



Preliminary Ecological Appraisal

Land at Low Valley Farm, Pitt Street, Barnsley.
for:

Hartwood Estates

CRM.1122.003.EC.R.001



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For:	Hartwood Estates
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Non-Technical Summary

- i. In August 2018, Enzygo Ltd was commissioned by Hartwood Estates to undertake a Preliminary Ecological Appraisal (PEA) of land at Land at Low Valley Farm, Pitt Street, Barnsley, S73 9PY (central grid reference: SE 40535 04142), located within Barnsley Metropolitan Borough Council planning authority. The study will inform outline planning application for the development of residential dwellings.
- ii. The following ecological constraints and associated recommendations to avoid/ mitigate/ compensate for potential impacts have been identified:
 - **Green Infrastructure and Hedgerows** (present on site)-avoidance through retention of features, undertake a Hedgerow Assessment to determine impacts/mitigation if sections are to be lost and compensatory planting with sensitive management if features are to be lost,
 - **Bats** (moderate foraging and commuting habitat on-site and off-site features)- avoid through retention of features where practicable and sensitive lighting scheme. Bat Activity survey is recommended to inform appropriate mitigation approach,
 - **Specially Protected Birds and General Nesting Birds** (suitable habitat on site)- avoidance though seasonally constrained clearance,
 - **Common Reptiles** (suitable habitat on site)- Reptile presence/likely-absence survey is recommended to inform appropriate mitigation approach,
 - **Great Crested Newt, England SPI/Local BAP and Notable species (invertebrates, mammals and flora species)** (suitable habitat on site) - sensitive clearance under Ecological Clerk of Works (ECoW) and compensatory planting with sensitive management.

1 Introduction

1.1 Commission

- 1.1.1 In August 2018, Enzygo Ltd was commissioned by Hartwood Estates to undertake a Preliminary Ecological Appraisal (PEA) and subsequently to produce a report in January 2019, of Land at Low Valley Farm, Pitt Street, Barnsley, S73 9PY (central grid reference: SE 40535 04142), located within Barnsley Metropolitan Borough Council (BMBC) planning authority. The study will inform outline planning application for the development of residential dwellings.
- 1.1.2 This assessment supports an outline planning application for the development of a residential development including internal circulation roads, structural planting and landscaping, an attenuation basin, a children's play area and a footpath, at Land at Low Valley Farm, Pitt Street, Barnsley. The application seeks to agree the location of the access only, with all other matters reserved. The application is supported by an indicative layout showing 107 dwellings (refer to Appendix A), however full details would be agreed through subsequent reserved matters applications.

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), 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 includes: 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, 2012) and 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 A search of BMBC planning portal revealed a single historic application located at the north-eastern corner of the proposed site boundary, extending off-site to the east, for the erection of stable buildings (retrospective) granted in January 2004 (reference: B/03/2019/DA).
- 1.3.2 In the surrounding area there is an approved (with conditions) proposal for an outline development of 5 dwellings and a more recent “demolition of a former gym and erection of 1 block of 10 apartments” in the same site area adjacent to the south eastern site boundary (ref. 2005/2093 and 2007/0437, retrospectively).
- 1.3.3 Also, an outline application for a residential development of one pair of semi-detached dwellings and a “Change of use of land as domestic curtilage (Use Class C3) and erection of outbuilding/workshop on land for business use (Use Class B1)” both located immediately south-east. The applications were approved (with conditions) in December 2009 and August 2012 (ref. 2009/1390 and 2012/0649 respectively).
- 1.3.4 There are no historic ecological reports covering the proposal site in relation to the above applications or any applications made within the surrounding area.
- 1.3.5 There have been no known discussions in relation to Ecology with the LPA/County Ecologist/third party consultees (i.e. Natural England) regarding the proposed redevelopment. 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 approx. 3.3Ha site is located on Land at Low Valley Farm, Pitt Street, Darfield, Barnsley. The majority of the site is comprised of unmanaged neutral grassland, with scattered patches of encroaching semi-mature trees, scrub and tall-ruderal vegetation. The south-west corner of the site and a strip along the western boundary comprises short-grazed pasture grassland. An informal but well used footpath runs from north to south through the centre of the site. The site boundaries are largely fenced and stock proof with a small and isolated stretch of hedgerow along the eastern site edge. The majority of the western boundary is undefined as it routes across short-grazed grassland field units which extend beyond the western boundary.
- 1.4.2 The wider area is comprised of a residential housing estate to the north and south, with an allotment site to the east and grazing pasture to the west, with Low Valley Farm located directly beyond. Pitt Street runs directly adjacent to the southern site boundary. The site is located on the western boundary of Darfield village.
- 1.4.3 The site lies within the Nottinghamshire, Derbyshire and Yorkshire Coalfield National Character Area (NCA) which is characterised through the “impact of widespread industrialisation and development on the landscape and a settlement pattern within the NCA is clear, influencing the visual and ecological landscape. A generally low-lying area, with hills and escarpments above wide valleys, the landscape embraces major industrial towns and cities as well as villages and countryside”. Further the NCA confirms “very little of the NCA is designated for geology or nature conservation, but instead the landscape” (Natural England, 2019).

Figure 1.1: Surveyed Area¹



Image courtesy of Google Image Pro 7.1.8.3036, 53°31'57.50"N 1°23'33.36"W Elev. 34m. Imagery date 25th June 2018. Image accessed 17th July 2019.

¹ Please note, this may differ from the red-line boundary. The survey area includes all the land with the 'site' or red-line boundary, plus any additional 'off-site' areas where relevant to the assessment, based on the professional judgement of the ecologist attending the survey. Please refer to Appendix A for the proposed red-line boundary.

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 are 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, 2013). Records obtained included:

- European statutory sites within a 10km radius, national statutory sites and European Protected Species Licences (EPSL) within a 2km radius and England HPI identified as requiring action in the UK BAP (JNCC, 2015) and Ancient Woodland within a 0.5km radius (Natural England GIS Digital Boundary Database and Natural England Site Designations, on 18th February 2019);
- TPOs and Conservation Areas within the immediate zone of influence (BMBC, on 18th February 2019);
- Waterbodies within a 0.5km radius (Online mapping sources including: Google Maps; MAGIC; and Ordnance Survey Street View, on 18th February 2019); and
- Locally designated wildlife sites, Legally protected species, England SPI identified as requiring action in the UK BAP (JNCC, 2015), Local BAP Habitats/Species any Notable species (which includes: Species of conservation concern and RDB species (JNCC, 2014a), BOCC (Eaton et al., 2015); and nationally rare and nationally scarce species (JNCC, 2014b)) and Invasive species within a 2km radius, and important hedgerows/veteran trees within the immediate zone of influence (Barnsley Biological Records Centre [BBRC] operated by Sheffield Biological Records Centre [SBRC], 29th January 2019).

2.2 Field Survey

2.2.1 The Extended Phase I Habitat Survey was undertaken on 9th August 2018 by a Senior Ecologist from Enzygo (Chris Schofield, MSc, BSc [Hons], ACIEEM) who satisfies all necessary field survey competencies as stipulated by the Chartered Institute for Ecology and Environmental Management (CIEEM). Weather conditions on the day of survey were dry with light wind, 75% cloud cover and a temperature of 18°C.

2.2.2 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.

2.2.3 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).

2.2.4 Incidental observations of Legally protected species, England SPI/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; however no specific species surveys were undertaken.

2.3 Assessment

- 2.3.1 Potential ecological constraints to development have been identified from desk study and field survey data using current development proposals (see Appendix A). 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.
- 2.3.2 An assessment of likely impacts and ecological effects 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.
- 2.3.3 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 aforementioned 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 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. In addition, many plant species are only evident at certain times of the year and so some plant species may have gone undetected.
- 2.5.2 Data held by consultees may not be exhaustive. The absence of evidence, does not indicate evidence of absence.
- 2.5.3 Enzygo cannot take responsibility for the accuracy of external data sources and as such discrepancies and inaccuracies may occur.
- 2.5.4 Natural England do not hold information of Ancient Woodland less than 2ha in size.
- 2.5.5 BBRC and SBRC do not hold information of Important hedgerows or veteran trees.
- 2.5.6 Areas of dense scrub on site may restrict the survey effort concealing evidence of protected species, habitats or invasive species, this has been noted within the appropriate areas where relevant.

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 effect 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/habitat is shown on Drawing CRM.1122.003.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		
None.	-	-
Locally designated wildlife sites		
Gipsy Marsh LWS, 1.05km SE.	Site is comprised of ponds, lowland meadows, fen and heath habitats (no detailed designation information available).	No- No direct or indirect impacts during construction or operational phase (no similar habitats on site, no significant increase in noise, lighting, run-off, dust and disturbance during construction, significant distance from site and no significant recreational pressure during operation as "LWS often on private land and, as such, there is no right of public access because of their status" (BMBC, 2019).
Broomhill Flash & Wombwell Ings LWS, 908m SE.	Site is comprised of floodplain and grazing marsh with ponds (no detailed designation information available). This site is of county value.	No- as above.
Parkhill Nature Reserve LWS, 675m S.	Site is comprised of lowland mixed deciduous woodland and ponds (no detailed designation information available). This site is of county value.	No- as above.

Name (distance/direction from works)	Details and Ecological Value	Potential Impact/Effect
England HPI, Local BAP Habitats, Ancient Woodland, Important Hedgerows, Veteran Trees, TPOs and Conservation Areas		
Deciduous Woodland HPI, 27m S.	Several parcels of deciduous woodland within the search radius, the closest is immediately S, beyond Pitt Street.	No- no direct or indirect impacts perceived.
Green Infrastructure, Aquatic/Blue Infrastructure and Dark Zones		
Green Infrastructure	The site forms a parcel of unmanaged land in an area of managed and farmed habitats, located on the edge of Darfield settlement. The site provides connectivity from allotments and similar habitats to the east, to open greenspace to the west. Loss of this feature would result in minor fragmentation effect of the GI resource.	Yes- a) loss/fragmentation of GI resource during construction and operation of site. Minor, adverse, permanent, reversible impact.
Aquatic/Blue Infrastructure	No aquatic infrastructure resource on site or immediately off-site.	No.
Dark Zones	There site is not located in any dark zones.	No.

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.1122.003.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
Poor semi-improved grassland (B6) 	The dominant habitat type on site is poor semi-improved grassland, this accounts for approx. 80% of the site area. Predominantly, this habitat has had no recent management and at the time of survey resembled a dense tussocky sward, standing to approx. 80cm in height. Scrub and tall ruderal vegetation (see below) was beginning to colonise, encroaching from the site boundaries. A localised area at the south-west corner of the site and a strip along the western boundary lies beyond post-and-wire fencing and comprised short-grazed neutral grassland at the time of survey. The species recorded within these grassland areas include abundantly occurring False Oat-grass (<i>Arrhenatherum elatius</i>) and Cock's-foot (<i>Dactylis glomerata</i>). Frequently occurring Creeping Thistle (<i>Cirsium arvense</i>), Rosebay Willowherb (<i>Chamerion angustifolium</i>) and Common Nettle (<i>Urtica dioica</i>). Occasionally occurring Common Hogweed (<i>Heracleum sphondylium</i>), Bramble (<i>Rubus fruticosus</i> agg.), Hedge Bindweed (<i>Calystegia sepium</i>), Great Willowherb (<i>Epilobium hirsutum</i>), Mugwort (<i>Artemisia</i>	No - loss of this habitat alone is not perceived to be significant.

Habitat Type (code)	Details and Ecological Value	Potential Impact/Effect
	<i>vulgaris</i>), Broad-leaved Dock (<i>Rumex obtusifolius</i>), Field Horsetail (<i>Equisetum arvense</i>), Teasel (<i>Dipsacus fullonum</i>), Perennial Rye-grass (<i>Lolium perenne</i>), Yorkshire Fog (<i>Holcus lanatus</i>), Rough Meadow-grass (<i>Poa trivialis</i>), Meadow Foxtail (<i>Alopecurus pratensis</i>) and Common Ragwort (<i>Jacobaea vulgaris</i>). Poor semi-improved grassland is not an England HPI or Local BAP habitat and is of negligible importance.	
Scrub - dense/continuous (A2.1) & scattered (A2.2) 	Dense scrub patches are located across the northern site boundary, at the south-west corner of the site and within central areas, with scattered stands situated throughout the site. This habitat is largely found encroaching from site boundaries and has established on site through lack of overall site management. Species found here include dominantly occurring Bramble, frequently occurring Hedge Bindweed and False-oat grass. Occasionally occurring Dog Rose (<i>Rosa canina</i>), Creeping Thistle, Common Hogweed (<i>Heracleum sphondylium</i>) and Hawthorn (<i>Crataegus monogyna</i>). Rarely occurring Crab Apple (<i>Malus sylvestris</i>), Ash (<i>Fraxinus excelsior</i>), Rowan/Mountain Ash (<i>Sorbus aucuparia</i>), Lombardy Poplar (<i>Populus nigra 'italica'</i>) and Pedunculated Oak (<i>Quercus robur</i>). Dense and scattered scrub is not an England HPI or Local BAP habitat and is of negligible importance.	No - loss of this habitat alone is not perceived to be significant.
Other tall herb and fern – ruderal (C3.1) 	As above, tall ruderal vegetation is found in dense patches throughout central and southern parts of the site, encroaching from site boundaries and has established on site through lack of overall management. Species recorded here include poor semi-improved grassland species with dominantly occurring Rosebay Willow-herb and occasionally occurring Common Nettle and Creeping Thistle. Tall Ruderal vegetation is not an England HPI or Local BAP habitat and is of negligible importance.	No - loss of this habitat alone is not perceived to be significant.

Habitat Type (code)	Details and Ecological Value	Potential Impact/Effect
Mixed Parkland/scattered trees (A3.3) 	Semi-mature trees are located along site boundaries and scattered towards the centre of the site. Species recorded here include occasionally occurring Grey Willow (<i>Salix cinerea</i> subsp. <i>oleifolia</i>) and rarely occurring Turkey Oak (<i>Quercus cerris</i>), Field Maple (<i>Acer campestre</i>), Bird Cherry (<i>Prunus padus</i>) and Pedunculated Oak. Whilst semi-mature trees are present, this habitat does not qualify as Parkland HPI due to the lack of continuity of management for grazing/ browsing animals and presence of microhabitats. Scattered trees are not an England HPI or Local BAP Habitat and are of negligible importance.	No - loss of this habitat alone is not perceived to be significant.
Intact hedge (J2.1) 	Unmanaged hedgerow is located along approx. half of the eastern site boundary, measuring approx. 5m in height and 3m in width. The hedgerow is intact, stock proof with no additional features (i.e. no hedge bank, ditch or wall). Species recorded here include dominantly occurring Hawthorn and abundantly occurring Bramble. Frequently occurring Creeping Thistle and Ivy (<i>Hedera helix</i>) and occasionally occurring Elder (<i>Sambucus nigra</i>), Garden Privet (<i>Ligustrum ovalifolium</i>) and Dog Rose (<i>Rosa canina</i>). The understory is predominantly comprised of semi-improved grassland and tall ruderal vegetation species, with abundantly occurring Common Nettle and occasionally occurring False-oat Grass and Common Hogweed. For the purposes of England HPI (and local BAP), A hedgerow is defined as any boundary line of trees or shrubs over 20m long and less than 5m wide, and where any gaps between the trees or shrub species are less than 20m wide. All hedgerows consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species are covered by this priority habitat, therefore the western site boundary would qualify, and is of national importance.	Yes – a) minor loss of hedgerow bordering the site, b) degradation of retained hedgerow if works within root zones, and from cutting/poor management during construction and operation of site. Significant adverse, permanent, reversible impact. (No fragmentation effect as hedgerow is isolated with no connectivity to similar habitats.)
Fence (J2.4) & Wall (J2.5) 	The site is bordered by wooden and concrete posts and wire fences, and a small section of wall along the south east boundary. There is no flora directly associated with these habitats. Fencing and walls are not an England HPI or Local BAP habitat and is of negligible importance.	No - loss of this habitat alone is not perceived to be significant.

3.3 Protected and Notable Species

3.3.1 Legally protected species, England SPI/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; 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 SPI/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 (<i>Chiroptera</i> <i>spp.</i>)	22 records for Common Pipistrelle (<i>Pipistrelle pipistrelle</i>), Soprano Pipistrelle (<i>Pipistrellus pygmaeus</i>), Daubenton's Bat (<i>Myotis daubentonii</i>), Noctule Bat (<i>Nyctalus noctula</i>) and unidentified Myotis species (<i>Myotis sp.</i>) within the search radius. Records are grouped to the SW associated with open parkland and wetland habitats with the closest record is 500m from the site boundary.	There are no buildings or structures on site. Trees on site are semi-mature and have no obvious damage which could offer Potential Roosting Features (PRF's). Habitats on site provide moderate suitability as commuting (i.e. hedgerows and scrub) and foraging resources (i.e. unmanaged grassland and scrub). Off-site features available to bats include surrounding housing (offering roosting opportunities) and woodland and farmland to the south and west (commuting and foraging resource).	Likely Local	Yes – a) loss of moderate potential foraging and commuting habitat on site during construction activities. Significant adverse, permanent, irreversible impact. b) lighting in vicinity of any roosts within off-site buildings or off-site commuting/foraging habitat could result in indirect disturbance during construction or operation of site. Significant adverse, temporary, reversible impact
Badger (<i>Meles meles</i>)	3 records of Badger. Records are located to the SW associated with open parkland and wetland habitats with the closest record is 1.1km from the site boundary.	No evidence of setts on site or within the immediate surrounding area (where visually accessible). No field evidence was recorded on site. Unmanaged grass, scattered scrub and hedgerows provides an optimal foraging resource for this species.	-	No.
Dormouse (<i>Muscardinus avellanarius</i>)	No records within search radius.	No incidental observations made on site. Suitable habitat on site (i.e. hedgerow) is isolated with no connectivity to similar off-site habitats.	-	No.

Species/Group	Desk Study Record (distance/direction from works)	Field Survey Habitat/Evidence	Ecological Value	Potential Impact/Effect
Otter (<i>Lutra lutra</i>)	1 record of Otter. Record is located 1.75km SW associated with wetland habitats adjacent to RSPB Old Moor.	No suitable aquatic habitat on site or within the immediate surrounding area. No connectivity to suitable off-site habitats.	-	No.
Water Vole (<i>Arvicola amphibious</i>)	46 records of Water Vole. Records are associated with the River Dove, River Dearne and wetland habitats. The closest record is located 550m S.	No suitable aquatic habitat on site or within the immediate surrounding area. No connectivity to suitable off-site habitats.	-	No.
Other Protected Mammals	No records within search radius.	No incidental observations made on site. Site comprised of common habitat types only.	-	No.
Specially Protected Birds	A large number of records, of 22 species of WCA Sch.1 birds. Species include Kingfisher (<i>Alcedo atthis</i>), Little-ringed Plover (<i>Charadrius dubius</i>), Hobby (<i>Falco subbuteo</i>), Barn Owl (<i>Tyto alba</i>) and Redwing (<i>Turdus iliacus</i>). Records are associated with open arable and wetland habitats in all directions. The closest record is located 750m from the site boundary.	No incidental observations made on site. All habitats on site, particularly hedgerow and scrub provide optimal nesting habitat for a range of bird species.	Within zone of influence	Yes – a) potential disturbance of active nesting birds during site clearance. Minor adverse, temporary, irreversible impact. (no significant loss of nesting habitat)
All Other Birds	Large number of records for >100 species of common birds, including Moorhen (<i>Gallinula chloropus</i>), Rook (<i>Corvus frugilegus</i>), Starling (<i>Sturnus vulgaris</i>), Lapwing (<i>Vanellus vanellus</i>), Sparrowhawk (<i>Accipiter nisus</i>) and Golden Plover (<i>Pluvialis apricaria</i>) which was within the	Incidental observations on site include House Sparrow (<i>Passer domesticus</i>), Swallow (<i>Hirundo rustica</i>), Magpie (<i>Pica pica</i>), Wood Pigeon (<i>Columba palumbus</i>), Goldfinch (<i>Carduelis carduelis</i>), Black Bird (<i>Turdus merula</i>), Robin (<i>Erithacus rubecula</i>), Blue Tit (<i>Cyanistes caeruleus</i>), Jackdaw (<i>Corvus monedula</i>) and Carrion Crow (<i>Corvus corone</i>).	Within zone of influence	Yes – a) potential disturbance of active nesting birds during site clearance. Minor adverse, temporary, irreversible impact. (no significant loss of nesting habitat)

Species/Group	Desk Study Record (distance/direction from works)	Field Survey Habitat/Evidence	Ecological Value	Potential Impact/Effect
	site boundary. Records are located in all directions and within arable, woodland, urban, riparian and wetland habitats.	All habitats on site, particularly hedgerow and scrub provide optimal nesting habitat for a range of common bird species.		
Common Reptiles	6 records for Grass Snake (<i>Natrix natrix</i>) and Adder (<i>Vipera berus</i>). Records are associated with wetland, riparian and grass habitats to the W. The closest record is 1.1km from the site boundary.	No incidental observations made on site. Unmanaged grass habitat on site provides optimal basking and foraging habitat, with hedgerows, scattered trees and tall ruderal vegetation providing sheltering opportunities. No features on site which are suitable to offer hibernaculum potential, however and there is connectivity to other suitable off-site habitats.	Likely local	Yes – a) risk of killing/injury of Reptiles and b) loss of suitable habitat. Significant-minor adverse, permanent-temporary, reversible impact.
Great Crested Newt (<i>Triturus cristatus</i>)	No records within search radius.	No waterbodies are present within the site to provide any potential breeding opportunities for GCN. Rough grassland, tall ruderal vegetation and scrub on site provides limited suitable foraging and sheltering opportunities during terrestrial life phase. No features on site were noted as providing suitable hibernation potential. Aerial imagery and OS maps do not indicate any waterbodies within a 250m radius of the site which may provide suitable conditions for breeding GCN. <i>Note: it is confirmed that a pond shown on OS maps at Low Valley Farm 230m west has been filled in and no longer present.</i> Maps and imagery indicate one further pond between 250m and 500m from the site boundary, located 350m to the west of the site, to the south of Pitt Street/Netherwood Road (which presents a partial barrier to the dispersal of GCN considering the 90° kerbs and traffic). Woodland, scrub and grassland in close proximity to the pond appear to	Within zone of influence	Yes – a) significantly low risk of killing/injury, and b) loss/disturbance of suitable terrestrial habitat within 500m of potential breeding pond. Low risk of significant, minor adverse, permanent, irreversible impact.

Species/Group	Desk Study Record (distance/direction from works)	Field Survey Habitat/Evidence	Ecological Value	Potential Impact/Effect
		provide an abundance of favourable GCN terrestrial habitat. Given the absence of any ponds to the north/east of the site to which GCN may attempt to disperse to, the relatively large distance between the site and the pond (350m), the favourable terrestrial habitats in close proximity to the pond and the presence of Pitt St/Netherwood Road representing a partial dispersal barrier, it is considered significantly unlikely any GCN would be present within the site boundary.		
Other Protected Herpetofauna	No records within search radius.	No incidental observations made on site. Common habitat types only.	-	No.
White-clawed Crayfish (<i>Austropotamobius pallipes</i>)	No records within search radius.	No suitable aquatic habitat on site or within the immediate surrounding area. No connectivity to suitable off-site habitats.	-	No.
Fish/Marine	2 records of Three-Spined Stickleback (<i>Gasterosteus aculeatus</i>) and Ten-Spined Stickleback (<i>Pungitius pungitius</i>) within search radius associated with wetland habitats located 1.1km from the site boundary.	No suitable aquatic habitat on site or within the immediate surrounding area. No connectivity to suitable off-site habitats.	-	No.
Protected Invertebrates	No records within search radius.	No incidental observations made on site. Common habitat types only.	-	No.
Protected Flora	No records within search radius.	No incidental observations made on site. Common habitat types only.	-	No.
England SPI/Local BAP and Notable species	5 records for invertebrate species including Cinnabar (<i>Tyria jacobaeae</i>) and Shaded Broad-bar (<i>Scotopteryx chenopodiata</i>).	No incidental observations made on site. Unmanaged grass, tall ruderal vegetation, mature trees and hedgerow provide optimal foraging and sheltering opportunities for a range of species.	Likely local.	Yes – a) risk of killing/injury during site clearance and construction, and b) limited loss of habitat. Minor adverse, temporary, reversible impact.

Species/Group	Desk Study Record (distance/direction from works)	Field Survey Habitat/Evidence	Ecological Value	Potential Impact/Effect
	24 record for mammal species including Brown Hare (<i>Lepus europaeus</i>), Hedgehog (<i>Erinaceus europaeus</i>) and Harvest Mouse (<i>Micromys minutus</i>). 2 records for flora species, Cornflower (<i>Centaurea cyanus</i>).	Whilst there are no specialist or rare habitats on site, in its current unmanaged state there are opportunities for a range of species, particularly flora species.		
Invasive Flora	No records within search radius.	No incidental observations made on site (it should be noted dense scrub may have concealed small or newly established stands of Japanese Knotweed on site). A stand of Japanese Knotweed (<i>Fallopia japonica</i>) noted on the eastern most boundary of an adjacent land parcel (approx. 150m east).	-	No.
Invasive Fauna	No records within search radius.	No incidental observations made on site.	-	No.

4 Relevant Legislation and Policy

4.1 Legislation

4.1.1 Wildlife legislation and policy relevant (or potentially relevant pending further survey) to the proposed works, based on the findings of the desk study and field survey are set out below. This legal information is a summary only, and the original legal documents should be consulted for definitive information.

Table 4-1: Legislation Protection Afforded to Sites/Habitats that could Potentially be Affected by the Proposed Works

Designated Site/Habitat	Legal Status
Hedgerows	Hedgerows that meet certain criteria are protected by The Hedgerows Regulations 1997, under which it is an offence to remove or destroy such hedgerows without permission from the Local Planning Authority.

Table 4-2: Legislation Protection Afforded to Species that could Potentially be Affected by the Proposed Works

Species	Legal Status
European Protected	
Bats & Great Crested Newt.	These animal species and their breeding sites or resting places are protected under Regulation 41 of the Conservation of Habitats and Species (Amendment) Regulations 2012, which makes it illegal to: - Deliberately capture, injure or kill any such animal or to deliberately take or destroy their eggs; - Deliberately disturb such an animal; - Damage or destroy a breeding site or resting place of such an animal. European Protected Species (EPS) licences can be granted by Natural England in respect of development to permit activities that would otherwise be unlawful under the Conservation Regulations, providing that the following 3 tests (set out in the EC Habitats Directive) are passed: - The development is for reasons of overriding public interest; - There is no satisfactory alternative; and - The favourable conservation status of the species concerned will be maintained and/or enhanced. Under Regulation 9(5) of the Conservation Regulations, Planning Authorities have a legal duty to 'have regard to the requirements of the EC Habitats Directive in the exercise of their functions'. This means that they must consider the above 3 tests when determining whether Planning Permission should be granted for developments likely to cause an offence under the Conservation Regulations. As a consequence, Planning Applications for such developments must demonstrate that the 3 tests will be passed.
Nationally Protected	
Bats & Great Crested Newt.	These animals receive full protection under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which makes it illegal (subject to exceptions) to: - Intentionally kill, injure or take any such animal; - Intentionally or recklessly damage, destroy or obstruct any place used for shelter or protection by any such animal; and - Intentionally or recklessly disturb such animals while they occupy a place used for shelter or protection.

Species	Legal Status
Adder, Viviparous Lizard, Grass Snake & Slow-worm.	These animals receive limited protection under The Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which makes it illegal to intentionally kill or injure any such animal.
Nesting Birds (general)	All wild birds are protected under the Wildlife and Countryside Act 1981 (as amended by the Countryside and Rights of Way Act 2000), which makes it illegal (subject to exceptions) to: • Intentionally kill, injure or take any wild bird; • Take, damage or destroy the nest (whilst being built or in use) or eggs of any wild bird.
Wild Mammals	The Wild Mammals (Protection) Act 1996 makes it illegal to mutilate, kick, beat, nail, or otherwise impale, stab, burn, stone, drown, crush, drag or asphyxiate any wild mammal with intent to inflict unnecessary suffering.
Invasive Species	
None.	-

4.1.2 Section 40 of the Natural Environment and Rural Communities Act 2006 (the NERC Act) places a legal duty on public bodies, including planning authorities, to 'have regard' to the conservation of biodiversity when carrying out their normal functions, which includes consideration of planning applications.

4.1.3 In compliance with Section 41 of the NERC Act, the Secretary of State has published a list of species and habitats considered to be of principal importance for conserving biodiversity in England under the UK Post-2010 Biodiversity Framework. This is known as the list of Habitats and Species of Principal Importance (HPI/SPI), of which there are 56 habitats and 943 species. The HPI/SPI list is used to guide planning authorities in implementing their duty under the NERC Act.

4.2 National Planning Policy

4.2.1 The NPPF (2019) set out the Government's planning policies for England and how these are expected to be applied. At the heart of the NPPF is a presumption in favour of sustainable development. This presumption does not apply where development requiring Appropriate Assessment under the Birds or Habitats Directives is being considered, planned or determined.

4.2.2 The NPPF states that:

"When determining planning applications, local planning authorities should apply the following principles:

- a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- b) development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;
- c) development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists;

d) development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity;

e) The following should be given the same protection as habitats sites; potential Special Protection Areas and possible Special Areas of Conservation, listed or proposed Ramsar sites and sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

4.2.3 Under the NPPF, the Planning Authority has a responsibility to promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

4.2.4 Also, under the NPPF the planning system should contribute to and enhance the natural and local environment by protecting and enhancing valued landscapes and sites of biodiversity (in a manner commensurate with their statutory status or identified quality in the development plan) and to minimise impacts on, and provide net gains for biodiversity, including by establishing a coherent ecological network that are more resilient to current and future pressures.

4.3 Local Planning Policy

4.3.1 The following policies of the Barnsley Local Plan (BMBC, 2019) are relevant. Policy information is a summary only, and the original Barnsley Local Plan documents should be consulted for definitive information:

- Policy GI1: Green Infrastructure (to protect, maintain, enhance and create and integrated network of connected and multi-functional GI including enhancements for biodiversity through protection and creation of open space as part of new developments),
- Policy GS1: Green Space (includes open areas which are valuable for amenity, recreation, wildlife or biodiversity, loss of such space will not normally be permitted. To improve green space in the county, new residential developments will contribute in accordance with Green Space Strategy and Infrastructure and Planning Obligations Policy following assessment to determine appropriate provision), and
- Policy BIO1: Biodiversity and Geodiversity (development will be expected to conserve and enhance the biodiversity and geological features by, protecting and improving habitats, species and sites of value, maximising opportunities around new developments, conserving and enhancing local character, following mitigation hierarchy, protecting ancient woodland and trees and provision of biodiversity enhancements).

4.3.2 Additional documentation (BMBC, 2012) may also be relevant including:

- SPD 'Open Space Provision on New Housing Developments', and
- SPD 'Trees and Hedgerows'.

5 Discussions and Recommendations

5.1 Overview of Ecological Features subject to Potential Impacts/Effects

5.1.1 In the absence of mitigation, the following ecological features could be subject to potential impacts/effects as a result of the proposed works:

- Green Infrastructure and Hedgerows,
- Bats,
- Specially Protected Birds and General Nesting Birds,
- Common Reptiles,
- Great Crested Newt, England SPI/Local BAP and Notable species (invertebrates, mammals and flora species).

5.2 Further Survey and Mitigation

5.2.1 For each potential impact/effect identified, all mitigation options provided follow the established mitigation hierarchy as set out in BS42020:2013 (BSI, 2013). This seeks as a preference to avoid impacts, then to mitigate unavoidable impacts, and as a last resort, to compensate for unavoidable residual impacts that remain after avoidance and mitigation measures. All recommended surveys and mitigation measures follow current best practice guidance as identified by CIEEM (CIEEM, 2014) and is proportionate to the level of impact identified and to the nature and scale of the proposed works. A clear and valid justification of methods has been provided where necessary.

5.2.2 Once a proposed design has been set, the EcIA report will need to be revised incorporating any Phase II Surveys recommended below, to clearly identify appropriate avoidance/ mitigation/ compensation measures.

Green Infrastructure and Hedgerow

5.2.3 Avoidance: Boundary hedgerow and a commuting resource from east to west should be retained and protected where practicable. All features, where retained, will be protected by a buffer around the tree or feature base protecting root zones in accordance with BS5837:2012. Where necessary, protection fencing (i.e. Heras panels) will be installed during the construction phase. If necessary, this can be subject to a planning condition.

5.2.4 Mitigation: To determine impacts and inform the design of any corresponding mitigation measures, a Hedgerow Assessment will need to be undertaken of any hedgerow sections which are to be removed in accordance with current guidance (Defra, 2007).

5.2.5 Compensation: To compensate for the loss of any green infrastructure, additional native planting of local provenance can be incorporated into the proposed landscape design to create new green infrastructure/ connectivity across the site, along with a management scheme which is sensitive to wildlife.

Bats

5.2.6 Avoidance: To avoid impacts to bats, the hedgerow should be retained and protected where practicable.

5.2.7 Further, to avoid lighting impacts during the construction phase there will be no night working or night lighting of any boundary features or off-site habitats. To avoid impacts during the

operational phase a sensitive lighting scheme will be incorporated. As necessary, this can be secured as a planning condition.

5.2.8 Mitigation: To determine impacts and inform the design of appropriate mitigation a bat activity surveys of the site will need to be undertaken in accordance with current guidance (Collins, 2016). This will need to include 1 survey visits each month April to October and at least one of the surveys should comprise dusk and pre-dawn within one 24-hr period. All surveys should be conducted in appropriate weather conditions. The survey will consist of one walked transect and the deployment of 2 static detectors left on site to record for 5 consecutive nights.

5.2.9 Compensation: None proposed.

Specially Protected Birds and Birds (general nesting)

5.2.10 Avoidance: To avoid impacts all suitable nesting habitat (i.e. hedgerow) will be retained and protected, as above. Any vegetation clearance required be conducted from September to February, outside of the bird nesting season, to avoid the disturbance of active nesting birds. Should works be required within the breeding season (March to August, inclusive) they should be conducted sensitively and under supervision of a suitably qualified Ecological Clerk of Works (ECoW).

5.2.11 Mitigation: None proposed

5.2.12 Compensation: None proposed.

Common Reptiles

5.2.13 Avoidance: None proposed.

5.2.14 Mitigation: To determine impacts and inform the design of appropriate mitigation, a reptile survey of the site in accordance with current guidance (Froglife, 1999), consisting of seven survey visits in suitable weather conditions to determine presence/likely-absence. If reptiles are found to be present on site an additional eight survey visits would be required to determine populations status and inform additional impacts/mitigation which would be required. Surveys can be conducted from mid-April to mid-June or September, in appropriate weather conditions.

5.2.15 Compensation: None proposed.

Great Crested Newt, England SPI/Local BAP and Notable species (invertebrates, flora, amphibians & mammals)

5.2.16 Avoidance: To avoid the risk of killing/injury of England SPI/Local BAP and Notable species, and to minimise the already significantly low risk of killing/injury of GCN even further, site/vegetation clearance will be undertaken in an ecologically sensitive manner and under the supervision of an ECoW. This will include initially strimming/flailing vegetation to a height of 0.15m to encourage wildlife to move out of the construction area, prior to stripping of the remaining vegetation and top-soil. In the unlikely event a GCN is discovered during the construction period, all works in the area must immediately cease and an Ecologist/Natural England contacted for advice on how to proceed

5.2.17 Mitigation: None proposed

5.2.18 Compensation: To compensate for the limited loss of suitable habitat for a range of wildlife (including invertebrates, amphibians and mammals), additional native trees and planting will be incorporated into new residential gardens and landscaping across the site alongside a management scheme which is sensitive to wildlife.

5.2.19 To comply with guidance set out in BS42020:2013, a Construction Environment Management Plan (CEMP) will be produced prior to the commencement of construction activities, including site clearance works or archaeological investigations etc. A Landscape and Ecological

Management Plan (LEMP) will then be produced prior to operation of the site to ensure the continued appropriate management and monitoring of ecological features. These documents should contain details on the mechanisms in place to secure mitigation works, and refer to the Construction (Design and Management) Regulations 2015 (CITB, 2016) where applicable. The production of both a CEMP and a LEMP can be requested within a planning condition.

5.3 Programme of Works

5.3.1 The recommended further surveys will be undertaken in accordance with the proposed programme of works (timings associated with mitigation will be fully detailed within any CEMP/LEMP document produced). The programme takes into account: seasonal survey constraints; the expected timetable of works (i.e. when archaeological works are to commence, when site clearance needs to be undertaken, and when construction works are due to commence); and any other timing considerations, such as, planning application submission deadlines.

Table 5.1: Programme of Works

Recommendation	2019/2020											
	J	F	M	A	M	J	J	A	S	O	N	D
Hedgerow Assessment												
Bat Activity Survey												
Reptile Survey												

5.4 Opportunities for Biodiversity Enhancement

5.4.1 Opportunities for biodiversity enhancement (above and beyond those required to mitigate for any identified impacts) have been determined through consideration of: Ecological Features identified on site and within the zone of influence; Historical records of protected species/habitats present within the locality; National and Local planning policy including UK BAP SPI/HPI and Local BAP species/habitats; Local Development Plan including consideration of Green/Blue Infrastructure Resource; Consultation with third parties/stakeholders where applicable; and Other influencing factors such as a Geology/Hydrology, intended operational activities, and existing disturbance activities within the locality. Where necessary, proposed enhancements should refer to the Construction (Design and Management) Regulations 2015 (CITB, 2016):

- Enhance and extend hedgerow along the eastern boundary, and creation of new hedgerows of native species included as part of the landscape design,
- Include native species of local providence in all landscape design, including fruiting species to provide foraging and nesting habitat for general nesting birds,
- Informal hibernacula i.e. brash piles and log piles, at base of boundary vegetation to provide sheltering opportunities for England SPI/Local BAP and Notable species,
- Include small gaps in the base of garden fences to allow England SPI/Local BAP and Notable species (i.e. Hedgehog and Toad, *Bufo bufo*) to pass through, and
- Provision of 3x Small Bird Nest Boxes (with an entrance hole of 32mm) upon trees or buildings on site. Nest boxes should be hung on a mature tree or building, between 1.5m to 3m in height, close to suitable foraging habitat and angled away from the prevailing wind (typically south westerly).

6 Conclusion

- 6.1.1 Further surveys are required before it can be determined if the proposed works will result in any significant residual impacts to protected species and habitats, and so the application can demonstrate 'no net loss in biodiversity' in accordance with NPPF and Local Planning Policy.
- 6.1.2 The incorporation of the suggested enhancements will allow the application to demonstrate a 'biodiversity net gain' in accordance with NPPF and Local Planning Policy.

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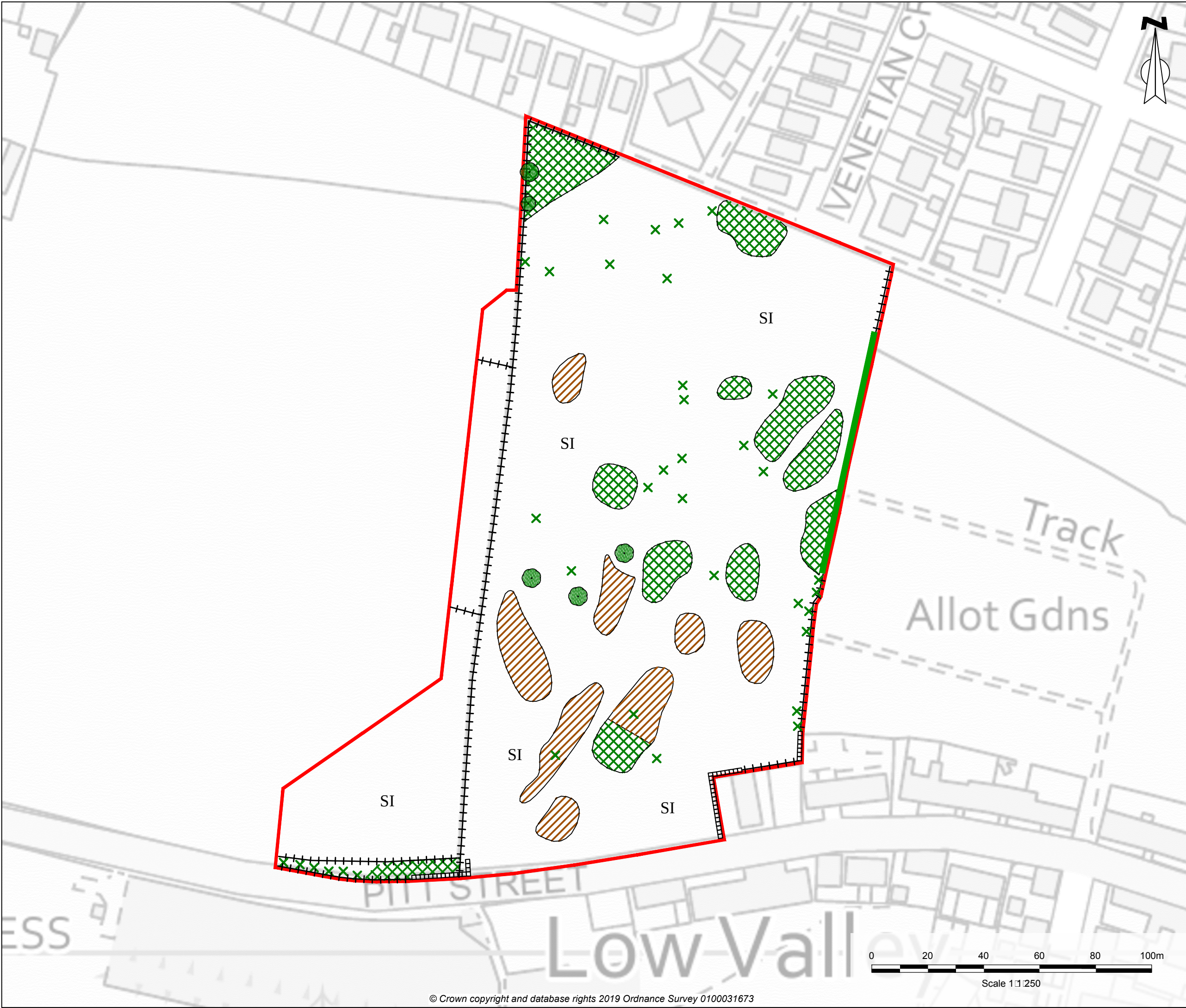
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Drawing CRM.1122.003.EC.D.001 – Phase I Habitat Map



- Ke
- Site Boundary
 - Scrub dense/continuous (A2.1)
 - Scrub scattered (A2.2)
 - Mead Parkland scattered trees (A3.3)
 - SI: Poor semi-improved grassland (B6)
 - Other tall herb and fern (C3.1)
 - Intact hedge (E2.1)
 - Fence (E2.4)
 - Wall (E2.5)

enzygo
environmental consultants

Samuel House, 5 Fox Valley Way, Stocksbridge, Sheffield, S36 2AA

CLIENT: Hartwood Estates

SCALE: 1:250 A3 PROJECT REF: CRM.1122.003

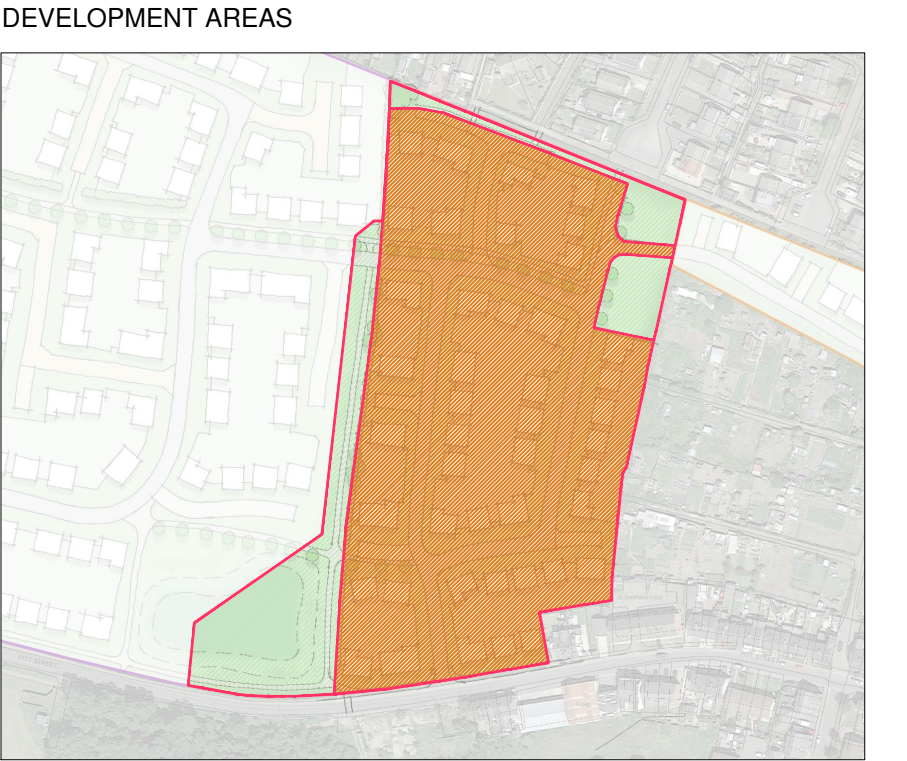
DRAWN: MG CHECKED: CS DATE: Jul 2019

PROJECT: Land at Low Valley Farm Pitt Street

TITLE: Phase I Habitat Map

DRAWING NO: CRM.1122.003.EC.D.001

Appendix A – Proposed Layout



DEVELOPMENT AREA = 2.67 HECTARES (107 UNITS @40 DPH)

PUBLIC OPEN SPACE & DRAINAGE = 0.71 HECTARES (26%)

GROSS AREA = 3.38 HECTARES

KEY TO MASTERPLAN:

APPLICATION BOUNDARY

PUBLIC RIGHT OF WAY

C	14.08.19	ACCESS POSITION MOVED FURTHER WEST, AWAY FROM EXISTING PROPERTIES. DWELLINGS RE-ORIENTATED TO OVERLOOK ACCESS & FOOTPATH.	LB	LM
B	27.06.19	EAST-WEST GREEN ROUTE ADDED HEDGE SHOWN RETAINED ON EASTERN BOUNDARY ACCESS POSITION MOVED FURTHER WEST PUBLIC OPEN SPACE ENLARGED & LAP RELOCATED	LB	
A	17.05.19	DRAWING LOCATED ACCORDING TO NEW TOPO SURVEY CONTOURS SHOWN	LB	

REV	DATE	DESCRIPTION	BY	CHECK
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CLIENT:
HARTWOOD

PROJECT:
LAND AT PITT STREET
WOMBWELL

DRAWING:
ILLUSTRATIVE MASTERPLAN

DRAWING NUMBER:
P09 4270 101

SCALE @ A2:
1:1000

DRAWN:
LB

DATE:
13.05.19

CHECKED:

DATE:

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