



global environmental solutions

Anzio Camp, Leek

Ecological Assessment, Update Report

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DRAWING 01 Extended Phase 1 Habitat Plan

1.0 INTRODUCTION

1.1 Terms of Reference

SLR Consulting Limited was commissioned by Enhanced Developments Limited to update the ecology surveys at Anzio Camp at Leek Staffordshire (Approximate Centre grid reference SK 007 590).

The site was originally assessed by Apex Ecology undertaken in 2006, with further work undertaken by Andrew McCarthy Associates in 2008.

1.2 Site Context

The Anzio Camp is a former army barracks, and consists of a series of buildings surrounded by agricultural land, located 1.5 km to the east of Tittesworth Reservoir, to the north of Leek, Staffordshire. The site supports species poor semi improved and marshy grassland with large numbers of trees and secondary scrub regeneration. The buildings have all been vandalised for the lead in the roof at some time between 2008 and 2012.

2.0 METHODOLOGY

2.1 Desk Study

2.2 Flora

Habitats

The habitat survey and mapping exercise was carried out by Dale Broadbent BSc (Hons) MIEEM, an experienced ecologist with SLR Consulting on 23 April 2012, using standard Phase 1 Habitat survey methodology (JNCC, 2007).

Species

In addition to general habitat classification and mapping, a botanical species list was also compiled¹, with the abundance of each species being estimated for each main habitat-type using standard 'DAFOR' codes: **D**ominant, **A**bundant, **F**requent, **O**ccasional, **R**are (**L**ocally is used as a prefix where appropriate).

2.3 Fauna

Habitats and features with potential to support protected and/or conservation priority fauna species, together with any field signs of such species, were recorded on the field map using target notes (relevant details are reproduced on the digitised plan in Drawing 01).

2.3.1 Badger

During the site visit any field sign of badger activity (tracks, prints, setts, snuffle holes or latrines) was noted down on the phase 1 map as a target note.

2.3.2 Bats

Building Inspections

The building inspection was undertaken by Dale Broadbent (Natural England Bat Licence 20114467) and Ellie Jones on 10 May 2012.

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

The criteria for building assessment and grading can be found in Appendix C

Evening Emergence & Dawn Survey

Evening and dawn surveys are currently being undertaken by Licensed Ecologists with SLR Consulting.

Evening emergence surveys commenced 15 minutes before sunset and continued for up to 2 hours after. Dawn surveys commenced 1.5 hours before sunrise and ended at sunrise.

¹ Botanical nomenclature follows Stace (1997).

During each survey the surveyors were strategically positioned around the building so as to be able to observe any bats leaving or entering their roost. All observed bat passes were recorded on a detailed plan of the site; noting the time, the location and, where possible, the direction of flight, species and behaviour of the bat (i.e. commuting, foraging, social calling). Particular importance was placed on searching for access/ egress points used by bats for leaving or entering buildings. Surveyors were all equipped with a Duet (Batbox Ltd,) combined frequency division and heterodyne bat detector, or Petterson D 240x (Petterson Elektronik AB, Uppsala, Sweden): Heterodyne and time expansion detector, connected to a creative Zen Nano digital recording device.

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

Tree Inspections

The tree inspection was undertaken by Dale Broadbent on the 23 April 2012.

All trees within the site were initially inspected using binoculars for features which might support roosting bats such as cracks and fissures, woodpecker holes, splits, loose bark, dense ivy and rot holes. The trees were assessed according to the criteria within Table 8.4 of the BCT Guidelines (Anon 2012).

2.3.3 Birds

During the site visit and building inspections a search for evidence of nesting birds and general bird activity was undertaken and recorded on the Phase 1 map as target notes.

2.3.4 Reptiles

Forty heat refuges (0.5 x 0.5m square pieces of bitumen roofing felt) were deployed in suitable habitat (i.e. rough grassland habitats along hedge banks and between scattered scrub) on 23 April 2012.

After allowing a suitable amount of time for the refuges to 'bed in', they were subsequently checked for the presence of reptiles on seven occasions.

Each reptile survey visit was conducted in appropriate weather conditions (temperature between 10 °C and 20 °C, with intermittent or hazy sunshine, little or no wind and no persistent rainfall), either in the morning or late afternoon, so as to maximise the likelihood of finding basking reptiles.

As well as checking the heat refuges, a passive reptile survey was undertaken during each visit. This involved looking for reptiles at existing suitable basking and refuge locations around the site, such as rocks, rubble, discarded metal sheets, logs and ant hills.

2.3.5 Great Crested Newt

Any ponds or water bodies found on site or within 500 metres of the site were subjected to a great crested newt Habitat Suitability Index (HSI) as detailed in Oldham et al (2000).

2.4 Limitations

2.4.1 Desk Study

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

2.4.2 Field Survey

Cool weather experienced at the time of the survey had resulted in some species present on site not being apparent during the Phase 1 assessment. This is not considered to be a significant issue as further site visits are scheduled to be undertaken to assess the sites bat roosts and reptile potential, which will also be used to supplement the field survey.

Access to the roof voids of the buildings was not possible due to safety considerations. The level of water damage making it possible that the roof beams had rotted since the initial inspection.

Quality Assurance & Environmental Management

The surveyor is a member of the Institute of Ecology and Environmental Management (IEEM) and follows the Institute's code of professional conduct when undertaking ecological work.

3.0 RESULTS

3.1 Desk Study

3.1.1 Designated Sites

A full list of the statutory and non statutory designated sites can be found in Appendix B; the nearest statutory designated site is Thorncliff Moor Site of Special Scientific Interest (SSSI) located approximately 900 metres to the west. The Anzio Camp Site of Biological Importance is located within the boundary of the development site.

3.1.2 Protected and Notable Species

A complete list of the protected and notable species generated by the desk study can also be found in Appendix B. Key species which occur in habitat likely to be affected by the proposed development have been highlighted in yellow on the species list.

3.2 Field Survey

3.2.1 Overview

The site consisted of a series of buildings surrounded by semi improved and marshy grassland with scattered scrub and overgrown borders.

The results of the Phase 1 Habitat Survey are illustrated in map form (Drawing 01) with associated target notes listed in Appendix A.

3.2.2 Habitats

Semi Improved Grassland

Areas of grassland surrounding the buildings, identified in the 2006 phase 1 Habitat Survey as amenity grassland have succeeded to species poor-semi improved grassland over the past six years, and these areas now support a larger number of herb species than is typically associated with amenity grassland. The grassland is dominated by creeping bent *Agrostis stolonifera*, and fescue *Festuca* sp. grasses with dandelion *Taraxacum officinale* agg, Meadow fox tail *Alopecurus pratensis*, Yorkshire fog *Holcus lanatus*, broad leaved dock *Rumex obtusifolius* cuckooflower *Cardamine pratensis* and hogweed *Heracleum sphondylium*.

Interspersed within the grassland surrounding the buildings are a large number of semi mature trees, surrounded by secondary regeneration including willow *Salix* sp, field maple *Acer campestre*, oak *Quercus robur*, beech *Fagus sylvatica* and silver birch *Betula pendula*. The areas of scattered scrub and tree coverage on the site has increased significantly since the 2006 survey.

The area of grassland located within the Anzio Camp SBI to the east of the site is unmanaged and dominated by creeping bent with cocksfoot *Dactylis glomerata*, common sorrel *Rumex acetosa* and cuckooflower.

Marshy Grassland

The area of marshy grassland located to the north of the site is unmanaged and consists of patches of sedge *Carex* sp. and grass species including Yorkshire fog, sweet vernal grass *Anthroxanthum odoratum*, soft rush *Juncus effusus*, hard rush *Juncus Inflexus*, cocksfoot

and fescue grasses with broad leaved dock, common sorrel, dandelion, and cuckooflower, the area is unmanaged and has remained largely unchanged since the 2006 surveys.

Non Native Scrub

The herbaceous borders have become dominated by the non native shrubs consisting of cotoneaster *Cotoneaster horizontalis*, buddleia *buddleja davidii*, burberis *Berberis sp* and Rhododendron *Rhododendron sp*.

3.2.3 Badger


Animal tracks, used by badger, were located to the east of the site within the SBI boundary (TN8). A scrape, again showing evidence of use by badger, was observed beneath the perimeter fencing (TN9). No evidence of latrines, setts or snuffle holes were found on site.

3.2.4 Bats

Since 2006 all the buildings have suffered considerable damage to the rooftops, ceilings and floors due to the theft of lead and other valuable metals from the buildings, and the subsequent rain damage to the internal floors and ceilings. As such nearly all of the roof voids have been compromised, with the warm humid conditions favoured by bats being lost. The increase in the number of disturbed tiles on certain buildings could improve their potential to support small roosts, perhaps used by individual or low numbers of bats on an intermittent basis, but the potential of the site to support a significant roost, such as a maternity colony, has been significantly reduced.

3.2.3.1 Building Inspections

**Table 3-1
Building Inspection Results**

Building B1 Moderate Potential		
	<p>Description:</p> <p>A single storey brick building with a double pitch clay tile roof. The windows and doors are open. The brickwork is in good condition with no cracks, crevices or eroded mortar joints. The roof is of modern construction with a bitumastic membrane beneath the tiles.</p> <p>Potential Roosting Features:</p> <ul style="list-style-type: none">- Slipped and broken roofing tiles <p>Evidence of Bat Activity in 2012:</p> <ul style="list-style-type: none">- None	

Building B2

**Moderate
Potential**



Description:

A single storey brick building with a double pitch clay tile roof. The windows and doors are open. The brickwork is in good condition with no cracks, crevices or eroded mortar joints. The roof is of modern construction with a bitumastic membrane beneath the tiles.

Potential Roosting Features:

- Slipped and broken roofing tiles
- Holes into soffit box

Evidence of Bat Activity in 2012:

- None
-

Building B3

**Moderate
Potential**



Description:

A single storey brick building with a double pitch clay tile roof. The windows and doors are open. The brickwork is in good condition with no cracks, crevices or eroded mortar joints. The roof is of modern construction with a bitumastic membrane beneath the tiles. An Internal inspection was not possible due to health and safety considerations

Potential Roosting Features:

- Slipped and broken roofing tiles
- Holes into soffit box

Evidence of Bat Activity in 2012:

- None
-

Building B4

**Moderate/High
Potential**



Description:

A single storey brick building with a double pitch clay tile roof. The windows and doors are open. The brickwork is in good condition with no cracks, crevices or eroded mortar joints. The roof is of modern construction with a bitumastic membrane beneath the tiles. An Internal inspection was not possible due to health and safety considerations

Potential Roosting Features:

- Slipped and broken roofing tiles
- Gaps into soffit box
- Holes into cavity wall

Evidence of Bat Activity in 2012:

- None
-

Building B5

**Moderate /
High Potential**



**Confirmed
Roost in 2006**

Description:

A two storey brick building with a multiple pitched clay tile roof. The brickwork is in good condition; though the roof has been broken open in many locations. The roof is of modern construction with a bitumastic membrane beneath the tiles. An Internal inspection was not possible due to health and safety considerations

Potential Roosting Features:

- Slipped and broken roofing tiles
- Gaps into soffit box
- Some lead flashing remains on the eastern aspect

Evidence of Bat Activity in 2012:

- None
-

Building B6

**Moderate
Potential**



**Confirmed
roost in 2006**

Description:

A two storey brick building with a multiple pitched clay tile roof. The brickwork is in good condition; though the roof has been broken open in many locations. The roof is of modern construction with a bitumastic membrane beneath the tiles. An Internal inspection was not possible due to health and safety considerations

Potential Roosting Features:

- Slipped and broken roofing tiles
- Gaps into soffit box

Evidence of Bat Activity in 2012:

- None
-

Building B7

**Moderate
Potential**



**Confirmed
roost in 2006**

Description:

A two storey brick building with a multiple pitched clay tile roof. The brickwork is in good condition; though the roof has been broken open in many locations. The roof is of modern construction with a bitumastic membrane beneath the tiles. An Internal inspection was not possible due to health and safety considerations

Potential Roosting Features:

- Slipped and broken roofing tiles

Evidence of Bat Activity in 2012:

- None
-

Building B8

**Moderate
Potential**

**Confirmed
Roost in 2006**



Description:

A two storey brick building with a multiple pitched clay tile roof. The brickwork is in good condition; though the roof has been broken open in many locations. The roof is of modern construction with a bitumastic membrane beneath the tiles. An Internal inspection was not possible due to health and safety considerations

Potential Roosting Features:

- Slipped and broken roofing tiles

Evidence of Bat Activity in 2012:

- None
-

Building B9

**Moderate
Potential**



Description:

A two storey brick building with a multiple pitched clay tile roof. The brickwork is in good condition; though the roof has been broken open in many locations. The roof is of modern construction with a bitumastic membrane beneath the tiles. An Internal inspection was not possible due to health and safety considerations

Potential Roosting Features:

- Slipped and broken roofing tiles

Evidence of Bat Activity in 2012:

- None
-

Building B10

**Moderate
Potential**

**Confirmed
roost in 2006**



Description:

A two storey brick building with a multiple pitched clay tile roof. The brickwork is in good condition; though the roof has been broken open in many locations. The roof is of modern construction with a bitumastic membrane beneath the tiles. An Internal inspection was not possible due to health and safety considerations

Potential Roosting Features:

- Slipped and broken roofing tiles

Evidence of Bat Activity in 2012:

- None
-

Building B11

**Moderate
Potential**



Description:

A one and two storey brick building with a single pitched clay tile roof. The brickwork is in good condition; though the roof has been broken open in many locations. The roof is of modern construction with a bitumastic membrane beneath the tiles. An Internal inspection was not possible due to health and safety considerations.

Potential Roosting Features:

- Slipped and broken roofing tiles

Evidence of Bat Activity in 2012:

- None
-

Building B12

**Confirmed
roost in 2012**



**Confirmed
maternity
roost in 2006**

Description:

A single storey brick building with a multiple pitched clay tile roof. The brickwork is in good condition; though the roof has been broken open in many locations. The roof is of modern construction with a bitumastic membrane beneath the tiles. The roof is of modern construction with metal beams and wooden joists, light levels were high, and the roof void was cool and drafty due to the number of holes in the roof.

Potential Roosting Features:

- Slipped and broken roofing tiles
- Wooden soffit box on northern aspect

Evidence of Bat Activity in 2012:

- Two droppings consistent with common pipistrelle were found in the roof void. The droppings appeared quite old.
-

Building B13

**Moderate
Potential**



Description:

A single storey brick building with a single pitched clay tile roof. The brickwork is in good condition; though the roof has been broken open in many locations. The roof is of modern construction with a bitumastic membrane beneath the tiles. The roof void was cluttered with numerous wooden joists and metal beams, light levels were high and the roof void was cool and drafty.

Potential Roosting Features:

- Slipped and broken roofing tiles

Evidence of Bat Activity in 2012:

- None
-

Building B14

**Moderate
potential**



Description:

A single storey brick building with a multiple pitched clay tile roof. The brickwork is in good condition; though the roof has been broken open in many locations. The roof is of modern construction with a bitumastic membrane beneath the tiles. An Internal inspection was not possible due to health and safety considerations

Potential Roosting Features:

- Slipped and broken roofing tiles

Evidence of Bat Activity in 2012:

- None
-

Building B15

**Negligible
Potential**



Description:

A single storey brick building with a flat concrete roof. The brickwork is in good condition. Light levels within the building were low to moderate.

Potential Roosting Features:

- None

Evidence of Bat Activity in 2012:

- None
-

Building B16
Negligible
Potential



Description:

A single storey metal skin building, with a single pitched metal roof.

Potential Roosting Features:

- None

Evidence of Bat Activity in 2012:

- None
-

Building B17
Moderate /
High Potential



Description:

A single storey prefabricated concrete building with a pitched clay tile roof with hanging tiles on the east and west aspects. The building is in poor condition and the roof appears to be unstable, preventing any internal inspections.

Potential Roosting Features:

- Slipped and broken roofing tiles
- Hanging tiles on east and west aspects

Evidence of Bat Activity in 2012:

- None
-

3.2.3.2 Tree Inspections

With the exception of two beech trees (indicated by TN7 on Drawing 01) and a tree containing a woodpecker hole (TN3), none of the trees on site had features that are considered suitable for roosting bats. The two trees at TN 7 were assessed as Category 1* trees as they have the potential to support a significant roost within the hollow cores. The tree at TN7 has been assessed as a Category 1 tree as it has lower potential for roosting bats.

3.2.3.3 Dusk and Dawn Activity Surveys

A series of dusk and dawn bat surveys to cover all the buildings on the site is currently underway; results from the first bat survey indicate that roosts of common pipistrelle are on or near to the site, based on the time the first bats were recorded. The remaining dusk dawn surveys are to be undertaken on the 26/27 June, and the results of these surveys will be provided in detail once the work is concluded.

To date bat roosting activity has been recorded in Buildings B5, B8 and B9. The roosts are all occupied by individual common pipistrelle bats; they have all been classified as summer roosts supporting low numbers of male or non breeding females.

3.2.5 Birds

Nesting blue tits *Parus caeruleus* were observed nesting within the cavity wall of building B4 and in the soffit box of building B13. An occupied woodpecker hole (TN3) was also located within a tree (Target Note 3). Barn Swallow *Hirundo rustica* were recorded roosting within building B12, though no evidence of nesting was observed.

A barn owl was observed entering building B9 on 23 April 2012, and hunting over the site during the dawn survey on 10 May 2012 but no evidence of nesting was found during the building inspections.

3.2.6 Great Crested Newt

The south east corner of the site supports a wet ditch surrounded by willow and alder trees. The pond was subjected to a HSI assessment which scored it as being of poor value for this species (a HSI score of 0.44). This indicates that there is a very low probability of this pond supporting great crested newt and as such no further surveys are considered necessary.

3.2.7 Reptiles

The results of the reptile survey are detailed in table 3.2 below. No reptiles were recorded during the seven visits; though a considerable number of toads were recorded taking shelter beneath the roofing felt tiles.

Table 3-2
Reptile Survey Results

Visit	Date	Temp	Cloud	Weather	Results	Additional Notes
1	09-May	14	8 of 8	light drizzle	No returns	
2	23-May	20	1 of 8	hazy sunshine	No returns	
3	25-May	20	1 of 8	sunny	No returns	4 toad
4	29-May	24	0 of 8	sunny	No returns	3 toad
5	30-May	19	1 of 8	hazy sunshine	No returns	1 toad
6	18-Jun	19	1 of 8	Sunny	No returns	2 Toad one vole
7	19-Jun	18	2 of 8	hazy sunshine	No returns	3 toad

4.0 RELEVANT LEGISLATION & POLICY²

4.1 Legislation

4.1.1 *Habitat Regulations*

The Conservation of Habitats and Species Regulations 2010 transpose Council Directive 92/43/EEC on the Conservation of Natural Habitats and Wild Flora and Fauna (Habitats Directive) into English law, making it an offence to deliberately capture, kill or disturb³ wild animals listed under Schedule 2 of the Regulations. It is also an offence to damage or destroy a breeding site or resting place of such an animal (even if the animal is not present at the time).

4.1.2 *Wildlife & Countryside Act*

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

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

4.1.3 *Natural Environment & Rural Communities Act*

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

4.2 Policy

4.2.1 *National Planning Policy Framework*

NPPF supersedes PPS9 and lays out current government policy on sustainable development including considerations towards biodiversity and nature conservation and places a duty on planners to make material consideration to the effect of a development on legally protected species when considering planning applications.

² Please note that this legal information is a summary and intended for general guidance only. The original legal documents should be consulted for definitive information. Web addresses providing access to the full text of these documents are given in the References & Bibliography section.

³ Disturbance, as defined by the Conservation of Habitats and Species Regulations 2010, includes in particular any action which impairs the ability of animals to survive, breed, rear their young, hibernate or migrate (where relevant); or which affects significantly the local distribution or abundance of the species.

4.2.2 Biodiversity Action Plans

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

4.2.3 Local Structure Plans

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

5.0 DISCUSSION & RECOMMENDATIONS

5.1 Habitats

With the exception of the buildings, which have been heavily vandalised, the habitats on site have not changed significantly since 2006/ 2008, the reduction in management since this time has allowed a more diverse grassland sward to develop on the former amenity grassland, as well as a significant increase in the levels of scrub coverage on the site as a whole. The area of marshy grassland to the north of the site has remained largely unchanged, while the area of grassland to the east has become dominated by coarse grass species which has reduced the species diversity recorded here compared to the 2006 survey.

It is recommended that a site management plan is formulated for the site to promote the management of the Anzio camp SBI and the site vegetation. The management plan should be drawn up in consultation with the Local Authority and the local Wildlife Trust to meet any identified objectives for the site.

5.2 Protected Species

Bats

A climb-and-inspect assessment by a competent tree climber under the supervision of a licensed bat worker, or a series of dusk/ dawn bat detector surveys is recommended for the two beach trees (TN7) and the tree containing the woodpecker hole (TN3). If there is no evidence of bat activity the trees should be sensitively felled in sections within 24 hours of the inspection/ surveys. The cordwood should be left in situ for a further 24 hours before being cleared.

Due to the damage to the buildings on the site it is likely that the majority of the roosts recorded in 2006, located within buildings B5, B6, B7, B8, B10 and B12 are no longer present. This is supported by the current findings from the bat surveys already carried out. Based on these findings it is recommended that mitigation for bats should be tailored for the bat assemblage identified in the 2006 bat survey.

Retention of existing roosts and replacement roosts

No roosts would be retained as all the buildings on site are scheduled to be demolished. It is proposed that Building B15 would be modified to include roosting features for bats. Modifications to this building would take the form of removing the surrounding wall and blocking up the windows. The doors would be modified to allow access for the bats but ensure that access by visitors to the building was restricted. Untreated marine ply boards containing roosting features would be affixed to the internal walls of the building as well as two Schwegler 1FW Hibernation Boxes. A further 20 bat boxes would be installed in mature trees on site and in the adjacent woodland to provide additional roosting opportunities. These provisions should ideally be in place before the demolition of the site buildings.

**Table 5-1
Recommended Bat Box Provision**

Bat Box type	Number
Schwegler 2F	6
Schwegler 2F-DFP	6
Schwegler 1FS	3
Oak double chambered bat box	5

Demolition Works

Demolition works on the site buildings would need to be undertaken under a Natural England European Protected Species Licence. Once the license is acquired and before demolition works can proceed all features capable of supporting roosting bats in the buildings identified as having bat roost potential would be exhaustively searched and where possible these features would be sealed or removed. Where an internal inspection is not possible one-way exclusion devices would be installed, after these devices have been in situ for five nights of good weather the buildings could then be demolished using a sensitive demolition protocol. Buildings assessed as having negligible bat roost potential can be demolished using the sensitive demolition protocol. A tool box talk will be provided by a licensed bat ecologist to the demolition team before works commence.

Birds

The site represents a wide range of bird nesting opportunities, both within the buildings and in surrounding scrub and woodland. Nesting birds are protected and ideally all demolition works and scrub clearance should be scheduled to avoid the bird breeding season, which for most species extends between March and August inclusive. If this cannot be achieved it will be necessary to undertake a nesting bird check immediately before works are to commence. As compensation for the loss of nesting opportunities as a result of the demolition and scrub clearance the following nesting boxes should be provided.

**Table 5-2
Proposed Nest Boxes**

Nest Box	Number
Kestrel Box	2
Barn Owl Nest Box	2
Sparrow terraces	3
Hole fronted bird Boxes	8
Swallow Nesting Cups	5

The swallow nesting cups should be located within building B15, while the sparrow terraces should be installed on the outside of this building. The hole fronted bird boxes, kestrel and barn owl boxes should be located on the site under the advice of a suitably experienced ecologist.

6.0 CLOSURE

This report has been prepared by SLR Consulting Limited with all reasonable skill, care and diligence, and taking account of the manpower and resources devoted to it by agreement

with the client. Information reported herein is based on the interpretation of data collected and has been accepted in good faith as being accurate and valid.

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

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

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www.naturalareas.naturalengland.org.uk (Accessed 12/04/2012)

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

Conservation of Habitats and Species Regulations 2010:

http://www.opsi.gov.uk/si/si2010/uksi_20100490_en_1

Habitats Directive:

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

Birds Directive:

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

Wildlife and Countryside Act 1981:

www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1981/cukpga_19810069_en_1

Countryside and Rights of Way Act 2000:

www.legislation.hms.gov.uk/acts/acts2000/20000037

Natural Environment and Rural Communities Act 2006:

http://www.opsi.gov.uk/acts/acts2006/ukpga_20060016_en_1

Protection of Badgers Act 1992:

http://www.opsi.gov.uk/ACTS/acts1992/ukpga_19920051_en_1

National Parks and Access to the Countryside Act 1949:

http://www.opsi.gov.uk/RevisedStatutes/Acts/ukpga/1949/cukpga_19490097_en_1

National Planning Policy Framework 2012

<http://www.communities.gov.uk/documents/planningandbuilding/pdf/2116950.pdf>

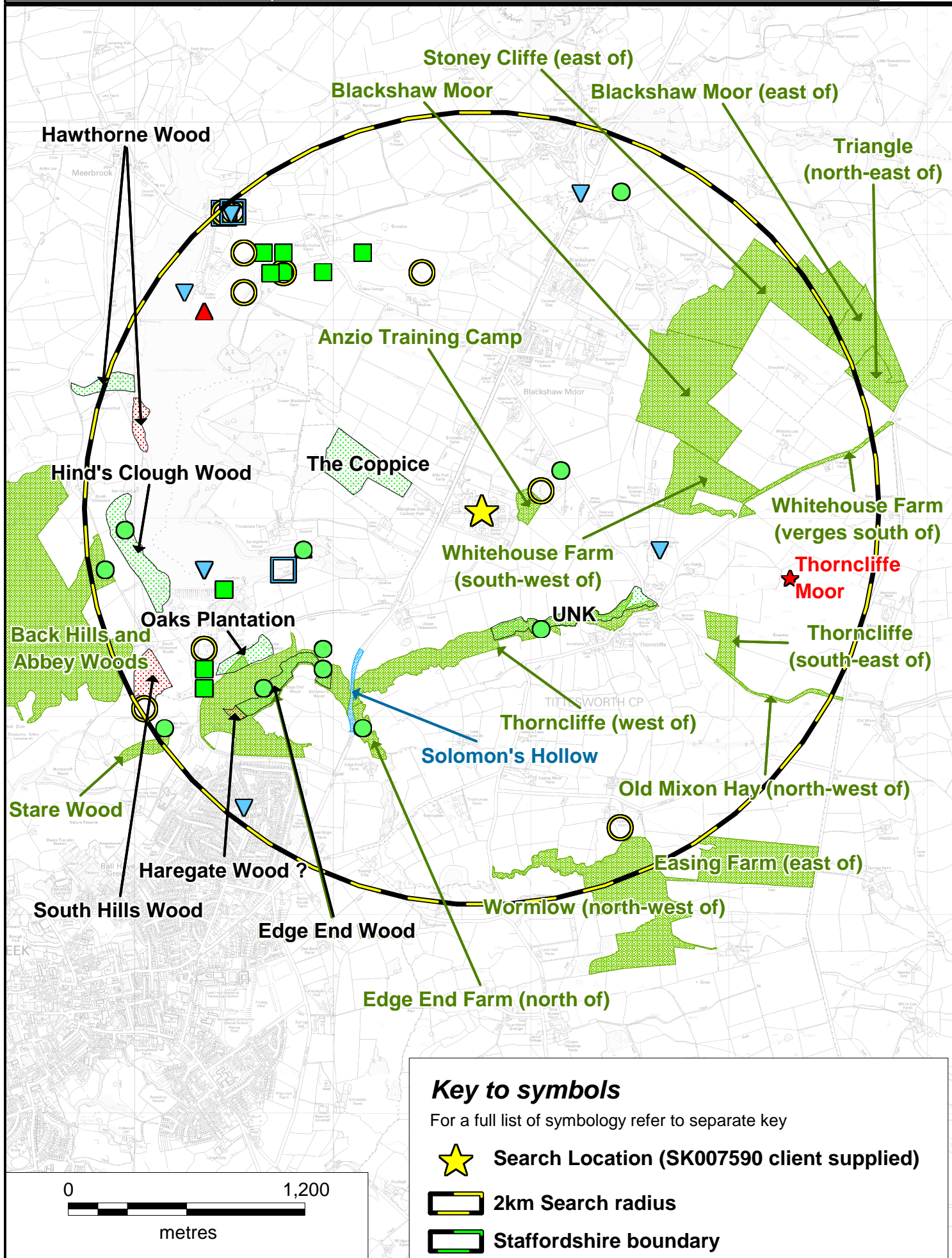
APPENDIX A – TARGET NOTES

Number	Note
TN1	Bird nest in soffit box of Building B13
TN2	Blue tit nest in cavity wall of Building B4
TN3	Woodpecker hole in tree (occupied)
TN4	Owl and raptor Pellets (possibly kestrel) found at old firing range
TN5	Small area of standing water beneath willow and alder, HSI indicated poor suitability for GCN (HSI score of 0.44)
TN6	Small area (approx 10m X 15m) of Species Poor Neutral Grassland, dominated by red fescue <i>Festuca rubra</i> and Creeping bent <i>Agrostis stolonifera</i> with Common vetch <i>Vicia sativa</i> and yarrow <i>Achillea millefolium</i> .
TN7	Two mature Beech trees assessed as having high bat roost potential
TN8	Badger track
TN9	Scrape under perimeter fencing

APPENDIX B – DESK STUDY DATA

Nature Conservation Sites and Species within 2km of Anzio Camp (SK007590)

Note: Badger records are excluded, and only 100m precision sightings are plotted






A legend to the map showing Nature Conservation Sites and Species




Introduction

These colours are used on the site alert mapping within the SWT GIS, but SER cannot guarantee the same colours are used in any other mapping system, particularly those based on ArcView.

Statutory Designations from Natural England's web-site

	National Nature Reserves	★	NNR (boundary not available owing to OS restrictions)
	Sites of Special Scientific Interest	★	SSSI (boundary not available owing to OS restrictions)
	Local Nature Reserves	★	LNR (boundary not available owing to OS restrictions)

Non-statutory Designations from the Staffordshire Grading System (1995 onwards)

	Site of Biological Importance (ex Grade 1 SBI) equivalent to "Local Wildlife Site"
	Biodiversity Alert Site (ex Grade 2 SBI)
	Proposed/potential Site of Biological Importance


Geological Sites

	Regionally Important Geological/geomorphological Site (= Local Geological Site)
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

Staffordshire Wildlife Trust Sites

	SWT Nature Reserves
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






Other Nature Reserves

	Royal Society for the Protection of Birds
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Ancient Woodland Inventory

	Ancient & Semi-natural Woodland
	Ancient Replanted Woodland

Species Information

	Mammals excluding those listed below		Amphibians and reptiles excluding those below
	Otter (<i>Lutra lutra</i>)		Great Crested Newt (<i>Triturus cristatus</i>)
	Badger (<i>Meles meles</i>) - not normally supplied		Native Crayfish (<i>Austropotamobius pallipes</i>)
	Water Vole (<i>Arvicola terrestris</i>)		Flowering plants except those below
	All bat species		Bluebell (<i>Hyacinthoides non-scripta</i>)
	All bird species		Butterflies and Moths
	Any other protected species (precise to 100m)		BAP Species Records (precise to 100m)
	All Protected Species Records (precise to 1km)		BAP Species Records (precise to 1km)

Notes:

The Local Nature Reserve and other nature reserve boundaries can overlay the current grading when both layers are actively visible

Where there are multiple species records for the same grid reference the dot for one species may obscure the dots for other species - all species records will be displayed in the accompanying spreadsheet

Not all the above categories may be present on the accompanying map

Version 2.0 July 2011

NOTE:

Scientific Name	Common Name	No. Of Recs.	Most Recent Rec.
Bufo bufo	Common Toad	3	2008
Accipiter gentilis	Northern Goshawk	13	2009
Actitis hypoleucos	Common Sandpiper	285	2011
Alauda arvensis	Sky Lark	55	2011
Alcedo atthis	Common Kingfisher	185	2011
Anas acuta	Northern Pintail	28	2011
Anas clypeata	Northern Shoveler	87	2011
Anas crecca	Eurasian Teal	339	2011
Anas platyrhynchos	Mallard	313	2011
Anas querquedula	Garganey	2	1975
Anas strepera	Gadwall	52	2011
Anser albifrons	Greater White-fronted Goose	2	1978
Anser anser	Greylag Goose	63	2011
Anser brachyrhynchus	Pink-footed Goose	86	2011
Anser erythropus	Lesser White-fronted Goose	1	2007
Anthus pratensis	Meadow Pipit	59	2011
Anthus spinoletta	Water Pipit	1	2003
Anthus trivialis	Tree Pipit	7	2011
Apus apus	Common Swift	67	2011
Arenaria interpres	Ruddy Turnstone	9	2009
Asio flammeus	Short-eared Owl	14	2012
Aythya ferina	Common Pochard	194	2011
Aythya fuligula	Tufted Duck	345	2011
Aythya marila	Greater Scaup	27	2011
Aythya nyroca	Ferruginous Duck	4	2005
Botaurus stellaris	Great Bittern	2	2012
Branta bernicla	Brent Goose	5	2008
Branta leucopsis	Barnacle Goose	11	2010
Bucephala clangula	Common Goldeneye	152	2011
Calidris alpina	Dunlin	125	2011
Calidris canutus	Red Knot	2	2007
Calidris temminckii	Temminck's Stint	3	1993
Carduelis cabaret	Lesser Redpoll	189	2011
Carduelis cannabina	Common Linnet	46	2011
Carduelis flavirostris	Twite	3	1994
Charadrius alexandrinus	Kentish Plover	1	1995
Charadrius dubius	Little Plover	224	2011
Chlidonias niger	Black Tern	30	2010
Circus aeruginosus	Eurasian Marsh Harrier	3	2010
Circus cyaneus	Hen Harrier	10	2008
Clangula hyemalis	Long-tailed Duck	1	1987
Columba oenas	Stock Dove	49	2011
Cuculus canorus	Common Cuckoo	34	2011
Cygnus columbianus	Tundra Swan	6	2002
Cygnus cygnus	Whooper Swan	25	2011
Delichon urbicum	House Martin	108	2011
Dendrocopos minor	Lesser Spotted Woodpecker	20	2011
Egretta garzetta	Little Egret	64	2011
Emberiza citrinella	Yellowhammer	8	2004
Emberiza schoeniclus	Reed Bunting	200	2011
Eremophila alpestris	Horned Lark	1	1996
Falco columbarius	Merlin	10	2008
Falco peregrinus	Peregrine Falcon	96	2011
Falco subbuteo	Eurasian Hobby	58	2011
Falco tinnunculus	Common Kestrel	134	2011
Ficedula hypoleuca	Pied Flycatcher	45	2011

<i>Fringilla montifringilla</i>	Brambling	49	2011
<i>Fulmarus glacialis</i>	Northern Fulmar	1	1993
<i>Gallinago gallinago</i>	Common Snipe	312	2011
<i>Gavia immer</i>	Great Northern Diver	1	1985
<i>Gavia stellata</i>	Red-throated Diver	1	1997
<i>Haematopus ostralegus</i>	Eurasian Oystercatcher	167	2011
<i>Hirundo rustica</i>	Barn Swallow	190	2011
<i>Lagopus lagopus</i>	Willow Ptarmigan	9	2011
<i>Larus argentatus</i>	Herring Gull	52	2011
<i>Larus canus</i>	Common Gull	116	2011
<i>Larus fuscus</i>	Lesser Black-backed Gull	157	2011
<i>Larus marinus</i>	Great Black-backed Gull	21	2010
<i>Larus melanocephalus</i>	Mediterranean Gull	4	2008
<i>Larus michahellis</i>	Yellow-legged Gull	1	2008
<i>Larus minutus</i>	Little Gull	5	2011
<i>Larus ridibundus</i>	Black-headed Gull	234	2012
<i>Limosa lapponica</i>	Bar-tailed Godwit	4	2011
<i>Limosa limosa</i>	Black-tailed Godwit	42	2011
<i>Locustella naevia</i>	Common Grasshopper Warbler	8	2009
<i>Luscinia svecica</i>	Bluethroat	1	1994
<i>Lymnocyptes minimus</i>	Jack Snipe	23	2009
<i>Melanitta nigra</i>	Common Scoter	24	2011
<i>Mergellus albellus</i>	Smew	1	1989
<i>Milvus milvus</i>	Red Kite	7	2009
<i>Morus bassanus</i>	Northern Gannet	3	2009
<i>Motacilla cinerea</i>	Grey Wagtail	124	2011
<i>Motacilla flava</i>	Yellow Wagtail	19	2010
<i>Motacilla flava subsp. flavissima</i>	Yellow Wagtail	12	2011
<i>Muscicapa striata</i>	Spotted Flycatcher	114	2011
<i>Numenius arquata</i>	Eurasian Curlew	303	2011
<i>Numenius phaeopus</i>	Whimbrel	45	2011
<i>Oenanthe oenanthe</i>	Northern Wheatear	27	2011
<i>Pandion haliaetus</i>	Osprey	43	2012
<i>Passer domesticus</i>	House Sparrow	121	2011
<i>Passer montanus</i>	Eurasian Tree Sparrow	13	2011
<i>Perdix perdix</i>	Grey Partridge	12	2011
<i>Phalacrocorax aristotelis</i>	European Shag	2	1996
<i>Philomachus pugnax</i>	Ruff	4	2005
<i>Phoenicurus ochruros</i>	Black Redstart	1	1982
<i>Phoenicurus phoenicurus</i>	Common Redstart	116	2011
<i>Phylloscopus sibilatrix</i>	Wood Warbler	2	2008
<i>Phylloscopus trochilus</i>	Willow Warbler	168	2011
<i>Picus viridis</i>	Green Woodpecker	39	2011
<i>Plectrophenax nivalis</i>	Snow Bunting	1	1983
<i>Pluvialis apricaria</i>	European Golden Plover	12	2011
<i>Pluvialis squatarola</i>	Grey Plover	3	2009
<i>Podiceps auritus</i>	Slavonian Grebe	1	1996
<i>Podiceps grisegena</i>	Red-necked Grebe	3	1997
<i>Poecile montanus</i>	Willow Tit	142	2011
<i>Poecile palustris</i>	Marsh Tit	11	2011
<i>Prunella modularis</i>	Dunnock	97	2011
<i>Pyrhula pyrrhula</i>	Common Bullfinch	139	2011
<i>Recurvirostra avosetta</i>	Pied Avocet	1	1994
<i>Riparia riparia</i>	Sand Martin	110	2011
<i>Rissa tridactyla</i>	Black-legged Kittiwake	7	2011
<i>Saxicola rubetra</i>	Whinchat	14	2011
<i>Scolopax rusticola</i>	Eurasian Woodcock	28	2011
<i>Somateria mollissima</i>	Common Eider	1	1993
<i>Sterna hirundo</i>	Common Tern	51	2011

<i>Sterna paradisaea</i>	Arctic Tern	12	2009
<i>Sterna sandvicensis</i>	Sandwich Tern	2	2005
<i>Sternula albifrons</i>	Little Tern	2	1998
<i>Streptopelia turtur</i>	European Turtle Dove	1	1993
<i>Sturnus vulgaris</i>	Common Starling	101	2011
<i>Sylvia communis</i>	Common Whitethroat	73	2011
<i>Tachybaptus ruficollis</i>	Little Grebe	89	2011
<i>Tadorna ferruginea</i>	Ruddy Shelduck	14	2011
<i>Tringa erythropus</i>	Spotted Redshank	1	1972
<i>Tringa glareola</i>	Wood Sandpiper	11	2011
<i>Tringa nebularia</i>	Common Greenshank	63	2011
<i>Tringa ochropus</i>	Green Sandpiper	55	2011
<i>Tringa totanus</i>	Common Redshank	76	2011
<i>Turdus iliacus</i>	Redwing	105	2011
<i>Turdus philomelos</i>	Song Thrush	117	2011
<i>Turdus pilaris</i>	Fieldfare	118	2011
<i>Turdus torquatus</i>	Ring Ouzel	3	2009
<i>Turdus viscivorus</i>	Mistle Thrush	75	2011
<i>Tyto alba</i>	Barn Owl	118	2011
<i>Vanellus vanellus</i>	Northern Lapwing	426	2011
<i>Genista tinctoria</i>	Dyer's Greenweed	5	1995
<i>Hieracium acuminatum</i>	Tall Hawkweed	1	2007
<i>Hyacinthoides non-scripta</i>	Bluebell	23	2007
<i>Rumex alpinus</i>	Monk's-rhubarb	1	2000
<i>Vicia lutea</i>	Yellow-vetch	1	1978
<i>Erynnis tages</i>	Dingy Skipper	1	1999
<i>Lasiommata megera</i>	Wall	2	2009
<i>Pyrgus malvae</i>	Grizzled Skipper	1	1982
<i>Andrena (Andrena) clarkella</i>	insect - hymenopteran	6	2007
<i>Bombus</i>	insect - hymenopteran	1	2001
<i>Bombus (Bombus) lucorum</i>	insect - hymenopteran	5	2007
<i>Bombus (Bombus) terrestris</i>	insect - hymenopteran	18	2007
<i>Bombus (Melanobombus) lapidarius</i>	Large Red Tailed Bumble Bee	1	2007
<i>Bombus (Psithyrus) sylvestris</i>	Four Coloured Cuckoo Bee	1	2001
<i>Bombus (Psithyrus) vestalis</i>	Vestal Cuckoo Bee	1	2000
<i>Bombus (Pyrobombus) jonellus</i>	Heath Bumble Bee	1	2000
<i>Bombus (Pyrobombus) monticola</i>	Mountain Bumble Bee	2	2001
<i>Bombus (Pyrobombus) pratorum</i>	Early Bumble Bee	3	2007
<i>Bombus (Thoracombus) pascuorum</i>	Common Carder Bee	2	2001
<i>Vespula (Paravespula) vulgaris</i>	Common Wasp	1	2006
<i>Acronicta psi</i>	Grey Dagger	1	2011
<i>Apamea remissa</i>	Dusky Brocade	2	2011
<i>Blepharita adusta</i>	Dark Brocade	1	2010
<i>Caradrina morpheus</i>	Mottled Rustic	1	2009
<i>Ecliptopera silaceata</i>	Small Phoenix	4	2011
<i>Euxoa nigricans</i>	Garden Dart	1	2008
<i>Melanchra pisi</i>	Broom Moth	1	2010
<i>Mythimna comma</i>	Shoulder-striped Wainscot	1	2009
<i>Spilosoma lubricipeda</i>	White Ermine	6	2011
<i>Spilosoma luteum</i>	Buff Ermine	3	2011
<i>Xanthia icteritia</i>	Sallow	2	2008
<i>Xanthorhoe decoloraria</i>	Red Carpet	1	1898
Chiroptera	a bat	3	1997
<i>Myotis daubentonii</i>	Daubenton's Bat	6	2008
<i>Nyctalus noctula</i>	Noctule Bat	4	2008
<i>Pipistrellus pipistrellus sens. lat.</i>	Pipistrelle	6	2005
<i>Pipistrellus pygmaeus</i>	Soprano Pipistrelle	2	2008
<i>Lutra lutra</i>	European Otter	5	2008
<i>Meles meles</i>	Eurasian Badger	58	2011

Mustela putorius	Polecat	2	2010
Erinaceus europaeus	West European Hedgehog	7	2010
Lepus europaeus	Brown Hare	60	2011
Arvicola amphibius	European Water Vole	13	2002
Micromys minutus	Harvest Mouse	10	2011
Natrix natrix	Grass Snake	4	2008
Vipera berus	Adder	1	1878
Zootoca vivipara	Common Lizard	1	1979

APPENDIX C

Assessment of potential to support roosting bats – Grading system for Buildings

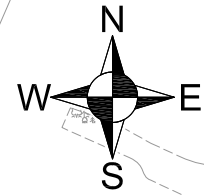
It should be noted that the grading system below only reports on the situation at the time of survey; should bat activity levels change after the initial survey, or should the trees/ buildings/ structures be modified (for example if roof tiles are removed or fascia boards develop cracks), the category may need revision. Generally speaking, assessments are considered to be valid for 12 months.

Building/ Structure Category (Potential Value in Summer)	Description
No/negligible value	Buildings with no or very few features capable of supporting roosting bats. Most buildings in this category tend to be 'sound' well-sealed structures (with no or very few potential bat access points), or have a single prefabricated steel or sheet material skin and no separate roof void. They tend to have high interior and/ or exterior light-levels, and be cool, with little or no insulation; they may be subject to regular disturbance. They may be within a highly urbanised location, within cities for example, with no obvious 'connectivity' or potential bat flight lines between the building and suitable foraging habitat. Buildings without any roofs may also fall into this category.
Low value	Buildings without features with potential to support a significant roost, but with a small number of 'opportunistic' features capable of supporting a small number of roosting bats, most likely common pipistrelles (perhaps due to a very urban setting). Buildings within this category may contain a small number of gaps above windows a small number of slipped or missing roof or hanging tiles, a cavity between tiles and underfelt, or small numbers of apparently shallow crevices, for example). Buildings in this category do not have potential to support, for example, a maternity colony (including of common pipistrelles), large numbers of hibernating bats, or a significant transitory roost. Buildings within this category may be surrounded by poor or sub-optimal bat foraging habitat, with few mature trees, little parkland, woodland or wetland within circa 400 metres, and have few bat flight lines/ 'broken' connectivity to such habitats, as is often the case with urbanised (such as town or city centre) locations.
Moderate value	Buildings usually of brick or stone construction with a large number of features of obvious potential to roosting bats e.g. loose roof / ridge tiles, gaps in brickwork, gaps under fascia boards, and/or warm sealed roof-spaces with under-felt. Buildings falling into this category would not be expected to support a maternity colony, or significant hibernation or transitory roost. For example, whilst a large number of potential roosting features and bat access points may exist, the building may be externally lit, be subject to regular disturbance, be draughty and cold, have a cluttered roof void, or not have good connectivity with high quality bat foraging habitat within circa 400 metres. Nonetheless, they may have some potential to support small roosts, of more than one bat species (i.e. not just potential to support small numbers of common pipistrelle).
	Buildings with a large number of features of likely significance to bats (such as extensive areas of 'lifted' fascia boards and/ or a large number of gaps

Building/ Structure Category (Potential Value in Summer)	Description
High value	<p>beneath weather boarding or roof/ hanging tiles), suggesting it may be used either as a maternity colony, a hibernation site for large numbers of bats, or as a significant transitory roost. Buildings within 'core areas' of greater horseshoe, lesser horseshoe, barbastelle or Bechstein's distribution would generally fall into this category, if they have potential to support roosts of these species (including significant 'night roosts'). Buildings falling into this category may include those with brick or stone construction with exposed wooden beams (generally >20 cm wide roof timbers with mortice joints, cracks and holes) and a dark, uncluttered roof void; buildings with damp, dark cellars containing a large number of crevices; and buildings close to and with good connectivity with woodland and/ or water bodies may also have High intrinsic value. Caves; tunnels; mines; ice-houses; military fortifications; churches; bridges (particularly over water); follies and viaducts/ aqueducts, and underground ducts may also, depending on their construction and location, also have High bat potential.</p>
Confirmed roost	<p>Bats discovered roosting within the building, or recorded emerging from / entering the building at dusk and / or dawn. Building found to contain conclusive evidence of occupation by bats, such as bat droppings. A confirmed record (as supplied by an established source such as the local bat group) would also apply to this category.</p> <p>The intrinsic nature conservation value of the roost (i.e. the value of the 'receptor') will depend upon the bat species roosting within it, the number of bats, and their seasonality of use (for example, a maternity colony would generally be of higher intrinsic value than a transitory roost). Furthermore, the 'setting' of the roost may influence its value, for example, a transitory roost of common pipistrelles in a city centre location may be ascribed greater value than a similar roost in a rural location.</p>
Building/ Structure Category (Potential Value as a Hibernation Site)	Description
Moderate or High Value	<p>Specialist hibernation surveys (involving two x winter checks, and/ or two x automated detector surveys) would generally only be recommended for buildings or structures with appreciable potential to support hibernation roosts, for example, buildings with large, damp cellars with gaps in the walls, traditional stone barns with numerous gaps and/ or empty mortice joints, caves, mines, tunnels bridges over water etc. Buildings with modest/ limited potential to support small numbers of common pipistrelles within 'opportunistic' roost features would generally not be subject to specific hibernation surveys, although it may be recommended that the hibernation period may be avoided for demolition</p>
Tree Category (Potential Value as	

Building/ Structure Category (Potential Value in Summer)	Description
a Hibernation Site)	Description
<p>The value of trees is assessed according to the criteria within Table 8.4 of the BCT guidelines. In terms of applying an appropriate level of dusk/ dawn survey effort (see Table 8.5 of the BCT guidelines), a Category 1* tree is classified as Moderate potential (i.e. requiring 2 survey sessions), a Category 1 tree is classified as Low potential (i.e. requiring 1 survey session). Category 2 trees (the tree supports some features which may have limited potential to support bats) and Category 3 trees (no potential to support bats) do not require dusk/ dawn survey. Category 2 trees tend to be felled/ pruned taking reasonable avoidance measures; Category 3 trees do not require avoidance measures or specific mitigation.</p>	

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- LEGEND
- EXISTING TREES
 - MARSHY GRASSLAND
 - SEMI IMPROVED NEUTRAL GRASSLAND
 - POOR SEMI-IMPROVED GRASSLAND
 - DENSE SCRUB
 - SCATTERED SCRUB
 - INTACT HEDGE WITH TREES
 - INTACT HEDGE
 - DAMAGED HEDGE
 - HARDSTANDING
 - BUILDING
 - BUILDING NUMBER
 - TARGET NOTE
 - WALL

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ANZIO CAMP
PHASE 1 HABITAT PLAN

ANZ-HAB1

Scale
1:500 @ A3

Date
JUNE 2012