



VINCI Construction

Radcliffe Market

Preliminary Ecological Appraisal Report

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EXECUTIVE SUMMARY

This report presents the results of a Preliminary Ecological Appraisal (PEA), comprising a background data search and a Phase 1 habitat survey with an assessment for protected species. The survey was carried out on 01st October 2021. This report has been produced to support the demolition of the former TSB and south block, and refurbishment of the market chambers and basement located at Radcliffe Market. The appraisal was based on the red line boundary plan of the development site (the 'site' shown in Figure 1).

The site comprised Radcliffe Market Hall, including four buildings comprising the south block (B1), the market chambers (B2), former TSB (B3) and the market basement (B4) shown in Figure 2. Hardstanding, introduced shrub planters and scattered trees were associated with the buildings. The scattered trees adjacent to B1 were anticipated to be of the highest ecological value, offering nesting opportunities for birds and foraging resources for bats. These trees should be retained where possible. B1 and the associated canopy joining to B3 were assessed as having Moderate bat roosting potential due to the presence of damaged areas of soffit which could support bats. Further surveys will need to be undertaken prior to the demolition of B1 and its associated canopy. In addition to this, the stone wall adjacent to the River Irwell was considered to offer some opportunities for nesting birds such as sand martin and access for bats into buildings as described above may also provide features suitable for nesting birds such as house sparrow.

Further surveys to determine the extent of potential constraints, and to inform the planning decision, are recommended as follows:

- Two nocturnal bat surveys on B1 and the canopy which connects B1 and B3 between May and September (inclusive) with at least one of the surveys between May and August.
- Nesting bird survey (between March and June inclusive) of the buildings required for demolition and of the wall adjacent to the River Irwell, prior to removal.

Mitigation measures required include:

- If the scattered trees require removal, they should be removed outside of the breeding bird season (March to September inclusive). If this is not possible, a nesting bird check should be undertaken by a suitably qualified ecologist up to 24 hrs before works commence. If a nest, or nest in construction, is located, then a stand-off distance should be maintained until the young have fledged.
- If any buildings or the stone wall adjacent to the river is found to support nesting birds, demolition or removal works will need to wait until the bird breeding season has completed (March to August inclusive).
- A lighting strategy is recommended, to maintain a dark corridor along the River Irwell located east and scattered within the site.
- Standard Pollution prevention control measures are recommended, to ensure there are no negative impacts on River Irwell.

Enhancement opportunities are suggested to meet any requirement for biodiversity net gain, including:

- Retention of the scattered trees.

- Installation of bat and bird boxes.
- Native planting including fruiting and flowering species.

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1.0 INTRODUCTION

1.1 Purpose of this report

- 1.1.1 This report presents the results of a Preliminary Ecological Appraisal (PEA), comprising a background data search and a Phase 1 habitat survey, with assessment for protected or otherwise notable species, at Radcliffe Market (Grid Ref SD 78539 06957). The survey area included the land within the red-line boundary (the site), plus adjacent land up to 30 m where access was possible: Figure 1.
- 1.1.2 A ground-level assessment of all trees and man-made structures potentially suitable for bats within the site and along the boundaries was made. An assessment of the River Irwell adjacent to the east of the site was undertaken for its suitability for protected and notable species.
- 1.1.3 The report identifies ecological constraints relevant to the project, specifies any further survey or mitigation requirements (e.g. for any Ecological Impact Assessment), gives recommendations for avoidance and protection through design changes, and suggests opportunities for ecological enhancement, in particular to deliver biodiversity net gain. The appraisal was carried out on behalf of RSK Biocensus for their client VINCI Construction Ltd

1.2 Landscape context

- 1.2.1 The 0.6 ha site is located within the south of Radcliffe. The site includes a series of buildings including active and disused commercial and residential properties. Areas of hardstanding pavement surround the buildings, with scattered trees situated within the north and south-east of the site.
- 1.2.2 The site is located within a predominantly commercial area. The River Irwell defines the eastern site boundary, while commercial units are located immediately north and south of the site. Dale Street is located west of the site, with further commercial buildings located beyond. An area of deciduous woodland is located approximately 260 m south of the site, defining the River Irwell. An active railway line bordered by deciduous woodland is situated approximately 370 m east of the site, at its closest point.

1.3 Development proposals

- 1.3.1 Detailed development proposals were unavailable at the time of writing; however, demolition plans indicate the demolition of the south block (B1) and former TSB (B3), and refurbishment of the market chambers (B2) and basement (B4). These are presented in Figure 2.

2.0 METHODS

2.1 Overview

- 2.1.1 The PEA was undertaken in line with guidance from the Chartered Institute of Ecology and Environmental Management (CIEEM, 2017); it therefore included:
- a desk study (here called a background data search (BDS)), which included a review of aerial photographs; obtaining information from DEFRA, JNCC and Magic Mapping, and data from the local records centre Greater Manchester Ecology Unit (GMEU) -The Biodiversity Information System for Greater Manchester, and;
 - a field survey that informed habitat mapping, an assessment of the possible presence of protected or priority species and the likely importance of habitat features.
- 2.1.2 The PEA report includes an ecological description of the site and information about species that may occur there. Notes and mapping of any incidental sightings of invasive non-native plant species and protected or priority fauna species are also provided.
- 2.1.3 The survey was carried out on 01st October 2021 by Lowri Thomas. Lowri is a suitably qualified and experienced ecological consultant, a member of CIEEM, and is experienced in carrying out preliminary ecological appraisals.

2.2 Background data search

- 2.2.1 A search was made in October 2021 for relevant reference materials. A list of sources is given in Table 1.

Table 1 Data sources

Information obtained	Available from
Protected and noteworthy species-records	Greater Manchester Ecology Unit (GMEU)
MAGIC (the Multi-Agency Geographic Information website) to view statutory designated nature conservation sites	MAGIC Mapping www.magic.gov.uk [NB: this site is included for convenience as a viewer, but data to create maps for any figures used is extracted from Open Source data provided by the SNCBs]
Nationally designated site locations and citations	Joint Nature Conservation Committee (JNCC) website and MAGIC
European and Internationally designated site locations and citations	Joint Nature Conservation Committee (JNCC) website
Local Designated site locations	Greater Manchester Ecology Unit (GMEU)
Designations and legal protection of noteworthy species	Joint Nature Conservation Committee (JNCC) website
Details of species and habitats listed on the LBAP	Local Biodiversity Action Plan (LBAP) website https://www.gmwildlife.org.uk/projects/gm_bap/

- 2.2.2 A search was made for the following international and national statutory designated sites of ecological importance within 10 km of the site boundary: Ramsar sites, Special Areas of Conservation (SAC), Special Protection Areas (SPA)¹. A search was also made for statutory designated sites including Sites of Special Scientific Interest (SSSI) and Local Nature Reserves (LNR) within 2 km of the site. Impact Risk Zones of SSSI's were also considered during the assessment.
- 2.2.3 A search was also made for non-statutory designated (often important in a local context) within 1 km of the site boundary. A 1 km search area was utilised with this being deemed an appropriate distance for the zone of influence of the site. The 1 km search area was selected due to the developed nature of the site, which provides limited opportunities for fauna in comparison to the wider habitat. Species are anticipated to prioritise using the higher value including the River Irwell and adjoining deciduous woodland.
- 2.2.4 The BDS also included a search for records within 1 km of the site boundary of noteworthy species, which might pose a constraint to the proposed development. Species included in the search were:
- European protected species (listed on Schedules 2 and 5 of The Conservation of Habitats and Species Regulations 2017 (as amended));
 - nationally protected species under Schedules 1, 5 and 8 of The Wildlife & Countryside Act 1981 (as amended) and The Protection of Badgers Act 1992;
 - species listed as critically endangered, endangered or vulnerable based on the IUCN Red List Categories and Criteria 2001;
 - all species listed on the RSPB's Birds of Conservation Concern 4 (Eaton *et al.*, 2015) as red' or 'amber';
 - nationally rare or nationally scarce species;
 - notable² invertebrates; and
 - species of principal importance listed under The Natural Environment and Rural Communities (NERC) Act 2006.

2.3 Plants and habitats

Phase 1 habitat survey

- 2.3.1 The field survey was based on the Phase 1 habitat survey approach (Joint Nature Conservation Committee, 2010). This field survey was undertaken in line with CIEEM 2017 and involved the following elements:
- habitat mapping using a set of standard colour codes to indicate habitat types on a habitat map (Figure 2).

¹ SACs and SPAs were formerly called 'European Sites' and part of the Natura 2000 network; post-'Brexit', they are now considered part of the UK's 'national site network'. Ramsar sites are sites of international importance. See Appendix A for details. Note that SPAs, SACs and Ramsar sites are also underpinned by SSSI designations whose citations/boundaries may be slightly different.

- 2.3.2 Vascular plant species were recorded during the survey, although no attempt was made to produce an exhaustive species list (additional species would almost certainly be found during more detailed surveys or repeat surveys at various times of the year). A plant species list was recorded for the site and is given in Appendix F.
- 2.3.3 Plant nomenclature in this report follows Stace (2019) for native and naturalised species of vascular plant, and mosses and liverworts follow Hill *et al.* (2008). Introduced species and garden varieties were identified using relevant Floras. Plant names in the text are given with common names with the scientific name (in italics) immediately following the first time it is mentioned

Invasive non-native species (INNS)

- 2.3.4 Phase 1 habitat survey does not involve exhaustive surveying for individual plant species, and various invasive species may be little in evidence at various times of year (depending on the species). A survey seeking to identify habitat types cannot therefore be relied upon to provide firm information about the presence or extent of any INNS. However, any INNS that were encountered during the habitat survey were noted, as well as any invasive non-native species of animals.

2.4 Protected and notable animals

General

- 2.4.1 The site was assessed for its suitability to support protected or otherwise notable animals that are likely to occur in the area. Taking into account the results of the BDS, the geographic location, connectivity to natural habitats in the wider landscape, the nature and extent of habitats at the site, and the proposed development, specific assessment was also carried out for the species/species groups outlined below.

Birds

- 2.4.2 Birds nest, forage and roost in a wide variety of habitats including scrub, woodland, hedgerows and trees, wetland, arable and pastoral farmland and rough grassland. Some species also use open bare ground and man-made structures.
- 2.4.3 The site was assessed for its suitability to support diverse assemblages and/or uncommon species of breeding and non-breeding birds, with an emphasis on those species that are listed on Schedule 1 of the Wildlife & Countryside Act 1981 (as amended), the red and amber lists of the RSPB's Birds of Conservation Concern 4 (Eaton *et al.*, 2015) and other notable species recorded in the BDS, including any species that are qualifying features of nearby designated sites. Consideration was given to the site's connectivity to landscape features that are likely to be of particular importance to birds, such as extensive areas of semi-natural woodland or wetlands. The presence of nests or signs of nest building were recorded, and buildings were surveyed for their suitability for barn owls and other species, with signs including nesting sites, feathers, droppings and pellets.

Bats

- 2.4.4 Habitats were assessed for their suitability for foraging and commuting bats, in line with guidance provided in Collins (2016). Areas of particular interest vary between species, but generally include sheltered areas and habitats with good numbers of insects, such as woodland, scrub, rivers and species-rich or rough grassland.
- 2.4.5 Trees and man-made structures were noted if they had potential suitability for roosting bats (Collins, 2016). This involved identifying features that roosting bats may favour (e.g. holes, cracks and cavities that might be used as bat access-points or roost sites).

Preliminary roost assessment (PRA) of built structures

- 2.4.6 Internal access to the buildings was not possible during the survey, due to access constraints. Buildings were assessed externally to ascertain suitability for roosting bats, taking account of the following factors that influence the likelihood of bats roosting:
- Surrounding habitat: whether there are potential flight-lines and bat foraging areas nearby.
 - Construction detail: the type and construction of architectural features such as attics, soffit boxes, lead flashing and hanging tiles that could be used by roosting bats. Some construction details and materials are more favourable to bat occupation than others.
 - Building condition: whether the building has no roof or has a sound roof without any potential bat-access points.
 - Internal conditions: bats favour sheltered locations with a stable temperature regime, protection from the elements and little wind/light/rain penetration.
 - Potential bat-access points: whether there is flight and crawl access.
 - Potential roosting locations: descriptions of all bat-accessible voids, cracks and crevices.

2.4.7 The building's potential to support roosting bats was then categorised as defined in Table 2.

Table 2: Categorisation of the suitability of buildings or trees for roosting bats (Collins 2016)

Category (Potential to support roosting bats)	Description
Negligible suitability	Negligible habitat features on site likely to be used by roosting bats.
Low suitability	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 habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential.
Moderate suitability	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 for a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High suitability	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.
Confirmed roost	Bats or evidence of bats recorded during the initial inspection surveys or during dusk/dawn surveys. A confirmed record (supplied by records centre/local bat group) would also apply.

2.4.8 The buildings were then inspected for evidence of bats. Visual, systematic examinations were made for bats and evidence of bats, externally, of the following:

- roof slopes and the ridge;
- wall, window and door surfaces;
- window and door frames;
- wall bases;
- wall ledges and wall tops;
- cracks, crevices and sheltered voids; and
- external features such as soffits and lead flashing.

2.4.9 Evidence of roosting bats includes droppings, urine stains, staining from fur-oils, wear marks, feeding remains, dead bats, odour, squeaking and chattering, and in some cases the absence of cobwebs. Bat droppings can prove beyond doubt that bats use a building and can help to identify roosting locations because piles often accumulate beneath roosting sites or entrance points.

Ground-Level Tree Surveys

- 2.4.10 All trees within the site were surveyed from ground level. Features that might be used by roosting bats were described and categorised according to accepted guidelines (Collins, 2016). Each tree was given a category during the ground-level surveys (see Table 2) based on its potential for roosting bats.
- 2.4.11 Trees may also be categorised as having *unknown potential* if the surveyor's view of the tree is obscured. This can be caused by dense Ivy (*Hedera helix*) covering the trunk and major limbs concealing potential roosting features from view.

Water voles and otters

- 2.4.12 The adjacent River Irwell was assessed to determine its suitability suitable for water voles (*Arvicola amphibius*). Suitable habitats include vegetated earth banks, reed beds, flowing water and wet ditches. Incidental signs of water vole activity, including burrows, feeding platforms, food remains and latrines, were recorded if they were encountered.
- 2.4.13 Waterbodies and watercourses on the site were also assessed for their suitability for otters (*Lutra lutra*). Otters require clean rivers and associated waterbodies with an abundant, varied supply of food and plenty of bank-side vegetation, offering secluded sites for their holts. Other suitable habitats include reed beds and interconnected ditches and streams. Incidental signs of otter activity, including holts, foraging signs, paths (runs), footprints and spraints, were recorded if they were encountered.

2.5 Constraints and limitations

- 2.5.1 Less conspicuous plant species (including INNS) may have been missed as a result of the survey being undertaken outside of the ideal survey season. However, the majority of plants present were confidently identified, and the survey was sufficient to make a broad assessment of the habitats present on the site.
- 2.5.2 This preliminary appraisal as to whether protected or otherwise notable species might occur on the site is based on the suitability of habitat, the known distribution of relevant species in the local area (from online sources and desk study), and any signs of the relevant species. It does not constitute a full and definitive survey of any protected species group.
- 2.5.3 Field signs for protected and valuable species are often difficult to find or absent from a site. The survey conducted was not intended to be a comprehensive presence/absence survey for all species, but rather to provide an indication of the likely presence of such species based on the field signs found, and the nature of the habitats present.
- 2.5.4 Internal access to all the buildings on-site was not possible during survey. This has been taken into consideration during the assessment.
- 2.5.5 As the survey was conducted outside of the nesting bird season, an assessment of breeding bird potential was undertaken looking at possible nesting opportunities from the ground and looking for evidence of historic nests.

3.0 RESULTS

3.1 Background Data Search

Statutory designated sites

- 3.1.1 There is one internationally designated site within 10 km of the site boundary, the Rochdale Canal, Special Area of Conservation (SAC), Site Special Scientific Interest (SSSI). The site falls within the Impact Risk Zone of three SSSIs including Ashclough SSSI, West Pennine Moors SSSI, and Rochdale Canal SAC, SSSI. One Local Nature Reserve (LNR) is located within 2 km of the site. These sites are listed in Table 3 in order of proximity to the site; short descriptions are given for the sites.

Table 3: Statutory sites within 10 km of the site boundary (2km for LNRs and SSSIs and SSSI impact risk zones)

Site name	Reasons for designation	Approximate distance (m) and direction from site
Chapelfield, LNR	The LNR includes a triangular shaped reservoir and hosts important aquatic plants that can be found within it, and in particular, the locally rare Water Violet (<i>Hottonia palustris</i>).	415 m south-east of the site
Ashclough, SSSI	The site comprises two sections of the steep south bank of the River Irwell, representing the type and best available exposures for showing the Ashclough Marine Band and its associated strata. Ashclough is a site of national importance for interpreting the Coal Measure palaeogeography of Great Britain.	2 km south-west of the site
West Pennine Moors, SSSI	The site supports an extensive mosaic of upland and upland-fringe habitats. It is of special interest for the following nationally important features that occur within and are supported by the wider habitat mosaic: • blanket bogs; • wet and dry heathlands; • acid and lime-rich flushes; • rush pastures and mire grasslands; • acid grasslands; • neutral hay meadows and pastures; • wet and dry broadleaved woodlands and scrub; • diverse assemblages of upland moorland, in-bye and woodland breeding birds; • breeding black-headed gulls (<i>Chroicocephalus ridibundus</i>), Mediterranean gulls (<i>Larus melanocephalus</i>) and grey herons (<i>Ardea cinerea</i>); and	9 km north of the site

Site name	Reasons for designation	Approximate distance (m) and direction from site
	populations of starry lady's-mantle (<i>Alchemilla acutiloba</i>), large-toothed lady's-mantle (<i>A. subcrenata</i>) and floating water-plantain (<i>Luronium natans</i>)	
Rochdale Canal, SSSI, SAC	The site is designated as a SAC under Article 4(4) of the Directive (92/43/EEC) as it supports Annex II species floating water-plantain (<i>Luronium natans</i>). The site is designated as an SSSI as it contains important habitats for submerged aquatic plants and emergent vegetation, including extensive colonies of floating water-plantain and a diverse assemblage of aquatic flora, notably its assemblage of pondweeds (<i>Potamogeton spp.</i>).	9.7 km east of the site

Non-Statutory Sites

- 3.1.2 There are four non-statutory designated sites within 1 km of the site boundary. The designated sites present within the study area include Sites of Biological Importance (SBI) are listed in Table 4 along with their proximity to the site.

Table 4: Non-statutory designated sites within 1 km of the site boundary

Site name	Designation	Approximate distance (m) and direction from site
Manchester, Bolton and Bury Canal, Site of	SBI	620 m north-west
Sailor's Brow and Springwater Park	SBI	640 m east
Reservoirs at Chapelfield	SBI	715 m south-east
Wetland near Radcliffe	SBI	800 n north

Habitats

- 3.1.3 Numerous areas of deciduous woodland are located within the 1 km surrounding area. The closest of which is situated approximately 250 m south-west of the site, associated with the River Irwell. The areas of woodland are anticipated to provide a number of valuable resources for local wildlife.
- 3.1.4 An area of lowland dry acid grassland is located approximately 680 m south of the site, located adjacent to a reservoir. This habitat is likely to support specialist species of invertebrates and attract a range of bird species.
- 3.1.5 Small areas of lowland fens are situated within the 1 km search area, located along the Manchester, Bury and Bolton Canal, SBI, and approximately 875 m east of the site

adjacent to the River Irwell. The areas of lowland fen are expected to support a diverse community of flora and fauna.

Protected and Notable Species

- 3.1.6 At least 27 noteworthy species are recorded within 1 km of the site boundary. Noteworthy species include species of principal importance that are listed under Section 41 of The Natural Environment and Rural Communities (NERC) Act 2006.
- 3.1.7 Of these, two are amphibians, 16 are birds, one is a fish, two are invertebrates and six are mammals (of these, five are bats). Species that are protected by law under Schedules 2 and 5 of The Conservation of Habitats and Species Regulations 2017 (as amended), Schedules 1, 2, 5 and 8 of The Wildlife and Countryside Act 1981 (as amended) or The Protection of Badgers Act 1992 that have been recorded in the search area are highlighted in the full species list is given in *Appendix B*. Those of relevance to the site and the current proposals are discussed in Sections 4.2 and 4.3.

3.2 Plants and habitats

Phase 1 Habitat Survey

- 3.2.1 The Phase 1 habitat map is provided as Figure 1 and shows the location of the habitats referred to in the text below. The site comprises the following:

Buildings and Hardstanding

- 3.2.2 The site is largely formed of hardstanding and buildings. The hardstanding was well managed and included concrete pavement slabs. Small areas of the hardstanding were colonised by broad-leaved dock (*Rumex obtusifolius*), dandelion (*Taraxacum officinale* agg.) and American willowherb (*Epilobium ciliatum*).

Introduced shrub

- 3.2.3 Introduced shrub was located along the south-east wall of B1 and within planters within the center of the site. Areas of introduced shrub were also located among the understory of the scattered trees. The planters contained numerous ornamental species and herbaceous species. Species included heather (*Calluna vulgaris*), cherry laurel (*Prunus laurocerasus*), fennel (*Foeniculum vulgare*), chives (*Allium schoenoprasum*), sage (*Salvia officinalis*), herb-Robert (*Geranium robertianum*), common ragwort (*Jacobaea vulgaris*), hart's-tongue (*Asplenium scolopendrium*), fat-hen (*Chenopodium album*) and introduced shrub species.
- 3.2.4 A sign was located on the south-east aspect of B1 within an area of introduced shrub indicating that there was hogweed present (presumed to refer to Giant Hogweed). However, no signs of Giant Hogweed were identified during the survey.
- 3.2.5 No INNS plant species were identified.

Scattered trees

- 3.2.6 Scattered trees were located along the northern and southern boundary adjacent to B1. Species included lime species (*Tilia sp.*), cherry species (*Prunus sp.*) and alder (*Alnus glutinosa*).

3.3 Protected and notable animals

Invertebrates

- 3.3.1 The BDS returned a single record of a section 41 dot moth (*Melanchra persicariae*) located approximately 270 m south-east of the site, associated with an area of woodland. The data search also returned a record of cinnabar (*Tyria jacobaeae*) within the search area.
- 3.3.2 The site was determined to offer little opportunities for notable invertebrate species as only small, fragmented areas of flora were identified, which included lacked floristic diversity. However, common invertebrates are likely to be present among the scattered trees and introduced shrub.

Fish

- 3.3.3 The data research identified two records of brown trout (*Salmo trutta*) situated approximately 780 m south-west of the site at its closest point, within the River Irwell.
- 3.3.4 The site contained no aquatic habitats or watercourses. However, the River Irwell is located immediately adjacent to the eastern site boundary. This watercourse is expected to offer suitable habitat for fish, such as brown trout, including commuting, foraging and spawning opportunities and refuge from predation.

Great crested newts

- 3.3.5 The data search revealed three records of great crested newts within 1 km of the site boundary, two records were recorded in 1991, with one recorded in 2003. The records were located approximately 750 m west of the site, associated with a waterbody adjacent to the Manchester, Bolton and Bury Canal, SBI. An absence record for great crested newt was also located at this location in 2004. Consultation with MAGIC Maps showed no great crested newt licences or survey records within 1 km of the site boundary.
- 3.3.6 No waterbodies were located within the site or within 500 m of the site. Furthermore, the site largely comprised hardstanding and buildings, with only small areas of introduced shrub, and scattered trees, which do not provide suitable refuge for the species.
- 3.3.7 Considering the developed nature of the site and as no waterbodies were located within the site or within 500 m of the site, it is anticipated that great crested newts are absent. As such they have been discounted from assessment.

Reptiles

- 3.3.8 Consultation with the BDS identified no records of reptiles within the 1 km search area.
- 3.3.9 The majority of the site was formed of hardstanding and buildings, as such it lacked the diverse habitat structure that reptiles require for shelter, basking and egg laying.

Therefore, reptiles are discounted from assessment, and no further surveys or mitigation is required for the species group.

Birds

- 3.3.10 The BDS identified numerous records of notable birds within the 1 km search area. Species included kingfisher (*Alcedo atthis*), little ringed plover (*Charadrius dubius*), peregrine (*Falco peregrinus*), bullfinch (*Pyrrhula pyrrhula*), curlew (*Numenius arquata*), dunnoek (*Prunella modularis*), grasshopper warbler (*Locustella naevia*), 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*) and yellow wagtail (*Motacilla flava*).
- 3.3.11 The site was found to have value for common bird species within the scattered trees which are expected to offer nesting and potential foraging opportunities.
- 3.3.12 The site also has multiple buildings onsite which have potential for common nesting birds including feral pigeon and house martin. However, upon inspection during the PEA, no historic bird nests were found.
- 3.3.13 Two records of peregrines were identified within the 1 km search area, the closest of which is situated approximately 40 m north-east of the site. Peregrines opt to nest on high structures in undisturbed locations. The buildings on-site were determined to be too low and public to support nesting peregrines. Furthermore, no known nest sites are located within the Radcliff area. However, peregrine may utilise the wider landscape located approximately 340 m south and 500 m east for hunting purposes.
- 3.3.14 Ground nesting grassland birds thrive on large, open grasslands habitats to nest and reproduce. The site was assessed as having negligible value for ground-nesting birds due as it largely comprised hardstanding with fragmented areas of vegetation.
- 3.3.15 During the site survey magpie (*Pica pica*) was identified utilising the scattered trees.
- 3.3.16 Priority species identified by the BDS that may utilise the site or habitat directly adjacent to the site include dunnoek, house sparrow and starling.
- 3.3.17 The buildings onsite directly back onto the River Irwell and holes and crevices in the wall could provide potential nesting opportunities for sand martins.

Bats

- 3.3.18 Consultation with GMEU identified numerous records of bats within the 1 km search area these included;
- Common pipistrelle (*Pipistrellus pipistrellus*) (37 records, closest being approximately 30 m south-west associated with commercial units);
 - Daubenton's bat (*Myotis daubentonii*) (5 records, closest being 95 m south-east adjacent to the River Irwell);
 - Noctule bat (*Nyctalus noctule*) (4 records, closest located 700 m south west the site);

- Pipistrelle species (*Pipistrellus sp.*) (10 records, closest record located approximately 315 m north-west); and,
- Unknown bat species (5 records, the closest of which was recorded approximately 265 m east of the site, associated with coronation park)

- 3.3.19 Numerous records of bat roosts were located within the 1 km search area, including common pipistrelle, pipistrelle species and unknown bat species. The closest of which was a common pipistrelle roost situated approximately 500 m south-east of the site. The Defra MAGIC Website showed that two bat licences have been issued within 1 km of the site, the first from between 2010 and 2012 for the destruction of a common pipistrelle maternity roost approximately 620 m south-east of the site boundary. The second was also for the destruction of a common pipistrelle maternity roost in 2015 approximately 780 m north-east of the site boundary.
- 3.3.20 During the site survey, an inspection of trees and buildings was undertaken as per guidance set out in Collins (2016), to assess the features suitability for roosting bats. B1 and the canopy located between B1 and B3 was determined to have Moderate bat roosting potential due to the presence of gaps and holes within the soffit, as well as missing paneling. All other buildings were assessed as having Negligible potential as they contained no potential roost features which could support bats.
- 3.3.21 All trees within the site boundary and adjacent to the site were assessed as having Negligible bat roosting potential as they contained no potential roosting features and/or were of an age that could not support roosting bats.
- 3.3.22 The site provides limited foraging opportunities for bats, which are restricted to the scattered trees. The scattered trees are likely to attract a range of invertebrate prey.
- 3.3.23 The River Irwell located immediately adjacent to the east of the site is anticipated to act as an important commuting feature for bats within the urban landscape. It also provides connectivity to high value habitat including deciduous woodland located approximately 260 m south of the site, which may offer potential roosting opportunities for the species. Furthermore, the River Irwell is likely to provide valuable foraging opportunities for bats which specialize feeding along watercourses, such as daubenton's bat.
- 3.3.24 The surrounding landscape including an active railway line bordered by deciduous woodland, situated approximately 370 m east of the site, is expected to offer foraging opportunities and act as a wildlife corridor for local bat species. The trees within the woodland may also offer roosting sites for bat species. The River Irwell provides connectivity from the railway to the site.

Dormice

- 3.3.25 No records of Dormice (*Muscardinus avellanarius*) were recorded in the 1 km data search.
- 3.3.26 The site contained mainly hardstanding and buildings, with no suitable foraging or refuge opportunities for the species in the form of hedgerows. Additionally, the site is outside the species' known range. Therefore, the species is assumed to be absent from the site.

Water voles and otters

- 3.3.27 Consultation with GMEU identified no records of water vole (*Arvicola amphibius*) or otter (*Lutra lutra*) within the 1 km search area.
- 3.3.28 The River Irwell is located immediately east of the site. During the survey an assessment of the River Irwell was undertaken. Water vole usually occur in well-vegetated grassy steep banks, of slow-flowing shallow watercourses. The River Irwell defining the east boundary of the site was determined to be unsuitable for the species, due to its deep depth and fast flow, and as the banks comprised concrete walls which formed the foundations of B2, B3 and B4. As such the eastern boundary of the site does not provide suitable burrowing opportunities for the species. As such the species is discounted from assessment.
- 3.3.29 During the assessment of the River Irwell it was ascertained that there were no holts/ opportunities for holts present along the eastern sites boundary, due to the limited vegetation cover and concrete walls. However, the River Irwell is anticipated to be utilised by otter as a commuting and foraging feature.

Badgers

- 3.3.30 Consultation with GMEU did not identify any records of badger within the 1 km search area. Badgers and their setts are protected under the Protection of Badgers Act 1992.
- 3.3.31 No field signs of badger including setts, tracks, latrines, snuffle holes and hairs were noted on-site or within 30 m of the site, where access was possible.
- 3.3.32 The habitats on site were identified as being unsuitable for badger and they comprised large expanses of hardstanding and buildings, with few scattered trees. Furthermore, the site lacked adequate foraging opportunities for the species. This species is therefore likely to be absent from the site.

Other species

- 3.3.33 Numerous records of common toad (*Bufo bufo*) were located within the 1 km search area. The closest of which was situated approximately 445 m east of the site, associated with an active treelined railway line.
- 3.3.34 Amphibians require shelter from excessive heat, dryness and predation, with sufficient foraging areas and access to prey species (ARC, 2019). During the survey the site was assessed as having negligible value for common amphibians as the site largely comprised hardstanding and buildings which do not provide the adequate habitat requirements for the species in the form of refuge and foraging resources. As such common amphibian are discounted from further assessment. However, the species may be present within the surrounding environment including the deciduous woodland adjacent to the River Irwell, located approximately 300 m south of the site.
- 3.3.35 Four records of hedgehogs were located within 1 km of the site, the closest of which was located approximately 320 m north-west of the site. Hedgehogs require refuge, shelter from predators and suitable foraging opportunities. The site was determined to be unsuitable for the species as the introduced shrub was present in raised planters and the understory of scattered trees was determined to be too exposed. Hedgehog are

anticipated to utilise the wider landscape including the deciduous woodland located approximately 300 m east of the site.

4.0 EVALUATION

Internationally Designated Sites

- 4.1.1 SACs and SPAs are part of the 'national site network'¹ and are afforded protection under the provisions of The Conservation of Habitats and Species Regulations 2017 (as amended) (the 'Habitats Regulations') or their equivalents in the devolved administrations (refer to Appendix A). These sites are designated as being of international importance for ecology and nature conservation. Furthermore, Ramsar sites are also of international importance, being wetlands that have been designated under the criteria of the Ramsar Convention on Wetlands for containing representative, rare or unique wetland types or for their importance in conserving biological diversity (see Appendix A).
- 4.1.2 Rochdale Canal SAC, SSSI, located approximately 9.7 km east of the site boundary. The site is designated as a SAC under Article 4(4) of the Directive (92/43/EEC) as it supports Annex II species floating water-plantain. The site is designated as a SSSI as it contains important habitats for submerged aquatic plants and emergent vegetation, notably its assemblage of pondweeds.
- 4.1.3 Due to the distance between the site and the designated site, and as Rochdale Canal SAC, SSSI is not hydrologically connected to the site water pollution is not anticipated as a result of the demolition works. Equally as the habitat between the site and Rochdale Canal SAC, SSSI is not functionally linked no detrimental effects are anticipated on the designated features of the site, which includes submerged aquatic plants.
- 4.1.4 The site is located within the Impact Risk Zone of Ashclough SSSI located approximately 2 km west of the site, designated for its geological interest, namely its marine band and associated strata. The SSSI is hydrologically connected to the site via the River Irwell that is present on the eastern site boundary. Mitigation detailed in paragraph 5.4.5 will ensure there are no negative impacts on the River Irwell and subsequently Ashclough SSSI during the construction phase of development. Furthermore, as the site is designated for its geological interest, with anthropogenic barriers, such as commercial units located south and west of the site, present between the site and Ashclough SSSI, no detrimental effects are anticipated as a result of the works.
- 4.1.5 Chapelfield, LNR is situated approximately 415 km east of the site. Taking into account the distance between the LNRs and the site, and as they are not functionally linked the demolition works are not anticipated to have a negative impact on the LNR.
- 4.1.6 Given the reasons outlined above, no significant adverse effects are anticipated on any of the statutory designated sites.

Non-statutory designated sites

- 4.1.7 There are four non-statutory designated sites within 1 km of the site boundary (Manchester, Bolton and Bury Canal, Site of, SBI, Sailor's Brow and Springwater Park, SBI, Reservoirs at Chapelfield, SBI and Wetland near Radcliffe, SBI), which are recognised as being of local ecological value. Due to the small scale of the works and as anthropogenic barriers are located between the site and the SBIs no negative impacts are anticipated.

Habitats and plants

- 4.1.8 Habitats within the site were found to be in keeping with the local area. The site contained value for wildlife including bats and birds. The hardstanding is of lowest value for wildlife, with the scattered trees and introduced shrub comprising the areas of highest value.
- 4.1.9 The scattered trees are anticipated to support invertebrates, provide foraging opportunities for bats, and nesting and foraging opportunities for birds. As such it is recommended these habitats are retained and protected through development. If some areas require removal, the trees should be replaced as soon as practicable. Any replacement planting should endeavor to be on the same aspect as that to be lost. It is recommended that any future landscape planting comprises native species and species known to be of value for the attraction of wildlife. This will include fruiting and flowering species.
- 4.1.10 Any trees or shrubs within the site or boundary, to be retained, are to be appropriately protected during the construction phase. Temporary protective demarcation fencing will be used to protect the trees and shrubs. The fencing must extend outside the canopy of the retained trees and must remain in position until works are complete. The fencing will be in accordance with BS 5837:2012 Trees in Relation to Design, Demolition and Construction: Recommendations.
- 4.1.11 The River Irwell located adjacent to the east of the site is anticipated to act as an important foraging and commuting feature for wildlife through an urban landscape, as such a lighting strategy will be required to maintain a dark corridor along the river. In addition, standard pollution prevention control measures will be adhered to during all works.

Protected and other notable species

- 4.1.12 Building 1 (B1) and the canopy extending from B1 to B3 were determined to have Moderate bat roosting potential during the survey. Missing soffit paneling and areas of broken/damage soffit were located on the north, east and western aspect. These features were assessed as providing suitable roosting opportunities for crevice dwelling bat species on a regular basis.
- 4.1.13 The site was determined to have limited foraging opportunities for bats which is restricted to the scattered trees within the site, which are anticipated to attract invertebrate prey.
- 4.1.14 The scattered trees located along the northern boundary and south of B1 were determined to provide potential nesting opportunities for birds.
- 4.1.15 The River Irwell defined the eastern boundary of the site, the watercourse is anticipated to act as an important foraging and commuting feature for local wildlife. The existing buildings onsite, which back directly onto the River Irwell could provide nesting opportunities for sand martin foraging over the watercourse.
- 4.1.16 Enhancement measures for birds and bats are recommended, as outlined in Section 5.

5.0 RECOMMENDATIONS

5.1 Key constraints to design and construction

Birds

- 5.1.1 The site was determined to have value for nesting birds within the scattered trees and the buildings onsite. It is recommended that the scattered trees are retained where possible. If the scattered trees require removal, they should be removed outside of the breeding bird season (March to August inclusive). If this is not possible, then these areas will have to be checked for nests by an ecologist immediately prior to clearance. If nests are found in either trees to be removed or buildings to be demolished, they must be retained (with a suitable, species-specific buffer from works established) and protected from damage or abandonment until the young have fledged.
- 5.1.2 Due to the PEA survey being conducted outside of breeding bird season we would advise a detailed breeding bird survey of the buildings to be demolished to be conducted prior to the commencement of building removals.

Bats

- 5.1.3 B1 and its adjoining canopy (between B1 and B3) were determined to have Moderate bat roosting potential. Bats are protected under the Habitats Regulations and the Wildlife and Countryside Act 1981 (as amended) (see Appendix A). Two nocturnal bat surveys are required between May and September (Inclusive) on B1 and its associated canopy (between B1 and B3) prior to demolition, with at least one survey completed between May and August. If bats are identified roosting within the building and associated canopy an additional bat survey will be required to inform a European Protected Species Licence (EPSL), which will be required to destroy any identified bat roosts. An EPSL can only be granted once full planning permission has been obtained and all wildlife conditions have been discharged.
- 5.1.4 A sensitive lighting scheme should be maintained during and after works to maintain the areas of highest value as dark zones. Therefore, it is recommended that the proposed lighting plan considers the habitats of highest importance including the scattered trees, and River Irwell to the east. It is recommended that any security lighting during is appropriately placed to avoid being directed at these habitats. Lighting should also be placed to avoid being directed at the buildings adjacent to the site boundary assessed as having bat roosting potential.
- 5.1.5 It is recommended that all lighting is to be pre-fixed on the buildings, located near retained habitats or proposed habitats, to minimise the impact of lighting. Lighting should follow the protocols outlined in the Institute for Lighting Engineers document "Guidance for the Reduction of Obtrusive Lighting" (2005) and BCT's "Bats and Artificial Lighting in the UK" (2018) to minimise disturbance and sky-glow off site.

5.3 Further surveys required

5.3.1 Recommended further surveys are outlined below.

Breeding Birds

5.3.2 During the survey no historical bird nests were found within the buildings or trees surveyed. However, it was noted that the trees onsite, plus the buildings to be demolished have potential to support breeding birds. Therefore, we advise a nesting bird survey (between March and June inclusive) of the buildings required for demolition and of wall adjacent to the River Irwell, prior to removal.

Bats

- 5.3.3 During the survey no evidence of roosting bats was found, however an internal assessment could not be undertaken due to access constraints. Although no evidence of roosting bats was identified during the survey, it was concluded that B1 and the associated canopy (between B1 and B3) had Moderate bat roosting potential due to presence of broken soffit and missing soffit panels within the canopy.
- 5.3.4 As such, two nocturnal bat surveys are required between May and September (Inclusive) with at least one survey conducted between May and August (inclusive) is required to confirm the presence or absence of roosting bats before the building is demolished, as outlined in Section 5 of this report.
- 5.3.5 Bats are afforded protection through the Conservation of Habitats and Species Regulations 2017 (as amended) as well as the Wildlife and Countryside Act 1981 (as amended) (refer to Appendix A for further details). Mitigation may therefore be necessary to ensure compliance with this legislation. This is outlined further in Section 5 of this report. Other buildings and structures on site were found to have a Negligible potential for roosting bats and no further action is required regarding these structures.
- 5.3.6 The scattered trees within the site boundary were determined to have Negligible bat roosting potential. As such they do not require further surveys. However, they do provide foraging opportunities for bats by attracting invertebrate prey. As such they are recommended for retention where possible and a lighting strategy should ensure they are maintained as dark areas as outlined in section 5.1.3 and 5.1.4.
- 5.3.7 The site lacked linear features which connected to the wider landscape as such it was determined to have negligible value for commuting bats. However, the River Irwell located adjacent to the east of the site is anticipated to provide commuting and foraging opportunities for local bat species. A lighting strategy should be adhered to as outlined in section 5.1.3 and 5.1.4.

5.4 Mitigation requirements

Birds

- 5.4.1 All active birds' nests, regardless of species, are protected by UK law. A nest is deemed to be active even if it is in the process of being built and does not yet contain eggs or young. To avoid impacts on nesting birds, if the scattered trees which are suitable for nesting birds are to be cut during the nesting season (March to August inclusive), they will have to be checked for nests by an ecologist immediately prior to clearance. If nests are found, they must be retained (with a suitable, species-specific buffer from works established) and protected from damage or abandonment until the young have fledged.
- 5.4.2 Removal of suitable bird nesting habitat should be conducted over the winter months between October and February to avoid the breeding bird season (March to August inclusive), where possible.
- 5.4.3 Throughout the site, to minimise the risk of damaging or destroying a bird's nest, including significant disturbance of the birds (if present), the following measures should be adopted:
- Fell trees and shrubs, and reduce bramble scrub and other above-ground vegetation to 30cm height either: (a) outside the main bird breeding season (March to August inclusive, taking care to avoid impacts to features on the ground which may be used by hibernating reptiles or amphibians, and thereafter retaining habitat as unsuitable for use by breeding birds; or (ii) during the main bird breeding season, but only once an ecological clerk of works has conducted checks for nesting birds prior to site clearance operations.
- 5.4.4 If a bird's nest is discovered on site, for example in any of the buildings or the wall adjacent to the river, the works should cease, and the nest left alone until the eggs have hatched and the young have fledged – a period of 6-8 weeks.

The River Irwell

- 5.4.5 The River Irwell is anticipated to act as a foraging and commuting feature for local wildlife. As such a lighting strategy is recommended to ensure this watercourse is maintained as a dark zone to protect this aquatic feature and the wildlife that utilize it.
- 5.4.6 Measures will need to be undertaken throughout the demolition to avoid pollution of the River Irwell. Pollution prevention and control strategies will be adhered to at all times. Best practice protection measures as detailed within PPG5 Pollution Prevention Guidelines (2007) are to be put in place to protect the watercourse. The following control measures would be required during any ground works, demolition or construction works to ensure there are no impacts on the watercourses and water table or any wildlife utilising it:
- All operational plant will be kept well maintained and should not enter/be stored within the buffer zone.
 - Turning off plant when not in use.
 - Dampening of the operational areas will be regularly undertaken during dry weather conditions to avoid dust. Dust management will be extended to cover the

plant and all operational areas and will be complied with throughout the period of development.

- Measures to prevent pollutants from entering ground and surface water is standard construction practice through the use of a bunded fuel storage and refuelling area at a discrete distance from any watercourses. These measures should be underwritten by spill management equipment being kept on-site and capable of being effectively utilised by trained operatives to contain any accidental spillage within any part of the operational area.
- A toolbox talk should be completed by a qualified ecologist to ensure contractors are aware of the River Irwell and its ecological value.
- During night hours, no lighting is to be located towards the River Irwell
- A 'Site Tidy' protocol is to be put in place on-site. All litter is to be appropriately controlled, whilst on-site materials are to be adequately stored over-night.

5.5 Opportunities for enhancement

Landscaping

- 5.5.1 The planting of native species including flower-, berry- and fruit-bearing species would benefit birds, terrestrial mammals, and other noteworthy species. Furthermore, planting trees and hedgerows on site would create a commuting corridor for many species including bats and hedgehogs. These features should be kept as dark corridors and should have strips of rough native grassland planted adjacent to them to attract invertebrates.

Nest/Roost boxes

- 5.5.2 Bird and bat boxes and/or bricks should be incorporated into the development design, including those suitable for a range of bat species, swift, house sparrow and/or starling, which are all species of conservation concern and are likely to be present within 1 km of the site. These features would provide additional roosting/nesting sites for these species groups and help offset impacts associated with habitat loss.

Biodiversity Net Gain

- 5.5.3 The scheme should strive to achieve biodiversity net gain, as per "Biodiversity Net Gain; Good Practice Principles for Development" CIEEM, CIRIA, IEMA (2016). Full details of this and a calculation of net gain could be completed to inform the scheme design. A final calculation could be undertaken after the preparation of landscape plans.
- 5.5.4 The following habitat measures will increase the on-site biodiversity:
- Retaining the Scattered Trees.
 - Native Hedgerow Planting.
 - Native Scrub Planting.
 - Broadleaved Trees.

- 5.5.5 Habitat measures should be provided within areas of open space or designated wildlife zones. A 30-year management plan could be produced to ensure biodiversity is secured on-site.

6.0 CONCLUSIONS

- 6.1.1 The site comprised largely buildings and hardstanding, with scattered trees and planters of introduced shrub. The site held limited value for local wildlife, however it did contain value for bats and birds.
- 6.1.2 B1 and its associated canopy (between B1 and B3) were determined to have Moderate bat roosting potential, as such further surveys are required as outlined in 5.1.2.
- 6.1.3 The site was also found to have value for nesting birds within the scattered trees and existing buildings. The trees are recommended for retention where possible. If their removal is necessary, a nesting bird check as outlined in 5.4.1 will be required. A detailed breeding bird survey of the site is recommended due to the possibility of nesting birds using the existing buildings and sand martins using the wall adjacent to the River Irwell.
- 6.1.4 The River Irwell located immediately east of the site was determined to have value for local wildlife as such the report recommends a lighting strategy and pollution prevention methods to protect the watercourse and any wildlife that utilise it.

6.2 Validity of Data

- 6.2.1 Unless the site changes significantly, the surveys carried out for this report should remain valid for at least 18 months (CIEEM 2019).

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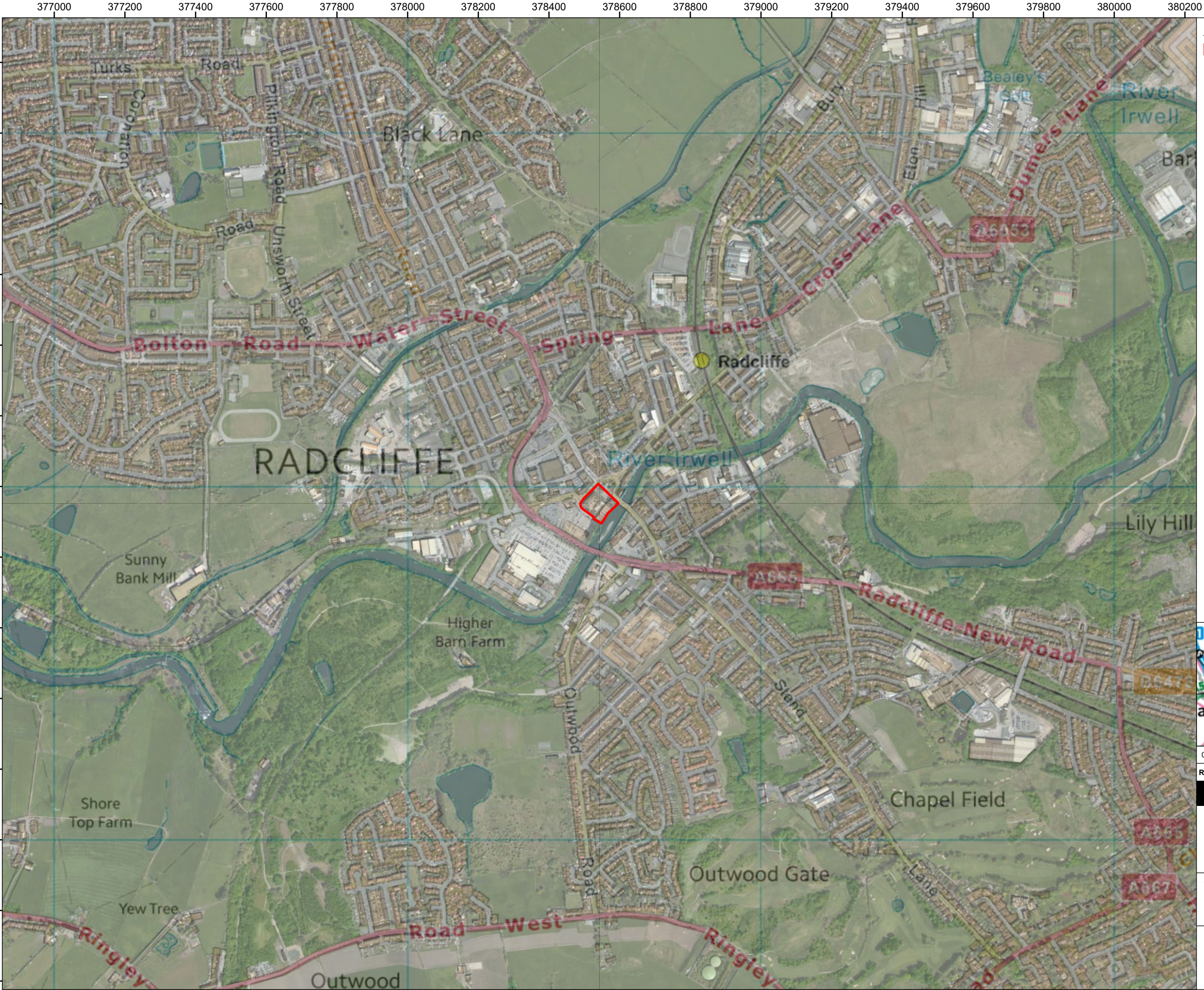
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FIGURES

Figure 1 Site Location Plan

Figure 2 Habitat Map



Legend:
[Red Square] Site Boundary

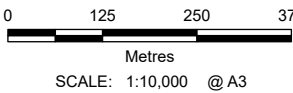


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TITLE: Figure 1:
Site Location Plan



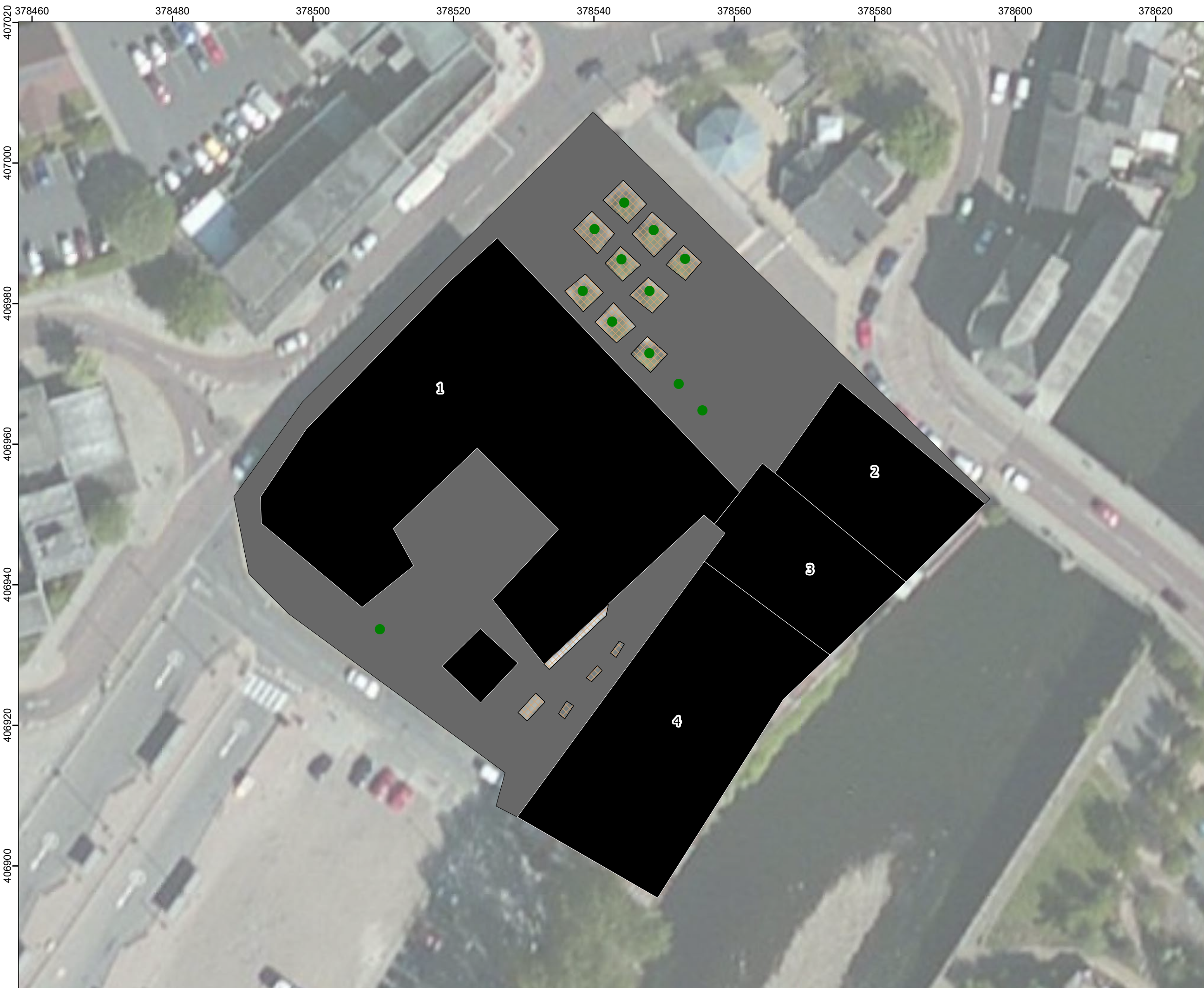
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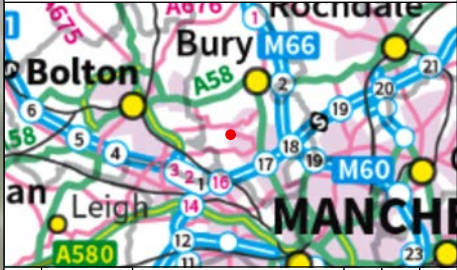
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- Legend:**
- Scattered broad-leaved tree
 - Introduced shrubs
 - Building
 - Hardstanding

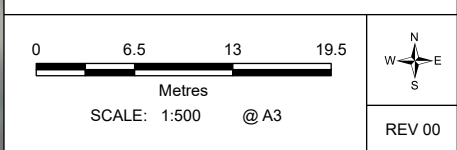


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TITLE: Figure 2:
Phase 1 Habitat Survey



APPENDIX A – NATURE CONSERVATION LEGISLATION AND POLICY

International Legislation

The following international conventions and directives apply to biodiversity protection in the UK. Post-'Brexit', even though European Union (EU) directives no longer directly apply to the UK, the provisions therein are enshrined in both domestic legislation and international agreements. Legislation has been enacted to ensure the regulations derived from these remain in force³.

The Convention on Biological Diversity 1992 *et seq.*

This multilateral treaty (<https://www.cbd.int/doc/legal/cbd-en.pdf>), signed by 150 government leaders at the 1992 Rio Earth Summit, has three main goals, of which one is the conservation of biological diversity. Article 6 requires countries to develop national biodiversity strategies, plans or programmes. In response, the UK developed the UK Biodiversity Action Plan (BAP) 1994 (<https://jncc.gov.uk/our-work/uk-bap/>) as well as county-specific BAPs. Subsequent to this, parties of the convention agreed the supplementary Nagoya Protocol 2010 (available at <https://www.cbd.int/abs/doc/protocol/nagoya-protocol-en.pdf>), adopting the Strategic Plan for Biodiversity 2011-2020. The purpose of this Strategic Plan was to provide a framework for establishing national and regional biodiversity targets (<https://www.cbd.int/doc/strategic-plan/2011-2020/Aichi-Targets-EN.pdf>).

Directive 2009/147/EC of the European Parliament and of the Council on the conservation of wild birds (Birds Directive) 2009

<https://www.legislation.gov.uk/eudr/2009/147>

The Birds Directive 2009 relates to the conservation of all species of naturally occurring birds in their wild state in the territory of the EU Member States (MSs) to which the treaty applies. Under the Birds Directive, the most suitable areas of conservation of the Annex I species are to be designated as Special Protection Areas (SPAs), as part of the European Natura 2000 network. Post Brexit, SPAs are no longer considered part of Natura 2000 and are instead components of the UK's 'national site network', but their highly protected status is unchanged. Maintaining a coherent network of protected sites with overarching conservation objectives is still required in order to fulfil the commitment made by government to maintain environmental protections and continue to meet the UK's international legal obligations.

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (Habitats Directive) 1992

<https://www.legislation.gov.uk/eudr/1992/43>

The Habitats Directive 1992 requires EU MSs to maintain or restore, at favourable conservation status, natural habitats and species of wild fauna and flora of community interest, which are listed

³ Further information relating to England and Wales can be found here: <https://www.gov.uk/government/publications/changes-to-the-habitats-regulations-2017/changes-to-the-habitats-regulations-2017>. A similar exercise has been undertaken in Scotland and Northern Ireland.

under Annex I, II, IV and/or V. Species listed under Annex IV are known as 'European Protected Species' (EPS), and have retained their protected status in UK domestic legislation post-Brexit.

Under the Habitats Directive, EU Member States are required to contribute to the Natura 2000 network through the designation of Special Areas of Conservation (SACs) for natural habitat types listed in Annex I and habitats of species listed in Annex II. Post Brexit, SACs are no longer considered part of the European Natura 2000 network and are instead components of the UK's 'national site network', but their highly protected status is unchanged.

The Convention on Wetlands of International Importance Especially as Waterfowl Habitat 1971: the Ramsar Convention

Accessible via <https://jncc.gov.uk/our-work/ramsar-convention/>

The Ramsar Convention is an intergovernmental treaty focused on the conservation and sustainable use of wetland, primarily as habitats for water birds. Under the convention, each ratified country is required to identify and designate sites (Ramsar sites) that meet the criteria for identifying a wetland of international importance, i.e. containing representative, rare or unique wetland types. In addition, the convention promotes international co-operation to promote the wise use of all wetlands and their resources.

Habitats Regulations Assessment (HRA): a note

There is a requirement under the EU nature directives, and enshrined in country-specific domestic legislation⁴ (see below), to undertake a screening exercise to determine whether any sites that form part of the 'national site network' (formerly Natura 2000) are likely to be significantly affected by any proposal (project or plan). The assessment must consider the proposals alone and also in combination with other plans and projects, if they result from activities that are not directly connected with, or necessary to, the management of the designated sites. If significant effects are likely, an Appropriate Assessment (AA) will need to be carried out. The screening, any AA, and any subsequent assessment, are collectively known as a Habitats Regulations Assessment (HRA). The HRA needs to take into account each of the 'Qualifying Features' (habitats or species) that justified the site being designated. Ramsar sites are treated in the same way as SACs and SPAs in HRAs, as are sites which have not been fully adopted i.e. candidate SACs (cSACs) and potential SPAs (pSPAs).

The Convention on the Conservation of Migratory Species of Wild Animals (Bonn Convention) 1979

Accessible via: <https://jncc.gov.uk/our-work/the-convention-on-the-conservation-of-migratory-species-of-wild-animals/#convention-summary>

The Bonn Convention was adopted in 1979 and came into force in 1985. Contracting Parties work together to conserve migratory species and their habitats by providing strict protection for endangered migratory species (listed in Appendix I of the Convention), concluding multilateral agreements for the conservation and management of migratory species which require or would benefit from international cooperation (listed in Appendix II), and by undertaking cooperative

⁴ In England and Wales: the Conservation of Habitats and Species Regulations 2017 (as amended).
In Scotland: the Conservation (Natural Habitats &c.) Regulations 1994 (as amended).
In Northern Ireland: the Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended).
In the UK offshore area: the Conservation of Offshore Marine Habitats and Species Regulations 2017 (as amended).

research activities. The UK Government ratified the Bonn Convention in 1985. The current legally-binding Agreements under the Convention include EUROBATS⁵.

The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention) 1979

<https://www.coe.int/en/web/bern-convention>

The principal aims of the Bern Convention 1979 are to ensure the conservation and protection of wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to regulate the exploitation of those species (including migratory species) listed in Appendix III. To this end, the Bern Convention imposes legal obligations on contracting parties, protecting over 500 wild plant species and more than 1,000 wild animal species. The UK Government ratified the Bern Convention in 1982.

National Legislation

The following pieces of domestic legislation apply to biodiversity protection in the UK.

The Wildlife and Countryside Act (WCA) 1981

<https://www.legislation.gov.uk/ukpga/1981/69>

The Wildlife and Countryside Act 1981 (as amended) is the primary piece of legislation relating to nature conservation in the UK, though it has been adapted in different ways in the devolved administrations. It was initially enacted to implement the Bern Convention, Bonn Convention and the Birds Directive (described above).

The act is supplemented by provisions in the Countryside and Rights of Way (CROW) Act 2000 and the Natural Environment and Rural Communities (NERC) Act 2006, and extended in Scotland by the Nature Conservation (Scotland) Act 2004 and the Wildlife and Natural Environment (Scotland) Act 2011). Its equivalent in Northern Ireland is the Wildlife (Northern Ireland) Order 1985 (as amended and similarly extended). In addition to the Habitat Regulations (described below), the WCA provides protection for species listed in Schedules 1 (birds), 5 (other animals) and 8 (plants) of the Act. It provides for the notification and confirmation of Sites of Special Scientific Interest (SSSIs) in England and Wales⁶. It also sets out, in other schedules, important and invasive species which are legally protected or require management.

All species of bird are protected under the WCA. The legislation makes it an offence to intentionally:

- a) kill, injure or take any wild bird;
- b) take, damage, or destroy the nest of any wild bird while that nest is in use or being built; or
- c) take or destroy an egg of any wild bird.

Those species of birds listed on Schedule 1 of the WCA are afforded additional protection, which deems it an offence to intentionally or recklessly:

⁵ More information available at <https://jncc.gov.uk/our-work/agreement-on-the-conservation-of-populations-of-european-bats-eurobats>

⁶ Duty replaced by the Nature Conservation (Scotland) Act 2004 (as amended) and the Nature Conservation and Amenity Lands (Northern Ireland) Order 1985 (as amended) in those countries.

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

Under Section 9 of the WCA, for animals listed on Schedule 5, it is an offence in England and Wales to intentionally or recklessly:

- kill, injure or take any wild animal listed on Schedule 5;
- possess or control any live or dead those wild animals or anything derived from it;
- damage or destroy any structure or place which wild animals listed on Schedule 5 uses for shelter or protection;
- disturb any such animal while it is occupying a structure or place of shelter or protection;
- obstruct access to any structure or place used by any such animal for shelter or protection; and
- sell, offer or expose for sale, or have in their possession or transports for the purpose of sale, any live or dead wild animal listed on Schedule 5 or any part of, or anything derived from such an animal.

As noted above, there are minor differences between the offences in England and Wales outlined above, and those in Scotland / Northern Ireland. In addition, the Wildlife and Countryside Act 1981 is no longer relevant to EPS in Scotland or Northern Ireland, which instead are afforded full protection by the 'Habitats Regulations' (see below).

In addition to EPS, species commonly found on development sites include water voles (*Arvicola amphibius*) and widespread species of reptiles: common lizard (*Zootoca vivipara*); slow-worm (*Anguis fragilis*); grass snake (*Natrix helvetica*); and adder (*Vipera berus*). These four reptile species receive partial protection, which prevents the intentional or deliberate killing and injuring of reptiles or offering them for sale.

Section 14(2)⁷ states that it is an offence to plant or otherwise cause to grow any plant in the wild at a place outside its native range.

There is no provision within the Act for derogation licences to be issued for the purposes of development, although Section 10 provides a defence in cases that may be considered to be: "*the incidental result of a lawful operation and could not reasonably have been avoided*" if certain conditions are met.

Section 16(i) of the Act does make provision for derogation licences to be issued "*for the purposes of preserving public health or public ... safety*". For confirmation of this, it would be appropriate to consult the relevant statutory nature conservation body (SNCB)⁸.

The Conservation of Habitats and Species Regulations (Habitat Regulations) 2017

<https://www.legislation.gov.uk/uksi/2017/1012> England and Wales

The Habitats Regulations 2017 consolidated the various amendments made to the 1994 Habitat Regulations, which were developed to implement the Birds Directive and Habitats Directive (see above) at a national level, though this consolidation only applies in England and Wales.

⁷ In Scotland, as amended by Section 14 of the Wildlife and Natural Environment (Scotland) Act 2011.

⁸ SNCBs are - in England: Natural England; in Wales: Natural Resources Wales; in Scotland: NatureScot; in Northern Ireland: Department of Agriculture, Environment and Rural Affairs (DAERA).

The Regulations (as amended) provide for the designation and protection of the national site network (formerly 'Natura 2000 sites'), the adaptation of planning and other controls for those sites, and the protection of EPS (listed on Schedules 2 and 5).

The 2017 Regulations (England and Wales, Reg. 43) deems it an offence to:

- a) deliberately capture, injure or kill a wild animal of a EPS,
- b) deliberately disturb wild animals of any such species,
- c) deliberately take or destroy the eggs of such an animal, or
- d) damage or destroy a breeding site or resting place of such an animal.

For the purposes of paragraph (b), disturbance of animals includes in particular any disturbance which is likely to:

- a) impair their ability to survive, to breed or reproduce, or to rear or nurture their young, or in the case of animals of a hibernating or migratory species, to hibernate or migrate; or
- b) to affect significantly the local distribution or abundance of the species to which they belong.

There are also restrictions on transport, possession and sale.

It is possible to obtain a derogation licence from the relevant SNCB⁸ to permit activities which would otherwise contravene the regulations above, including for development purposes, when certain conditions are met. Failure to satisfy the Regulations and obtain a licence where required could result in prosecution and lead to fines and possible imprisonment.

To meet the requirements in Regulation 63(1) [48(1) of the 1994 Regulations in Scotland], an HRA is required (see note in previous section).

Currently (2021), all EPS are also listed on Schedule 5 of the WCA (outlined above), as it applies in England and Wales. EPS often encountered on development sites include GCN (*Triturus cristatus*), all species of bats, dormice (*Muscardinus avellanarius*) and otters (*Lutra lutra*).

Countryside and Rights of Way Act 2000

<https://www.legislation.gov.uk/ukpga/2000/37>

The Countryside and Rights of Way (CROW) Act 2000 provides for public access on foot to certain land types, amends the law for public rights of way, increases protection for SSSIs, and strengthens wildlife enforcement legislation. It applies only in England and Wales.

The Natural Environment and Rural Communities (NERC) Act 2006; The Environment (Wales) Act 2016

<https://www.legislation.gov.uk/ukpga/2006/16>

The Natural Environment and Rural Communities (NERC) Act 2006, Section 40 requires that any public body or statutory undertaker in England must have regard to the purpose of conservation of biological diversity in a manner that is consistent with the exercise of their normal functions. This may include enhancing, restoring or protecting a population or a habitat. The intention is to help ensure that biodiversity becomes an integral consideration in the development of policies, and that decisions of public bodies work with the grain of nature and not against it. In Wales, a similar duty has been moved to Section 6 of the Environment (Wales) Act 2016.

As part of this duty, statutory undertakers must have regard to the list of habitats and species which are of principal importance for the purpose of maintaining and enhancing biodiversity. For

England, the duty to compile such a list is captured under Section 41 of the NERC Act; in Wales, under Section 7 of the Environment (Wales) Act. The lists for England are accessible online via the National Archive⁹; for Wales via <https://www.biodiversitywales.org.uk/>.

The Hedgerows Regulation 1997

<https://www.legislation.gov.uk/ukxi/1997/1160/made>

The Hedgerows Regulations 1997 provide protection for ‘important’ hedgerows for which replanting is not a substitute. The ‘importance’ of a hedgerow depends upon several archaeological, wildlife and landscape criteria (which are outlined in the Regulations). The regulations deem it an offence to remove an ‘important hedgerow’ without prior notification to the relevant local planning authority.

Protection of Badgers Act 1992

<https://www.legislation.gov.uk/ukpga/1992/51>

Badgers and their setts are protected under the Protection of Badgers Act 1992 (England, Wales and Scotland). The key part of this legislation in relation to the proposed development are in Section 3, which deems it an offence to:

- a) damage a badger sett or any part of it;
- b) destroy a badger sett;
- c) obstruct access to, or any entrance of, a badger sett;
- d) disturb a badger when it is occupying a badger sett,
- e) intend to do any of those things or be reckless as to whether those actions would have any of the consequences listed above.

Derogation licences may be obtained from the relevant SNCB⁸ under Section 10 of the Act for the purpose of development, to permit activities which would otherwise be unlawful.

Note: there are additional provisions relating to badgers under the WCA Section 11 (Prohibition of certain methods of killing or taking wild animals).

The Wild Mammals (Protection) Act 1996

<https://www.legislation.gov.uk/ukpga/1996/3>

All wild mammals are protected by The Wild Mammals (Protection) Act 1996 (as amended). This makes it an offence to mutilate, kick, beat, nail, or otherwise impale, stab, burn, stone, crush, drown, drag or asphyxiate any wild mammal.

Invasive Alien Species (Enforcement and Permitting) Order 2019

(<https://www.legislation.gov.uk/ukxi/2019/527/contents/made>)

The Invasive Alien Species (Enforcement and Permitting) Order applies principally in England and Wales and the UK’s offshore marine area, but also controls imports and exports from the UK (including Scotland and Northern Ireland). It lists species of concern which cannot be imported, kept, bred/grown, transported, sold, used, allowed to reproduce, or released into the environment. This Order replaces some elements relating to invasive species in the Wildlife and Countryside Act 1981 (as amended).

National, regional and local policy and guidance of relevance

Planning policy relating to ecology and nature conservation is set out below.

National Planning Policy Framework 2019

Access via: <https://www.gov.uk/government/publications/national-planning-policy-framework-2>

The National Planning Policy Framework (NPPF) sets out the Government's planning policy in England at the national level. It does not contain specific policies for nationally significant infrastructure projects, which are determined in accordance with the decision-making framework in the Act and relevant National Policy Statements for major infrastructure, as well as any other matters that are relevant (which may include the NPPF). Section 15 (paragraphs 170-183) of the NPPF specifies the requirements for conserving and enhancing the natural environment through the planning and development process to minimise impacts on habitats and biodiversity.

Planning Practice Guidance 2019

Accessed via: <https://www.gov.uk/government/collections/planning-practice-guidance>

The Planning Practice Guidance 2019 is a web-resource to support the NPPF, including guidance for Environmental Impact Assessments (<https://www.gov.uk/guidance/environmental-impact-assessment>) and the Natural Environment (<https://www.gov.uk/guidance/natural-environment>). The guidance for the Natural Environment explains key issues in implementing the NPPF to protect and enhance the natural environment, including local requirements. The guidance outlines what evidence needs to be taken into account in preparing planning applications to identify and map local ecological networks. It also outlines how biodiversity can be taken into account in preparing a planning application.

Government's 25-Year Environment Plan 2018

Accessed via: <https://www.gov.uk/government/publications/25-year-environment-plan>

The Government's 25-Year Environment Plan 2018 sets out how the UK Government intends to improve the natural health of the UK through improving land, air and water quality, as well as setting out how the effects of climate change will be tackled. The plan promotes the creation or restoration of wildlife-rich habitat outside the protected site network and seeks to recover threatened, iconic or economically important species of animals, plants and fungi, and where possible to prevent human induced extinction or loss of known threatened species in England. The plan sets out a number of goals and corresponding policies that look at managing land sustainably, improving and enhancing landscapes and biodiversity for both marine and terrestrial environments, improving resource efficiency and reducing waste and pollution, whilst also examining the UK's contribution to improving the global environment.

APPENDIX B – NOTEWORTHY SPECIES RECORDS

Table 6 displays noteworthy species records that are located within 1 km of the site boundary. These species records were obtained from GMEU. The scientific and common names for species are given as well as their level of designation. A glossary defining abbreviations used in the table is given in Table 7, Appendix C. If a species is not included in the table below it does not necessarily mean the species is absent from the search area, but that data-holding organizations do not have records of it in these locations.

Table 5: Noteworthy species records within 1 km of the site boundary

Scientific name	Common name	Designation	Most Recent	Within 100m	Within 1km
Invertebrates					
<i>Melanchra persicariae</i>	dot moth	S41, UKBAP	2017		X
<i>Tyria jacobaeae</i>	cinnabar	UKBAP	2016		X
Fish					
	brown trout	S41	2013		X
Amphibians					
<i>Triturus cristatus</i>	great crested newt	WC9	2003		X
<i>Bufo bufo</i>	common toad	WCA9, S41	2018		X
Birds					
<i>Pyrrhula pyrrhula</i>	bullfinch	S41, Amber, UKBAP	2018	x	
<i>Numenius arquata</i>	curlew	S41, Red, UKBAP	2008		X
<i>Prunella modularis</i>	dunnock	S41, Amber	2016		X
<i>Locustella naevia</i>	grasshopper warbler	S41, Red, UKBAP	2010		X
<i>Passer domesticus</i>	house sparrow	S41, Red, UKBAP	2016		X
<i>Vanellus vanellus</i>	lapwing	S41, Red, UKBAP	2016		X
<i>Acanthis cabaret</i>	lesser redpoll	S41, Red, UKBAP	2016		X
<i>Linaria cannabina</i>	linnet	S41, Red, UKBAP	2014		X
<i>Emberiza schoeniclus</i>	reed bunting	S41, Amber, UKBAP	2017		X
<i>Alauda arvensis</i>	skylark	S41, Red, UKBAP	2017		X
<i>Turdus philomelos</i>	song thrush	S41, Red, UKBAP	2017		X
<i>Sturnus vulgaris</i>	starling	S41, Red, UKBAP	2017		X
<i>Motacilla flava</i>	yellow wagtail	S41, Red, UKBAP	2017		X
<i>Alcedo atthis</i>	kingfisher	WCA1, Amber	2019	X	
<i>Charadrius dubius</i>	little ringed plover	WCA1	2018		X
<i>Falco peregrinus</i>	peregrine	WCA1	2009	X	
Mammals					
<i>Chiroptera</i>	bat species	EPS (Sch 2)	2014		X
<i>Pipistrellus sp.</i>	pipistrelle species	EPS (Sch 2)	2014		X
<i>Pipistrellus pipistrellus</i>	common pipistrelle	EPS (Sch 2)	2019	X	
<i>Myotis daubentonii</i>	Daubenton's	EPS (Sch 2)	2006		X
<i>Nyctalus noctula</i>	noctule	EPS (Sch 2), S41	2006		X

Scientific name	Common name	Designation	Most Recent	Within 100m	Within 1km
<i>Erinaceus europaeus</i>	hedgehog	S41, UKBAP	2015		X

Note - **P** relates to records with 4 figure or tetrad grid references that could potentially be anywhere within a 1 km or 2 km square.

APPENDIX C – ABBREVIATIONS

Table 7 displays abbreviations of protected species legislation.

Table 6: Glossary of abbreviations used in this report

Code	Full Title	Explanation
Amber	Amber list	Amber listed species have a population status in the UK of medium conservation concern.
BAP	Biodiversity action plan	A plan that identifies threats to significantly important species and habitats, and sets out targets and actions to enhance or maintain biodiversity.
ENG BSBI RDB	A Vascular Plant Red List for England	A list published in 2014 by the Botanical Society of Britain and Ireland of the red list status of plants in England. Measured against standardised IUCN criteria.
ENG BSBI RDB(CR)	Critically endangered	A BSBI Red List designation for species at an extremely high risk of extinction.
ENG BSBI RDB(EN)	Endangered	A BSBI Red List designation for species at a very high risk of extinction.
ENG BSBI RDB(VU)	Vulnerable	A BSBI Red List designation for species at high risk of extinction.
EPS (Sch 2)	European protected species (Schedule 2)	European protected species of animals, listed on Schedule 2 of The Conservation of Habitats and Species Regulations 2017.
EPS (Sch 5)	European protected species (Schedule 5)	European protected species of plants, listed on Schedule 5 of The Conservation of Habitats and Species Regulations 2017.
GB RDB	Red data book species	Species identified in one of the UK Red Data 2001.
GB RDB(CR)	Critically endangered	An IUCN Red List designation for species at an extremely high risk of extinction.
GB RDB(EN)	Endangered	An IUCN Red List designation for species at a very high risk of extinction.
GB RDB(VU)	Vulnerable	An IUCN Red List designation for species at high risk of extinction.
IUCN	International Union for Conservation of Nature and Natural Resources	A worldwide partnership and conservation network to influence, encourage and assist societies throughout the world to conserve the integrity and diversity of nature and to ensure that any use of natural resources is equitable and ecologically sustainable.
LBAP	Local biodiversity action plan	A plan that identifies threats to locally important species and habitats, and sets out targets and actions in Species Action Plans and Habitat Action Plans to enhance or maintain biodiversity at the county or regional level.
Notable	Scarce and threatened invertebrates	Invertebrate species which are estimated to occur within the range of 16 to 100 10km squares but subdivision into Notable A and Notable B categories is not possible as there is insufficient information available).
Notable: A	Scarce and threatened invertebrates	Taxa which do not fall within Red Data Book categories but which are none-the-less uncommon in Great Britain and thought to occur in 30 or fewer 10km squares of the National Grid or, for less well-recorded groups, within seven or fewer vice-counties.
Notable: B	Scarce and threatened invertebrates	Taxa which do not fall within Red Data Book categories but which are none-the-less uncommon in Great Britain and thought to occur in between 31 and 100 10km squares of the National Grid or, for less-well recorded groups between eight and twenty vice-counties.
NN	Nationally notable	Designation for invertebrate taxa that are thought to be notably important in the UK.
NR	Nationally rare	Species in 15 or fewer hectads in Great Britain.
NS	National scarce	Species in 16-100 hectads in Great Britain.
Red	Red list	Red listed species have a population status in the UK with high conservation concern.
S41	Species of principal importance	Species of Principal Importance in England under The Natural Environment and Rural Communities (NERC) Act (2006)

Code	Full Title	Explanation
UKBAP	UK biodiversity action plan	A plan that identifies threats to locally important species and habitats, and sets out targets and actions in species action plans and habitat action plans to enhance or maintain biodiversity in the UK.
WCA	The Wildlife and Countryside Act 1981 (as amended)	Containing 4 Parts and 17 Schedules, the Act covers protection of wildlife (birds, and some animals and plants), the countryside, National Parks, and the designation of protected areas, and public rights of way.

APPENDIX D – SITE PHOTOGRAPHS

Plate 1 – Hardstanding



Plate 2 - Introduced shrub



Plate 3 - Scattered trees



Plate 4 - B1 and adjoining canopy (between B1 and B3) roosting features



APPENDIX E – PLANT SPECIES LIST

Table 8. Vascular plant species recorded from the site and its boundaries on 1st October 2021.

Species
broad-leaved dock (<i>Rumex obtusifolius</i>)
dandelion (<i>Taraxacum officinale</i> agg.)
American willowherb (<i>Epilobium ciliatum</i>)
heather (<i>Calluna vulgaris</i>)
cherry laurel (<i>Prunus laurocerasus</i>)
fennel (<i>Foeniculum vulgare</i>)
chives (<i>Allium schoenoprasum</i>)
sage (<i>Salvia officinalis</i>)
herb-Robert (<i>Geranium robertianum</i>)
common ragwort (<i>Jacobaea vulgaris</i>)
hart's-tongue (<i>Asplenium scolopendrium</i>)
fat-hen (<i>Chenopodium album</i>)



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