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**Furthergate, Plot 4**

***Ecological Appraisal***

May 2019

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**Control sheet**

 www.bowlandecology.co.uk	2 York Street, Clitheroe, Lancashire, BB7 2DL.  01200 446777	Unit 2, Dye Works, New Lanark, ML11 9DB.  01555 438880
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<b>Client:</b>	Blackburn with Darwen Borough Council	
<b>Prepared by:</b>	Jodie Marks, <i>Ecologist</i>	
<b>Checked by:</b>	Claire Wilson, <i>Senior Ecologist</i>	
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## Executive Summary

An extended Phase 1 Habitat survey, desk study and ecological appraisal was completed in May 2019 on a site proposed for development off Burnley Rd, Blackburn (NGR: SD 70531 28689).

Key ecological features, potential impacts, further survey requirements and outline mitigation measures are summarised in the following table.

Ecological Feature	Potential Impact	Further surveys if affected	Outline Mitigation
Habitat - Trees	Direct impact, loss of habitat	N	Retention of and/or the replacement of trees.
Foraging and commuting bats	Direct impact, loss of foraging and commuting habitat	N	Retain or replace lost habitat. Sensitive lighting schemes to be developed.
Other mammals	Direct impacts, loss of foraging and refuge habitat	N	Make contractors aware of possible presence of small mammals. Remove debris and cover excavations at night.
Birds	Direct impacts, loss of nesting habitat	N	Vegetation clearance outside of nesting season (March to August inclusive) or pre-clearance nesting bird check by an ecologist required.  Retain or replace lost habitat.
Amphibians	Direct impacts, loss of terrestrial habitat	N	Implementation of Reasonable Avoidance Measures (RAMs).
Invertebrates	Direct impacts, loss of habitat	N	Creation of wildflower areas in wildflower corridor.

## 1. Introduction

- 1.1 Bowland Ecology Ltd was commissioned by Blackburn with Darwen Borough Council to complete an ecological appraisal of land located north of Burnley Road, Blackburn (NGR: SD 70531 28689). The site is proposed for development.
- 1.2 The site is located to the east of Blackburn city centre. The Leeds and Liverpool Canal with associated broadleaved woodland, grassland and allotments are located to the north and east of the site (other side of A678). Industrial buildings are located to the south and west. The site boundary is shown on the Phase 1 Plan in Appendix D.
- 1.3 The purpose of the survey was to: 1) identify and map all habitats occurring within the survey area, 2) identify the presence of (or potential for) wildlife interests with particular reference to the need for further surveys and legal requirements, and 3) provide an ecological assessment, identify potential impacts and provide recommendations pertaining to the proposal.
- 1.4 This report includes a description of survey methods, habitats and fauna present and outlines recommendations to provide protection and enhancements for biodiversity and protected species.

## 2. Methodology

- 2.1 The desk study, extended Phase 1 Habitat survey and ecological appraisal followed the Guidelines for Preliminary Ecological Appraisal and the Guidelines for Ecological Report Writing (CIEEM, 2017 a, b), and are in line with the British Standard BS42020:2013 'Biodiversity – Code of practice for planning and development'.

### **Desk Study**

- 2.2 The aim of the desk study was to identify the presence of statutory and non-statutory wildlife sites within the area and any legally protected species or Habitats and Species of Principal Importance for the conservation of biodiversity (Section 41 NERC Act, 2006).
- 2.3 The Multi-Agency Geographic Information for the Countryside (MAGIC) website ([www.magic.gov.uk](http://www.magic.gov.uk)) was reviewed for information on locally, nationally and internationally designated sites of nature conservation importance (statutory sites only) on or within 1 km of the site boundary.
- 2.4 Local records on and within 1 km of the site were obtained following a data search with Lancashire Environmental Records Network (LERN)<sup>1</sup>.
- 2.5 Ordnance Survey (OS) maps and aerial photographs (<http://maps.google.co.uk/maps>) were reviewed to help identify any continuous habitat and any other notable habitats within the surrounding area.
- 2.6 Natural England's great crested newt (*Triturus cristatus*) licensing method 7 statement template (Form WML-A14-2 (version December 2017<sup>2</sup>) advises that, for developments resulting in permanent or temporary habitat loss at distances over 0.25 km from the nearest pond, careful consideration should be given to whether a survey is appropriate. Although the species may use suitable terrestrial habitat up to 0.5 km from a breeding pond, in this instance a 0.25 km search radius was considered appropriate due to the small scale of the proposed development and absence of ponds in the surrounding area.

### **Field Survey**

- 2.7 The extended Phase 1 Habitat survey followed standard methodology (JNCC, 2010 and CIEEM, 2017). All features of ecological significance were target noted and a colour coded map of the habitats on site has been produced.
- 2.8 This survey methodology records information on the habitats together with any evidence of and potential for legally protected and notable fauna, in particular:
- potential roosting sites for bats within buildings and trees (identification of suitable cracks and crevices – survey undertaken externally and from ground level only). An assessment of suitability was undertaken according to the Bat Conservation Trust's Good Practice Guidelines 3<sup>rd</sup> Edition (Collins, 2016) (Appendix B);
  - assessing the suitability of habitats for other notable and protected species such as nesting birds (including any active or disused nests),

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<sup>1</sup> Records from 2000 onwards are included within this report.

<sup>2</sup> <https://www.gov.uk/government/publications/great-crested-newts-apply-for-a-mitigation-licence>

reptiles, water vole (*Arvicola amphibius*), otter (*Lutra lutra*), white-clawed crayfish (*Austropotamobius pallipes*), badger (*Meles meles*) and invertebrates;

- checking for the most common invasive plant species subject to strict legal control including: Japanese knotweed (*Fallopia japonica*), giant knotweed (*F. sachalinensis*), hybrid knotweed (*F. x bohemica*), giant hogweed (*Heracleum mantegazzianum*), rhododendron (*R. ponticum*, *R. ponticum* x *R. maximum* and *R. luteum*) and Himalayan balsam (*Impatiens glandulifera*);
- assessing the suitability of the habitat for amphibians and for the protected great crested newt. Ponds on site and within 0.25 km (access permitting) were subject to a habitat suitability index (HSI) (Oldham *et al.* 2000) assessment for great crested newt<sup>3</sup>.

2.9 The survey was carried out by Jodie Marks MSc, BSc (Hons) on the 23<sup>rd</sup> May 2019. The weather was sunny with a slight breeze (Beaufort scale 1) with an air temperature of approximately 17°C.

### **Limitations**

2.10 Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviour. Therefore, the survey of the study area has not produced a complete list of plants and animals.

2.11 The list of invasive plant species included on Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) is extensive and these plants are found in a range of different habitats, including aquatic habitats. The extended Phase 1 habitat survey checked, in particular, for the presence of Japanese knotweed, giant knotweed, hybrid knotweed, giant hogweed, rhododendron and Himalayan balsam. There may be other invasive plant species present on the site which were not recorded, but it is considered that this survey is sufficient to identify any significant constraints posed by invasive plants.

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<sup>3</sup> An HSI is a numerical index, between 0 and 1. Values close to 0 indicate unsuitable habitat, 1 represents optimal habitat. The HSI for the great crested newt incorporates ten suitability indices, all of which are factors known to affect this species. The HSI for great crested newts is a measure of habitat suitability - it is not a substitute for newt surveys.

### 3. Results

#### ***Designated Sites and Habitats of Principal Importance***

- 3.1 There are no statutory designated wildlife sites within 1 km of the site.
- 3.2 The site falls within the outer Impact Risk Zone for the West Pennine Moors Site of Special Scientific Interest (SSSI). The SSSI is located 4.8 km south east of the site. If work proposals fall within any of the following categories, then consultation with Natural England will be required;
- Livestock & poultry units with floor space > 500m<sup>2</sup>, slurry lagoons > 750m<sup>2</sup> & manure stores > 3500t; and
  - Airports, helipads and other aviation proposals
- 3.3 There are no non-statutory designated wildlife sites within 1 km of the site.
- 3.4 The search of the Multi Agency Geographical Information Centre ([www.magic.gov.uk](http://www.magic.gov.uk)) identified several areas of deciduous woodland (Habitat of Principal Importance; HPI) within 1 km of the site. The closest area is located 0.13 km north east of the site.
- 3.5 A review of aerial photographs and OS maps did not reveal any ponds within 0.25 km of the site. Residential allotments are located 50 m north west of the site.
- 3.6 The Leeds and Liverpool canal is located 45 m north of the site with a woodland corridor along the banks.

#### ***Habitats***

- 3.7 Target notes summarising key interest features for wildlife recorded during the extended Phase 1 Habitat survey are included in Appendix C. The Phase 1 Habitat plan of the site presented in Appendix D includes the locations of the target notes. Plant species nomenclature follows Stace (2010).

##### Tall ruderal vegetation (TN's 1, 2, 3 and 4)

- 3.8 Tall ruderal vegetation is present in several areas across the site. Species include rosebay willowherb (*Chamerion angustifolium*), common hogweed (*Heracleum sphondylium*), creeping thistle (*Cirsium arvense*), broad leaved dock (*Rumex obtusifolius*) and common nettle (*Urtica dioica*), with occasional marshy vegetation including soft rush (*Juncus effusus*) also present.

##### Scattered trees and scrub (TN 2)

- 3.9 Scattered silver birch (*Betula pendula*) and ash (*Fraxinus excelsior*) trees are present on the western and southern boundary of the site. The ground flora comprises tall ruderal species as described in paragraph 3.7 with areas of bramble (*Rubus fruticosus*) scrub also dominant. Fly tipped materials including wood, metal and pipework are present within the scrub layer.

##### Marshy grassland (TN 3)

- 3.10 Rough marshy grassland is common throughout the site, species include abundant moss sp. (*Byrophyta* sp.) and marsh vetchling (*Lathyrus palustris*) with occasional field horsetail (*Equisetum arvense*), germander speedwell (*Veronica*

*chamaedrys*), burdock sp. (*Arctium* sp.), common mouse ear (*Cerastium fontanum*) and soft rush (*Juncus effusus*). Occasional young alder (*Alnus glutinosa*) and sycamore (*Acer pseudoplatanus*) saplings are also present within the grassland.

#### Group of trees (TN 4)

- 3.11 A group of young to semi-mature trees are present to the south east of the site, dominated by goat willow (*Salix caprea*), occasional alder (*Alnus glutinosa*) and silver birch (*Betula pendula*). The trees are at the basin of a sloped depression with the remnants of two dry stone walls within the vegetation. The ground flora is dominated by tall ruderal species including; rosebay willowherb, common nettle, common hogweed and cleavers (*Galium aparine*).

#### Other habitats (TN 1)

- 3.12 Other habitats on site include bare ground, a pile of rubble, metal fencing and dry-stone walls. A small culvert is present at the eastern boundary of the site, with no water present in the culvert at time of survey. The culvert meanders under the adjacent road and roundabout to the east.

### **Species**

#### Bats

- 3.13 The data search returned three records for bat activity within 1 km of the site: one common pipistrelle (*Pipistrellus pipistrellus*); one noctule (*Nyctalus noctula*) and one soprano pipistrelle (*Pipistrellus pygmaeus*). The records are dated 2014 and are located 0.32 km south west of the site boundary, the records are for bats in flight.
- 3.14 No trees on site have any features such as cracks, crevices, splits and woodpecker holes that would be considered suitable for roosting bats. As such, the trees are considered to have **negligible** potential to support roosting bats.
- 3.15 The scattered scrub, trees and tree lines within the site boundary provide moderate foraging and commuting habitat for bats (see Appendix B), with suitable habitat also present within the surrounding landscape. The site is approximately 25 m to the south of good quality bat foraging and commuting habitat, located within a woodland corridor along the banks of the Leeds and Liverpool canal. However, commuting habitat between the site and habitat along the banks of the Leeds and Liverpool Canal is considered unfavourable due to the recent construction of a new road, with associated street lighting, between the two areas. The site is also located in an urban area with residential and industrial properties with frequent roads and associated lighting which makes the site less favourable to bats.

#### Other mammals

- 3.16 One record for badger was returned by the data search, located 0.6 km north west of the site. The record is dated 2012. The scrub and trees on site provide potential sett building and foraging habitat for badger, however no evidence of badger activity or their setts was recorded during the survey. Therefore, due to no evidence of badger being noted on site, the small area of the site, the site being in an urban environment with no suitable habitat in close proximity, it is therefore considered unlikely that badgers are present on site. Therefore, no further consideration is given towards badgers within this report.

- 3.17 The trees, tall ruderal vegetation, scattered scrub and stone walls on site provides refuge habitat for small mammals, specifically hedgehog (*Erinaceus europaeus*), a SPI. It is also considered likely that the species is common in the area due residential allotments to the north west of the site and scattered tree lines to the north, which provide ample foraging and nesting opportunities for the species.
- 3.18 No evidence of the presence or habitat for any other protected and notable mammals including otter and water vole was recorded on site during the survey. As such, they are not considered further within this report.

#### Birds

- 3.19 The data search returned 11 records for notable and protected bird species within the search area, including; lapwing (*Vanellus Vanellus*), house sparrow (*Passer domesticus*), starling (*Sturnus vulgaris*), lesser redpoll (*Acanthis cabaret*), grey partridge (*Perdix perdix*), wood warbler (*Phylloscopus sibilatrix*), curlew (*Numenius arquata*), grasshopper warbler (*Locustella naevia*), kingfisher (*Alcedo atthis*) and swallow (*Hirundo rustica*) within the search area. The trees and scrub within the site provide nesting and foraging habitat for tree and scrub nesting birds.

#### Reptiles

- 3.20 No records for reptiles were returned by the desk study. However, rubble piles and stone walls on site provide suitable refuge habitat for common reptiles. However the potential for reptiles to be present on site is considered negligible due to; the absence of desk study records, the isolated and urban nature of the site (surrounded by main roads and industrial areas) and the damp nature of the dominant vegetation (marshy grassland) with a lack of basking spots. As such, reptiles are not considered further within this report.

#### Amphibians

- 3.21 No records of amphibians, including great crested newt, were returned by the desk study. However, the terrestrial habitats including scattered trees, marshy grassland, tall ruderal, scattered scrub, rubble piles and stone walls provide suitable refuge habitat for amphibians. The Leeds and Liverpool canal, located 45 m north of the site, potentially provides breeding habitat for common toad (*Bufo bufo*) an SPI, as the species shows a preference for breeding in deeper waterbodies, as opposed to small, shallow ponds, preferred by other amphibians. However, great crested newts and other amphibians require ponds for breeding and there are no ponds on or within 0.25 km of the site. Therefore, due to; the absence of desk study records, the isolated and urban nature of the site (surrounded by main roads and industrial areas) with no potential of dispersal and no ponds within 0.25 km of the site, great crested newts are not considered further within this report.

#### Invertebrates

- 3.22 One record for the grey dagger moth (*Acronicta psi*) an SPI, was returned by the data search. The record is dated 2010 and is located 0.3 km south east of the site boundary. The foodplant of the grey dagger moth caterpillar is deciduous trees and shrubs including; hawthorn (*Crataegus monogyna*), blackthorn (*Prunus spinosa*), elm (*Ulmus procera*), silver birch (*Betula pendula*) and lime (*Tilia x europaea*). Therefore, due to a very small number of the aforementioned tree species being present on site, and no connecting

habitat between the record and the site, it is considered unlikely that the grey dagger moth would present within the habitats on site. The marshy grassland, tall ruderal vegetation and scattered scrub provides moderate value foraging habitat for invertebrates as this habitat is uncommon in the surrounding landscape.

## 4. Evaluation and Assessment of Potential Impacts

- 4.1 An assessment of effects on ecological features has been made using the available design and survey information and the professional judgement of the ecologist. This includes a consideration of the relevant legislation (see Appendix A) and planning guidance.

### *Habitats of Principal Importance*

- 4.2 Deciduous woodland HPI is located 0.13 km north east from the site on the other side of the main Burnley Rd roundabout. Therefore, due to this road barrier, it is considered unlikely that there will be any direct impacts to this HPI and therefore remaining HPI's from the proposed development.
- 4.3 However, site clearance and construction activities have the potential to indirectly impact the HPI through an increase in dust pollution. Dust pollution reduces the availability of light for photosynthesis and can also alter the pH of soils which may affect the long term success of trees within the HPI. Unmitigated impacts upon this habitat could cause a significant negative ecological impact, therefore mitigation is required to minimize potential impacts.

### *Habitats*

- 4.4 The dominant habitats on site comprise marshy grassland, tall ruderal and scrub. These features are not common within the surrounding landscape and they have the potential to provide foraging habitat for a variety of species (described below) and provide structure in the landscape. Therefore, loss of these habitats to accommodate future development of the site has the potential to result in the loss of urban greenspace, open places and habitat for a variety of species. As such, loss of these features will result in a negative ecological impact.
- 4.5 The development will result in the loss of a number of trees within the site. Trees are not common in the surrounding landscape and they provide refuge and foraging habitat for a variety of species (further described below) as well as providing structure in the landscape, particularly within the very local context of the site itself. As such, loss of these features will result in a negative ecological impact.

### *Species*

#### Bats

- 4.6 All trees on site have been categorised as having **negligible** potential to support roosting bats due to their lack of suitable roosting features. It is therefore considered highly unlikely that roosting bats would be present on site and they are not considered further within this report.
- 4.7 Bat foraging and commuting habitat comprising trees and scrub is present within the site, predominantly to the south western boundary and south eastern area of the site. As such, loss of these features has the potential to result in the fragmentation of habitats and a reduction in the availability of bat foraging and commuting habitat which may negatively impact local bat populations.
- 4.8 Furthermore, light pollution associated with site clearance, construction and the completed development may have a negative impact on foraging opportunities

especially along site boundary features if designed without due care and attention.

Other mammals

- 4.9 The removal of tall ruderal vegetation, rubble piles, scattered scrub and stone walls has the potential to impact small mammals including hedgehog, which may potentially hibernate/shelter in the aforementioned features. Therefore, removal of the habitats may cause disturbance and/or direct harm to the species and also result in the loss of foraging and refuge habitat for the species.

Birds

- 4.10 Where trees and scrub are removed/affected, impacts to nesting birds could occur if works are undertaken within the nesting bird season (March to August inclusive) and/or without due care and attention, which would constitute an offence (see Appendix A). The removal of these habitats will also result in the loss of suitable bird nesting and foraging habitat.

Amphibians

- 4.11 The site offers suitable terrestrial and refuge habitat for common amphibians in the form of scattered trees, marshy grassland, tall ruderal vegetation, scrub, rubble piles and stone walls with the Leeds and Liverpool canal possibly providing potential suitable breeding habitat for amphibians.
- 4.12 As such, clearance of trees, marshy grassland, tall ruderal vegetation, scrub, rubble piles and stone walls has the potential to result in the loss of refuge habitat for common amphibians and the potential killing and/or injury of individuals if works are undertaken in the absence of mitigation, and without due care and attention.

Invertebrates

- 4.13 The removal of marshy grassland, scrub and tall ruderal vegetation has the potential to result in the loss of foraging habitat for invertebrates that may potentially be present on site. As such, loss of these habitats on site would likely result in a negative ecological impact to invertebrate populations in the local area.

## 5. Recommendations

- 5.1 This section provides the required measures to mitigate the impacts of the proposed development. A key element of the National Planning Policy Framework is to minimise impacts to biodiversity and provide enhancements. Paragraph 170 states that ‘Planning policies and decisions should contribute to and enhance the natural and local environment by ... minimising impacts on and providing net gains for biodiversity’. Paragraph 174 also states that ‘when determining planning applications, local planning authorities should...’ encourage ‘opportunities to incorporate biodiversity improvements in and around developments’.

### Habitats of Principle Importance

- 5.2 Appropriate dust prevention measures will be adhered to throughout the construction period to ensure that the deciduous woodland HPI, located 0.13 km north east of the site, will not be indirectly impacted during the works. Currently there is no published guidance available in England, however the Scottish Environmental Protection Agency (SEPA) and Northern Ireland Environment Agency (NIEA) have recently published updated guidance (NetRegs, 2018). In the absence of any guidance in England it is advised that the information published on the NetRegs website is adhered to during the works. The information provided is considered recognised, good practice and the most up to date guidance currently provided. Examples of suitable mitigation that can be adopted during site clearance and construction includes;
- Maintaining high standards of housekeeping;
  - Dampening down working areas and haul roads in dry periods;
  - Using covered wagons and skips; and
  - Keeping roads clean with the use of road sweepers.

### Habitat

- 5.3 It is unlikely that the marshy grassland and tall ruderal vegetation will be retained as part of any future development, as it is located within the centre of the site. Therefore to ensure the continuation of these habitats a 2 m wide wildlife corridor of wildflower planting will be undertaken along the northern and western boundaries of the site, the closest boundaries to the Leeds and Liverpool canal and residential allotments, enhancing habitat connectivity in the area.
- 5.4 A less intensive management/mowing regime of the wildflower grassland will also be implemented to allow grasses and herbs to flower and seed; further increasing the biodiversity value of the site.
- 5.5 It is recommended that as many trees as possible are retained. Root protection zones will be established around any retained trees to provide adequate protection from physical damage during works. Any trees removed as part of the works will be replaced at a ratio of 2:1 using native species, of local provenance (see Appendix E for species list). Planting will be undertaken at an appropriate time of year (usually in autumn or early spring when there is no ground frost) and specimens protected from grazing by rabbits. Tree planting will be located on the northern and western boundaries; the closest boundaries to the Leeds and Liverpool canal and residential allotments, enhancing habitat connectivity in the area.

## Species

### Bats

- 5.6 Impacts to bats as a result of the loss of foraging habitat on site is considered to be moderate. The potential retention of habitats and/or the re-planting of trees (see paragraphs 5.5 above), will ensure the continuation of foraging and commuting opportunities for bats within the area. In addition, any new lighting schemes will be designed so that they are 'bat friendly'. Examples of low impact lighting schemes (BCT/ILP 2018) include, but are not limited to:
- Use of low pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps; and
  - Lighting should be directed to where it is needed and light spillage avoided in particular along the site boundaries.

### Other mammals

- 5.7 Contractors will be made aware of the likely potential presence of small mammals, including hedgehog on site. Removal of stone walls, rubble piles, tall ruderal vegetation and scrub should be undertaken with care to avoid disturbance to sheltering/hibernating mammals. Any debris from works should not be left on site and any holes or trial pits associated with works should be covered overnight or fitted with egress boards to prevent animals becoming trapped. Any small mammals found within the works area during construction should be carefully relocated to sheltered location with plenty of vegetation cover, in an area off site which will remain undisturbed.

### Birds

- 5.8 It is recommended that nesting bird habitat on site is retained where possible. Where this is not possible, tree planting (as described above in paragraph 5.5) and the provision of alternative nesting habitat will be undertaken. Nest boxes with variable entrance hole sizes are recommended to accommodate a variety of bird species. The following nest boxes should be incorporated into the development of the site;
- Schwegler Nest Box 1B 26 mm;
  - Schwegler Open Front Nest Box 2H
  - Schwegler Starling Nest Box.
- 5.9 Vegetation clearance will be undertaken outside the nesting period which runs from March to August inclusive. Where this is not possible, clearance that must be carried out within the bird breeding season will be subject to a pre-clearance bird survey carried out by a suitably experienced ecologist.
- 5.10 No works will be carried out within 5 m of an identified nest until the young have fledged and are no longer returning to the nest site. Works will only be undertaken once a scheme ecologist has declared the nest to be no longer in use.

### Amphibians

- 5.11 There is a possibility for amphibians, such as common toad to be present on site. Therefore as a precautionary measure the following Reasonable Avoidance Measures (RAMs) are recommended to avoid impacts to common amphibians during the works;

- Clearance of the habitats on site should be undertaken no more than two weeks prior to works commencing on site, all vegetation within any working areas, where required, should be cut and removed using hand held machinery (i.e. strimmer, brushcutter, chainsaw) to a height of no less than 150 mm;
- The working area must be left for a minimum of two days to allow any amphibians that may be present to move out of the immediate area. A second cut using hand held machinery (i.e. strimmer or brushcutter) should be then carried out to a height of 50 mm;
- Any excavations should be backfilled, covered over, or a means of escape provided (e.g. plank) at the end of each day in order to prevent amphibians becoming stranded within trenches;
- All works, stockpiling of materials or storage of machinery must be contained within sub-optimal habitat (bare ground or hard standing, or raised off the ground) and any soil/spoil stored on site will be compacted; and
- Any amphibians found during the duration of the works should be moved safely (using gloved hands) to a suitable location outside the working area.

#### Invertebrates

- 5.12 The retention of topsoils, creation and less intensive management of wildflower grasslands as described in paragraph 5.3 and 5.4 will ensure the continuation of invertebrate foraging habitat on site.

#### ***Enhancement measures***

- 5.13 As designs for the site develop, an ecologist can provide site specific advice on ways to enhance the wildlife value of the final development and contribute towards a net gain in biodiversity. Simple examples of enhancement measures which could be considered and designed into the proposals include (but are not limited to):
- Additional planting of native trees in suitable locations on site;
  - Landscaping schemes to include native species that are nectar rich to attract a variety of species.

#### ***Re-survey of the Site***

- 5.14 If no works are undertaken on site within 12 months of this survey or if any changes to the proposals are made, a further ecological survey may be necessary (because of the mobility of animals and the potential for colonisation of the site).

## References

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- British Standards Institution (2013) *BS 42020:2013 Biodiversity – Code of practice for planning and development*. British Standards Institution, London.
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- Stace, C. (2010) *New Flora of the British Isles*. Third Edition. Cambridge University Press, Cambridge.
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## Appendix A – Legal Information

This report provides guidance of potential offences as part of the impact assessment. This report does not provide detailed legal advice and for full details of potential offences against protected species the relevant acts should be consulted in their original forms i.e. The Wildlife and Countryside Act, 1981, as amended, The Countryside and Rights of Way Act 2000, The Natural Environment and Rural Communities Act, 2006 and The Conservation of Habitats and Species Regulations 2017.

Species	Legislation	Offences	Notes on licensing procedures and further advice
<b>Species that are protected by European and national legislation</b>			
<b>Bats</b> <i>European protected species</i>	Conservation of Habitats and Species Regulations 2017 Reg 41	Deliberately <sup>1</sup> capture, injure or kill a bat; Deliberate disturbance <sup>2</sup> of bats; Damage or destroy a breeding site or resting place used by a bat. The protection of bat roosts is considered to apply regardless of whether bats are present.	An NE licence in respect of development is required in England. <a href="https://www.gov.uk/bats-protection-surveys-and-licences">https://www.gov.uk/bats-protection-surveys-and-licences</a> <i>European Protected Species: Mitigation Licensing- How to get a licence</i> (NE 2010) <i>Bat Mitigation Guidelines</i> (English Nature 2004) <i>Bat Workers Manual</i> (JNCC 2004) <i>BS8596:2015 Surveying for bats in trees and woodland</i> (BSI, 2015)
	Wildlife and Countryside Act 1981 (as amended) <sup>4</sup> S.9	Intentionally or recklessly <sup>3</sup> obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place.	Licence from NE is required for surveys (scientific purposes) that would involve disturbance of bats or entering a known or suspected roost site.
<b>Birds</b>	Conservation of Habitats and Species (Amendment) Regulations 2017	N/A	Authorities are required to take steps to ensure the preservation, maintenance and re-establishment of a sufficient diversity and area of habitat for wild birds in the United Kingdom, including by means of the upkeep, management and creation of such habitat. This includes activities in relation to town and country planning functions.
	Wildlife and Countryside Act 1981 (as amended) <sup>4</sup> S.1	Intentionally kill, injure or take any wild bird; Intentionally take, damage or destroy the nest of any wild bird while that nest is in use or being built; Intentionally take or destroy the nest or eggs of any wild bird. <b>Schedule 1 species</b> Special penalties are liable for these offences involving birds on Schedule 1 (e.g. most birds of prey, kingfisher, barn owl, black redstart, little ringed plover). Intentionally or recklessly <sup>3</sup> disturb a Schedule 1 species while it is building a nest or is in, on or near a nest containing eggs or young; intentionally or recklessly disturb dependent young of such a species.	No licences are available to disturb any birds in regard to development. Licences are available in certain circumstances to damage or destroy nests, but these only apply to the list of licensable activities in the Act and do not cover development. General licences are available in respect of 'pest species' but only for certain very specific purposes e.g. public health, public safety, air safety. <a href="https://www.gov.uk/wild-birds-protection-surveys-and-licences">https://www.gov.uk/wild-birds-protection-surveys-and-licences</a> <a href="https://www.gov.uk/prevent-wild-birds-damaging-your-land-farm-or-business">https://www.gov.uk/prevent-wild-birds-damaging-your-land-farm-or-business</a>
<b>Other species</b>			
<b>Rabbits, foxes and other wild mammals</b>	Wild Mammals (Protection) Act 1996	Intentionally inflict unnecessary suffering to any wild mammal.	Natural England provides guidance in relation to rabbits (Technical Information note TIN003, Rabbits- management options for preventing damage, July 2007) and foxes (which are also protected under the Wildlife and Countryside Act 1981 from live baits and decoys, see

Species	Legislation	Offences	Notes on licensing procedures and further advice
For BAP species and Species of Principal Importance, see below			Species Information notes SIN003 (2011), <i>Urban foxes</i> and SIN004 (2011) <i>The red fox in rural areas</i> as well as other wild mammals. Lawful and humane pest control of these species is permitted.

<sup>1</sup>Deliberate capture or killing is taken to include “accepting the possibility” of such capture or killing

<sup>2</sup>Deliberate 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 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.

Lower levels of disturbance not covered by the Conservation of Habitats and Species Regulations 2017 remain an offence under the Wildlife and Countryside Act 1981 although a defence is available where such actions are the incidental result of a lawful activity that could not reasonably be avoided. Thus deliberate disturbance that does not result in either (a) or (b) above would be classed as a lower level of disturbance.

<sup>3</sup>The term ‘reckless’ is defined by the case of Regina versus Caldwell 1982. The prosecution has to show that a person deliberately took an unacceptable risk, or failed to notice or consider an obvious risk.

Site Designation	Legislation	Guidance
<b>Species and Habitats of Principal Importance for the Conservation of Biodiversity</b>	Natural Environment & Rural Communities Act 2006 S.40 (which superseded S.74 of the Countryside & Rights of Way Act 2000).	S.40 of the NERC Act 2006 sets out the duty for public authorities to conserve biodiversity in England. Habitats and species of principal importance for the conservation of biodiversity are identified by the Secretary of State in consultation with NE, are referred to in S.41 of the NERC Act for England. The list of habitats and species was updated in 2008: <a href="http://webarchive.nationalarchives.gov.uk/20140605090108/http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx">http://webarchive.nationalarchives.gov.uk/20140605090108/http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx</a> The habitats and species listed are not necessarily of higher biodiversity value, but they may be in decline. Habitat Action Plans and Species Action Plans are written for them or are in preparation, to guide their conservation. Ecological impact assessments should include an assessment of the likely impacts to these habitats and species.
<b>Biodiversity Action Plan (BAP) Habitats &amp; Species</b>	No specific legislation, unless it is also a species or habitat of principal importance as described above.	The UK Post 2010 Biodiversity Framework published in July 2012 succeeds the UK BAP. Following devolution in 1998, each of the four countries of the UK have developed their own Biodiversity Strategies. In England the current strategy is <i>Biodiversity 2020: A strategy for England's wildlife and ecosystem services</i> (2011), which also reflects a change in strategic thinking following the Convention for Biological Diversity's (CBD) Strategic Plan for Biodiversity 2011-2020 and the launch of the new EU Biodiversity Strategy. The UK Post 2010 Biodiversity Framework demonstrates how the work of the four countries and the UK contributes to the Aichi Biodiversity Targets in the CBD's Strategic Plan for Biodiversity 2011-2020. The original UK BAP list of species and habitats, prepared over 10 years ago, was used to compile the lists of species and habitats of principal importance under section 41 of the NERC Act 2006 which now forms the focus of England's Biodiversity Strategy. In addition to the England Biodiversity Strategy, there are also many BAPs at the regional and local level which feed into the delivery at the country level and also identify biodiversity priorities at the more local level.

## Appendix B – Bat Roost Potential and Habitat Suitability Categories

Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape (Collins, 2016).

Suitability	Description of Roosting Habitat	Commuting & Foraging Habitats
<b>Negligible</b>	Negligible habitat features on site likely to be used by roosting bats	Negligible habitat features on site likely to be used by commuting or foraging bats.
<b>Low</b>	<p>A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitats to be used on a regular basis or by a larger number of bats (i.e. unlikely to be suitable maternity or hibernation).</p> <p>A tree of sufficient size and age to contain potential roosting features but with none seen from the ground, or feature seen with only very limited roosting potential.</p>	<p>Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream but isolated i.e. not very well connected to the surrounding landscape by other habitat.</p> <p>Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.</p>
<b>Moderate</b>	A structure or 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.	<p>Continuous habitat connected to the wider landscape that could be used by bats for commuting, such as lines of trees and scrub or linked back gardens.</p> <p>Habitat that is connected to the wider landscape that could be used by bats for foraging, such as trees, scrub, grassland or water.</p>
<b>High</b>	A structure or tree with one or more potential roost sites 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.	<p>Continuous high quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.</p> <p>High quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats, such as broadleaved woodland, tree-lined watercourses and grazed parkland.</p> <p>Site is close and connected to known roosts.</p>

## Appendix C – Target notes

Target Note	Description	Photograph
1	<p>An area of tall ruderal vegetation at the northern end of the site. Species include rosebay willowherb (<i>Chamerion angustifolium</i>), common hogweed (<i>Heracleum sphondylium</i>), creeping thistle (<i>Cirsium arvense</i>), broad leaved dock (<i>Rumex obtusifolius</i>) with occasional marshy vegetation including soft rush (<i>Juncus effusus</i>).</p> <p>The tall ruderal vegetation provides foraging and refuge habitat for amphibians/small mammals and commuting/foraging habitat for bats.</p>	
2	<p>Scattered silver birch (<i>Betula pendula</i>) and ash (<i>Fraxinus excelsior</i>) trees are present on the western and southern boundary. Ground flora comprises tall ruderal species as described in TN1 with areas of dominant bramble scrub. Fly tipped materials including wood, metal and pipework are present within the area.</p> <p>The trees and scrub provide nesting habitat for birds, refuge habitat for small mammals and foraging/commuting habitat for bats.</p>	See Photograph 1
3	<p>Rough, marshy grassland is common throughout the site, species include abundant moss sp. (<i>Bryophyta</i> sp.) and marsh vetchling (<i>Lathyrus palustris</i>) with occasional field horsetail (<i>Equisetum arvense</i>), soft rush, germander speedwell (<i>Veronica chamaedrys</i>), burdock sp. (<i>Articum</i> sp.) and common mouse ear (<i>Cerastium fontanum</i>). Tall ruderal vegetation is also present and dominated by rosebay willowherb. Young alder (<i>Alnus glutinosa</i>) and sycamore (<i>Acer pseudoplatanus</i>) saplings are also present.</p> <p>The area provides refuge habitat for amphibians and the alder saplings providing foraging habitat for bats and birds.</p>	
4	<p>A group of young to semi-mature trees are present to the south east of the site, dominated by goat willow (<i>Salix caprea</i>) and occasional alder and silver birch. The trees are at the basin of a sloped depression with remnants of two dry stone walls present. The ground flora is dominated by tall ruderal species including; rosebay willowherb, common nettle (<i>Urtica dioica</i>), common hogweed and cleavers (<i>Galium aparine</i>).</p> <p>The trees provide nesting habitat for birds and foraging habitat for bats. The dry stone walls and tall ruderal vegetation provide refuge habitat for amphibians and small mammals.</p>	
5	<p>A small culvert is present at the eastern boundary of the site. The culvert meanders under the adjacent road and roundabout to the east and was dry at the time of survey.</p>	

### Appendix D – Phase 1 Habitat Plan



## Appendix E – Suggested Species for Tree and Shrub Planting

Tree and shrub planting mix						
Scientific name	Common name	Location / Landscape Type		Local Conditions		
		County Wide	Lowlands Below 75m	Soil	Hydrology	
				Neutral	Damp	Dry
<i>Alnus glutinosa</i>	Alder		*	*	*	
<i>Betula pendula</i>	Silver Birch		*	*		*
<i>Betula pubescens</i>	Downy Birch		*	*	*	
<i>Calluna vulgaris</i>	Heather					*
<i>Corylus avellana</i>	Hazel		*	*		*
<i>Crataegus monogyna</i>	Hawthorn	*	*	*		*
<i>Cytisus scoparius</i>	Broom		*			*
<i>Fraxinus excelsior</i>	Ash		*	*		*
<i>Ilex aquifolium</i>	Holly	*	*	*		*
<i>Ligustrum vulgare</i>	Wild Privet		*	*		*
<i>Lonicera periclymenum</i>	Honeysuckle		*	*		*
<i>Malus sylvestris</i>	Crab Apple		*	*		*
<i>Populus tremula</i>	Aspen		*	*	*	
<i>Prunus avium</i>	Wild Cherry		*	*		*
<i>Prunus padus</i>	Bird Cherry			*		*
<i>Prunus spinosa</i>	Blackthorn		*	*		*
<i>Quercus petraea</i>	Sessile Oak					*
<i>Quercus robur</i>	Pedunculate Oak		*	*		*
<i>Rosa arvensis</i>	Field Rose		*	*		*
<i>Rosa canina</i> agg.	Dog Rose		*	*		*
<i>Salix caprea</i>	Goat Willow		*	*	*	
<i>Salix cinerea</i>	Grey Willow		*	*	*	
<i>Salix fragilis</i>	Crack Willow		*	*	*	
<i>Salix repens</i>	Creeping Willow			*	*	
<i>Salix viminalis</i>	Osier				*	
<i>Sambucus nigra</i>	Elder		*	*		*
<i>Sorbus aucuparia</i>	Rowan	*	*	*		*
<i>Ulex europaeus</i>	Gorse			*		*
<i>Ulmus glabra</i>	Wych Elm		*			*
<i>Vaccinium myrtillus</i>	Bilberry	*				*
<i>Viburnum opulus</i>	Guelder-rose		*	*	*	