



ecological consultants

PRELIMINARY ECOLOGICAL APPRAISAL

28, Northorpe Lane, Mirfield, West Yorkshire

Report Reference: BG19. 267

September 2019



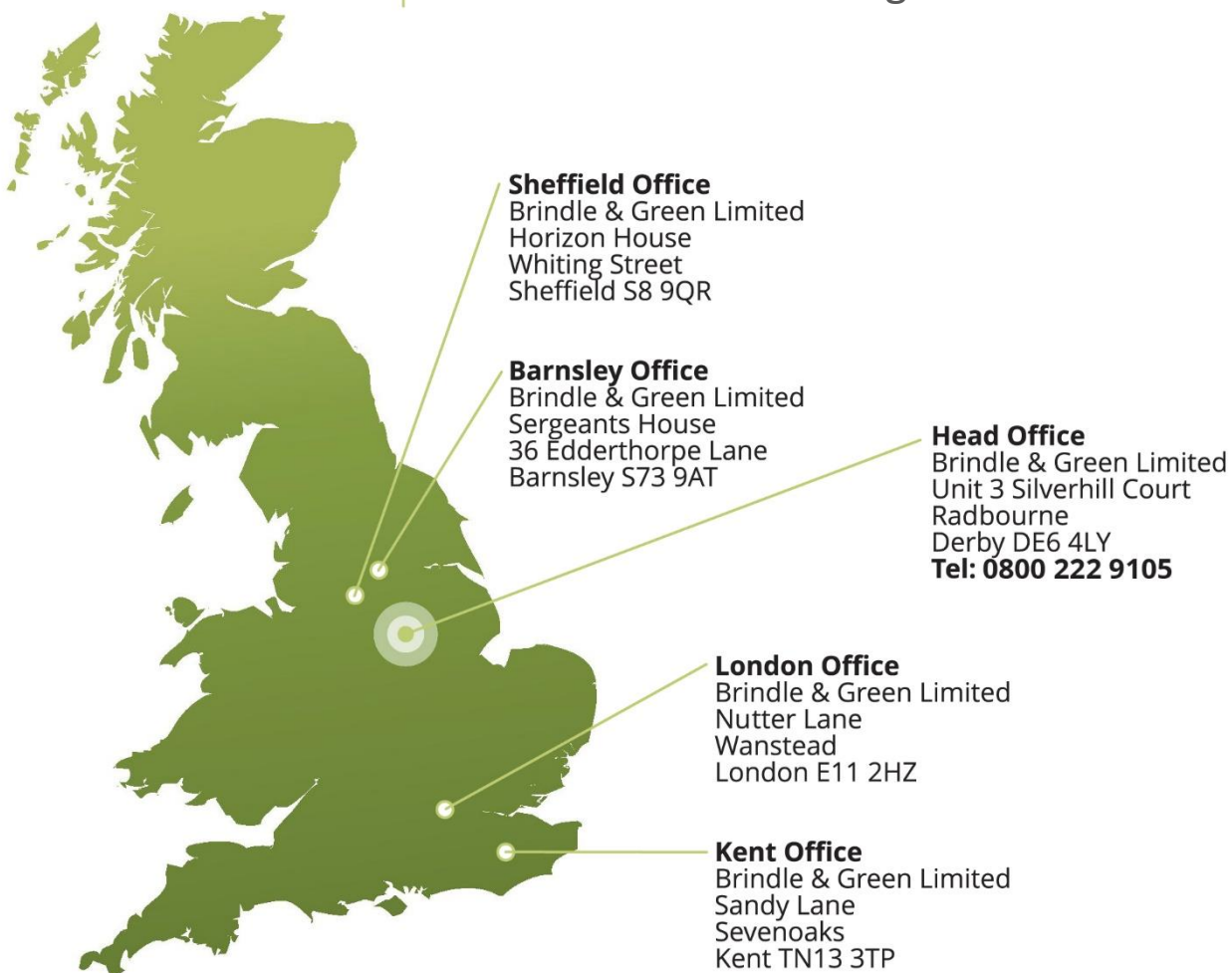
Brindle & Green Ecological Consultants specialise in delivering high quality and affordable ecological surveys and reports-tailored for their suitability for informing planning applications.

Brindle & Green surveyors have the necessary experience, technical ability, qualifications and accreditations to meet the high demands increasingly enforced by Local Authorities and Natural England.

Projects are undertaken against the recognised guidelines for the species or habitats being studied. Brindle & Green reports are uniquely designed to provide the reader with the best possible understanding of our client's proposals and to ensure that the information requested by the Local Planning Authority is easily found and understood.

This report has been prepared in accordance with the CIEEM (2017) **Guidance on Ecological Report Writing**. Chartered Institute of Ecology and Environmental Management, Winchester and CIEEM (2017) Technical guidance series, **Guidelines for Preliminary Ecological Appraisal**. Chartered Institute of Ecology and Environmental Management, Winchester

www.brindlegreen.co.uk



Sheffield Office

Brindle & Green Limited
Horizon House
Whiting Street
Sheffield S8 9QR

Barnsley Office

Brindle & Green Limited
Sergeants House
36 Edderthorpe Lane
Barnsley S73 9AT

Head Office

Brindle & Green Limited
Unit 3 Silverhill Court
Radbourne
Derby DE6 4LY
Tel: 0800 222 9105

London Office

Brindle & Green Limited
Nutter Lane
Wanstead
London E11 2HZ

Kent Office

Brindle & Green Limited
Sandy Lane
Sevenoaks
Kent TN13 3TP



DOES YOUR REPORT MAKE RECOMMENDATIONS FOR
**FURTHER SURVEY WORK,
MITIGATION, MONITORING
OR ENHANCEMENT?**

Our consultancy services include specialist species surveys, landscape and mitigation, including European Protected Species Development Licences, on site supervision and monitoring.

Our contracting team deliver on site mitigation including exclusion fencing, badger sett construction and closure, tree climbing and soft landscaping.

For further information on consultancy or from our construction team please contact us on...



0800 222 9105



info@brindlegreen.co.uk

www.brindlegreen.co.uk

DID YOU KNOW BRINDLE & GREEN ALSO OFFER...



Our ecology team provide extended habitat, botanical and species survey including bat work. We also specialise in obtaining European Protected Species Licences.



Our arboriculture team deliver industry standard tree surveys, root impact assessment and tree protection plans.



Our marine team deliver shoreline surveys, marine mammal surveys, coral reef impact assessments and more within an ever diversifying division.



Our in house contracting team deliver GCN / Reptile fencing, badger sett exclusion and closure and habitat creation services.



Our science team offer GCN eDNA analysis & sample training, Bat eDNA analysis and can now provide White Clawed Crayfish eDNA analysis too.



Our Landscape consultants provide bespoke design schemes for commercial and private projects to satisfy a range of briefs. We can assess the potential scope of a proposed scheme from the earliest concept stage.

Document Control

Report	Name	Signature	Date
Prepared by	John Holt		26/09/2019
1 st Check by	Belinda Wiggs MCIEEM		22/10/2019
2 nd Check by	Neil Crofts Director		05/11/2019
Issued by (PDF)	Neil Crofts Director		05/11/2019
Rev1			

Liability

Brindle & Green has prepared this report for the sole use of:

Mr John Cowell

The report is in accordance with the agreement under which our services were performed. No warranty, express or implied, is made as to the advice in this report or any other service provided by us. This report may not be relied upon by any other party except the person, company, agent or any third party for whom the report is intended without the prior written permission of Brindle & Green.

The content of this report is, at least in part, based upon information provided by others and on the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from any third party has not been independently verified by Brindle & Green unless otherwise stated in the report.

COPYRIGHT

© This report is the copyright of Brindle & Green. Unauthorised reproduction or usage by any person is prohibited.

Project Details

Project carried out by:

Brindle and Green

Unit 3, Silverhill Court

Radbourne

Derby.

DE6 4LY

Head Office: 0800 222 9105

Email: info@brindlegreen.co.uk

Website: www.brindlegreen.co.uk

Project carried out for:

John Cowell

28 Northorpe Lane

Mirfield

Kirklees

West Yorkshire

WF14 0QN

Project site:

28 Northorpe Lane

Mirfield

Kirklees

West Yorkshire

WF14 0QN

Grid Ref. SE 21423 21132

Contents

1	Summary.....	7
2	Introduction	8
3	Methodology	9
3.1	Desk Study.....	9
3.2	Surveyors.....	9
3.3	Survey Conditions	9
3.4	Extended Phase 1 Habitat Survey.....	9
3.5	Limitations.....	11
3.6	Report Lifespan.....	12
4	Site Context	13
5	Results.....	15
5.1	Desk Study.....	15
5.2	Habitats.....	17
5.3	Fauna.....	24
6	Evaluation	27
6	Recommendations	31
7.1	Habitats.....	31
7.2	Breeding Birds.....	31
7.3	Roosting Bats.....	32
7.4	Foraging & Commuting Bats	32
7.5	Badgers.....	33
7.6	Reptiles.....	33
	Appendix 1. Phase 1 Habitat Plan	34
	Appendix 2. Target Notes and Plant Species List.....	35
	Appendix 3. General References.....	37
	Appendix 4. Legislation, Policy and Guidance.....	38
	Appendix 5. Legislation, Guidance and Methodology for Preliminary Ecological Appraisals.	39
	Appendix 6. Proposed Plans	44
	Appendix 7. Magic Data	45
	Appendix 8. Ecological Data Search Information.....	46
	Appendix 9. Building Photographs.....	48
	Appendix 10. Confidential Badger Records	49

1 Summary

1.1 Brindle & Green Ltd were commissioned by Mr John Cowell to undertake a Preliminary Ecological Appraisal incorporating a Phase 1 Habitat Survey and Protected Species Assessment at 28, Northorpe Lane, Mirfield, West Yorkshire. This report summarises the potential ecological constraints to the outline planning application for the development of 48 residential dwellings. Design plans are provided within Appendix 6 of this report. The survey was carried out on 16/08/2019.

1.2 The red line boundary is approximately 1.5 ha in extent and comprises an area of semi improved grassland with areas of marshy grassland and amenity grassland bordered by post and rail fences to the north and east with walls and fences associated with adjoining gardens to the south and west. Scattered trees and patches of dense scrub are present onsite with a row of mature trees beyond the eastern boundary. The site was evaluated to support local value on a regional scale.

1.3 The habitats described within this report have the potential to support protected and/or notable species. As such, this report outlines important measures to protect species during site clearance, and recommendations to improve the biodiversity status of the site post development.

A full description of the recommendations can be found within Chapter 7, the table below is a summary of the ecological issues recommended for further consideration as a result of our initial investigations:

Ecological Consideration	Recommendations (e.g. further survey, mitigation)	Timing
Breeding birds	Reasonable Avoidance Measures are recommended during site clearance, outlined in chapter 7.	During clearance and development
Roosting Bats	Low suitability building should be subjected to at least one presence / absence survey	May - August
Foraging and commuting bats	Transect surveys to be undertaken following recommendations in Chapter 7	May - September
Badgers	Reasonable avoidance measures and pre-commencement checks as outlined in chapter 7.	Prior to and during development
Reptiles	Works should be sympathetic to this group of species, outline in chapter 7.	Year Round

2 Introduction

- 2.1 The purpose of this assessment was to provide a Preliminary Ecological Appraisal of the site incorporating a Phase 1 Habitat Survey and Protected Species Assessment to establish the likelihood of the site to support European protected species. The survey provides detail on the need for any additional, more detailed protected species surveys, likely mitigation and any opportunities for enhancement.
- 2.2 The red line boundary is approximately 1.5 ha in extent and comprises a large area of semi improved grassland with smaller areas of amenity grassland and marshy grassland bordered by post and rail fences to the north and east with walls and fences associated with adjoining gardens to the south and west. Scattered trees and patches of dense scrub are present onsite with a row of mature trees beyond the eastern boundary. The site is the subject of an outline planning application for the development of several residential dwellings. Design plans are provided within Appendix 6 of this report.
- 2.3 The legislation relevant to protected species within the United Kingdom is summarised within Appendix 4.
- 2.4 Results and recommendations contained within this report have been prepared by an experienced ecologist and are therefore the view of Brindle & Green Limited. The survey is based on information provided by our client, the development proposals, results of the desk study, and our survey of the site. This report pertains to this information only.

3 Methodology

3.1 Desk Study

Table 1 below lists organisations and/or resources used as part of the desk study process. Data regarding any known statutory or non-statutory sites, in addition to any records for protected species, were requested from the following sources:

Table 1. Ecological Data Resources

Consultant	Requested Data	Search Radius	Date Requested
West Yorkshire Ecology Service	Protected and notable species records Local, National and International Site Designations	2km	23/08/2019
MAGIC Maps	National and International Site Designations Granted EPS Development Licences	2km	26/09/2019

3.2 Surveyors

Survey carried out by John Holt, BSC (Hons), Ecologist, Natural England GCN Licence (2019-39325-CLS-CLS).

The survey was supervised by Lucinda Sweet, PhD, Principal Ecologist (Natural England Bat Licence 2019-39122-CLS-CLS), Great Crested Newt licence; 2016-22852-CLS-CLS

3.3 Survey Conditions

The survey was undertaken at 13:00 on the 16th of August 2019.

The outside temperature was recorded as 18°C, with wet, rainy conditions, and 8/8 cloud cover.

3.4 Extended Phase 1 Habitat Survey

3.4.1 A Phase 1 habitat survey was undertaken following survey guidance (JNCC 2007) to establish the presence and distribution of habitat types within the site and potential ecological constraints to development. A Phase 1 Habitat Map was produced (Appendix 1) and where additional details were required Target Notes have been provided (Appendix 2). A plant species list (Appendix 2)

summarising all plants identified on site was produced during the survey and all scientific nomenclature was produced according to Stace (2010).

3.4.2 This survey was extended to note the potential for habitats on site to support protected and/or notable species and for evidence of any such species. The habitats on site were assessed for their suitability to support protected species in relation to the habitat type found at the site. Any incidental sightings or field signs were noted at the time of survey. Where evidence of, or the confirmed presence of a protected species was identified, further species-specific surveys may be recommended to ensure that the presence or otherwise of a legally protected species is fully considered prior to the determination of any planning approval or to guide an EPS development licence.

3.4.3 Hedgerows on site were assessed following the Hedgerow Survey Handbook (DEFRA 2007) and defined as species-rich if the structural species making up a surveyed 30m section of hedgerow included at least four native woody species. Results were compiled and assessed against qualifying criteria within the Hedgerow Regulations (1997), the Hedgerow Evaluation and Grading System (HEGS) as defined by Clements and Tofts (1992) and the UK Biodiversity Action Plan / NERC Act 2006.

3.4.4 Legislation, guidance and methodology for species relevant to this site are presented in full within Appendices 4 and 5 of this report.

3.4.5 **Site Evaluation**

Following the ecological appraisal, the site was classified into one of six groups (Table 2), to indicate whether the site is considered to hold ecological value on a local, national or international scale. This evaluation is intended as a guide and only targeted survey work can establish the significance of protected species populations onsite.

Table 2. Definitions of each of the six evaluation brackets, indicating the importance of each habitat type and an example of their possible habitat status. (Table constructed following The CIEEM EclA Guidelines, Terrestrial, Freshwater and Coastal (2016) pages 16-17).

Evaluation Value	Comparable example
International	An internationally designated site or candidate site, including habitat or species included within Special Protection Areas (SPA) / Special Areas of Conservation (SAC), Ramsar Sites, listed under Annex 1 of the Habitats Directive.
National	Sites designated at UK level, e.g. Sites of Special Scientific Interest (SSSI), supporting species considered nationally threatened or rare. A regularly occurring regionally or county significant population/number of any nationally important species A feature identified as of critical importance within Section 41 of the NERC Act (2006).
Regional	Key Habitat type included within the National Biodiversity Action Plan (BAP) /NERC Habitat of Principle Importance (HPI). A regularly occurring, locally significant number of a regionally important species.
County	Designated sites, such as Sites of Biological Importance (SBIs) or viable habitat / species populations of value at a county level (LBAP).
District	District level designated sites, such as Local Wildlife Sites (LWS) or habitats / species populations of value at a district (Which have features qualifying for LWS status). Sites/features that are scarce within the district or which appreciably enrich the district habitat resource.
Local / Site	Habitats or species populations of value in a local (i.e. within ~ 5km of the site) context. Habitats of poor to moderate biological diversity e.g. established conifer plantations, species poor hedgerows and un-intensively managed grassland which supports species which are common to the local area and whose loss can be easily mitigated.

3.5 Limitations

3.5.1 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment. The protected and notable species assessment provides a preliminary view of the likelihood of these species occurring on site, based upon the suitability of the habitats, known distribution of the species in the local area and any direct evidence on site. It should not be taken as providing a full and definitive survey of any protected species group.

3.5.2 Access was not possible into the roof space at the time of the survey, therefore an internal inspection of these features was not undertaken

3.6 Report Lifespan

Given the transient nature of the subject we would consider the survey results contained to be accurate for 2 years.

4 Site Context

4.1 Site Description

The application site can be found at SE 21423 21132 and is located within the town of Mirfield, West Yorkshire. The site is positioned within a row of detached residential dwellings on Northorpe Lane with associated mature gardens and adjacent fields and trees. The landscape surrounding the site is predominantly rural with pasture and arable fields connected to the site by a belt of mature trees immediately to the east of the application site. The River Calder lies approximately 1km south east, however, habitat connectivity between the river and the application site is broken by the residential area of Ravensthorpe which lies approximately 400m to the south east.

4.2 Dewsbury Country Park and the Spen River lay approximately 500m to the east of the application site and are connected to site by a network of hedgerows, trees and ditches. To the north of the site a patchwork of interconnected pasture and arable fields with associated boundary hedgerows provide some connectivity between the site and Finching Dyke approximately 1km to the north.

4.3 Zone of Influence

The zone of influence describes the geographic extent of potential impacts of a proposed development. Suitable connective vegetation could influence the presence of protected species within the application boundary. the zone of influence was considered to be 500 metres from the application boundary for amphibians and reptiles, 30 metres for terrestrial mammals such as badgers, and within the area of impact for breeding birds



Figure 1. OS map of the project site and surrounding area.

Red line boundary depicts application site.

5 Results

5.1 Desk Study

5.1.1 Designated Sites

The site was subjected to a search for designated sites within a 2km radius of the site using data supplied by the Local Records Centre (West Yorkshire Ecology Service) and the online desk-based resource MAGIC.

5.1.2 The data supplied by West Yorkshire Ecology Service was received on 23/08/2019 and is summarised within Table 3. The search revealed no internationally or nationally designated (statutory) sites and three locally designated (non-statutory) sites within the 2km radius search.

5.1.3 A search of the online resource Magic Maps found no additional sites with Statutory designations within the 2km radius search.

Table 3. Summary of Designated Sites within a 2km radius of the application site

Site Name	Grid Ref	Status	Reason for Designation	Distance from site
Lower Spen Wildlife Area	SE 227 208	LNR	Ancient semi-natural woodland	1.1km ESE.
Sunny Bank Ponds	SE 199 216	LNR	Reedbeds with high value for birds	1.5km NW
Whitley Wood	SE 215 185	LNR	Abundant native bluebells (<i>Hyacinthoides non-scripta</i>)	1.9km S

5.1.4 Protected Species Assessment

5.1.4.1 Data supplied by West Yorkshire Ecology Service also included records of protected species. Full datasets are presented within Appendix 8 of this report. A summary of the closest or most relevant records can be seen in Table 4 below.

5.1.4.2 Magic maps revealed a single granted EPS licence 1.8km south east of the application site for common pipistrelle (*Pipistrellus pipistrellus*) to allow the destruction of a resting place. The licence was granted in September 2016 and is due to expire in August 2021.

Table 4. Summary of relevant protected and priority species records

Species	Grid ref.	Date	Distance from Site	Description
Kestrel (<i>Falco tinnunculus</i>)	SE223217	08/01/2016	1.2km	1 count
Green Woodpecker (<i>Picus viridis</i>)	SE223217	08/01/2016	1.2km	1 count
Leisler's Bat (<i>Nyctalus leisleri</i>)	SE20732065	31/05/2017	0.8km	Field record (No description)
Noctule (<i>Nyctalus noctula</i>)	SE205196	13/09/2013	1.7km	1 count
Common pipistrelle (<i>Pipistrellus pipistrellus</i>)	SE20732065	31/05/2017	0.8km	1 count

5.2 Habitats

5.2.1 The habitat types recorded on site are summarised below, and the frequency and distribution of habitat types is displayed within a Phase 1 Habitat Survey Map (Appendix 1 and 2).

5.2.2 Table 5 provides a list of habitat types present on site along with their inclusion (or otherwise) as a National and / or Local Habitat of Principle Importance (HPI) (Previously referred to as Biodiversity Action Plan (BAP)) (It should be noted that additional information is included within the text where a classification under Phase 1 survey methodology does not mirror habitat types considered to be conservation priorities).

Table 5. JNCC Habitat Types found on site and inclusion within UK BAP habitats.

Habitat Type	N HPI	L HPI	N/A
Poor semi-improved grassland			✓
Inundation vegetation			✓
Scattered Tees			✓
Dense Scrub		✓	
Tall Ruderals			✓
Dry Ditch			✓
Native species poor intact hedgerow	✓	✓	
Ornamental Planting			✓
Hardstanding			✓
Bare Ground			✓

5.2.3 Poor Semi-Improved Grassland

The site was dominated by poor semi-improved grassland covering 1ha of the redline boundary (Figure 2). The sward was predominantly an even mix of creeping soft grass (*Holcus mollis*), Yorkshire fog (*Holcus lanatus*), creeping bent grass (*Agrostis stolonifera*) and rough-stalked meadow grass (*Poa trivialis*) with occasional patches of tufted hair grass (*Deschampsia cespitosa*), false oat grass (*Arrhenatheram elatius*) and cocksfoot (*Dactylis glomerata*). Dicotyledon species recorded included creeping buttercup (*Ranunculus repens*), white clover (*Trifolium repens*), dandelion (*Taraxacum officinale*) and sowthistle (*Sonchus sp.*). A full species list can be found in Appendix 2. The sward length varied slightly and had been more recently mowed closer to the property, however it was predominantly between 4 to 6 inches in length.



Figure 2. Poor semi-improved grassland. Photo taken from the north of the application site.

5.2.4 Inundation vegetation

An area of inundation vegetation approximately 10m² was present on site (Figure 3) situated centrally within the much larger poor semi-improved grassland. This area was dominated by great willowherb (*Epilobium hirsutum*) but also contained abundant great reedmace (*Typha latifolia*), frequent curled dock (*Rumex crispus*), occasional rosebay willowherb (*Chamerion angustifolium*) and creeping thistle (*Cirsium arvense*) and a small amount of common nettle (*Urtica dioica*). A small patch of locally abundant field woodrush (*Luzula campestris*) was also present very close to this habitat.



Figure 3. Area of inundation vegetation located centrally within the poor semi-improved grassland

5.2.5 Scattered Trees

Sixteen mature trees were present onsite, scattered evenly within the grassland and along the boundaries (Figure 4). Species recorded included beech (*Fagus sylvatica*), cherry laurel (*Prunus laurocerasus*), domestic apple (*Malus domestica*), elder (*Sambucus nigra*), holly (*Ilex aquifolium*), Leyland cypress (*Cupressus x leylandii*), pedunculate oak (*Quercus robur*), Scots pine (*Pinus sylvestris*), silver birch (*Betula pendula*), white willow (*Salix alba*) and wild cherry (*Prunus avium*).

5.2.6 Dense Scrub

Patches of dense scrub were recorded in five locations across the application site. The largest of these patches was approximately 6m² at the eastern side of the site close to the application boundary (Figure 5). Species present included abundant bramble (*Rubus fruticosus*) and creeping thistle, frequent ivy (*Hedera helix*) and occasional false oat grass



Figure 4. Scattered trees on site. Photo taken from west looking east.

5.2.7 Tall Ruderal Herbs

Patches of tall ruderal herbs were recorded across the application site, particularly in the south and along the line of fences in the west (Figure 6). Species included great willowherb, rosebay willowherb, cleavers (*Galium aparine*), common nettle, common sowthistle (*Sonchus oleraceus*) and broad-leaved dock (*Rumex obtusifolius*).



Figure 5. A patch of dense scrub at the eastern side of the application site.



Figure 6. A patch of tall ruderal herbs at the south of the site.

5.2.8 Dry Ditch

A dry ditch approximately 25m long and 1m deep ran west to east in the north of the site (Figure 7). The ditch had different vegetation to the surrounding grassland consisting largely of abundant false oat grass, common nettle and creeping thistle. The ditch contained evidence of recent fires such as burnt wood and ash.



Figure 7. A dry ditch running east-west

5.2.9 Native species-poor intact hedgerow

A native, species-poor intact hedgerow consisting largely of dominant holly (*Ilex aquifolium*) was recorded at the west of the site associated with the adjacent properties on Northorpe Lane. The composition of the hedgerow on site comprised fewer than four native woody species in any 30m section and as such were not considered species rich. The hedgerow was approximately 8m in length and contained abundant hawthorn (*Crataegus monogyna*) and occasional Lawsons cypress (*Chamaecyparis lawsoniana*). The understorey was predominantly bramble and common nettle.

5.2.10 Introduced Ornamental shrubs

Flower beds containing ornamental shrubs were located adjacent to the property (Figure 8). Species recorded included fuchsia (*Fuchsia magellanica*), cherry laurel and Leyland cypress.



Figure 8. An area of ornamental planting to the west of the application site

5.2.11 Invasive Weeds Assessment

An assessment of the site was made to establish the presence of invasive weeds included on schedule 9 of the Wildlife and Countryside Act 1981 (as amended). No recordings of invasive weed species were found within, or adjacent to the application area.

5.3 Fauna

5.3.1 Breeding Birds

5.3.1.1 Scrub, on site provided suitable nesting habitat for common bird species such as Blackbird (*Turdus merula*) and song thrush (*Turdus philomenos*) as well as notable bird species such as nightingale (*Luscinia megarhynchos*). Two species of bird were recorded onsite during the survey, these were wood pigeon (*Columbus palumba*) and carrion crow (*Corvus corone*).

5.3.1.2 Building 1 supported no suitable access points for birds to enter the roof void. There was no evidence that breeding birds had previously occupied the building although there was no access to the roof void. No current evidence of breeding birds was recorded at the time of the survey.

5.3.1.3 Based on a review of the habitat types on site during the survey, the site is considered to support an assemblage of bird species and is suitable for some species considered to be of high conservation concern that are either legally protected or UK BAP species, such as song thrush (*Turdus philomenos*) and dunnock (*Prunella modularis*).

5.3.2 Bats

5.3.2.1 Roosting Bats

Scattered trees were present throughout the site with a broadleaved woodland directly adjacent to the eastern boundary of the application site. Visible trees were assessed and categorised based upon Bat Conservation Trust guidance (see Appendix 5), with all scattered trees within the site boundary assessed to have negligible suitability to support roosting bats. Despite the trees being mature in nature, they did not support suitable cracks, fissures or holes to support roosting bats.

5.3.2.2 Building 1 was assessed to have low suitability to support roosting bats. Due to the internal roof void of the building being inaccessible at the time of the survey it is possible that suitability exists to support roosting bats, however a combination of relatively new and well fitted tiles, snug fascia and flush bargeboards contributed to an overall lack of external PRFs and made access to the roof void by bats unlikely. The main structural features of the building,

and their suitability for supporting roosting bats are summarised below (Table 6), and associated figures can be found with Appendix 9.

Table 6. Summary of Bat Roost potential and evidence found within each of the buildings/structures on site (Supporting Figures within Appendix 9).

High	Moderate	Low	Negligible	None
Building Number	Description	Bat evidence / Potential Roosting Features (PRFs)		Roost Suitability
B1	Two storey detached brick building with render on external walls. uPVC windows throughout the building with flush plastic fascia and timber bargeboards at gabling. Pitched pan tile roof in good repair with no obvious access points for bats	No external PRF'S present., however access could be achieved behind barge boards into the roof void. Possibility of internal suitability within roof void, however no access was achieved. No evidence of previous bat activity was recorded during the assessment.		Low

5.3.2.3 Foraging and Commuting Bats

The site supported vegetative features considered suitable to support commuting and foraging bats. The scattered trees, adjacent woodland and scrub, within the site boundary provide valuable resources for foraging bats. Linear features such as the woodland edge provided connective habitat across the site, providing commuting pathways to the wider environment. The site is considered to provide moderate suitability habitat for foraging and commuting bats, due linear features onsite connecting areas of woodland to the east and the south of the site and agricultural land beyond.

5.3.3 Badgers (*Meles meles*)

5.3.3.1 Records relating to certain protected species including badger sett locations are sensitive in nature, and due to the risk of public interference are kept confidential. Details of results relating to badger have not been included in this report due to their sensitive nature but will be submitted within a confidential appendix to support the planning submission (Appendix 10).

5.3.3.2 No evidence of badger setts, or activity such as mammal runs, snuffle holes and latrines were found during the ecological appraisal of the site. However,

the site supported habitat features such as dense scrub and adjacent woodland which were considered conducive to supporting badger populations. The extent of the site, and the location within an agricultural dominated landscape suggest that this transient species could forage or commute within the surrounding environment but are not dependant on habitats within the redline boundary.

5.3.4 **Great Crested Newts** (*Triturus cristatus*)

The site supported a mixture of scrub and tussock grassland which is considered suitable to support the terrestrial phase for this species. There were no ponds within or on land adjoining the application boundary. A search was conducted for ponds within 500m of the application site and no ponds were found. Due to the lack of suitable aquatic habitat for great crested newts to use as breeding ponds within the search area it is considered unlikely that this species would be using the site and as such are not considered a constraint to the application.

5.3.5 **Reptiles**

No evidence of reptiles was recorded during the survey; however, the site supported a suitable habitat matrix to support reptiles such as grass snake (*Natrix helvetica*). The extensive grassland on site provided a variable sward structure supporting areas of rough tussock grassland, short mown areas, and wet grassland and suitable reptile refugia such as deadwood was recorded in the west and north of the site.

6 Evaluation

6.1 Development Proposals

The site is the subject of an outline planning application for the development of 48 residential dwellings. Design plans are provided within Appendix 6 of this report.

6.2 Desk Study Impacts

Direct impacts on nearby designated sites as a result of the proposed development are considered unlikely. The application site is positioned over 1km distant from the three LNRs recorded within the datasearch. Lower Spen Wildlife Area is a semi-natural ancient woodland positioned 1.1km ENE of the application site. Sunnybank Ponds is an area of ponds and reedbeds 1.5km NW of the application site, while Whitley Wood is an ancient woodland 1.9km south. Significant barriers to terrestrial dispersal including large areas of urban residential development and major roads exist between the application site and Lower Spen Wildlife Area and Sunnybank Ponds, and the River Calder and the A644 are situated between the site and Whitley Wood.

6.3 Habitats

6.3.1 The habitats on site have been evaluated as having site value in relation to the immediate surroundings and a regional context. The site was dominated by poor semi-improved grassland dotted with scattered trees, patches of scrub and tall ruderal herb. A patch of inundation vegetation was recorded in the approximate centre of the site. The site was also bordered by semi-natural broad-leaf deciduous woodland to the east and a small section of native species-poor intact hedgerow in the west. The hedgerow on site falls within the NHPI and LHPI priority habitat criteria. Using the Hedgerow BAP Targets and Favourable Condition Attributes the hedgerow was not found to be in a favourable condition due to its inability to meet the threshold for herbaceous vegetation, non-native woody species and nutrient enrichment. Using the HEGS survey methodology as defined in Clements and Tofts (1992) the hedgerows on site were awarded a hedgerow grade of 4+ giving it low value.

6.4 Breeding Birds

6.4.1 All wild birds, their eggs and nests are protected under the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally

kill, injure, or take any wild bird whilst nesting, or take, damage or destroy the nest of any such bird while in use or being built. In addition, species listed on Schedule 1 of the Wildlife and Countryside Act 1981 or their dependant young are afforded additional protection from disturbance whilst they are at their nests.

6.4.2 The vegetation on site was considered to provide suitable nesting habitat for common bird species and has the potential to support populations of birds of local and national interest such as song thrush and dunnoek. Any clearance works proposed on site should be well researched in order to prevent direct or indirect impacts on individual birds, their young, eggs and habitats. Chapter 7 provides recommendations relating to the need for reasonable avoidance measures to avoid disturbing breeding birds and their eggs and nests.

6.5 **Bats**

6.5.1 All bats in the United Kingdom and their habitats are fully protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2017. It is an offence to damage or destroy any bat roost, intentionally or recklessly obstruct a bat roost, deliberately, intentionally or recklessly disturb a bat or intentionally kill, injure or take any bat.

6.5.2 *Roosting bats*

Scattered trees on site were not considered suitable to support roosting bats. This woodland is proposed for clearance as part of the redevelopment scheme, and as such could result in disturbance or injury to roosting bats, and the loss of suitable roosting habitat. The recommendations section (Chapter 7) of this report sets out important guidance on measures to avoid impacts on this species and measures to support its conservation status.

6.5.3 Building 1 was identified as having low suitability to support roosting bats due to the lack of PRFs throughout the building's external features, however access prevented an internal inspection which could flag potential access points or evidence of use by bats. As such chapter 7 recommends further presence / absence surveys to safeguard this protected species group.

6.5.4 *Foraging and Commuting Bats*

The linear features provided by woodland edge and scattered trees could act as important commuting lines for bat species and are considered to hold moderate suitability. The removal of these features without an understanding of their significance could lead to the loss or disturbance of commuting and foraging habitat utilised by local bat populations, impacting their commuting behaviour. Chapter 7 sets out important guidance relating to further survey work to understand the importance of the feature and development of appropriate mitigation.

6.6 **Badgers**

Under the Protection of Badgers Act 1992, in England and Wales it is an offence to wilfully kill, injure, disturb or take any badger, or intentionally or recklessly damage, destroy, or obstruct access to any part of a badger sett. There was no evidence of badger activity within zone of influence, however the rural location of the site and data records suggest that badgers may be present in the wider environment and could forage and commute through the red line boundary on an intermittent basis. Chapter 7 sets out important guidance on measures to avoid impacts on this species and measures to support its conservation status.

6.7 **Great Crested Newts**

It is considered unlikely that GCN would present a constraint to the planning application, particularly given the increasingly low densities at which GCN are found at increased distances from optimal habitat and breeding ponds. GCN are not thought to be present within the redline boundary and as such are not considered further within this report. If any evidence of GCN presence is uncovered during development works, then works should cease and the advice of an ecologist sought.

6.8 **Reptiles**

Reptiles are protected under the Wildlife and Countryside Act 1981 (as amended) making it illegal to intentionally kill or injure reptiles. No evidence of reptiles was recorded during the survey; however, the site supported a suitable habitat matrix comprising a variable sward structure, wet grassland and dead wood refugia and as such it is therefore likely that harm or injury could be sustained to this group of species during the pre-construction clearing of the

site. Chapter 7 sets out important guidance on measures to avoid impacts on this species and measures to support its conservation status.

7 Recommendations

As with all development sites; efforts should be made to support National and Local Biodiversity Action Plans and seek opportunities to incorporate ecological enhancement schemes within the proposed development. Such site enhancements are viewed positively in light of the NPPF (2019) which seeks biodiversity enhancements and net gain through the planning process.

7.1 Habitats

Habitats / Botanical	Timing
Recommendations	
It is recommended that some of the scattered trees on site be retained where possible and incorporated into the proposed development.	N/A

7.2 Breeding Birds

Breeding Birds	Timing
Recommendations	
<p>Scrub on site have been identified as being suitable for use by breeding birds. Given their protection, development must be sympathetic to the value of this habitat and potential impacts on breeding birds, their eggs, nests and young. The breeding bird season is generally accepted as being between March and September.</p> <p>Developers should consider and implement the options most appropriate to their scheme;</p> <ol style="list-style-type: none"> 1. Construction works should be undertaken outside of the breeding bird season, between the months of October and February where possible. 2. Any vegetation proposed for removal between the months of March and September should be subjected to a search for active birds' nests 24 hours prior to commencement of works. This should confirm whether all or some clearance is achievable at this time. <p>In addition to a pre-works check, the clearance of vegetation between the months of March and September should be supervised by a suitably qualified ecologist. The results of this check are valid for the subsequent 5 days.</p>	October-February

Enhancement Prescriptions	
<p>Five 1B Schwegler bird boxes (or similar) in the following sizes: 26mm Hole, 32mm Hole, Oval Hole should be positioned on suitable scattered boundary trees, retained following the development and located within the application boundary. Entrance holes directed towards the north and east to avoid strong sunlight and driving rain. The bird boxes should be positioned at a height of between 2 and 4 metres during the Autumn.</p> <p>Single cavity no. 17 Schwegler swift boxes should be installed in each new building. These boxes should be installed at least six to seven metres above the ground, ensuring that there is unobstructed access for birds entering and leaving. If possible, boxes should be sited under the shelter of eaves or overhanging roofs.</p>	Post construction

7.3 Roosting Bats

Roosting Bats	Timing
Recommendations	
Potential suitability for roosting bats within the roof void of B1 requires recommendation for a single dusk emergence survey to be carried out in order to determine the presence or absence of bats using the building.	One survey between May and August
Enhancement Prescriptions	
Design proposals may require amendment following the results of further survey work.	

7.4 Foraging & Commuting Bats

Foraging & Commuting Bats	Timing
Recommendations	
<p>The site possesses a range of features, notably scattered trees, scrub, and tree lined boundaries that have the potential to act as important flight paths and foraging resources for local bat populations. It is recommended that areas indicated for removal or disturbance during the redevelopment works are subjected to a bat activity survey to establish the significance of these commuting routes on site.</p>	<p>Transect /spot count/ timed search survey One survey visit per month At least one survey should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period. AND Static automated surveys: Two locations per transect, over a five-night period, per month (April to October)</p>
Enhancement Prescriptions	

Design proposals may require amendment following the results of further survey work. Enhancements can be better advised and directed once additional survey work has been completed.	
--	--

7.5 Badgers












Badgers	Timing
Recommendations	
<p>The site could potentially provide foraging habitat for outlying badger populations. Appropriate precautions should be employed during construction works to prevent harm to this protected species. Any exposed excavations to be left overnight are to be covered at the end of each working day or include a means of escape for any fallen animals (e.g. a scaffolding plank). Any temporarily exposed open pipes are to be capped to prevent badgers gaining access.</p> <p>A pre-commencement check to ensure badgers have not moved into the site should be undertaken, if works do not begin within 12 months of the initial report.</p> <p>Should badgers or any evidence of badgers be encountered during the construction phase, all works should cease, and the advice of a suitably qualified ecologist should be sought.</p>	During and post development

7.6 Reptiles

Reptiles	Timing
Recommendations	
<p>Habitat features such as rough grassland, wet grassland, scrub and deadwood were considered highly conducive to finding this species on site. To establish whether reptiles are using the site it is recommended that suitable habitat patches are subjected to a full reptile presence / absence survey at the appropriate time of year.</p>	Seven visits in suitable weather conditions Timing: March - September
Enhancement Prescriptions	
Design proposals may require amendment following the results of further survey work.	

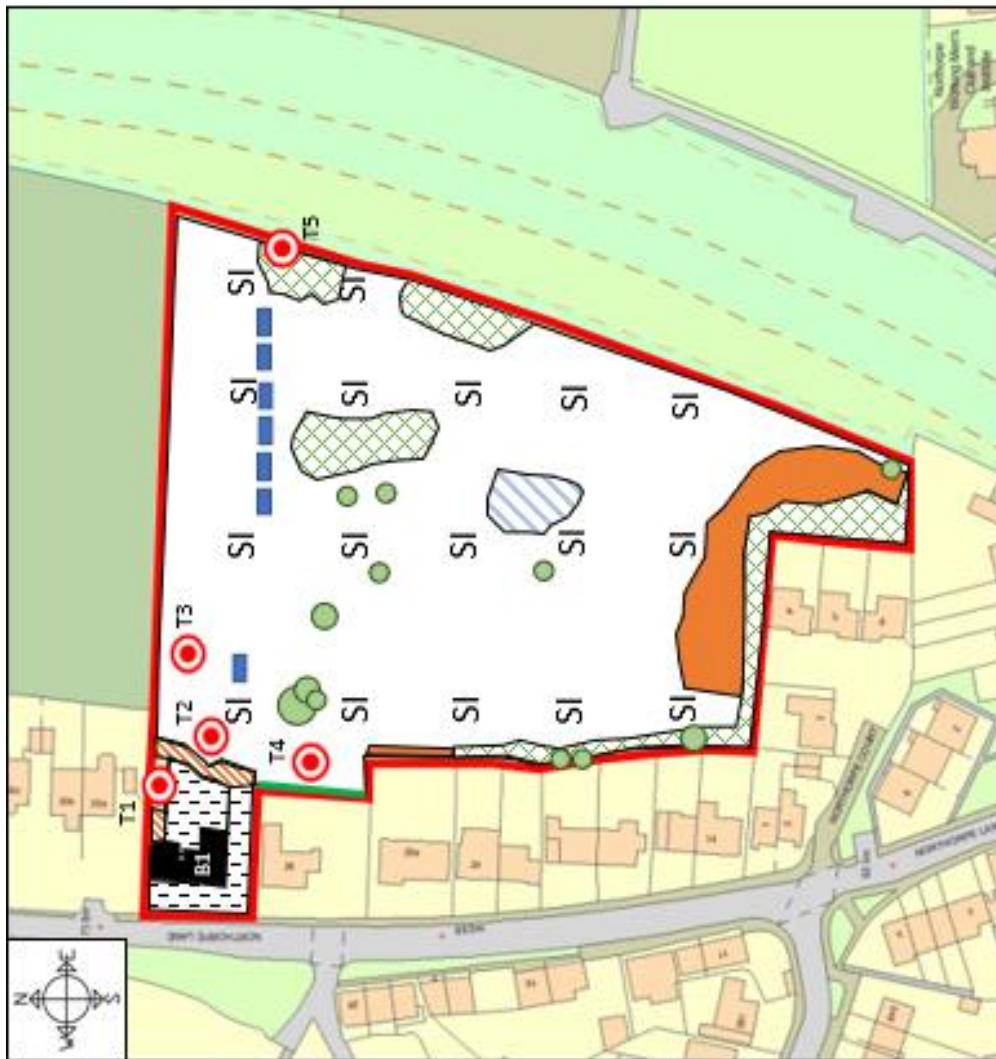
Appendix 1. Phase 1 Habitat Plan

Phase one Habitat Survey
 Project: BG19.267 28 Northorpe Lane,
 Mirfield, West Yorkshire

	Application Boundary		Scattered Trees
	Poor semi-improved Grassland		Target Note
	Hardstanding		Tall Ruderal Herbs
	Dense scrub		Inundation vegetation
	Introduced Shrub & Ornamentals		Species poor, native, intact hedgerow
	Dry Ditch		

brindle & green
 ecological consultants

Drawn by: JCH
 Date Created: 16/10/2019
 Map is for indicative purposes only, habitat patches are not scale



Appendix 2. Target Notes and Plant Species List

Target Note Number	Description
T1	Polyester tunnel greenhouse
T2 & T4	Woodpile
T3	Water tanks
T5	Fence repairs

Plant Species List with DAFOR Scale

Scientific nomenclature follows Stace (2010) for vascular plant species and common names follow BSBI List of British & Irish Vascular Plants and Stoneworts.

Please note that this plant species list was generated as part of a Phase 1 Habitat survey and does not constitute a full botanical survey.

Abundance was estimated using the DAFOR scale as follows: D = dominant, A = abundant, F = frequent, O = occasional, R = rare, LF = locally frequent

Common Name	Scientific Name	Estimated Abundance (DAFOR)
Sycamore	<i>Acer pseudoplatanus</i>	R
Creeping bent	<i>Agrostis stolonifera</i>	F
False oat-grass	<i>Arrhenatherum elatius</i>	O
False brome	<i>Brachypodium sylvaticum</i>	O
Rosebay willowherb	<i>Chamerion angustifolium</i>	O
Creeping thistle	<i>Cirsium arvense</i>	F
Hawthorn	<i>Crataegus monogyna</i>	O
Leyland cypress	<i>Cupressus x leylandii</i>	O
Cocksfoot	<i>Dactylis glomerata</i>	O
Tufted hairgrass	<i>Deschampsia cespitosa</i>	O
Great willowherb	<i>Epilobium hirsutum</i>	O
Beech	<i>Fagus sylvatica</i>	R
Cleavers	<i>Galium aparine</i>	O
Common ivy	<i>Hedera helix</i>	LA
Hogweed	<i>Heracleum sphondylium</i>	O
Creeping soft-grass	<i>Holcus mollis</i>	A
Holly	<i>Ilex aquifolium</i>	LA
Field woodrush	<i>Lazula campestre</i>	LA
Perennial ryegrass	<i>Lolium perenne</i>	F
Domestic apple	<i>Malus domestica</i>	R
Common poppy	<i>Papaver rhoeas</i>	R
Scots pine	<i>Pinus sylvestris</i>	R
Rough-stalked meadow-grass	<i>Poa trivialis</i>	F
Bird cherry	<i>Prunus avium</i>	O
Cherry laurel	<i>Prunus laurocerasus</i>	O
Turkey oak	<i>Quercus cerris</i>	R
Pedunculate oak	<i>Quercus robur</i>	R
Creeping buttercup	<i>Ranunculus repens</i>	F
Bramble	<i>Rubus fruticosus</i>	F
Curled dock	<i>Rumex crispus</i>	O
Broad-leaved dock	<i>Rumex obtusifolius</i>	O
White willow	<i>Salix alba</i>	O
Goat willow	<i>Salix caprea</i>	R
Elder	<i>Sambucus nigra</i>	R
Ragwort	<i>Senecio jacobaea</i>	O

Common sowthistle	<i>Sonchus oleraceus</i>	O
Whitebeam	<i>Sorbus aria</i>	R
Dandelion	<i>Taraxacum officinale</i>	O
White clover	<i>Trifolium repens</i>	F
Great reedmace	<i>Typha latifolia</i>	LA
Common nettle	<i>Urtica dioica</i>	F

Appendix 3. General References

Bat Conservation Trust's 'Good Practice Survey Guidelines' (Rev 2012).

Bell, S. McGillivray, D. (2006) *Environmental Law*. 6th ed. Oxford University Press.

Byron, H (2000) *Biodiversity and Environmental Impact Assessment: A Good Practice Guide for Road Schemes*. The RSPB, WWF-UK, English Nature and the Wildlife Trusts, Sandy.

Collins, J (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, (3rd edition), Bat Conservation Trust, London.

Clements, DK. Tofts, Russel J. (1992) *Hedgerow Evaluating and Grading System (HEGS)*

Defra (2007) *Hedgerow Survey Handbook; A standard procedure for local surveys in the UK*. Defra, London.

Gilbert G, Gibbons DW, Evans J. (1998) *Bird Monitoring Methods: Breeding Bird Survey* (pages 389-393). RSPB.

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

Joint Nature Conservation Committee (JNCC) *Handbook for Phase 1 habitat survey* (2003). JNCC.

Langton T, Beckett C and Foster J (2001) *Great Crested Newt Conservation Handbook*. Froglife, Halesworth.

Mitchell-Jones A.J. McLeish, A.P. (2004) *Bat Workers Manual* (3rd Edition). Joint Nature Conservation Committee.

Mitchell-Jones A.J. *Bat Mitigation Guidelines* 2004. English Nature.

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

Rodwell, J.S. Joint Nature Conservation Committee (JNCC). *National Vegetation Classification: Users' handbook* (2006). JNCC.

Rose, F. (2006). *The Wild Flower Key* (Revised edition). Penguin books Ltd, London

Stace, C. (2010). *Field Flora of the British Isles*. Cambridge University Press

Sutherland, W.J. (1996) *Ecological Census Techniques*. Cambridge University Press.

Treweek, J. (1999) *Ecological Impact Assessment*. Blackwell Science.

Williams, C. (2010) *Biodiversity for Low and Zero Carbon Buildings, A Technical Guide for New Build*. Riba Publishing.

Appendix 4. Legislation, Policy and Guidance

Articles of British wildlife and countryside legislation, policy guidance and both Local and National Biodiversity Action Plans (BAPs) are referred to. The articles of legislation are:

The Wildlife and Countryside Act 1981 (as amended)

The Conservation of Habitats and Species Regulations 2017

Department for Communities and Local Government. National Planning Policy Framework. (2019)

EC Council Directive on the Conservation of Wild Birds 79/409/EEC

The Protection of Badgers Act 1992

The Natural Environment and Rural Communities Act 2006 (Including National and Local Biodiversity Action Plan (LBAP / HPI))

Hedgerow Regulations 1997

Appendix 5. Legislation, Guidance and Methodology for Preliminary Ecological Appraisals.

Legislation, Guidance and Methodology

Breeding Birds

All nesting birds are protected under the Wildlife and Countryside Act 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition, for species listed on Schedule 1 of the Wildlife and Countryside Act 1981 it is an offence to intentionally or recklessly cause disturbance at, on or near an 'active' nest.

The bird breeding season is typically accepted to start in February/March and continue through until September/October, however breeding birds can be found all year round depending on the given species and climatic conditions.

A sites habitat composition, locality, association to designated sites as well as current usage and management are all considered in the decision as to whether further bird related surveys are required. In addition, surveys may be recommended based on incidental bird records collected during a Preliminary Ecological Appraisal, species identified within an ecological data search or target species listed within a local biodiversity action plan.

Bird surveys are carried out in accordance with:

Gilbert G, Gibbons DW, Evans J. (1998) *Bird Monitoring Methods*. RSPB.

Bats

Foraging and Commuting bats

Habitat features on site are assessed for their suitability to support foraging and commuting bat populations. This assessment is independent from the suitability of the site to support roosting bats, and provides information on the likeliness of bat foraging activity within the local environment, and the dependence of individuals on these features for commuting to alternative roosting sites, foraging and migration.

Table 1: Guideline for assessing the suitability of a structure to support roosting habitat (Buildings and Trees), amended from Collins, J (2016)

Category	Description of roosting habitat	Number of additional presence / absence surveys required
Negligible Suitability	Suitable cavities may exist, but these are less than ideal.	None
Low Suitability	<p>A structure with one or more potential roost sites that could be used by individual bats opportunistically. The feature and surrounding habitat do not provide enough shelter, conditions* space for larger roost types such as a maternity or hibernation roost.</p> <p>A tree of sufficient size and age to support roosting bats, but with no features observed from the ground, or the features only have a limited potential to support roosting bats.</p>	<p>One survey between May and August</p> <p>Trees – No further surveys required</p>

Moderate Suitability	A structure or tree considered to have one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions* and surrounding habitat but are unlikely to support a roost of high conservation status (With regard to roost type only – assessments are made irrespective of species conservation status, which is established after presence is confirmed).	Two surveys between May and September (with at least one survey undertaken between May and August) One Dusk emergence and One Dawn re-entry survey to ideally be undertaken at least two weeks apart.
High Suitability	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions* and surrounding habitat.	Three surveys between May and September (with at least two surveys undertaken between May and August) One Dusk emergence and One Dawn re-entry survey to be undertaken. The third survey can be either Dusk or Dawn, undertaken at least two weeks apart.
Confirmed	This category is where positive evidence of bats has been recorded. For example, bats are found; bat droppings may be present at a suitable location for roosting bats; existing bat records may be associated with the structure.	

(* in this context conditions refers to the level of disturbance, light, height above ground, temperature, and humidity etc)

Table 2: Potential suitability of foraging and commuting habitat within an application boundary. Features should be assessed following this guide and professional judgement. Adapted from Collins J (2016)

Category	Description of commuting and foraging habitat	Survey effort to establish the value of commuting and foraging habitat**
Negligible Suitability	Negligible habitat features on site likely to be used by commuting or foraging bats.	None
Low Suitability	Habitat which could be used by low numbers of commuting bats such as an isolated gappy hedgerow, or an unvegetated stream unconnected to suitable habitat in the wider environment. Suitable, yet isolated habitat that could be used by foraging bats such as individual trees, or a patch of scrub.	Transect /spot count/ timed search survey: One survey visit per active season AND Static automated surveys: One location per transect, over a five-night period, per season.
Moderate Suitability	Continuous habitat connected to the wider landscape that could be used by commuting bats, notably tree lines, hedgerows or linked back gardens. Habitat that is connected to the wider landscape which could be used by bats for foraging such as trees, open water, scrub or grassland.	Transect /spot count/ timed search survey One survey visit per month At least one survey should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period. AND Static automated surveys: Two locations per transect, over a five-night period, per month (April to October)
High Suitability	Continuous, High-quality habitat that is well connected to the wider landscape which is considered to be highly conducive to commuting bats including river valleys, stream, hedgerows, and woodland edge	Transect /spot count/ timed search survey Up to two survey visit per month (April to October)

	<p>High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree lined watercourses, and grazed parkland.</p> <p>Site is close to and connected to known roosts.</p>	<p>At least one survey should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period.</p> <p style="text-align: center;">AND</p> <p>Static automated surveys: Three locations per transect, over a five-night period, per month (April to October)</p>
--	---	--

(** This is only a guide for survey effort required, the complexity of the site and the proposed disturbance / loss of features will determine the extent of works required on a site by site basis).

Badgers (*Meles meles*)

Badgers are protected under the Protection of Badgers Act 1992. It is illegal to wilfully kill, injure, disturb or take any badger, or attempt to do so and it is an offence to intentionally or recklessly damage, destroy, or obstruct access to any part of a badger sett.

Site assessments are undertaken in accordance with:
Harris S, Cresswell P and Jefferies D (1989). *Surveying Badgers*.

During the PEA, the site and the 30 metre zone of Influence considered for this species are searched for evidence of badger activity. The surveyor will identify evidence of activity, or habitat suitability for this protected species. Even if no evidence of badger activity is found, if local conditions suggest that the habitat may be suitable for badger, further surveys will be recommended.

Amphibians

The great crested newt and natterjack toad are fully protected under Schedule 5 of the wildlife and countryside Act 1981. The legislation protects these amphibians and their place of shelter or protection which may extend 500m from the breeding pond.

Great Crested Newt (*Triturus cristatus*)

The great crested newt, is fully protected under the Habitat regulations 2017, making it an offence to intentionally or recklessly kill, injure, disturb or take great crested newts, intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection.

The legislation protects these amphibians and their place of shelter or protection which may extend 500m from the breeding pond. Sites should be considered suitable to support great crested newts if distribution and historical records suggest newts may be present, there is a pond within 500m of the development or the development site includes suitable terrestrial habitat refuges.

Great crested newt site assessments are undertaken in accordance with:
English Nature. (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough. and Langton T, Beckett C and Foster J (2001) *Great Crested Newt Conservation Handbook*. Froglife, Halesworth.

Prior to a site visit, a desk study pond search is undertaken. When searching for ponds, Brindle & Green apply a total of 4 sources to establish their location. The following online sources are used:
OS MAPPING VIA PRO MAP, GOOGLE EARTH PRO, GOOGLE MAPS and MAGIC MAPS

Each identified pond (Access permitting) is subjected to a Habitat Suitability Index (HSI) assessment providing a score for each pond. This survey should be undertaken during the summer period to be fully accurate, however assumptions can be made out of season to guide survey recommendations.

Reptiles

Two species of reptile, the sand lizard and smooth snake, and their habitats are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981. All other native British reptiles are protected against intentional killing and injury.

British reptiles are found in exposed, undisturbed areas, such as areas without cultivation with differing areas of grassland sward length. Suitable areas include abandoned sand quarries, fallow farmland land, heathland, post-industrial land, railway corridors etc. If these types of suitable features are found then further reptile surveys are recommended.

Edgar P, Foster J and Baker J (2010) *Reptile Habitat Management Handbook*. Amphibian and Reptile Conservation, Bournemouth.

Gent T and Gibson S (2003) *Herpetofauna Workers Manual*. JNCC, Peterborough.

Invasive non-native weeds

Plant species such as Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*) and giant hogweed (*Heracleum mantegazzianum*) are examples of invasive non-native weeds classified under Part II of Schedule 9 of the Wildlife and Countryside act 1981. Any person who causes these species to grow or spread in the wild by dumping or other means is guilty of an offence. The plant and the soil these species are found growing in are classified as waste material and should be treated as such.

A simple walk over survey of the site to determine if these species are present was carried out during the PEA. A full list of Schedule 9 species can be found at Plantlife.org

Botanical Value

There are 60 plant species listed under Schedule 8 of the Wildlife and Countryside Act 1981 where it is an offence to intentionally pick or uproot or destroy any of these plant species.

During the PEA, a phase one habitat survey was undertaken following JNCC guidance. Further assessments are made to determine whether habitats comprise those identified as Habitats of principle Importance under S42 of NERC Act 2006.

Surveys can be undertaken year-round, however, if species or site conditions suggest higher botanical interest a full botanical survey will be recommended.

Invertebrates

The following invertebrates are European protected species and it is considered an offence if you capture, kill, disturb or injure, on purpose or by not taking enough care. It is also against the law to damage or destroy a breeding or resting place, obstruct access to their resting or sheltering places, possess, sell, control or transport live or dead protected invertebrates, or parts of them.

Large blue butterflies (eggs, caterpillars, chrysalises and adults)
Fisher's estuarine moths (eggs, caterpillars, chrysalises and adults)
Little ramshorn whirlpool snails

Approximately 400 additional species form the invertebrate species of Principal Importance in England and are included within Schedule 5 of the Wildlife and Countryside Act 1981 and S4I of NERC Act 2006.

If suitable habitat for invertebrates is identified during the PEA further surveys will be recommended.

Ecological Enhancement

In March 2019 the Department for Communities and Local Government published the National Planning Policy Framework. This sets out planning policies on protection of biodiversity through the planning

system. The document states - *opportunities to incorporate biodiversity in and around developments should be encouraged.*

For new buildings guidance such as in the following will be used:

Williams, C. (2010) *Biodiversity for Low and Zero Carbon Buildings, A Technical Guide for New Build.* Riba Publishing.

Designated Sites

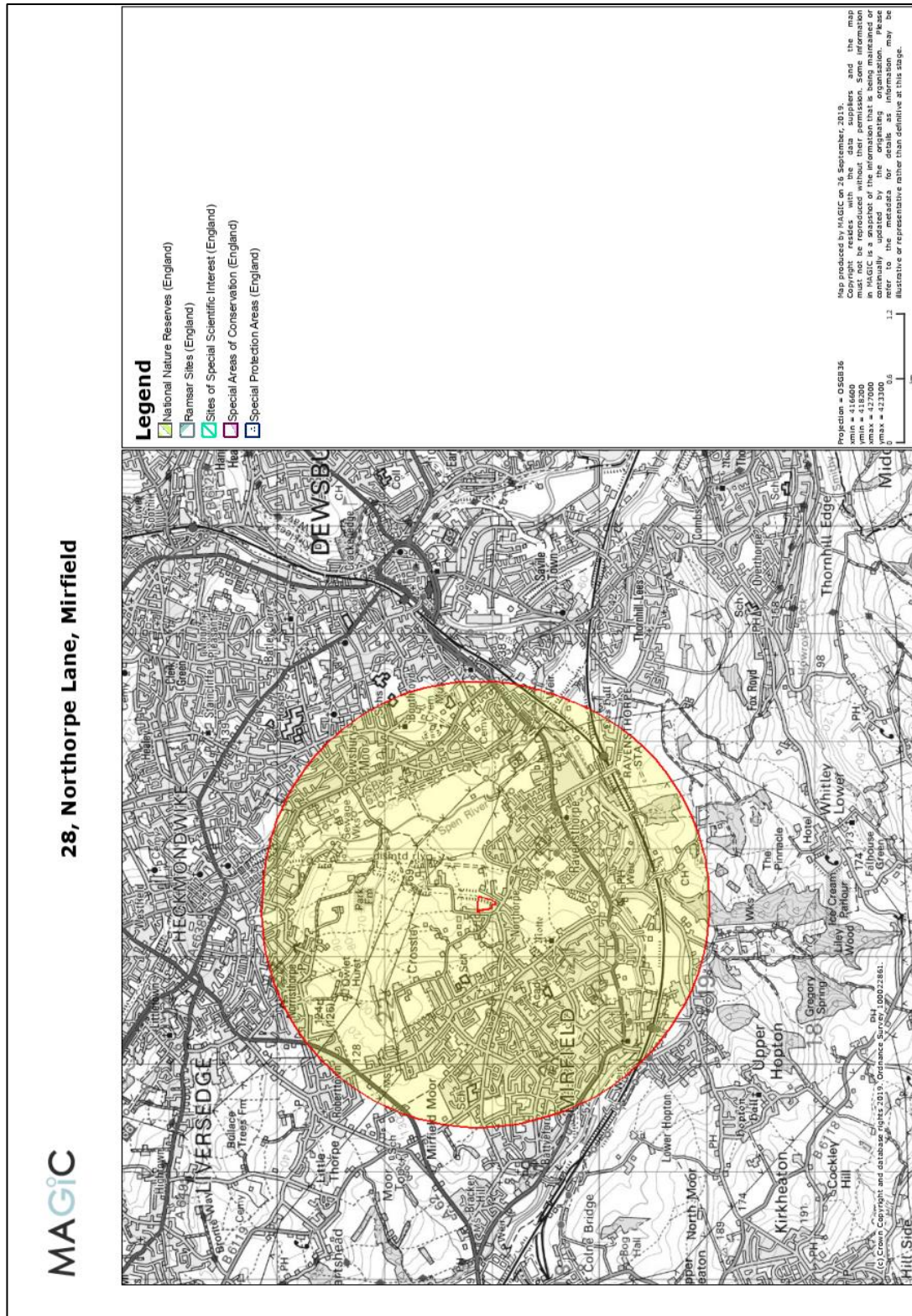
Designated areas are Sites of Special Scientific Interest (SSSI) while others have been designated as having European protection status. Local authorities can also designate areas for nature conservation and in doing so may impose local authority byelaws to support local nature conservation objectives.

European designated status includes Special Protection Areas (SPAs) that preserve areas for birds and Special Areas of Conservation (SACs) which provides protection for habitats and the species which these habitats supports.

Information of Designated Protected Areas is received through Ecological Data Searches and Magic Map searches.

Appendix 7. Magic Data

Two kilometre radius search of the project site.



26/09/2019

Site Check Report Report generated on Thu Sep 26 2019
You selected the location: Centroid Grid Ref: SE21482105
The following features have been found in your search area:

Areas of Outstanding Natural Beauty (England)

No Features found

National Nature Reserves (England)

No Features found

Ramsar Sites (England)

No Features found

Sites of Special Scientific Interest (England)

No Features found

Special Areas of Conservation (England)

No Features found

Special Protection Areas (England)

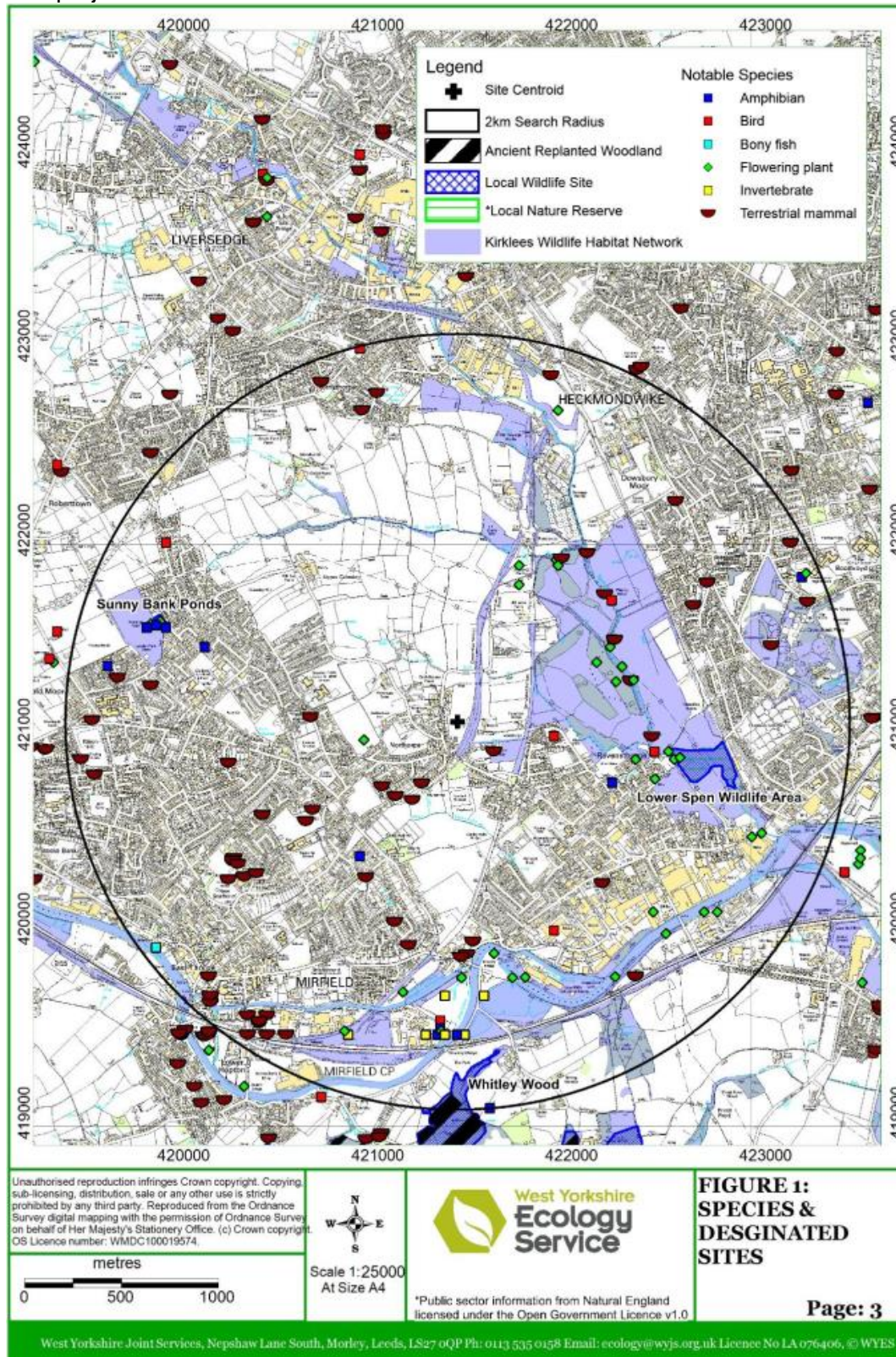
No Features found

Granted European Protected Species Applications (England)

Case reference of granted application	2016-25281-EPS-MIT
Species group to which licence relates	Bat
Species on the licence	C-PIP
Site county of licence	West Yorkshire
Licence Start Date	07/09/2016
Licence End Date	29/08/2021
Does licence impact on a breeding site	N
Does licence allow damage of breeding site	N
Does licence allow damage of a resting place	N
Does licence allow destruction of breeding site	N
Does licence allow destruction of a resting place	Y
Does licence impact on a hibernation site	Unknown
NERC agreement reference	Unknown

Appendix 8. Ecological Data Search Information

The project site can be found at Grid Ref. SE 21423 21132



Appendix 9. Building Photographs

<p>Western Elevation</p>	
<p>Eastern Elevation (Showing poly tunnel greenhouse in foreground)</p>	

