PRELIMINARY ECOLOGICAL APPRAISAL

LAND OFF MILL LANE, WETLEY ROCKS STAFFORDSHIRE

SEPTEMBER 2016

Eyebright Ecology
43 Hope Street
Bignall End
Newcastle-under-Lyme
Staffordshire
ST7 8PX

01782 721924
07903 113497
info@eyebrightecology.co.uk
www.eyebrightecology.co.uk

Project Name	Mill Lane, Wetley Rocks, Staffordshire
Project Number	C116
Document Name	Preliminary Ecological Appraisal
Author	Eleanor Weir
Version	v00
Date of issue	28/09/16

1. NON-TECHNICAL SUMMARY

Eyebright Ecology was commissioned by Sammons Architectural Ltd on behalf of John Pointons & Sons to undertake a Preliminary Ecological Appraisal of land off Mill Lane, Wetley Rocks, Staffordshire.

An 'Extended' Phase I Habitat Survey was undertaken on 19 August 2016 by an experienced and licensed ecologist.

The site comprised an area of hardstanding with a series of disused stable buildings. The site was set on the edge of an improved grassland field.

A building inspection was undertaken on 19 August 2016 and evidence of pipistrelle and brown long-eared bats was found in some of the buildings. Dusk emergence / dawn re-entry bat surveys were recommended, and were undertaken in August and September 2016. These are the subject of a separate Bat Survey Report (Eyebright Ecology, 2016).

No evidence of badger was found. It is considered unlikely for badgers to create setts on or adjacent to the site in future due to the wet ground and lack of cover.

The nearby brook was assessed to be potentially suitable for water vole, and there are past records of a water vole colony. The proposed development is unlikely to affect the brook, but if any work to the banks or surrounding vegetation is planned, a water vole survey would be recommended.

The buildings were found to support nesting swallows and house sparrows, and any work to the buildings should therefore commence outside of the breeding season which runs from March to September. If any work to the buildings cannot avoid being undertaken during these months, there should be a prior check for nesting birds. Any active nests that are found must not be moved until fledglings have dispersed. Recommendations are given for provision of swallow and house sparrow nesting sites where possible.

The site was assessed to be of low potential for supporting reptiles, although grass snakes could occasionally occur on the grassland field. There are no further recommendations for reptiles unless large amounts of grassland are due to be lost.

The buildings and hardstanding were considered to be of low potential for great crested newts, although the grassland field could support newts during their terrestrial phase if there was a breeding pond within 500 m. There were no records of great crested newts within 2 km, but there were five ponds within 500m of the site, the nearest being located 75 m to the north. A Habitat Suitability Index assessment of this pond was undertaken, and the pond was found to be of 'Average' suitability for great crested newts. Together the factors suggest it would be of low risk to encounter great crested newts during the building work, but as a precaution work should proceed following a Reasonable Avoidance Method Statement. If larger amounts of grassland were due to be lost or damaged, it would be prudent to undertake a great crested newt presence/absence survey of the nearest pond between March and June.

2. INTRODUCTION

2.1 Background & Objectives

Eyebright Ecology was commissioned by Sammons Architectural Ltd on behalf of John Pointons & Sons to undertake a Preliminary Ecological Appraisal of farm buildings and land off Mill Lane, Wetley Rocks, Staffordshire (SJ958495).

An Extended Phase I Habitat Survey including building inspections for bats was undertaken on 19 August 2016 by an experienced and licensed ecologist who is a full member of the Chartered Institute of Ecology and Environmental Management (CIEEM). The objective of this report is to provide the client with information on any known or potential protected or rare species that may be using the site, and to outline recommendations on how to proceed with the works in a legal and ecologically sensitive manner.

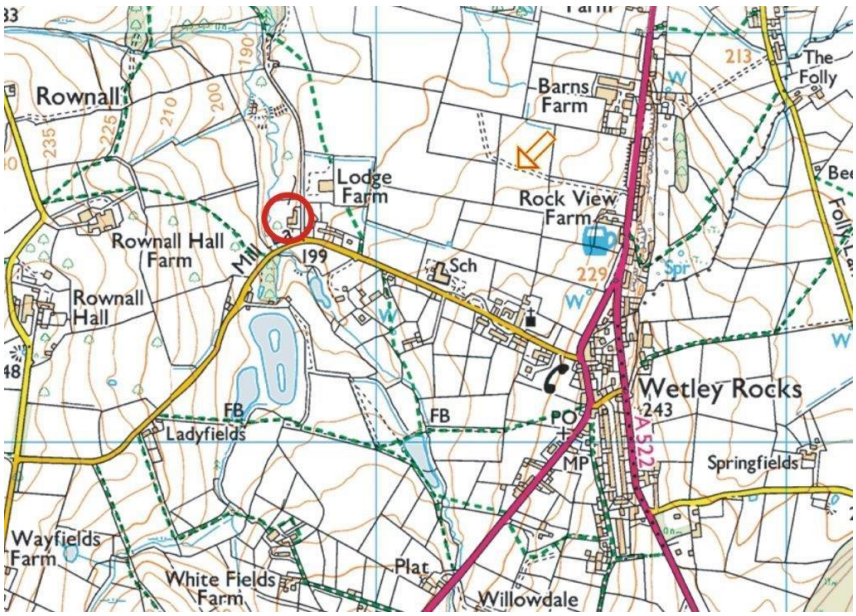
Unless the client indicates to the contrary, information on the species found to be present on the site will be passed to the county biological records centre to update records held for the area.

2.2 Site Description

The site comprised an area of hardstanding and a series of disused stable buildings, bordered by a semi-improved grassland field.

2.3 Site Location

Figure 1: Location of site



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3. METHODOLOGY

3.1 Data Search

Statutory internationally, nationally and locally designated sites within 2 km of the site were identified using Natural England's web-based database (http://www.magic.gov.uk/).

A request for records of protected sites and species within 2 km of the site was made to Staffordshire Ecological Records Ltd (SER).

Ordnance survey maps (1:25,000) and aerial images of the site (www.streetmap.co.uk and www.maps.google.co.uk) were examined online.

3.2 Habitats

An 'Extended' Phase I Habitat Survey was undertaken following standard methodology (JNCC 2010)[1]. The habitat types within the site were identified and mapped, and evidence or potential for protected species was noted.

The Extended Phase I Habitat survey was undertaken on 19 August 2016. Weather conditions during the survey were mild and dry.

3.3 Species

During the 'Extended' Phase I survey, the site was inspected for any field signs of protected species or species of conservation concern (see Table 1 – Legislation is detailed in Appendix 5). In addition, the habitats on, and immediately adjacent to the site were assessed for their potential to support such species.

*Table 1: Protected fauna species **relevant** to site habitats and field signs*

Species	Habitats / Features	Field signs (in addition to sightings of individual animals)
Bats	Roost sites: Trees, buildings and other structures (e.g. mines, caves, bridges etc) Foraging areas: Waterbodies and wetland areas, river and stream corridors, grassland, parkland, woodland/edges, hedgerows and gardens Commuting routes: Hedgerows, water courses and other linear features	At potential roost sites – droppings, staining from urine, feeding remains, individual bats
Badger	Setts can occur in most urban and rural habitats, often found in woodland, along hedgerows and fields	Sett entrances, day nests, well-worn pathways, latrines, snuffle holes, hairs, prints.
Birds	Trees, scrub, grassland, hedgerows, buildings	Nests, droppings below nest sites, pellets
Reptiles	Rough grassland, logpiles, rubble, hedgebanks, wetland	Sloughed skins

[1] *Handbook for Phase I Habitat Survey – A technique for environmental audit.* Joint Nature Conservancy Council, 2010 (revised reprint).

Species	Habitats / Features	Field signs (in addition to sightings of individual animals)
Great crested newt	Ponds within 500 metres of site. Terrestrial habitat includes rough grassland, scrub, woodland, hedgerows, log and rubble piles, stone walls, animal burrows.	No field signs – presence is only confirmed by individual animals and eggs within pond.

A building inspection was undertaken to check for evidence of roosting bats and nesting birds.

A Habitat Suitability Index (Oldham et al, 2000) assessment for great crested newts was undertaken of the nearest pond (Pond 1).

3.4 Personnel

The Extended Phase I Habitat Survey was undertaken by Eleanor Weir, an experienced ecologist who has worked as a consultant since 2002 and holds survey licences for bats, dormouse, great crested newts and barn owl, and is a full member is CIEEM. Eleanor was accompanied by ecologist Carl Capewell, who has been assisting on a range of ecological surveys over the past year. Carl is a graduate member of CIEEM.

3.5 Survey Constraints

Data Search

Desk study data provides information on recorded species in the area and can be helpful for targeting survey. However, it is possible that protected species that have not been identified within the data search may occur on or adjacent to the site.

Field Survey

The Habitat Suitability Index of Pond 1 was undertaken from some distance using binoculars, as the pond was on private land and access was not arranged. However, it was considered that the information gathered was satisfactory to undertake the habitat suitability calculation.

Fauna species present may not always leave field signs and in addition, species may take up residence on site subsequent to the survey. If no development takes place within 12 months of this survey report, the findings should be reviewed and may need updating, and a full survey should be repeated within three years.

4. RESULTS

4.1 Data Search – Protected Sites

International Designations

There are no internationally designated sites within 2 km of the site.

National Designations

There are no nationally designated sites within 2 km of the site.

Local Designations

There are no local statutory protected sites within 2 km.

Non-statutory sites

There are six non-statutory sites within 2 km of the site. These include 3 Local Wildlife Sites (LWS) and 3 Biological Alert Sites (BAS).

The closest non-statutory site is The Rookery LWS, 480m to the north, which is an ancient woodland with a stream and associated wet woodland flora. The next nearest site is Wetley Rocks LWS, 845m to the east, which is a rocky outcrop with heathland community.

Due to their distance, it is unlikely that there would be any impacts on the above protected sites from any development proposals on site.

4.2 Data Search – Protected Species

SER returned the following protected species records within 2 km of the site.

SER provided numerous records of bats within 2 km, including common pipistrelle *Pipistrellus pipistrellus*, soprano pipistrelle *Pipistrellus pygmaeus*, brown long-eared *Plecotus auritus* and Daubenton's bat *Myotis daubentonii*. The nearest record was for an adult pipistrelle and Daubenton's bat, on Mill Lane, 499 m from the site (dated 2000).

There were numerous records of badger *Meles meles* within 2 km of the site. The closest record was an unspecified field sign of badger 190 m to the north of the site. The nearest sett record was 359 m away (2009).

There was a record of a water vole *Arvicola amphibius* colony, 199 m way from the site, on the River Dove which appears to relate to the brook which runs along the bottom of the field. This record dated from 1997. The only other record of water vole is over 1 km away.

SER returned 7 records of grass snake *Natrix natrix*, mostly historical records but with a few more recent although all the records were over 1 km away from the site. There was a historical record of slow worm and common lizard within 2 km, although these records were very old (1931 - 1942).

There were no records of great crested newt *Triturus cristatus* within 2 km of the site.

SER returned a number of bird records. Species which may be relevant to the habitats present on site are shown in Table 2.

Table 2: Records of relevant bird species within 2 km.

Species	**Scientific name**	**Special protection (see Appendix 3)**	**Status in UK[2]**	**Biodiversity Action Plan (BAP) Species**
Barn Owl	Tyto alba	Schedule 1	Amber List	Staffordshire BAP
House Sparrow	Passer domesticus		Red List	Staffordshire BAP
Kestrel	Falco tinnunculus		Amber List	
Short-eared owl	Asio flammeus		Amber List	
Swallow (barn)	Hirundo rustica			

4.3 Field survey

HABITATS

The site comprised several connected farm buildings on a sparsely vegetated area of gravel hardstanding. The site was on the edge of a field of semi-improved neutral grassland which was grazed by sheep at the time of the survey. The habitats are shown on Figure 2 (Appendix 1) and on Plates 1 - 5.

Semi-improved neutral grassland

The buildings were on the edge of a semi-improved species-poor neutral grassland field (Plate 2 & 3) which had a medium length sward (on average 15 cm) and was grazed by sheep at the time of the survey (sheep were not present on subsequent surveys). The grassland was damp underfoot in places, dominated by Yorkshire fog *Holcus lanatus* with frequent perennial rye-grass *Lolium perenne* and occasional crested dog's-tail *Cynosurus cristatus*, meadow foxtail *Alopecurus pratensis* and soft-rush *Juncus effusus*. Herbs were limited and typical of improvement, including creeping buttercup *Ranunculus repens*, white clover *Trifolium repens*, creeping thistle *Cirsium arvense* and broad-leaved dock *Rumex obtusifolius*.

Ephemeral / Short perennial

Much of the gravel hardstanding in front of the buildings was becoming vegetated with typical pioneer plants able to colonise shallow stony substrate (Plate 1). Clumps of grass including cock's-foot *Dactylis glomerata* and Yorkshire fog were observed, prickly sow-thistle *Sonchus asper,* willowherb *Epilobium* species and liverworts.

[2] BTO Birds of Conservation Concern 3 (2009): Red List species have suffered severe recent population declines, Amber List species are in moderate population decline.

Buildings

The farm buildings were a mixture of structures connected together. Each different area of the buildings have been assigned a letter to aid description (Figure 2, Appendix 1).

Building A (Plate 1 & 4) was a disused single storey stable building separated into three main rooms and comprised brick walls and a pitched slate roof. The slates were mostly unlined but there were some areas inside which were lined with plasterboards which were broken and missing in places. The rooms were open to the roof inside (no roof space present). There were several ill-fitting doors facing east and an open window facing south. Connected to the south side of Building A was a small separate lean-to which had unglazed windows.

Building B (Plate 4) was a single storey lean-to stable block adjoining Building A on the west side. The walls were brick with a corrugated metal roof and open doorways and windows.

Building C (Plate 1) was a single storey stable block comprising block walls, concrete floor and a corrugated concrete/asbestos roof with plastic panels.

Building D (Plate 1 & 2) was a former garage comprising a mixture of block and brick walls and a flat roof of corrugated concrete/asbestos sheeting. The building was being used as a wood store at the time of survey.

Building E (Plate 3) was a lean-to sheep shelter which comprised corrugated metal roof and walls with one end open.

Building F (Plate 3) was an open-sided sheep shelter which comprised a pitched corrugated asbestos roof and lean-to with corrugated metal walls. The shelter was open at the ends.

Further details about the buildings can be found in a separate bat survey report (Eyebright Ecology, 2016).

Stone Wall

There was a dry stone wall connecting to Building D and forming the eastern boundary of the site. Parts of this wall were damaged in places.

Off-site Habitats

Running water

There was a brook (Plate 6) which ran along the bottom of the sheep-grazed field, approximately 60 m away from the buildings at it's nearest point. The brook was fairly shallow with vegetated grassy banks with frequent to locally abundant wild angelica *Angelica sylvestris*, great willowherb *Epilobium hirsutum*, common nettle *Urtica dioica* and occasional Himalayan balsam *Impatiens glandulifera*. There were frequent alder *Alnus glutinosa* trees shading the brook. On average it was about 1 m in width with a moderate flow.

SPECIES

Bats

An inspection of the buildings for evidence of bats was undertaken, as well as dusk and dawn surveys, and these are detailed in a separate Bat Survey Report (Eyebright Ecology, Sep 2016).

The following table summarises the initial building inspection findings, any evidence found and/or potential for bat roosts.

Table 3: Preliminary Roost Assessment

Building	Description	Evidence of Bats	Potential for Bat Roosts
A	Stable with pitched slated roof, possible roost crevices under ridge tiles or between slates and lining	Small pile of pipistrelle droppings Several scattered droppings	High potential
B	Lean-to stable block with metal roof, damp, few crevices noted	Several scattered bat droppings	Low potential
C	Flat roof stable block with asbestos roof, damp, few crevices noted.	Four droppings in one stable, possibly long-eared. 1 fresh pipistrelle droppings on window sill.	Moderate potential for night roost (low potential for day roost as few crevices)
D	Garage (wood store) with flat asbestos roof, potential crevices noted in blockwork and tops of walls	Two piles of 30+ bat droppings, characteristic of long-eared bat. Numerous scattered bat droppings.	High potential
E	Lean-to shelter of metal roof and walls. No roosting crevices noted.	No evidence of bats.	Negligible potential.
F	Sheep shelter with pitched corrugated asbestos roof and corrugated metal walls.	No evidence of bats.	Low potential

The site itself was likely to be of limited value to foraging or commuting bats, but there was a wooded stream corridor within 65 m to the west leading to areas of woodland to the north, as well as several

large ponds in the area which may provide foraging opportunities.

Badger

There was no evidence of badger activity on site, or within the areas which could be accessed within 30 metres of the site. The adjoining field appeared fairly damp, and there was little cover (e.g. scrub or wooded areas), and it is therefore considered to be low potential for a badger sett to be formed on site or adjacent to the buildings in future.

Water vole

The brook at the bottom of the adjoining field appeared potentially suitable for water vole. There are past records of a water vole colony on this brook. No evidence was found during the walkover although a detailed search for evidence was not undertaken.

Birds

The buildings were found to contain several unoccupied swallow's nests. There was also likely to be an active house sparrow nest in Building A due to an adult alarm-calling during the survey.

Building F had signs of old nesting material on the beams, possibly of wood pigeon *Columba palestris*.

No evidence of barn owl was found.

The buildings are likely to support nesting birds between March and September.

Reptiles

The surrounding grassland had some potential to support common species of reptiles, in particular grass snake *Natrix natrix.*

Great crested newt

The grassland adjoining the site could provide potential terrestrial habitat for great crested newts if there was a breeding pond nearby which was connected to the site by suitable habitat.

According to OS and aerial maps, there were 5 ponds within 500 m of the site (see Figure 3).

Pond 1 (Plate 5) was the nearest, approximately 75 m to the north of the site, in the adjacent field. The pond could be viewed from the site; it appeared to be fairly recently created as it does not appear on aerial maps. The pond was large (around 15 m diameter), but there was no aquatic or emergent vegetation that could be seen and the water appeared turbid. The pond could be stocked with fish although there was no indication of regular angling (e.g. fishing platforms). There were pipes into the pond suggesting it may be to help drain the surrounding fields. A Habitat Suitability Index was calculated for Pond 1 (Appendix 4) and it was found to have 'Average' suitability for breeding great crested newts.

Pond 2 was approximately 140 m to the south-east of the site, the other side of Mill Lane. It was not visited during the survey as it was on private land.

Pond 3 was approximately 220 m to the south of the site, and was a large angling pool with two islands in the middle.

Pond 4 was approximately 370 m to the south-west of the site, and appeared to be a smaller angling pool.

Pond 5 was approximately 150 m to the south-west of the site. The pond was not visited as it was on private land.

Invasive species

No invasive species were found on site. There was scattered Himalayan balsam along the stream corridor at the bottom of the field.

4. 4 Photographs

Plate 1: View of east aspect of Buildings (A, C & D) with gravel hardstanding

Plate 2: View of north aspect of Building (D) from adjacent field

Plate 3: View of west aspect of buildings from bottom of field (Buildings D, E & F)

Plate 4: South aspect of buildings (A & B)

Plate 5: Pond 1 which was the nearest at 75 m away, in a field north of the site.

Plate 6: Brook which runs along bottom of sheep-grazed field

5. DISCUSSION & RECOMMENDATIONS

5.1 Summary of Findings

There were no statutory protected sites within 2 km, but six non-statutory protected sites were located within 2 km of the proposed development. The closest non-statutory site was 480 m away. Due to the distance, these protected sites are unlikely to be affected by any development proposals on the site.

The site comprised hardstanding and buildings, with an adjoining semi-improved grassland field.

The buildings were a complex of former stables and sheep shelters. Evidence of bats was found in several areas of the buildings, which were assessed to be high potential for roosting bats. Other buildings were likely to be of low or negligible potential for bat roosts. Further bat surveys were recommended and these are the subject of a separate report (Bat Survey Report, Eyebright Ecology 2016).

No badger setts or other badger activity was found on or adjacent to the site where accessible. The field appeared fairly wet with little cover, which is likely to minimise the risk of a badger sett being formed on site in future. No further survey is necessary.

The brook at the bottom of the field had potential to support water vole, with records of this species occurring nearby.

Swallows and house sparrows use the buildings for nesting during the breeding season.

The grassland had some potential to support foraging grass snake (the only recently recorded reptile in the locality) as part of their wide ranging territory.

The grassland field was potentially suitable terrestrial habitat for great crested newt, although there were no records of this species within 2 km of the site. There were five ponds found within 500 m of the site, four of which were not viewed closely due to being on private land. At least two of the ponds appeared to be used for angling.

Pond 1 was nearest to the site at 75 m to the north and was assessed to have ‘Average’ potential to support great crested newts.

No invasive species were found on site.

5.2 Potential Impacts of Works

The site is proposed for partial demolition and conversion of buildings to dwellings. The following summarises some general potential impacts.

Demolition or work affecting the buildings could cause loss of bat roosts, if present. Without mitigation, bats could be injured or killed, and roosts would be destroyed.

Work to the buildings is unlikely to directly affect water voles if present on the brook.

Work affecting the buildings could potentially harm nesting birds if carried out during the breeding season (March to September inclusive).

The work is unlikely to impact grass snakes unless large amounts of grassland were due to be lost.

Removal of grassland may directly harm great crested newts, as if breeding populations are present in any nearby pond, they could be found in terrestrial habitat within 500 m.

5.3 Recommendations

Bats

A preliminary roost assessment and bat dusk emergence and dawn re-entry surveys were undertaken to gather more information about the bat roosts present, including species, numbers and access points. Bat dusk and dawn surveys were completed in August and September 2016 and the findings are detailed in the accompanying Bat Survey Report (Eyebright Ecology, 2016).

Water vole

The work to the buildings is unlikely to impact water voles, even if a colony is still present on the brook nearby. If any work is required which may affect the brook, including the surrounding vegetation, it would be advisable to undertake surveys for water vole between mid-April and September.

Birds

As swallows and house sparrows nest in some of the buildings, work to demolish any buildings or undertake conversion and renovations works (including re-roofing, glazing windows etc) should commence between October and February to avoid the main bird breeding season.

If work to any areas of the buildings cannot avoid the March to September breeding period, a check for nesting birds must be undertaken immediately prior to work commencing, to check for any active nests. If any nests are found, they must be left in place until fledglings have left the nest, which may take several weeks.

Nesting opportunities for swallows should be incorporated into the new development if possible. Swallows prefer to nest under cover (e.g. inside a shed/outbuilding or under a shelter/porch) where providing a ledge or artificial swallow nesting cup (e.g. Schwegler No.10) can help encourage them to nest. Ledges below nest sites can be installed to catch droppings where necessary.

House sparrows appear to be using the buildings for nesting, and this species is a Staffordshire BAP Priority Species, and appears on the BTO Red List due to drastic declines in population. To ensure the proposed development does not impact this species, it is recommended that two long-lasting sparrow terrace boxes (e.g. Schwegler 1SP) are installed out of reach of cats, high up on south or west facing walls.

A range of bird boxes suitable for other species could also be incorporated into the new development as a biodiversity enhancement. Standard nest boxes suitable for cavity or open nesting species could be installed on the future buildings, ensuring they are high up, south or west facing and out of reach of cats.

Further information on siting and sourcing bird boxes can be found at the following websites:

http://www.rspb.org.uk/makeahomeforwildlife/advice/helpingbirds/nestboxes/smallbirds/index.aspx

http://www.rspb.org.uk/discoverandenjoynature/discoverandlearn/birdguide/name/s/swallow/encouraging.aspx

http://www.nhbs.com/browse/subject/908/bird-boxes

Great crested newts

The buildings were on solid concrete and gravel foundations, which were considered low potential for supporting great crested newts.

However, the buildings adjoined improved grassland habitat which has potential to be used by great crested newts if there was a breeding pond within 500 m.

The nearest pond was 75 m away and was assessed to have 'Average' suitability for breeding great crested newts (N.B. if this pond was fish stocked, it would lower the potential suitability for great crested newts). There were four other ponds on the other side of Mill Lane, ranging from 140 to 370 m away, some of which were used for angling and therefore likely to be of low potential for great crested newts. There were no records of great crested newts within 2 km of the site.

Given these factors, it is considered to be low potential for great crested newts to occur on site. If only buildings and small amounts of grassland are likely to be affected by the works, it is recommended that a Reasonable Avoidance Method Statement (RAMS) is followed, which will include careful methods of working, such as a check underneath any stored items or rubble which need to be moved during the construction work. In the unlikely event that a great crested newt was found on site, work would have to stop immediately and there could be delays until a licence from Natural England was obtained.

If larger areas of the grassland were due to be affected by work, it is recommended that a great crested newt presence/absence survey of the nearest pond is undertaken, if access is granted. Great crested newt surveys can only be undertaken between March and June (with 2 - 3 surveys between mid April and mid May).

6. REFERENCES

Anon (1995) *Guidelines for Baseline Ecological Assessment*. Institute of Environmental Assessment. Chapman & Hall.

Anon (1995) *The UK Biodiversity Action Plan*. Joint Nature Conservation Committee, Peterborough.

Anon (1999) *Advice Sheet 10: Reptile Survey*. Froglife, Peterborough.

Anon (2002) *Badgers and Development*. English Nature, Peterborough.

Anon (2010) *Handbook for Phase 1 Habitat Survey – A Technique for Environmental Audit* (Revised reprint). Joint Nature Conservancy Council, Peterborough.

Anon (2004) *Reptiles: Guidelines for Developers*. English Nature, Peterborough.

Anon (2012) *Bat Surveys – Good Practice Guidelines*. Bat Conservation Trust, London.

Cresswell, W. & Whitworth, R (2003) *An assessment of the efficiency of capture techniques and the value of different habitats for the great crested newt* Triturus cristatus. English Nature Research Reports, No. 576.

Foster, J. (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough.

Gent, T. & Gibson, S. (1998) *Herpetofauna Workers Manual*. Joint Nature Conservation Committee, Peterborough.

Mitchell-Jones, A.J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough.

Mitchell-Jones, A.J. & McLeish, A.P. [Eds.] (2004). *The Bat Workers Manual* (3rd edition). Joint Nature Conservancy Council, Peterborough.

Oldham R.S., Keeble, J., Swan M.J.S. & Jeffcote M. (2000*). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). Herpetological Journal 10 (4), 143 – 155.*

Rose, F. (1991). *The Wild Flower Key*. Frederick Warne, London.

Websites used:

Protected Sites: www.magic.gov.uk

Staffordshire Biodiversity Action Plan: http://www.sbap.org.uk/

UKBAP: http://jncc.defra.gov.uk/page-5155

www.rspb.org.uk

www.streetmap.co.uk

www.maps.google.co.uk

www.gridreferencefinder.com

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

Conservation (Natural Habitats &c.) Regulations 1994:
http://www.opsi.gov.uk/si/si1994/uksi_19942716_en_1

Conservation (Natural Habitats &c.) (Amendment) Regulations 2007:
http://www.opsi.gov.uk/si/si2007/uksi_20071843_en_1

Conservation (Natural Habitats &c.) (Amendment) Regulations 2009:
http://www.legislation.gov.uk/uksi/2009/6/pdfs/uksi_20090006_en.pdf

Habitats Directive:
http://ec.europa.eu/environment/nature/legislation/habitatsdirective/index_en.htm

Wildlife and Countryside Act 1981:
http://www.legislation.gov.uk/ukpga/1981/69

Countryside and Rights of Way Act 2000:
http://www.legislation.gov.uk/ukpga/2000/37/contents

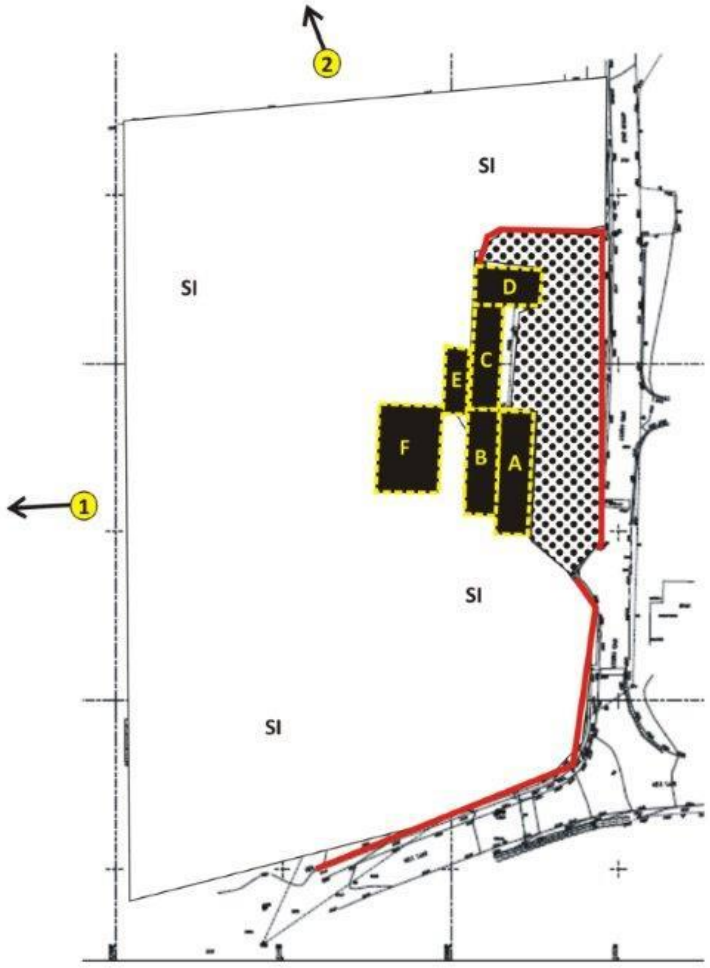
Protection of Badgers Act 1992:
http://www.opsi.gov.uk/ACTS/acts1992/ukpga_19920051_en_1

Natural Environment and Rural Communities Act 2006:
http://www.legislation.gov.uk/ukpga/2006/16/contents

National Planning Policy Framework 2012:
http://www.communities.gov.uk/publications/planningandbuilding/nppf

APPENDIX 1

Figure 2: Extended Phase I Habitat Map



SI Semi-improved neutral grassland (species-poor)

Ephemeral / Short Perennial

Building

Stone wall

1 Target Note

Project
Mill Lane, Wetley Rocks

Title
Extended Phase I Habitat Survey

Project Number	Figure Number	Date
C116	Figure 2	27 Sep 2016

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APPENDIX 2: Target Notes

Table 4: Target Notes (shown on Figure 2)

Number	Target Note
1	Brook (off site) which runs along the bottom of field, about 60 m away from the buildings. The brook was lined with frequent trees and vegetation including common nettle, angelica, bramble, willowherbs and Himalayan balsam. The brook was 1 – 2 m wide, with a moderate flow and a gravel bed. The water was fairly shallow, 10 – 20 cm.
2	Pond (off site) which is in an adjacent field. Looks recently dug, with no vegetation and bare earth banks. Could be used for fish stocking. The water appeared turbid. About 75 m away from the buildings.

APPENDIX 3: Pond Locations

Figure 3: Ponds within 500 m of the site

APPENDIX 4: Habitat Suitability Index

Table 5: Habitat Suitability Index calculations for Pond 1 nearest to site (Location on Figure 3).

Scoring system	**Pond 1**
Location	Optimal (1)
Pond Area	200m^2 (0.4)
Pond Drying	Never (0.9)
Water Quality	Poor (0.33)
Shade	10% (1)
Fowl	Minor (0.67)
Fish	Possible (0.67)
Density of Ponds in 1 km	2.86 (0.9)
Terrestrial Habitat	Moderate (0.67)
Macrophytes	0% (0.3)
Calculated score (scores multiplied and tenth root taken)	0.62
Pond Suitability	**Average**

APPENDIX 5: Relevant wildlife legislation and policy

Habitat Regulations

The Conservation of Habitats and Species Regulations 2010 make it an offence to deliberately capture, kill or disturb any wild animal listed in Schedule 2. It is also an offence to damage or destroy a breeding site or resting place of such an animal, even if the animal is not present at the time. In UK, these European Protected Species include (in addition to other animals and plants not relevant to this site):

- All species of bats
- Great crested newt

Special Areas of Conservation (SAC) sites are also designated under the Habitats Directive, due to the presence of habitats and/or species which are important for conservation at a European level.

Wildlife & Countryside Act

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

- Intentionally kill, injure or take any wild bird or their eggs or nests (with certain exceptions) and disturb any bird species listed under Schedule 1 to the Act, or its dependent young while it is nesting;
- Intentionally kill, injure or take any wild animal listed under Schedule 5 to the Act; intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any wild animal listed under Schedule 5 to the Act; intentionally or recklessly disturb certain Schedule 5 animal species while they occupy a place used for shelter or protection;
- Pick or uproot any wild plant listed under Schedule 8 of the Act.
- Plant or otherwise cause to grow in the wild any invasive plant listed under Schedule 9 of the Act.

Sites of Special Scientific Interest (SSSI) are also designated under this Act.

In respect to this site, the widespread reptile species (adder, grass snake, common lizard and slow worm) have partial protection under Schedule 5, against intentional killing, injuring and trade. Bats and great crested newts also have full protection under Schedule 5.

Protection of Badgers Act

The Protection of Badgers Act 1992 makes it illegal to kill, injure or take a badger or to intentionally or recklessly interfere with a badger sett. Sett interference includes disturbing badgers whilst they are occupying a sett or obstructing access to it.

Hedgerow Regulations

The Hedgerow Regulations 1997 (as amended) makes it illegal to remove or destroy 'important' hedgerows without Local Planning Authority permission (either through planning or a Hedgerow Removal Notice). Hedgerows that are at least 20 metres long, more than 30 years old and contain certain botanical species need to be assessed for 'importance' using a number of criteria set out in the Regulations.

Natural Environment & Rural Communities Act

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

National Planning Policy Framework (NPPF)

The NPPF replaces Planning Policy Statements (e.g. PPS9) and sets out current government policy on biodiversity and nature conservation. Planners are required to set criteria based policies against which proposals for development which may affect legally protected species will be judged. The NPPF promotes sustainable development by ensuring that developments take account of the role and value of biodiversity with emphasis on maintaining ecological networks at a landscape level.

Biodiversity

Biodiversity 2020: A strategy for England's Wildlife and Ecosystem Services is the current government strategy for maintaining and increasing biodiversity in UK. As a response to this, Local Biodiversity Action Plans set targets which aim to conserve priority species and habitats relevant to each county.