

Land off Keresforth Road,
Dodworth, Barnsley

Ecological Impact Assessment

January 2023

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1 Introduction

1.1.1.1 This report presents an Ecological Impact Assessment (EclA) in relation to a proposed residential development as shown in the following drawing (the impact assessment includes the proposed access area):

- Keresforth Road, Dodworth. Masterplan. Drawing ref. n1664.005.F, dated 31.01.2023.

1.1.1.2 This document should be read in conjunction with the following documents:

- Quants Environmental Ltd. (2022). Land off Keresforth Road, Dodworth, Barnsley – Preliminary Ecological Appraisal. Ref. 153-01a.2. April 2022.
- Quants Environmental Ltd. (2022). Land off Keresforth Road, Dodworth, Barnsley – Additional Ecological Surveys. Ref. 153-01d.3. January 2023.

1.1.1.3 This report should be read in conjunction with the above documents, although all key information has been reproduced in this EclA.

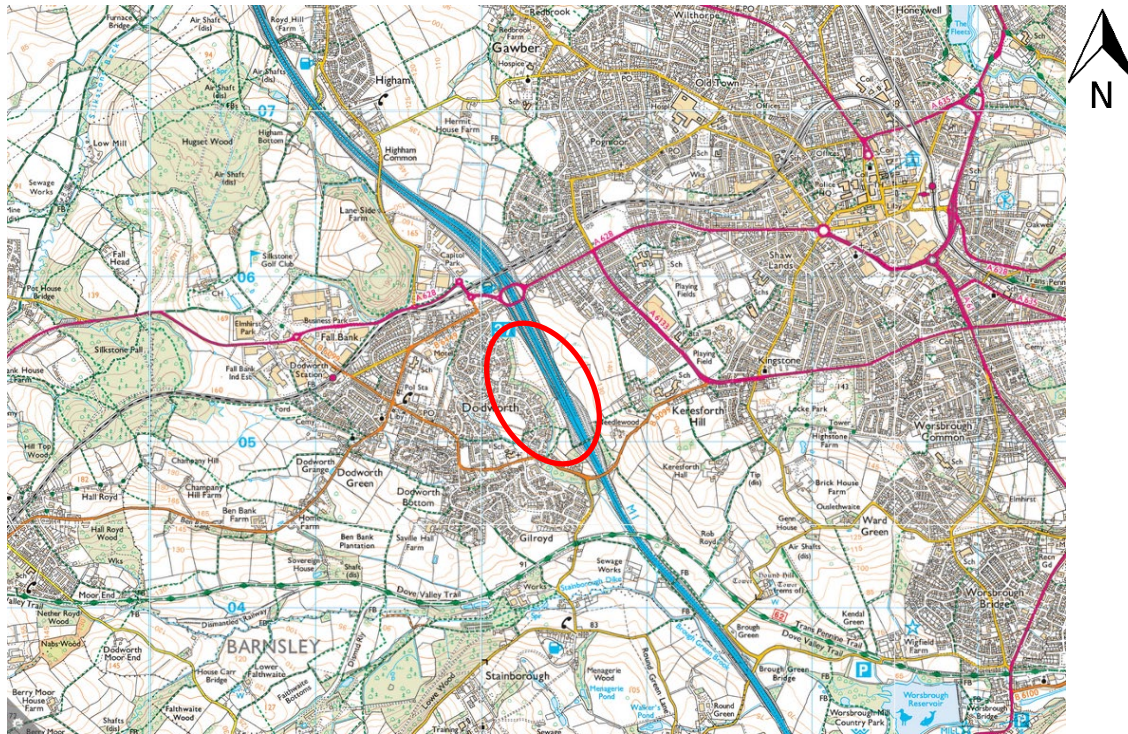
1.1.1.4 This EclA presents the results of specialist ecological surveys undertaken at the site and reviews relevant previous ecological survey information for the site and surroundings. In accordance with current guidelines¹, the aims of this EclA were to identify and evaluate all relevant ecological receptors, identify likely ecological impacts resulting from the proposed development including the proposed access area, identify mitigation / compensation measures and identify any residual effects.

Figure 1. Site Area (aerial imagery dated 2021)



¹ CIEEM (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater and Coastal, 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.

Figure 2. Site Location



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2 Methodology

2.1 Desk Study

2.1.1.1 As described in the previous report², the following organisations were contacted for searches of protected sites and records of protected species within a 2 km radius of the site centre:

- Barnsley Biological Records Centre (BBRC).
- South Yorkshire Bat Group.
- South Yorkshire Badger Group.

2.1.1.2 The following previous ecological reports provided by BMBC were also reviewed:

- Site Title: Land East of Water Royd Drive, Dodworth. Field Survey Sheet Survey Ref No. BAR34. Date 29/11/2010.
- Site Name: Land Adjoining Junction 37 M1. Site Ref Number BAR86. Date 12/08/2013.

2.1.1.3 In addition, the following data sources were searched for statutorily protected sites and additional ecological data of relevance to the assessment such as off-site waterbodies:

- Multi Agency Geographic Information for the Countryside (MAGIC).
- Ordnance Survey 1:10,000 mapping.
- Aerial imagery (dated 2021).

2.2 Personnel

2.2.1.1 This ecological impact assessment and the various ecological surveys undertaken in 2021 and 2022 have been undertaken by Toby Fisher CEnv MCIEEM^{3, 4} with assistance from Morgane Accault ACIEEM and Max Caulton.

2.3 Preliminary Ecological Field Survey

2.3.1.1 A Preliminary Ecological Appraisal of the site was conducted on 13th December 2021 by Toby Fisher CEnv MCIEEM in accordance with the standard survey methodology^{5, 6}. On 12th September 2022, an update habitat survey of the site was conducted by Toby Fisher CEnv MCIEEM in accordance with the same methodology.

2.3.1.2 The habitats on the site were assessed and categorised in order to provide baseline information and subsequent interpretation of the ecological value of the site. In addition, the site was searched for evidence of protected / notable species and assessed in terms of its potential to support protected / notable species such as badger, great crested newt, water vole, reptiles and bat species. The trees were inspected from ground level for evidence of bats and for potential bat roost features, using close-focussing binoculars.

² Quants Environmental Ltd. (2022). Land off Keresforth Road, Dodworth, Barnsley – Preliminary Ecological Appraisal. Ref. 153-01a.2. April 2022.

³ Natural England Class Licence Registration No. 2015-10756-CLS-CLS - CL18 Level 2 (Bats).

⁴ Natural England Class Licence Registration No. WML- CL08:2015-16681-CLS-CLS (Great Crested Newts).

⁵ JNCC, (2010), Handbook for Phase 1 habitat survey - a technique for environmental audit, ISBN 0 86139 636 7.

⁶ Chartered Institute of Ecology and Environmental Management (CIEEM). (2017). Guidelines for Preliminary Ecological Appraisal, Second Edition. December 2017. CIEEM, Winchester.

2.4 Hedgerow Survey

2.4.1.1 On 12th September 2022, one hedgerow in the southern part of the site which had been identified as having potential to qualify as Important under Hedgerows Regulations 1997 was surveyed in terms of the Wildlife and Landscape criteria of the Hedgerows Regulations 1997 by Toby Fisher CEnv MCIEEM. The hedgerow is less than 100 metres in length; therefore the number of woody species was determined within the central stretch of 30 metres.

2.5 Bat Transect and Dusk Emergence Surveys

2.5.1.1 As described in the previous report², bat activity surveys involved a combination of transect surveys and static bat recorder surveys in order to provide a full understanding of bat activity at the site. Three bat transect surveys were undertaken at the site during each of August, September and October 2022. The surveyors used Echo Meter Touch 2 Pro bat detectors.

2.5.1.2 Immediately prior to two of the September and August transect surveys, a dusk emergence survey was undertaken from approximately 20 minutes before sunset until 60 minutes after sunset in order to determine the location of any bat roosts in trees identified as having bat roost potential (Target Notes 1 and 2 as shown in the Preliminary Ecological Appraisal²).

2.6 Static Bat Recorder Surveys

2.6.1.1 Three static bat recorder surveys were undertaken at the site during each of August, September and October 2022. The static bat recorder surveys involved the use of a single static bat sound recording device (fixed-point Anabat Express detector) to record bat activity at the site. The remote detector was left in situ for a period of five nights during each month during suitable weather conditions. The recorded bat sounds (sonograms) were analysed using the computer programmes Kaleidoscope and Anabat Insight.

2.7 Reptile Surveys

2.7.1.1 Presence/likely absence surveys for reptiles were undertaken during suitable weather conditions in September 2022 and October 2022 in accordance with standard guidelines^{7 8 9}. The reptile surveys covered all areas of the site considered to offer potentially suitable habitat for reptiles. Areas in the southern, central and northern parts of the site were considered to offer potentially suitable habitat for reptiles due to the presence of the following features:

- Suitable basking sites.
- Potentially hunting habitat.
- Areas of refuge.

2.8 Otter Surveys

2.8.1.1 In accordance with the standard methodologies^{10 11} all suitable accessible areas of the on-site minor watercourse within 100 metres of the proposed development footprint were surveyed for evidence of Otter on 12th September 2022 and 6th October 2022. Beyond the site area, the surveys extended approximately 100 metres downstream but was limited to spot checks in the downstream section

⁷ Froglife (1999). Reptile survey; an introduction to planning, conducting and interpreting surveys for snake and lizard conservation. Froglife Advice Sheet 10. Froglife, Halesworth.

⁸ Gent T and Gibson S eds (2003). Herpetofauna Workers Manual. JNCC, Peterborough.

⁹ Natural England (2011). Natural England Technical Information Note TIN102: Reptile Mitigation Guidelines. Natural England, Peterborough. (Note this guidance was published and subsequently withdrawn in September 2011).

¹⁰ National Rivers Authority (1993). Otters and River Habitat Management. Conservation Technical Handbook Number 3.

¹¹ Macdonald DW, Mace G and Rushton S (1998). Proposals for future monitoring of British mammals. DETR, London.

due to limited land access. Upstream of the site, the watercourse and appears to be culverted beneath the M1 motorway for over 100 metres.

- 2.8.1.2 The surveys involved detailed searches of all sections of the watercourse for signs of Otter such as spraints, jelly, holts, lying-up places, footprints and slides. At the time of each of the surveys, the water level on the watercourse was relatively low such that any evidence of Otters such as spraints would not have been washed away by recent flood waters.
- 2.8.1.3 In association with the physical searches for evidence of Otter, static motion-sensitive cameras were employed on the watercourse for a total of 10 nights between 12th September 2022 and 6th October 2022 in order to detect any Otter activity.
- 2.8.1.4 There were no significant survey limitations. Areas of the river which were not accessed due to health and safety reasons were viewed from the bank using close-focussing binoculars.

2.9 Ecological Impact Assessment

The Ecological Impact Assessment (EclA) has been undertaken in accordance with the standard guidelines¹.

Figure 3. Reptile and Otter Survey Areas



Key:	
	Areas of potentially suitable reptile habitat subject to artificial refugia survey
	Watercourse subject to Otter survey

3 Results

3.1 Desk Study

3.1.1.1 The desk study results are detailed in the previous report² and key information is summarised below for ease of reference.

3.1.2 Internationally / Nationally Protected Sites

3.1.2.1 One nationally designated nature conservation site has been identified within 2 km of the site boundary:

- Dearne Valley Wetlands SSSI is located approximately 1.78 km south-east of the site. At the time of writing, this SSSI was subject to a current notification process. The SSSI Notification Document issued by Natural England on 13th May 2021¹² states: “Reasons for notification. Dearne Valley Wetlands SSSI is of special interest for the following nationally important features:
 - Numbers of non-breeding birds: The site’s range of open water sizes, depths, aquatic life and marginal vegetation supports nationally important numbers of non-breeding gadwall *Mareca strepera* and shoveler *Spatula clypeata*.
 - Numbers of breeding birds: The open water, reedbed, fen, grassland and scrub habitats at the site support nationally important numbers of breeding gadwall, shoveler, bittern *Botaurus stellaris*, garganey *Spatula querquedula*, pochard *Aythya ferina* and black-headed gull *Chroicocephalus ridibundus*.
 - Assemblages of breeding birds: The site supports nationally important breeding bird assemblages associated with Lowland damp grassland, Lowland scrub and a mixed assemblage of Lowland open waters and their margins and Lowland fen.
 - Breeding willow tit: The site supports important numbers of the rare breeding bird willow tit *Poecile montanus klienschmidtii*. The willow tit is included in the Government’s list of species of principal importance for the conservation of biodiversity in England¹ and is classed as Red-listed (i.e. of the highest conservation concern) in the UK Birds of Conservation Concern². During the five-year period 2014 to 2018 the SSSI supported territories for an estimated 18-20 breeding pairs of willow tit.”

3.1.2.2 A search on MAGIC confirmed that there are no internationally protected sites within 10 km of the site.

3.1.3 Locally Designated Sites

3.1.3.1 BBRC confirmed that there are five Local Wildlife Sites (LWS) and one Local Nature Reserve (LNR) within 2 km of the site:

- Faithwaite and Lowe Wood LWS is located approximately 790 metres south-south-west of the site.
- Stainbrough Park LWS located approximately 1.24 km south of the site.
- Redbrook Pastures LWS located approximately 1.35 km north of the site.
- Kendal Green Scrub LWS located approximately 1.74 km south-east of the site.
- Silkstone Fall Wood LWS located approximately 1.76 km west of the site.
- Worsbrough Reservoir LNR and LWS located approximately 1.86 km south-east of the site.

3.1.4 Other Non-Statutory Designations

3.1.4.1 BBRC confirmed the presence of four areas of Ancient Woodland within 2 km of the site; the nearest such area is approximately 1.09 km south-south-west of the site.

¹² https://consult.defra.gov.uk/natural-england/dearne-valley-wetlands-sssi/supporting_documents/Dearne%20Valley%20Wetlands%20SSSI%20Notification%20document%2013%20May%202021.pdf

3.1.5 *Species Records*

Amphibians

- 3.1.5.1 BBRC provided 20 records of Great Crested Newt within 2 km of the site; the nearest records are approximately 1.3 km south-south-west of the site at the Serpentine Lake (grid ref. SE325036) dated 1978 to 1984.
- 3.1.5.2 BBRC also provided records of Smooth Newt, Palmate Newt, Common Toad and Common Frog within 2 km of the site but none from the site itself.
- 3.1.5.3 A search on the MAGIC website revealed no granted EPSM licences for Great Crested Newt within 1 km of the site

Reptiles

- 3.1.5.4 BBRC provided 14 records of reptiles: two records of Adder, two of Viviparous Lizard, two of Common Lizard and eight of Grass Snake. None of these records are within 1 km of the site.

Birds

- 3.1.5.5 BBRC provided 2582 bird records within 2 km of the site. None of the records appear to be from grid references comprising of the site itself. Bird species recorded within 2 km of the site included a number of uncommon and notable species. There is one record of Barn Owl within 2 km of the site: approximately 1 km south-east of the site.

Invertebrates

- 3.1.5.6 BBRC provided 1684 records within 2 km of the site; none within 250 metres of the site.

Crustaceans

- 3.1.5.7 BBRC provided 31 records of crustaceans; none within 250 metres of the site. BBRC provided no records of White-Clawed Crayfish.

Water Vole

- 3.1.5.8 BBRC provided three records of Water Vole within 2 km of the site. These records are approximately 1 km south-east of the site, dated 1985 and 1991.

Otter

- 3.1.5.9 BBRC provided no records of European Otter within 2 km of the site.

Brown Hare

- 3.1.5.10 BBRC provided 8 records of Brown Hare within 2 km of the site; none of these records are within 1km of the site.

Hedgehog

- 3.1.5.11 BBRC provided 17 records of European Hedgehog within 2 km of the site; none of these records are within 500 metres of the site.

Bats

- 3.1.5.12 BBRC provided 46 records of bats comprising the following species: Common Pipistrelle, 45kHz Pipistrelle, Pipistrelle, Pipistrelle bat species, Noctule, Leisler's bat, Lesser Noctule, *Nyctalus* bat species, Brown Long-eared bat, Natterer's bat, bat and unidentified bats. Eleven of the records are within 1 km of the site:

- One record of several 45 kHz Pipistrelle bats seen and one record of bat droppings, at Needlewood, Barnsley, at grid ref SE328051 approximately 300 metres east of the site, dated 04/07/2008 and 31/10/2007.

- Two records of bats emerging at 3 Ratton Row, Dodworth, Barnsley, at grid ref SE313049 approximately 900 metres west of the site, dated 24/06/1994 and 25/06/1994.
- Two records of bats emerging at 41 Strafford Walk, Dodworth, Barnsley, at grid ref SE314048 approximately 870 metres south-west of the site, dated 30/05/1997 and 31/05/1997.
- One record of Pipistrelle maternity roost at 41 Strafford Walk, Dodworth, Barnsley, at grid ref SE314048 approximately 870 metres south-west of the site, dated 13/07/1997.
- One record of Pipistrelle roost at 23 Strafford Walk, Dodworth, Barnsley, at grid ref SE314048 approximately 870 metres south-west of the site, dated 13/07/2006.
- Two records of Pipistrelle roost at 24 Strafford Walk, Dodworth, Barnsley, at grid ref SE314048 approximately 870 metres south-west of the site, dated 14/07/1999 and 12/07/2006.
- One record of Noctule at Dodworth Road, at grid ref SE3206 at least 415 metres north of the site, dated 30/05/1981.

3.1.5.13 South Yorkshire Bat Group provided 296 records of bats comprising the following species: Common Pipistrelle, Soprano Pipistrelle, Pipistrellus sp., Noctule, *Nyctalus* sp., Leisler's, Noctule / Leisler's / Serotine, Brown Long-Eared, Daubenton's, Natterer's, Whiskered, Whiskered / Brandt's / Alcathoe, *Myotis* sp and unidentified bat species. Twelve of the records are within 500 metres of the site:

- One record of unidentified bat species at Farrow Close, Dodworth, Barnsley, at grid ref SE322052 approximately 70 metres west of the site, dated 26/10/2004.
- One record of unidentified bat species and one record of Common Pipistrelle at Keresforth Hill Road, Dodworth, Barnsley, at grid ref SE328051 approximately 270 metres east of the site, dated 31/10/2007 and 04/07/2008.
- One record of unidentified bat species flying at Northfield House, Barnsley Road, Dodworth, at grid ref SE318057 approximately 380 metres west-north-west of the site, dated 26/10/2006.
- One record of unidentified bat species at Farrow Close, Dodworth, Barnsley, at grid ref SE320050 approximately 390 metres west of the site, dated 26/10/2004.
- One record of Noctule at Dodworth Road, Pogmoor, Barnsley at grid ref SE320060 approximately 400 metres north of the site, dated 30/05/1981.
- One record of *Nyctalus* sp. and one record of Pipistrellus sp. at Locke Park and Keresforth Hall Road, Kingstone, Barnsley, at grid ref SE330050 approximately 435 metres east of the site, dated 27/07/1988 and 19/04/1993.
- One record of *Pipistrellus* sp. droppings and one record of Brown Long-Eared at Barnsley, at grid ref SE319049 approximately 480 metres west of the site, dated 25/02/2014 and 22/02/2016.
- One record of Common Pipistrelle emerging and one record of Noctule / Leisler's / Serotine commuting at Bowden Grove, Dodworth, Barnsley, at grid ref SE319050 approximately 490 metres west of the site, dated 21/07/2013.

3.1.5.14 A search on the MAGIC website revealed no granted EPSM licences for bats within 1 km of the site.

Badger

3.1.5.15 BBRC provided 7 records of Badgers within 2 km of the site. The nearest of these records is located approximately 560 metres south of the site, dated 24/06/2018.

3.1.5.16 A request for Badger records within 2 km of the site was submitted to South Yorkshire Bat Group on 11th April 2022; at the time of writing, no response had been received.

3.2 Habitats

3.2.1 Amenity Grassland

3.2.1.1 A small area of mown amenity grassland in the southern part of the site comprises a typical suite of species including Perennial Rye-Grass *Lolium perenne*, Red Fescue *Festuca rubra*, Yorkshire Fog *Holcus lanatus*, Dandelion *Taraxacum officinale* agg., Creeping Buttercup *Ranunculus repens* and White Clover *Trifolium repens*.

3.2.2 *Hard Standing and Buildings*

3.2.2.1 A small section of road in the southern part of the site was devoid of vegetation at the time of the survey. Three horse shelters within a horse-grazed field of semi-improved neutral grassland in the southern part of the site were also devoid of vegetation at the time of the survey.

3.2.3 *Semi-Improved Neutral Grassland*

3.2.3.1 Semi-improved neutral grassland at the site appears to be of different origins.

3.2.3.2 In the southern part of the site, a horse-grazed field appears to have been pasture for a number of years. Species present here include Common Bent, Perennial Rye-Grass, Red Fescue, Yorkshire Fog, Smooth Meadow-Grass *Poa pratensis*, Ribwort Plantain *Plantago lanceolata*, Meadow Buttercup *Ranunculus acris*, Creeping Buttercup, Self-heal *Prunella vulgaris*, Sorrel *Rumex acetosa*, Dandelion, Ragwort *Senecio jacobaea*, Lesser Trefoil *Trifolium dubium*, Broad-leaved Dock *Rumex obtusifolius*, Common Nettle *Urtica dioica* and Common Mouse-ear *Cerastium fontanum*. The southernmost field at the site appears to have been pasture since 2008 but aerial imagery suggests that it was bare ground in 2002; the sward within this field appears to be similar to that in the adjacent field.

3.2.3.3 The other grassland in the northern and central parts of the site appear to have developed in land which was previously under arable cultivation. Species present here include Cock's-foot *Dactylis glomerata*, Common Bent, Red Fescue, Yorkshire Fog, Tufted Hair-grass *Deschampsia cespitosa*, Soft Rush *Juncus effusus*, False Oat-Grass *Arrhenatherum elatius*, Broad-Leaved Dock, Hardheads *Centaurea nigra*, Ragwort, Bramble *Rubus fruticosus* agg., Creeping Thistle *Cirsium arvense*, Creeping Buttercup, Greater Willowherb *Epilobium hirsutum*, Spear Thistle *Cirsium vulgare* and Broad-Leaved Willowherb *Epilobium montanum*.

3.2.4 *Marshy Grassland*

3.2.4.1 An area of former arable in the northern part of the site has developed a sward dominated by Soft Rush. Additional species present here include Tufted Hair-grass, Yorkshire Fog, Common Bent, Broad-leaved Dock, Creeping Thistle, Creeping Buttercup, Ragwort, Greater Willowherb, Bramble, Alder *Alnus glutinosa*, Goat Willow *Salix caprea* and Silver Birch *Betula pendula*.

3.2.5 *Tall Ruderal*

3.2.5.1 An area of the former arable in the central part of the site is categorised as tall ruderal vegetation as it is dominated by Broad-leaved Dock, Creeping Thistle, Greater Willowherb and Common Nettle with Creeping Buttercup and Yorkshire Fog.

3.2.6 *Scrub*

3.2.6.1 Scattered scrub on former arable in the northern part of the site comprises Alder, Silver Birch, Goat Willow, Grey Willow *Salix cinerea*, Ash *Fraxinus excelsior*, Pedunculate Oak *Quercus robur*, Bramble and Dog Rose *Rosa canina*.

3.2.6.2 Continuous scrub has become established in the central and south-western parts of the site. Species present here include Bramble, Hawthorn *Crataegus monogyna*, Ash, Gorse *Ulex europaea*, Pedunculate Oak, Sycamore *Acer pseudoplatanus*, Grey Willow, Blackthorn *Prunus spinosa*, Cherry *Prunus avium*. Additional species present within the establishing scrub vegetation includes Cock's-foot, Yorkshire Fog, Common Nettle, Greater Willowherb, Broad-leaved Dock, Rosebay Willowherb *Chamerion angustifolium* and Hedge Bindweed *Calystegia sepium*.

3.2.7 *Broad-Leaved Semi-Natural Woodland and Trees*

3.2.7.1 In the south-western part of the site, a belt of broad-leaved semi-natural woodland comprises a canopy of Pedunculate Oak, Ash, Horse Chestnut *Aesculus hippocastanum*, and Sycamore. Additional species present include Lawson's Cypress *Chamaecyparis lawsoniana*, Wych Elm *Ulmus*

glabra, Hawthorn, Ivy, *Hedera helix*, Bramble, Male Fern *Dryopteris filix-mas*, Common Nettle, Cock's-Foot, Yorkshire Fog, Greater Willowherb, Gorse, Cow Parsley *Anthriscus sylvestris*, Wood Avens *Geum urbanum*, Creeping Thistle and Hogweed.

- 3.2.7.2 In the south-eastern part of the site, a belt of broad-leaved semi-natural woodland comprises a canopy of Pedunculate Oak, Ash and Field Maple with additional species including Hawthorn, Elder *Sambucus nigra*, Field Maple *Acer campestre*, Dog Rose, Bramble, Male Fern, Common Nettle, Cock's-Foot, Wood Avens *Geum urbanum* and Common Nettle. Immediately south-west of this woodland lies a row of mature Ash and Hawthorn trees that have become established along with Bramble along an old dry stone wall.
- 3.2.7.3 In the central part of the site, an area of broad-leaved semi-natural woodland comprises a canopy of Crack Willow *Salix fragilis*, Pedunculate Oak, Sycamore, Field Maple and Ash along with understorey species including Hazel *Corylus avellana*, Hawthorn, Elder, Dog Rose, Bramble, Cherry and Blackthorn and ground flora species including Bramble, Herb Robert *Geranium robertianum*, Male Fern, Common Nettle, Wood Avens *Geum urbanum*, Creeping Thistle, Common Nettle and Pendulous Sedge *Carex pendula*.
- 3.2.7.4 Two trees in the southern part of the site (a Pedunculate Oak¹³ and an Ash¹⁴) contain certain 'veteranising' features but do not appear to fully meet the requirements for classification as 'veteran' trees¹⁵. The trees contain features such as: large girth; and signs of decay in the trunk, branches or roots such as exposed dead wood or fungal fruit bodies. However, neither tree shows sufficient signs of 'ancientness' for qualification as 'veteran' or 'ancient'¹⁵.

3.2.8 *Introduced Shrubs*

- 3.2.8.1 In the south-western part of the site, introduced shrubs include Box-leaved Honeysuckle *Lonicera pileata*, Cherry Laurel *Prunus laurocerasus*, Ivy *Hedera* sp., *Daphne* sp. and Cherry.

3.2.9 *Watercourse*

- 3.2.9.1 An unnamed watercourse flows broadly south-south-westwards across the central part of the site before continuing southwards outside the site's western boundary and forming part of the site's western boundary in the extreme south-western part of the site.
- 3.2.9.2 At the time of the survey, the watercourse held flowing water approximately 1 metre across and upto approximately 15 cm deep. No submerged, emergent or marginal aquatic vegetation was noted at the time of the survey. The watercourse is rather overshadowed within and adjacent to the site.

3.2.10 *Hedgerow, Walls and Fences*

- 3.2.10.1 One mature species-rich hedgerow with trees is present in the southern part of the site. The hedgerow is situated along an old bank. Several mature trees are present but no veteran or ancient trees were identified in hedgerows at the site. Woody species present include Hawthorn, Pedunculate Oak, Elder, Dog Rose, Sycamore and ground flora includes Broad-leaved Dock, Foxglove *Digitalis purpureum* and Ivy.

¹³ Tree T4 in the Arboricultural Impact Assessment (Quants Environmental. 2022. Keresforth Road, Dodworth. Arboricultural Impact Assessment, April 2022).

¹⁴ Tree T11 in the Arboricultural Impact Assessment (Quants Environmental. 2022. Keresforth Road, Dodworth. Arboricultural Impact Assessment, April 2022).

¹⁵ Lonsdale, D. (ed.) (2013). Ancient and other veteran trees: further guidance on management. The Tree Council, London 212pp. ISBN: 978-0-904853-09-4

3.2.10.2 During the Hedgerow Survey of the species-rich hedgerow on 12th September 2022, the number of woody species within the central stretch of 30 metres was determined to be four (Hawthorn, Pedunculate Oak, Elder and Dog Rose).

3.2.10.3 In accordance with the Hedgerows Regulations 1997, given the number of woody species (and the geographical location along with the absence of listed species), the hedgerow does not qualify as Important under the Wildlife and Landscape criteria of the Hedgerows Regulations 1997.

3.2.10.4 The walls and fences supported limited vegetation at the time of the survey including Bramble, Common Nettle and Ash.

3.2.11 *Invasive Weeds*

3.2.11.1 One non-native invasive weed listed on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) has been identified at the site: a patch of Wall Cotoneaster *Cotoneaster horizontalis* extending to approximately 4 x 2 metres in the southern part of the site.

3.3 *Birds*

3.3.1.1 A limited range of birds was observed during the Preliminary Ecological Appraisal survey. Species observed within and adjacent to the site included Blackbird, Robin, Goldfinch, Magpie, Bullfinch, Blue Tit, Carrion Crow, Coal Tit, Long-tailed Tit, Grey Wagtail, Common Buzzard and Common Pheasant along with Feral Pigeon and Black-headed Gull overhead.

3.3.1.2 One Species of Principal Importance for the conservation of biodiversity in England¹⁶ was recorded at the site: Bullfinch. The site could support a notable assemblage of birds during the breeding period including Species of Principal Importance for the conservation of biodiversity in England such as Bullfinch, Song Thrush, Skylark, Lapwing, Reed Bunting and Grasshopper Warbler.

3.3.1.3 Based on the nature of the habitats within and adjacent to the site (including housing and motorway), the site is not likely to support notable assemblages of birds during the winter or passage periods.

3.3.1.4 A range of birds are likely to nest in woodland, scrub, shrubs, trees, walls, tall ruderal, watercourse, semi-improved neutral grassland, marshy grassland and possibly in the horse shelters at the site.

3.4 *Bats*

3.4.1 *Initial Assessment*

3.4.1.1 Ten trees at the site were been assessed as having genuine potential to support bat roosts due to the presence of features such as cracks, splits, rot holes and poorly occluded wounds:

- Two Ash trees with mature bat roost potential; a young-mature Ash with linear cavities at low level adjacent to Keresforth Road and a mature ivy-covered Ash adjacent to minor watercourse.
- A mature Pedunculate Oak with several cracks and splits in southern part of the site, with some veteranising features.
- Two trees (a mature Ash with some veteranising features and a mature Horse Chestnut) with rot holes in southern part of the site.
- Two mature Pedunculate Oaks with several cracks and splits in south-eastern part of the site.
- Three mature Crack Willows with several cracks and rot holes in central part of the site.

¹⁶ Species and Habitats listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 as Species of Principal Importance for the conservation of biodiversity in England.

3.4.1.2 Three horse shelters constructed of timber and corrugated materials in the southern part of the site were each assessed as having negligible bat roost potential due to the absence of suitable roosting features.

3.4.1.3 In terms of foraging and commuting habitats, the areas of woodland, trees, hedgerow and scrub at the site are assessed as providing moderate quality habitats for bats. The areas of grassland, tall ruderal, hard standing and introduced shrubs are assessed as providing low quality habitats for bats. It is noted that the proximity of the M1 motorway is likely to limit bat activity levels at the site¹⁷.

3.4.2 *Bat Emergence and Transect Surveys*

3.4.2.1 Overall, the bat transect surveys revealed low levels of bat activity throughout the site. Two bat species were recorded during the surveys: Common Pipistrelle and Soprano Pipistrelle.

3.4.2.2 No particular concentrations of bat activity were recorded; foraging/commuting bats were recorded in association with all areas of woodland and hedgerow at the site. Little bat activity was recorded over the open fields at the site. During the dusk emergence bat surveys, no evidence of bat roosts was identified in the surveyed trees.

3.4.3 *Static Bat Recorder Surveys*

3.4.3.1 The results of the static bat recorder surveys revealed low to moderate levels of bat activity at the site. A total of four bat species were recorded during the surveys at the site: Noctule, Common Pipistrelle, Soprano Pipistrelle and *Myotis* sp. Bat activity levels were the greatest during the September survey whilst activity levels were lower during the October survey.

3.4.3.2 By far the most frequently recorded species at the site was Common Pipistrelle; with approximately 82.35% of all recorded bat registrations being of Common Pipistrelle. Noctule registrations accounted for 9.05%, *Myotis* sp. for 7.24% and Soprano Pipistrelle for the remaining 1.36%.

3.4.3.3 Of the three static bat recorder locations, the greatest levels of bat activity were recorded on the edge of a woodland area with an average of 43.4 bat passes recorded. Bat activity levels at the other two locations were significantly lower with average registrations per night of 0.8 and 0 respectively. Overall, the survey results indicated low to moderate levels of bat activity across all bat habitat features (woodland and hedgerows).

3.5 *Great Crested Newt*

3.5.1.1 Analysis of aerial imagery and Ordnance Survey mapping identified one potential waterbody within 500 metres of the site boundary; a possible wildlife pond within the grounds of Keresforth Primary School at grid reference SE32100489 approximately 280 metres west of the site at its nearest point. This possible pond is shown on Ordnance Survey 1:10,000 mapping but is situated within the school grounds and was not accessible for survey. Aerial imagery suggests that there may be a small pond approximately 1-2 metres across in this location.

3.5.1.2 Given the distance of 280 metres between the site and this possible pond, its small size and the presence of significant barriers to dispersal (including roads, hard standing playground, buildings and several solid walls) it is considered very unlikely that Great Crested Newts would occur at the site.

3.6 *Invertebrates*

3.6.1.1 Based on the nature of the habitats present, the site is not likely to support a notable assemblage of invertebrates. Based on the nature of the watercourse, it is very unlikely that White-Clawed Crayfish will occur at the site.

¹⁷ Berthinussen, A. and Altringham, J. (2011). Journal of Applied Ecology. The effect of a major road on bat activity and diversity.

3.7 Reptiles

3.7.1 Initial Assessment

3.7.1.1 BBRC provided 14 previous records of reptiles within 2 km of the site comprising four species: Adder, Viviparous Lizard, Common Lizard and Grass Snake. Based on the nature of the habitats within and adjacent to the site, it was considered that reptiles could potentially occur at the site.

3.7.2 Presence / Absence Survey

3.7.2.1 No reptiles or evidence of reptiles was observed during the detailed surveys in September 2022 and October 2022. It is considered that sufficient survey effort was undertaken to conclude that reptiles are likely to be absent from the site.

3.8 Water Vole and Otter

3.8.1 Initial Assessment

3.8.1.1 No evidence of Water Vole or Otter was identified during the Preliminary Ecological Appraisal survey. Based on the nature of the watercourse and the absence of aquatic vegetation, it is considered very unlikely that Water Vole will occur at the site. Based on the nature of the habitats and barriers to dispersal adjacent to the site, it was considered that there is low potential for Otter to use the watercourse at the site for occasional passage.

3.8.2 Presence / Absence Survey

3.8.2.1 No Otters or evidence of Otters was observed during the detailed surveys in September 2022 and October 2022. It is considered that sufficient survey effort was undertaken to conclude that Otters are likely to be absent from the site.

3.9 Badger and Other Fauna

3.9.1.1 No evidence of Badger was observed at the site.

3.9.1.2 Hedgehog and Brown Hare (both Species of Principal Importance in England) could potentially occur within the site.

4 Evaluation and Potential for Impacts

4.1.1.1 The evaluation of the nature conservation interest of the ecological features present on the site and whether or not they are subject to detailed impact assessment is summarised in Table 1 below.

Table 1. Summary of Evaluation of Nature Conservation Interest and Potential for Impacts

Receptor	Evaluation Rationale	Value of receptor or Value of site to receptor	Potential for Impact	Subject to detailed assessment
Designated sites:				
Dearne Valley Wetlands SSSI	Designated for its national ornithological value. 1.78 km south-east of the site. No functional connectivity between the site and SSSI.	National	No – distance and lack of connectivity.	No
Faithwaite and Lowe Wood Local Wildlife Site (LWS)	Designated for its local value.	District	No – distance and lack of connectivity (approximately 790 metres south-south-west of the site).	No
Stainbrough Park LWS	Designated for its local value.	District	No – distance and lack of connectivity (approximately 1.24 km south of the site).	No
Redbrook Pastures LWS	Designated for its local value.	District	No – distance and lack of connectivity (approximately 1.35 km north of the site).	No
Kendal Green Scrub LWS	Designated for its local value.	District	No – distance and lack of connectivity (approximately 1.74 km south-east of the site).	No
Silkstone Fall Wood LWS	Designated for its local value.	District	No – distance and lack of connectivity (approximately 1.76 km west of the site).	No
Worsbrough Reservoir LNR and LWS	Designated for its local value.	District	No – distance and lack of connectivity (approximately 1.86 km south-east of the site).	No
Habitats:				
Amenity Grassland	Common, widespread and easily recreated.	Less than local	Yes – direct habitat loss	No, due to low value
Hard Standing and Buildings	Common, widespread and easily recreated.	Less than local	Yes – direct habitat loss	No, due to low value

Receptor	Evaluation Rationale	Value of receptor or Value of site to receptor	Potential for Impact	Subject to detailed assessment
Semi-Improved Neutral Grassland	Common, widespread and easily recreated.	Less than local	Yes – direct habitat loss	No, due to low value
Marshy Grassland	Common, widespread and easily recreated.	Less than local	Yes – direct habitat loss	No, due to low value
Tall Ruderal	Common, widespread and easily recreated.	Less than local	Yes – direct habitat loss	No, due to low value
Scrub	Common, widespread and easily recreated.	Less than local	Yes – direct habitat loss	No, due to low value
Broad-Leaved Semi-Natural Woodland and Trees	Common and widespread. Two trees with veteranising features identified. Not Ancient Woodland.	Local	Yes – direct habitat loss	Yes
Introduced Shrubs	Common, widespread and easily recreated.	Less than local	Yes – direct habitat loss	No, due to low value
Watercourse	Common and widespread; minor stream with limited ecological value.	Less than local	Yes – minor impacts such as new outfalls and headwalls	No, due to low value
Hedgerow, Walls and Fences	Common, widespread and easily recreated.	Less than local	Yes – direct habitat loss	No, due to low value
Fauna:				
Birds	One Section 41 species ¹⁸ recorded on the site: Bullfinch; and potential to other S41 species to breed on site.	Potentially Local	Yes – direct habitat loss	Yes
Bats	No roosts present on site. Habitats of low-moderate value as foraging and commuting habitat for bats.	Less than local	No	No, due to low value
Great Crested Newt	Absent	n/a	No	No
Invertebrates	Site expected to support typical assemblages of common invertebrate species.	Less than local	No	No, due to low value
Reptiles	Absent	n/a	No	No
Water Vole	Absent	n/a	No	No
Otter	Absent	n/a	No	No
Badger	Absent	n/a	No	No

¹⁸ Species / Habitats listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 as Species and Habitats of Principal Importance in England.

Receptor	Evaluation Rationale	Value of receptor or Value of site to receptor	Potential for Impact	Subject to detailed assessment
Brown Hare	Could occur within the site (Section 41 NERC Act species).	Less than local	Yes – direct habitat loss	No, due to low value
Hedgehog	Could occur within the site (Section 41 NERC Act species).	Less than local	Yes – direct habitat loss	No, due to low value

4.1.1.2 Therefore, the following ecological receptors are taken forward for further assessment:

- Broad-Leaved Semi-Natural Woodland and Trees including two mature trees with veteranising features.
- Birds.

5 Likely Significant Effects

5.1.1.1 Activities which could affect the identified ecological receptors comprise the following:

- Direct removal of Woodland and Trees.
- Direct removal of Bird habitats.

5.1.1.2 The potential impacts on the identified ecological receptors resulting from these activities are assessed below. Mitigation is then considered before an assessment of residual impacts.

5.1.1.3 This assessment is based on the following information:

- Keresforth Road, Dodworth. Masterplan. Drawing ref. n1664.005.F, dated 31.01.2023.

5.2 **Construction Phase**

5.2.1.1 Impacts during the construction phase comprise the following:

- Direct removal of Woodland and Trees.
- Direct removal of Bird habitats.

5.2.1.2 These impacts are assessed below.

5.2.2 *Direct removal of Woodland and Trees*

5.2.2.1 The development will result in the loss of small areas of Broad-Leaved Semi-Natural Woodland and Trees including two trees with veteranising features (a Pedunculate Oak and an Ash). The woodland at the site does not appear to qualify as a Habitat of Principal Importance for the conservation of biodiversity in England (Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006).

5.2.2.2 In the absence of mitigation, the loss of small areas of Broad-Leaved Semi-Natural Woodland and Trees including two trees with veteranising features could potentially be significant at the Local level.

5.2.3 *Direct removal of Bird Habitats*

5.2.3.1 The removal of vegetation at the site is likely to result in the loss of habitat for a number of common and widespread bird species. In terms of species listed on Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 as Species of Principal Importance for the conservation of biodiversity in England and BoCC Red and Amber List species this habitat loss could potentially result in the loss of habitat for small numbers of birds potentially including Bullfinch, Dunnock, Woodpigeon, Mistle Thrush, Grey Partridge, Willow Warbler, Song Thrush, Skylark, Lapwing, Reed Bunting and/or Grasshopper Warbler.

5.2.3.2 In the absence of mitigation, the impact on breeding birds could potentially be significant at the site level. Breeding Bird Surveys are programmed to take place in Spring 2023. Legal compliance mitigation measures to protected nesting birds are presented below.

5.3 **Mitigation Measures**

5.3.1 *Construction Environmental Management Plan (CEMP)*

5.3.1.1 In order to protect habitats and species, a Construction Environmental Management Plan (CEMP) will be prepared. The CEMP will include the following measures:

1. Minimisation of Vegetation Removal: The removal of trees, woodland and scrub will be minimised as far as practicable by minimising working areas.
2. Schedule 9 Invasive Weed Management Plan: An Invasive Weed Management Plan will be prepared in order to prevent the illegal spread of Wall Cotoneaster within and beyond the site.

3. Minimisation of Dust and Noise: Standard measures will be employed to minimise dust and noise.
4. Protection of Nesting Birds.
5. Measures for dead wood habitats, e.g. stockpiling woody material for subsequent creation of dead wood habitat features such as log piles and standing dead wood.

5.3.2 *Habitat Creation*

- 5.3.2.1 New habitat creation, including native tree and shrub planting and wildflower grassland seed creation will be undertaken at the site utilising native species of local provenance.

5.3.3 *Dead Wood Habitat Creation*

- 5.3.3.1 A series of Log Piles and Brush Piles will be created within areas of retained woodland at the site. These will be created under the direction of a Suitably Qualified Ecologist (SQE). They will be created by re-using material from felled trees and woody material removed during vegetation clearance at the site. The dead wood habitat features will be created in accordance with good practice guidelines; to avoid desiccation they will be positioned in areas of shade within existing mature tree cover and the log piles will be partially buried to maximise their biodiversity value.
- 5.3.3.2 Where practicable, standing dead wood features will be created using mature and/or standard trees that cannot be retained as living trees as part of the development.

5.3.4 *Protection of Nesting Birds (Legal Compliance)*

- 5.3.4.1 Any works affecting potential bird nesting habitat will be undertaken outside the main bird nesting period of 1st March to 31st August where possible. If works affecting vegetation or built structures is unavoidable during this period, a nesting bird check must be undertaken by a suitably qualified ecologist no more than 48 hours prior to the start of such works. In the event that an 'in use' bird nest is present or likely to be present, it must be retained in situ undisturbed until the nest is no longer in active use. A nest is classed as 'in use' when it contains eggs or chicks and when it is being built.

5.3.5 *Bats (Legal Compliance)*

- 5.3.5.1 Although no evidence of a bat roost was identified at the site, there remains a possibility that bats may roost in trees at the site in the future. Therefore, an update survey will be undertaken immediately prior to felling to confirm the presence/absence of roosting bats. In the unlikely event that a bat roost is found to be present, it may be necessary to obtain a licence from Natural England before proceeding.

5.3.6 *Provision of Bat Boxes and Bird Nest Boxes*

- 5.3.6.1 In order to provide permanent bat roosting and bird nesting opportunities at the site, integrated bat and bird boxes will be provided on new buildings at the site.

5.3.7 *Lighting Design*

- 5.3.7.1 In accordance with current guidelines¹⁹, the following measures will be adopted as part of the detailed lighting design for the development:
 - Retain the woodland and watercourse habitat features as 'Dark Corridors' for bats;
 - Use narrow spectrum bulbs to lower the range of species affected by lighting; and
 - Reduce light-spill so that light reaches only areas needing illumination. Shielding or cutting light can be achieved through the design of the luminaire or with accessories, such as hoods, cowls, louvers and shields to direct the light; and
 - Limit the times that lights are on to provide some dark periods for wildlife.

¹⁹ Institution of Lighting Professionals. (2018). Guidance Note 08/18. Bats and artificial lighting in the UK. Bats and the Built Environment series

5.3.8 *Hedgehog*

- 5.3.8.1 In order to enable hedgehogs to maintain territories at the site and move freely, hedgehog gaps will be installed at the base of new garden walls/fences.

5.3.9 *Update Surveys*

- 5.3.9.1 Depending on the proposed construction start date, update surveys for protected species (bats and nesting birds) will be undertaken as necessary.

5.4 *Residual Effects and the Mitigation Hierarchy*

- 5.4.1.1 Given the proposed mitigation measures, it is predicted that there will be a minor adverse effect at the Local level due to the permanent loss of two trees with veteranising features. Depending on the findings of breeding bird surveys, there could potentially be a minor adverse effect at the Site level due to the permanent loss of bird nesting habitat. No other significant adverse effects on ecological receptors are predicted.
- 5.4.1.2 The Mitigation Hierarchy (or Biodiversity Hierarchy) is an important principle of ecological good practice. Applying the Mitigation Hierarchy means aiming to avoid / minimise impacts in the first instance; where this isn't possible impacts should be mitigated; and as a last resort compensation measures should be provided, e.g. new habitat creation. For this proposed development, for most of the ecological receptors subject to detailed assessment, it has been possible to avoid significant ecological impacts (e.g. by retaining areas of woodland and hedgerow in situ). Where avoidance isn't possible, impacts will be mitigated (e.g. impacts on bats will be mitigated through a sensitive lighting design including provision of 'dark corridors'). In accordance with the Mitigation Hierarchy, as a final measure, compensation measures will be provided, e.g. tree planting and provision of bat and bird boxes.
- 5.4.1.3 In respect of the Mitigation Hierarchy for the site access area in the southern part of the site, options for avoiding significant ecological impacts have been thoroughly explored (including potential access to the north of the site); ecological impacts at the site access area will be mitigated by minimising the working area as much as possible and by undertaking vegetation clearance outside the main bird nesting season; and finally compensation measures will be provided (e.g. tree planting and provision of bat and bird boxes).