enzygo
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Preliminary Ecological Appraisal

Land at Station Road, Wombwell
for:

Hartwood Estates

CRM.1122.005.EC.R.001

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Contents

1 Introduction 1
1.1 Commission 1
1.2 Aims and Objectives 1
1.3 Background 2
1.4 Site Context 2
2 Methodology 4
2.1 Desk Study 4
2.2 Field Survey 4
2.3 Assessment 5
2.4 Nomenclature 6
2.5 Limitations 6
3 Results and Evaluation 7
3.1 Sites and Habitats Identified by the Desk Study 7
3.2 Habitats Identified on Site 8
3.3 Protected and Notable Species 11
4 Relevant Legislation and Policy 19
4.1 Legislation 19
4.2 National Planning Policy 20
4.3 Local Planning Policy 21
5 Discussions and Recommendations 23
5.1 Overview of Ecological Features subject to Potential Impacts/Effects 23
5.2 Further Survey and Mitigation 23
5.3 Further Survey Timings 26
5.4 Opportunities for Biodiversity Enhancement 26
6 Conclusion 28

7 References 29

Tables and Figures

Figure 1.1: Surveyed Area 3

Table 3.1: Sites and Habitats Identified by the Desk Study 7

Table 3.2: Habitat Identified on Site 9

Table 3.3: Species Identified from the Desk Study and Field Survey 11

Table 4.1: Legislation Protection Afforded to Sites/Habitats that could Potentially be Affected by the Proposed Works 19

Table 4.2: Legislation Protection Afforded to Species that could Potentially be Affected by the Proposed Works 19

Table 5.1: Further Survey Seasonal Restrictions 26

Drawings and Appendices

Drawing CRM.1122.005.EC.D.001 Phase I Habitat Map 31

Non-Technical Summary

i. In December 2018 Enzygo Ltd was commissioned by the Hartwood Estates (the client) to undertake a Preliminary Ecological Appraisal (PEA) of Land at Station Road, Wombwell, Barnsley S73 8AF (central grid reference: SE 40501 03630) located within the Barnsley Metropolitan Borough Council (Darfield Ward) planning authority. The study will inform proposals for residential development at the site.

ii. The following ecological constraints and associated recommendations to avoid/ mitigate/ compensate for potential impacts have been identified:

- **Lowland Mixed Deciduous Woodland and Green Infrastructure** (woodland to the north and north-east of the site likely represents Lowland Mixed Deciduous Woodland HPI. Trees and scrub along the eastern boundary provide significant green infrastructure and wildlife corridor function) ç Incorporate corridor of trees and scrub along the eastern boundary in to the site design. Implement appropriate protection measures (e.g. fencing around root protection areas) at retained trees, and adopt sensitive lighting scheme to avoid degradation of green infrastructure resource;
- **River Dove, Bulling Dyke and Blue Infrastructure, associated Local Wildlife Sites and Protected Species** ç (watercourses provide significant aquatic/blue infrastructure function and represent Rivers HPI, are connected to Local Wildlife Sites in the wider area to the south and south-east, and provide suitable habitat for Otter, Water Vole, White-clawed Crayfish and Kingfisher) ç retention and protection of habitats in site layout design, further River Corridor Survey required if development works are to directly affect watercourses and banks, and best practice pollution prevention guidance to be adhered to;
- **Bats** ç (site provide suitable foraging and commuting habitat) ç retention and protection of habitats, including implementing sensitive lighting scheme, further activity survey required if impacts to these habitats cannot be avoided;
- **Badger** ç (site provides suitable habitat for Badger although no field signs detected) ç pre-works updated check of site and immediate surrounds to ensure Badger have not colonised the site prior to commencement;
- **Birds** - (habitats across site provide nesting potential) ç Clearance outside nesting period or Ecological Clerk of Works (ECoW) to conduct nesting bird check prior to clearance;
- **Reptiles, England SPI and Notable Species** (habitats across site suitable for foraging and shelter) ç Habitats should be cleared in a sensitive manner under the direct supervision of an ECoW;
- **Invasive Flora** (Cotoneaster species present and risk of Indian Balsam presence) ç removal of species from site during site preparation

iii. This assessment has demonstrated that, if the recommended mitigation measures are implemented in full, the proposals will result in no net loss to biodiversity and provide opportunities for ecological enhancements in accordance with local and national planning policy.

1 Introduction

1.1 Commission

1.1.1 In December 2018 Enzygo Ltd was commissioned by the Hartwood Estates (the client) to undertake a Preliminary Ecological Appraisal (PEA) of Land at Station Road, Wombwell, Barnsley S73 8AF (central grid reference: SE 40501 03636), located within the Barnsley Metropolitan Borough Council (Darfield Ward) planning authority. The study will inform proposals for residential development at the site.

1.1.2 The proposed development would include site clearance, including removal of existing vegetation, and development of residential housing, with associated access roads and greenspace. The study will inform the design of the proposed site layout, and this assessment can be updated following confirmation of the proposals.

1.2 Aims and Objectives

1.2.1 The aim of the survey and supporting desk study was to satisfy the requirements of the National Planning Policy Framework (NPPF, DCLG) by identifying ecological features within or near the site that could potentially pose a constraint to the proposed development and opportunities for incorporating biodiversity enhancements into the development proposals. The following ecological features are relevant to this exercise:

- Statutory sites designated or classified under international conventions or European legislation;
- Statutory sites designated under national legislation (excluding geological);
- Locally designated wildlife sites;
- Ancient Woodland Inventory sites, Important Hedgerows (as defined by The Hedgerow Regulations 1997), Veteran Trees, trees listed under Tree Preservation Orders (TPOs), and trees within a Conservation Area;
- England Habitats of Principal Importance (HPI) identified as requiring action in the UK Biodiversity Action Plan (UK BAP) and Local BAP Habitats;
- Legally protected species;
- England Species of Principal Importance (SPI) identified as requiring action in the UK BAP and Local BAP Species;
- Notable species (which include Species of conservation concern and Red Data Book (RDB) species, Birds of Conservation Concern (BOCC), and nationally rare and nationally scarce species);
- Invasive species (listed under section 14 of Schedule 9); and
- The wider green infrastructure resource.

1.2.2 This report has been produced with reference to current guidelines for preliminary ecological appraisal (CIEEM, 2017) and is in accordance with BS42020:2013: Biodiversity Code of Practice for Planning and Development (BSI, 2013).

1.2.3 This report remains valid for 2 years from the date of survey, or until conditions across the site should substantially alter.

1.3 Background

1.3.1 The site has been subject to previous planning applications for residential development with a 2005 outline planning application (ref: 2005/2017) granted at appeal (ref: APP/R4408/06/2028445) and a 2010 reserved matters application (ref: 2010/0310) which was not determined. These applications, supporting information and consultation responses have been reviewed, where available, with the details used to inform the scope of this assessment. No supporting ecological survey information is available for these previous applications.

1.3.2 Land to the north of the application site was granted permission in 2007 (ref: 2007/2131) for development of a school, with an approved reserved matters application (ref: 2010/0990) made in 2010. This 2007 application was supported by an Ecological Assessment (Tim Outlaw, 2007) which included an Extended Phase I Habitat Survey, bat activity survey, breeding bird survey, amphibian survey and Water Vole survey. An Environmental Statement (GL Hearn, 2009) was also produced which included a chapter on Nature Conservation. These documents have been reviewed and pertinent information incorporated into the appropriate section of this report.

1.3.3 A search of the Barnsley Council planning portal has not revealed any further previous planning applications for the site or the nearby land which has any beneficial information to inform this assessment.

1.3.4 There has been no known correspondence with any third parties (i.e. County Ecologist, Natural England etc.) in relation to this proposed development. Additionally, we have not been made aware of any validation requirements (i.e. completion of a biodiversity checklist or specific protected species survey requirements).

1.4 Site Context

1.4.1 The approximately 3.5 Ha proposed development site is adjacent to Valley Road Industrial Estate and residential housing, in a suburban area of Wombwell, Barnsley. The site formerly supported industrial buildings, with aerial imagery indicating this was demolished between 2002 and 2008. Since that time the site appears to have been left derelict and has become colonised by vegetation.

1.4.2 Habitats present within the site comprise bare ground, which is becoming colonised by sparse pioneer vegetation and young shrubs, species-poor unmanaged neutral grassland, dense scrub vegetation, scattered trees and Bulling Dyke which runs north-west to south-east across the site. The northern boundary is demarcated by fencing, beyond which is a public footpath, the River Dove and plantation woodland. The eastern boundary is characterised by fencing beyond which are residential properties. The southern boundary is defined by Station Road beyond which is further residential housing, and the western boundary is demarcated by security fencing with Valley Road Industrial Estate beyond.

1.4.3 The site lies within the Nottinghamshire, Derbyshire and Yorkshire Coalfield National Character Area (Natural England, 2013) which is generally characterised as *a gently undulating area, with hills and escarpments above wide valleys, the landscape embraces major industrial towns and cities as well as villages and countryside*.

Figure 1.1: Surveyed Area

Image courtesy of Google Image Pro 7.1.8.30363, 51.41.39 é 1º23'25.95 é ² 926m ÔÍ imagery date 25th June 2018. Image accessed 19th February 2019.

2 Methodology

2.1 Desk Study

2.1.1 Desk study details were obtained from the following sources on the associated dates to provide background on ecological features in the vicinity of the site. Records over 10 years old for transient species and all species protected from sale only were excluded. In each case the search included the site and the specified area beyond the site boundary. The search radius was based on the professional judgement of the ecologist leading the appraisal, taking into account the scope of the proposed works and associated potential impacts, with reference to current guidelines for preliminary ecological appraisal (CIEEM, 2017). Records obtained included:

- European statutory sites within 5km radius, national statutory sites and previous EPS licence applications within a 2km radius, and England HPI identified as requiring action in the UK BAP (JNCC, 2015a) and Ancient Woodland within a 0.5km radius (Magic Map, 18th February 2019);
- TPOs and Conservation Areas within the immediate zone of influence (Barnsley Council, 18th February 2019);
- Waterbodies within a 0.5km radius (Online mapping sources including: Google Maps; Magic Map; and Ordnance Survey, 18th February 2019); and
- Locally designated wildlife sites, legally protected species, England HPI identified as requiring action in the UK BAP (JNCC, 2015), Local BAP Species, any Notable species (which includes: species of conservation concern and RDB species (JNCC, 2014a), Birds Of Conservation Concern (Eaton et al., 2015), and nationally rare and nationally scarce species (JNCC, 2014b)), and Invasive species within a 2km radius, Local BAP Habitats and important hedgerows/veteran trees within the immediate zone of influence (Barnsley Biological Records Centre (BBRC), 18th January 2019).

2.2 Field Survey

2.2.1 A Phase I Habitat Survey and preliminary ground-level assessment of trees for roosting bats was undertaken on 13th February 2019 by Chris Schofield MSc BSc (Hons) MCIEEM (Senior Ecologist at Enzygo) under the guidance of Derek Allan MCIEEM MSc BSc [Hons] (Director of Ecology at Enzygo and a licensed bat surveyor (Natural England licence Level 2: 2015-21655-CLS-CLS)) who satisfy all necessary field survey competencies as stipulated by the Chartered Institute for Ecology and Environmental Management (CIEEM). Weather conditions at the time of survey were dry and clear, with 0% cloud cover, a moderate breeze and a temperature of 10°C.

Phase I Habitat Survey

2.2.1 Phase I Habitat Survey (JNCC, 2010) is a standard technique for obtaining baseline ecological information for large areas of land in which the main vegetation types present within the survey area are mapped using a standard set of habitat categories.

2.2.2 In addition to mapping, each of the main habitats within the survey area was described; including details of component plant species abundances (recorded using the DAFOR scale: D=Dominant, A=Abundant, F=Frequent, O=Occasional, R=Rare).

2.2.3 Incidental observations of Legally protected species, England HPI, Local BAP Species, any Notable species (which includes: Species of conservation concern and RDB species; BOCC; and nationally

rare and nationally scarce species) and Invasive species, and the potential for such species to occur on site (and in the surrounding landscape where relevant) were also noted.

Scoping (non-specialist) survey for roosts: individual trees and groups of trees

2.2.4 With reference to current survey guidelines BS8596:2015 (BSI, 2015), a scoping (non-specialist) survey for roosts of individual trees and groups of trees, was undertaken. Each tree was visually inspected from the ground (with the aid of binoculars and a high-powered torch) to identify Potential Roosting Features (PRFs), including checks for the presence of the following features that bats might be able to use:

- Natural holes (e.g. knot holes) arising from naturally shed branches, or branches previously pruned back to the branch collar;
- Man-made holes (e.g. cavities that have developed from flush cuts) or cavities created by branches tearing out from parent stems;
- Woodpecker holes;
- Cracks/splits in stems or branches (both vertical and horizontal);
- Partially detached or loose, platy bark;
- Cankers (caused by localised bark death) in which cavities have developed;
- Other hollows or cavities, including butt rots;
- Compression forks with included bark, forming potential cavities;
- Crossing stems or branches with suitable space between for roosting;
- Ivy stems with diameters in excess of 50mm with suitable roosting space behind (or where a roosting space can be seen where a mat of thinner stems has left a gap between the mat and the trunk);
- Bird and Bat boxes on trees; or
- Other features that offer a place of shelter.

2.3 Assessment

2.3.1 Following the preliminary assessment of trees, based on the signs present, each tree was classified as one of the following categories in accordance with current guidance BS8596:2015 (BSI, 2015):

- Known or confirmed roost – Trees with evidence of bat use or bat presence;
- High/medium risk – Trees with a suitable PRF, or with several features with some bat roost potential;
- Low risk – Trees of sufficient size and age to contain bat roosts but with no obvious PRFs seen during the scoping survey, or features seen with limited roost potential only, e.g. small amounts of Ivy; or
- Negligible/no risk – Trees with apparently no potential to support bats.

2.3.2 Potential ecological constraints to development have been identified from desk study and field survey data using current development proposals. An ecological value has been assigned to each ecological feature that poses a constraint/potential constraint to development in accordance with the Chartered Institute of Ecology and Environmental Management (CIEEM) guidelines

(CIEEM, 2016) where sufficient baseline data are available to do so. Where no value has been assigned, this is due to insufficient information.

2.3.3 An assessment of likely ecological impacts has been undertaken in accordance with CIEEM guidelines (CIEEM, 2016) only where clear evidence is available to substantiate and justify the findings. In the absence of such evidence, the ecological feature is merely identified as a potential constraint to development.

2.3.4 Where ecological constraints to development are identified, further survey requirements and/or avoidance, mitigation, compensation measures that are proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed works are described. In addition, in accordance with the NPPF, opportunities to enhance or create benefits to wildlife are explored alongside the hierarchy of measures.

2.4 Nomenclature

2.4.1 The English names of flora and fauna species are given in the main text of this report. Scientific names are used alongside the English name where this first occurs. Vascular plants and Stoneworts (Charophytes) follow the nomenclature of The Botanical Society for the British Isles database (BSBI, 2007) with all other flora and fauna following the National Biodiversity Network (NBN) Gateway (NBN, 2014).

2.5 Limitations

2.5.1 This document does not contain a comprehensive list of botanical species on site. Only plant species characteristic of each habitat and incidental observations of notable plant species were recorded.

2.5.2 In February many plant species are in a state of senescence and are not readily identifiable. However, the surveyor is experienced in plant identification through vegetative characteristics, and the habitats within the site are common and typical of the conditions present. It is considered that sufficient survey to inform the Preliminary Ecological Appraisal (and identify common Phase I habitats) was feasible and appropriate, and the timing of the survey does not represent a significant survey limitation.

2.5.3 Data held by consultees may not be exhaustive. The absence of evidence, does not indicate evidence of absence.

2.5.4 Enzygo cannot take responsibility for the accuracy of external data sources and such discrepancies and inaccuracies may occur.

2.5.5 Natural England do not hold information on Ancient Woodland less than 2ha in size.

2.5.6 BBRC do not supply information on Important Hedgerows or Veteran Trees.

3 Results and Evaluation

3.1 Sites and Habitats Identified by the Desk Study

3.1.1 Sites and habitats identified by the desk study are presented below, along with the reason(s) for their designation and associated ecological value. Potential direct or indirect impacts resulting from the construction phase or operation of the site, and the associated ecological effects have been identified, including details of any relevant Impact Risk Zone (IRZ) within which the proposed works fall. Where potential impacts/effects to ecological features have been identified, the site/habitats is shown on Drawing CRM.1122.005.EC.D.001.

Table 3.1: Sites and Habitats Identified by the Desk Study

Name (distance & direction from works)	Details and Ecological Value	Potential Impact/Effect
Statutory sites designated or classified under international conventions or European legislation		
None	-	-
Statutory sites designated under national legislation		
Impact Risk Zone (IRZ)	The proposed development site lies within an Impact Risk Zone which the LPA are advised to consult with Natural England on the likely impacts of development types which comprise airports, helipads and other aviation proposals only.	No – it is confirmed that the proposed residential development does not meet any of the development categories for which further consultation with Natural England is advised.
Locally designated wildlife sites		
Parkhill Nature Reserve Local Wildlife Site (LWS) 150m South	Site supports mixed deciduous woodland and ponds Local value	Yes – risk of run-off/pollution impacts as Bulling Dyke flows from the site to the LWS. Minor adverse, temporary, irreversible impact
Broomhill Flash and Wombwell Ings LWS 700m East	Site supports floodplain grazing marsh and ponds. Local value	Yes – risk of run-off/pollution impacts as both the River Dove and Bulling Dyke flow from the site to the LWS Minor adverse, temporary, irreversible impact
Gipsy Marsh LWS 1.4km South-east	Site supports ponds, lowland meadow, fen and heath. Local value	No – no direct or indirect impacts predicted. The proposals are of a type, scale and distance that construction or operational impacts on the LWS are reasonably discounted.

Name (distance, direction from works)	Details and Ecological Value	Potential Impact/Effect
Old Moor and Wath Ings LWS 1.8km South-east	Site supports floodplain and grazing marsh, lowland meadows and reedbeds. Local value	Yes – risk of run-off/pollution impacts as both the River Dove and Bulling Dyke flow from the site to the LWS Minor adverse, temporary, irreversible impact
England HPI, Local BAP Habitats, Ancient Woodland, Important Hedgerows, Veteran Trees, TPOs and Conservation Areas		
Lowland Deciduous Broadleaved Woodland HPI Immediately north-west of the site and north of the River Dove.	Total of 15.7 Ha of the HPI within a 500m radius of the site boundary. With an extensive 13.3Ha present to the north and north-west of the sit boundary. Local value.	Yes – the proposals may lead to damage and degradation of the habitat Minor adverse, permanent, reversible impact
Green/Blue Infrastructure, Dark Zones & Local Policy		
Green Infrastructure	The trees and scrub along the eastern boundary of the represents significant green infrastructure, providing structu diversity and wildlife corridor function, from north to south acr the site, connecting to the woodland and river corridor habitats the north, in a landscape dominated by residential and indus development. Local value.	Yes – the proposals may lead to the loss, damage and degradation of habitat providing significant gre infrastructure resource. Minor adverse, permanent, reversible impact
Blue Infrastructure	Bulling Dyke which runs north-west to south-east through the site and the River Dove to the north of the site boundary prov significant blue/aquatic infrastructure function. ¢ K Ŝ w ƛ Ø Ŝ NJ 5 ƨ Ø Ŝ ƛ ă l · f ă ƨ Ř Ŝ ă ƛ w ƛ Ø (Bulling Dyke is not). Local value.	Yes – the proposals may lead to loss, damage and/o degradation of the significant blue/aquatic infrastructure. Significant adverse, permanent, reversible impact
Dark Zones	There are no known dark zones across the site. In accordanc the standard guidance specified in the *Guidance Notes fo Reduction of Obtrusive Lighti* (2011), the application site like falls under Environmental Zone E3 (Medium district brightness).	N/A

3.2 Habitats Identified on Site

3.2.1 Habitats identified on site during the field survey are presented below, along with their associated ecological value. The distribution of these habitats is shown on Drawing CRM.1122.005.EC.D.001. Potential direct or indirect impacts resulting from the construction phase or operation of the site, and the associated ecological effect have been identified.

Table 3.2: Habitat Identified on Site

Habitat Type (code)	Details and Ecological Value	Potential Impact/Effect
Bare Ground (J4) 	At the centre of the site is a large area of bare ground comprising areas of loose ar compacted rubble which are becoming colonised by sparse pioneer vegetation. The vegetation assemblage is significantly sparse, with an abundance of approximately 1% cover of the area, and is characterised by frequent Creeping Bent (*Agrostis stolonifera*), Annual Meadow-grass (*Poa annua*) and Red Fescue (*Festuca rubra*), with occasiona / 2 Y Y 2 y -foot Trefoil (*Lotus corniculatus*), Dandelion (*Taraxacum officinale* agg.), Hard Rush (*Juncus inflexus*), Wavy Bittercress (*Cardamine flexuosa*) and mosses. Thi area also supports frequent young saplings of Silver Birch (*Betula pendula*), Alder (*Alnus glutinosa*) and Poplar (*Populus* sp.), with occasional Blackthorn (*Prunus spinosa*). Two large spoil mounds are present which lack significant vegetation cover. There are also numerous shallow pools which have been created due to the lack of drainag This habitat is assessed against the five qualifying criteria of Open Mosaic Habitat o Previously Developed Land (OMH) in accordance with the HPI description (Maddock 2008) and OMH Survey Handbook (Lush *et al.*, 2013). All five criterion must be met fo the habitat to qualify as the HPI: 1) Area is greater than 0.25Ha 2) Area has a known history of disturbance with industrial spoil present 3) Supports some early successional vegetation communities, with colo grasses and mosses present. 4) Supports areas of unvegetated loss bare substrate and shallow seasona 5) The area does not show spatial variation. The area represents a homog expanse of land with very sparse colonising vegetation and no distinct m of successional communities present. Although adjacent to the colonisin ground, grassland and scrub around the perimeter of the site are considered to contribute, having not formed part of the previously develope land. There is no mosaic of habitats present such as established grassla scrub and tall ruderal vegetation in combination with the bare ground which would provide the diverse habitats of great value to wildlife and is the reason for the identification of this HPI. Therefore, it is considered this area does not meet criteria 5 of the HPI description a so does not represent England HPI or Local BAP Habitat. Negligible ecological value only.	No - loss of this habitat is not perceived to be significant.

Habitat Type (code)	Details and Ecological Value	Potential Impact/Effect
Poor Semi-improved Grassland (B6 	At southern end of the site and around the margins of the site to the north is unmar speciespoor neutral grassland. This grassland is characterised by abundant Common Bent (*Agrostis capillaris* Σ *f*ŏ Ă ŏ ŏ ŏ

Habitat Type (code)	Details and Ecological Value	Potential Impact/Effect
	A dry ditch lies across the southern part of the site, and supported no water at the time of survey. The dry ditch is overgrown with scrub and grassland vegetation as described above and likely only supports any water during periods of heavy rainfall. This dry ditch does not represent any England HPI or Local BAP Habitat (ditches are excluded from the Rivers HPI description (Maddock, 2008)). Dry ditch is of negligible ecological value.	

3.3 Protected and Notable Species

3.3.1 Legally protected species, England S41 and Local BAP Species, any Notable species (which includes: Species of conservation concern and RDB species; BOCC; and nationally rare and nationally scarce species), and Invasive species identified by the desk study and field survey are presented below, along with their associated ecological value. Potential direct or indirect impacts resulting from the construction phase or operation of the site, and the associated ecological effect have been identified. This is based on an assessment of habitat suitability and other relevant factors, such as national distribution of each species/group; previous records of species occurrence obtained through the desk study; or connectivity to suitable habitats in the surrounding landscape, and any field signs suggesting presence of species within or near to the site. Given the large number of England S41, Local BAP Species, and Notable species (which includes: Species of conservation concern and RDB species, BOCC, and nationally rare and nationally scarce species), these have only been included if identified from the desk study and/or observed on site during the field survey.

Table 3.3: Species identified from the Desk Study and Field Survey

Species/Group	Desk Study Record (distance/direction from works)	Field Survey Habitat/Evidence	Ecological Value	Potential Impact/Effect
Bats (*Chiroptera spp.*)	Records in the wider area of Common Pipistrelle (*Pipistrellus pipistrellus*), Soprano Pipistrelle (*Pipistrellus pygmaeus*), Noctule	There are no buildings or structures within or adjacent to the site which have any suitability for roosting bats. Culverts present along Bulling Dyke present at the southern site boundary as the dit	Bulling Dyke, scrub and trees provide *Moderate* foraging and	Yes – a) potential loss, damage, degradation and/or fragmentation of bat foraging and commuting habitat.

Species/Group	Desk Study Record (distance/direction from works)	Field Survey Habitat/Evidence	Ecological Value	Potential Impact/Effect
	(*Nyctalus noctula*) Σ 5 l· dz ó Bat (*Myotis daubentonii*) and unidentified *Myotis* species, with the closest records 400r south from 2013. Surveys conducted in 200 associated with the school t the north (Tim Outlaw, 2007) detected individual numbers c Common Pipistrelle, Noctul l· y˝Ř 5 l· dz ō Ŝ y˝ ú r2 y significant foraging o commuting identified. No records of any previous E licence applications within 2km radius of the site.	goes under Station Road, and at the nor wes the site under the Valley Road access, both hav negligible suitability for roosting bats. Bo culverts are significantly low to the grou (approximately 0.5m high) with the entranc significantly obscured by tipping and overgrown scrub vegetation. No trees within the site suppt any features with potential to support roosting bats. The trees a predominantly too young to have created typica bat roosting features as regularly present on m mature trees. In accordance with current guidance (Colli 2016), the bare ground and grassland habitats within the centre of the site provide negligib foraging and commuting habitat for bats. T boundary scrub vegetation and Bulling Dy provide a limited extent of moderate suitability habitat, but provide connectivity to the favourabl habitats comprising the River Dove and woodla to the north. The site is enclosed to the east, we and south by development with lighting overspill/glare from this development illuminati the site which reduces the value to foraging an commuting bats	commuting habitat (Collins, 2016) with *High* suitability habitat provided by the River Dove and woodland to the north. Likely within zone of influence value	Risk of minor, adverse, permanent reversible impact (likely no significant commuting route or core foraging habitat provided by th site)
Badger (*Meles meles*)	Total of 5 records within a 2k radius of the site.	Observations during the Phase 1 survey did detect any evidence of badger within si boundary or the immediate surrounds. The scrub habitats mounds provide suitable shelter and sett creation habitat, and the grassla areas provide foraging potential. Site is connec to woodland to the north which provide	Potentially within the zone of influence value	Yes ç low risk of killing/injury of Badge during construction, and/o destruction/damage to setts if they were to colonise the site Low risk of significant advers permanent, irreversible impact.

Species/Group	Desk Study Record (distance/direction from works)	Field Survey Habitat/Evidence	Ecological Value	Potential Impact/Effect
		favourable habitat, and Badger are known to present in the wider area.		
Dormouse (*Muscardinus avellanarius*)	No records within search radius.	Scrub provides limited extent of sub-optimal habitat for Dormouse in an area of the country where this species is significantly rare and likely extinct.	Negligible	No
Otter (*Lutra lutra*)	One record from 2016 of a dead Otter found in Wombwell Ings 600m to the south-east	The River Dove to the north of the site and associated adjacent woodland, provides suitable habitat for Otter, and provides connectivity to the wider area. The section of river adjacent to the site, is likely of limited suitability for Otter, with the presence of the well-used public footpath along the southern bank, and the adjacent residential housing and industrial development. However, Otter are known to have a large home-range of therefore this river may represent part of an Otter territory and commuting corridor. Bulling Dyke provides significantly poor-quality habitat for Otter, being choked and overgrown by scrub vegetation, having low water levels, and high levels of fly-tipped material and human disturbance. However, this habitat may provide corridor of connectivity for Otter which are present at the River Dove to the north.	Within zone of influence	Yes c, a) possible fragmentation/isolation of habitat through construction, b) potential for degradation of habitat and c) disturbance of Otter through increased noise, lighting and encroachment of development Minor adverse, permanent, reversible impact
Water Vole (*Arvicola amphibious*)	Total of 45 records in the wider area, with the closest record 1.2km south-east of the site at Billing Dyke which is connected to Bulling Dyke.	Bulling Dyke provides suitable habitat for Water Vole, although sub-optimal due to the significant shading and overgrown nature of the watercourse and the low water levels. The River Dove to the north also provides suitable, albeit significantly shaded, habitat for Water Vole and provides good connectivity to the network of watercourses in the	Within zone of influence	Yes c, a) risk of killing/injury during any modifications to the banks of the watercourses, b) potential destruction/ disturbance of burrows, c) fragmentation/ isolation of habitat, and d) degradation of habitat.

Species/Group	Desk Study Record (distance/direction from works)	Field Survey Habitat/Evidence	Ecological Value	Potential Impact/Effect
		wider landscape. Water Vole have been known t utilise a variety of sub-optimal habitats (Dean e al., 2016) and have been recorded in the wi area.		Significant, adverse, permaner irreversible impact.
Other Protected Mammals	No records within search radius.	No habitats within or immediately adjacent to th site specifically suitable for other species protected mammal.	Negligible	No
Specially Protected Birds	No records of any special protected bird species within the site boundary. Total of 45 records of Kingfish (*Alcedo atthis*) in the wider area with the closest record 700m east along the River Dove. A total of 18 records of Barn Ow (*Tyto alba*) with the closest record 650m south-east from Wombwell Ings. Further records are predominantly associated wit wetlands at Wombwell Ings t the south-east and comprise records of Peregrine Falco *peregrinus*), Hobby (*Falco subbuteo*), Redwing (*Turdus iliacus*), Fieldfare (*Turdus pilaris*), Pintail (*Anas acuta*), Greenshank (*Tringa nebularia*), Garganey (*Anas querquedula*), Osprey (*Pandion haliaetus*), Whimbrel (*Numenius phaeopus*), Wood Sandpipe	The River Dove to the north of the site provid suitable habitat for Kingfisher. Bulling Dyke provides significantly poor-quality habitat for Kingfisher, as it is substantially overgrown a choked with vegetation, has minimal depth of water and likely does not support an abundance of fish prey items. No structures or trees provide any opportunities for nesting or roosting Barn Owl. The bare grou habitats provide negligible foraging opportunitie as likely do not support an abundance of sm mammal prey. The unmanaged grassland hab provide a limited extent of suitable foraging habitat for Barn Owl, although the site is enclos by built development and footpaths, and suppo extensive dense scrub, which reduce the poten for foraging Barn Owl Site is not considered to provide suitable habi for the wader and waterfowl species recorded at Broomhill Flash and Wombwell Ings LWS 70 south-east, with an absence of wetland habita enclosed nature of the site and regular disturbance from dog-walkers	Within zone of influence	Yes – a) potential killing/injury and/or disturbance of nesting Kingfisher duri any engineering works at the River Do to the north, b) damage and/o degradation of habitat through construction and operational activities. Significant adverse, permaner irreversible impact

Species/Group	Desk Study Record (distance/direction from works)	Field Survey Habitat/Evidence	Ecological Value	Potential Impact/Effect
	(*Tringa glareola*), Common Scoter (*Melanitta nigra*), Green Sandpiper (*Tringa ochropus*), Goldeneye (*Bucephala clangula*), Black-necked Grebe (*Podiceps nigricollis*), Black tailed Godwit (*Limosa limosa*), Greylag Goose (*Anser anser*), Little Ringed Plover (*Charadrius dubius*) and Mediterranean Gu (Larus melanocephalus)			
All Other Birds	Records of UK BAP Priorit Species (SPI) in the wider area comprising House Sparrow (*Passer domesticus*), Tree Sparrow (*Passer montanus*), Grey Partridge (*Perdix perdix*), Yellowhammer (*Emberiza citrinella*), Reed Bunting (*Emberiza schoeniclus*), Lapwing (*Vanellus vanellus*), Curlew (*Numenius arquata*), Cuckoo (*Cuculus canorus*), Grasshoppe Warbler (*Locustella naevia*) and Spotted Flycatcher (*Muscicapa striata*).	Incidental observations during the Phase I surv of Blackbird (*Turdus merula*), Chaffinch (*Fringilla coelebs*), Dunnock (*Passer domesticus*), Blue Tit (*Cyanistes caeruleus*), Goldfinch (*Carduelis carduelis*), Robin (*Erithacus rubecula*), Wren (*Troglodytes troglodytes*), Magpie (*Pica pica*), Wood Pigeon (*Columba palumbus*) and Collared Dove (*Streptopelia decaocto*) The scattered trees, dense scrub, grassland and Bulling Dyke provide suitable habitat for a restricted range of common nesting bir (considering the site location and conditions).	Within zone of influence	Yes – potential disturbance of active nesting birds during works. Minor adverse, temporary, irreversib impact. (no significant loss of habitat)
Common Reptiles	Total of seven records of Gra Snake (*Natrix natrix*) in the wider area. The closest record is from 2016 500m south of th	The combination of habitats within the site, namely the grassland, scrub, bare ground a Bulling Dyke, provide suitable habitat for commo reptiles, with a combination of foraging habita	Within zone of influence	Yes – low risk of killing/injury of common reptiles during construction activities

Species/Group	Desk Study Record (distance/direction from works)	Field Survey Habitat/Evidence	Ecological Value	Potential Impact/Effect
	site at Parkhill Nature Reserv The further six records are fro the former Wombwell Foundry site 1.7km south-west and the disused Carthill Quarry 1.8km the east.	basking areas and shelter/refuge. However, suitability of the habitat is reduced due to th extensive built development surrounding the sit Furthermore, the previous developed nature the site and the history of disturbance likely me the site was previously entirely unsuitable to support populations of common reptiles. It considered possible that low numbers of common reptiles have since colonised the site.		Minor adverse, permanent, irreversible impact
Great Crested Newt (*Triturus cristatus*)	Six records, the most recent from 2017, from a group o ponds 1.8km south of the site. No records of any EPS licen applications within a 2km radius.	No potential breeding habitat within the site. T series of shallow pools present at the site February are entirely unsuitable for breeding GCN. With a maximum depth of 10cm at the ti of survey, these ponds will dry entirely by ea summer, and therefore successful breeding GCN and development of larvae will not be possible. Grassland and scrub habitats within the s provide suitable terrestrial GCN habitat, provid potential foraging and refuge opportunities. OS maps indicate one pond within a 500m radius of the site, located 450m north-west of the site boundary. Considering the woodland ar grassland habitats in close proximity to the pond and the absence of any nearby ponds to the south and east of the site to which GCN may disperse to, it is assessed significantly unlik any GCN will disperse from this distant pond habitats within the site.	Negligible	No

Species/Group	Desk Study Record (distance/direction from works)	Field Survey Habitat/Evidence	Ecological Value	Potential Impact/Effect
Other Protected Herpetofauna	No records within search radius.	No suitable habitats within or immediate adjacent to the site specifically suitable for other species of protected herpetofauna.	Negligible	No
White-clawed Crayfish (*Austropotamobius pallipes*)	No records within search radius.	The River Dove to the north of the site bounda provides suitable habitat for White-clawed Crayfish and connectivity to the wider landsca However, it is noted that the landscap surrounding the site is significantly developed w engineered watercourses and there are no record of White-clawed Crayfish.	Limited poor suitability habitat outside the site boundary. Within zone of influence	Yes – a) low risk of killing/injury durin any works associated with the Riv Dove, and b) potential fragmentation/ isolation and degradation of habitat. Significant, adverse, permaner irreversible impact
Fish/Marine	No records within search radius.	River Dove provides common and typical habita the developed landscape and unlikely to prov habitat for any protected fish species. Bullin Dyke, with the significant choking of vegetati and shallow nature, is significantly unlikely support any protected fish species.	Negligible	No
Protected Invertebrates	No records within search radiu	Only widespread and common habitats typical the landscape are present. No habitats pres which are likely to support a range or diversity invertebrates or likely to support any protecte invertebrate species.	Negligible	No
Protected Flora	No records within search radius.	No protected flora species detected during t Phase I Habitat survey. Only common an widespread habitats present, and unlikely support any protected flora species.	Negligible	No
England SPI/Local BAP and Notable species	Records in the wider area of Hedgehog (*Erinaceous europaeus*), Brown Hare (*Lepus europaeus*), Harvest Mouse (*Micromys minutus*), Common Toad (*Bufo bufo*), Dingy Skipper (*Erynnis tages*), Cinnabar (*Tyria*	The unmanaged grassland and scrub habi provide suitable foraging and refuge habitat for a range of SPI including Hedgehog, Common T and invertebrates.	Within zone of influence	Yes – risk of killing/injury of SPI during site clearance and construction activities Minor adverse, permanent, irreversible impact