



THE BAT CONSULTANCY

PHASE 1 HABITAT SURVEY
LAND AT CHERHILL
PARK LANE, CHERHILL, WILTSHIRE

DECEMBER 2015

THE BAT CONSULTANCY The Cottages, Wagg Drove, Langport, Somerset, TA10 9ER
t01458 252 794 einfo@thebatconsultancy.com www.thebatconsultancy.co.uk

Proprietor: Caroline Wright

PHASE 1 HABITAT SURVEY

LAND AT CHERHILL

Park Lane, Cherhill, Wiltshire

December 2015

CONTENTS

1.0	SUMMARY	2
2.0	INTRODUCTION	3
3.0	SITE DESCRIPTION	4
4.0	METHODOLOGY	6
5.0	LIMITATIONS OF SURVEY	9
6.0	SURVEY RESULTS	10
7.0	POTENTIAL IMPACTS & RECOMMENDATIONS	17
8.0	ECOLOGICAL ENHANCEMENT OPTIONS	22
9.0	REFERENCES	27
10.0	LEGISLATION	28
	APPENDIX:	31
	PHASE 1 HABITAT MAP	
	SITE PHOTOS	

1 SUMMARY

- 1.1.1 The Bat Consultancy was commissioned by Cherhill Village Hall Committee, to carry out a Phase 1 Habitat Survey of land at Park Lane, Cherhill, Wiltshire SN11 8XN.
- 1.1.2 The potential impacts upon protected wildlife species and habitats, as a result of the planned development, are considered to be 'low'.
- 1.1.3 The continuation of the existing grazing regime has been recommended. This will maintain the short grassland sward and will reduce the likelihood for reptiles to be present within the grassed areas of the site prior to development.
- 1.1.4 It is understood that the development will not affect the field boundaries. However, the gated entrance within the west boundary may require enlarging by a couple of metres to allow access for site traffic during and post development. It will be considered necessary to carry out a bird nesting check on this hedge prior to removal and a precautionary hand-search for reptiles by an ecologist. See 'Recommendations' for further information.
- 1.1.5 Ecological enhancement options have been considered and include the planting and plumping out of hedgerows, grass buffers around the boundaries, conservation grassed areas, tree and shrub planting and a grassed roof; with the incorporation of low lighting levels, bird boxes and dormouse boxes.

2 INTRODUCTION

2.1.1 The Bat Consultancy was commissioned by Cherhill Village Hall Committee to carry out an ecological survey of land at Park Lane, Cherhill, Wiltshire SN11 8XN.

2.1.2 The aim of the survey was to identify any potential ecological constraints and opportunities on the site in relation to a forthcoming planning application for the erection of a community village hall and associated parking and landscaping. The aim of the study was:

- To provide a description of the existing habitat types across the whole site including the boundary features;
- Determine the presence and location of any ecologically valuable areas; and
- Identify the presence of any protected species or habitats that may support these species.

2.1.3 The survey was carried out in accordance with those set out in the *Phase 1 Habitat Survey Handbook - a technique for environmental audit*. JNCC (2010). The survey was conducted on 14th December 2015 by an experienced ecologist when the weather conditions were dry, overcast and still, with an air temperature of approximately 10°C.

2.1.4 Ecological constraints and potential mitigation measures (where required), that could reduce the ecological impact of any potential damaging works, have been established and any opportunities for enhancement measures that could be incorporated have been identified.

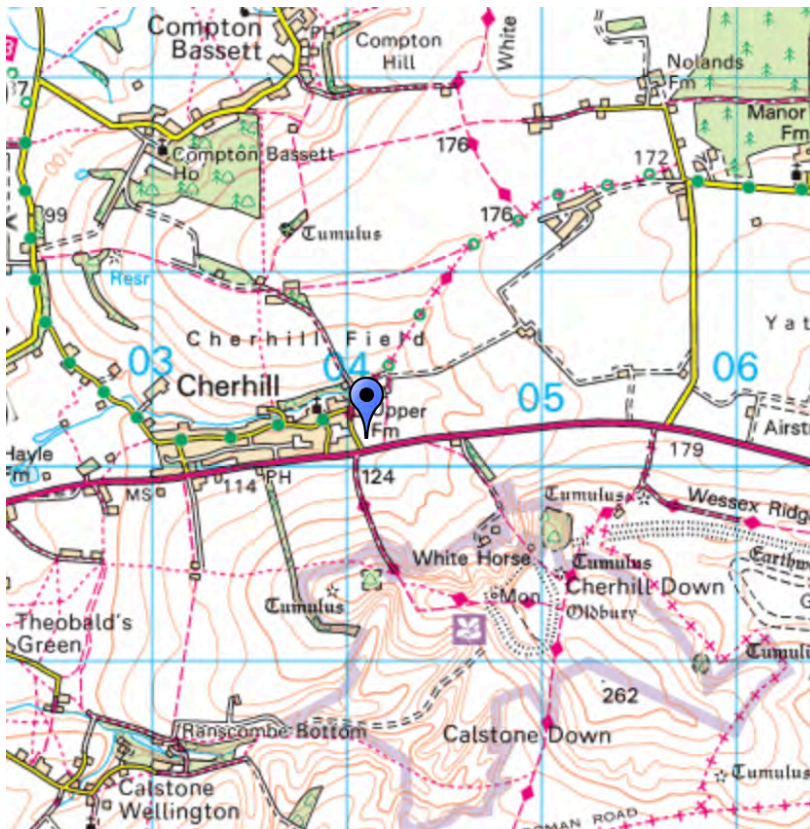
3 SITE DESCRIPTION

- 3.1.1 The proposed development site lies within the North Wessex Downs area of Outstanding Natural Beauty (AONB) and sits at the southeast edge of the small village of Cherhill, immediately to the north of the A4 (Chippenham to Marlborough). The site is approximately 0.69 hectares in size and is dominated by undulating improved pasture that was grazed short at the time of survey. Boundary habitats include a single width native hedgerow at the west and stock fencing to the south and north. The eastern length of the site is that of the infield improved grassland. Common nettle *Urtica dioica* can be found in a few small patches throughout the site where the ground has been disturbed at some point. The site is located at central OS Grid Reference SU 0409 7013 (*Figure 1*).
- 3.1.2 Land directly adjacent to site comprises of a continuation of the improved grassland to the east, the A4 to the south with its overgrown ditched and banked verges, Park Lane road to the west and a small strip of tall ruderals beneath native trees and shrubs to the north.
- 3.1.3 Beyond the adjacent land sit the houses and associated gardens of Cherhill village to the north and west, arable farmland to the east and south. Cherhill Down, which is home to the White Horse and obelisk called the Lansdowne Monument, are located approximately 1km to the south of the site. The Down is notified as Calstone & Cherhill Downs Site of Special Scientific Interest (SSSI), an extensive area of herb-rich chalk grassland of exceptional botanical quality (unfavourable, recovering).
- 3.1.4 The wider countryside is that of arable and pasture with networks of hedgerows with River's Brook running through the village approximately 300m to the north, joining the River Marden approximately 3.5km west of Cherhill at Quemerford and Calne.

Figure 1: Map showing the boundaries of the site



Figure 2: Map showing the location of the site



4 METHODOLOGY

4.1 Data search

4.1.1 Statutory designated sites within proximity of the Site were searched using the Natural England/DEFRA web-based MAGIC database (www.MAGIC.gov.uk). A data search was requested from Wiltshire & Swindon Biological Records Centre (WSBRC) for records of designated sites and protected wildlife species. The National Ordnance Survey maps (1:25,000) and aerial images of the Site were examined online (bing.com/maps and maps.google.co.uk).

4.2 Field Survey

4.2.1 A habitat field survey (site walkover) was carried out based on standard field methodology set out in the *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit*, Joint Nature Conservation Committee 1990 (2010 edition), to establish the presence and distribution of habitat types within the site and identify potential ecological constraints to development.

4.3 Protected and Notable Species

4.3.1 Field signs indicating the presence of protected species and species of conservation concern, such as those listed on the UK Biodiversity Action Plan (UKBAP) were recorded. Habitats were also assessed for their potential to support such species.

4.3.2 Relevant legislation pertaining to those species potentially present on site have been included in this report.

Badgers

4.3.3 A search was made for badger setts, and sett entrances were checked for signs of use by badgers or other mammals. Setts were classified accordingly i.e. 'active', 'inactive' (debris in the entrance indicates not recent activity, but the tunnel and entranceway could easily be cleared and brought back in to use) or 'disused' (largely or completely blocked and not in use for at least the previous year).

4.3.4 Field signs such as 'snuffle holes' (holes dug by badgers when searching for invertebrates), 'dung pits' (small pits in which badgers deposit their faeces) and 'day nests' (nests of bedding material made by badgers for sleeping above ground) were also mapped.

Bats

- 4.3.5 *Trees*: An inspection of trees on site was carried out from the ground, using close focussing binoculars, to record any signs of use of the tree by bat species. Features such as cracks, cavities, decaying limbs, loose bark and dense ivy were inspected. A search was made for droppings underneath these features.
- 4.3.6 *Habitat*: The habitats within the site were appraised for their suitability for use by foraging and commuting bats.

Dormice

- 4.3.7 The hedgerows were assessed during the walkover for their suitability to support dormice. In addition, any direct sightings, nests or feeding signs (i.e. gnawed hazelnuts) observed during the site visit were also recorded.

Otters and Water Voles

- 4.3.8 Watercourses are absent from within and surrounding the site. The nearest watercourse/river is not located close enough to the site for there to be a possibility of use by these species. There is no further need for their consideration within this survey report.

Great Crested Newts

- 4.3.9 Ponds within 500m of the Site were searched for using OS maps and aerial imagery, and assessed for the suitability for supporting amphibian species where possible. Terrestrial habitats were also assessed for the suitability for foraging and sheltering amphibians.
- 4.3.10 Any ponds present were appraised under the criteria of the Habitat Suitability Index *Oldham et. al (2000)*.
- 4.3.11 The great crested newt (GCN) Habitat Suitability Index is calculated using ten numerical or categorical environmental variables:

1. Geographic location
2. Pond area
3. Pond permanence
4. Water quality
5. Shade
6. Waterfowl impact
7. Fish impact
8. Pond count
9. Terrestrial habitat
10. Macrophyte proportion

4.3.12 The methods used to measure each variable are outlined in: ARG UK (2010). For any pond, the ten variables are calculated using either field or map data. Each variable is converted to a Suitability Index (SI) score, which varies on a scale from 0.01 to 1. The numerical field scores are converted to SI's by reading-off values from a graph.

4.3.13 The overall HSI value for each pond is calculated as the geometric mean of the ten suitability indices, derived by multiplying the ten SI scores together and taking the tenth root of this number. i.e. $HSI = (SI1 \times SI2 \times SI3 \times SI4 \times SI5 \times SI6 \times SI7 \times SI8 \times SI9 \times SI10)^{1/10}$.

4.3.14 To assess the pond's suitability for great crested newts, the overall HSI value is classified into one of five categories:

HSI Pond suitability
< 0.5 = poor
0.5-0.59 = below average
0.6-0.69 = average
0.7-0.79 = good
> 0.8 = excellent

Reptiles

4.3.15 Features on site were assessed for their potential for providing suitable habitats for use by reptile species. Where present, suitable existing refugia were searched, and the ground was scanned whilst walking to look for basking species.

Birds

4.3.16 Vegetation, such as hedgerows and grassland, were assessed for their suitability to support nesting birds and were searched for old nests. Any birds seen or heard during the survey were noted.

Invasive Species

4.3.17 Invasive species, such as Japanese knotweed *Fallopia japonica* and Himalayan Balsam *Impatiens glandulifera* were searched for and mapped if present.

Other Notable Species and Species of Conservation Concern

4.3.18 Field signs indicating the presence of other species of conservation concern, such as hares and hedgehogs (UKBAP) were recorded. Habitats were also assessed for their potential to support such species.

5 SURVEY LIMITATIONS

5.1 General

- 5.1.1 This survey does not take into account seasonal differences, or any species that might move onto the site subsequently. The absence of a particular species cannot definitely be confirmed by a lack of signs, merely that there was no indication of its presence during this survey. Ecological surveys cannot rule out the potential for a species to move onto the site following a survey.
- 5.1.2 This report is provided for information purposes and does not constitute legal advice. The client is advised to consult full texts of relevant documents and obtain legal guidance if required.
- 5.1.3 If any action or development has not taken place on this land within twelve months of the date of this report, the findings of this survey should be reviewed and updated appropriately.

6 RESULTS

6.1 Data search – Designated Sites

International Designations

6.1.1 The Natural England web based search did not identify international statutory designated wildlife sites on or within 2km radius of the site. The data records held by WSBRC did not return data on these sites either.

National Designations

6.1.2 The Natural England web based search and data records supplied by WSBRC identified Calstone & Cherhill Downs SSSI approximately 0.5km south of the site. This is an extensive area of herb-rich chalk grassland of exceptional botanical quality (Unit 1 - unfavourable, recovering; Unit 2 – favourable, Unit 3 – unfavourable, recovering). The flora supports a diverse population of invertebrates including an outstanding assemblage of butterflies and a nationally rare cricket. The site comprises one of the best remaining examples in North Wiltshire of unimproved downland, a habitat, which has been largely lost due to either neglect or the use of intensive agricultural methods.

6.1.3 North Wessex Downs AONB encompasses the site and was created to give a protective coherence to one of the largest tracts of chalk downland in southern England and perhaps one of the least affected by development. It includes the bright, bare uplands of the Marlborough, Berkshire and North Hampshire Downs and sweeps on its western edge to a crest above the White Horse Vale.

Local Designations

6.1.4 Local Wildlife Sites within 2km include:

- Calstone Wood - Approximately 1.5km southwest of the site. A steep-sided broadleaved woodland at the headwaters of the River Marden with several springs.
- Ranscombe Bottom - Approximately 1.5km south of the site. Unimproved calcareous grassland on the steep banks of a complex of chalk coombes with associated mesotrophic grassland in valley bottoms.

- South Farm Coombe - Approximately 1.9km southwest of the site. Unimproved calcareous grassland on the steep banks of a complex of chalk coombes with associated mesotrophic grassland in valley bottoms.
- Calstone Chalk – Approximately 2km south of the site. A small area of unimproved calcareous grassland buffering a much larger grassland SSSI
- Cherhill Down – Approximately 1.2km southeast of the site. A large chalk site on a moderate, north facing slope with arable reversion, mesotrophic grassland and scrub above and species-rich calcareous grassland below, especially on the extensive earthworks
- Cherhill Down South - Approximately 1.5km southeast of the site. Unimproved calcareous grassland, species-rich reversion grassland and successional scrub on the top and south facing slopes of a large chalk ridge
- Home Wood - Approximately 1.3km northwest of the site. Ancient semi-natural broadleaved woodland and historic parkland on rolling chalk land
- Marsh Lane Mead - Approximately 1.4km northwest of the site. An attractive little hay meadow of neutral grassland, which forms part of a domestic garden. Includes areas of very high diversity and herb-cover
- Calstone & Cherhill Downs are cared for as a National Trust reserve as part of their Wiltshire Landscape portfolio. They are considered particularly important because of the Iron Age archaeology and for its diverse floral and insect life.

6.2 Data Search – Protected and Notable Species

6.2.1 A search requested from WSBRC revealed a number of protected species recorded within 2km of the site boundary within the last **10 years**. No records were held for the site itself or immediately adjacent to the site.

Badger

6.2.2 A dead badger was recorded on the main road immediately to the south of the site in 2009 (see 'Survey Results' for further information), however there are no other records held adjacent to the site or for the site itself.

6.2.3 A main badger sett is located within 1km-2km approx 1.5 km of the site.

6.2.4 There are a number (7) of other badger setts within 1-2km of the site as observations made over 30 years ago but none adjacent to or for the site itself.

6.2.5 There are a further 26 badger records (not setts) within the 2km of the site, the nearest of which is located approximately 700m from the site boundary. The exact locations are not disclosed.

Bats

6.2.6 Records held for bats were not held adjacent to or for the site itself. Records held within the last 10 years within 2km of the site boundary include:

- Brown long-eared bat *Plecotus auritus* (1997-2013) x6 roosts at approximately 1km west of the site, and 1-2km north/northwest and northeast of the site (location not given, 1km grid ref only).
- Common pipistrelle *Pipistrellus pipistrellus* (2006) roosting at approximately 1km west of the site (location not given, 1km grid ref only).
- Soprano pipistrelle *P. pygmaeus* (2007) grounded at approximately 1.8km west of the site.
- Pipistrelle species *P. Sp* (2009 & 2012) x2 roosts at approximately 0.6km northwest of the site and 1-2km north/northwest of the site (location not given, 1km grid ref only).
- Natterers *Myotis nattereri* (2009) roosting at approximately 1-2km west of the site (location not given, 1km grid ref only).
- Serotine *Eptesicus serotinus* (2009) roosting at approximately 1-2km north of the site (location not given, 1km grid ref only).
- Noctule *Nyctalus noctula* (2013) commuting at approximately 1-2km northeast of the site (location not given, 1km grid ref only).

Reptiles

6.2.7 Records were not held adjacent to or for the site itself. Results showed:

- Common lizard *Zootoca vivipara* (2007-2013 (small population)) the closest record being at approximately 0.9km to the south of the site.
- Slow-worm *Anguis fragilis* (2013 (small population)) at approximately 1.5km northeast of the site.

Great Crested Newts

6.2.8 Records were not held for great crested *Triturus cristatus* newts within or adjacent to the site. The closest pond found during the search of OS maps was located in private gardens approximately 0.7km (over 500m) to the northwest of the site. It is not known if this pond is suitable for breeding great crested newts.

6.2.9 A record is held for great crested newts being relocated from an old swimming pool to a pond on land approximately 0.7km northwest of the site.

6.2.10 Other Amphibians - The closest record for common frog *Rana temporaria* is a Cherhill Monument dew-pond at approximately 1.5km to the southeast of the site and common toad *Bufo bufo* was recorded at 1.9km west of the site.

Dormouse

6.2.11 Records were not held for dormouse *Muscardinus avellanarius* within the last 45 years.

Birds

6.2.12 Records held for birds within 1km of the site boundary since 2005 include: Grey partridge, quail, hobby, golden plover, lapwing, skylark, fieldfare, linnet, yellow hammer, corn bunting, and little egret.

Invertebrates

6.2.13 Records held for invertebrates within 1km of the site boundary since 2005 included the following: Small red damselfly, wart-biter, cinnabar, chalk carpet, latticed heath, grayling, wall, small heath, marsh fritillary, white-letter hairstreak, Adonis blue, chalk hill blue, small blue, grizzled skipper, dingy skipper, Duke of Burgundy, Devil's-Bit Jewel Beetle, Hawthorn Jewel Beetle, Bastard-toadflax Bug.

Other Mammals

6.2.14 Records held within 1km of the site boundary include brown hare *Lepus europaeus*, a UK, and Wiltshire Biodiversity Action Plan species; and hedgehog *Erinaceus europaeus* and harvest mouse *Micromys minutus*, which are UK BAP species.

Plants

6.2.15 There are numerous plants associated with chalk grassland and broadleaved woodland on the Local Wildlife Sites and SSSI's within 2km of the site boundary.

6.3 Site Survey Results

6.3.1 The habitat descriptions below should be read in conjunction with the Phase 1 Habitat Map (*Figure 3*) and Target Notes, which are included in the Appendix at the end of this report.

Improved Grassland

- 6.3.2 Improved short grassland dominates the site. This habitat type is typically species poor and was grazed short at the time of survey to a sward height of 5cm. The land is undulating with a south-facing slope at the north of the site, flat in the south with slight undulations in the west. A few patches of nettle were present, likely due to disturbed ground.
- 6.3.3 The sward comprises of dominant perennial rye grass *Lolium perenne*, frequent cock's-foot *Dactylis glomerata* and Yorkshire fog *Holcus lanatus* with occasional creeping bent *Agrostis stolonifera*. Herbaceous species include locally dominant nettle *Urtica dioica* with occasional broad-leaved dock *Rumex obtusifolius*, spear thistle *Cirsium vulgare*, white clover *Trifolium repens*, creeping buttercup *Ranunculus repans* and dandelion *Taraxacum agg.*

Boundary Features

- 6.3.4 *Boundary 1 (west boundary)* – This species-poor hedge, without trees, is dominated by hawthorn *Crataegus monogyna* with occasional elder *Sambucus nigra* and rarely occurring field maple *Acer campestre* and bramble *Rubus fruticosus*. The hedge is approximately 1.75m in height. An understory is absent with a ground-layer dominated by ivy *Hedera helix* and occasional nettle and hedge bedstraw *Gallium mollugo*. This hedgerow is of limited value for wildlife with some opportunity for nesting birds during the breeding season.
- 6.3.5 *Boundary 2 (south boundary)* – This is defined by a stock-fence. Outside of this lies the grass verge of the main road with a banked and heavily overgrown and knotted vegetated ditch, which is culverted for some of the length of the boundary. A small number of shrubby trees are scattered along the outer of the boundary, these include elder and hawthorn species. Ground flora beneath the fence is that of the improved grassland with abundant nettle, cock's-foot *Dactylis glomerata* and Yorkshire fog *Holcus lanatus* with rarely occurring teasel *Dipsacus sylvestris*.
- 6.3.6 *Boundary 3 (east boundary)* – This is a continuation of the improved field and has no dividing features such as a hedge, trees or stock-fence. Grass and forb species are as described above (Boundary 1).
- 6.3.7 *Boundary 4 (north boundary)* – This is defined by a stock-fence. Outside of this lies a mix of hawthorn, elder, sycamore trees at an approximate height of 4m with an ivy covered ground layer. This habitat has some potential for nesting birds, foraging bats and sub-

optimal conditions for commuting reptiles, which could lead to individuals basking along its southern edge.

6.4 Protected Species and Species of Conservation Concern

Badgers

6.4.1 Signs of badger and their setts were not observed during the site survey.

Bats

6.4.2 *Trees:* Trees with features suitable for roosting bats are not present upon the site or within the site boundary.

6.4.3 *Foraging & commuting habitat:* The field boundary to the north and west may provide some potential for foraging species. Habitat beyond the site boundary, to the north and northwest, holds more suitable potential for foraging bats by means of grassed gardens, trees, hedgerows woodland and the River's Brook.

Reptiles

6.4.4 Habitats present within the site were considered to be sub-optimal for reptile species due to the short grass sward leaving them open to predation. The west hedge could provide habitat suitable for commuting reptiles and the north boundary and the overgrown ditch with associated grass verge, outside of the southern site boundary, could potentially support small-medium populations of reptiles such as slowworm *Anguis fragilis*.

Great Crested Newts

6.4.5 The site and adjacent habitat did not provide signs such as sedges, rushes and other vegetation that tolerates wet feet, which could be a location for a seasonal pond. Seasonal and permanent ponds were not found to be located within 500m of the site during the search of OS aerial maps and the grass sward of the site is permanently grazed to a short length. Therefore the site is considered as suboptimal for great crested newts and other amphibian species during their terrestrial stage.

Dormice

6.4.6 The species diversity, and structural diversity of the boundary hedgerows, did not indicate suitability for this species. A nest search was made for hibernating dormice and for the remains of summer nests and did not reveal use by this species. The boundary hedge has not been planned for high impact disturbance; A small section (2-3m) of the west

boundary hedge, located immediately adjacent to the current entrance gateway, may be removed to widen the entrance to the site.

Birds

- 6.4.7 Signs of birds having nested during the breeding season (March-September) were not observed. However, the hedgerow and trees surrounding the site hold potential for common bird species to be present at any time during the nesting season.
- 6.4.8 The site is not considered suitable for ground nesting bird species with its short exposed habit.

Invertebrates

- 6.4.9 Habitats and their associated shrubs and flora were of poor quality (improved grassland) and therefore suitability for invertebrates other than common and widespread are unlikely to be present. Due to the time of year invertebrates were not observed on the day of survey.

Other Species of Conservation Concern

- 6.4.10 Flora and fauna species of conservation concern were not noted during the survey.

Invasive Species

- 6.4.11 Invasive species were not observed during the survey and are therefore considered absent from the site and site boundaries.

7 POTENTIAL IMPACTS AND RECOMMENDATIONS

7.1.1 This section analyses the survey findings providing a value and significance of the habitats present and of the protected species identified within the area to be affected by the proposals. Any potential impacts that the proposals may have upon sensitive ecological receptors identified during the survey have been assessed.

7.2 Overview of Development Proposals

7.2.1 The survey has been carried out to prepare for the possibility of a planning application for the erection of a new village hall with an associated parking area.

7.2.2 The exterior light levels on Site are to be carefully designed to keep light spill and unnecessary light pollution to a minimum level (see below).

7.3 Desk Study

7.3.1 Impacts resulting from the development are considered unlikely to result in any ecological adverse effects on the designated sites and wildlife species identified by the desk study. A soft landscape plan, including the planting of a new hedgerows, the plumping out of the existing hedge, tree / shrub plantings to soften hard standing, and the possible inclusion of a grass roof, would enhance the site for wildlife.

7.4 Site Survey

Habitats

7.4.1 ***Improved Grassland*** - The improved grassland field is of low ecological value but may provide some value for wildlife such as common invertebrates and a possible small population of reptiles such as slowworm along the edge of the field boundaries.

7.4.2 For recommendations made with regard to the clearance of the grass, refer to '*Reptiles*' below.

7.4.3 ***Hedgerows/Field Boundaries*** - The field boundaries are considered to have a low intrinsic nature conservation value due to minimal structural diversity, minimal availability of year round food, the low species diversity, and limited potential habitat they may provide for wildlife species.

- 7.4.4 It is understood that the development will not affect the field boundaries. However, the entrance within the west boundary may require enlarging by a couple of metres to allow site traffic to access the site during clearance, development and post development and for viewing the main road on safe entry and exit.
- 7.4.5 For further recommendations for the removal of the small section of hedgerow, please see 'Birds' below.
- 7.4.6 **General** - It is recommended that a grass easement of at least two metres be maintained from all field boundaries. This will prevent damage to any of the field boundaries during construction and minimise disturbance to species that might occupy these habitats such as common reptiles. It is also recommended, if possible that hedgerows are maintained at a height of no less than 2m as this is considered to be particularly important for encouraging use by native British wildlife especially commuting and foraging bats.
- 7.4.7 Within the landscape design of the development, a mix of grassed areas should be maintained and native fruiting shrubs and trees should be incorporated.

Wildlife Species

Bats

- 7.4.8 The data search carried out by WSBRC did not reveal bat roost on or adjacent to the site. The majority of bat records were given for approximately 0.6km-1km from the site where habitat is dominated by trees, gardens, river, hedges and buildings for roosting within. The planned development is not considered to impact upon these bat species should a sensitive lighting and landscaping scheme be implemented.
- 7.4.9 The west and north field boundaries may provide potential commuting and foraging features for bat species. It is understood that the boundary hedgerows are not to be affected by development proposals during development or once operational.
- 7.4.10 The planting of vegetation within the development may provide suitable commuting and foraging habitat along with the proposed planting of new hedgerows and the supplementary planting of the west hedge. Should ecological advice be followed during the design stage of the development, the development will not be expected to have any significant adverse impact upon this species. No further surveys have been recommended.

Dormice

7.4.11 The boundary hedgerows of the site offer suboptimal habitat for dormice. The total species diversity, and poor structural diversity of the hedgerows indicates little suitability for the species. In conjunction with this, the west hedge of the site, that might possibly undergo the removal of small section (2-3m), does not lead to prime dormouse habitat or into the wider countryside with its southern end finishing abruptly without adjoining likely dormouse habitat. In addition, the desk study did not hold records for this species, therefore further survey efforts have not been recommended.

Great Crested Newts

7.4.12 The terrestrial habitat within the survey area was dominated by short grazed improved grassland, which is considered as sub-optimal terrestrial habitat for amphibian species. A search of Ordnance Survey maps of the site and up to 500m surrounding the site did not reveal ponds or suitable watercourses within 500m of the site for breeding great crested newts. Although great crested newts may be found up to 250m from ponds (and up to 500m from ponds in exceptional circumstances) studies by Jehle and Cresswell & Whitworth have shown that within a great crested newts terrestrial range, the habitat within 50m of the pond supports the majority of a great crested newt population. Dispersal of newts, beyond this zone, is only likely when there is suitable habitat features that link a pond to "optimal" terrestrial habitat. Therefore, the likelihood of engagement with newts within the site is considered to be negligible, given that ponds suited to a newts requirement were not noted within 500m of the site.

7.4.13 Although encountering amphibians and great crested newts is considered to be highly unlikely, it is recommended that a toolbox talk be carried out at the beginning of the construction phase in order that contractors are aware of the steps to take should amphibians and great crested newts be encountered.

Reptiles

7.4.14 The improved grassland holds limited habitat for reptiles, especially those that are less than common. However, the field boundaries (with the exception of the suggested east boundary) may be suitable for supporting a population of reptiles such as slowworm. Reptile refugia and hibernacula were not present within the site. The desk study did not reveal records of reptiles within 1km of the site boundary.

7.4.15 To prevent reptiles from inhabiting the site prior to site clearance and development, it is advised that current grazing regime continues right up to the clearance phase maintaining

a short grass sward to ensure that habitat remains unsuitable for reptile species. This will minimise the likelihood of disturbance and injury to these species during works. The grass should be maintained at a height of no more than 5cm leaving the grassland without cover. Reptiles are less likely to be found within such an exposed location.

- 7.4.16 Should a section of hedgerow be removed to widen site access, the section and adjacent grass margin (2m) should undergo a hand search by an ecologist immediately prior to hedge removal. Should a reptile be found, it will be captured by hand and moved immediately to the overgrown grass verge / ditch outside of the southern boundary.
- 7.4.17 Finally, a destructive search of the ground habitat will be carried out by slowly and carefully removing the hedge with hand tools to a height of 15cm. Once cleared of brash the ground will undergo a repeat of the hand search by the ecologist to ensure reptiles are absent before carefully lifting the tree/shrub roots from the ground. The ecologist will watch for reptiles that may be caught in the roots or soil/ground layer. If sighted the ecologist will signal to halt works whilst the reptiles are captured and removed.
- 7.4.18 Cut vegetation will be removed from the site completely by close of day to prevent the creation of further reptile habitat.

Clearance will be carried out at a time when reptiles are not hibernating (March – September) and in suitable weather conditions (nor too hot, wet or cold).

Birds

- 7.4.19 Due to the abundance of more suitable ground habitat for birds within the local area, specific mitigation measures for ground nesting birds are not considered essential.
- 7.4.20 The field boundaries will, for-the-most, remain unaffected by development proposals and will be maintained and enhanced to provide nesting habitat. No net loss, for nesting birds within the hedgerows is anticipated.
- 7.4.21 Should a small section (2-3m) of the west hedge be removed to provide greater site access, it is recommended that a check to confirm the absence of nesting birds be undertaken, by a suitably experienced ecologist, no more than 48 hours prior to any clearance works undertaken during the nesting season (March-September). This check would identify if nests present, and the life stages of the occupants (eggs, chicks, fledglings). Any active nests found will be appropriately protected (approx. 5m circumference of habitat to remain undisturbed) until eggs have hatched and young fledged. Until the young have

fledged, the nest should be subject to regular monitoring to ensure that a second brood is not raised once the first brood has fledged.

General Site Recommendations

- 7.4.22 Contingency measures for unforeseen incidents such as spillages should be set in place prior to commencement of construction works.
- 7.4.23 Lights should not be used to enable work to continue through the hours of darkness. This will ensure that any wildlife using the hedges during the night will not be disturbed and will be able to continue their activities without threat.
- 7.4.24 All trenches must be securely covered at the close of the days work to ensure that wildlife doesn't fall into these and become trapped.
- 7.4.25 An appropriately qualified and licensed ecologist should be available via an 'on-call' basis throughout the construction phase. This will enable a prompt response for dealing with any habitat or protected species issues that could arise during the course of development.

8 ECOLOGICAL ENHANCEMENT OPTIONS

8.1.1 The National Planning Policy Framework (NPPF), issued in March 2012, states that the planning system should contribute to “*minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government’s commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures*”. It also states, that “*opportunities to incorporate biodiversity in and around developments should be encouraged*”. Suggestions are provided below to deliver such ecological enhancements.

8.2 Habitats

Grass Margins/Buffers

8.2.1 Two metre grass buffers/margins alongside all boundaries could be maintained and enhanced by the sowing of native wild grass and flower seed mix to enhance the diversity of the development. The establishment of these 2m grass buffers comprising native British grass and herb species can provide excellent foraging opportunities and protection for wildlife species. A more species-rich area of grassland would be expected to attract a greater diversity of insect-life, and with it, their prey species, small mammals, common reptile species, invertebrates and birds. Bright single headed flowers could also be incorporated which are highly attractive to night foraging insects which in turn will provide food for foraging bats. The incorporation of yellow rattle *Rhinanthus minor* will aid with the management of this grassland. This plant is parasitic on grass species helping to maintain a finer sward.

8.2.2 The grass margins will act as a buffer to the habitat bounding the Site. To prevent damage to these buffers, a post and rail fence must be erected prior to site preparation and development and must remain in-situ until the development is complete. This fence will also protect the hedges/boundaries from damage and disturbance caused by the development.

Other Grassed Areas

8.2.3 On completion of the development it is recommended that any further grassed areas are sown with a native wild grass and flower mix such as low maintenance / conservation mix and general purpose / neutral-calcareous soils wildflower mix such as British Seed House

80% A4 Low Maintenance / Conservation Area Mix, 20% WF3 General Purpose / Neutral - Calcareous Soils Wildflower Mix.

Hedgerow Planting and Enhancement

- 8.2.4 The east boundary is absent of a hedgerow and the southern boundary supports scattered shrubby trees. To create greater connectivity of habitat for wildlife across the site into the immediate and greater countryside, these boundaries should be planted as a hedge with a mix of a minimum of 5 native woody species indicative of the local area. It would be of higher benefit if these were a double hedge and continuous without breaks. Species could include hawthorn, blackthorn, hazel, holly, English oak, dog-rose, dogwood and crab apple. Honeysuckle should be added as part of this planting to provide nesting material for dormice. The existing north and west hedge could be planted with a second row of hedgerow species to provide extra habitat and protection from the development. These green corridors are also important for foraging and nesting wildlife.
- 8.2.5 New plantings should encompass tree guards to protect the new growth from grazing by deer and rabbits. Every 10m a tree specimen should be left to grow on as a standard tree to provide continual flight lines for bats, oak and ash are suitable species for this. Any trees that die should be replaced to ensure the continuation of the hedgerows.
- 8.2.6 The boundary hedgerows should undergo minimal management and left to maintain a more natural unkempt appearance. The height of the hedges should be cut to no less than 2m in height and should be cut with hand tools. This is considered to be particularly important for encouraging use by native British wildlife especially commuting and foraging bats. Hedge cutting should take place between October and February inclusive in order to allow fruit, flowers and seed to establish and to avoid impacting nesting birds.
- 8.2.7 Annual inspections of new hedgerow plantings should commence twelve months after planting and should continue for the first two years after planting. These inspections would include the identification of where planting has failed and replacement specimens are required. It is normal to allow up to a 5% failure rate. If failure occurs supplementary planting would be required with a mix of native species of local provenance (like-for-like). This planting should be undertaken during winter months annually. If required, specimens would be supported with stakes and protected with tree guards, which will also be replaced if broken, damaged or missing.

- 8.2.8 New tree/hedgerow species should be allowed to grow above the height of the existing hedge before cutting commences on these individuals. These newly planted specimens would obtain their first cut during the third year following planting if they have reached the height of the supporting hedgerow.
- 8.2.9 Tree guards will need removing after the establishment of the specimens, which is usually around the third to seventh year after planting or once they have reached a height of two meters. This is an important part of tree management as the guards and stakes can damage the expanding trunks during development by constricting their growth.

Tree & Shrub Planting

- 8.2.10 Garden and street trees as well as ground planting and low shrubs could be incorporated into the landscaping scheme to further soften and enhance the site for wildlife. These could include:
- Garden trees planted as 6-8cm girth on MM106 rootstock
 - Street trees planted as 12-14cm girth
 - Ground planting as 3L pots at 4 per m²
 - Low shrubs planted as 3L pots at 4 per m²

Grassed Roof

- 8.2.11 Green roofs not only screen a building from the views onto it but can also encourage biodiversity, providing potential habitats for local wildlife species especially invertebrates. If planted correctly upon the proposed village hall, it would give an opportunity for local wild plants to thrive, where otherwise they might not. Research indicates that biodiversity benefits can be increased with use of local substrates, varying substrate depth, planting local seed mixes and placing locally sourced materials and objects on the roof.
- 8.2.12 An example of species suited to the local area could include: upright brome *Bromus erectus* throughout, although tor grass *Brachypodium pinnatum* sheep's-fescue *Festuca ovina*, crested hair-grass *Koeleria macrantha*, glaucous sedge *Carex flacca*, and spring-sedge *C. caryophyllea*. Herb species could comprise of devil's-bit scabious *Succisa pratensis*, greater knapweed *Centaurea scabiosa*, clustered bellflower *Campanula glomerata*, horseshoe vetch *Hippocrepis comosa* and chalk milkwort *Polygala calcarea*. Field fleawort *Senecio integrifolius*, bastard-toadflax *Thesium humifusum* and round-headed rampion *Phyteuma orbiculare* are of nationally restricted distribution and could be trailed on the roof.

8.2.13 For guidance and more information on vegetated roof refer to Natural England's online publication - <http://livingroofs.org/images/stories/pdfs/living%20roofs.pdf>.

8.3 Wildlife

Bats

8.3.1 The field boundaries provide some potential commuting and foraging features for bat species. The use of low-pressure or high-pressure sodium lamps instead of mercury or metal halide lamps should be used within the development. The lighting could be hooded with side shields to direct light to where it is needed, avoiding light spillage especially onto the hedgerows where horseshoe bats and other bat species might commute and at building roof height where many bats spend time foraging. The bulbs would need to be deeply embedded in the fixtures with the glass covering being flat and parallel to the ground and below 0.5 lux, and ideally below 0.04 lux. Secured low to the ground, these lamps should only be sited along the entrance road and parking area and not at the Site boundaries. The total number of street lamps throughout the development should be kept to the minimum, spaced approximately 10m apart and start no less than 5m from any boundary.

8.3.2 Should security lighting be fitted to the external of the building, these should be less than 2000 lumens (150 W). The use of a higher power is not as effective for the intended function and will be more disturbing for bats and other wildlife. Movement sensors should be carefully installed and aimed to illuminate only the immediate area required by using a sharp downward angle. This lit area should avoid being directed at, or close to, any hedges and must be well below the height of the buildings roof. A shield or hood should be used to avoid illuminating at a wider angle as this will be more disturbing to foraging and commuting bats as well as other wildlife. If the light is fitted with a timer this should be adjusted to the minimum to reduce the amount of 'lit time'.

8.3.3 The planting of vegetation within the development and the boundaries may provide additional suitable commuting and foraging habitat. Should ecological advice be followed during the design stage of the development, the development will not be expected to have any significant adverse impact upon this species.

Birds

8.3.1 Bird nesting opportunities could be incorporated into the development with regard to swallows, house martens and sparrows.

8.3.2 Purposely designed woodcrete bird boxes and nest cups for nesting birds, could be erected high on the external building walls directly beneath the eaves or gable apex. Boxes and cups can be purchased from the RSPB website. These could include:

- Swallow cups and house marten cups - Terracotta nest cup made to actual dimensions of nests built by swallows that are securely fixed to sturdy FSC timber backboard. It is possible to fix a shelf under the nest to catch the droppings if deemed appropriate.
- Bird boxes for garden birds – Schwegler Woodcrete 32mm, fixed to a tree within the development boundaries.
- A sparrow terrace could be placed on the exterior of a gable wall, installed a minimum of 2m above ground level. House sparrow and Tree sparrow, (UK BAP species) commonly use these terraces and other species such as Tits *Paridae spp.* and Spotted Flycatchers (UK BAP) are also known to use terraces. Sparrow terraces come in a variety of designs but terraces constructed from wood-concrete with dimensions of around H24 X W43 x D20cm would seem to be appropriate for the development.

Dormice

8.3.3 Nesting sites for dormice may be incorporated through the provision of dormouse boxes. These are wooded, durable boxes which can be placed within hedgerows and provide day nesting and breeding sites for dormice. The planting of hedgerows and plumping out of existing hedges may provide a more suitable habitat for this species.

9 REFERENCES

Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit, Joint Nature Conservation Committee 1990 (2003 edition).

Jehle R (2000) The terrestrial summer habitat of radio- tracked great crested newts (*Triturus cristatus*) and marbled newts (*T. marmoratus*). *Herpetological Journal* 10: 137-142.

Cresswell W and Whitworth R (2004) An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt *Triturus cristatus*. English Nature Research Report 576. English Nature, Peterborough.

10 LEGISLATION

10.1 Relevant legislation relating to the site for the protection of species and habitats is detailed below. Relevant policies within national, regional, and local planning policy are also detailed.

10.2 NPPF

10.2.1 The National Planning Policy Framework in summary requires that the planning system should aim to contribute and enhance the natural and local environment. The aims are to: protect and enhance valued landscapes as well as geological conservation interests and soils; recognising the wider benefits of ecosystem services; and minimising impacts on biodiversity and providing net gains in biodiversity where possible.

10.3 Biodiversity

10.3.1 Statutory protection is afforded to certain wild habitats and species through European Directive 92/43/EEC on the conservation of natural habitats and wild fauna and flora (the 'Habitats Directive'). This has been adopted into UK legislation through the provisions of the Conservation of Habitats and Species Regulations, 2010. At the national level protection is found in Wildlife and Countryside Act (WCA 1981; as amended) and it is designed to protect species and habitats considered to be of principal importance to safeguard for the purpose of conserving biodiversity.

10.4 UK BAP

10.4.1 The UK Biodiversity Action Plan was published in 1994 in response to the Biodiversity Convention. The plan aims to enhance biological diversity of the UK through implementation of the Habitat Action Plans (HAPs) and Species Action Plans (SAPs), written for priority habitats and species.

10.5 Wiltshire BAP

10.5.1 The Wiltshire BAP transforms the national objectives at a county level. Detailed habitat action plans will be written for 11 priority habitats and 260 species to fully review their current status and set objectives and targets for action.

10.6 Reptiles

10.6.1 All four common UK native species of reptile are included in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and receive protection from part of Section 9(1)

and all of Section 9(5). These species are adder (*Vipera berus*), grass snake (*Natrix natrix*), slow worm (*Anguis fragilis*) and common (viviparous) lizard (*Lacerta vivipara*). It is thus an offence to:

- Recklessly, deliberately or intentionally kill, injure any of these species;
- Sell, offer for sale, possess or transport for the purpose of sale, or advertise for purchase or sale.

10.6.2 Two other native species, smooth snake (*Coronella austriaca*) and sand lizard (*Lacerta agilis*); receive the full of protection of Section 9 of Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Due to their rarity and conservation value they are also listed in Schedule 2 of EC Directive 92/43/EEC (the Habitats Directive), implemented by Regulation 39 of the Conservation (Natural Habitats &c) Regulations 1994 (The Habitat Regulations).

10.6.3 The key requirement is that the appropriate Statutory Nature Conservation Organisation (in this case Natural England) is notified before any activities are begun which could incidentally affect reptiles and allow a reasonable time to advise whether the proposed actions should be carried out, and, if so, the methods to be used.

10.7 Birds

10.7.1 All species of wild bird and their nests are protected under the Wildlife and Countryside Act 1981 (as amended). This makes it illegal to intentionally or recklessly:

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

10.7.2 There are also additional penalties for birds listed on Schedule 1 of the act.

10.7.3 Under the ‘Habitats’ Directive (92/43/EEC), Special Protection Areas (SPAs), together with the Special Areas of Conservation (SACs), form the Natura 2000 European network of protected ecological sites. This Directive establishes a general system of protection for all species of wild birds occurring in European territory. It prohibits in particular:

- Deliberate destruction or capture of wild birds;
- Destruction of, or damage to, nests;

- Taking or keeping eggs even if empty; and
- Practices which deliberately disturb the birds and which jeopardise the conservation of the species;

10.7.4 Trade in and the keeping of live or dead species the hunting and capture of which are not permitted (this prohibition also applies to any parts or derivatives of a bird).

10.8 Habitat

10.8.1 All wild plants are protected under Section 13 of the Wildlife & Countryside Act 1981 as amended. This makes it an offence for any unauthorized person to intentionally uproot any wild plant. Additionally, certain rare species of plants listed on Schedule 8 of the 'Act' are given greater protection. It is an offence to:

- Intentionally pick, uproot or destroy any species included in Schedule 8; and
- Sell, offer or expose for sale, possess or transport for the purpose of sale, any live or dead wild plant included in Schedule 8, or any part of or anything derived from such a plant.

10.8.2 Schedule 8 is reviewed every five years, but currently it contains 107 vascular plants, 33 bryophytes (mosses, liverworts and hornworts), 26 lichens and 2 stonewort's [see www.jncc.gov.uk for current list].

10.8.3 Sub-section (3) provides defences. An offence would not have been committed under Section 13 provided it could be shown to be the incidental result of an otherwise lawful operation and could not reasonably have been avoided.

Appendix

Phase 1 Habitat Map



SITE PHOTOS

View of Site Looking East



Improved Grass Sward



Boundary No.1, Species-poor Hedge



Boundary No.2 (Fence) With Overgrown Ditch on Its Southern Side



Boundary No.3 Absent, Continuation of Improved field (looking east)



Boundary No.4 (Fence) With Tree Line to The North



Field Gate / Entrance to Site From Park Lane

