table 6.2 Recommended further ecological surveys and mitigation





Species / Feature & Location	Recommended Survey/Action	Potential Impact/Mitigation Required	Survey Timing
Avifauna Vegetation	Nesting bird check prior to removal of suitable nesting bird habitats. NB: only required if works undertaken during the breeding bird season.	Disturbance of breeding birds. Area to be declared free immediately prior to site works.	March to September.
Amphibians	PWM's to follow before and during development.	Disturbance/destruction of a great crested newt.	Mrch - October
Bats	Low bat potential trees will be removed under soft fell methods. Moderate bat potential tree will be subject to a climbed tree inspection or dusk emergence survey. NB. Only required if the trees are to be removed	Disturbance/destruction of a bat roost	All year Dusk emergence survey limited to May – September.





7. REFERENCES

- ▶ ARG UK (2010). ARG UK Advice Note 5: Great Crested Newt Habitat Suitability Index. Amphibian and Reptile Groups of the United Kingdom.
- ▶ Bat Conservation Trust (2014). Artificial Lighting and Wildlife Interim Guidance: Recommendations to Help Minimise the Impact of Artificial Lighting.
- ▶ English Nature (2001). *Great crested newt mitigation guidelines*. English Nature.
- ▶ Collins, J (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edition. Bat Conservation Trust.
- ▶ Institute of Environmental Assessment (1995). Guidelines for Baseline Ecological Assessment.
- ▶ Institute of Lighting Engineers (2005). Guidance Notes for the Reduction of Obtrusive Light.
- ▶ JNCC (1990). Handbook for Phase 1 habitat survey: A technique for environmental audit. English Field Unit, Nature Conservancy Council.
- ▶ JNCC (2004). The Bat Workers Manual. 3rd Edition.
- ▶ Mitchell-Jones A, J, (2004). Bat Mitigation Guidelines, English Nature, Peterborough.
- ▶ Stace. C. A. (2011). *'New Flora of the British Isles'*. Third Edition. Cambridge University Press.







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APPENDIX 1 TARGET NOTES









APPENDIX 1 – TARGET NOTES (TN)

TN	Feature	Photograph of feature
1 & 2	Log piles located within the site boundary.	
3	Areas of bare ground to the east of the site, including an area of sand.	








<p>4</p>	<p>An improved grassland field within the centre of the site used for horse training.</p>	
<p>5</p>	<p>Majority of the site comprised of overgrown improved grassland fields.</p>	
<p>6</p>	<p>A dry ditch located to the south of the site.</p>	
<p>7</p>	<p>Scattered tall ruderal located to the south of the site.</p>	





B1	A wooden stable with a metal sheet roof.	
B2	A small wooden shed.	No photograph available.
H1	Hedgerow located to the south of the site.	
H2	Hedgerow located to the east of the site.	






H3	Large hedgerow located to the north of the site.	No photograph available.
H4	Hedgerow bordering the area of bare ground.	
T1	Oak with low bat roosting potential	





T2	Oak with moderate bat roosting potential.	
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APPENDIX 2 SPECIES LIST





APPENDIX 2 – INDICATIVE SPECIES LIST

Flora

Field maple (*Acer campestre*)
Sycamore (*Acer pseudoplatanus*)
Yarrow (*Achillea millefolium*)
Horse chestnut (*Aesculus hippocastanum*)
Alder (*Alnus glutinosa*)
Lords and ladies (*Arum maculatum*)
False oat grass (*Arrhenatherum elatius*)
Rapeseed (*Brassica napus*).
Hedge bind weed (*Calystegia sepium*)
Spear thistle (*Cirsium vulgare*)
Hazel (*Corylus avellana*)
Hawthorn (*Crataegus monogyna*)
Hawksbeard (*Crepis vesicaria*)
Cocks foot (*Dactylis glomerata*)
Red fescue (*Festuca rubra*)
Ash (*Fraxinus excelsior*)
Common cleavers (*Galium aparine*)
Doves foot (*Geranium molle*)
Cranes-bill (*Geranium pyrenaicum*)
Ground ivy (*Glechoma hederacea*)
Common ivy (*Hedera helix*)
Common hogweed (*Heracleum sphondylium*)
Yorkshire fog (*Holcus lanatus*)
Ragwort (*Jacobaea vulgaris*)

Fauna

Swift (*Apus apus*)
Robin (*Erithacus rubecula*)
Swallow (*Hirundo rustica*)
Red kite (*Milvus milvus*)
Partridge (*Perdix perdix*)
Magpie (*Pica pica*)
Blackbird (*Turdus merula*)





Purple dead nettle (*Lamium purpureum*)

Nipple wort (*Lapsana sp.*)

Perennial rye grass (*Lolium perenne*)

Birds foot trefoil (*Lotus corniculatus*)

Red poppy (*Papaver somniferum*)

Ribwort plantain (*Plantago lanceolata*)

Poplar (*Populus sp.*)

Cherry laurel (*Prunus laurocerasus*)

Black thorn (*Prunus spinosa*)

English oak (*Quercus robur*)

Common nettle (*Urtica dioica*)

Meadow buttercup (*Ranunculus acris*)

Bramble (*Rubus fruticosus*)

Broadleaved dock (*Rumex obtusifolius*)

Prickly sow thistle (*Sonchus asper*)

Smooth sow thistle (*Sonchus oleraceus*)

White clover (*Trifolium repens*)

Red clover (*Trifolium pratense*)

Common dandelion (*Taraxacum officinale*)





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APPENDIX 3 PROTECTED SPECIES LEGISLATION





APPENDIX 3 – PROTECTED SPECIES LEGISLATION

Breeding Birds

Under the Wildlife & Countryside Act 1981 (as amended), a wild bird is defined as any bird of a species that is resident in or is a visitor to the European Territory of any member state in a wild state. Game birds, however, are not included in this definition (except for limited parts of the Act). They are covered by the Games Acts, which fully protect them during the closed season.

All birds, their nests and eggs are protected by law and it is an offence, with certain exceptions, to;

- ▶ Kill, injure or take any wild bird;
- ▶ Take, damage or destroy the nest of any wild bird while it is being built or in use;
- ▶ Take or destroy the eggs of any wild bird; and,
- ▶ Possess or control any wild bird or egg unless obtained legally.

Birds listed under Schedule 1 of the Wildlife & Countryside Act 1981 (as amended) are afforded additional protection, which makes it an offence to disturb a bird while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

The UK's birds can be split in to three categories of conservation importance - red, amber and green.

Red list criteria:

- ▶ Globally threatened;
- ▶ Historical population decline in UK during 1800–1995;
- ▶ Severe (at least 50%) decline in UK breeding population over last 25 years, or longer-term period (the entire period used for assessments since the first BoCC review, starting in 1969); or,
- ▶ Severe (at least 50%) contraction of UK breeding range over last 25 years, or the longer-term period.

Amber list criteria:

- ▶ Species with unfavourable conservation status in Europe (SPEC = Species of European Conservation Concern);
- ▶ Historical population decline during 1800–1995, but recovering; population size has more than doubled over last 25 years;
- ▶ Moderate (25-49%) decline in UK breeding population over last 25 years, or the longer-term period;
- ▶ Moderate (25-49%) contraction of UK breeding range over last 25 years, or the longer-term period;
- ▶ Moderate (25-49%) decline in UK non-breeding population over last 25 years, or the longer-term period;
- ▶ Rare breeder; 1–300 breeding pairs in UK;
- ▶ Rare non-breeders; less than 900 individuals;
- ▶ Localised; at least 50% of UK breeding or non-breeding population in 10 or fewer sites, but not applied to rare breeders or non-breeders; or,
- ▶ Internationally important; at least 20% of European breeding or non-breeding population in UK (NW European and East Atlantic Flyway populations used for non-breeding wildfowl and





waders respectively).

Green list species occur regularly in the UK but do not qualify under any or the above criteria.

Herpetofauna

All native herpetofauna receive some legal protection in Great Britain arising from the following legislation:

- ▶ Wildlife and Countryside Act 1981 (as amended) (in Great Britain);
- ▶ Nature Conservation (Scotland) Act 2004;
- ▶ Conservation of Habitats and Species Regulations 1994 (as amended) (in Scotland); and,
- ▶ Conservation of Habitats and Species Regulations 2010 (in England & Wales).

In England and Wales they are all listed on schedule 5 of the 1981 act and the more threatened species (the great crested newt *Triturus cristatus*, natterjack toad *Epidalea calamita*, pool frog *Pelophylax lessonae*, sand lizard *Lacerta agilis* and smooth snake *Coronella austriaca*) are also listed on schedule 2 of the 2010 Regulations, which designate them 'European protected species' (In Scotland natterjack toads and great crested newts are protected through the Conservation of Habitats and Species Regulations, 2004).

The legislation effectively creates two levels of protection. The European protected species receive strict protection, making it an offence to capture, possess, disturb, kill, injure, or trade in individuals of these species. In addition it is an offence to damage or destroy the places they use for breeding or resting.

The remaining reptile species (common lizard *Lacerta vivipara*, slow worm *Anguis fragilis*, adder *Vipera berus* and grass snake *Natrix natrix*) are protected against killing, injuring and unlicensed trade only. Whilst the remaining amphibian species (smooth newt *Lissotriton vulgaris*, palmate newt *Lissotriton helveticus*, common frog *Rana temporaria* and common toad *Bufo bufo*) are protected only against unlicensed trade. The legislation applies to all life stages of these animals.

Bats

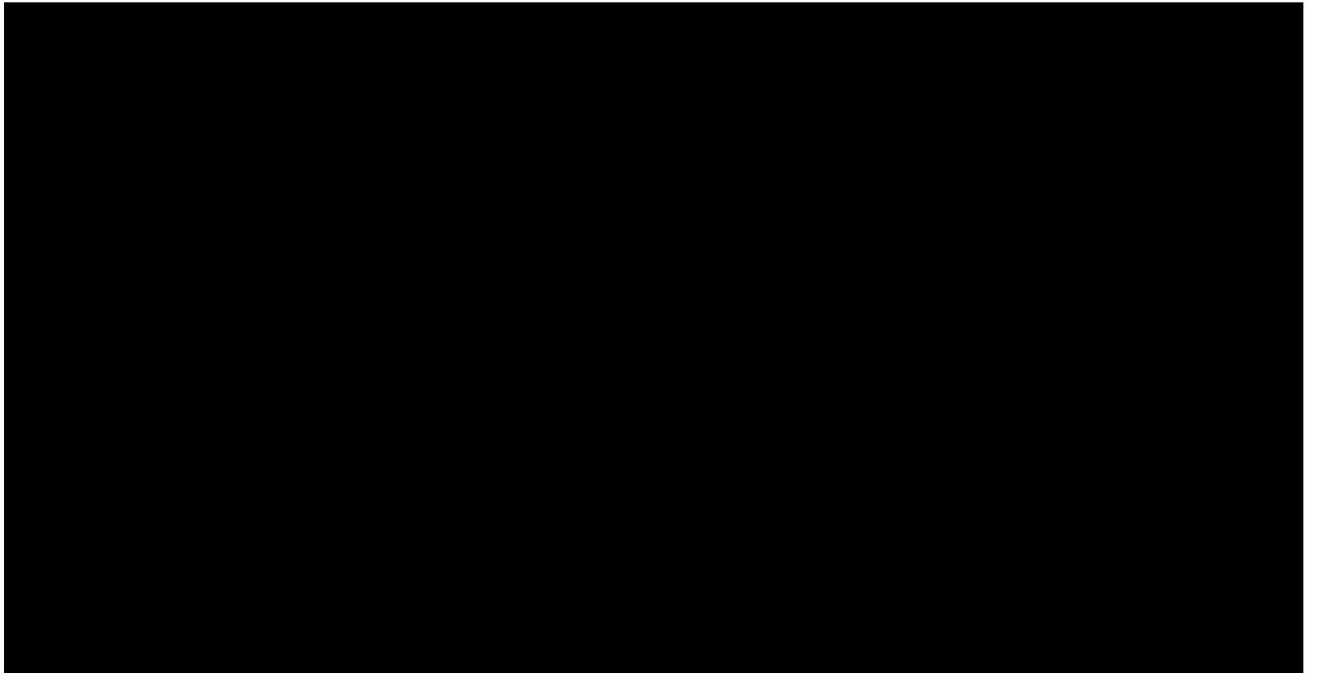
All bat species are afforded full protection under UK and European legislation, including the Wildlife and Countryside Act 1981 (as amended), the Countryside and Rights of Way Act (2000) and the Conservation (Natural habitats &c.) Regulations 2010 (as amended). Together, this legislation makes it illegal to:

- ▶ Intentionally or deliberately take, kill or injure a bat;
- ▶ Damage to, destruction of, and obstruction of access to, a bat roost; and,
- ▶ Disturbance of a bat occupying a roost.
- ▶ A bat roost is defined in the legislation as "any structure or place which a bat uses for shelter





or protection”.





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DRAWINGS



Site Location Plan

Revision	Date	Issue	Drawn	Authorised
RO	04.07.2017	1	KB	OW
Client:		Job Number:	Scale:	
Tollins Strategic Land		001	N/A	
Job Title:		Site Location Plan		
Land off Berry Hill Road, Adderbury				

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