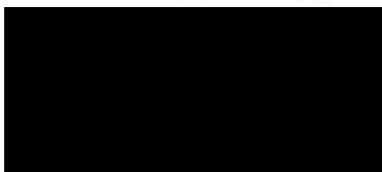




Huyton Industrial Estate
Ecological Appraisal

August, 2021

Control sheet

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Executive Summary

An extended Phase 1 Habitat survey of land located at 35 Wilson Road, Huyton Business Park, Liverpool, was completed during July 2021 to inform a planning application for the construction of 8 new storage units and parking facilities.

Key ecological features, potential impacts, further survey requirements and outline mitigation measures are summarised in Table 1 below.

Table 1: Summary of ecological features, impacts and outline mitigation

Ecological Feature	Potential Impact	Further surveys required	Outline Mitigation
Local Wildlife Sites and Habitats of Principal Importance	Pollution	N	Pollution prevention measures
Habitats	Loss of habitat	N	Minimise habitat loss and translocate removed habitat to suitable areas Safeguard Root Protection Areas of trees and shrubs in mature treelines
Bats	Impact to roosting bats in adjacent trees / buildings	Y*	Minimise habitat loss, use of bat friendly lighting schemes, *minimum of one dusk emergence or dawn re-entry survey for Buildings 2 and 3 and installation of four compensatory bat boxes
Birds	Injury / mortality Loss of habitat	N*	Any vegetation clearance to be outside of nesting season or *a pre-clearance nesting bird check by an ecologist required Provision of 5 open fronted nest boxes to provide alternative nesting habitat
Mammals	Injury / mortality	N	Use of reasonable avoidance measures and provision of mitigation measures for Hedehogs
Amphibians / Reptiles	Injury / mortality	N	Use of appropriate RAMs and pollution avoidance measures
Invasive species	Spread of invasive species to new locations on or around site	N	Use of reasonable control measures and appropriate disposal of both arisings and potentially contaminated soil
Species in adjacent watercourse	Pollution leading to loss of habitat/mortality	N	Use of pollution prevention methods

1. Introduction

- 1.1 Bowland Ecology Ltd was commissioned by Linden Hill-Capital Assets-ALX Limited to complete an extended Phase 1 Habitat survey of land located at 35 Wilson Road, Huyton Business Park, Liverpool, L36 6AE (NGR: SJ 45755 90004).
- 1.2 The site forms part of the grounds of Huyton Business Park, in Knowsley, central Merseyside. It mostly comprises bare ground, with patches of sparse ephemeral vegetation and scrub. There are large warehouse units in the centre of the site. The surrounding land use is also predominantly a business park with warehouses and scattered trees and small areas of woodland alongside Logwood Mill brook, which runs along the north eastern edge of the site. Both the ephemeral vegetation, scrub and brook have the potential to be disturbed by the proposed works.
- 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 extended Phase 1 Habitat survey, which included a desk study and field survey, followed the CIEEM Guidelines for Preliminary Ecological Appraisal and the CIEEM Guidelines for Ecological Report Writing (CIEEM, 2017 a, b), and is in line with the British Standard BS42020:2013 'Biodiversity – Code of practice for planning and development' (British Standards Institution 2013).

Desk Study

- 2.2 The aim of the desk study was to identify the presence of statutory and non-statutory wildlife sites and any legally protected species or Habitats and Species of Principal Importance (HPI & SPI) for the conservation of biodiversity (Section 41 NERC Act 2006) within the search area.
- 2.3 The Multi-Agency Geographic Information for the Countryside (MAGIC) website (www.magic.gov.uk) was reviewed for information on locally, nationally and internationally designated sites of nature conservation importance (statutory sites only) within 2 km of the site boundary. For larger scale project a search of 5 km is normally recommended, however due to the small scale and small zone of influence of the proposal, 2 km was deemed sufficient.
- 2.4 Local records of protected sites and species within 2 km of the site were obtained following a data search with Mersey BioBank.
- 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 licensing method statement template (Form WML-A14-2, version November 2017¹) 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 as 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 small zone of influence and working footprint of the scheme.

Field Survey

- 2.7 The extended Phase 1 Habitat survey followed standard methodology (JNCC, 2010 and CIEEM, 2017b). A colour coded map of the habitats on site was produced (Appendix A) and all features of ecological significance were target noted (see Appendix B).
- 2.8 This survey methodology records information on habitats used by, 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 the suitability of bat roosting, foraging and commuting habitat was undertaken according to the Bat

¹ <https://www.gov.uk/government/publications/great-crested-newts-apply-for-a-mitigation-licence>

Conservation Trust's Good Practice Guidelines 3rd Edition (Collins, 2016) (Appendix C);

- Assessing the suitability of habitats for other notable and protected species such as nesting birds (including any active or disused nests), 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 (*Rhododendron ponticum*, *R. ponticum* x *R. maximum* and *R. luteum*) and Himalayan balsam (*Impatiens glandulifera*).

- 2.9 The survey was carried out by Lucy Pocock BSc (Hons) and Luke Hall BSc (Hons) on the 20th July 2021. The weather was 25° C, with no cloud cover and a very light breeze (Beaufort Scale 2).

Limitations

- 2.10 Ecological surveys are limited by factors that 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 Desk study data should not be treated as a comprehensive list of species present within a search area. Many species are under-recorded and low numbers of records can indicate a lack of survey effort in some areas, rather than confirm the absence of a species.
- 2.12 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 was sufficient to identify any significant constraints posed by invasive plants.

3. Results

Designated Sites and Habitats of Principal Importance

- 3.1 There are no statutory designated wildlife sites on or within 2 km of the site.
- 3.2 The site falls outside the Impact Risk Zone (IRZ) for the Mersey estuary SSSI, which is located 7 km south of the site, and the proposals do not fall into any of the indicated IRZ categories for which the Local Planning Authority must consult with Natural England.
- 3.3 There are 21 non-statutory Local Wildlife Sites within 2 km of the site:
- Coppice Lane Council Depot, which is 0.4 km to the south and appears to have been developed on since the data from the desk study was gathered.
 - Stadt Moers Q3, Knowsley, which is 0.5 km to the north and consists mainly of broadleaved deciduous woodland and lowland meadows; it appears to be contiguous with Tushingham's Pond, Stadt Moers Q2 and Q3.
 - Tushingham's Pond, Stadt Moers Country Park, which is 0.5 km to the north east and site consists of a central pond surrounded by lowland fens and broadleaved deciduous woodland.
 - Stadt Moers Q4, Knowsley, which is 0.6 km to the north east (see Stadt Moers Q3 for habitat description).
 - Stadt Moers Q2 and visitor centre, which is 0.9 km to the north east (see Stadt Moers Q3 for habitat description).
 - Strettles Bog, Tarbock, which is 0.9 km to the south east and consists of mainly sapling Ash and Oak trees with occasional wet areas consisting of Stinking iris (*Iris foetidissima*), Common reed (*Phragmites australis*) and Broad buckler fern (*Dryopteris dilatata*).
 - Those located 1 km or more away include:
 - Big Water and Big Water Wood, Halsnead, located 1 km to the east.
 - The Old Wood, South, located 1.1 km to the south east.
 - The Old Wood, North, located 1.1 km to the south east.
 - Ox Lane Wood, Tarbock, located 1.2 km to the south.
 - Huyton and Prescott Golf Club, Knowsley, located 1.2 km to the north.
 - Daggers Bridge Wood, located 1.2 km to the south east.
 - Huyton Lane Wetland, located 1.5 km to the north west.
 - Ochre Brook, Tarbock, Knowsley, located 1.3 km to the south east.
 - Lickers Lane Wood, located 1.5 km to the east.
 - Dog Clog Brook, Tarbock, Knowsley, located 1.5 km to the south.
 - Ten Acre Pits, Huyton, located 1.6 km to the west.
 - Mine Waste, Cronton, located 1.6 km to the south east.
 - Woodland, Sandfield Park, located 1.7 km to the east.
 - Mill Brook, Netherley, Knowsley, located 1.9 km to the south.

- Carr Lane Lake, located 2 km to the north.
- 3.4 The search of MAGIC and the Mersey Biobank data search identified several HPI within 2 km of the site:
 - 13 records of reedbeds (Lowland Fen HPI), the closest being located 160 m south east of the site boundary, and 2 other records of Lowland Fens HPI located 500 m north east at the closest point.
 - 95 hectares of woodland (likely Lowland Mixed Deciduous Woodland HPI), which is well distributed throughout the 2 km search radius, the closest example being 200 m to the east along the edge of the M57.
 - 57 hectares of neutral grassland (Lowland Meadows HPI), the closest being 220 m to the south east.
 - 9.2 km of hedgerow (likely Hedgerows HPI), the closest being located 400 m to the south.
 - 7.5 hectares of Lowland Dry Acid Grassland HPI mainly located in close proximity to Halsnead Park 850 m to the south east.
- 3.5 The search of MAGIC identified one area of ancient woodland within 2km located at The Old Wood, 1.1 km from site to the south east.
- 3.6 67 ponds were identified within 2 km via Mersey Biobank data search however, only 1 was located within 0.25 km of the site.

Habitats

- 3.7 Target notes (TN) summarising key interest features for wildlife recorded during the extended Phase 1 Habitat survey are included in Appendix B. The plan of Phase 1 habitats recorded on site is presented in Appendix A, which also includes the locations of the target notes. Each Phase 1 habitat type is described more fully below. Plant species nomenclature follows Stace (2010).

Ephemeral vegetation (TN1)

- 3.8 Most of the site consists of bare ground and ephemeral vegetation comprising Ribwort plantain (*Plantago lanceolata*), Sow thistle (*Sonchus oleraceus*), Mustard sp. (*Brassica sp.*), Ragwort (*Senecio jacobaea*), Yorkshire fog (*Holcus lanatus*), Herb Robert (*Geranium robertianum*), Rosebay willow herb (*Chamaenerion angustifolium*), Red campion (*Silene dioica*), Black medick (*Medicago lupulina*), Spear thistle (*Cirsium vulgare*), Creeping bent (*Agrostis stolonifera*), Broad-leaved dock (*Rumex obtusifolius*), Common hogweed (*Heracleum sphondylium*), Hemp agrimony (*Eupatorium cannabinum*), Red clover (*Trifolium pratense*), White clover (*Trifolium repens*) and Oxeye daisy (*Leucanthemum vulgare*).

Mature treeline and scattered trees (TN2, TN9)

- 3.9 Along the NW and SE edges of the site, there are mature treelines and scattered trees. These are mostly coniferous trees; other species include Elder (*Sambucus nigra*), Dogwood (*Cornus sanguinea*), Hedge bindweed (*Calystegia sepium*) and Hawthorn (*Crataegus monogyna*) at TN2; and Goat willow (*Salix caprea*), Hawthorn, Wild cherry (*Prunus avium*) and Silver birch (*Betula pendula*) at TN9.

Scrub (TN3)

- 3.10 Sections of dense scrub are present on the site mainly at the site boundary at TN3 and along the boundary to the north alongside the brook. These areas primarily consist of Buddleia (*Buddleia davidii*), Mugwort (*Artemisia vulgaris*), Goat willow saplings, Bramble (*Rubus fruticosus*), Bistort (*Persicaria bistorta*), Ribwort (*Plantago lanceolata*), False oat-grass (*Arrhenatherum elatius*) and Common vetch (*Vicia sativa*).

Watercourse (TN9)

- 3.11 A small section of watercourse is present along the northern section of the site. It lies outside the site boundary and is heavily vegetated throughout, meaning access, even for a visual inspection, was not possible. The treeline surrounding the brook consists of dominant Sycamore (*Acer pseudoplatanus*), Grey willow (*Salix cinerea*), Goat willow, and Crack willow (*Salix fragilis*), with abundant Elder (*Sambucus nigra*), Hawthorn, Oak (*Quercus robur*) and occasional Conifers, Wild cherry, Ash (*Fraxinus excelsior*) and Rowan (*Sorbus aucuparia*).

Fences

- 3.12 Most of the site is bounded by high fencing, separating it from the surrounding business park units.

Buildings

- 3.13 Four buildings are present on the site with the main building being split into two for the target notes due to the differing structure and age. Building 2 and 3 (main storage and office unit) provide low potential roosting spots for bats along the SE elevation, while the rest of the buildings were of negligible potential.

Species

Plants (incl. invasive species)

- 3.14 The Phase 1 Habitat survey revealed instances of both Cotoneaster and Japanese Knotweed (both labelled on the Habitat Plan in Appendix A).

Bats

- 3.15 The desk study returned 139 records of foraging and commuting bats and five records of bat roosts within 2 km of the site. Species recorded included common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), unidentified pipistrelle (*Pipistrellus* sp.), Daubenton's bat (*Myotis daubentonii*), Noctule bat (*Nyctalus noctula*), Natterer's bat (*Myotis daubentonii*), Whiskered bat (*Myotis daubentonii*), Myotid species (*Myotis* spp.), and unidentified bat species. The closest bat roost is of Brown long-eared bat located 1.2 km south of the site. Details of the roost are not included within the desk study information.
- 3.16 The site provides limited amounts of suitable foraging and commuting habitat for bat species which show a preference for utilising 'edge' habitats via treelines located just outside the site boundaries. Such species include Common pipistrelle and Myotid species, which are flexible in their foraging habitat. The brook itself, while outside the site boundary, is also considered to be a good potential foraging feature for Daubenton's bats.
- 3.17 Most of the site comprises bare ground and ephemeral vegetation, which provides limited bat foraging habitat. Suitable foraging and commuting habitats for bats within the site include overhanging treelines (TN2, TN5, TN9), and dense scrub around the base of the trees along the brook (TN5). More suitable bat foraging habitat is located beyond the site boundary, including the small area of

woodland to the NE along Logwood Mill brook. Although the brook provides good access to areas of deciduous woodland to the NE, the site is otherwise poorly connected in all other directions to further areas of bat foraging habitat. Overall, the site was assessed as offering low suitability for foraging and commuting bats in accordance with Collins (2016).

- 3.18 Two buildings were assessed as providing potential habitat for roosting bats within the site. The small area of woodland adjacent to Logwood Mill brook also offers potential habitat among the mature trees (TN5). A brief description of the two buildings and their suitability for roosting bats is given in Appendix B (B2 and B3).

Birds

- 3.19 The following birds that are classified as Species of Principal Importance and/or red-listed species on Birds of Conservation Concern 4 (Eaton *et al.*, 2015) were returned by the 2 km desk study; Bullfinch (*Pyrrhula pyrrhula*), Corn bunting (*Emberiza calandra*), Dunnock (*Prunella modularis*), Grasshopper warbler (*Locustella naevia*), Grey partridge (*Perdix perdix*), House sparrow (*Passer domesticus*), Lapwing (*Vanellus vanellus*), Lesser redpoll (*Acanthis cabaret*), Linnet (*Linaria cannabina*), Reed bunting (*Emberiza schoeniclus*), Skylark (*Alauda arvensis*), Song thrush (*Turdus philomelos*), Starling (*Sturnus vulgaris*), Tree sparrow (*Passer montanus*), Willow tit (*Poecile montanus*) and Yellowhammer (*Emberiza citrinella*).
- 3.20 The bare ground and ephemeral vegetation which makes up most of the site is considered unsuitable for ground nesting birds.
- 3.21 The treelines, scrub/bramble and brookside vegetation provide suitable nesting habitat for shrub and tree nesting bird species.
- 3.22 Building 3 (B3), which is in the centre of the site, was assessed as providing nesting space for upwards of one hundred gulls that were present at the time of the survey and flagged up by a representative on site.

Other mammals

- 3.23 The desk study returned 17 records of Brown hare (*Lepus europaeus*) and 51 records of West European hedgehog (*Erinaceus europaeus*), the site is deemed suitable habitat for the latter due to the presence of thick scrub vegetation in parts, with the former unlikely to be present given the lack of connectivity to further habitat and strong fencing.
- 3.24 Records show 4 instances of Badger (*Meles meles*) in the 2 km radius. However, the site is not deemed suitable for this species due to its limited size, connectivity, disturbance and strong fencing.

Aquatic species

- 3.25 The desk study returned one record of Otter (*Lutra lutra*), from Tarbock to the south of the site; the watercourse at Tarbock is directly connected to the brook at the north eastern edge of the site and so this could potentially form part of regular territory used by otters.
- 3.26 The desk study also returned data for Water vole (*Arvicola amphibius*) activity in the area. 37 counts of activity were returned with positive confirmation above and below Logwood Mill brook. Water vole are present at Prescott golf club (connecting to the north end of the brook) and Ochre brook at Tarbock Hall

(connecting to the south end of the brook). Logwood Mill brook itself has been subject to three Water vole checks in the last 20 years, most recently in 2010 with no activity recorded. However, given the location of sightings and connectivity of the watercourse, it could potentially be used as a commuting pathway by this species.

Reptiles and amphibians

- 3.27 No records of reptiles were returned from the 2 km desk study area. Most of the site comprises bare ground and is considered to provide unsuitable habitat for reptile species.
- 3.28 There were records of amphibians returned by the desk study including Common frog (*Rana temporaria*), Common toad (*Bufo bufo*), Great crested newt (*Triturus cristatus*) and Smooth newt (*Lissotriton vulgaris*). There are no ponds within the site itself. A review of aerial photos and OS maps identified one pond within 0.25 km of the site, located around 120 m to the south. However, as this is located across a busy road it is deemed unlikely that any inhabitants of this pond will make their way onto site. There was also a pond recorded during the Phase 1 Habitat survey just through the fence to the south, which was not flagged on the desk study or MAGIC data search. However, due to the limited connectivity of the brook and the steep sided woodland, a population in this pond is deemed unlikely.

4. Evaluation and Assessment of Potential Impacts

- 4.1 An assessment of effects on ecological features has been made based on the available scheme proposals (see below), desk and field survey information, and the professional judgement of the ecologist. This includes a consideration of relevant legislation (see Appendix D) and planning guidance. If there are changes to the proposals, such as a change to the proposed development design or to the construction method and programme, the assessment would need to be reviewed.

Scheme Proposal

- 4.2 The site is subject for proposals for the installation of a multi-use unit and the construction of parking spaces, which would form a wide area of flat, hard standing. A map of the plans is available in Appendix E.

Designated Sites and Habitats of Principal Importance

- 4.3 The site lies just outside the Impact Risk Zone (IRZ) for the Mersey Estuary SSSI which is located 7 km south of the site at its closest point. As such it is of no further concern in this report.
- 4.4 The closest local wildlife site of interest is Stadt Moer located 0.5 km north of the site; and the closest HPI is a Deciduous Woodland 0.2 km east of the site. Due to the small scale and localised nature of the works, it is considered unlikely that these sites will be directly impacted. However, indirect impacts including pollution (fuel spillages incidents, runoff and dust) and vibration disturbance during site clearance and construction may occur in the absence of mitigation. Dust pollution, in particular, has the potential to negatively impact habitats through an increase in dust deposition. For example, the smothering effects from the grounding of dust reduces the amount of light available for photosynthesis

which can impact on ground vegetation and affect the long-term success of trees.

Habitats

- 4.5 The site is dominated by bare ground with scattered ephemeral vegetation; this habitat type, along with buildings, provide negligible botanical value and is very common in the local landscape. As such, loss of this habitat will not result in a significant adverse ecological impact.
- 4.6 The scattered and dense scrub have moderate potential for nesting birds, given the density of bramble and saplings in areas such as TN3. The proximity to larger treelines and the watercourse also means these areas of scrub have good connectivity to wildlife areas, such as Stadt Moers to the north. Clearance of these areas could have an adverse ecological impact, potentially disturbing protected species such as Bullfinch, Dunnock, Linnet and Song thrush as detected in the desk study.
- 4.7 The various mature treelines located just outside the site boundaries could be adversely impacted by indirect impacts of pollution, vibration and dust (as described in paragraph 4.4 above). Direct impacts could also arise if works damage the roots of trees and shrubs. This could have a negative ecological impact on nesting birds and also potential bat roosts and foraging routes by reducing connectivity to wider areas of habitat.

Species

Bats

- 4.8 The buildings present on the site were assessed as having varying levels of suitability for roosting bats (Appendix B).
- 4.9 Buildings 1, 4 and 5 are considered to have **negligible** potential for roosting bats. The absence of PRF (Potential Roost Features) and/or the roofing materials in these buildings creates sub-optimal roosting conditions for bats. The proposed scheme, in regard to these buildings, is therefore unlikely to result in the injury and/or killing of bats or impact the suitability of bat roosting habitat.
- 4.10 Buildings 2 and 3 are assessed as having **low** potential to support roosting bats. PRF include gaps in lintels, gaps in brickwork/missing mortar, gaps under fascia and gaps under asbestos cladding on building exterior. In the absence of mitigation, the scheme proposals therefore carry a risk of causing injury and/or death to any potential roosting bats during building demolition and rebuilding, which would constitute an offence (see Appendices D and F).
- 4.11 The habitats within the site were assessed as providing negligible suitability for foraging and commuting bats. However, the treeline and brook habitats immediately surrounding the site provide good suitability for foraging and commuting, as evidenced by the abundance of bat records in the local area and their connectivity to local wildlife sites (Stadt Moers, 0.5 km to the north). Any unmitigated negative impacts to these habitats are likely to have a negative ecological impact via reduction in foraging area and further fragmentation of habitats in the locale.

Birds

- 4.12 Any removal of dense scrub or the overhanging treeline will result in the loss of nesting habitat for shrub nesting birds and potential damage/destruction of nests and chicks if clearance is conducted during the nesting bird season (March to August inclusive). This would constitute an offence under the Wildlife and Countryside Act, 1981 (as amended) (see Appendix D).
- 4.13 Similarly, any demolition or significant disturbance of the large storage warehouse (B3) will disturb and destroy the nests of the hundreds of seagulls present if carried out during nesting bird season.

Other mammals

- 4.14 Small mammals, including hedgehog (a SPI), are at risk of becoming trapped in open excavations or otherwise harmed or disturbed whilst works are being carried out. They will also potentially be adversely affected by the removal of the dense scrub along the north east side of the site, adjacent to the brook. This habitat could be in use for foraging and breeding; removal without mitigation could result in a negative ecological impact at a site level.

Aquatic species

- 4.15 Since Logwood Mill brook is not situated within the site boundaries, construction work is not considered to be a direct threat to any potential aquatic species. However, evidence of Otter and Water vole in watercourses to the north and the south indicate that it may be in use as a commuting route between more suitable habitat. This means that unmitigated indirect impacts, such as, fuel spillage incidents, runoff and dust could result in negative ecological impacts to these species.

Reptiles and amphibians

- 4.16 Due to the absence of records returned by the desk study, and the lack of suitable habitat within the site, it is considered highly unlikely that any reptiles are present. The risk of causing injury and/or mortality to reptile species as a result of the scheme is assessed as negligible.
- 4.17 The only pond found via the desk study in a 0.25 km radius around the site was located around 120 m to the south, across the other side of Wilson Road. The occurrence of this relatively busy road between the pond and site boundary suggests that potential commuting is unlikely.
- 4.18 Another pond was detected during the Phase 1 Habitat survey just outside the site boundary to the south east (as shown in Appendix A). Although the desk study did return records nearby (Stadt Moers 0.5 km north), the risk of GCN presence at the site is considered to be highly unlikely due to:
- limited available connective habitat between the pond adjacent to the site and the desk study record. Potential commuting habitat is provided by Logwood Mill brook to the north east and habitat along the banks of the brook, adjacent to the proposed development site. However, the potential value of these habitats is limited due to flowing water, steep sided banks and the relatively narrow strip (3-4 m) of habitat; and
 - the suboptimal nature of habitats within the proposed development site i.e. predominantly hard standing and the absence of aquatic or terrestrial habitats within the development site.

- 4.19 It is therefore considered unlikely that there will be GCN present in this pond or within habitats associated with the proposed development site. As such, adherence to appropriate RAMs and pollution avoidance controls are expected to reduce the risk of harm to Great crested newts and other amphibians in this pond to negligible.

5. Recommendations

- 5.1 This section sets out measures to mitigate the impacts of the proposed development. The recommendations are designed to comply with legal requirements and national and local planning policy. 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 175 also states that “*when determining planning applications, local planning authorities should ...*” encourage “*opportunities to incorporate biodiversity improvements in and around developments*”. (National Planning Policy Framework, 2019) This section also therefore includes suggested enhancement measures. The following recommendations are designed to comply with legal requirements and national and local planning policy.

Designated Sites and Habitats of Principal Importance

- 5.2 Appropriate pollution prevention measures will be adhered to throughout construction phase of the scheme proposal to ensure there are no impacts to nearby LWS and/or HPI. Currently there is no published guidance available in England, however the Scottish Environmental Protection Agency (SEPA) and Northern Ireland Environment Agency (NIEA) have published 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. Suitable mitigation that should be adopted during site clearance and construction includes (but is not limited to);
- Maintaining high standards of housekeeping;
 - Dampening down working areas and access roads in dry periods;
 - Using covered wagons and skips; and
 - Keeping roads clean with the use of road sweepers

Habitats

- 5.3 Any areas of dense scrub should be retained where possible, for example, the scrub at TN3 and along the outside margins of the site at TN9 should be able to be retained throughout development. As most of the remainder of this habitat is located around the site perimeter, it should also be possible to retain these areas for the most part. For any areas where removal is unavoidable, provisions should be made to designate equal or greater areas within the final construction to be left to regrow naturally. Due to the relatively species poor nature of the scrubland present on site, a similar habitat will likely grow in of its own accord over time. A less intensive management regime of the resultant scrubland will also be implemented to allow suitable small mammal, bird and amphibian habitat to develop, further increasing the biodiversity value of the site.
- 5.4 All mature lines of trees should be retained unless losses are unavoidable. Measures to safeguard the Root Protection Area (RPA) of mature treelines around the site boundary will also be implemented during construction, in line with BS 5837:2012 (British Standard, 2012). Compensation for any unavoidable loss of trees and mature shrubs will comprise the planting of native species of local provenance, including berry bearing species, such as rowan, hawthorn,

blackthorn, crab apple, dog rose, dogwood and elder, and avoidance of planting ash or ornamental species. It is recommended that new trees/shrubs are planted at a ratio of two for every one lost.

- 5.5 Habitats located in Logwood Mill brook are at risk of pollution from adjacent works, which may also negatively impact protected species including otter and water vole (see 5.15). The brook is particularly at risk due to the steep sloping banks making it vulnerable to run off.
- 5.6 Appropriate pollution control and prevention measures will be applied throughout site clearance and construction to ensure that adjacent habitats, including the brook and nearby pond are not negatively affected during the works through run-off created during the construction period. The following good practice measures will be adhered to:
- Vehicle refuelling in designated compounds/area at least 10 m from the pond or brook;
 - Any fuel will be stored in double bunded containers at least 10 m from the pond or brook;
 - Drip trays or plant nappies to be used when refuelling and left under stationary machinery;
 - Oil spill kits to be kept on site and within all vehicles; and
 - All materials such as excavated topsoil must be stored in a bunded area away from the pond or brook and protected from potential rainfall and runoff.

Species

Plants (invasive species)

- 5.7 The following control measures will be undertaken to prevent the spread of Japanese knotweed on site:
- Contractors will be made aware of the locations of the Japanese knotweed and how to correctly identify the plant (see Appendix F);
 - Marking off all stands of the plant with hi-visibility fencing, including a buffer zone of 7 m;
 - Access to infected areas should be avoided until the plant has been successfully eradicated from the area in line with best practice; and
 - Biosecurity measures to be implemented whilst on site to prevent cross contamination. This involves the cleaning of footwear and machinery, prior to, and on completion of each working window to ensure that Japanese knotweed is not taken off site.
- 5.8 Under the Environmental Protection Act (1990) Sections 33 and 34, Japanese knotweed must be treated as controlled waste. As such all arisings and potentially contaminated soil from the plants must be disposed of in an appropriate manner to ensure that the waste does not cause pollution of the environment.
- 5.9 Cotoneaster is present in one location adjacent to the site (see Appendix A) and should be removed where possible.

Bats

- 5.10 Avoidance of damage to or removal of treelines in and around the site boundary will allow for less disturbance of bats within the area. In addition, any new lighting schemes will be designed so that they are 'bat friendly'. Lighting schemes should be designed in accordance with the appropriate guidance to minimise impacts on foraging bats (Institute of Lighting Professionals, 2018). Examples of low impact lighting schemes 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
- 5.11 The risk of impacts to roosting bats within Buildings 2 and 3 is considered to be low. **In accordance with Collins (2016) a minimum of one dusk emergence or dawn re-entry survey is required for low potential buildings.** The survey will be undertaken within the bat active season, between May and September, using several ecologists to cover all potential roosting features. If bats are determined to be present, consideration will need to be given to the requirement for a Natural England Licence for the modification of works to legally proceed. A method statement detailing mitigation and compensation measures, such as careful timing of the works, hand removal of potential bat roosting features and provision of alternative roosting opportunities, would also be required.
- 5.12 Compensation for the loss of Buildings 2 and 3, which have been assessed as having low potential to support roosting bats, will comprise the installation of 4 bat boxes situated on the site either mounted to trees or the newly constructed units. These boxes will be positioned at a height of between 4 to 6 metres and orientated in a southerly or south westerly direction. This will provide adequate potential roost replacement for the removal of two large buildings that provide PRFs currently.

Mammals

- 5.13 As a precaution, regarding the potential presence of various mammals on site (suggested in paragraphs 4.14), the following Reasonable Avoidance Measures (RAMs), will be undertaken:
- Before works commence, all contractors will be made aware of the potential for mammals to be encountered during works;
 - The working footprint will be kept to a minimum;
 - Removal of young woodland, scrub, young scattered trees, introduced shrub and stored materials (if required) will be undertaken with care to avoid disturbance of any sheltering/hibernating mammals;
 - All stored materials, which may provide mammals with suitable refugia, will be raised off the ground, on pallets stored over habitat of low value, such as areas of bare ground;
 - All excavated material will be stored in such a way that does not create habitat for mammals/amphibians (i.e. well compacted to ensure no cavities suitable for small mammals are created);
 - Any trenches or other excavations associated with the works will be backfilled or covered before nightfall to prevent mammals becoming trapped within them. If holes must be left open, a means of escape, such as an egress board will be provided. Excavations will be carefully inspected in the morning prior to commencement of works;
 - Any small mammals encountered at any time during works will be carefully relocated to a safe location, in an area away from the works

which will remain undisturbed and placed within an area with plenty of vegetation cover;

- If badger and/or fox are sighted, all works must stop and machinery switched off, and the animal(s) allowed to leave the area of its own accord; and
- If any mammal holes are unexpectedly discovered during the works, work in that area must cease and the project ecologist will be contacted for advice on how to proceed.

5.14 In addition to the above, the following mitigation for European hedgehog will also be undertaken;

- Provision of artificial or natural hedgehog boxes located in quiet undisturbed areas with ground covering vegetation, preferably against the broadleaved woodland. For example, three or four logs may be arranged to leave an appropriately sized hole for a hedgehog to nest in (big enough for the hedgehog and its nest) and covered with masses of twigs and leaves;
- The creation of 'hedgehog highways' by leaving holes in any boundary fencing to allow the movement of hedgehogs throughout the site; and
- Retaining wood piles from felled trees to attract invertebrates and fungi, providing a good local food source for hedgehogs and possible nesting sites (materials from site works could be used for this purpose).

Aquatic species

5.15 Aquatic species utilising Logwood Mill brook could be indirectly impacted by the proposed development. The measures set out in paragraphs 5.2 and 5.6 will ensure they are not negatively affected, including any commuting or foraging otter and water vole that use using this stretch of the brook

Birds

5.16 Any removal of scrub, tall ruderal vegetation, trees and hedgerows should take place outside the breeding bird season which runs from March until August inclusive, in order to prevent impacts upon nesting birds.

5.17 Any 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. 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.

5.18 This guidance is also applicable to the nesting gulls on building 3. It is strongly recommended that work is carried out on this structure outside of the breeding bird season (i.e. not during March to August inclusive), due to the volume and inaccessible location of the nests.

5.19 In addition, the provision of alternative nesting habitat in the form of 5 open fronted nest boxes with variable entrance hole sizes to accommodate a variety of bird species will be located within and/or adjacent to the site.

Amphibians

5.20 It is considered possible that amphibians, including common toad (a SPI), will be encountered and therefore the following RAMs (along with the general precautions suggested in 5.13) should be in place during site clearance:

- Clearance of scrub 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;
- Before works commence, all contractors will be made aware of the potential for amphibians to be encountered during works (Appendix F).
- 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 common amphibians found during the duration of the works should be moved to a suitable location outside the working area.

Enhancement measures

5.21 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. Examples of enhancement measures which could be considered and designed into the proposals include (but are not limited to):

- The installation of additional bird boxes and bat boxes, beyond the already suggested mitigation measures (paragraph 5.19).
- Enhancement of foraging and commuting opportunities for bats through the planting of night-scented plant species to attract insect prey for foraging bats. For example, evening primrose (*Oenothera biennis*), honey suckle (*Lonicera periclymenum*), and soapwort (*Sapnoria officinalis*).
- Installation of 'hedgehog highways' on all boundary fences lining the site.
- Installation of extra small mammal and amphibian nesting sites within scrub areas (as detailed in paragraph 5.14).
- Planting of flower rich vegetation along any linear strips between/behind buildings to attract insects.

Re-survey of the Site

5.23 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).

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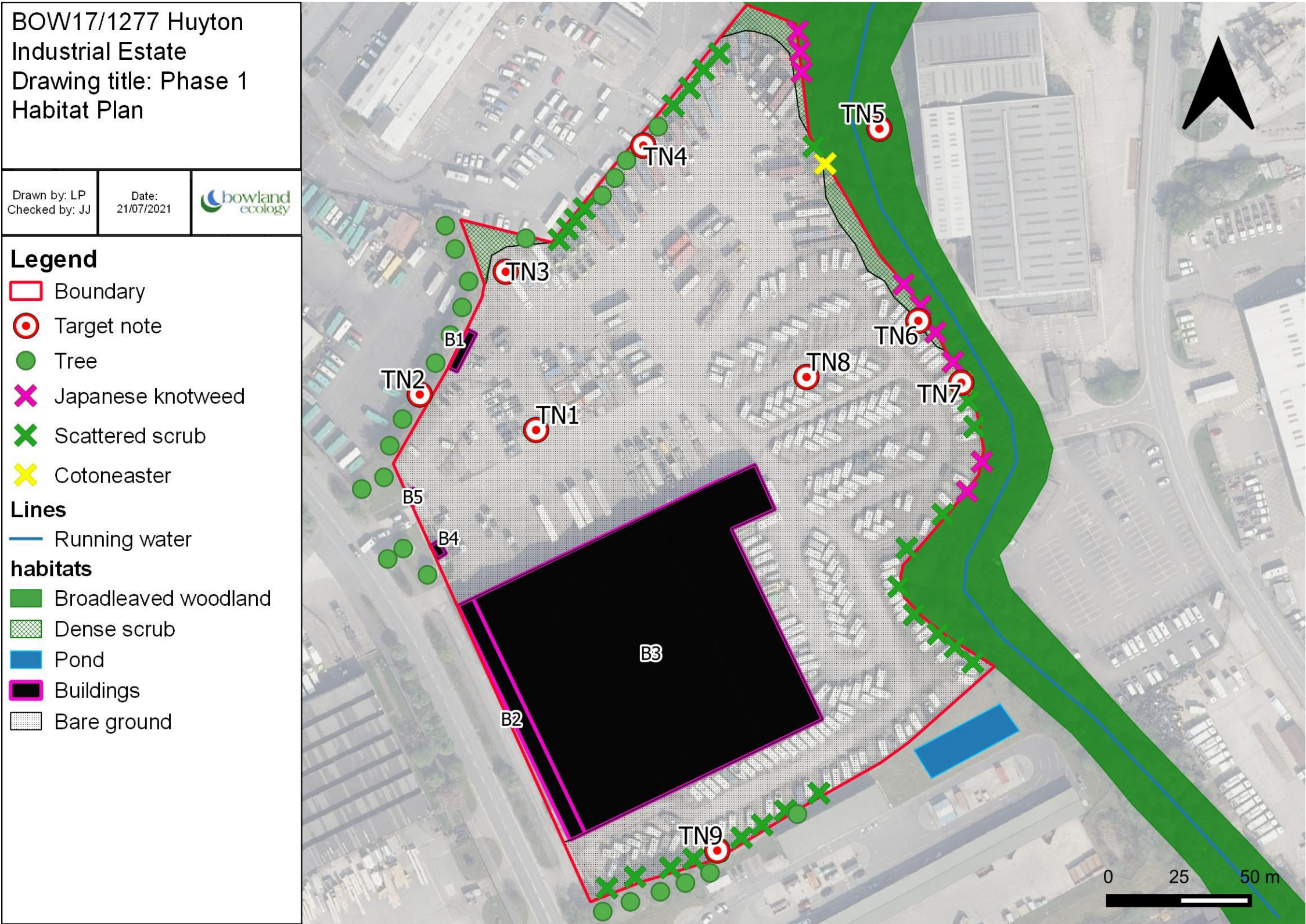
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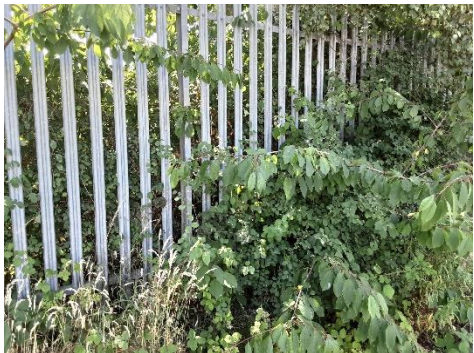
Appendix A – Phase 1 Habitat Plan



Appendix B – Target notes

No	Description	Photograph
TN1	Site used for storage of caravans and lorries main habitat is bare ground with patches of sparse ephemeral vegetation. Large warehouse containers in center of the site.	 Image 1: Main habitats present on site plus storage areas
TN2	Mature tree line over hanging site behind the wall to the northwest. Dominated by Conifers. May need trimming to facilitate works, also comprising mature Elder (<i>Sambucus nigra</i>), Dogwood (<i>Cornus sanguinea</i>), Hedge bind weed (<i>Calystegia sepium</i>), Hawthorn (<i>Crataegus monogyna</i>).	 Image 2: Mature treeline along NW boundary of the site
TN3	Patch of scrub, with mounds of gravel at the NE edge of the site. Scrub present along much of the site boundary. Species composition dominated by Buddleia (<i>Buddleia davidii</i>) and Mugwort (<i>Artemisia vulgaris</i>) with abundant Goat willow saplings (<i>Salix caprea</i>) and occasional Bramble (<i>Rubus sp.</i>), Bistort (<i>Persicaria bistorta</i>), Ribwort Plantain, Oat grass (<i>Arrhenatherum sp.</i>) and Common vetch (<i>Vicia sativa</i>).	 Image 3: NW corner of the site

TN4	Semi-mature tree line comprising Goat willow, Sycamore (<i>Acer pseudoplatanus</i>) and Silver birch (<i>Betula pendula</i>).	 Image 4: Semi Mature willow treeline at NW boundary
TN5	Brook lined with mature trees, forming a broadleaved woodland outside of the Eastern site boundary. Some trees overhang into the site. Dense canopy comprising, dominant Sycamore, Grey willow (<i>Salix cinerea</i>), Goat willow, and Crack willow (<i>Salix fragilis</i>), with abundant Elder, Hawthorn, Oak (<i>Quercus robur</i>) and occasional Conifer, Wild cherry (<i>Prunus avium</i>), Ash (<i>Fraxinus excelsior</i>), Rowan (<i>Sorbus aucuparia</i>). Japanese knotweed (<i>Reynoutria japonica</i>) also present at the woodland edges. Scrub at footing of fence in front of the woodland is dominated by Bramble with Silver weed (<i>Potentilla anserina</i>), Cinquefoil (<i>Potentilla reptans</i>), Large leaved primrose (<i>Primula vulgaris</i>), Horsetail (<i>Equisetum hyemale</i>), Oat grass, Dog rose (<i>Rosa canina</i>), Yarrow (<i>Achillea millefolium</i>), Common nettle (<i>Urtica dioica</i>), Large poppy, Ribwort plantain, Bistort, Mustard, Broadleaved dock, Mugwort, Greater willowherb (<i>Epilobium hirsutum</i>), Bind weed, Scarlet pimpernel (<i>Anagallis arvensis</i>), Bramble and Common vetch. Brook banks are steep and covered with Bramble, however, they were viewed from a vantage point only due to access restrictions.	 Image 5: Mature broadleaf trees around logwood mill brook
TN6	Japanese knotweed present here. Although outside of the site boundary there are areas of encroachment through the fence. Spreads along boundary (See Appendix A for extent).	 Image 6: Japanese knotweed stand

TN7	Cotoneaster (<i>Cotoneaster horizontalis</i>) identified on site comprising of two individual plants.	 Image 7: Cotoneaster plant growing through the fence at site boundary
TN8	Caravan storage area, mostly bare ground formed from gravel with small patches of ephemeral vegetation comprising perennial rye grass (<i>Lolium perenne</i>), Hawkbit (<i>Leontodon hispidus</i>), Ragwort, Ribwort plantain, Meadow grass (<i>Poa annua</i>), Yarrow, White clover, Dandelion (<i>Taraxacum officinale</i>), Pineapple weed (<i>Matricaria discoidea</i>), and Herb Robert,	 Image 8: Caravan storage area
TN9	Mature tree line running along the southern section of the site, outside of boundary but overhanging the fence. Dominated by Goat willow, Hawthorn, Wild cherry and Silver birch. Scrub at the footing dominated by Oat grass and some Gorse (<i>Ulex europaeus</i>). Snowberry (<i>Symphoricarpos albus</i>) present at eastern end of tree line.	 Image 9: Southern treeline
B1	Portable cabin made from metal. Negligible bat potential with no features.	 Image 10: SW and SE elevation of B1

B2	Flat roofed office spanning the length of the main warehouse storage areas. Currently in use with 3 storeys. Flat felt roof and walls constructed from brickwork in moderate condition. Wooden doors to south elevation, glass windows and doors with metal frames line the southwestern elevation. North Eastern elevation linked to main warehouse facilities. Potential roosting features include: gaps in mortar (unclear if lead to cavity), wooden boards with holes and gaps leading to crevices behind, gaps behind wooden fascia on north face, roadside elevation in good condition with well-sealed, minimal gaps. Street lamps and security lighting may reduce roost suitability. Overall low potential will need further surveys.	 Image 11: Southern elevation of B2 displaying potential roost features and how it connects to B3 on the NE edge.
B3	Large warehouse and storage areas constructed from brick with asbestos/cement roof sheeting. Nesting seagulls apparent, licences been applied for before regarding nesting birds as the population is in the 100's. Southeastern face includes barred wooden windows, with some gaps in the lintels (lintels are concrete). Fascia material unclear, numerous gaps underneath ranging from 1 - 3 cm. Gaps in brickwork above drainpipes with further gaps in the main wall face. Northeastern elevation appears to be of newer construction. Large gap running along the top of the wall where the it meets the metal roof beam, does not lead into the building interior. Asbestos sheeting on some sections of the building cladding the external walls, gaps between asbestos sheets and fascia at the top, rotted beams at roof ridge. Metal shutters on North elevation with metal interior features. Large flood lights on all elevations may deter bat roosting. Overall low potential. Will need further surveys	 Image 12: Southeastern elevation of B3

B4	Owned by electricity company and as a result won't be altered by the development. Single storey flat roof red brick building in good condition, well sealed. Negligible bat roost potential.	 Image 13: Unaffected, flat roof security building
B5	Security building single storey constructed from red brick with felt flat roofed edge with lead flashing and white PVC windows. Negligible bat roost potential.	 Image 14: Security building southeastern corner

Appendix C – 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
Negligible	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.
Low	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). 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.	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. 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.
Moderate	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.	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. Habitat that is connected to the wider landscape that could be used by bats for foraging, such as trees, scrub, grassland or water.
High	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.	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. 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. Site is close and connected to known roosts.

Appendix D – 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
Species that are protected by European and national legislation			
Badger	Protection of Badgers Act 1992	Wilfully kill, injure or take a badger; Intentionally or recklessly damage, destroy or obstruct access to a badger sett; Disturb a badger in its sett. It is not illegal to carry out disturbance activities in the vicinity of setts that are not occupied.	Where required, licences for development activities involving sett loss, damage or disturbance are issued by Natural England (NE). Licences for activities involving watercourse maintenance, drainage works or flood defences are issued under a separate process. Licences are normally not granted from December to June inclusive because cubs may be present within setts. https://www.gov.uk/badgers-protection-surveys-and-licences
Bats <i>European protected species</i>	Conservation of Habitats and Species Regulations 2017 Reg 41	Deliberately ¹ capture, injure or kill a bat; Deliberate disturbance ² 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. https://www.gov.uk/bats-protection-surveys-and-licences <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) ⁴ S.9	Intentionally or recklessly ³ 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.

Species	Legislation	Offences	Notes on licensing procedures and further advice
Birds	Conservation of Habitats and Species (Amendment) Regulations 2012	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) ⁴ 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. Schedule 1 species 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 recklessly³ 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. https://www.gov.uk/wild-birds-protection-surveys-and-licences https://www.gov.uk/prevent-wild-birds-damaging-your-land-farm-or-business
Other species			
Rabbits, foxes and other wild mammals For BAP species and Species of Principal Importance, see below	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 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.

¹Deliberate capture or killing is taken to include "accepting the possibility" of such capture or killing

²Deliberate 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.

³The 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.

⁴The Wildlife and Countryside Act (1981) has been updated by various amendments, including the Countryside and Rights of Way Act 2000 and the Natural Environment and Rural Communities Act 2006. A full list of amendments can be found at <http://jncc.defra.gov.uk/page-1377>.

Site Designation	Legislation	Protection	Guidance
Local Sites	There is no statutory designation for Local Sites.	Local Sites are given protection through policies in the Local Development Plan.	Development proposals that would potentially affect a Local Site would need to provide a detailed justification for the work, an assessment of likely impacts, together with proposals for mitigation and restoration of habitats lost or damaged. Further guidance can be found in the National Planning Policy Framework and the accompanying joint Circular (ODPM Circular 6/2005 & Defra Circular 01/2005), which is still valid.

Habitats & Species	Legislation	Guidance
Species and Habitats of Principal Importance for the Conservation of Biodiversity	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: http://webarchive.nationalarchives.gov.uk/20140605090108/http://www.naturalengland.org.uk/ourwork/conservation/biodiversity/protectandmanage/habsandspeciesimportance.aspx 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.
Japanese knotweed	Wildlife and Countryside Act 1981 (as amended) S.14	It is illegal to plant these species or otherwise cause them to grow or spread in the wild. Any contaminated soil or plant material containing Japanese knotweed or giant hogweed is classified as controlled waste and should be disposed of in a suitably licensed landfill site, accompanied by appropriate Waste Transfer documentation, and must comply with section 34 of the Environmental Protection Act 1990. <i>The Knotweed Code of Practice</i> (Environment Agency, 2013) <i>Managing and controlling invasive rhododendron</i> (Forestry Commission, 2006) <i>Guidance on Section 14 of the Wildlife and Countryside Act, 1981</i> (Defra, 2010)

Site Designation	Legislation	Protection	Guidance
Site of Special Scientific Interest (SSSI)	Wildlife and Countryside Act 1981 (as amended)	It is an offence to carry out or permit to be carried out any potentially damaging operation. SSSIs are given protection through policies in the Local Development Plan.	Owners, occupiers, public bodies and statutory undertakers must give notice and obtain the appropriate consent under S.28 before undertaking operations likely to damage a SSSI. S.28G places a duty on all public bodies to further the conservation and enhancement of SSSIs. Further guidance can be found in the National Planning Policy Framework and the accompanying joint Circular (ODPM Circular 6/2005 & Defra Circular 01/2005) England, which is still valid.

Site Designation	Legislation	Protection	Guidance
Local Sites	There is no statutory designation for Local Sites.	Local Sites are given protection through policies in the Local Development Plan.	Development proposals that would potentially affect a Local Site would need to provide a detailed justification for the work, an assessment of likely impacts, together with proposals for mitigation and restoration of habitats lost or damaged. Further guidance can be found in the National Planning Policy Framework and the accompanying joint Circular (ODPM Circular 6/2005 & Defra Circular 01/2005), which is still valid.

Appendix E – Scheme Proposal



Appendix F – Information Sheets for Contractors

Amphibians

Information, legal responsibilities and best practice for the construction industry



Legal Information

In England it is **illegal** to deliberately capture, injure or kill a GCN, deliberately disturb a GCN, deliberately take or destroy GCN eggs, damage or destroy a breeding site or resting place used by a GCN. Penalties on conviction: the maximum fine is £5,000, up to six months in prison, per offence and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery. The following points are defences:

- ✓ Tending/caring for a GCN solely for the purpose of restoring it to health and subsequent release.
- ✓ Mercy killing where there is no reasonable hope of recovery (provided that person did not cause the injury in the first place – in which case the illegal act has already taken place).

Good to know-

- Newts are also carriers of the waterborne fungi- chytrid fungus. This fungus can be spread between water bodies and can cause the disease chytridiomycosis. If any work is being carried out around standing water then disinfection of footwear and equipment is important to prevent the spread of the disease.
- If a great crested newt is found before or after work (for example, pond management work) is commenced, then **work should be immediately postponed** and then started another time or with different methodology. If the newts cannot avoid being harmed then a license must be applied for.

Life cycle and seasonal appearances

April-May= This is when newts undertake courtship displays and mate with females. Certain amphibians can start this process as early as February.

June-August= Larval growth and development of newly hatched juveniles- This event can occur anytime between March and October (depending on pond conditions and other factors such as climatic conditions)

August-October= Metamorphosis and juvenile emigration to terrestrial environments occurs at this stage

November-February= Hibernation on land

February-May= Emergence of adult form newts and dispersal to ponds

Other protected amphibians

The other two species of newts (**smooth and palmate**) are **protected under Section 9 (5) of the Wildlife & Countryside act 1981**, which prohibits the 'sale, barter, exchange, transporting for sale and advertising to sell or to buy. Common toads and common frogs are also protected under this legislation. **The natterjack toad** (which are smaller than common toads at 6-7cm) are given **full protection** by section 9 of the same act due to the fact they are a threatened and rare species in the UK, being confined to only a couple coastal territories. It is an offence to 'intentionally kill. Injure or take (capture. etc); possession; intentional disturbance whilst occupying a 'place used for shelter or protection' and destruction of these places; sale, barter, exchange, transporting for sale or advertising to sell or buy'.



Common frog (top), common toad (middle), natterjack toad (bottom)

Key ID Features

Smooth Newt (*Lissotriton vulgaris*)

Egg stage- Smooth eggs are indistinguishable against palmate newt eggs, are rounded (not oval) and a grey/brown colour when freshly laid.

Larvae stage- Larvae are up to 3-4cm long (shorter than GCN), and have less obvious speckling and smaller gills.

Adult stage- Adult smooths measure up to 10cm, have a paler body than GCN with an orange belly stripe. Smooths lack some features of palmate newts (notably pink chin, and a cream spot). There is a slight silver/ orange strip along the base of the tail. The crest is wavy along whole back and tail, unlike palmates where it is more of a ridge shape.



Species protected by UK and European law
Great Crested Newt (GCN)- *Triturus cristatus*



GCN eggs are oval shaped with a pale yellow to white colour, these are usually found singly wrapped in folded leaves. Smooth and Palmate eggs are grey/ brown when freshly laid.

Adults are black, and are also covered in bright yellow spots on the underside and irregular blotches.



Larvae (Efts) are up to 5-9cm long and have distinguishable black speckling on the tail and body

Adults also have a jagged crested tail with a recognisable stripe. Both males and females also have white speckling on the sides.



Palmate Newt (*Lissotriton helveticus*)

Egg stage- Palmate eggs are indistinguishable against smooth newt eggs, are rounded (not oval) and a grey/brown colour when freshly laid.

Larvae stage- Larvae are up to 3-4cm long (shorter than GCN), and have less obvious speckling and smaller gills.

Adult stage- Adult palmates measure up to 10cm, have a paler body than GCN with an orange belly stripe. They also have a pink chin with no spots/ speckles and a cream spot on both hind feet.



References:
Acknowledgements:

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Japanese knotweed



Information, legal responsibilities and best practice for the construction industry

Legal Information

In England it is illegal to plant or cause the spread of Japanese knotweed in the wild. If Japanese knotweed is taken away from the site of origin, the plant and its associated materials, e.g. soil, become classed as controlled waste and must be disposed of at an authorised landfill site. Furthermore, powers are given to environmental authorities to enter into control agreements and orders with landowners, in order to ensure action is taken to control the plant on their land.

Legislation governing the movement and spread of Japanese knotweed in England includes the following;

- Wildlife and Countryside Act 1981 (as amended) Section 14;
- Environmental Protection Act 1990 S33 & 44; and
- Infrastructure Act 2015 Sections 23 to 25.

Impacts

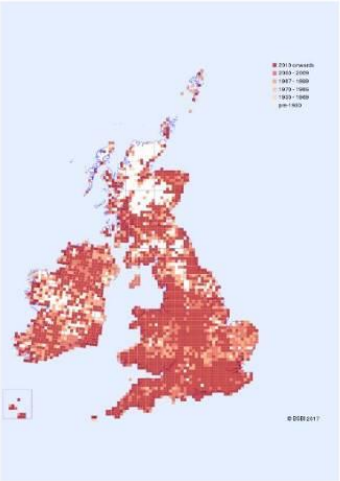
Japanese knotweed is a non-native species that when established forms dense stands, commonly found in riparian habitats. However, the plant can establish in other habitats where the ground has become disturbed. The dense, monoculture stands reduce biodiversity and dominate the landscape, outcompeting native species. The plant can also grow through tarmac and concrete causing damage to buildings and roads.

Management of Japanese knotweed

- Prior to commencement of any works on site all staff on site should be made aware of the presence and location of Japanese knotweed and all stands of the plant, including a 7 m buffer zone should be marked out with hi-visibility fencing;
- The use of mechanical plant over infected areas should be kept to a minimum, and biosecurity measures should be implemented whilst on site to prevent cross contamination. This includes the cleaning of footwear and machinery, prior to, and on completion of each working window to ensure that the plant is not taken off or spread around the site;
- Japanese knotweed is classed as controlled waste. Therefore, all arisings and potentially contaminated soil from the plant must be disposed of in an appropriate manner to ensure that the waste does not cause pollution of the environment;
- The plant can be managed several ways;
 - Spraying with approved herbicides, over a three year period to ensure rhizomes become dormant;
 - Burying, further guidance should be sought beforehand from the EA; and
 - Burning, guidance should be sought beforehand from the EA and LPA.

Distribution & spread

Japanese knotweed is widely distributed across most of lowland England and Wales and many parts of Scotland and Ireland. All Japanese knotweed plants in the UK are clones, as such, their seeds are sterile. The plant contains rhizomes (underground root system) which enables the effective spread of the plant. Soil can be contaminated up to 3 m deep and within a 7 m radius of the parent plant.



Useful references & guides:

GB non-native species secretariat
<http://www.nonnativespecies.org/home/index.cfm>
Preventing Japanese knotweed from spreading
<https://www.gov.uk/guidance/prevent-japanese-knotweed-from-spreading>

Key ID Features



Young shoots (approx. 2 cm)



Arrow shaped leaves



Young stem



Flowers



Dead, hollow stems



Stand in winter



Branches in winter



Dense stand along watercourse



Rhizomes

Identifying Japanese knotweed

There are three species of Japanese knotweed in England; Japanese knotweed (*Fallopia japonica*) the most widespread species; giant knotweed (*Fallopia sachalinensis*); and a hybrid Knotweed (*Fallopia x bohemica*).

Japanese knotweed is a herbaceous perennial that produces green/reddish shoots in early spring. The plant can reach to heights of 3 m before dying back in autumn. The stem, is green with red and/or purple specks and forms dense cane-like clumps. The plant's shoots and leaves, which can be up to 120 mm long, densely cover the ground and are arrow shaped.

The plant spreads underground by means of rhizomes which can extend 7 metres outwards and reach up to 2 metres deep. Rhizome fragments as small as 10 mm can produce new plants, seeds produced by the plant are sterile. The outer surface of the rhizome is dark brown, when broken the inside is orange. When the rhizomes become older they become woody with a hollow centre.

BATS



Information, legal responsibilities and best practice for the construction industry

Legal Protection

All UK Bat species are protected by European and UK law, in practical terms this means it is an offence to:

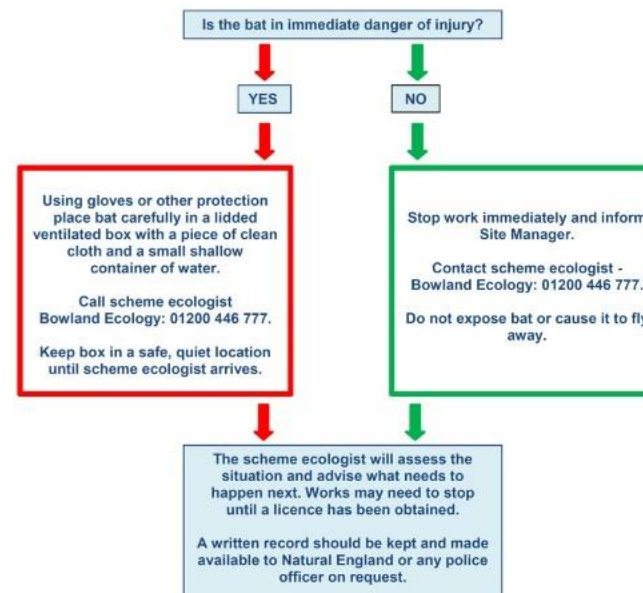
- Deliberately capture, injure or kill a bat;
- Deliberately disturb bats;
- Damage or destroy a breeding site or resting place (even if bats are not occupying the roost at the time);
- Intentionally or recklessly obstruct access to any structure or place used for shelter or protection or disturb a bat in such a place;
- Possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat.

Penalties on conviction: the maximum fine is £5,000 per incident or per bat (some roosts contain several hundred bats), up to six months in prison, and forfeiture of items used to commit the offence, e.g. vehicles, plant, machinery.

Defences include:

1. Tending/caring for a bat solely for the purpose of restoring it to health and subsequent release.
2. Mercy killing where there is no reasonable hope of recovery (provided that person did not cause the injury in the first place – in which case the illegal act has already taken place).

Found a bat during unsupervised works?



Field signs of bat presence:

- Live or dead bats: the smallest UK bat species, the pipistrelle is only 3.5-4.5cm long.
- Droppings: bat droppings look like mouse droppings but will crumble between your fingers (they are dry and made entirely of insects).
- Feeding remains: piles of butterfly/moth wings are often left below bat feeding perches.



Places that bats may use in buildings



Schematic from www.bats.org.uk

Bats can roost in the following places:

- The top of gable end or dividing wall;
- The top of chimney breasts;
- Ridge and hip beams and other roof beams;
- Mortise and tension joints;
- All beams/ceilings/pipework (free hanging bats);
- The junction of roof timbers, especially where ridge and hip beams meet;
- Behind purlins;
- Between tiles and the roof lining;
- Under flat felt roofs;
- Under barge boards;
- In cavity walls;
- In cracks in stone or concrete;
- Behind peeling paint/wall coverings;
- Gaps behind window and door frames;
- Between window panes and timber boarding.
- In trees (cracks/holes/ivy cladding).

Why wear gloves?

There is a small risk that some bats carry a rabies virus – European Bat Lyssavirus. The purpose of wearing gloves is to reduce the chance of being bitten, as the virus is transmitted via bat saliva. Thick leather gloves are appropriate for removing a bat from imminent danger but these should be clean.

In the event that you are bitten, wash the wound, gently but thoroughly, with soap and water. Speak to a health professional immediately, advising them that you have been bitten by a bat.



References:

Bat Conservation Trust. August 2016. Why wear gloves when handling bats?
BCT Bat Surveys for Professional Ecologists, Good Practice Guidelines, 3rd Edition, 2016

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