

# ECOLOGICAL APPRAISAL

## HEMLINGTON NORTH, MIDDLESBROUGH



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DRAFT

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## A. SUMMARY

E3 Ecology Ltd was commissioned by Middlesbrough Council in June 2018 to undertake an Ecological Appraisal of Hemlington North Development Site, Middlesbrough.

At this stage development plans are not available.

Consultation with the MAGIC website<sup>1</sup> indicated that Stainton Quarry Local Nature Reserve (LNR) lies 2km west of the site. ERIC NE records revealed five Middlesbrough Local Wildlife Sites within 2km of the site.

Ecological Appraisal indicated the site comprises improved grassland, hedgerows with trees and a stream. The habitats present are considered to be of up to local value.

The site is considered suitable to support small numbers of foraging and breeding garden birds within the hedgerows and trees. There is low potential for ground-nesting birds as it is open to the north, regularly mown and likely to be frequented by dog walkers. The site is considered to be up to local value for birds.

No field evidence of badger was observed on site or within 50m of accessible areas from the site boundary. The site has low commuting and foraging potential for badgers with main roads to the north and east and high levels of human disturbance.

The hedgerows on site provide potential foraging and commuting habitats for bats and some linkages to the wider area. However, the small size of the site and high levels of light and noise pollution limits the site value to low suitability for bats. Two mature ash trees on site are considered to have moderate bat roosting potential, with a third having low potential; these are within or very close to the hedgerows. At this stage it is unknown if these will be retained under the proposals; if impacts on them are likely further survey work will be required to ascertain their use by bats.

There are no waterbodies on site suitable for great crested newt (GCN). The improved grassland provides suboptimal opportunities for GCN in their terrestrial phase due to the short sward and regular disturbance. Better opportunities are available within the hedge and scrub around the periphery of the site. The nearest pond on aerial maps is 220m south-west of the site. It is on private land and within a building development site so could not be inspected during the survey. No records were returned by ERIC NE for great crested newts within 2km of the site. Previous survey work by E3 confirm that they were historically present in the wider area. Further investigation is required to confirm whether this pond is present and a Habitat Suitability Index (HSI) assessment for great crested newts should be undertaken, if so.

The stream provides very limited suitable habitat for water vole due to the lack steep sides for burrowing, lack of suitable vegetation, the culverting and high levels of disturbance and is also considered unsuitable for otter. The nearest records for water vole are 700m north-west of the site along Blue Bell Beck. Given the lack of linkage between the beck and the drainage stream and the presence of a busy main road they are unlikely to be present on site.

Due to a lack of suitable habitats on site and lack of connectivity to other areas of suitable habitat red squirrel, reptiles, white-clawed crayfish, priority species of butterfly and brown hare are considered highly unlikely to occur on site. There is low potential for hedgehog and common toad to forage and commute across the site on occasion.

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<sup>1</sup> MAGIC website: [www.magic.gov.uk](http://www.magic.gov.uk)

No other protected or priority species is likely to be affected by the proposals.

Detailed plans are required to finalise impacts and mitigation requirements. However, based on the preliminary assessment, potential impacts of the development are anticipated to include:

- Loss of habitats of up to local value if hedgerows and trees are removed;
- loss of 0.6ha of improved grassland of low habitat value;
- pollution of the stream through contamination or run off during and post construction;
- loss of habitat with low potential to support foraging and commuting badger;
- harm/disturbance to amphibians should they be present on site;
- loss of habitat of up to local value to support hedgehogs;
- potential loss of hedgerows and trees of up to local value for nesting birds if removed, and harm/disturbance to nesting birds should vegetation removal be undertaken during the nesting period;
- impacts on trees that have the potential to support roosting bats;
- disturbance to bats foraging, roosting and/or commuting across the site from increased lighting; and
- loss of habitats with low suitability to support foraging and commuting bats.

Key mitigation measures are likely to include:

- It is recommended that the hedgerows and trees around the periphery of the site are retained and protected during development. Lighting of these areas should be avoided or low level and low lux;
- vegetation clearance/tree felling will be undertaken outside of the bird nesting season (March to August inclusive) unless a checking survey by a suitably experienced ornithologist confirms the absence of active nests;
- any excavations left open overnight will have a means of escape for mammals that may become trapped in the form of a ramp at least 300mm in width and angled no greater than 45°;
- the roots and crowns of retained trees will be protected throughout the development through the provision of adequate construction exclusion zones in accordance with the guidance given by BS5837:2012; and
- works near the stream will be carried out in line with pollution prevention guidelines (formerly the Environment Agency's PPG5); and
- all site works will be undertaken in accordance with the attached amphibian method statement.

The local planning authority is likely to require the means of delivery of the mitigation to be identified. It is recommended that mitigation and enhancement proposals are incorporated into the planning documents.

Without detailed development plans full impacts cannot be considered at this stage, however ecological proposals provide an opportunity for wildlife benefit through bat and bird boxes and native planting, contributing to local and national conservation targets.

**Before this report can be used to support a planning application it is recommended that:**

- If the two trees with moderate bat roosting potential are to be lost as part of the development proposals it is recommended that further surveys are carried out to determine the use of the trees by bats. It is also recommended that the tree classified as low roosting potential is inspected due to the difficulties in observing potential features from the ground;

- 
- further investigation is carried out to determine the presence of the pond 220m south-west of the site. If the pond is present a HSI assessment should be undertaken; if there is potential for great crested newts to be present further presence/absence surveys or eDNA survey may be required; and
  - final development plans are provided to allow completion of a detailed impact assessment and design of appropriate mitigation.

*If you are assessing this report for a local planning authority and have any difficulties interpreting plans and figures from a scanned version of the report, E3 Ecology Ltd would be happy to email a PDF copy to you. Please contact us on 01434 230982.*



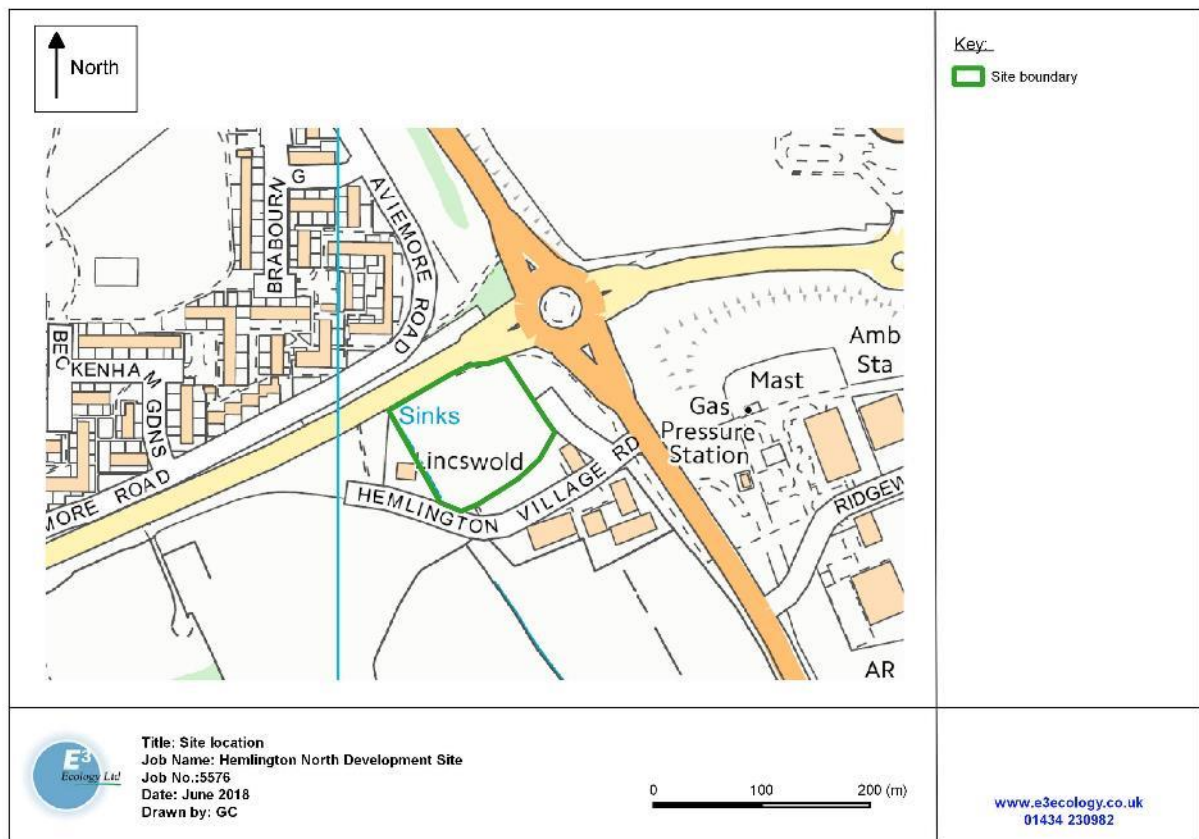
## B. INTRODUCTION

E3 Ecology Ltd was commissioned by Middlesbrough Council in June 2018 to undertake an Ecological Appraisal of Hemlington North Development Site.

The purpose of this report is:

- To identify and describe all potentially significant ecological effects associated with the proposed development; and
- To identify any further ecological survey work required to inform the development.

The site is located in Hemlington, Middlesbrough at an approximate central grid reference of NZ 5009 1433. The site location is illustrated in the figure below.



**FIGURE 1: SITE LOCATION**  
(OS mapping © Crown copyright and database rights 2016/2017 OS 0100039392)

The development plans are not available at this stage.



## C. PLANNING POLICY AND LEGISLATIVE CONTEXT

### C.1 NATIONAL PLANNING POLICY

The table below details the key paragraphs from the National Planning Policy Framework (NPPF)<sup>2</sup> relating to the natural environment:

TABLE 1: NATIONAL PLANNING POLICY FRAMEWORK: NATURAL ENVIRONMENT	
Statement	Paragraph
The planning system should contribute to and enhance the natural and local environment by: <ul style="list-style-type: none"> <li>o Recognising the wider benefits of ecosystem services;</li> <li>o Minimising impacts on biodiversity and providing net gains in biodiversity where possible</li> </ul>	109
Planning policies and decisions should encourage the effective use of land by re-using land that has been previously developed (brownfield land), provided that it is not of high environmental value.	111
Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife sites will be judged. Distinctions should be made between the hierarchy of international, national and locally designated sites so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks	113
To minimise impacts on biodiversity, planning policies should: <ul style="list-style-type: none"> <li>o Promote the preservation, restoration and re-creation of priority habitats ecological networks and the protection and recovery of priority species populations, linked to national and local targets</li> </ul>	117
When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principals: <ul style="list-style-type: none"> <li>o If significant harm resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;</li> <li>o Development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;</li> <li>o Opportunities to incorporate biodiversity in and around developments should be encouraged;</li> <li>o Planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees, found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss</li> </ul>	118
By encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation	125

Section 40 of the Natural Environment and Rural Communities Act 2006, places a duty on all public authorities in England and Wales to have regard, in the exercise of their functions, to the purpose of conserving biodiversity.

Planning Practice Guidance<sup>3</sup> states:

- *'The National Planning Policy Framework is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that*

<sup>2</sup> National Planning Policy Framework (March 2012), Department for Communities and Local Government,

<sup>3</sup> Planning Practice Guidance: Natural Environment ([www.planningguidance.communities.gov](http://www.planningguidance.communities.gov))

*a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution’ (para. 007).*

- *‘Information on biodiversity impacts and opportunities should inform all stages of development .... An ecological survey will be necessary in advance of a planning application if the type and location of development are such that the impact on biodiversity may be significant and existing information is lacking or inadequate’ (para. 016).*
- *‘Where an Environmental Impact Assessment is not needed it might still be appropriate to undertake an ecological survey, for example, where protected species may be present’ (para. 016).*
- *‘Local planning authorities should only require ecological surveys where clearly justified, for example if they consider there is a reasonable likelihood of a protected species being present and affected by development. Assessments should be proportionate to the nature and scale of development proposed and the likely impact on biodiversity’ (para. 016).*
- *‘Biodiversity enhancement in and around development should be led by a local understanding of ecological networks, and should seek to include:*
  - *habitat restoration, re-creation and expansion;*
  - *improved links between existing sites;*
  - *buffering of existing important sites;*
  - *new biodiversity features within development; and*
  - *securing management for long term enhancement’ (para. 017).*

## C.2 PROTECTED SPECIES LEGISLATION

The table below details the relevant legislation for those protected species that may be present on this site.

TABLE 2: SUMMARISED SPECIES LEGISLATION		
Species	Relevant Legislation	Level of Protection
<b>Bats (All species)</b>	<ul style="list-style-type: none"> <li>• Protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended</li> <li>• Classified as European protected species under Conservation of Habitats and Species Regulations 2017</li> <li>• Bats are also protected by the Wild Mammals (Protection) Act 1996</li> </ul>	<p>The WCA (1981) and Conservation of Habitats and Species Regulations 2017 make it an offence to:</p> <ul style="list-style-type: none"> <li>• Intentionally kill, injure, or take any species of bat</li> <li>• Intentionally or recklessly disturb bats</li> <li>• Intentionally or recklessly damage destroy or obstruct access to bat roosts</li> </ul>
<b>Birds</b>	<ul style="list-style-type: none"> <li>• Protection under the Wildlife and Countryside Act (1981) as amended with the exception of some species listed in Schedule 2 of the Act</li> </ul>	<p>The WCA (1981) makes it an offence to (with exceptions for certain species):</p> <ul style="list-style-type: none"> <li>• Intentionally kill, injure or take any wild bird</li> <li>• Intentionally take, damage or destroy nests in use or being built (including ground nesting birds)</li> <li>• Intentionally take, damage or destroy eggs</li> <li>• Species listed on Schedule 1 of the WCA or their dependant young are afforded additional protection from disturbance whilst they are at their nests</li> </ul>
<b>Badger</b>	<ul style="list-style-type: none"> <li>• Protection of Badgers Act 1992</li> <li>• Badgers are also protected by the Wild Mammals (Protection) Act 1996</li> </ul>	<p>The Protection of Badgers Act (1992) makes it an offence to intentionally or recklessly:</p> <ul style="list-style-type: none"> <li>• Damage a badger sett or any part of it</li> <li>• Destroy a badger sett</li> <li>• Obstruct access to, or any entrance of a badger sett</li> </ul>

Species	Relevant Legislation	Level of Protection
		<ul style="list-style-type: none"> <li>Disturb a badger whilst it is occupying a badger sett</li> </ul>
<b>Great Crested Newt</b>	<ul style="list-style-type: none"> <li>Protection under the Wildlife and Countryside Act (WCA) (1981) (Listed on Schedule 5) - as amended</li> <li>Classified as European protected species under Conservation of Habitats and Species Regulations 2017</li> </ul>	<p>The WCA (1981) and Conservation of Habitats and Species Regulations 2017 make it an offence to:</p> <ul style="list-style-type: none"> <li>intentionally kill, injure, or take great crested newts</li> <li>intentionally or recklessly disturb great crested newts</li> </ul> <p>intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection</p>
<p><i>Under the Countryside and Rights of Way Act 2000 (CROW Act) the offence in section 9(4) of the Wildlife and Countryside Act 1981 of damaging a place of shelter or disturbing those species given full protection under the act is extended to cover reckless damage or disturbance.</i></p>		

### C.3 INVASIVE SPECIES LEGISLATION

The table below details the legislation in relation to invasive species and lists those invasive species most likely to be found in this region.

Relevant Legislation	Description of Offence	Species <i>(Covered by the Legislation and most likely to be found in this Region)</i>
Listed on Part II of Schedule 9 of the Wildlife and Countryside Act (1981 as amended)	<p>Section 14 of the WCA (1981) states:</p> <ul style="list-style-type: none"> <li>if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence.</li> </ul>	<p>Himalayan balsam Cotoneaster Montbretia Japanese knotweed Giant hogweed Rhododendron</p>

### C.4 PROTECTED SITE LEGISLATION

Details of the legislation surrounding protected sites are provided in the appendices.

### C.5 PRIORITY SPECIES

Although not afforded any legal protection, national priority species (species of principal importance, as listed in Section 41 of the NERC Act (2006)), and local and regional priority species, as detailed within the relevant biodiversity action plans, are material considerations in the planning process and as such have been assessed accordingly within this report.

The table below details the local biodiversity action plan relevant to the area within which this site lies, and the species/species groups and habitats listed as priorities within the plan.

Species				Habitats	
Barn Owl	Ringed Plover	Grey Partridge	Tree Sparrow	Traditional Orchards	Semi-natural Broadleaved Lowland Woodland

**TABLE 4: TEES VALLEY BIODIVERSITY ACTION PLAN**

Little Tern	Corn Bunting	Shelduck	Wagtail Yellow	Reedbeds	Rivers & Streams
Bittern	Swift	Purple Milk- vetch	Water Violet	Arable field Margins	Roadside Verges
Globeflower	Pepper saxifrage	Tufted Sedge	Knotted hedge- parsley	Lowland Meadows	Sand Dunes
Yellow Star of Bethlehem	Burnt Orchid	Green Winged Orchid	Strawberry Clover	School Grounds	Maritime Cliffs and Slopes
Flat Sedge	Small Leaved Lime	Black Poplar	Lyme Grass	Grazing Marsh	Hedgerows
Scarlet Wax Cap	White-letter Hairstreak	Grayling	Dingy Skipper	Gardens and Allotments	Saline Lagoons
Blomer's Rivulet	Crescent Striped	Forester	Large Red- Belted Clearwing	Marsh and Saltmarsh	Ponds, Lakes & Reservoirs
Fen Wainscot	Shore Wainscot	Eccentric Grass Snail	Moss Chrysalis Snail	Parks and Recreation Grounds	Lowland Heath
Moss Chrysalis Snail	Bats (except common pipistrelle)	Brown Hare	Harvest Mouse	Brownfields	Churchyards and Cemeteries
Harbour Seal	Water Vole	Common Lizard	Slow Worm		
Great Crested Newt	Bullhead	Salmon	Brown Trout		
European Eel	Brook Lamprey	Sea Lamprey	River Lamprey		

## D. METHODOLOGY

### D.1 SCOPE OF STUDY

The scope of the study, in terms of the survey area and the desk study area, is based on professional judgement. The likely zone of influence of the proposal has been considered, including both potential direct effects such as habitat loss and potential indirect effects such as disturbance. Consideration has been given to potential effects both during the construction and operational phases of the development.

For this site the survey area comprised the green line boundary as defined within the figure below with, in addition, a 50m buffer around the periphery appraised where access was available. The desk study included an assessment of land-use in the surrounding area.

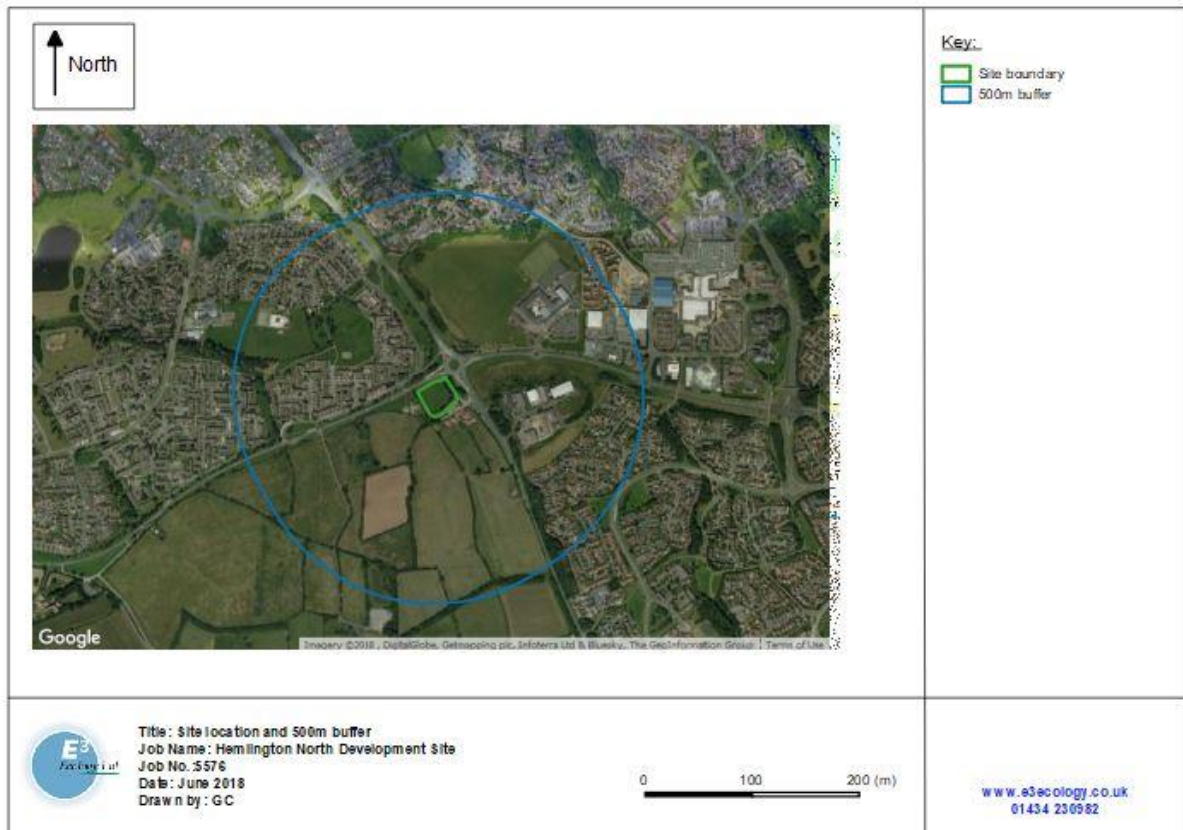
The following types of ecological receptors have been considered:

- Statutorily designated sites for nature conservation;
- Non-statutorily designated sites for nature conservation;
- Species protected by law;
- Species and/or habitats listed under the NERC Act (2009) as being of principal importance for conservation of biodiversity; and
- Species and/or habitats listed in relevant local biodiversity action plans.

The figures below illustrate firstly the site boundary and secondly the broad habitats present on site and within an approximate 500m buffer zone.



**FIGURE 2: SITE BOUNDARY**  
 (Reproduced under licence from Google Earth Pro)



**FIGURE 3: SITE AND SETTING**



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(Reproduced under licence from Google Earth Pro)

## **D.2 DESK STUDY**

Initially, the site was assessed from aerial photographs and 1:25,000 Ordnance Survey maps. In addition, a search was made of the MAGIC website<sup>4</sup> for all statutorily protected sites for nature conservation within 2km of the survey area. A record search for protected species from the Local Records Centre (ERIC NE) was commissioned for this project.

## **D.3 PRELIMINARY FIELD SURVEY METHODOLOGY**

### **D.3.1 PHASE 1 HABITAT SURVEY**

#### **D.3.1.1 SURVEY METHODS**

The field survey of the proposed site was conducted using the methodology of the Joint Nature Conservation Committee's Phase 1 Habitat Survey, as outlined in their habitat-mapping manual<sup>5</sup>. Each parcel of land was assessed by a trained surveyor and classified as one of ninety habitat types. These were then mapped and the habitat information supplemented by dominant and indicator species codes and target notes where appropriate. Where areas within the study area do not fall into the Phase 1 Habitat Survey classification, alternative methods of classification have been used.

#### **D.3.1.2 SURVEY EQUIPMENT**

The following equipment was used during the phase 1 habitat survey:

- Digital camera; and
- Wetland 8x42 binoculars.

### **D.3.2 PRELIMINARY PROTECTED AND PRIORITY SPECIES APPRAISAL**

#### **D.3.2.1 SURVEY METHODS**

Where there is a risk of legally protected species and/or otherwise notable species<sup>6</sup> being present, an initial appraisal was completed to inform the proposals. This appraisal included the following key elements:

- Structures and trees were assessed for the risk of supporting roosting bats (see below);
- Wetlands, where present, were reviewed for their potential use by great crested newt, otter and water voles;
- If present, any trackways regularly used by badger were noted and any badger sett usage assessed by the presence of freshly dug earth or bedding at the entrance.
- The suitability of the suite of habitats present for use by reptiles was assessed;
- Likely use of the site by birds was assessed from the species seen during the survey, and the habitats present; and
- Potential use by otherwise notable species was determined based on the broad habitat types present on site, any recent records obtained through the desk study and the geographical distribution of the species. Where specific habitat requirements for notable species have been recorded on site these have been noted, and used as part of this

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<sup>4</sup> MAGIC Website: [www.magic.gov.uk](http://www.magic.gov.uk)

<sup>5</sup> Handbook for Phase 1 habitat survey, A Technique For Environmental Audit, JNCC, 2010

<sup>6</sup> To include national priority species as listed in Section 41 of the NERC Act (2006) and local or regional priority species as listed within the relevant Biodiversity Action Plan

appraisal. The species groups assessed are limited to birds, freshwater fish, amphibians, reptiles, terrestrial mammals, butterflies and dragonflies.

A preliminary assessment, based on inspection from within the site boundary, was made of any trees affected by the proposed development. Trees were inspected and assessed for their potential to support roosting bats and were categorised as negligible, low, moderate or high suitability for roosting bats based on guidelines provided within the Bat Conservation Trust Bat Survey: Good Practice Guidelines<sup>7</sup> and detailed within the table below.

<b>TABLE 5: GUIDELINES FOR ASSESSING THE POTENTIAL SUITABILITY OF PROPOSED DEVELOPMENT SITES FOR BATS, BASED ON PRESENCE OF ROOSTING HABITAT FEATURES (TREES)</b> <i>(TO BE APPLIED USING PROFESSIONAL JUDGEMENT, TABLE 4.1 BAT SURVEY GUIDELINES)</i>	
<b>Suitability</b>	<b>Roosting Habitats</b>
Negligible	Negligible habitat features on site likely to be used by roosting bats.
Low	A tree of sufficient size and age to contain potential roost features but with none seen from the ground or features seen with only very limited roosting potential.
Moderate	A tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A tree with one or more potential roost site that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

The assessment is based upon the age and species of the tree, the presence of features with potential to support roosting bats and the location of the tree and habitats present in the surrounding area. Any potential roosting locations and field signs that could indicate bat use, such as droppings, staining and scratch marks were noted.

Where it is considered likely that there is a significant risk of protected or otherwise notable species being affected or where habitats are of particularly high value additional specialist survey work has been recommended. Further survey work may also be recommended where development proposals have the potential to affect statutorily designated sites in the vicinity.

### D.3.3 ENVIRONMENTAL CONDITIONS

The table below details the environmental conditions during the preliminary ecological appraisal.

<b>TABLE 6: SURVEY CONDITIONS</b>				
<b>Date</b>	<b>Temperature</b>	<b>Cloud Cover</b>	<b>Precipitation</b>	<b>Wind Conditions</b>
20.06.18	15°C	100%	None	F2

### D.3.4 SURVEY CONSTRAINTS

As the trees were in leaf some bat roosting features may have been missed during the ground level assessment for potential bat roosting features. The nearest pond on aerial maps is 220m south-west of the site. If still present, it is on private land and adjacent to the building development site so could not be inspected during the survey.

<sup>7</sup> Collins, J. (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3<sup>rd</sup> Edition). Bat Conservation Trust



## D.4 PERSONNEL

The table below details the personnel who undertook the survey work.

Name	Position	Professional Qualifications	Natural England Survey Licence Numbers
Gemma Cone	Ecologist	ACIEEM, MRes, BSc	2016-21884-CLS-CLS (GCN*), 2016-22634-CLS-CLS (Bats)
*GCN – Great Crested Newt			

Further details of experience and qualifications are available at [www.e3ecology.co.uk](http://www.e3ecology.co.uk).

## D.5 ASSESSMENT METHODOLOGY

The relative value of the ecological receptors (habitats, species and designated sites) was assessed using a geographical frame of reference. For designated sites this is generally a straightforward process with the assigned designation generally being indicative of a particular value, e.g. Sites of Special Scientific Interest are designated under national legislation and are therefore generally considered to be receptors of national value. The assignment of value to non-designated receptors is less straightforward and as recognised by the Guidelines for Ecological Impact Assessment produced by the Chartered Institute of Ecology and Environmental Management<sup>8</sup>, is a complex and subjective process and requires the application of professional judgement.

When assessing the value of species and habitats, relevant documents and legislation are considered including the lists of species and habitat of principal importance annexed to the NERC Act (2006) and those provided within relevant local Biodiversity Action Plans. Data provided through consultation is also considered. These data sources can provide context at a local, regional and national scale.

The table below provides examples of receptors of value at different geographical scales.

Level of Value	Examples
<b>International</b>	An internationally designated site or candidate site.
	A site meeting criteria for international designation.
	A substantial* area of a habitat listed on Annex I of the EC Habitats Directive or smaller areas of such habitat, which are considered likely to be essential to maintain the functionality of a larger whole.
	The site is of functional importance** to a species population with internationally important numbers (i.e. >1% of the biogeographic population)
<b>National</b>	A nationally designated site.
	A substantial* area of a habitat listed as a Habitat of Principal Importance within Section 41 of the NERC Act (2006) or smaller areas of such habitat, which are considered likely to be essential to maintain the functionality of a larger whole.
	The site is of functional importance** to a species population with nationally important numbers (i.e. >1% of the national population)
<b>Regional</b>	An area of habitat that falls slightly below the criteria necessary for designation as a SSSI but is considered of greater than county value.
	The site is of functional importance** to a species population with regionally important numbers (i.e. >1% of the regional population)
<b>County</b>	A Local Wildlife Site (LWS) or equivalent, designated at a County level

<sup>8</sup> Chartered Institute for Ecology and Environmental Management (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal

TABLE 8: ECOLOGICAL RECEPTOR VALUATION	
Level of Value	Examples
	A substantial* area of a habitat listed within the relevant County Biodiversity Action plan or smaller areas of such habitat, which are considered likely to be essential to maintain the functionality of a larger whole. The site is of functional importance** to a species population of county value (i.e. >1% of the county population)
<b>District</b>	A Local Wildlife Site (LWS) or equivalent, designated at a District level A substantial* area of a habitat listed within the relevant District Biodiversity Action plan or smaller areas of such habitat, which are considered likely to be essential to maintain the functionality of a larger whole. The site is of functional importance** to a species population of district value (i.e. >1% of the district population)
<b>Parish</b>	Area of habitat or species population considered to appreciably enrich the habitat resource within the context of the parish. Local Nature Reserves
<b>Local</b>	Habitats and species that contribute to local biodiversity but are not exceptional in the context of the parish.
<b>Low</b>	Habitats that are unexceptional and common to the local area.
*Substantial defined as 'of considerable size or value within that area based on professional judgement, rather than a small, inconsequential area' ** Functional importance defined as 'a feature which, based on professional judgement, is of importance to the day to day functioning of the population, the loss of which would have a detectable adverse effect on that population'	

## E. RESULTS

### E.1 DESK STUDY

#### E.1.1 PRE-EXISTING INFORMATION

##### **ORDNANCE SURVEY MAPPING AND AERIAL PHOTOGRAPHY**

The figures in Section B and D show that the general land use in the surrounding area is residential housing and commercial outlets to the north, east and west. To the south are arable and pasture fields. A residential development is currently being built to the south of the site.

The most recent aerial photograph of the site (Section D, 2017) indicates that habitats on site are dominated by grassland with a hedge with trees around the periphery. Historical imagery from 2000 indicates the land use has not changed significantly in this time.

##### **MAGIC WEBSITE<sup>9</sup>**

There are no internationally and nationally statutorily designated sites within 2km of the survey area. Stainton Quarry Local Nature Reserve (LNR) lies 2km west of the site.

The MAGIC Website indicate that there have been no European Protected Species Licences issued within 2km of the site.

#### E.1.2 CONSULTATION

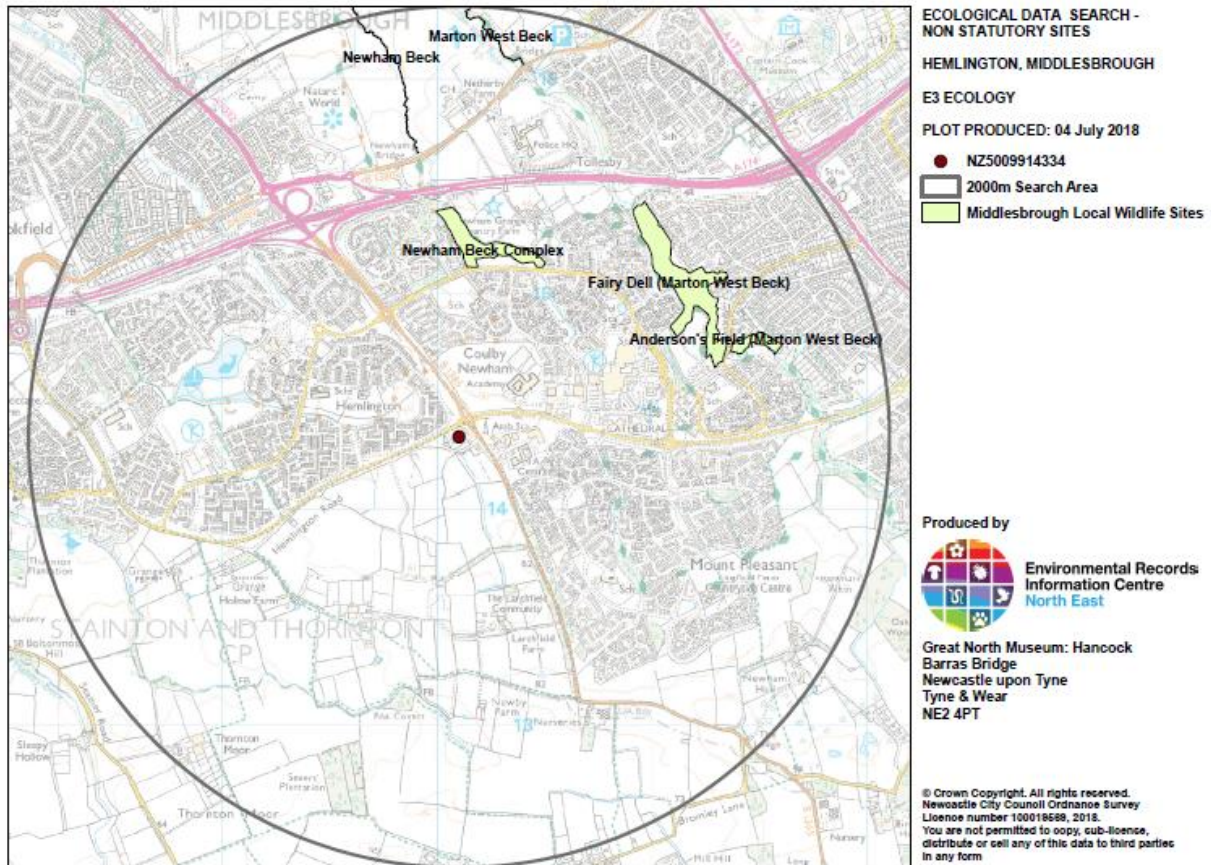
##### **LOCAL RECORD CENTRE**

The table below summarises the records provided by the local records centre. The full data search results can be provided on request.

<sup>9</sup> Multi Agency Geographic Information for the Countryside (MAGIC) [www.magic.gov.uk](http://www.magic.gov.uk)

<b>TABLE 9: CONSULTATION RECORDS</b>			
<b>Taxon</b>	<b>Species</b>	<b>No. of Records within Search Area</b>	<b>Records of Particular Note</b>
Amphibian	great crested newt	6	eDNA survey from 2016 2km south-west of the site. Historical records from 1988-1993 from Thornton Pond 2km west of the site.
	common toad	7	
Bird	skylark	17	
	tree pipit	1	
	ringed plover	2	
	cuckoo	1	
	corn bunting	4	
	yellowhammer	6	
	Linnet	2	
	Curlew	1	
	Yellow wagtail	1	
	House sparrow	15	
	Tree sparrow	5	
	Grey partridge	3	
	Lapwing	3	
	Wood warbler	2	
Terrestrial Mammal	Brown hare	4	
	Badger	2	
	Otter	6	Nearest record 1360m north-east near Marton West Beck
	Water vole	22	Nearest record 702m west from Blue Bell Beck in 2009
	Hedgehog	63	
	Bat	33	

In addition, the records centre provided information relating to the following non-statutory designated sites which lie within the search area:



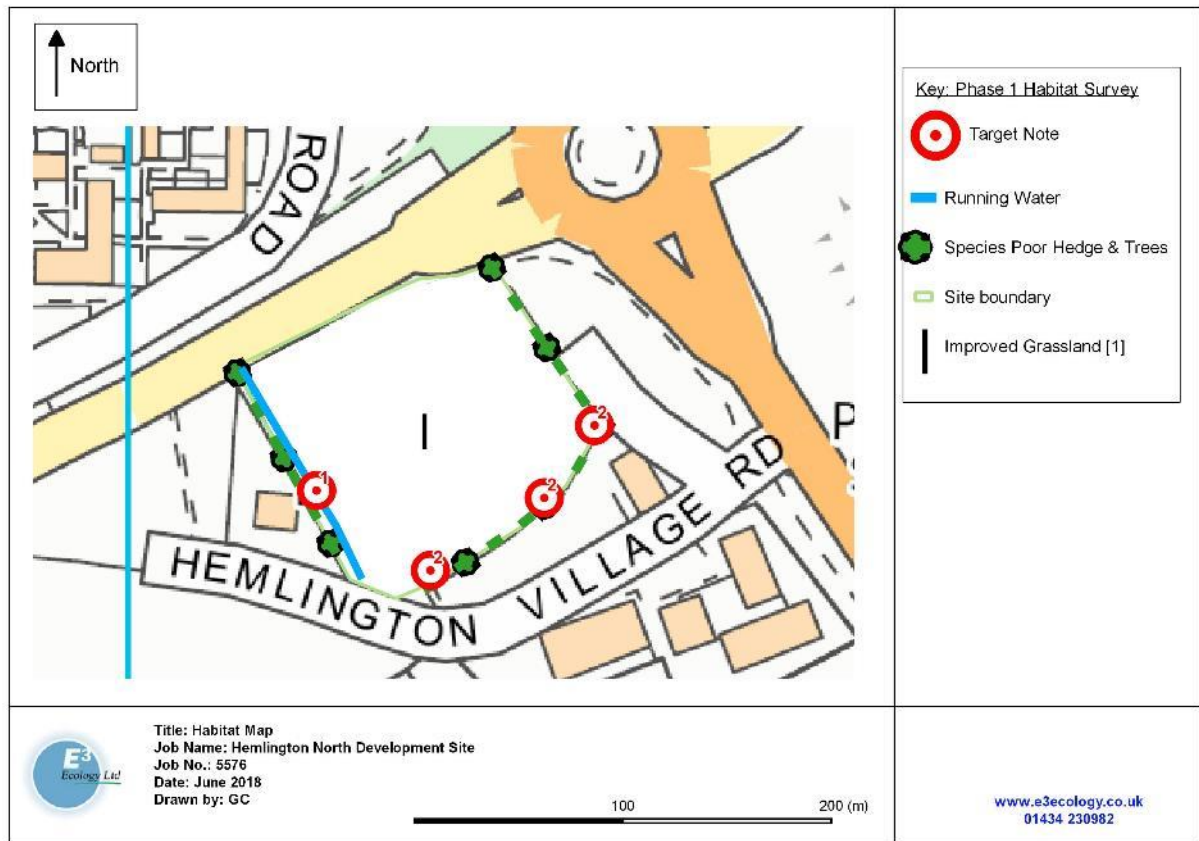
**FIGURE 4: NON-STATUTORY SITES MAP PRODUCED BY ERIC NE**

## **E.2 FIELD SURVEY**

### **E.2.1 HABITATS**

The site comprises an area of improved grassland (mown on the day of the survey). The eastern and southern boundaries are hedgerows with standards. Along the western boundary is a drainage stream with dense scrub, shrubs and trees along its length. The northern boundary is open to the main road.

The habitats present within the survey area are illustrated within the figure below and described in more detail below.



**FIGURE 5: HABITAT MAP**  
(OS mapping © Crown copyright and database rights 2016/2017 OS 0100039392)

#### IMPROVED GRASSLAND

Improved grassland dominated by perennial rye-grass (*Lolium perenne*), with frequent cock's-foot (*Dactylis glomerata*) occasional creeping buttercup (*Ranunculus repens*), white clover (*Trifolium repens*), daisy (*Bellis perennis*) and ribwort plantain (*Plantago lanceolata*).





#### **INTACT SPECIES-POOR HEDGE WITH TREES**

Along the eastern and southern boundaries, these are dominated by hawthorn (*Crataegus monogyna*), with elder (*Sambucus nigra*), ash (*Fraxinus excelsior*) and sycamore (*Acer pseudoplatanus*).

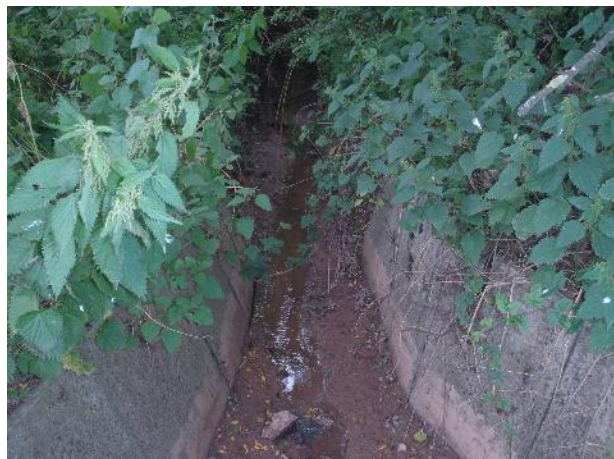
The hedge along the western boundary adjacent to the stream is comprised of hawthorn, blackthorn (*Prunus spinosa*), elder and bramble agg. (*Rubus fruticosus* agg.). Trees include cherry sp. (*Prunus* sp.), and apple sp. (*Malus* sp.).

The hedge understorey comprises creeping thistle (*Cirsium arvense*), rosebay willowherb (*Chamaenerion angustifolium*), common nettle (*Urtica dioica*), broad-leaved dock (*Rumex obtusifolius*), hogweed (*Heracleum sphondylium*), hedge bindweed (*Calystegia sepium*), cleavers (*Galium aparine*) and hedge woundwort (*Stachys sylvatica*).



#### **WETLAND**

A drainage stream along the western site boundary. It runs through culverts under roads in the south-west and north-west of the site. The stream has a silty substrate and was shallow on the day of the survey. It is canalised along much of its length.



### **E.2.2 SPECIES**

#### ***GREAT CRESTED NEWT***

There are no waterbodies on site suitable for great crested newt (GCN). The improved grassland provides suboptimal opportunities for GCN in their terrestrial phase due to the short sward and regular disturbance, with higher quality habitat available within the hedge and scrub around the periphery. The nearest pond on aerial maps is 220m south-west of the site. If still present, it is on private land and adjacent to the building development site so could not be inspected during the survey. The nearest great crested newt records or positive eDNA results are more than 2km from the site.

#### ***BIRDS***

Bird species noted on site include: great tit, carrion crow and magpie. The mature trees and hedgerows have the potential to support nesting and foraging birds. There is low potential for ground-nesting birds as the site is open to the north, is likely to be regularly mown and frequented by dog walkers.

#### **BADGER**

No field evidence of badger was observed and there are limited opportunities for sett creation around the periphery of the site. The site has low commuting and foraging potential with main roads to the north and east; more suitable habitat exists in the wider landscape to the south.

#### **OTTER**

The site does not contain suitable watercourses for this species, with the stream being small and culverted. There are streams and becks in the wider area although due to the high levels of anthropogenic disturbance it is unlikely they are used by otters other than occasional commuting routes. Due to the lack of suitable habitat, they are unlikely to be present on site.

#### **WATER VOLE**

The stream provides very limited habitat suitable for water vole and is isolated from other potential habitat by culverting; due to the high levels of disturbance they are highly unlikely to occur.

#### **REPTILES**

In general the site lacks the necessary structural mosaic, basking sites and refugia suitable for reptiles. In addition, the site is isolated from other areas of suitable habitat and subject to high levels of anthropogenic disturbance.

#### **RED SQUIRREL**

There is no suitable woodland on or adjacent to the site to support this species and they are very unlikely to be present.

#### **WHITE-CLAWED CRAYFISH**

The stream is unsuitable for this species.

#### **BUTTERFLIES**




No priority species primary larval food source plants were observed on site during the survey and it is considered unsuitable to support a breeding population of a priority species butterfly.

#### **BATS**

Two mature ash trees are considered to have moderate suitability for roosting bats (T1 and T2). One ash tree (T3) has low suitability although leaves may have hidden some of the features from ground level. The features are described in more detail in Table 9 below. The locations of the trees are shown in Appendix 2.

TABLE 9 TREES WITH BAT ROOST SUITABILITY			
Ref	Description	Suitability	Picture



T1	Mature ash along southern boundary with a knot hole facing south approximately 10m from the ground. Holes at the end of snapped limbs facing south-west approx. 8m from ground.	Moderate	
T2	Mature ash along southern boundary with holes at the end of snapped limbs facing south approx. 8m from ground.	Moderate	
T3	Mature ash in south-east corner of site within hedgerow. Some knot holes visible from west although obscured by leaves.	Low	

Opportunities for roosting bats are likely to exist within buildings in the wider area.

The commuting and foraging habitats on site are considered to be of low suitability for bats. Although the hedgerows provide links to further hedgerows off site to the south the site is small and subject to high levels of light and noise pollution from adjacent roads.

**NATIONAL PRIORITY AND LOCAL BAP SPECIES**

There is potential for hedgehog to forage and commute across the site and the hedgerows and trees offer some nesting and hibernation potential for this species. Common toad may also be present on site.

### E.2.3 TARGET NOTES

#### **TARGET NOTE 1**

The stream running along the west of the site. It is culverted as it runs under roads to the north and south of the site (pictured).



#### **TARGET NOTES 2**

The trees along the southern boundary with bat roosting potential.



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## **F. SITE ASSESSMENT**

### **F.1 HABITATS**

The site comprises improved grassland, hedgerows with trees and a drainage stream. The habitats present are considered to be of up to local value.

### **F.2 NOTABLE SPECIES**

Further investigation is required of the pond viewed on aerial maps 220m off-site to the south-west. This pond appears to lie within the phased residential development currently under construction. No records were returned by ERIC NE for great crested newts within 2km of the site. Previous survey work by E3 confirm that they were historically present in the wider area. The main body of the site provides poor terrestrial habitat for the species, although the peripheries do provide some limited habitat.

The site is considered to suitable to support foraging and breeding garden birds within the hedgerows and trees. There is low potential for ground-nesting birds as the site is open to the north, regularly mown and likely to be frequented by dog walkers. The ERIC NE records revealed several records of red-listed and BAP species of birds from the wider area although none of these were specific to the site. The site is considered to be up to local value for locally common birds.

The site has low commuting and foraging potential for badgers with main roads to the north and east. It is considered to be of low habitat value for badger. The ERIC NE record search revealed only two records of badger, both over 1.8km from the site.

The hedgerows on site provide foraging and commuting habitats for bats and some linkages to the wider area. However, the small size of the site and high levels of light and noise pollution limits the site value to low suitability for bats. ERIC NE records included roosts of Brandt's bat, common pipistrelle and brown long-eared bat, all more than 1km from the site.

The three mature ash trees on site with bat roosting potential are within or very close to the hedgerows. At this stage it is unknown if these will be retained under the proposals; if impacts on them are likely further survey work will be required to ascertain their use by bats.

The drainage stream provides very limited suitable habitat for water vole due to the lack steep sides for burrowing, lack of suitable vegetation, the culverting and high levels of disturbance and is also considered unsuitable for otter. The nearest records for water vole are 700m north-west of the site along Blue Bell Beck. Given the lack of linkage between the beck and the drainage stream and the presence of a busy main road they are unlikely to be present on site.

Due to a lack of suitable habitats on site and lack of connectivity to other areas of suitable habitat red squirrel, reptiles, white-clawed crayfish, priority species of butterfly and brown hare are considered highly unlikely to occur on site.

### **F.3 LIMITATIONS**

As trees were inspected when in full leaf some potential bat roosting features may have been missed. Development plans are not available at this stage as such impacts cannot be fully assessed.

## G. IMPACT ASSESSMENT

An impact assessment cannot be fully completed until detailed development plans are provided. However, the likely effects of the proposed development, without appropriate targeted mitigation and/or compensation, are detailed below.

### G.1 POTENTIAL IMPACTS AND/OR EFFECTS<sup>10</sup>

#### G.1.1 HABITATS

- Loss of habitats of up to local value if hedgerows and trees are removed;
- loss of 0.6ha of improved grassland of low habitat value;
- pollution of the stream through contamination or run off during and post construction;

#### G.1.2 SPECIES

- loss of habitat with low potential to support foraging and commuting badger;
- harm/disturbance to amphibians should they be present on site;
- loss of habitat of up to local value to support hedgehogs;
- potential loss of hedgerows and trees of up to local value for nesting birds if removed, and harm/disturbance to nesting birds should vegetation removal be undertaken during the nesting period;
- impacts on trees that have the potential to support roosting bats;
- disturbance to bats foraging, roosting and/or commuting across the site from increased lighting; and
- loss of habitats with low suitability to support foraging and commuting bats.

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<sup>10</sup> An impact is defined as an action resulting in changes to an ecological feature. For example, construction works removing a hedgerow. An effect is defined as the outcome to an ecological feature from an impact. For example, the effect on a dormouse population of the loss of a hedgerow.

## H. RECOMMENDATIONS

The recommendations have been based upon survey effort to date and may evolve with future findings and on receipt of development plans.

The mitigation strategy aims to minimise effects on biodiversity by:

- Avoiding significant negative impacts where possible through good design; and
- developing approaches to mitigate any remaining unavoidable impacts.

Where any significant residual impacts on biodiversity are anticipated, compensation may then be proposed. This approach is in-line with CIEEM recommendations<sup>11</sup>.

### H.1 FURTHER SURVEY

- If the two trees with moderate bat roosting potential are to be lost as part of the development proposals it is recommended that further surveys are carried out. It is also recommended that the tree classified as low roosting potential is inspected due to the difficulties in observing potential features from the ground.
- Further investigation is required of the pond 220m south-west of the site. If the pond is present a HSI assessment for great crested newts should be undertaken. If there is potential for great crested newts to be present further presence/absence surveys or eDNA survey may be required.

### H.2 AVOIDANCE AND MITIGATION STRATEGY

#### SITE DESIGN

- It is recommended that the hedgerows and trees around the periphery of the site are retained and protected during development. Lighting of these areas should be avoided or low level and low lux.

#### TIMING OF WORKS

- Vegetation clearance/tree felling will be undertaken outside of the bird nesting season (March to August inclusive) unless a checking survey by a suitably experienced ornithologist confirms the absence of active nests.

#### WORKING METHODS AND BEST PRACTICE

- Any excavations left open overnight will have a means of escape for mammals that may become trapped in the form of a ramp at least 300mm in width and angled no greater than 45°;
- the roots and crowns of retained trees will be protected throughout the development through the provision of adequate construction exclusion zones in accordance with the guidance given by BS5837:2012; and
- all site works will be undertaken in accordance with the attached amphibian method statement.

Further mitigation may be required with regard to bats and great crested newts dependent on site design and results of further surveys.

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<sup>11</sup> Chartered Institute for Ecology and Environmental Management (2016) Guidelines for Ecological Impact Assessment in the UK and Ireland - Terrestrial, Freshwater and Coastal



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### **H.3 COMPENSATION STRATEGY**

It is not possible at this stage to predict significant adverse effects on ecology without detailed development plans thus a compensation strategy cannot be developed.

### **H.4 ADDITIONAL ENHANCEMENT RECOMMENDATIONS**

The following measures are recommended in order to further enhance the site for biodiversity, contributing to local and/or national conservation targets.

- New buildings should incorporate potential bat roosting features such as bat access slates and/or bat boxes (a minimum of five Schwegler 2F-type or similar bat boxes across the site), and a minimum of five Schwegler 2M type or similar bird boxes; and
- Landscaping should include native tree planting, and native fruit and seed-bearing shrubs.

## **I. CONCLUSIONS**

Without detailed development plans full impacts cannot be considered at this stage, however ecological proposals provide an opportunity for wildlife benefit through bat and bird boxes and native planting, contributing to local and national conservation targets.

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## APPENDIX 1. STATUTORILY AND NON-STATUTORILY DESIGNATED SITES

### A1.i Statutorily Designated Sites

#### Ramsar Sites

Ramsar sites are designated under the Convention on Wetlands of International Importance, agreed in Ramsar, Iran, in 1971. The Convention recognizes wetlands as important ecosystems and includes a range of wetland types from marsh to both fresh and salt water habitats. The wetlands can also include additional areas adjacent to the main water-bodies such as river banks or coastal areas where appropriate.

#### Special Protection Areas (SPAs)

SPAs are classified by the UK Government under the EC Birds Directive and comprise areas which are important for both rare and migratory birds.

#### Special Areas of Conservation

SACs are designated under the EC Habitats Directive and are areas which have been identified as best representing the range and variety of habitats and (non-bird) species listed on Annexes I and II to the Directive. SACs are designated under the Conservation of Habitats and Species Regulations 2017 unless they are offshore.

#### Sites of Special Scientific Interest

SSSIs are designated as sites which are examples of important flora, fauna, or geological or physiographical features. They are notified under the Wildlife and Countryside Act 1981 with improved provisions introduced by the Countryside and Rights of Way Act 2000.

#### National Nature Reserves (NNRs)

NNRs are designated by Natural England under the National Parks and Access to the Countryside Act 1949 and the Wildlife and Countryside Act 1981 and support important ecosystems which are managed for conservation. They may also provide important opportunities for recreation and scientific study.

#### Country Parks

Country Parks are statutorily designated and managed by local authorities in England and Wales under the Countryside Act 1968. They do not necessarily have any nature conservation importance, but provide opportunities for recreation and leisure near urban areas.

### A1.ii Non-Statutorily Designated Sites

#### Local Nature Reserves (LNRs)

LNRs are designated under the National Parks and Access to the Countryside Act 1949 by local authorities in consultation with Natural England. They are managed for nature conservation and used as a recreational and educational resource.

#### Non-Governmental Organisation Property

These are sites of biodiversity importance which are managed as reserves by a range of NGOs. Examples include sites owned by the RSPB, the Woodland Trust and the Wildlife Trusts.

#### Local Wildlife Sites (LWSs)

These are sites defined within the local plans under the Town and Country Planning system and are material considerations of any planning application determination. They are designated by the local authority although criteria for designation can vary between authorities.



## APPENDIX 2: LOCATION OF TREES WITH BAT ROOSTING POTENTIAL



## APPENDIX 3: AMPHIBIAN METHOD STATEMENT FOR THE DEVELOPMENT OF LAND AT BEECHWOOD

*This statement must be copied to the site owner, designer, clerk of works, and to those contractors whose work may affect amphibians, including those involved in all elements of the work detailed above. A signed copy should be kept at the site offices.*

This method statement contains information regarding:

- Species identification ecology
- Working methods

	Print Name	Signature	Date
Supervisor:			
Operative:			
Operative:			
Operative:			
Operative:			

## GREAT CRESTED NEWTS

### *Relevant Legislation*

Great crested newts are protected under the Wildlife and Countryside Act 1981 (as amended), and the Habitat Regulations (2010). As a result it is illegal to kill, injure or disturb a great crested newt or damage, destroy or obstruct access to its place of rest or shelter. **Prosecution could result in imprisonment, fines of £5000 per animal affected and confiscation of vehicles and equipment used.**

### *Ecology*

Adult great crested newts are present in ponds during the spring period, generally February to June, where they lay their eggs. Larvae hatch out and emerge as small newts in the summer. Most of the year is spent on the land, generally in areas that provide good cover and an invertebrate food source such as woodland, hedges, marshy grassland and coarse grassland. The majority of newts will stay within 150m of the breeding pond, but some may be present up to 500m from a pond and can certainly move over greater distances than this. Great crested newts are up to 170mm long, larger than smooth or palmate newts, which are rarely longer than 100mm and have a coarse, dark (almost black) granular skin with very fine white spots on the lower flank and a brightly coloured orange-yellow belly, with dark spots. Smooth newts are delicate and often yellow-brown in colour (see photographs below).

Newts are mainly active at night, particularly in warm and wet conditions, and are most likely to be found under stones and logs, discarded rubbish or within piles of rock, bricks and the like.



<b>Smooth Newt (spots under the chin)</b>	<b>Smooth Newt</b>	<b>Palmate Newt (pearlescence under the chin)</b>
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## TOADS

The Common Toad is a widespread amphibian found throughout Britain although absent from Ireland. The Common Toad can be found in almost any habitat and is common in gardens. It prefers larger water bodies in which to breed and, because toxins are also present in the skin of the tadpoles, they are able to breed in ponds and lakes containing fish which learn to avoid them. Common Toads congregate at breeding ponds in early April but for the rest of the year will wander well away from water as they are far more tolerant of dry conditions than the Common Frog. The Common Toad is a UK Biodiversity Action Plan priority species.



### *Working Methods*

Standard working methods, to minimise the risk of harming or killing amphibians should include the following:

- Any areas of rocks, brick rubble, rubbish or fallen timber that have been present within the area to be cleared for over 3 months are to be searched by hand before the start of works in that area.
- Vegetation should be cleared progressively using hand tools to provide animals with an opportunity to move out of the area. Areas of tall grassland should be strimmed, and scrub cut down to ground level and removed.
- Following vegetation clearance the area should be left for several days to allow any animals to move out of the area before any excavation commences.
- Areas of standing water will not be allowed to persist for more than a week during the construction period.
- If reptiles are found during the clearance operations they should be moved to adjacent areas of suitable habitat that are not affected by development.
- If great crested newts are found at any time during the works, works will stop in that area immediately and the ecological consultant for this project will be contacted. If newts are likely to be harmed without immediate action handle them with care, place in a cool, humid and shaded receptacle and release them in tall grassland/scrub outside of the construction area in a location that will not be disturbed in the future.
- The use of insecticides/herbicides in areas where reptiles or great crested newts may be present should be minimised.

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**In case of queries please contact the project ecologists E3 Ecology Ltd 01434 230982.**