WOLD ECOLOGY LTD

2 Redwood Gardens, Driffield,
East Riding of Yorkshire. YO25 6XA
01377 200242

Chris Toohie M Sc. MCIEEM
chris.toohie@woldecology.co.uk
www.woldecology.co.uk

Holgate Road, Scunthorpe

EXTENDED PHASE 1 HABITAT SURVEY
September 2016

	Staff Member	Position
Extended Phase 1 Habitat Survey:	Chris Toohie MSc MCIEEM Daniel Lombard BSc MCIEEM	Ecologist
Report prepared by :	Chris Toohie MSc MCIEEM Daniel Lombard BSc MCIEEM	Ecologist
Signed off by :	Chris Toohie MSc MCIEEM	
Notes.	**This report contains sensitive information concerning protected species and caution should be exercised when copying and distributing to third parties.**	

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1.0 EXECUTIVE SUMMARY.

1.1 In September 2016, Wold Ecology was commissioned by BSB Architects to undertake an Extended Phase 1 Habitat Survey at Holgate Road, Scunthorpe, (national grid reference SE 90559 09710) in North Lincolnshire.

1.2 In order to accomplish the brief, a desk top study, external consultation and an extended Phase 1 field survey was undertaken by Wold Ecology staff.

1.3 The habitats within the Application Site comprise bare ground, hedgerow and amenity grassland. There are no statutory or non-statutory sites within the site boundary.

1.4 The proposed development involves site clearance and the erection of a small number of residential dwellings including services and infrastructure.

1.5 The surrounding habitat is potentially important and the proposed development may impact upon mobile species. Consequently, the extended phase 1 assessment also targeted the following species relevant to the Application Site and proposed development:

- Bats
- Great crested newts
- Badger
- Birds
- Reptiles
- Hedgehogs

1.6 The extended phase 1 survey and ecological assessment concludes that the proposed development is unlikely to impact upon any European protected species or associated habitats. However, the report recommends a number of measures which should be adopted to ensure potential adverse impacts to wildlife are avoided:

- **Wold Ecology does not recommend any further specific bird surveys. However, any hedges to be removed should be cleared outside of the bird nesting season (i.e. clearance should be undertaken between September and February inclusive) or be carefully checked by an ecologist to confirm no active nests are present - prior to removal during the summer period. If nesting birds are found during the watching brief, works will need to stop until the young have fledged.**
- **Potential discharge of foul water into the adjacent watercourses should be addressed by Land Drainage Consultant.**

1.7 The data collected to support the output of this report is valid for 18 months. This report is valid until **March 2018**. After this time, additional surveys need to be undertaken to confirm that the status of the site, for European protected species, has not changed.

1.8 Species list within this report may be forwarded to the local biodiversity records centre to be included on their national database. No personal information will be sent. Please contact Wold Ecology if you do not wish the species accounts and grid references to be shared.

2.0 INTRODUCTION

2.1 In September 2016, Wold Ecology was commissioned by BSB Architects to undertake an Extended Phase 1 Habitat Survey at Holgate Road, Scunthorpe, (national grid reference SE 90559 09710) in North Lincolnshire.

2.2 An ecological assessment is a requirement of the Local Authority Planning Department, as part of the planning application process. This is specified in the following legislation:

- Department for Communities & Local Government Circular 06/2005 Biodiversity and Geological Conservation – Statutory Obligations and their Impact within the Planning System.
- National Planning Policy Framework (NPPF): Biodiversity and Geological Conservation – national planning policy relation to biodiversity. NPPF Biodiversity and Geological Conservation gives further direction with respect to biodiversity conservation and land use change/development. NPPF states that not only should existing biodiversity be conserved but importantly that habitats supporting such species should be enhanced or restored where possible. The policies contained within NPPF may be material to decisions on individual planning applications.

2.3 In addition, an ecological assessment is also required so that the local authority comply with the Habitats and Species Regulations 2010 and to have regard to the purpose of conserving biodiversity in the exercise of their functions (Natural Environment and Rural Communities (NERC) Act 2006).

2.4 Planning authorities must determine whether the proposed development meets the requirements of Article 16 of the EC Habitats Directive before planning permission is granted (where there is a reasonable likelihood of European Protected Species being present). Therefore, in the course of its consideration of a planning application, where the presence of a European protected species is a material consideration, the planning authority must satisfy itself that the proposed development meets three tests as set out in the Directive.

2.5 The Local Authority must be satisfied that the proposed development must meet a purpose of:

a) 'Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment'.

In addition, the authority must be satisfied that:

(b) 'That there is no satisfactory alternative'

(c) 'That the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range'.

2.6 Case Law - Woolley v Cheshire East Borough, 5th June 2009.

2.6.1 The ruling states that if it is clear or perhaps very likely that the requirements of the Directive cannot be met because there is a satisfactory alternative or because there are no conceivable 'other imperative reasons of over-riding public interest" then the authority should act on that and refuse permission.'

2.6.2 In addition, the judgement also clarified that it was not sufficient for planning authorities to claim that they had discharged their duties by imposing a condition on a consent that requires the developer to obtain a licence from Natural England. Natural England considers it essential that appropriate survey information supports a planning application prior to the determination. Natural England does not regard the conditioning of surveys to a planning consent as an appropriate use of conditions.

2.7 In order to fulfil the brief, the following has been undertaken:

- A desktop study and consultation.
- Field survey including accessible adjacent land up to 1km.
- An Extended Phase 1 Habitat Assessment.

2.8 This report describes the findings of the field survey and desktop study whilst identifying further surveys to ensure that a comprehensive study is undertaken.

3.0 COMPANY PROFILE

3.1 Wold Ecology Ltd was established in 2006 and is a professional company whose staff has over 30 years' experience in providing a bespoke service for environmental management. Wold Ecology employs a number of experienced and qualified associates to undertake specialist survey work. Professional service is of primary importance and Wold Ecology only employs staff who can demonstrate knowledge and expertise to an exceptional standard.

3.2 Wold Ecology provides a wide range of specialised advice aimed at integrating business with nature. We specialise in ecological surveys, land management planning and site assessments, these include:

- **European Protected Species Surveys**
  Bats, Birds, Great Crested Newts, Water Vole, Badger, Crayfish and Fungi surveys. Phase 1 and Phase 2 NVC Habitat Surveys, Landscape Character Assessment, Environmental Impact Assessments and Arboricultural Surveys.
- **European Protected Species Licenses**
  Bat Licenses - Chris Toohie is a Natural England Bat Low Impact Class License Registered Consultant. Great crested newt development license holders. Implementation of licenses (amphibian fencing, destructive searches, watching briefs and post development monitoring).
- **Environmental Grant Applications**
  Natural England Higher Level Scheme, Farm Environmental Plans, English Woodland Grant Scheme and Heritage Lottery Funding, Breathing Places.
- **Land Management**
  Management Plans, Landscape Designs, Monitoring and Site Evaluation.

3.3 Wold Ecology is committed to working towards the conservation of our natural heritage. Wold Ecology support The Wolds Barn Owl Study Group, Driffield Millennium Green, Cornfield Project (Ryedale Folk Museum), Butterfly Conservation and RSPB projects with volunteer staff time and financial resources. Wold Ecology has adopted an important site for nature conservation on Flamborough Head. North Marsh is owned by a local farmer and is an integral part of an exciting Higher Level Stewardship Scheme, supported by Natural England, RSPB and Wold Ecology for over 10 years. The recent work on the marsh and the return of scarce breeding birds, such as Corn Bunting, has given a huge sense of achievement for all concerned.

3.3.1 Wold Ecology is an Associate Member of the RSPB, a Bat Conservation Trust Benefactor and Corporate Member of the Yorkshire Wildlife Trust.

3.4 Surveyor Profile – Chris Toohie M Sc., MCIEEM.

3.4.1 Job title : Director.

3.4.1.1 Expertise.

- Bat surveys, bats and wind turbine assessments, writing and implementing bat development licenses, bat sound analysis and monitoring- Natural England Bat Low Impact Class License Registered Consultant
- Phase 1 habitat field surveys and ecological appraisals including Building Research Establishment Environmental Assessment Method (BREEAM) and Code for Sustainable Homes (CfSH) assessments.

- Great crested newt and reptile surveys.
- Management planning, woodland and orchard management and community environmental projects including funding applications.

3.4.2 Qualifications.

- M Sc. Arboriculture and Community Forest Management.
- HND Countryside Management.
- Great Crested Newt License – 2016-19412-CLS-CLS (held concurrently since 2009).
- Bat Handling License – RC027and 2015-12688-CLS-CLS (held concurrently since 2009).

3.4.3 Professional Membership.

- Member of the Chartered Institute of Ecology and Environmental Management (held concurrently since 2007).

3.5 A detailed surveyor profile is included in Appendix 5.

3.6 Chris Toohie M Sc. MCIEEM meets the criteria for a suitably qualified ecologist by:

- Holding a Master's degree in Community Forestry and Arboriculture;
- Being employed as a practising ecologist since 1995, with over 15 years relevant experience (within the last five years) and;
- Being a full member of the Institute of Ecology and Environmental Management (this makes him subject to peer review and bound by a professional code of conduct).

3.7 Surveyor Profile – Daniel Lombard B Sc., MCIEEM.

3.7.1 Job title : Senior Field Ecologist.

3.7.2 Expertise.

- Phase 1 habitat field surveys and biodiversity assessments including BREEAM and CfSH assessments.
- Bat surveys, bat ecology, bats and wind turbine assessments, bat sound analysis and monitoring.
- Great crested newt and reptile surveys.
- Mammal surveys including water vole, otter and badger.
- Ornithological surveys.
- Invertebrates studies, principally Lepidoptera, Odonata, Coleoptera and Diptera plus habitat management/creation for these groups.
- Management planning, pond and wetland management.

3.7.3 Qualifications.

- B Sc. Environmental Science.
- Great Crested Newt License – 2015-17182-CLS-CLS
- Bat License – 2015-11490-CLS-CLS
- Bird Ringing C Licence – C/6298

3.7.4 Professional Membership.

- Member of the Chartered Institute of Ecology and Environmental Management.

3.8 A detailed surveyor profile is included in Appendix 5.

3.9 Daniel Lombard meets the criteria for a suitably qualified ecologist by:

- Holding a Bachelor of Science degree (hons) in Environmental Science;
- Being employed as a practising ecologist since 2007, with over 9years' relevant experience and;
- Being a full member of the Institute of Ecology and Environmental Management (this makes him subject to peer review and bound by a professional code of conduct).

3.10 Chris Toohie M Sc. MCIEEM has read and reviewed the report and confirms that it:

- Represents sound industry practice
- Reports and recommends correctly, truthfully, and objectively
- Is appropriate, given the local site conditions and scope of works proposed
- Avoids invalid, biased, and exaggerated statements

4.0 SURVEY METHODOLOGY.

4.1 A Phase 1 Habitat Survey was undertaken on 27th September 2016. During the site visit, the whole of the Application Site and accessible neighbouring land was examined in detail.

Survey	Date	Time		Wind Speed	Wind Direction	Temperature		Rainfall	Cloud Cover
		Start	Finish			Start	Finish		
Field	27/09/16	1600	1700	Still	N/A	15°C	16°C	None	80%

4.2 The habitats within the Application Site were mapped (see Appendix 2) according to the techniques described in the publication *Handbook for Phase 1 Habitat Survey* (JNCC 2010).

4.3 Target notes (if applicable) provide descriptions of the main habitats found on the site, including information about species composition, habitat structure, evidence of management, habitats too small to map and transitional or mosaic habitats.

4.4 Sufficient detail on the composition of the vegetation was obtained from the Phase 1 Habitat Survey, which enabled it to be successfully characterised and assessed.

4.5 During the site visit, notes were made of features of potential value to other groups such as birds, mammals, amphibians, reptiles or invertebrates, paying particular attention to species protected by law:

Species/Group	Indicative habitat	Field signs (in addition to sightings)
Bats	Roosts - Trees, buildings, bridges, caves etc. Foraging areas - e.g. Parkland, waterbodies, wetlands, woodland, hedgerows Commuting routes - Linear features (e.g. hedgerows, water courses, tree lines).	Potential roost sites: Droppings, urine splashes, staining and feeding remains.
Badger	Habitat mosaic in rural and many urban habitats	Excavations and tracks, sett entrances, latrines, hairs, well-worn paths, prints, scratch marks on trees
Otter	Rivers, streams, canals, ponds, lakes, ditches, drains and coastal areas.	Holts (or dens), prints, spraints, slide marks into watercourses and feeding signs.
Water Vole	Rivers, streams, canals, ponds, lakes, ditches, drains and marshes.	Burrow entrances, prints, distinctive latrine areas and feeding signs.
Birds	Habitat mosaic	Nests, droppings below nest sites (especially in buildings of trees); tree holes
Reptiles	Habitat mosaic	Sloughed skins
Great Crested Newt	Ponds within 500 m of suitable habitat within the site boundary. Habitat Suitability Index (HSI assessment)	Egg wraps and animals (depending on time of year)

5.0 LIMITATION OF FIELD SURVEY.

5.1 Whilst the majority of the Application Site was examined at the macro scale, many species will have been overlooked at the micro level because it is not the purpose of a phase 1 habitat survey to classify all taxa occurring in the Application Site. In addition, whilst the actual timing of the survey was adequate to classify the habitat types, there is undoubtedly a strong seasonal element to the presence of species within the site and species occurring outside of the survey period will have been missed.

5.2 This report will serve to indicate the possible value of the site in nature conservation terms based upon the survey and desk top data gathered. As with any survey of this kind, it cannot be seen as a definitive description of the site and its associated habitats and species.

5.3 Access was only granted within the Application Site and land owned by the client; neighbouring land was only studied from vantage points, maps and aerial photography and it is possible that habitats important to the ecology of the Application Site may not have been recorded fully.

5.4 However, a phase 1 habitat survey of this nature, supported by a thorough desk top survey, is sufficient to make a number of general assumptions about the ecology of the site.

6.0 SURVEY RESULTS.

6.1 General Description.

6.1.1 The Application Site is situated within the town of Scunthorpe, in an urban location. However, the Scunthorpe Guidebook describes states that 'it's actually a surprisingly green place - two recent awards for its open space give credence to that fact – which is proud to be called the 'industrial garden town'' (Source - http://www.findanewhome.com/yorkshire-and-the-humber/north-lincolnshire/scunthorpe/guide.fap). The Application Site is immediately surrounded by well lit, heavily disturbed and fragmented urban habitats including residential dwellings, private gardens and roads.

6.1.2 The town of Scunthorpe is largely built on former dry heathland (glacial blown sand) habitats and these sandy soils still dictate the character of the vegetation in many of the town's green spaces and gardens. The presence of light soils means that it is generally more difficult for a few highly aggressive plant species to dominate vegetation (as happens on heavier soils), even after moderate improvement. 'Ordinary' wayside and amenity grassland here is often rather open, and can support a relatively diverse range of species including those characteristic of heath or acid grassland, or even maritime sand.

6.1.3 The surrounding flat landscape is relatively sheltered and well drained with no areas of open standing water present. The Application Site is surrounded by urban habitats including housing estates and commercial unites. Mixed agricultural land is located adjacent to the western boundary of Scunthorpe, within 500m of the Application Site.

6.1.4 Woodland cover in the locality is limited and occurs as small shelterbelts, avenues and plantations; woodland cover occurs predominantly to the west of the site. Scattered amenity trees are moderately widespread within the surrounding area as avenues adjacent to roads. Habitat connectivity is relatively poor due to expanses of open, managed amenity grassland, roads, walls and buildings which are abundant within the surrounding area.

6.1.5 A summary of the surrounding habitat is as follows (radius of < 2km from the Application Site):

- Buildings – Residential properties, commercial units and industrial area.
- Steel works
- Mature trees and woodland.
- Arable.
- Urban parks and green space.
- Scrub.
- Rank grassland.
- Railway line.
- Winterton Road Pits
- Crosby Warren
- Golf course
- Private gardens.
- Roads.
- Wetlands and watercourses.

6.2 Desktop Study.

6.2.1 Natural England, Lincolnshire Environmental Records Centre (LERC), National Biodiversity Network (NBN) and www.magic.gov.uk were consulted in order to obtain any ecological information that they hold of relevance to the Application Site.

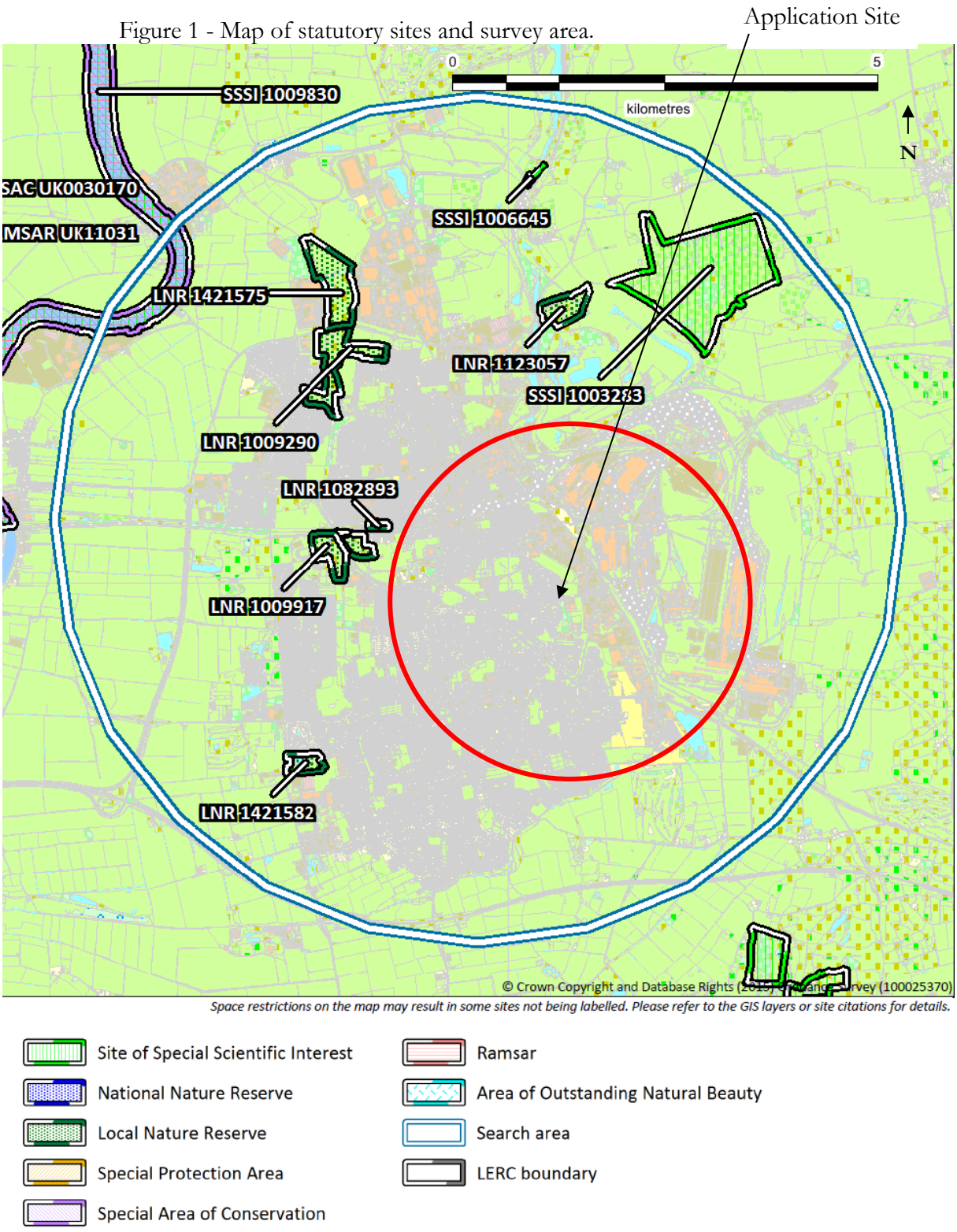
6.2.2 The desk top study identifies land parcels of nature conservation value within 2 km locality of Application Site. Relevant extracts from associated documentation are highlighted below. The following data resources were searched:

- Sites of Special Scientific Interest (SSSI)
- Special Protection Areas (SPA)
- National Parks
- National Reserves
- Special Areas of Conservation (SAC)
- Ramsar sites
- Areas of Outstanding Natural Beauty (AONB)
- Local Nature Reserves (LNR)
- Local wildlife sites (LWS)
- Natural England Habitat Inventories
- Natural Area documentation
- European protected species records
- UK Biodiversity Action Plan habitats and species records
- Local Biodiversity Action Plan habitats and species records
- Notable species records

6.2.3 Statutory sites

6.2.3.1 There are no statutory sites within 2km of the Application Site

Figure 1 - Map of statutory sites and survey area.



6.2.4 Non-statutory Sites

6.2.4.1 Local Wildlife Sites (LWS).

6.2.4.1.1 The following local wildlife sites lie within 2 km of the Application Site;

- Ashbyville Lakes

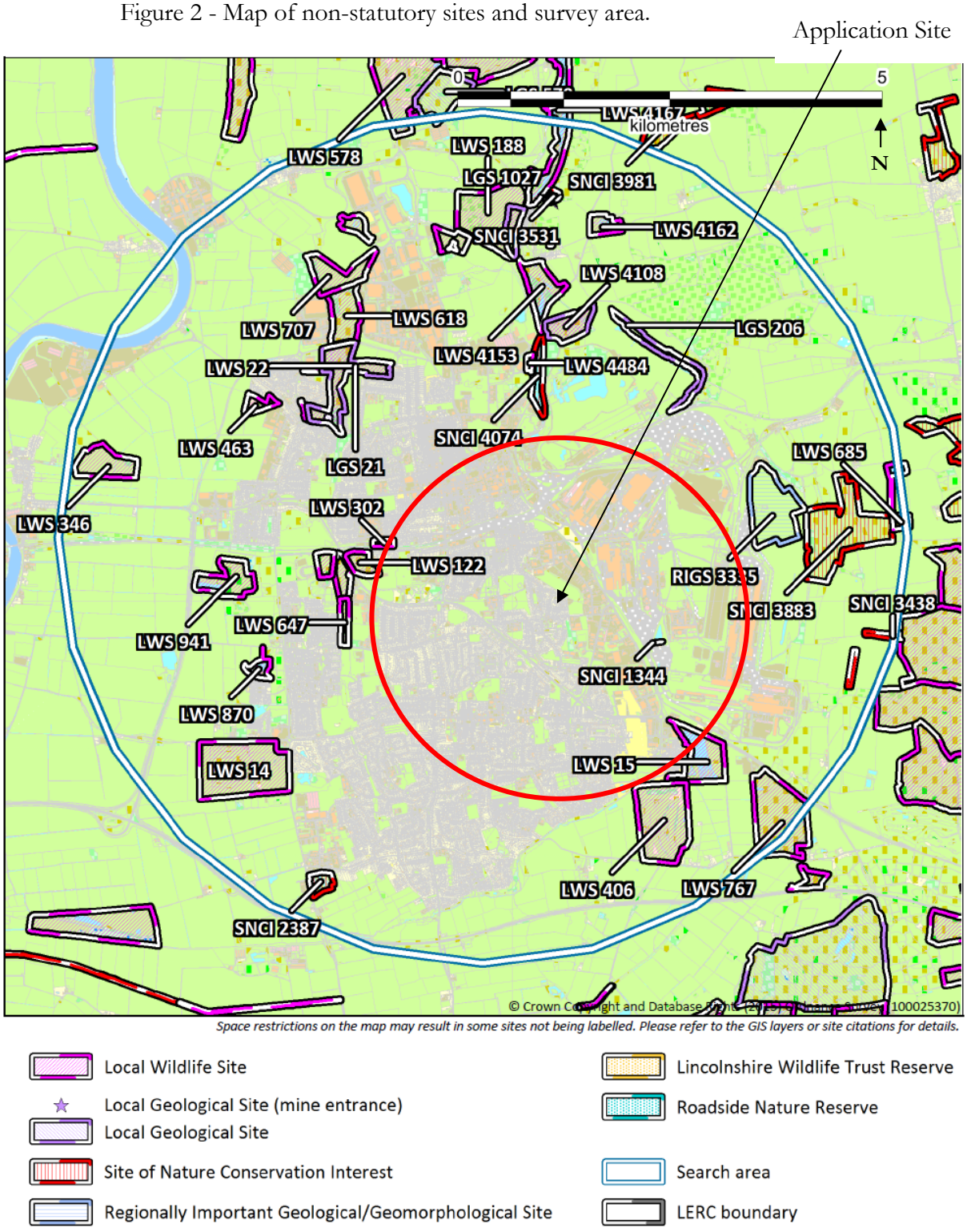
6.2.4.2 Sites of Nature Conservation Interest

6.2.4.2.1 The following Sites of Nature Conservation Interest lie within 2 km of the Application Site:

- Brumby Beck (1344)

6.2.4.3 The non-statutory and statutory sites will not be impacted on by the proposed development due to the small scale nature of the proposed development and the distance between the Application Site and the nearest land parcels of nature conservation which is greater than 500 metres.

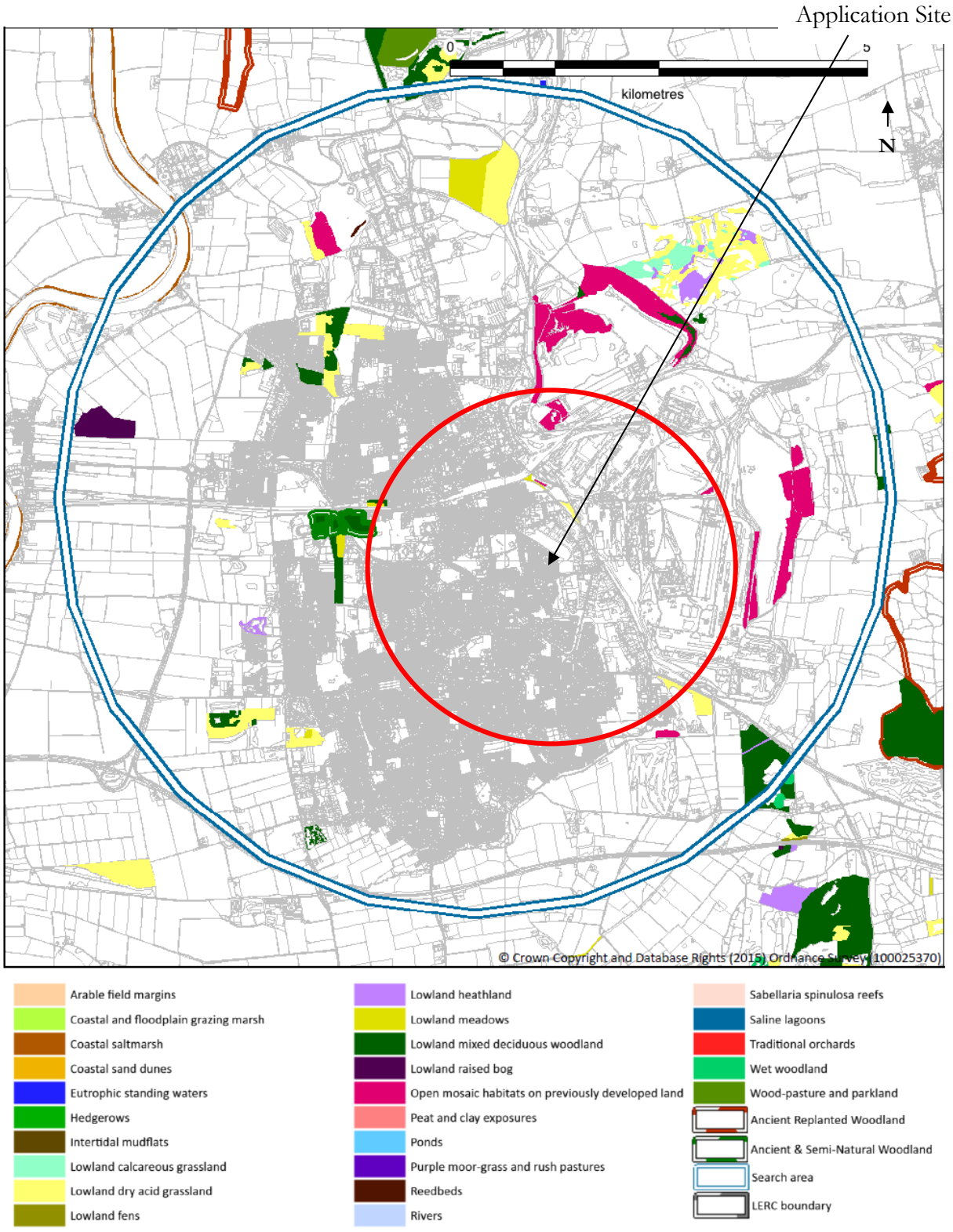
Figure 2 - Map of non-statutory sites and survey area.



6.2.5 Natural England Habitat Inventories

6.2.5.1 All the Natural England Habitat Inventories were searched, including the woodland inventory and grassland inventory. The following areas of notable habitat from the Habitat Inventories list were found within 1 km of the Application Site.

Figure 3 - Map of notable habitats listed in the Habitats Inventory.



6.2.5.2 The notable habitats will not be impacted on by the proposed development due to the small scale nature of the proposed development and the distance between the Application Site and the nearest land parcels of nature conservation which is greater than 500 metres.

6.3 Natural Character Areas

6.3.1 National Character Areas (NCAs) divide England into 159 distinct natural areas. Each is defined by a unique combination of landscape, biodiversity, geodiversity and cultural and economic activity. Their boundaries follow natural lines in the landscape rather than administrative boundaries, making them a good decision making framework for the natural environment. As part of its responsibilities in delivering the Natural Environment White Paper, Biodiversity 2020 and the European Landscape Convention, Natural England is revising its National Character Area profiles to make environmental evidence and information easily available to a wider audience.

6.3.2 NCA profiles are guidance documents which will help to achieve a more sustainable future for individuals and communities. The profiles include a description of the key ecosystem services provided in each character area and how these benefit people, wildlife and the economy. They identify potential opportunities for positive environmental change and provide the best available information and evidence as a context for local decision making and action. The Application Site is located within the Natural Character Area 45: The Northern Lincolnshire Edge with Coversands.

6.3.3 The Northern Lincolnshire Edge with Coversands NCA comprises a ridge of Jurassic limestone running north from Lincoln to the Humber Estuary. The scarp slope rises prominently from adjacent low-lying land, forming the Edge or Cliff, and giving panoramic views out, in particular to the west. In the north is a second, lower scarp of ironstone. In the vicinity of Scunthorpe are the Coversands, post-glacial wind-blown sands which have given rise to mosaics of heathland, acid grassland and oak/birch woodland, supporting rare plant and animal communities akin to the Brecklands. Risby Warren, historically used as a rabbit warren, reveals the distinctive formation of inland dunes. Several of these sandy sites are designated as Sites of Special Scientific Interest, along with a number of disused limestone, ironstone and sand extraction sites, which comprise geological exposures alongside calcareous grassland, open water and other semi-natural habitats. At the northern boundary the limestone drops below the River Humber.

6.3.4 The following Statements of Opportunity (SEO) are relevant to the Application Site:

- **SEO 3**: Maintain the sense of place and the diversity of settlements and landscape features through expanding semi-natural habitats, managing the restoration of extraction sites, retaining the inspirational long views, ensuring that development is sustainable and well-integrated into the landscape, and providing more interpretation and access through good green infrastructure links.

6.4 Natural Areas

6.4.1 Natural Areas are a way of looking at the natural environment around us. Using specialist knowledge of wildlife and natural features, English Nature has identified over 140 areas, covering the land surface and coast of England, each of which can be characterised by its unique combination of wildlife, landform, land use and human history. The boundaries of these Natural Areas often vary from existing administrative boundaries and provide the framework for much of English Nature's work, and are key to achieving, enabling and promoting nature conservation in England. Natural Areas define local needs in light of national priorities, also providing a focus for Local Biodiversity Action Plans. The Application Site lies within Natural Area 34 'North Lincolnshire Coversands and Clay Vales'.

6.4.2 Natural Area 34 - North Lincolnshire Coversands and Clay Vales (as described by English Nature 1997)

6.4.2.1 'This Natural Area consists of two broad lowland plains or clay vales that stretch south from the Humber Estuary to the beginning of the Fens just north of the Wash, separated by a watershed lying west of Market Rasen. Both Lincoln and Scunthorpe are major areas of settlement in the area. Within the Natural Area are two large areas of windblown, glacial deposits known as 'Coversands'. The Coversands are banked up against the Wolds north of Caistor and around Scunthorpe. Bordering either side of the lowland plains are two lines of hills consisting of relatively hard rocks that have eroded much more slowly. To the east are the Lincolnshire Wolds on chalk and to the west is the Lincolnshire Edge on limestone. The Lincolnshire Edge north of Lincoln is included in this Natural Area; its western margin consists of a steep scarp slope, whereas the eastern side is more undulating and gently dips down towards the lowland plains.

6.4.2.2 Lowland heath was once abundant upon the Coversands but large areas have been lost through conifer plantations, conversion to arable, urban development and quarrying.

6.4.2.3 The vast majority of grassland in the Natural Area has been agriculturally intensified and is of poor wildlife value. Neutral grassland is the most common, and there are a number of acidic grasslands depending on the underlying geology.

6.4.3 Relevant Natural Area Objectives

6.4.3.1 **To prevent further loss of, and maintain, the characteristic semi-natural habitats in the Natural Area, particularly the heathland, grassland and woodland habitats.**

- Identify, prioritise and implement programmes to recreate habitats which have declined or been lost, and manage sustainably. Priority habitats include heathlands, limestone grassland and woodland.

6.4.3.2 **To survey and monitor species and habitats effectively.**

- Collate available historical data.
- Encourage monitoring to ensure up to date information across the Natural Area as a whole.
- Identify species groups that need further information.
- Monitor indicator species to ensure that management is effective and to provide early warning of a decline in nature conservation interest.

6.4.3.3 **To maintain and enhance important species and populations which are characteristic of the Natural Area.**

- Manage semi-natural habitats to maintain populations of key species particularly those of international, national and local importance.
- Assess the current distribution of key species and the status of their respective habitats.
- Monitor key species to establish whether or not their populations are sustained.
- Maintain and enhance populations of key species at all current locations.

6.5 European Protected Species records

6.5.1 Badger *Meles meles* is recorded within 5km of the Application Site (source – LERC and NBN Gateway 2016).

6.5.2 Bats

- Currently, there is no pre-existing information on bats at the site.
- Data for the 10km grid squares SE81, SE91, SE80 and SE90 show records of noctule *Nyctalus noctula*, brown long-eared bat *Plecotus auritus*, whiskered bat *Myotis mystacinus,* Natterer's bat *Myotis nattereri*, Daubenton's bat *Myotis daubentonii,* soprano pipistrelle *Pipistrellus pygmaeus* and common pipistrelle *Pipistrellus pipistrellus* (source – LERC and NBN Gateway 2016).
- Wold Ecology bat surveys on Pryme Road during 2010 identified common pipistrelle bat activity in low numbers. The bat activity surveys were within 100m of the Application Site.

6.5.3 Great crested newts

- Great crested newt *Triturus cristatus* is recorded within 5km of the Application Site, with records frequent around the periphery of Scunthorpe becoming very scarce and localised towards the town centre.
- No records occur within 1km of the Application Site (source – LERC and NBN Gateway 2016).

6.5.4 Water vole

- Water vole *Arvicola amphibious* is frequently recorded within 5km of Scunthorpe. No records or suitable habitat occurs within 500 metres of the Application Site (source –LERC and NBN Gateway 2016).

6.5.5 Otter

- Otter *Lutra lutra* is recorded within 5km of Scunthorpe. No records or suitable habitat occurs within 500 metres of the Application Site (source – LERC and NBN Gateway 2016).

6.5.6 Reptiles

- Grass snake *Natrix natrix* and common lizard *Zootoca vivipara* are recorded within 5km of the Application Site on the eastern edge of Scunthorpe.
- No records of grass snakes occur within 1km of the Application Site.
- Common lizard is recorded at Frodingham >600 metres south west of the Application Site (source –LERC and NBN Gateway 2016).

6.5.7 Phase 1 Field Survey Results

6.5.7.1 The following habitat types were recorded within the Application Site:

Phase 1 Habitat Classification	Reference Code
Amenity Grassland	J1.2
Intact species poor hedge	J2.1.2
Fence	J2.4
Bare ground	J4

6.5.7.2 Species poor Hedge

6.5.7.2.1 A species poor hedgerow runs adjacent to the southern boundary of the Application Site. This hedge is sporadically managed between a height of 2-3 metres and 1-2 metres in width with a flat top and square sides cut. This habitat contains limited amounts of standing and fallen deadwood within its base, although there is no evidence of historical practices such as hedge laying. No significant gaps occur within the hedge structure. Species composition is relatively poor with a heavy dominance of beech *Fagus sylvatica* interspersed with sporadic and irregular patches of elder *Sambucus nigra* and ash *Fraxinus excelsior*. No ancient woodland/or hedgerow indicator species were found growing in association with the hedgerow.

6.5.7.3 Amenity Grassland

6.5.7.3.1 The Application Site is centred around a parcel of amenity grassland which comprises of a flat and well drained verge adjacent to a road. This habitat is regularly cut during the growing season with no significant nutrient inputs. The sward is short and lush and is dominated by perennial ryegrass *Lolium perenne*, annual meadow grass *Poa annua*, dandelion *Taraxacum officinale*, common daisy *Bellis perennis*, white clover *Trifolium repens*, ribwort plantain *Plantago lanceolata*, great plantain *Plantago major* and creeping buttercup *Ranunculus repens*.

6.5.7.4 Fence

6.5.7.4.1 A variety of garden fencing occurs along the southern edge of the Application Site. These are dominated by timber panelled fencing of various types. These are of no ecological significance and are unlikely to prevent dispersal into the site.

6.5.7.5 Bare ground

6.5.7.5.1 Bare ground habitat within the Application Site and comprises pathways, kerbs and roads. Vegetation is sparse and sporadic and is dominated by species including smooth sow thistle *Sonchus oleraceus*, prickly sow thistle *Sonchus asper*, annual meadow grass and groundsel *Senecio vulgaris*. This habitat is not considered to be ecological significance and is regularly disturbed.

6.5.8 The following species were recorded during the field survey:

- Robin *Erithacus rubecula*
- Great tit *Parus major*
- Greenfinch *Chloris chloris*
- Goldfinch *Carduelis carduelis*

- Feral pigeon *Columba livia*
- Collared dove *Streptopelia decaocto*
- Pied wagtail *Motacilla alba*
- Dunnock *Prunella modularis*
- Garden spider *Araneus diadematus*
- Harlequin ladybird *Harmonia axyridis*

6.5.9 The surrounding habitat is potentially important and the development area may impact upon mobile species. Consequently, the extended phase 1 assessment targeted the following species relevant to the Application Site and proposed development:

- Bats
- Great crested newt
- Badger
- Reptiles
- Birds
- Hedgehog

6.6 Bats

6.6.1 The bat survey involved an initial walkover of the Application Site to assess the overall habitat quality for bats. This included the identification of key potential foraging habitat and potential flight corridors. This survey also targeted any potential or actual roost sites and evidence of actual bat use i.e. droppings, feeding signs.

6.6.2 Conclusions

6.6.2.1 No trees or buildings occur on site, subsequently no potential roosting opportunities exist.

6.6.2.2 The Application Site habitats are well lit and not extensive, they are similar to surrounding mature private gardens and consequently, the Application Site is not considered integral to the favourable population status of local bat populations.

6.7 Great crested newt.

6.7.1 No records of great crested newt occur within 1km of the Application Site.

6.7.2 The entire Application Site was assessed for its potential to support great crested newts, whilst conducting a walkover survey. In addition aerial photographs, maps and physical searches of the surrounding landscape gave an impression of how the Application Site is connected ponds within the locality and potentially great crested newt populations.

6.7.3 Refuge search.

6.7.3.1 Amphibians can take refuge under logs, bark and stones whilst in terrestrial habitat. All available features within the Application Site were turned over to search for the presence of amphibians. This method is not an effective method of presence/absence; however, it can be used as a general indication of amphibians within an area. Despite the time of year amphibians are occasionally found outside

of hibernacula in such situations, especially during mild damp weather such as that prior and during the field survey.

6.7.4 Results.

6.7.4.1 No ponds or permanent water bodies suitable for breeding great crested newts were observed during the walkover survey. The wider habitat is largely well drained with the exception of garden ponds associated with the nearby housing estate. Garden ponds are typically sub-optimum great crested newt habitat and have reduced potential for great crested newt; they are not considered to be of any significance to the species. Key attributes to the decreased probability of great crested newts being present within garden ponds are:

- High density of stocked fish, which predate great crested newt larvae, eggs and adults. The London Essex and Hertfordshire Amphibian and Reptile Trust state that 'Despite the natural protection of a poisonous secretion which makes the adults unpalatable to most predators, the larvae are highly vulnerable to fish predation. Entire colonies can be impacted upon by the introduction of fish'. It is unlikely that the lake now supports great crested newts.
- Decrease macrophyte growth due to fish disturbance and foraging and decreased water turbidity.
- Increased water turbidity due to fish disturbance and associate high nitrate input.
- Fish likely to predate large numbers of the invertebrates important for great crested newt reproduction and adult diet.
- Poor vegetation structure, creating cold micro-climate and lack of sunlight penetration.

6.7.4.2 Whilst it is not always possible to demonstrate site absence from a single scoping survey, with the evidence collected from a habitat survey, the likelihood of the presence of great crested newts in the Application Site is decreased. Key attributes to the reduced probability of great crested newts being present are:

- There is no current knowledge of great crested newts within the Application Site.
- No ponds exist within the Application Site and no suitable breeding ponds were observed within the surrounding area (<500m).
- The Application Site primarily comprises urban habitats which inhibits dispersal by reducing areas of shelter, foraging grounds and leaving amphibians open to predation and desiccation. Consequently, Application Site is poor quality terrestrial habitat for amphibians.
- The open exposed nature of the site with its limited plant diversity and improved grass with limited refugia results in a poor invertebrate habitat. Great crested newts predominantly prey on slugs, insects, spiders and earthworms. They tend to forage in woodland, scrub, rough grassland and wetland areas largely due to the large diversity and abundance of invertebrates which these areas attract.
- Currently, the Application Site consists of sub-optimum terrestrial great crested newt habitat, with limited refugia and hibernacula and contains no suitable aquatic habitat for breeding. This is essentially an "island" within a wider area of sub-urban housing and hard standing dominated by sub-optimum habitat.
- Great crested newts favour overwintering sites adjacent too or within tree

cover. This offers more shelter through the winter and limits the severity of frost. The lack of tree cover and refugia reduce the likelihood of this species using the site to hibernate as well as the lack of a close breeding pond.

- Sub-urban housing, surrounding road networks, walls and curbs limit great crested newt dispersal to and from the site in the wider area.
- Great crested newts require areas of refuge such as cracks and crevices in the ground, old small mammal burrows, gaps beneath tree stumps and the bases of tussocks to shelter under during the day. The open well maintained nature of the site currently lacks these features, making it less suitable for the species.
- No records of great crested newt exist within 1km of the Application Site.

6.7.4.3 **In conclusion, Wold Ecology does not recommend any further great crested newt survey work.**

6.8 Reptiles

6.8.1 The desktop study identified grass snake and common lizard as the only reptile species which is found within the wider area. Reptiles are moderately widespread in North Lincolnshire.

6.8.2 Results

6.8.2.1 No direct observations or field signs of reptiles was recorded on site. It is unlikely to observe reptiles on phase 1 surveys without appropriate survey methodology, especially where populations are small or sparse. A full walkover was undertaken to assess the sites potential to support reptiles.

6.8.2.2 The Application Site is considered to be unsuitable for reptiles for the following reasons:

- Reptiles thermoregulate in sheltered locations, predominantly in close proximity to cover such as rank or shrubby vegetation, large rocks, walls and tree stumps in which they can quickly escape. The Application Site primarily consists of open exposed habitat, with limited and largely insufficient thicker marginal vegetation, making reptiles prone to predation.
- Compost heaps, rotten logs and decaying vegetation provide important breeding, foraging and thermoregulation habitat for slow worm and grass snake. None of which are present in sufficient quantity within the Application Site.
- Reptiles use cracks, crevices and small mammal burrows to access underground refugia and hibernacula. These habitat features are limited within the Application Site, reducing the value to reptiles.
- The lack of the above features, with a sufficient depth to remain frost free reduces the potential for reptiles to hibernate within the Application Site.
- Reptiles are typically not very wide ranging species, instead staying in optimum habitat. Such optimum habitat does not occur within or around the Application Site reducing the likelihood of animals passing through the site.
- This past management is likely to have resulted in the site being sub-optimum for a long time period, reducing the likelihood of viable populations persisting.
- The open nature of the Application Site leaves reptiles open to predation from key predators including crows, kestrels, hedgehogs, domestic cats and foxes.

- The site is small, surrounded by disturbed land and fragmented from optimum reptile habitat in the wider area.
- The poor value of the site to amphibians (grass snakes chief food source) further limit the sites importance to grass snakes.

6.8.3 **Wold Ecology does not recommend any further reptile surveys.**

6.9 Birds

6.9.1 All bird species recorded by either sight, song or call were noted, in addition particular attention was given to key species of conservation concern and which habitat within the Application Site they were recorded using. All active (and disused) nests, territorial, breeding and foraging birds were recorded in further detail to analyse how breeding birds use the Application Site.

6.9.2 The following survey followed guidance and methods recommended within *Bird Monitoring Methods, a manual of techniques for key UK species* Gilbert et.al RSPB 1998, *Common Standards Monitoring Guidance for Birds* JNCC 2004 and *Survey Techniques Leaflet 8*.

6.9.3 Schedule 1 Listed Birds

6.9.3.1 **The Application Site is of low value to schedule 1 listed species. This is primarily due to the extensive urban locality nature of the application site, lack of suitable or extensive habitats for foraging and breeding and adjacent habitats with no features to support nesting Schedule 1 listed species.**

6.9.4 Non Schedule 1 birds

6.9.4.1 Breeding birds

6.9.4.1.1 Impacts related to breeding birds are essentially related to the temporary loss of habitat which is utilised by breeding species. Related to this is the risk that birds could be nesting within impacted habitats at the time that construction work is programmed to start. Of particular relevance to this project are small passerine species, particularly those associated with the shrubs and trees.

6.9.4.2 Wintering Birds

6.9.4.2.1 The Application Site is not considered to be valuable to wintering birds like wildfowl and waders. The Application Site is too enclosed, with buildings and is bounded by housing and roads causing regular disturbance, reducing the value of the habitat for these species groups, nor is it in close proximity to suitable aquatic habitats. The only impact typically of any relevance to wintering birds are those associated with the temporary loss of food sources. This is principally associated with the loss of trees which provide a potential source of food to a range of wintering species. However, these habitats are abundant within the wider area and are not thought to be of significant importance to birds.

6.9.5 **Wold Ecology does not recommend any further bird surveys.**

6.10 Badgers

6.10.1 All features of potential value to badgers are surveyed; including areas of woodland (including plantation), small copses, hedgerows, embankments and rock outcrops. Well-worn animal paths and footpaths were inspected for badger footprints and links to setts.

6.10.2 The surveyor observations included any areas where there were noticeable changes in the topography providing sloping ground into which the badgers could excavate setts. The following field signs will indicate the presence of badgers:

- Badger setts and associated soil excavation
- Badger latrines and dung pits
- Badger prints
- Badger hairs
- Badger paths
- Evidence of badger foraging activity

6.10.3 Results.

6.10.3.1 No main setts, annexe setts, subsidiary setts or outlier setts were located within 50 metres of the development area boundaries or within the Application Site. Badgers have a preference for excavating setts on well drained calcareous grits and upper chalks rather than middle chalks and clays, although exceptions to this rule occur where no similar geology is present. Badgers often show a preference to sett excavation in woodland and scrub. Tree cover in the Application Site is limited to widely spaced trees.

6.10.3.2 No evidence of badger activity was noted within the Application Site with no feeding signs, footpaths, tracks, push throughs or hair recorded. The Application Sites does not appear to be of significant value to badgers in its current state and consequently, the proposed development is considered negligible to the local population.

6.10.3.3 **No further surveys or mitigation are required for badgers.**

6.11 Hedgehog

6.11.1 Legislation

6.11.1.1 Although the Hedgehog *Erinaceus europaeus* only receives partial protection under the Wildlife and Countryside Act 1981 (as amended), its numbers have declined dramatically over the past two decades, resulting in the suggested proposal of upgrade to a higher level of protected status. The British population has declined by 25% over the past 10 years. The reasons for the decline are thought to be complex but include the loss of hedgerows and permanent grasslands as well as agricultural intensification.

6.11.2 Survey Methodology

6.11.2.1 All features of potential value to hedgehogs are surveyed; including areas of thick vegetation, outbuildings, lawns, grassland, scrub, woodland and hedge bases. Evidence of breeding nests, hibernation nests and loafing nests were searched for in areas of suitable cover.

6.11.2.2 Well-worn animal paths, pool edges and footpaths were inspected for hedgehog footprints. Open areas were inspected for hedgehog droppings, particularly amenity grassland. Additionally, the surrounding road system was surveyed for road casualties.

6.11.2.3 The following field signs will indicate the presence of hedgehogs:

- Nests within dense vegetation
- Hedgehog droppings
- Hedgehog prints
- Road causalities.

6.11.3 Results.

6.11.3.1 No active or unused hedgehog nests were found within the Application Site. Most of the Application Site is too open to support nesting behaviour.

7.0 EVALUATION OF SURVEY RESULTS.

7.1 Overall Approach to Assessment.

7.1.1 The overall approach to assessment followed in this report can be summarised as: A baseline identification of the nature conservation interest within the ecological Application Site by establishing levels of interest for ecological features measured against definable criteria. The term Valued Ecological Receptor (VER) is used to describe the species, communities, habitats or sites selected for detailed study during the process of the ecological assessment.

7.2 Evaluation Criteria.

7.2.1 The thorough evaluation of the ecological importance of a site is essential in order to assess the significance of the ecological assessment

7.2.2 The evaluation criteria are given in detail in Appendix 6. Their aim is to consider the habitats, communities and species present on site in relation to the following:

- The legislative framework (e.g. the Wildlife and Countryside Act 1981, Habitats and Species Regulations 2010 and the EC Directive on the Conservation of Habitats and Wild Fauna and Flora (92/43/EEC) for the presence of protected species and habitats).
- Nature conservation designations, including national site designations (Sites of Special Scientific Interest, National Nature Reserves etc.), local designations (Sites of Importance for Nature Conservation, Local Nature Reserves, County Wildlife Sites etc.).
- Accepted criteria for species rarity and declining populations, and rarity of habitat types or communities, including species and habitats identified in the British Red Data Books, national biodiversity action plan, and species and habitats identified in regional or local biodiversity action plans where available.
- Accepted criteria for overall site evaluation (including rarity, diversity, naturalness, historical factors and issues relating to landscape ecology).

7.3 Evaluation of Survey Results.

7.3.1 The field survey work did not identify the presence of any habitats or plant species considered rare in the United Kingdom.

Rarity is defined in this report as:
Rare—species not recorded in more than 100, 10 x 10 km grid-squares in the British Isles.
Very Rare—species not found in more than 15 different 10 x 10 km grid-squares in the British Isles.

7.4 Habitats

7.4.1 Biodiversity Action Plans (BAP) and Species and Habitats of Principal Importance for the Conservation of Biological Diversity

7.4.1.1 In 1995, 'Biodiversity: The UK Steering Group Report' was published, which aimed to conserve and enhance biological diversity within the UK, including action plans for 38 key habitats and for 402 of our most threatened species. These plans describe the status of each habitat and species, outline the threats they face, set targets and objectives for their management, and propose actions necessary to achieve recovery. The Biodiversity Action Plans (BAP) have recently been updated, new ones added and others removed, so there are now 1,149 species and 65 habitats that have been listed as priorities for conservation action. A list of these UK BAP species and habitats can be found at http://www.ukbap.org.uk/NewPriorityList.aspx.

7.4.1.2 In addition, there are approximately 150 Local Biodiversity Action Plans (LBAP), normally at county level. These plans usually include actions to address the needs of the UK priority habitats and species in the local area, together with a range of other plans for habitats and species that are of local importance or interest.

7.4.1.3 The following BAP Habitats are recorded on site.

UK BAP broad habitat.	UK BAP priority habitat.	Habitat present within the Application Site.
Rivers and Streams	Rivers	**N**
Standing Open Waters and Canals	Oligotrophic and Dystrophic Lakes	**N**
	Ponds	**N**
	Mesotrophic Lakes	**N**
	Eutrophic Standing Waters	**N**
	Aquifer Fed Naturally Fluctuating Water Bodies	**N**
Arable and Horticultural	Arable Field Margins	**N**
Boundary and Linear Features	Hedgerows	**Y**
Broadleaved, Mixed and Yew Woodland	Traditional Orchards	**N**
	Wood-Pasture and Parkland	**N**
	Upland Oakwood	**N**
	Lowland Beech and Yew Woodland	**N**
	Upland Mixed Ashwoods	**N**
	Wet Woodland	**N**
	Lowland Mixed Deciduous Woodland	**N**
	Upland Birchwoods	**N**
Coniferous Woodland	Native Pine Woodlands	**N**
Acid Grassland	Lowland Dry Acid Grassland	**N**
Calcareous Grassland	Lowland Calcareous Grassland	**N**
	Upland Calcareous Grassland	**N**
Neutral Grassland	Lowland Meadows	**N**
	Upland Hay Meadows	**N**
Improved Grassland	Coastal and Floodplain Grazing Marsh	**N**
Dwarf Shrub Heath	Lowland Heathland	**N**
	Upland Heathland	**N**
Fen, Marsh and Swamp	Upland Flushes, Fens and Swamps	**N**

	Purple Moor Grass and Rush Pastures	**N**
	Lowland Fens	**N**
	Reedbeds	**N**
Bogs	Lowland Raised Bog	**N**
	Blanket Bog	**N**
Montane Habitats	Mountain Heaths and Willow Scrub	**N**
Inland Rock	Inland Rock Outcrop and Scree Habitats	**N**
	Calaminarian Grasslands	**N**
	Open Mosaic Habitats on Previously Developed Land	**N**
	Limestone Pavements	**N**
Supralittoral Rock	Maritime Cliff and Slopes	**N**
Supralittoral Sediment	Coastal Vegetated Shingle	**N**
	Machair	**N**
	Coastal Sand Dunes	**N**
Marine Habitats		**N**

7.4.2 Hedgerows

7.4.2.1 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 that 20m wide (Bickmore, 2002). Any bank, wall, ditch or tree within 2m of the centre of the hedgerow is considered to be part of the hedgerow habitat, as is the herbaceous vegetation within 2m of the centre of the hedgerow. All hedgerows consisting predominantly (i.e. 80% or more cover) of at least one woody UK native species are covered by this priority habitat, where each UK country can define the list of woody species native to their respective country. Climbers such as honeysuckle and bramble are recognised as integral to many hedgerows, however they require other woody plants to be present to form a distinct woody boundary feature, as such they are not included in the definition of woody species. The definition is limited to boundary lines of trees or shrubs, and excludes banks or walls without woody shrubs on top of them.

7.4.2.2 Based on an analysis of Countryside Survey data, using the threshold of at least 80% cover of any UK native woody species, it is estimated that 84% of countryside hedgerows in GB would be included. Hedgerows are a primary habitat for at least 47 species of conservation concern in the UK, including 13 that are globally threatened or rapidly declining, more than for most other key habitats. They are especially important for butterflies and moths, farmland birds, bats and dormice (where locally present).

7.4.2.3 Since 1945 there has been a continual decline in both the quantity and quality of the UK's native hedgerows either through removal or poor management practices. The Environment Act 1995 introduced an enabling power to protect important hedgerows in Britain. Land managers are required to consult local authorities before hedgerows can be removed. Article 10 of the EC Habitats Directive requires member states to encourage the management of linear features such as hedgerows in their planning and development policies and, in particular, with a view to improving the ecological coherence of the Natura 2000 network. This is supported by the Habitats and Species Regulations2010, which recognises the importance of these features for the migration, dispersal and genetic exchange of wild species. NPPF further encourages the development of policies for the management of

hedgerows.

7.4.2.4 UKBAP targets for hedgerows are:

- Maintain the net extent of hedgerows across the UK
- Maintain the overall number of individual, isolated hedgerow trees and the net number of isolated veteran trees;
- Ensure that hedgerows remain, on average, at least as rich in native woody species
- Achieve favourable condition of 348,000 km (50%) by 2015
- Reverse the unfavourable condition of over-managed hedgerows across the UK by reducing the proportion of land managers who trim most of their hedges annually
- Halt further decline in the condition of herbaceous hedgerow flora in Great Britain by 2010 (and improve their condition by 2015)
- Improve the condition of the hedgerow tree population by increasing numbers of young trees (1-4 years) in Great Britain to 80,000 by 2015 and
- Achieve a net increase in the length of hedgerows of an average of 800 km per year in Great Britain to 2015.

7.4.2.5 The criteria for an important hedgerow are one or more of the following:

- Marks a pre-1850 parish or township boundary.
- Incorporates an archaeological feature.
- Is part of, or associated with, an archaeological site.
- Marks the boundary of, or is associated with, a pre-1600 estate or manor.
- Forms an integral part of a pre-parliamentary enclosure field system.
- Contains certain categories of species of bird, animals or plants listed in the Wildlife and Countryside Act or Joint Nature Conservation Committee (JNCC) publications and includes:
  - (a) at least seven woody species, on average, in a 30m length.
  - (b) at least six woody species, on average, in a 30m length and has at least three associated features.
  - (c) at least six woody species, on average, in a 30m length including a black-poplar tree, or a large-leaved lime, or small-leaved lime, or wild service-tree.
  - (d) at least five woody species, on average in a 30m length and has at least four associated features.

7.4.2.6 Runs alongside a bridleway, footpath, road used as a public path, or a byway open to all traffic and includes at least four woody species, on average, in a 30m length and has at least two of the associated features listed at (i) or (v) below. The associated features are:

(i) a bank or wall supporting the hedgerow.
(ii) less than 10% gaps.
(iii) on average, at least one tree per 50m.
(iv) at least three species from a list of 57 woodland plants.
(v) a ditch.
(vi) a number of connections with other hedgerows, ponds or woodland.
(vii) a parallel hedge within 15m.

7.4.2.7 Based on the criteria above, the hedge on site does not meet the UKBAP Priority Habitat criteria for hedgerows.

7.4.2.8 If applicable, hedges should be cleared outside of the bird nesting season (i.e. clearance should be undertaken between mid-September and early February inclusive) or be carefully checked by an ecologist to confirm no active nests are present - prior to removal during the summer period. If nesting birds are found during the watching brief, works will need to stop until the young have fledged. **Permission should be granted from the planning authority prior to removing a hedge.**

7.4.2.9 During the construction period, it is important that a root protection exclusion zone is in place adjacent to any hedgerow. This must be at least 5m from the centre of the hedge and must be kept free of plant and storage of building supplies.

7.4.2.10 The hedgerows bounding the site should ideally be maintained to a minimum height of at least 2m and kept free of fertilisers, pesticides and development on land within 3m of the hedge centre. The long term management of these hedges will add to their biodiversity value; the hedge should be cut only once every three calendar years and should not be cut between the beginning of February and mid-September to ensure breeding birds are not disturbed. Hedge cutting should be occur outside of the bird nesting season (i.e. clearance should be undertaken between mid-September and early February inclusive) or be carefully checked by an ecologist to confirm no active nests are present - prior to removal during the summer period. Cutting the hedge in January will provide maximum quantities of food for birds over winter.

7.4.2.11 The hedgerows should be trimmed every three years at the end of winter, avoiding periods of hard frost. This is to maintain the current shape and condition of the hedgerows. Hedgerows less than 2m in height should be lightly trimmed along the sides annually until a desired height of at least 2.5m is reached.

7.5 Species

7.5.1 Bats

7.5.1.1 Specially designed bat boxes can be located on site. Schwegler Bat Boxes are recommended and well tested boxes. The following bat boxes provide additional roost habitats and are available from Wold Ecology:

- Bat Tube (**1FR** and **2FR**) system. The tube is designed to meet behavioural requirements of the types of bats that roost in buildings i.e. pipistrelle spp. This design can be installed flush to external walls and beneath a rendered surface.

7.5.1.2 The majority of these boxes are self-cleaning as they are designed so that the droppings fall out of the entrance. This reduces the possibility of smell during the summer months. For more information on designs and installation of bat boxes see: www.schwegler-natur.de and www.bct.org.uk.

7.5.1.3 Wold Ecology recommends that at least 2 bat boxes are sited on perimeter trees or new buildings on site. Bat boxes should be erected on south, east or west elevations; 3-5 metres above ground level or close to roof lines.

7.5.1.4 Lighting

7.5.1.4.1 Lighting has a detrimental effect on bat activity; many bats will actually avoid areas that are well lit. Lighting can cause habitat fragmentation by preventing bats from commuting between roosts and foraging grounds (A.J Mitchell-Jones 2004).
The principles are:

- Reduce or remove the UV component of light emitted. To achieve this, a lamp that does not emit UV or a filtration product is recommended
- External lighting requirements will be carefully designed to avoid light spillage affecting foraging bats and bat box entrances. Thus creating a dark and green infrastructure and can be achieved by using hoods, cowls, shields and louvers. Planting or manmade barriers can also protect against light spillage.
- Security lighting will be on a short timer and motion sensitive to large objects only.
- Use of timers to reduce the hours lit and tailors this specifically to wildlife affected.
- Lights will not be mounted where they will shine directly on to the surrounding hedgerow or tree habitat used by foraging bats.

7.5.1.5 Habitat enhancements

7.5.1.5.1 Freshwater, woodland, grassland, urban gardens, trees and amenity green space are suitable foraging habitats for bats whilst linear habitats such as hedgerows and streams are particularly important commuting routes between roosts and foraging ground. It is recommended that the natural landscape remains largely unchanged and as many mature trees are retained on the site to continue to provide cover and feeding grounds. Landscaped areas can provide good foraging grounds for bats. Areas can be improved by growing night-scented flowers and other flowers favoured by insects. More information on suitable planting to encourage bats obtained from The Bat Conservation Trust (www.bats.org). Suitable species include:

- Foxglove *Digitalis purpurea*
- Cowslip *Primula veris*
- Red campion *Silene dioica*
- Marjoram *Origanum vulgare*
- Ox-eye daisy *Leucanthemum vulgare*
- Red clover *Trifolium pratense*
- Evening primrose *Oenothera biennis*.
- Honeysuckle *Lonicera periclymenum.*
- Wild Clematis *Clematis virginiana*

7.5.2 Birds

7.5.2.1 It is concluded that the study site is a good habitat for woodland edge and urban bird species with various designations. There is nesting potential for a range of bird families such as finches, tits, sparrows, thrushes and chats. Several simple management prescriptions can improve the site for breeding bird species.

7.5.2.2 Any trees, shrubs and vegetation to be removed should be cleared outside of the bird nesting season (i.e. clearance should be undertaken between mid-September and early February inclusive) or be carefully checked by an ecologist to confirm no

active nests are present - prior to removal during the summer period. If nesting birds are found during the watching brief, works will need to stop until the young have fledged. Since a number of nests are active, work will need to wait until fledging has occurred, then trees should be removed immediately to avoid other nests being created.

7.5.2.3 In order to increase nesting opportunities for birds, it is recommended that 4 Schwegler bird boxes are erected throughout the site. A summary of recommended bird boxes are listed below:

Name	Description	Number
Schwegler Nest Box 1B	Entrance hole 32 mm.	1
Schwegler Nest Box 1B	Entrance hole 26 mm.	1
Schwegler Nest Box 2GR	Oval entrance hole.	1
Starling box 3S	Oval entrance hole.	1

7.5.2.4 Boxes should be attached to trees using wire where possible, it is important that nails are not used as they damage the tree, get pushed out as the tree grows and can damage chainsaw blades and cause injury if the tree is felled.

7.5.2.5 Boxes should be placed so that the entrance does not face the prevailing wind, rain and strong sunlight. The sector from north to south east should be used, with south facing boxes positioned in more shaded areas. Boxes should be positioned away from the damp side of the tree trunk, usually told by algae, lichen and moss growth. Boxes should also be angled downwards to stop rain blowing into them.

7.5.2.6 Many species will use boxes at a wide variety of heights however to give the box protection in areas with a lot of human or mammalian predator activity they should be placed approximately 3-4 metres above ground level. A clear flight path should be available to and from the nest box.

7.5.2.7 Boxes should be placed at a density of approximately 10 per hectare within woodland like that on the site. This will help ensure that competition is not too great for more timid species such as marsh tits and coal tits. Metal plates should be fitted to the front of the boxes to stop grey squirrels and brown rats enlarging the entrance holes and predating the nestlings and eggs.

7.5.3 Hedgehogs

7.5.3.1 Care must be taken whilst carrying out vegetation clearance, or strimming. A thorough check of the vegetation prior to removal will help ensure that no hedgehogs are injured or killed during development works. Sleeping hedgehogs frequently suffer severe injuries from strimmers.

7.5.3.2 Avoid setting fire to piles of vegetation unless they have been turned, checked or moved immediately prior to burning. Hedgehogs often get killed or injured in fires during vegetation removal ad during early November.

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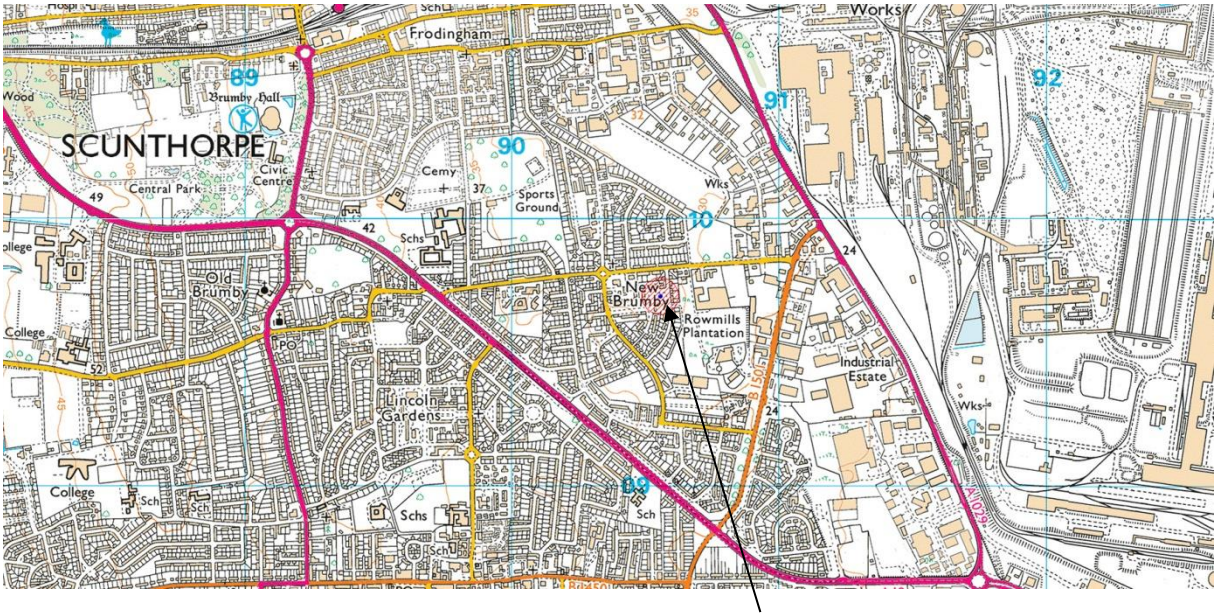
9.0 APPENDICES

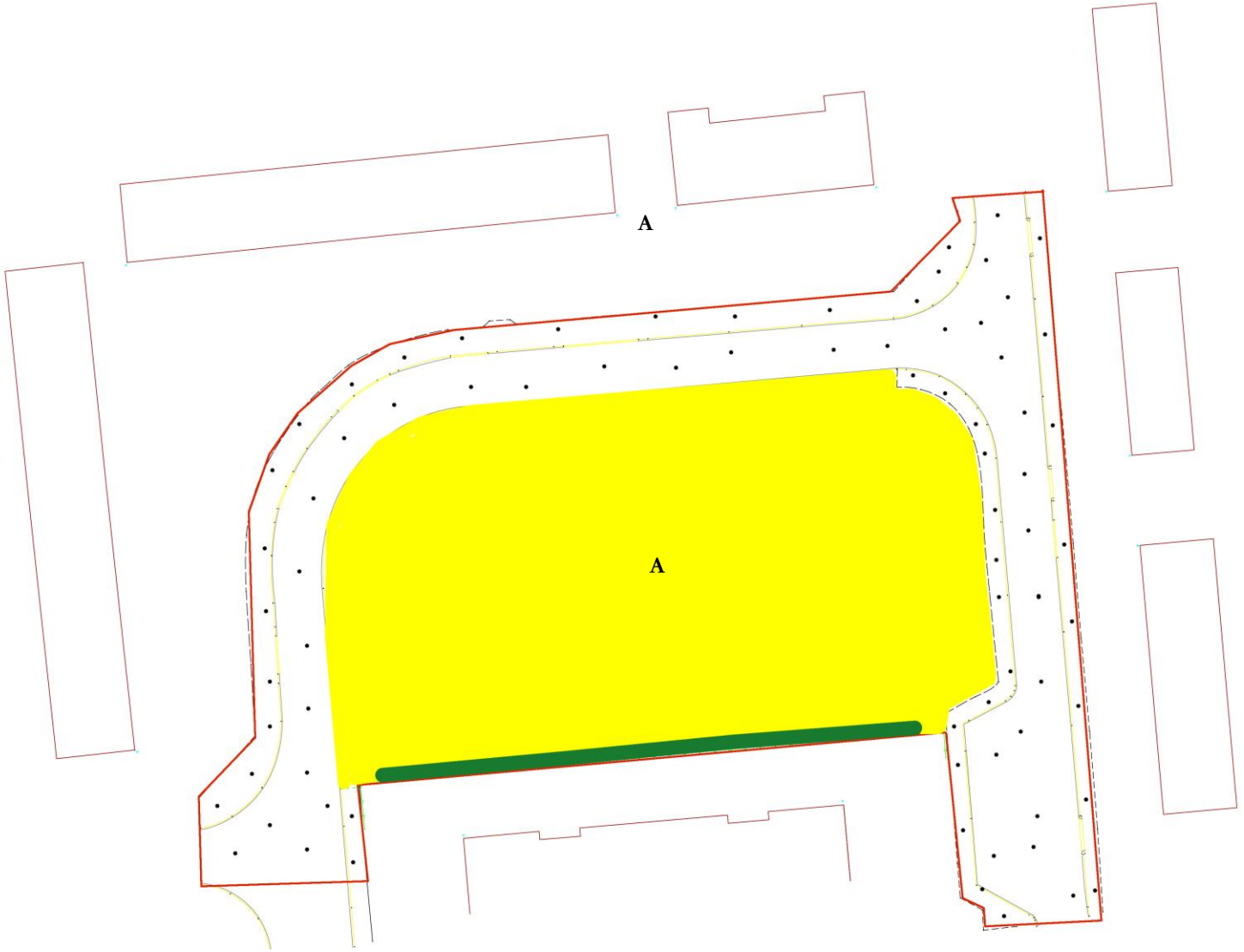
9.1 Appendix 1 –Location map



Scale 1 : 25,000

Application Site

9.2 Appendix 2 - Phase 1 Map



NORTH

Not to Scale

Drawing title :
Phase 1 Habitat Map

	Intact hedge
A	Amenity grassland
• •	Bare ground
	Site boundary

WOLD ECOLOGY LTD

2 Redwood Gardens
Driffield
East Yorkshire
YO25 6XA

T : 01377 200242
E : info@woldecology.co.uk
W : www.woldecology.co.uk

9.3 Appendix 3–Summary of desktop study

Organisation.	Response Summary.	Date.
Natural England.	Local designations.	September 2016
Natural England.	UKBAP species and habitats within 2 km of the Application Site.	September 2016
Lincolnshire Ecological Record Centre.	Species lists within 2 km of the Application Site.	September 2016
National Biodiversity Network.	Species lists within 2 km of the Application Site.	September 2016
www.magic.gov.uk	European Protected species licenses within 2km of the Application Site.	September 2016

9.4 Appendix 4 - Protected Species Legislation

The following provides background to the current legislation in England - for full details reference should be made to the relevant legislation. A number of wild animals are classified as Protected Species as they are protected by various pieces of legislation. The most commonly encountered Protected Species of animal are listed in the table below. This table summarises which sections of legislation each species is protected by and the legislative text is provided on the following pages.

Legislation	Schedule 5 Wildlife and Countryside Act 1981 (As amended) Part 1							EPS	PBA
	S1 (1)	S1 (4 & 5)	S9 (1)	S9 (2)	S9 (4)(a)	S9 (4)(b)	S9 (5)		
Adder ***Vipera berus***			✓*				✓		
Common lizard ***Zootoca vivipara***			✓*				✓		
Grass snake ***Natrix natrix***			✓*				✓		
Slow worm ***Anguis fragilis***			✓*				✓		
Smooth snake ***Coronella austriaca***			✓	✓	✓	✓	✓	✓	
Sand lizard **Lacerta agilis**			✓	✓	✓	✓	✓	✓	
Great Crested Newt ***Triturus cristatus***			✓	✓	✓	✓	✓	✓	
Natterjack Toad ***Epidalea calamita***			✓	✓	✓	✓	✓	✓	
All UK bats **Chiroptera**			✓	✓	✓	✓	✓	✓	
Water vole ***Arvicola amphibious***			✓	✓	✓	✓	✓		
Otter ***Lutra lutra***			✓	✓	✓	✓	✓	✓	
Dormouse ***Muscardinus avellanarius***			✓	✓	✓	✓	✓	✓	
Badger ***Meles meles***									✓
Red Squirrel			✓	✓	✓	✓	✓		

Sciurus vulgaris									
Pine Marten ***Martes martes***			✓	✓	✓	✓	✓		
Scottish Wildcat ***Felis silvestris silvestris***			✓	✓	✓	✓	✓	✓	
White-clawed crayfish ***Austropotamobius pallipes***			✓				✓		
All Nesting birds	✓								
Specific Nesting birds i.e. Barn Owl, Black Redstart	✓	✓							

S = Section
( ) = Paragraph
EPS = European Protected Species i.e. listed under Regulation 40 of the Conservation (Natural Habitats &c.) Regulations 2010
PBA = Protection of Badgers Act 1992
*** = Only part of this section**

Legislative Text

Wildlife and Countryside Act 1981 (as amended)

Since its original enactment, the Wildlife and Countryside Act has been subject to many changes (notably via Schedule 12 of the Countryside and Rights of Way Act 2000). These have in particular affected penalties and enforcement. Offences under section 9 of the Act are now 'arrestable'. Enforcement is usually by the Police and less frequently by Natural England. However, section 25(2) of Wildlife and Countryside Act also states that a local authority may institute proceedings. Prosecutions can result in a level five fine (currently £5000) for each offence (and the Act is specific that killing/injuring of each individual animal can constitute a separate offence), the forfeiture of any equipment, etc., used to perpetrate that offence and (under the Countryside and Rights of Way Act 2000) up to six months imprisonment.

The Wildlife and Countryside Act 1981 (as amended), transposes into domestic law the Convention on the Conservation of European Wildlife and Natural Habitats (the Bern Convention). It is an offense under the various sections of Part 1 of the Act to -

S.1(1) intentionally kill, injure, or take any wild bird or their eggs or nests.

S.1(4) intentionally or recklessly kill, injure, or take any wild bird listed on Schedule 1 of the Act, or their eggs or nests (special penalties apply if convicted) (For a full list of Schedule 1 bird species see the full text of the Wildlife and Countryside Act 1981 [as amended])

S.1(5) (a) disturb any wild bird listed on Schedule 1 while it is building a nest or is in, on or near a nest containing eggs or young; or
(b) disturb dependent young of such a bird

S.9(1) intentionally or recklessly kill, injure or take any wild animal included in Schedule 5 (certain reptiles are only protected from killing and injuring);

S.9(2) be in possession or control of any live or dead wild animal included in

Schedule 5 or any part or derivative;

S.9(4)(a) intentionally or recklessly damage or destroy, or obstruct access to, any structure or place used by a Schedule 5 animal for shelter or protection;

S.9(4)(b) disturb any such animal while it is occupying such a structure or place which it uses for that purpose

S.9(5)(a) sell, offer for sale, possess or transport any live or dead wild animal included in Schedule 5 for the purpose of sale or any part or derivative;

S.9 (5) (b) advertise for buying or selling such things.

European Protected Species (EPS)

EPS and their breeding sites or resting places are protected under Regulation 41 of the Conservation of Habitats & Species Regulations, 2010. These Regulations transpose Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law.

A person who—
(a) deliberately captures, injures or kills any wild animal of a European protected species,
(b) deliberately disturbs wild animals of any such species,
(c) deliberately takes or destroys the eggs of such an animal, or
(d) damages or destroys a breeding site or resting place of such an animal, is guilty of an offence.

For the purposes of paragraph (b), disturbance of animals includes in particular any disturbance which is likely—
(a) to impair their ability—
(i) to survive, to breed or reproduce, or to rear or nurture their young, or
(ii) in the case of animals of a hibernating or migratory species, to hibernate or migrate; or

(b) to affect significantly the local distribution or abundance of the species to which they belong.

(However, please note that the existing offences under the Wildlife and Countryside Act, which cover obstruction of places used for shelter or protection (for example, a bat roost), disturbance and sale, still apply to EPS.)

These actions can be made lawful through the granting of licenses by the appropriate authorities, e.g. Natural England. Licenses may be granted for a number of purposes (such as science and education, conservation, preserving public health and safety), but only after the appropriate authority is satisfied that there are no satisfactory alternatives and that such actions will have no detrimental effect on the wild population of the species concerned.

Protection of Badgers Act 1992 (PBA)

The main legislation protecting badgers is the Protection of Badgers Act 1992. This Act consolidates all previous legislation including the Badgers Act 1973 (as

amended) and the Badgers (Further Protection) Act 1991. Under the 1992 Act it is an offence to:

- destroy a sett
- interfere with a badger sett by damaging a sett or any part thereof
- obstruct access to a sett
- disturb a badger while occupying a sett
- wilfully kill, injure, take or attempt to kill, injure or take a badger;
- dig for a badger
- possess a dead badger or any part of a badges
- cruelly ill-treat a badger
- use badger tongs in the course of killing, taking or attempting to kill a badger
- sell or offer for sale or control any live badger
- mark, tag or ring a badger
- cause a dog to enter a sett

The 1992 Act defines a badger sett as: "any structure or place which displays signs indicating current use by a badger". Since development operations may take place over a protracted period, Natural England recommends that licences be sought for developments that may affect seasonally–used setts as well as main setts. Natural England considers a good guide to be that if a sett has shown signs of occupation within the past twelve months it is considered active.

The Protection of Badgers Act 1992 allows for licences to be issued for a number of purposes, including development under the Town and Country Planning Act 1990 and to prevent serious damage to property. Licences to interfere with badger setts or disturb badgers for development are issued by the Government's statutory nature conservation agencies, e.g. Natural England.

9.5 Appendix 5 - Staff Profiles

Surveyor Profile – Chris Toohie M Sc., MCIEEM.

Job title : Director.

Career Summary.

- Chris has worked in the environmental sector for all of his working life. He is an experienced and competent site manager with well-developed organisational skills and a proven ability to deal with a variety of situations in pressurised and challenging environments. As the former site manager of Millington Wood Site of Special Scientific Interest (SSSI), Beverley Parks Millennium Orchard Local Nature Reserve and three reserves on the Flamborough Head Heritage Coast/SSSI, Chris has gained an understanding of the functioning of local government and the skills to operate within such structures and multicultural environments. Chris completed over 14 years within local authority countryside services.
- Chris has also instigated accreditation from the Forest Stewardship Council at all East Riding of Yorkshire Council owned woodlands. As group manager, Chris ensures compliance with the UK Woodland Assurance Standard and demonstrates that the woodlands are managed in a socially, economically and environmentally sustainable manner.
- Chris is currently heavily involved in local projects and has volunteered his

time and resources to benefit local conservation projects that include The Wolds Barn Owl Study Group, North Cliff Marsh Flamborough and apple conservation. As a trustee of Driffield's Millennium Green, Chris has allocated his own time and financial resources to enhance the ecological value of the site.

- Chris is an excellent communicator and his enthusiasm for his work has enabled the successful deliverance of numerous conservation schemes. Chris has been instrumental in raising over £100,000 for environmental and community projects since 2005. These have included grants from Natural England, landfill tax credits and Heritage Lottery funding.

Project Experience in last 5 years.

- Chris has undertaken over 750 bat activity surveys since 2006 including writing and implementing Natural England bat development licenses. Successful projects have included the conservation of maternity roosts at Low Catton, Watton, Harwood Dale, Woodhall Spa and Myton on Swale.
- Phase 1 surveys and biodiversity assessments have included National Nature Reserves, SSSI's, local wildlife sites and urban sites; specifically Chris has undertaken ecological surveys at Raincliffe Wood SSSI, sections of Hadrian's Wall and numerous English Heritage Castles. Reports have also meet BREEAM/CODE criteria, when applicable.
- Contracts have included Natural England, English Heritage, East Riding of Yorkshire Council, Scarborough Borough Council, NPS London, Hull City Council, Gateway, Riverside Housing, IMS Windpower, Kier London Ltd, NHS, Castle Howard Estates, Stroma and Pell Frischman.

Surveyor Profile – Daniel Lombard B Sc. (Hons), MCIEEM.

Job title: Ecologist.

Career Summary.

- Daniel has spent all his working life in the environmental sector. He is an experienced and competent field ecologist with proven skills in species identification across a range of biota and an in-depth appreciation of many aspects of biodiversity, ecology and biology.
- Upon leaving University Daniel volunteered with a range of conservation organisations including The Wildlife Trust, North York Moors National Park, BTO and RSPB.
- He briefly operated as a freelance ecologist before starting full time at Wold Ecology.
- Daniel is currently involved in a number of local projects in which he has volunteered his time and resources. He is a member of Filey Bird Observatory and acts as the recorder for both Dragonflies and Butterflies within the group.
- He acts as an ecologist giving free advice to the Yorkshire branch of Butterfly Conservation including habitat management plans and field surveys. He also contributes to the BTO bird ringing scheme, helping in the scientific study birds.
- Daniel also contributes to national invertebrate, bird, fungi and mammal recording schemes.

Project Experience in last 5 years.

- Daniel has undertaken over 300 bat activity surveys since 2010 including dawn and dusk surveys at a range of sites across England.
- Daniel specialises in reptile, amphibian, bird and mammal surveys and has undertaken a wide range of surveys for species including otter, water vole, badger, adder, grass snake, common lizard, slow worm and great crested newt. This includes writing and contributing towards mitigation strategies and habitat enhancements where appropriate. He has also contributed to white clawed crayfish surveys.
- Daniel has undertaken a large number of Phase 1 surveys, EIA assessments and biodiversity assessments as well as both BREEAM and CODE reports.
- Daniel has undertaken and helped supervise a seabird surveys on the North Yorkshire coastline at an internationally important seabird colony on the behalf or Natural England and the Environment Agency. This has involved leasing with a variety of conflicting stakeholders to mitigate against potential adverse impacts to the colony.

9.6 Appendix 6 – Identification of Legal and Planning Policy Issues in England

Scope of Assessment

The first step is to identify any biodiversity features found on the site that are subject to legal or policy controls, as follows:

Designated Sites

The location of the site is compared to the distribution of sites with a statutory or non-statutory nature conservation designation using information derived from the desk study. Consideration is given to designated sites that could be affected directly or indirectly by the proposed development.

Habitats outside Designated Sites

The habitats known to occur on the site are compared to those which receive some protection, in law or policy, outside of designated sites i.e. hedgerows, uncultivated land and semi-natural areas, habitats listed as Priorities in the UKBAP, habitats listed as Habitats of Principal Importance for the Conservation of Biodiversity by the Secretary of State and habitats listed as requiring action in the Local Biodiversity Action Plan.

Ancient Woodland

The ancient woodland inventory is checked to determine whether any known ancient woodland occurs either on the site or nearby.

Protected Species

The species known to occur on the site as a result of the desk study and Phase 1 habitat survey are compared with those listed in nature conservation legislation i.e. the Wildlife and Countryside Act 1981, as amended, and the Habitats and Species Regulations 2010, as amended.

In addition, the species known to occur on the site as a result of the desk study and Phase 1 habitat survey are compared with those listed in animal welfare legislation, i.e. the Badgers Act 1992 and the Wild Mammals (Protection) Act 1996.

Biodiversity Action Plan Priority Species

The species known to occur on the site are compared with those listed as Priorities in the UKBAP, Species of Principal Importance for the Conservation of Biodiversity by the Secretary of State or requiring action in the Local Biodiversity Action Plan.

Other Species of Conservation Concern
The species known to occur on the site are compared with other nature conservation listings, such as red data books.

Invasive Plant Species
The species of plant present on the site are compared with those listed by government agencies as invasive non-natives, with particular attention given to those listed in the Wildlife and Countryside Act.

Review of Legislation and Policy

If any of the above are found to occur on or near the site and are likely to be affected by the development in any way, the relevant legislation and planning policy (including national, regional, county and borough policies) are examined to determine whether the proposed development is compliant.

Ecological Enhancement
Planning policy generally requires new developments to be enhanced for biodiversity. The existing proposals are considered to determine whether biodiversity enhancements are offered and whether they are adequate to meet the policy requirements. Again, national, regional, county and borough policies are considered.

Identification of Potential Further Ecological Issues
Further ecological issues are those which cannot be resolved during the desk study and extended Phase 1 habitat survey for any reason, including the following:

- The development is near a designated site and consultation with the relevant regulator is required in order to determine whether further assessment is required;
- Suitable habitat is present on or near the site for a protected species/species of conservation concern and specialist survey techniques are required for their detection;
- Suitable habitat is present on or near the site for a protected species/species of conservation concern and the extended Phase 1 habitat survey was not undertaken at a suitable time of year for their detection;
- A protected species/species of conservation concern was found on or near the site but further information on population size or distribution is required in order to resolve any legal and planning policy issues (such as obtaining licences).

Discussion of issues raised by 3rd parties, e.g. reports of protected species from the site by local people, may also be discussed under this heading.

The desk study is used as a guide to the protected species/species of conservation in the local area, however, the list is not taken to be exhaustive and it is borne in mind that some species may no longer occur in the locality.

No attempt is made to evaluate the importance of the site for species not yet

confirmed to be on or near the site, nor to discuss the implications for the development if the species were to be found on the site.