Preliminary Ecological Appraisal

"Poultry Houses"
Land at Bankwood Mill, Glossop,
SK13 5ER

Prepared on behalf of
Loxley Homes

Report Reference: SE0742-06/J/01b/JD
Report Author: Joseph Dance *BSc* GRAD CIEEM
Checked and Approved by: Richard Castell BSc, Senior Ecologist
Issue Date: 31st May 2018
Site Address: Land at Bankwood Mill, Glossop, SK13 5ER
Report Version: Final

Solum Environmental Limited
Suite 6, 9-11 Princess Street,
Knutsford, Cheshire WA16 6BY

Tel: 01565 755337 **Email:** info@solumenvironmental.com **Web:** www.solumenvironmental.com

CONTENTS

1.0 SUMMARY

2.0 INTRODUCTION
2.1 Background and Scope of Survey
2.2 Proposed re-development Works
2.3 Aims of the Survey
2.4 Site Description and Context
Plan 1: Application boundary
Plan 2: Proposed re-development

3.0 SURVEY AND EVALUATION METHODOLOGIES
3.1 Pre-survey Data Search
3.2 Surveyor Information
3.3 Field Survey: Habitats and Flora
Table 1: Survey Dates, Surveyors, Conditions and Equipment
3.4 Field Survey: Fauna
3.5 Survey Limitations
3.6 Evaluation Methodology

4.0 SURVEY RESULTS
4.1 Desktop Survey
4.1.1 Site Designations
4.1.2 Statutory Designated Sites
4.1.3 Non-statutory Designated Sites
4.1.4 Waterbodies on and within 500m of Application Site
Table 2: Waterbodies and watercourses on and within 500 m of site
Plan 3: Waterbodies and watercourses on and within 500m of site
4.1.5 Protected and Notable Species
Table 3: Protected and notable Species recorded within 1 km of Application Site over past ten years
Table 4: Protected and notable Species recorded during 2015 bat transect surveys
4.2 Field Survey: Habitats and Flora
4.2.1 Site Context and Connectivity
4.2.2 Overview of Habitats
Table 5: Habitat types recorded on (and immediately adjacent to) Application Site
4.2.3 Habitat Compartments
Photograph 1: General shot of site
4.2.4 Target Notes
Table 6: All Target Notes including photographs
4.2.5 Invasive species
4.3 Field Survey: Fauna
4.3.1 Great Crested Newt
Table 7: Description of WB01 and results of HSI assessment
4.3.2 Bats
Table 7: Building descriptions and assessment of bat roost potential
4.3.3 Otter
4.3.4 Water Vole
4.3.5 Badger
4.3.6 Reptiles
4.3.7 Breeding Birds
Table 8: Bird species recorded during field survey (including Conservation Status and behaviour)
4.3.8 Other Species Recorded During Field Survey

5.0 EVALUATION AND ASSESSMENT
5.1 Habitats, Hedgerows, Trees
5.2 Great Crested Newt
5.3 Bats
5.4 Otter
5.5 Water Vole

5.6 Badger
5.7 Reptiles
5.8 Breeding Birds
5.9 Assessment of Application Site's Current Biodiversity Value
5.10 Assessment of Impacts on Designated Sites
5.11 Initial Assessment of Impacts on Application Site's Biodiversity Value

6.0 RECOMMENDATIONS

SITE-SPECIFIC APPENDICES
Appendix 1: Extended Phase One Habitat Plan
Appendix 2: Site photographs
Appendix 3: Proposed re-development plans

NON-SITE-SPECIFIC APPENDICES
Appendix 5: UK Legal Protection and Planning Guidance
Appendix 6: Planting list to encourage badger foraging
Appendix 7: Specifications for bird nest boxes
Appendix 8: References and Bibliography

This report has been prepared with all reasonable skill, care and diligence, within the terms of the contract with the client. This report is confidential to the Client. Solum Environmental Limited accepts no responsibility of whatever nature to third parties to whom this report may be made known.

This report is based on survey data gathered in May 2014 and January 2016 at this site at Bankwood Mill, Glossop, Derbyshire SK13 5ER.

Limitations of use and copyright: All rights in this report are reserved. No part of it may be reproduced or transmitted, in any form or by any means, electronic, mechanical, photocopying, recording or otherwise, or stored in any retrieval system of any nature, without our written permission. Its content and format are for the exclusive use of the addressee in dealing with this site. It may not be sold, lent, hired out or divulged to any third party not directly involved in this site without the written consent of Biora Ltd, previously known as Solum Environmental Ltd.

1.0 SUMMARY

1.1 Solum Environmental was initially commissioned in February 2016 by Loxley Homes Ltd to conduct a Preliminary Ecological Appraisal of land at Bankwood Mill, Glossop, SK13 5ER. Following survey in 2014 (reported in draft), an update survey was commissioned to provide up-to-date ecological information to support a planning application for the proposed residential re-development of this site. Biora Ltd, formerly known as Solum Environmental, were subsequently asked to issue this report in conjunction with a dedicated badger survey carried out by Biora staff in May 2018 and a revised development plan.

1.2 Desktop and field survey was conducted by Joseph Dance (Graduate Ecologist) assisted by Matt Wiggins (Graduate Ecological Assistant) during daylight hours on 19th February 2016.

1.3 The combined results of the desk study and the PEA at this site recorded the following:

Site Characteristics and Surroundings	
Protected habitats present on site	None
Protected sites within 2 km	Peak District National Park, Great Wood and Hurst Clough LNR's, and Tom Wood, Gamesley Sidings, Robin Wood, Melandra Castle and Railway Local Wildlife sites.
Buildings on site	5
Waterbodies on site	None
Waterbodies within 500 m	3 waterbodies and 7 watercourses

Protected Species Recorded		
	By desktop survey (within 1 km)	**By field survey**
Great crested newt	No	No
Bats	Yes	Yes – historic droppings within **B1** and all five buildings assessed as providing **Very Low** roost potential.
Otter	No	No
Badger	No	Yes
Water vole	No	No
Reptiles	No	No
Breeding birds	No	Yes, historic nesting of Swallow *Hirundo rustica* in **B1**

1.4 Subsequently, the following further ecological survey, licensing or mitigation is recommended:

Further Actions Required	
Great crested newt	None
Bats	None
Otter	Pre-commencement survey to re-assess status of otter along River Etherow
Badger	Pre-commencement survey to re-assess status of badger within and adjacent to application boundary Any necessary security/street lighting directed away from identified commuting routes Suitable planting for badger should be incorporated into the planting scheme for the site
Water vole	None
Reptiles	None
Breeding birds	All vegetation/building clearance to be conducted outwith core British bird breeding season (March to August inclusive)

1.5 For further information on this survey report, contact:

Dr D. Hackett, Technical Director, Biora Ltd
Suite 6, 9 to 11 Princess Street, Knutsford, Cheshire, WA16 6BY
Phone 01565 755337
Email d.hackett@bioragroup.com

2.0 INTRODUCTION

2.1 Background and Scope of Survey

2.1.1 A Preliminary Ecological Appraisal of land at Bankwood Mill, Glossop, Derbyshire SK13 5ER was commissioned by Loxley Homes Ltd and conducted in May 2014 by Solum Environmental (findings reported in draft format to the client). Survey was commissioned to support the potential residential re-development of land within the supplied application boundary; no plans outlining the potential re-development of the site were available at the time of this survey.

2.1.2 Solum Environmental were commissioned by the same Loxley Homes Ltd in June 2015 to conduct a suite of bat transect and automated surveys of a larger parcel of land within the client's ownership, which encompassed land within the previous application boundary surveyed in 2014. (Survey in 2014 assessed the value of the habitat for foraging/commuting bats in this parcel of land as medium to high). Bat survey was commissioned to support potential residential re-developments of land within the client's ownership - details of said re-development were not available at the time of surveying. This Preliminary Ecological Appraisal report (2016) should, therefore, be read in conjunction with the bat surveys report for the wider site (Doc ref: *SE0742-07_BAT_01_JD Bankwood Bat Report*) produced by Solum Environmental.

2.1.3 Solum Environmental were commissioned by Loxley Homes Ltd in February 2016 to conduct an update Preliminary Ecological Appraisal of land within the application boundary. Survey was commissioned to provide up-to-date ecological information to support a planning application for small-scale residential development at this site.

2.1.4 Biora Ltd, formerly known as Solum Environmental, were subsequently asked to issue this report in conjunction with a dedicated badger survey carried out by Biora staff in May 2018 and a revised proposed development plan.

2.2 Proposed re-development Works

2.2.1 Detailed plans to inform ecological surveyors of the extent of the proposed re-development works were, upon finalisation, supplied to Solum Environmental in January 2016. This plan was revised in 2018 (these are reproduced at ***Plan 2*** below). It is our current understanding that the proposed re-development project would be confined to the original application boundary supplied in 2014 and would involve:

- Demolition of Buildings B03 – B05 (for locations see *Extended Phase One Habitat Plan* supplied at ***Appendix 1***)
- Construction of 6 residential units and associated garage spaces
- Landscaping of the site
- Transformation of bare ground within the application boundary to horse paddock
- Retention of all trees within the site

2.3 Aims of the Survey

2.3.1 This preliminary ecological appraisal survey aimed to:

- Assess the potential of the site to support protected habitats or species
- Assess the current ecological value of the site
- Highlight any potential ecological constraints to the proposed re-development
- Assess the likely impacts of the proposed development on protected habitats and species
- Advise on the requirement for further survey, mitigation, compensation or licensing should the proposed re-development be considered likely to result in adverse impacts on biodiversity or fail compliance with current ecological legislation and/or planning policies

2.4 Site Description and Context

2.4.1 The application site is delineated by the red line at ***Plan 1***.

2.4.2 The land within the application boundary is approximately 1 ha in size and comprises 5 former poultry houses (now in use as agricultural buildings and storage units) and several corrugated metal storage units, set on bare ground. The site is bound by post and wire fencing to three sides and a track and improved grassland to the south. The immediate surroundings consist of improved grassland horse paddocks and lines of broadleaf trees. The tree-lined River Etherow runs north to south adjacent to the northern and western boundaries of the survey area. The wider landscape is predominantly rural and contains mixed farmland and woodland with a minor railway line (c. 270 m south) and a sewage treatment works (c. 60 m north) nearby. The town of Glossop sits on the western fringe of the Peak District (National Park).

2.4.3 The Ordnance Survey (OS) grid reference for the approximate centre of the application site is SK 00128 94243.

Plan 1: Application boundary

Plan 2: Proposed re-development

3.0 SURVEY AND EVALUATION METHODOLOGIES

3.1 Pre-survey Data Search

3.1.1 In accordance with the British Standard for Biodiversity[1], desk study was carried out in May 2014 and again in January 2016 to identify any nearby National and local nature conservation designations, and any pre-existing protected species records for the area.

3.1.2 The M*agi*C website was interrogated to determine whether any statutory or non-statutory nature conservation sites lie within 2 km of the current site.

3.1.3 A thorough examination of Ordnance Survey base maps and on-line satellite imagery was conducted to locate any potential breeding sites for great crested newt, i.e. static or very slow-flowing water, within 500 m of the application boundary.

3.1.4 Ecological records of all protected species recorded within a 1 km radius of the site ('the search area') within the past 10 years were acquired from Derbyshire Wildlife Trust (the local ecological record centre for Derbyshire) in May 2014 and the National (UK) and local (Derbyshire) Biodiversity Action Plans for protected habitats and species relevant to this site were consulted, as was the list of species considered to be of principal importance for the conservation of biodiversity under Section 41 of the 2006 NERC Act. Additional bat species records were also acquired from South Lancashire Bat Group.

3.2 Surveyor Information

3.2.1 Joe Dance BSc Grad CIEEM is a Graduate Ecologist at Solum Environmental. Joe has a double first-class honours degree and has worked in the ecological sector for two years. Joe is competent in the field identification of breeding birds, plants, amphibians, small mammals and is experienced in conducting and leading habitat surveys and protected species surveys. Joe has contributed to the design and conduct of bat activity transects, automated bat detector and roost categorisation surveys. Over the past two years Joe has assisted in the preparation of three successful Natural England bat mitigation licences and is part of the team currently discharging conditions of all three licences. Joe is licensed to survey for great crested newt in all counties of England.

3.2.2 Matthew Wiggins BSc MSc is a Graduate Ecological Assistant at Solum Environmental. Matt has a Master's Degree in Ecology and Conservation and has worked in the ecological sector for three years. Matt has worked as a freelance surveyor for two years and has experience in preliminary ecological appraisal and surveys for National Vegetation Classification (NVC), reptiles, great crested newt, small mammals and bats. Matt is licensed to survey for great crested newt in all counties of England.

3.2.3 Laura Holmes *BSc ACIEEM* was an Ecologist at Solum Environmental. She has a first-class honours degree in Biological Sciences and has worked in the ecological sector for six years for Cheshire Wildlife Trust, the NBN and rECOrd, the Cheshire local biodiversity records centre. She is experienced in the field identification of plants, amphibians and small mammals and holds licences from Natural England and Natural Resources Wales to survey for bats and GCN. Laura is a member of the Cheshire Bat Group, South Lancashire Bat Group and is a volunteer surveyor for PondNet.

3.3 Field Survey: Habitats and Flora

3.3.1 ***Table 1*** below sets out details of field surveys conducted at this site.

Table 1: Survey Dates, Surveyors, Conditions and Equipment

Survey Type	Survey Date + Start Time	Surveyors	Weather Conditions	Equipment Used
First Preliminary Ecological Appraisal	9th May 2014 *12.00*	Laura Holmes (Lead surveyor) Joseph Dance	9° C , 10 mph wind, complete cloud cover and light drizzle	- 8x20 binoculars - Digital camera - Garmin Dakota 10 GPS
Second Preliminary Ecological Appraisal	19th February 2016 *10.00*	Joe Dance (Lead Surveyor), Matt Wiggins	5° C, 12 mph wind, partial cloud cover and no rain	- 8x20 binoculars - Digital camera - Garmin Dakota 10 GPS

3.3.2 Preliminary Ecological Appraisal involved surveyors walking the site to conduct Extended Phase 1 Habitat Survey following best practice methodology (JNCC, 1993, as amended 2010). Visual inspection was made of the site noting broad habitat

[1] BS42020:2013 *Biodiversity. Code of practice for planning and development*

compartments within it to establish the potential for movement of fauna between habitats. The presence of (or potential to support) protected species was recorded making note of any invasive species present. Target notes were made of any points of ecological value and photographs were taken throughout this survey.

3.3.3 Vegetation abundance was recorded using the DAFOR methodology, (D)ominant, (A)bundant, (F)requent, (O)ccasional, (R)are.

3.4 Field Survey: Fauna

3.4.1 Great crested newt *Triturus cristatus*: Survey followed best-practice methodologies set out by Froglife and Natural England. An assessment was made of the suitability of the terrestrial habitat within and adjacent to the application site to support great crested newt (GCN) and other amphibians. The suitability of WB01 to support GCN was assessed using selected indices of the Habitat Suitability Index (HSI) developed by Oldham *et al.* (2000). An HSI is a numerical index, between 0 and 1. 0 indicates unsuitable habitat, 1 represents optimal habitat. The HSI for the great crested newt incorporates ten suitability indices, all of which are factors thought to affect great crested newts. HSI is not a substitute for GCN presence/absence survey but can assist in determining the requirement for further survey effort.

3.4.2 Bats *Chiroptera*: Bat roost evaluation of the buildings within the application boundary followed best practice guidance set out in the third edition of the Bat Conservation Trust (BCT) *"Bat Surveys – Good Practice Guidelines"* (2016) Evaluation involved a thorough ground-level visual inspection of each building to identify any potential roost features (PRFs) and evidence of roosting bats (e.g. droppings, urine stains, insect remains).

3.4.3 A general assessment was also made of the suitability of the site and surrounding habitats for foraging activity by bats.

3.4.4 Otter *Lutra lutra*: The banks of any suitable watercourses and/or waterbodies within or adjacent to the site were examined for spraints (faeces), slides (areas of worn bank at favoured entry points into the water), feeding remains and otter prints.

3.4.5 Water vole *Arvicola amphibius*: Any banks bordering static or flowing water were examined for burrow entrances, terrestrial nests, latrines, feeding platforms and prints that would suggest evidence of water vole activity.

3.4.6 Badger *Meles meles*: This survey followed best-practice guidelines set out by Natural England, the Badger Trust and Harris, Creswell & Jeffries (1989)[2]. A walkover of the site (and land within 30 m of its boundaries where possible) was conducted to identify any evidence of badger activity. Specifically, surveyors checked for setts, latrines, pathways and fence/hedge crossing points and any associated trapped hairs, scratching posts and ground disturbed by foraging. The majority of the land surrounding the site was not directly accessible to surveyors but could be viewed from within the application boundary.

3.4.7 Reptiles: Following best-practice guidance in the JNCC Herpetofauna Worker's Manual (Gent & Gibson 2003), both the habitat within the site and that of the surrounding landscape was assessed for its potential to support reptiles. Surveyors checked in particular for opportunities for egg-laying, hibernation, refugia, abundance of prey and connectivity with the wider landscape.

3.4.8 Breeding birds: An assessment of the site's suitability to support breeding and foraging birds was conducted based on the habitats present within the application boundary and its position within the wider landscape. All species encountered during survey, together with notes on their location and any evidence of current or recent breeding was recorded.

3.5 Survey Limitations

3.5.1 February is considered sub-optimal season for Extended Phase 1 Habitat survey. During field survey it was still possible to identify the limited vegetation within the application boundary, including the presence of any invasive species, e.g. Himilayan balsam *Impatiens glandulifera,* allowing the broad habitat compartments within it to be effectively mapped and their potential to support protected species determined.

3.5.2 There are no seasonal constraints to the assessment of habitat suitability for other protected species considered at this site.

3.5.3 Permission to access WB01 to conduct a full HSI survey of WB01 was refused by the owner, making netting and sampling impossible. Consequently, a visual inspection was made from the eastern banks of WB01 where a public footpath runs adjacent to it. From this location, the pond could be viewed easily (also using binoculars) to give an accurate assessment based on professional judgement and inform each of the indices utilised by the HSI method.

[2] Harris S, Cresswell P and Jefferies D (1989).*Surveying Badgers*. Mammal Society.

3.6 Evaluation Methodology

3.6.1 Following both desktop and field surveys, the overall biodiversity value of this application site was evaluated in relation to:

- the National Planning Policy Framework (2012);
- DEFRA: A Simple Guide to Biodiversity 2020 and Progress Update;
- Local and national Biodiversity Action Plans;
- associated government circulars;
- Natural England's current standing advice for protected species.

4.0 SURVEY RESULTS

4.1 Desktop Survey

4.1.1 Site Designations

4.1.1.1 The land within the site does not form part of any site designated for nature conservation.

4.1.2 Statutory Designated Sites

4.1.2.1 Desktop survey identified three statutory sites designated for nature conservation within 2 km of the application boundary. The Peak District National Park is a varied landscape which includes 'impressive gritstone edges (the Dark Peak); steep limestone dales (White Peak); 196 square miles (51,000ha) of moorland; rolling hills and farmland (south west Peak). Caverns famed for rare Blue John stone, 5,440 miles (8,756 km) of dry stone walls, and 55 reservoirs supplying 450 million litres of water a day'.

4.1.2.2 Great Wood Local Nature Reserve is *'one of the few remaining ancient woodland sites in Tameside. Once part of the great Longdendale Forest, parts of the woodland are over 400 years old. Most of the trees are oak, but in places there are birch, alder beech and willow that add to the variety. In the clearings in the wood you will find wildflowers like bluebells, red campion and wood sorrel'*.

4.1.2.3 Hurst Clough Local Nature Reserve *'is an extension of Great Wood, separated from it by the main Manchester to Glossop rail line. The south end of Hurst Clough is a narrow wooded valley with a stream running along the bottom. As you move north up the clough, it begins to get wider, and open areas of grass begin to appear where you find wildflowers and butterflies'*.

4.1.3 Non-statutory Designated Sites

4.1.3.1 Derbyshire Wildlife Trust reported four Local Wildlife Sites within 1 km of the application boundary known as: Tom Wood, Gamesley Sidings, Robin Wood, Melandra Castle and Railway.

4.1.4 Waterbodies on and within 500 m of Application Site

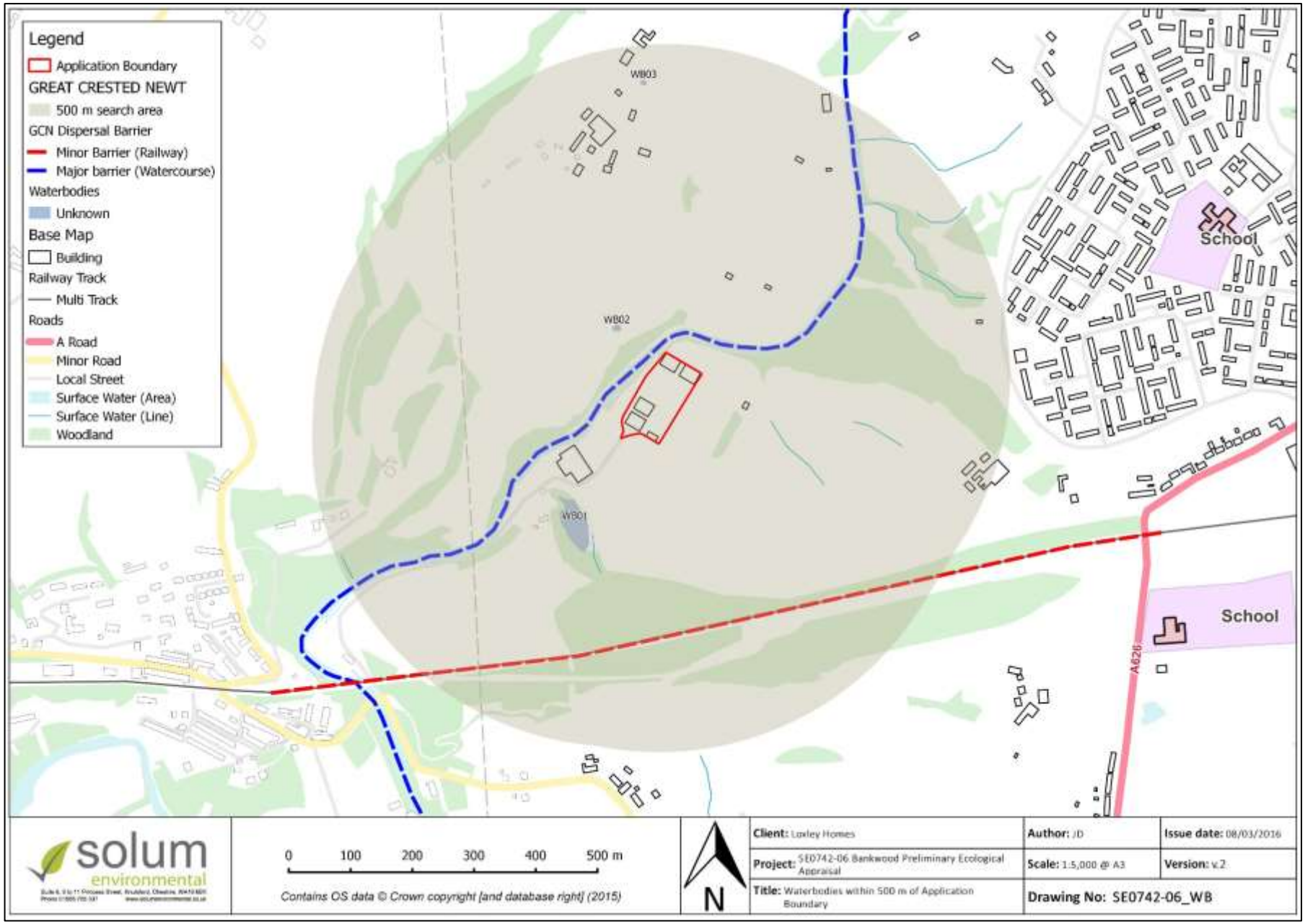
4.1.4.1 There were no waterbodies within the application boundary. Three ponds and seven watercourses were identified within 500 m of the site – the locations of these are illustrated in ***Plan 3*** (*Drawing SE0742-06_WB)*; ***Table 2*** provides a brief description of each.

Table 2: Waterbodies and watercourses within 500 m of application site

Reference	Description	Distance/direction from application site
WB01	Bankwood Mill pond	150 m SW
WB02	Small pond	450 m N
WB03	Small pond	60 m NW

4.1.4.2 The River Etherow to the north and west was, due to its wide channel and fast flow, considered to present a major barrier to amphibian dispersal thus sufficiently separating the site from any amphibian populations that may exist in WB02 and WB03. The very steep, raised embankments of the railway line approximately 310 m to the south presents a significant barrier to GCN dispersal in the wider landscape. It is also believed that the river represents a significant barrier to the movement of any badgers in the area.

Plan 3: Waterbodies and watercourses within 500 m of site



4.1.5 Protected and Notable Species

4.1.5.1 ***Table 3*** outlines the protected species recorded within 1 km of the application site over the last ten years.

Table 3: Protected and notable species recorded within 1 km of Application Site over past ten years

Scientific Name	Common Name	Date	Protection (see Appendix 5)
	Mammals		
Pipistrellus pipistrellus	Common pipistrelle	2012	All species of bat are protected under the Conservation of Habitats and Species Regulations 2010 (as amended) and fully protected under the Wildlife and Countryside Act 1981 (as amended).
Pipistrelles sp.	Pipistrelle sp. (roost)	2013	
Pipistrellus pygmaeus	Soprano Pipistrelle	2012	
Chiroptera sp.	Unidentified (roost)	2012	
Myotis sp.	*Myotis* sp.	2012	
Myotis Nattereri	Natterer's bat	2007	
Unidentified	Unidentified bat roost	2012	

4.1.5.2 ***Table 4*** outlines the protected species recorded within and immediately adjacent to the application site during the suite of bat surveys conducted by Solum Environmental in 2015, reported separately in document *SE0742-06_BAT_01_JD Bankwood Bat Report* produced by Solum Environmental.

Table 4: Protected and notable Species recorded during 2015 bat transect surveys

Scientific Name	Common Name	Date	Protection (see Appendix 5)
	Mammals		
Pipistrellus pipistrellus	Common pipistrelle	2015	All species of bat are protected under the Conservation of Habitats and Species Regulations 2010 (as amended) and fully protected under the Wildlife and Countryside Act 1981 (as amended).
Pipistrellus pygmaeus	Soprano Pipistrelle	2015	
Myotis daubentonii	Daubenton's bat	2015	
Nyctalus noctula	Noctule	2015	
Plecotus auritus	Brown long-eared	2015	
Meles meles	Badger	2015	Protection of Badgers Act 1992 (as amended)
Hirundo rustica	Swallow	2014	Amber List (RSPB) – Birds of Conservation Concern

4.2 Field surveys: Habitats and Flora

4.2.1 Site Context and Connectivity

4.2.1.1 The c. 1 ha site comprises five buildings and five former building footprints arranged in two parallel lines of five with a central track running from an access road. The site is dominated by bare ground, with building materials and steel containers along the eastern boundary. The site is bound by post and wire fencing to three sides and a track and improved grassland to the south. The immediate surroundings consist of improved grassland horse paddocks to the north, east and west, and improved grassland to the south. The tree-lined River Etherow runs north to south adjacent to the northern and western boundaries of the survey area. The wider landscape to the east and west is comprised of unimproved grassland used for cattle grazing with a steep drop into the river valley along the edges. To the north the landscape is comprises a sewage works, and to the south, residential development and Bankwood Mill.

4.2.2 Overview of Habitats

4.2.2.1 ***Table 5*** lists the broad habitat compartments recorded across the site; the locations of each of these compartments within the application boundary are presented in the *Extended Phase One Habitat Plan* (Drawing ref *SE0742-06_EP1H*) at ***Appendix 1***. The composition and structure of the habitats present in the re-survey of 2016 were unchanged since first inspection in May 2014.

Table 5: Habitat Types recorded on (and immediately adjacent to) Application Site

JNCC Code	Habitat Type	Compartment Size (ha)
A3.1	Parkland / scattered trees - Broadleaved	<0.005
B4	Improved grassland	0.07
J2.4	Fence	<0.01
J3.6	Buildings	0.25
J4	Bare ground	0.66

4.2.3 Habitat Compartments

4.2.3.1 Representative photographs of each habitat compartment are provided at **Appendix 2**. A general shot of the application site is provided at ***Photograph 1***.

4.2.3.2 **A3.1 Parkland / scattered trees - Broadleaved:** Present immediately adjacent to **B4**, this habitat type was dominated by a linear stand of young Silver Birch *Betula pendula*. A solitary Sycamore *Acer pseudoplatanus* was also recorded along the eastern boundary of the application site.

4.2.3.3 **B4 Improved grassland:** Small sections of improved grassland are located immediately adjacent to **B1**, **B3** and **B4**, whilst a small area lies to the west and south of steel storage containers located to the east of the central access road. These compartments were noted to be *A*bundant with Yorkshire fog *Holcus lanatus* and *Poa sp* with *O*ccasional Greater Plantain *Plantago major* and Ragwort *Jacobaea vuglaris*.

4.2.3.4 **J2.4 Fence:** Post and wire fencing c. 1.5 m in height marked the lengths of the northern, eastern and western site boundaries.

4.2.3.5 **J3.6 Buildings**: Five buildings were identified within the site and, for the purposes of this report have been identified as:

- **B1** – Stables (wooden construction), formerly a poultry house. – 590 m^2 floor space, 3 m in height.
- **B2** – Storage building (wooden construction), formerly a poultry house – 590 m^2 floor space, 3 m in height.
- **B3** – Office barn building (wooden construction), formerly a poultry house – 590 m^2 floor space, 3 m in height.
- **B4** – Storage building (wooden construction), formerly a poultry house – 590 m^2 floor space, 3 m in height.
- **B5** – Storage building (metal construction) – 166 m^2 floor space, 3.5 m in height.

4.2.3.6 **J4 Bare Ground:** This habitat type provided the most dominate coverage across the site and comprised the footprints of five former poultry houses and the central access road. It was dominated by a gravel substrate and emergent weed species associated with disturbed ground, including Creeping Buttercup *Ranunculus repens*, Dandelion *Taraxacum officinale*, Scented Mayweed *Matricaria chamomilla* and Yorkshire Fog *Holcus lanatus*.

Photograph 1: General shot of site

4.2.4 Target Notes

4.2.4.1 ***Table 6*** below outlines the Target Notes recorded within and adjacent to the survey area during field survey in 2016; the locations of each of the target notes are presented in the *Extended Phase One Habitat Plan* at ***Appendix 1***.

Table 6: All Target Notes including photographs

Target Note	*Target Note Description*	*Photographs*
TN01	Badger 'nest' in hay in the south-west corner of B1. (NO EVIDENCE FOR BADGER OCCUPANCY WAS FOUND IN SUBSEQUENT SURVEY IN 2018 – SEE BIORA BADGER SURVEY REPORT)	
TN02	Himalayan balsam *Impatiens glandulifera* present on the bank of the River Etherow immediately adjacent to the north-west boundary of the site.	*NO PHOTO*
TN03	Large mounds of rubble – potential amphibian refugia.	

Target Note	*Target Note Description*	*Photographs*
TN04	Steel storage containers.	
TN05	Dead badger, located near top of bank of the river Etherow. There was no evidence of physical interference having caused the death of this badger.	
TN06	Probable sett complex on the opposite bank of the River Etherow c. 40 m distant – evidence of bedding at entrance. It is likely that this is a separate social group to the animals living on the south side of the fast flowing River Etherow.	
TN07	Evidence of badger foraging in moss surrounding Building B01 and B02 and along banks of River Etherow alongside commuting path.	*NO PHOTO*
TN08	Badger path under post and wire fence line.	*NO PHOTO*

Target Note	*Target Note Description*	*Photographs*
TN09	Badger path along wooded river edge	
TN10	Badger latrine	

Target Note	*Target Note Description*	*Photographs*
TN11	Inactive Swallow nests in Building B01 (recorded 2016 – active nests recorded in same location in 2014).	

4.2.5 Invasive Species

4.2.5.1 No invasive species were present within the site but Himalayan Balsam was recorded frequently along the banks of the River Etherow, beyond the site's boundaries.

4.3 Field Survey: Fauna

4.3.1 Great crested newt

4.3.1.1 The ecological data request returned no records of GCN within the application site or search area over the past 10 years.

4.3.1.2 The majority of habitats currently present (e.g. buildings/bare ground/improved grassland/scattered trees) within the site were typically very poor quality terrestrial habitat for GCN. Whilst the large rubble mound in the centre of the site provides potential refugia habitat for GCN, these are completely isolated from the surrounding landscape. The habitats beyond the site (improved grassland and pasture) are similarly limited in their potential to support GCN.

4.3.1.3 No waterbodies with the potential to support GCN were identified within the application boundary by desk or field survey. WB01 was the only waterbody identified within the surrounding 500 m that was not separated from the site by any barriers to GCN dispersal; this isolated waterbody sits c. 900 m distant from the nearest neighbouring pond with the railway line and embankments between them.

4.3.1.4 Although access to conduct a full HSI survey of WB01 in May 2014 was refused by the owner, a visual inspection of this pond could be made from the public footpath that runs adjacent to it to inform an HSI assessment. Limitations to this approach are discussed at Section 3.5. ***Table 7*** provides a general description of WB01 and the results of the HSI survey conducted from the public footpath that runs adjacent to the pond. The condition of WB01 was unchanged upon re-inspection in the current 2016 survey.

Table7: Description of WB01 and results of HSI assessment

Ref:	Description	Index	Value
WB01	An open, large mill pond (c. 2000 m^2) set on the boundaries of woodland and mixed farmland. Deep and likely permanent; *presence of fish (and signal crayfish *Pacifastacus leniusculus)* confirmed anecdotally and evidence of occasional waterfowl activity around banks. Macrophytes covered 10% of surface area but these limited to yellow-flag iris *Iris pseudacorus* along the E and S banks and small patches of water lilies *Nymphaea*; no submerged aquatic plants noted. Vertical stone wall at NW corner. Index S2 was omitted as there are no data for such large ponds. Photograph of pond unavailable.	S1 Location	0.50
		S2 Pond area	Value omitted
		S3 Pond drying	0.90
		S4 Water quality	0.33
		S5 Shade	1.00
		S6 Fowl	0.67
		S7 Fish	0.33*
		S8 Ponds	0.43
		S9 Terrestrial habitat	0.67
		S10 Macrophytes	0.35
		Total SI	0.0033107508
		HSI Score	**0.530**
		Suitability	**Below Average**

4.3.2 Bats

4.3.2.1 The ecological data request for records of bat species within 2 km of the application boundary over the past 10 years returned records of two bat roosts: an unconfirmed *Pipistrellus sp.* roost 1.3 km to the east (2013) and an unidentified species roost c. 650 m to the northeast (2012). 4 field sightings of Natterer's bats *Myotis nattereri* and common/soprano pipistrelles *Pipistrellus pipistrellus/pygmaeus* were also returned from within the 2 km search area over the past 10 years.

4.3.2.2 Based on their construction style, setting, use and the presence of features considered suitable for bats, each building within the application boundary had their potential to support roosting bats assessed. ***Table 7*** below outlines this assessment. The original 2014 survey recorded four historic bat droppings on two internal dividing walls (c. 1.3 m in height) but, a lack of suitable roosting features above this wall or in the immediate vicinity suggested occasional use of the building by bats as a sheltered foraging site attracted by the presence of flies associated with the resident horses.

4.3.2.3 No features with the potential to support roosting bats were recorded on any tree within the application boundary – all trees were subsequently assessed as Category 3 for their bat roost potential (i.e. negligible potential).

Table 7: Building descriptions and assessment of bat roost potential

Ref:	Photograph	Description
B01		Single-storey, late 20th century poultry house used to stable horses and store equestrian equipment. Constructed with breezeblock base with timber cladding. No loft void. Gently-pitched roof of corrugated asbestos sheets supported by timbers. Immediately adjacent to Building **B02**. Open to the elements on E and W elevations so cold, draughty conditions within. Wooden boarding on the underside of roof showing signs of water damage. No cracks or crevices found. 2014 survey noted old bat droppings (from foraging activity) on internal walls. Swallow nests on roof beams. Bat roost potential: **Very Low**
B02		Single storey, late 20th century former poultry house, now used as storage. Constructed of a breezeblock base with timber cladding. No loft void. Gently-pitched roof of moss-covered corrugated asbestos sheets supported by timbers. Located immediately adjacent to Building **B01**. Open to the elements on the western elevation, creating cold, draughty conditions within. No cracks or crevices found. No features suitable for roosting bats. Bat roost potential: **Very Low**

Ref:	Photograph	Description
B03		Single storey, late 20th century former poultry house, now used as an office. Constructed of a breezeblock base with timber cladding. Gently-pitched roof of corrugated steel sheets Located immediately adjacent to Building B04. All elevations were tightly sealed. No cracks, gaps or crevices allowing bat access or roosting on any side. Wooden boarding placed behind corrugated edges preventing ingress, with the remaining shallow gap, covered in cobwebs, indicating nothing has tried to enter Internal access was not possible however any loft void present would be of minimal height and inaccessible. Bat roost potential: Very Low
B04		Single storey, late 20th century former poultry house, constructed in an identical fashion to Building B03. Also in good condition and tightly sealed at all sides. Wooden boarding is placed behind the corrugated edges to prevent ingress. Internal access was not possible however any loft void present would be of minimal height and inaccessible. Bat roost potential: Very Low
B05		Single storey, 21st century building constructed entirely of corrugated metal panelling with a pitched roof with no internal roof void. Used for storage. Unheated. No cracks, gaps or crevices visible externally and no potential access points observed as all sides were tightly sealed. Bat roost potential: Very Low

4.3.2.4 The habitats that dominate the land within the application site (i.e. sparsely vegetated, open bare ground and buildings) offer very few opportunities for foraging/commuting bats – the value of these habitats to bats was, therefore considered to be Low and the bat transect surveys conducted at this site throughout 2015 (referenced at Section 2.1.2) recorded very little activity within the application boundary itself.

4.3.2.5 The land that surrounds the application site, however, comprised habitats considered to be of Moderate – High value to bats – the wooded river valley that runs adjacent to the application site and a broadleaf copse c. 40 m south of the application boundary provide sheltered environments rich in sources of food and the river itself provides a strong linear feature that connects the land within and surrounding the application site to distant areas of valuable habitat to bats in the wider landscape (e.g. pockets of woodland/sewage works). In line with this assessment, the results of the 2015 transect surveys identified regular foraging and commuting activity by several species of bat in these locations.

4.3.3 Otter

4.3.3.1 The ecological data request returned no records of otter within the site or search area over the past 10 years.

4.3.3.2 Field survey in 2014 and 2016 identified no evidence of otter activity within the site or along the River Etherow corridor where it runs adjacent to the site, even though this river does provide potential habitat for this species to forage and shelter.

4.3.4 Water Vole

4.3.4.1 The ecological data request returned no records of water vole within the site or search area over the past 10 years.

4.3.4.2 Field survey in 2014 and 2016 identified no evidence of water vole activity or any habitat suitable to support this species either within or adjacent to the application boundary. The River Etherow was considered unsuitable for water vole due to its fast flow.

4.3.5 Badger

4.3.5.1 The ecological data request returned no records of badger within the site or search area over the past 10 years.

4.3.5.2 The habitats present within the application boundary offered no habitat with the potential to support excavation and no typical setts were identified within the application boundary, but an apparently active badger 'nest' showing signs of limited usage by a single badger was identified within a hay pile behind redundant panelling inside building **B01** during 2016 survey. No setts were identified within the accessible land surrounding the application site but the eastern bank of the River Etherow adjacent to the site was noted to provide potential habitat for future setts. Several probable sett entrances were also observed on the western bank of the River Etherow, c. 40 m distant to the northwest (see TN06).

4.3.5.3 A limited amount of badger foraging activity was noted within the boundaries of the application site, observed in upturned moss between buildings **B01** and **B02.** A well-worn badger path and evidence of foraging along its length was, however, recorded along the top of the eastern bank of the River Etherow, immediately off-site (see TN07 and TN09) to the west and a single badger was observed commuting along this route on one occasion during the 2015 bat transect surveys conducted for the wider survey area. A single-pit latrine was recorded c. 80 m off-site to the southwest adjacent to this path, along with an apparently recently deceased badger, c. 30 m southwest of the application boundary.

4.3.5.4 No setts or other evidence of badger activity was identified in the May 2014 survey.

4.4.5.4 No setts or other evidence of badger activity was identified within the application boundary, but evidence was found to south of the site of a badger commuting route, with the possible sett located to the south of the adjacent mill pond. (See Biora Ltd's *Bankwood Badger Survey*, 2018)

4.3.6 Reptiles

4.3.6.1 The ecological data request returned no records of any reptile species within the site or search area over the past 10 years.

4.3.6.2 Field survey identified no evidence of reptile activity or any habitat with the potential to support this species within the site boundary. Very limited habitat suitable for grass snake was identified along the wooded River Etherow corridor to the north and west of the site, however the current of the river itself was judged to be too fast flowing to provide suitable habitat for grass snake.

4.3.7 Breeding Birds

4.3.7.1 The ecological data request returned no records of birds within the site or search area over the past 10 years.

4.3.7.2 The narrow range of habitats within the application boundary offered few opportunities for nesting birds. Inactive Swallow nests were identified within Building **B01** in 2016 and survey in 2014 identified the Swallow nests in this building to be active. ***Table 8*** outlines the bird species recorded within and around the site during field survey in 2016.

Table 8: Bird species recorded during field survey (including Conservation Status and behaviour)

Scientific Name	Common Name	Conservation Status	Behaviour
Pica pica	Magpie	Green List	Flying off site
Turdus merula	Blackbird	Green List	Calling in hedge south of the application boundary
Troglodytes troglodytes	Wren	Green List	Nest inside an old Swallow nest
Cyanistes caeruleus	Blue Tit	Green List	Calling in scattered trees
Parus major	Great Tit	Green List	Calling in scattered trees

4.3.8 Other Species

4.3.8.1 No other fauna was recorded during field survey.

5.0 EVALUATION AND ASSESSMENT

5.1 Habitats, Hedgerows, Trees

5.1.1 The site contained a limited range of habitats (predominantly bare ground and buildings) which are low in ecological value. None of the habitats identified within the application boundary are protected or of conservation importance under local or National Biodiversity Action Plans or the NERC Act. The loss of these habitats would, therefore, be inconsequential. The surrounding landscape (broadleaved woodland, running water etc.), which would be unaffected by the proposed works, offers a broader range of habitats which have higher potential to support the protected species targeted by this survey. It is our understanding that a sympathetic landscape scheme for the site is proposed, which would involve the following:

- Introduction of a hedgerow along the entire length of the eastern boundary of the application site, which will provide suitable foraging habitat for all species of bat and introduce a new linear feature for bats to commute along and valuable nesting habitat for a range of bird species (in particular those of conservation concern [e.g. Song Thrush]).
- Introduction of parallel lines of trees and hedgerow in the centre of the proposed site along both sides of the main access road. This will provide valuable foraging habitat for bats in a location where foraging activity was absent in the 2015 surveys and habitat suitable for commuting bats.
- The introduction of rear gardens will also invariably introduce shrubs and insect prey which will also provide valuable foraging habitat for bats in a location that was previously devoid of foraging activity in the 2015 surveys and provide foraging and nesting opportunities for a broader range of bird species than currently exist within the site.

5.1.2 If implemented, the introduction of the features outlined above will undoubtedly provide a range of ecological benefits and increase the biodiversity value of the land within the application site.

5.2 Great crested newt

5.2.1 Terrestrial habitat within the site is very limited, restricted to a large rubble mound in the centre of the site, though this is not connected to the wider landscape through any suitable habitat corridors for this species.

5.2.2 The only waterbody identified within 500 m of the application site unseparated by any barrier to GCN dispersal, WB01, was assessed as having 'Below Average' suitability to support GCN based on HSI analysis. Whilst full access to survey this pond was not possible, visual inspection of this pond from the public footpath which runs adjacent to it was considered to be sufficient to give an accurate HSI assessment and reflection of the potential presence of GCN within.

5.2.3 The probability of GCN presence within this pond (and hence within the application site) was considered to be very low, based on the 'Below Average' score and the presence of barriers to GCN dispersal within the landscape to the north and south (River Etherow, railway line) that have been established for a significant period of time, thus significantly reducing the likelihood that GCN have been able to establish an initial population in WB01 in the first place. These barriers isolate WB01 from any other potential breeding ponds, thus significantly reducing the possibility of a viable population of GCN surviving within even if an historic population managed to establish itself.

5.2.4 Given the generally poor terrestrial habitat for GCN within the application boundary and the unsuitable nature of the only available waterbody (WB01) in the connecting landscape, the presence of GCN within the application boundary is considered extremely unlikely. It is near certain, therefore, that the proposed works would have no adverse impact on GCN. No further survey, licencing or mitigation is recommended.

5.2.5 In the unlikely event that GCNs are encountered during any stage of site preparation, clearance and re-development at this site, then all works on site should cease immediately and specialist advice sought from a licensed GCN ecologist.

5.3 Bats

5.3.1 The suite of transect and automated surveys conducted in 2015 (doc ref: *SE0742-07_BAT_J_01_JD 'Bankwood Bat Report'* produced by Solum Environmental) recorded no bat roosts. The buildings on site are generally unsuitable for roosting bats at all stages of their life cycle and their potential to support roosting bats was assessed as **Very Low**. It should be noted, however, that historic droppings indicative of feeding activity were identified in building **B01** in the original Preliminary Ecological Appraisal (2014) – this building, however, will remain unaffected by the proposed works. It is near certain, therefore, that the proposed development would have no impact on roosting bats.

5.3.2 The suite of transect and automated bat surveys conducted in 2015 recorded no significant commuting or foraging activity within the application site. The value of the land within the application boundary for foraging and commuting bats was assessed as LOW as the bare ground and open nature of the site offers very limited opportunities for these activities. Improved grassland and paddocks adjacent to the site are similarly unattractive to commuting or foraging bats. The wider

landscape, however, provides far more attractive habitat to commuting and foraging bats, along the wooded valley of the River Etherow located c. 35 m north and c. 14 m west of the site, a large stand of broadleaf woodland c. 125 m north-east of the site, and the broadleaf copse c. 40 m south of the site, which will not be directly impacted as a result of the proposed re-development. The results of the 2015 transect and automated surveys and a more in-depth assessment of the potential impacts on bat species as a result of the proposed works are discussed in the associated bat report for the site (doc ref: *SE0742-07_BAT_J_01_JD 'Bankwood Bat Report'* produced by Solum Environmental), which should be read in conjunction with the current report. Recommendations are also made in the bat survey report for the site to provide ecological enhancements for bat species and avoid potential impacts on those areas identified to support foraging/commuting activity within and around the application site.

5.4 Otter

5.4.1 Although field survey did not identify any habitat with the potential to support this species within or adjacent to the application boundary, the River Etherow corridor c. 35 m north and c. 14 m west of the site did provide suitable foraging habitat and sheltering opportunities for this species nonetheless. It is possible that the stretch of the River Etherow that runs adjacent to the site forms part of a larger otter territory and this species could colonise this stretch of the river between the time of reporting and commencement of re-development. However, the application site is sufficiently distant to make it very unlikely that the proposed redevelopment would impact on any otter using the River Etherow.

5.5 Water vole

5.5.1 Field survey identified no evidence of water vole activity or habitat assessed to be suitable for this species within the application site or adjacent to it. The site is not connected to any other suitable habitat within the wider landscape, and thus the probability of water vole being present either within or adjacent to the application site can be considered exceptionally low.

5.5.2 It is near certain, therefore, that the proposed re-development would have no adverse impact on water vole. No further survey, licensing or mitigation is recommended for this species.

5.6 Badger

5.6.1 Field survey identified no typical setts in the site or within 30 m of its boundary. However, an apparently active badger nest was identified in Building B01 – this feature could be construed as a sett in a legal setting. It is an offence under the Badger Act 1992 to intentionally or recklessly destroy, damage, disturb or interfere with a badger sett that is in use; whilst Building B01 would remain untouched during the construction and operational phases of the proposed re-development, it is sufficiently close to the Core Development Area (CDA) and landscaping works (i.e. transformation of adjacent bare ground to horse paddock) that there is potential for disturbance of an active badger 'sett' and thus, there is potential for a wildlife offence as a result of the proposed re-development. No evidence of use by badgers of any of the buildings was found in subsequent survey by Biora Ltd in May 2018.

5.6.2 As badgers are a highly mobile species, setts can be established or vacated in a short space of time (in particular those of limited use and of atypical nature – e.g. 'nests') and it is recommended that an update pre-commencement survey for badger is conducted prior to any site clearance or preparation works should planning permission be granted. This will inform any further licensing or mitigation measures that may be required in order to proceed with the proposed works.

5.6.3 The commuting route identified along the River Etherow corridor would remain intact during both the construction and operational phase of the proposed works as it is outside of the boundaries of the application site and the mosaic of agricultural land and broadleaved woodland in the surrounding landscape to the north, east and south of the site offers far superior foraging habitat than present within the application site. Therefore, the re-development of the site would not constitute a significant loss in badger habitat, given the availability of suitable habitat in the surrounding landscape and apparent lack of foraging activity recorded within the application site itself.

5.6.4 Nevertheless, the commuting route identified along the western boundary of the application site along the River Etherow should be protected during the construction and operational phases of the proposed re-development by directing any necessary security/street lighting associated with the re-development away from this area and avoiding all night-time construction/demolition works.[3]

[3] It should be noted that this recommendation can be achieved in conjunction with the recommendations made for bat species, provided in the separate bat survey report for this site (ref: *SE0742-07_J_01_JD'Bankwood Bat Report'* produced by Solum Environmental)

5.6.5 It would also be best-practice to enhance the land within the application boundary in the re-developed site for badger, given their presence in the area. This could be achieved by introducing suitable fruit-bearing trees and/or shrubs within the planting scheme for the re-developed site and efforts should be focused along the western boundary of the application site adjacent to the River Etherow, where the vast majority of badger activity was recorded. A comprehensive list of plants suitable for badger is provided in Appendix 6.

5.7 Reptiles

5.7.1 No habitats with the potential to support any reptile species were recorded within or adjacent to the site. There is no habitat on site which provides suitable ecotones to facilitate thermoregulatory behaviour, and very little refugia habitat other than a large rubble mound in the centre of the site (which is not connected to the wider landscape by any suitable habitat corridors for this species). The wider landscape is heavily agricultural, dominated by improved grassland, habitat which is considered generally unsuitable for all species of reptile. The wooded River Etherow corridor to the north and west of the site was judged to provide no habitat with the potential to support grass snake, given the dominance of Himilayan balsam, particularly along its eastern bank, which swamps any suitable ecotones that would otherwise facilitate thermoregulatory behaviour, and the fast flow of the river channel.

5.7.2 It is near certain, therefore, that the proposed re-development would have no impact on reptiles and no further survey or mitigation is recommended.

5.8 Breeding birds

5.8.1 Land within the application boundary contains habitat with the potential to support breeding activity from a narrow range of bird species, most notably Swallow (Amber List BoCC). Historic Swallow breeding activity was recorded in Building B01, though proposed re-development plans indicate the retention of Buildings B01 and the identical B02, resulting in no adverse impact on the status of Swallow at this site.

5.8.2 The proposed loss of the narrow range of habitats (buildings, bare ground, improved grassland and scattered trees) on site would be inconsequential, and is not expected to significantly impact breeding birds given the substantial amounts of superior habitat which surround the application.

5.8.3 Nevertheless, the proposed re-development should seek to enhance the developed site for breeding birds by selecting planting schemes which aim to provide food, cover and nesting sites for birds. This would be best achieved by providing a layered structure through the selection of plants which will grow to different heights and which provide a dense shrub layer (e.g. holly and hawthorn). Species which attract insects and/or produce berries will provide seasonal food resources. Shrubs, trees and climbers can disguise bare walls or fencing and create an attractive backdrop for lower-level species planted in front. In addition, bird nest boxes targeting species of conservation concern should be installed at suitable locations within the developed site to further enhance the value of the application site for breeding birds. Specifications for such boxes are provided at Appendix 7 and details of suggested quantities and locations are provided at Recommendation 6.

5.8.4 The proposed re-development would also include rear gardens which would inevitably result in the introduction of feeding stations and shrubs/grassland which would provide a far greater range of suitable habitats than those currently present within the application site.

5.9 Assessment of Application Site's Current Biodiversity Value

5.9.1 From initial results provided by this PEA survey, it is apparent that the application site itself has low ecological value, containing a narrow range of habitats which hold limited value for the species targeted by this appraisal, although evidence of badger activity was noted within and adjacent to the application boundary. The site is set within a landscape of habitats and features which provide far higher biodiversity value and would be unaffected by the proposed works.

5.10 Assessment of Impacts on Designated Sites

5.10.1 Given the distance of the site from any designated or non-designated sites, it is near certain that there will be no impact on any designated (or non-designated) sites as a result of the proposed works.

5.11 Initial Assessment of Impacts on Application Site's Biodiversity Value

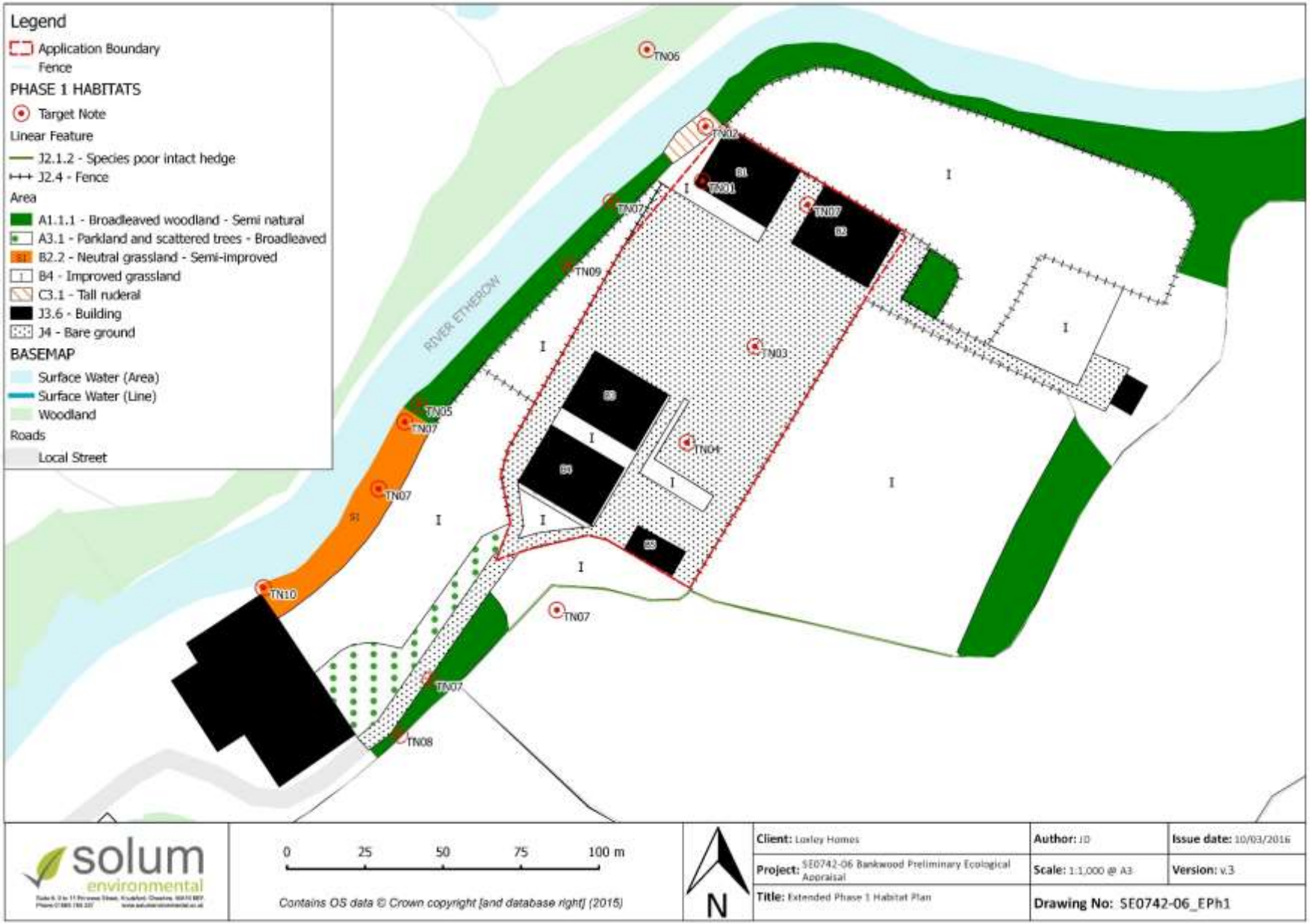
5.11.1 The results from this initial PEA identified that it is extremely unlikely that the proposed re-development would have a significant negative impact on any designated sites or protected habitats/species and, by following the recommendations set out in this report, would, result in a net gain in the biodiversity value of the site.

6.0 RECOMMENDATIONS

Recommendation Reference	Species/Habitats Concerned	Recommendation	Relevant Legislation/Best-Practice
R1	Badger	*Any necessary security/street lighting associated with the re-development should be directed away from the commuting route identified along the western boundary of the application site and avoiding all night-time construction/demolition works.*	Protection of Badgers Act 1992 (as amended), National Planning Policy Framework – *all developments must minimise impacts on biodiversity and provide net gains where possible*
R2	Badger	*Suitable planting for badger should be incorporated into the planting scheme for the re-developed site to enhance the site for badgers. Examples of suitable plants are provided at* Appendix 6.	National Planning Policy Framework – *all developments must minimise impacts on biodiversity and provide net gains where possible*
R3	Breeding birds	*The planting scheme for the developed site should incorporate the features described at* Section 5.8.3 *within this report*	National Planning Policy Framework – *all developments must minimise impacts on biodiversity and provide net gains where possible*
R4	Breeding birds	*One nest box targeting Starling and two for House Sparrow should be attached to (or incorporated into) any elevation of new or existing buildings within the client's ownership at a north/northeast aspect. Boxes should be fixed at a minimum height of 4 m. Specifications for these nest boxes are provided at* Appendix 7.	National Planning Policy Framework – *all developments must minimise impacts on biodiversity and provide net gains where possible*
R5	Birds	*All vegetation/building clearance should be conducted outwith the core British bird breeding season (March to August inclusive) to avoid destruction of active bird nests, all of which are legally protected. Where this is not possible, all vegetation/buildings to be cleared should be checked by a suitably experienced ecologist. Works should only proceed once the ecologist is satisfied that no active nests will be destroyed as a result of the works.*	All wild birds, including their nests and eggs are protected under the Wildlife and Countryside Act 1981 (as amended). It is an offence to intentionally or recklessly destroy any active bird nest or to remove its contents. Some species (Schedule 1 Birds) are afforded additional protection from disturbance at the nest site.

SITE-SPECIFIC APPENDICES

APPENDIX 1: Extended Phase One Habitat Plan



APPENDIX 2: Site Photographs

Photograph P1: A3.1 Parkland and Scattered trees - Broadleaved

Photograph P2: B4 Improved grassland

Photograph P3: J3.6 Buildings

Photograph P4: J4 Bare ground

APPENDIX 3: Proposed re-development plan

NON-SITE-SPECIFIC APPENDICES

APPENDIX 5: UK Legal Protection and Planning Guidance

A1 National Planning Policy Framework (NPPF)

The NPPF came into force in March 2012. It sets out the Government's planning policies for England and how these are expected to be applied. It gives guidance to local planning authorities on the content of their local plans but is also a material consideration in determining planning applications. **The NPPF states that the planning system should provide a net gain for biodiversity wherever possible.** The NPPF replaces much of the previous planning policy guidance, including PPS9: Biodiversity and Geological Conservation. However, the Government Circular 06/05: Biodiversity and Geological Conservation – Statutory Obligations and Their Impact within the Planning System (which accompanied PPS9) remains valid.

A2 Biodiversity Action Plans

UK Biodiversity Action Plans: The **UK Biodiversity Action Plan (UKBAP)** was established in response to the **Convention on Biological Diversity 1992**, signed by 150 members at the Rio Earth Summit, which aimed to promote sustainable development amongst all signatories. Specific action plans have been prepared for highly protected species. As well as a national Biodiversity Action Plan, local Biodiversity Action Plans identify species of note at local level throughout the UK.

A3 Priority Habitats and Species

Under the terms of the Natural Environment and Rural Communities Act 2006, all public bodies are required to have regard to the conservation of biodiversity when carrying out their activities. This means that efforts must be made to consider priority and protected species and habitats in particular. There would be a presumption in the land-use planning process against any development that would result in loss to an area of priority habitat or harm to the population of any priority species.

A4 Vegetation

The Wildlife and Countryside Act 1981 (as amended) lists plants which are statutorily protected. In relation to development these plants are rare and are not often encountered. The bluebell is scheduled, with commercial bulb-picking from the wild being prohibited. There is also a category of plants which it is an offence to introduce to the wild. This category includes Japanese knotweed, which is often found on brownfield sites. Care is needed to avoid spreading the species around the site during earthworks, and to ensure that any removal of infested soils off-site is to a licensed tip. Giant hogweed and Himalayan balsam are also listed in this category of invasive alien plant species. In addition the Ragwort Control Act came into force on 20 February 2004 and enables the Secretary of State to make a Code of practice to prevent the spread of common ragwort.

A5 Hedgerows

As a priority habitat for conservation concern, hedgerows also receive further protection under the Hedgerow Regulations 1997. Under the Hedgerows Regulations 1997 it is against the law to remove or destroy certain hedgerows without permission from the local planning authority. Local planning authority permission is normally required before removing hedges that are at least 20 metres (66 feet) in length, more than 30 years old and contain certain plant species. The authority will assess the importance of the hedgerow using criteria set out in the regulations. The local planning authority is also the enforcement body for offences created by the Regulations. If a hedgerow is removed without permission, there may be an unlimited fine and the hedgerow may have to be replaced.

A6 Great crested newt

A European Protected Species (EPS) and fully protected under the Conservation of Habitats and Species Regulations 2010 and the Wildlife and Countryside Act 1981 (as amended). Under the legislation it is an offence to:

- *Intentionally or deliberately capture, kill or injure great crested newts (GCNs).*
- *Intentionally or recklessly disturb them in a place used for shelter or protection.*
- *Damage or destroy a breeding site or resting place.*
- *Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection.*
- *Possess a great crested newt, or any part of it, unless acquired legally.*
- *Sell, barter, exchange or transport or offer for sale great crested newts or parts of them.*

Where Great crested newts (GCNs) are present at a proposed development site it is usually possible to continue with the project, re-locating the animals in advance of development, but only upon receipt of a site-specific licence from Natural England. The licence application process can be complex and can only be conducted by a suitably qualified GCN-specialist ecologist. Each licence application must be supported by:

- Full optimal-season great crested newt survey results and analysis;

- A suitable mitigation strategy that ensures that the favourable conservation status of the GCN population will be maintained (this usually involves the provision by the developer of additional land with ponds as compensation for loss of habitat and breeding sites). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural England; and
- A method statement explaining how GCNs will be accommodated legally if found during the development process.

A7 Bats

All species of bats are European Protected Species and their breeding and resting sites (roosts) are given a high degree of legal protection under the terms of the Wildlife and Countryside Act 1981 (as amended) and the Conservation of Habitats and Species Regulations 2010. In addition, all bats are the subject of a UK-wide Biodiversity Action Plan (BAP). This combined legislation offers bats, their roost sites and resting places strict protection from intentional or reckless disturbance (see wording of GCN legislation above). It should be noted that, under the legislation, a bat roost is defined as any structure or place which is used by bats to shelter, breed or perch whilst feeding. As bats tend to reuse the same roosts, the roost is legally protected, whether the bats are present at the time or not.

Where bats are present at a proposed development site it is usually possible to continue with the proposed project, but only upon receipt of a site-specific licence from Natural England. The licence application process can be complex and can only be conducted by a suitably qualified bat-specialist ecologist. Each licence application must be supported by:

- Full optimal-season bat survey results and analysis;
- A suitable mitigation strategy that ensures that the favourable conservation status of the bat population will be maintained (this usually involves the provision by the developer of replacement permanent bat roosts, additional bat boxes and both bat-friendly planting and lighting within the development site). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural England; and
- A method statement explaining how bats will be accommodated legally if found during the development process.

A8 Otter

Otters are a European Protected Species (EPS) and fully protected under the Conservation of Habitats and Species Regulations 2010 and the Wildlife and Countryside Act 1981 (as amended). Otters and their resting places are fully protected, it is an offence to deliberately, capture, injure or kill them or to damage, destroy or obstruct their breeding or resting places. It is also an offence to disturb otters in their breeding or resting places.

Where otters are present at a proposed development site it is usually possible to continue with the proposed project, but only upon receipt of a site-specific licence from Natural England. The licence application process can be complex and can only be conducted by a suitably qualified otter-specialist ecologist. Each licence application must be supported by:

- Full optimal-season otter survey results and analysis;
- A suitable mitigation strategy that ensures that the favourable conservation status of the otter population will be maintained (this usually involves the provision by the developer of replacement waterbodies and holts within the development site). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural England; and
- A method statement explaining how otters will be accommodated legally if found during the development process.

A9 Badger

All badgers are protected from harm under the Protection of Badgers Act (1992). Under this act it is an offence:

- To kill, injure or take a badger, or to attempt to do so;
- To use badger tongs in the course of killing or taking, or attempting to kill or take, any badger;
- To kill or take a badger with a firearm which does not fall within the specifications laid down in the Act;
- To dig for a badger;
- To cruelly ill-treat a badger;
- To possess or control a live badger;
- To sell or offer for sale a live badger;
- To mark, or attach any ring, tag or marking device to a badger;
- To possess or control any dead badger, any part of one, or anything derived from one;
- To interfere with a badger sett by (a) damaging a sett or any part of one; (b) destroying a sett; (c) obstructing access to or any entrance of a sett; (d) causing a dog to enter a sett; or (e) disturbing a badger when it is occupying a sett.

Where badgers are present at a proposed development site, it is usually possible to continue with the proposed project, but only upon receipt of a site-specific licence from Natural England. A licence is always required to shut down a badger sett or for works within 30m of a badger sett. The licence application process can be complex and can only be conducted by a suitably qualified badger-specialist ecologist. Each licence application must be supported by:

- Full optimal-season badger survey results and analysis;
- A suitable mitigation strategy that ensures that the favourable conservation status of the badger population will be maintained (this usually involves the provision by the developer of replacement artificial setts, planting of suitable fruit-bearing shrubs, erection of badger gates and underpasses within the development site). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural England; and
- A method statement explaining how badgers will be accommodated legally if found during the development process.

A10 Water vole

From 6th April 2008, water voles and their resting places gained full protection under the Wildlife and Countryside Act (1981). It is an offence to deliberately, capture, injure or kill them or to damage, destroy or obstruct their breeding or resting places. It continues to be an offence to disturb them in their breeding or resting places.

Where water voles are present at a proposed development site it is usually possible to continue with the project, re-locating the animals in advance of development, but only upon receipt of a site-specific licence from Natural England. The licence application process can be complex and can only be conducted by a suitably qualified water vole-specialist ecologist. Each licence application must be supported by:

- Full optimal-season water vole survey results and analysis;
- A suitable mitigation strategy that ensures that the favourable conservation status of the water vole population will be maintained (this usually involves the provision by the developer of additional land with ponds as compensation for loss of habitat and breeding sites). This mitigation strategy should usually be agreed by the ecologist through liaison with Natural England; and
- A method statement explaining how water voles will be accommodated legally if found during the development process.

A11 Reptiles

The four widespread species of reptile in the UK (i.e. common lizard, slow-worm, grass snake and adder) are all protected under the terms of the Wildlife and Countryside Act 1981 (as amended), however they are not fully protected under European law. This level of protection prohibits the intentional killing and injuring and trade of these reptiles. Where a survey identifies potential habitat for reptiles at a development site, a reptile survey may be needed prior to submission of a planning application and mitigation may be required by Natural England for any loss of reptile habitat as a result of a site's re-development

A12 Breeding birds

All wild birds, their nests and their eggs are protected by the Wildlife & Countryside Act 1981 (as amended). It is an offence (with certain exceptions), to intentionally or recklessly kill, injure or take any wild bird (this includes chicks); to take, damage or destroy any wild bird's nest while it is use or being built; and to take or destroy the egg of any wild bird. The definition of a wild bird is 'any bird of a kind which is resident in or a visitor to Great Britain in a wild state'.

Species named in Schedule 1 of the Act are given special protection and it is an offence to disturb these species at the nest of while they are caring for dependant young. The RSPB and the UK's leading bird conservation organisations work together to regularly review the status of birds within the UK. A total of 246 species are assessed against a set of objective criteria to place each on one of three lists - green, amber and red – indicating an increasing level of conservation concern. These lists provide a tool for guiding conservation actions for birds in the UK and for setting priorities for action on individual species. The last review of these lists was completed in May 2009.

For certain species, e.g. feral pigeon, general licences are available for an authorised person to lawfully carry out the actions outlined above providing that it is in the overriding interest of public health or air safety and that all other attempts to prevent the problem caused by the species have failed.

The Barn owl has seen significant declines in recent history primarily due to habitat loss and the destruction, removal or renovation of traditional nesting sites. It is currently included in the amber-list of species of medium conservation concern, having been classified as a Species of European Conservation Concern (SPEC). In Great Britain it is listed on Schedule 1 of the Wildlife & Countryside Act (1981) as amended. It is an offence to disturb any wild bird included in Schedule 1 while it is building a nest or is at, on or near a nest containing eggs or young; or disturbs dependent young of such a bird. Note that if any of the above resulted from a person being reckless, even if they had no intention of committing the offence, their action would still be considered an offence. A person is not guilty of an offence if it can be

shown that the act was 'the incidental result of a lawful operation and could not have been reasonably avoided'; only a court can decide what is 'reasonable' in any set of circumstances.

APPENDIX 6: Planting list to encourage badger foraging.

English Name	Latin Name
Blackberry	*Rubus fruticosus*
Elder	*Sambucus nigra*
Apple	*Pyrus malus*
Pear	*Pyrus communis*
Oak	*Quercus robur*
Blackthorn (sloe)	*Prunus spinosa*
Bird cherry	*Prunus padus*
Wild cherry	*Prunus avium*
Crab apple (wild)	*Malus sylvestris*
Guelder rose	*Viburnum opulus*
Hazel	*Corylus avellana*
Holly	*Ilex aquifolium*
Mountain ash (rowan)	*Sorbus aucuparia*
Plum (Myrobolan)	*Prunus cerasifera*
Hawthorn	*Crataegus monogyna*
Dog rose	*Rosa canina*
Other native roses	*Rosa spp*
Wayfaring tree	*Viburnum lantana*

APPENDIX 7: Specifications for bird nest boxes

WoodStone® Seville 32mm Nest Box

For House Sparrow
Height: 31 cm
Width: 20.5 cm
Depth: 20 cm
Entrance hole: 32 mm

Approximate unit cost: £22.00

Attach to building; guaranteed for 10 years

Also available in brown (code 90730)

Schwegler Brick Nest Box (Type 24)

For House Sparrow
Height: 23.5 cm
Width: 18 cm
Depth: 18 cm
Entrance hole: 32 mm

Approximate unit cost: £37.00

Build into wall then render front to match brick colour

WoodStone® Starling Nest Box

For Starling
Height: 38.5 cm
Width: 22 cm
Depth: 21.5 cm
Entrance hole: 45 mm

Approximate unit cost: £30.00

Attach to building; guaranteed for 10 years

APPENDIX 8: References and Bibliography

Barker, F. & Wright, D. (2011), *Common toads and roads - Guidance for planners and highway engineers in England*. Amphibian and Reptile Conservation Trust.

Bibby, C. et al (2000), *Bird Census Techniques (2nd Edition).* Academic Press

Birds of Conservation Concern 2009

British Trust for Ornithology (BTO) website www.bto.org.uk

Gilbert, G. et al (1998), *Bird Monitoring Methods.* RSPB

Ferguson-Lees, J., Castell, R. & Leech, D. (2011), *A Field Guide to Monitoring Nests.* British Trust for Ornithology

Harris, S., Cresswell, P. and Jefferies, D. (1989), *Surveying Badgers*. Mammal Society

Harrison, C. & Castell, P. (2002), A *Field Guide to Bird Nests, Eggs and Nestlings of Britain and Europe* (New Edition). Collins

Hundt, L. (2012), *Bat Surveys: Good Practice Guidelines (2nd Edition).* Bat Conservation Trust

JNCC (2010), *Handbook for Phase One Habitat Survey*. JNCC , Peterborough

Jones, K. & Walsh, A. (2001), *A Guide to British Bats.* The Mammal Society, London

Krebs, C. (2006), *Mammals in: Sutherland WJ (ed) Ecological census techniques, 2nd Edition, 351-369*. Cambridge University Press, Cambridge.

Mitchell-Jones, A. J. & McLeish, A. P. (2004), *The Bat Workers Manual 3rd edition*. JNCC , Peterborough

Natural England (2007), *Badgers and Development A Best Practice Guide.* Peterborough

Oldham, R.S., Keeble, J., Swan, M.J., & Jeffcote, M. (2000), *Evaluating the suitability of habitat for the great crested newt (Triturus cristatus).* Herpetological Journal 10 (4) 143-155

Scottish Natural Heritage (2003), *Best Practice Guidance - Badger Surveys.* Inverness Badger Survey 2003. Commissioned Report No. 096.

Spon, E. & Spon, F.N. (1995), *Guidelines for Baseline Ecological Assessment.* Institute of Environmental Assessment. An Imprint of Chapman and Hall, London.

The Conservation (Natural Habitats, &c.) Regulations 1994. HMSO, London.

The Conservation and Habitats Regulations 2010, as amended. HMSO London

UK BAP www.ukbap.org.uk

Waters, D. & Warren, R. (2003), *Bats.* The Mammal Society, London

Wiggington, M.J. (1999), *British Red Data Books: 1 Vascular Plants.* JNCC, Peterborough.

Wildlife and Countryside Act, (1981), as amended. HMSO, London.

Yalden, D. (1993), *The Identification of British Bats.* The Mammal Society, London

https://www.gov.uk/government/uploads/system/uploads/attachment_data/file/225300/pb14009-biodiversity2020-progress-guide-20130730.pdf