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Land north of Sheffield Road, Chapel-en-le-Frith, Derbyshire

Ecological Survey & Assessment

October 2011

RB-11-40

SUMMARY

Ribble Ecology has undertaken an ecological survey and assessment, including data search, desk study and site survey work, for a plot of land to the north of Sheffield Road, Chapel-en-le-Frith, Derbyshire.

This has been undertaken in connection with a planning application for proposed redevelopment of the land for housing.

Data search, desk study & site survey results have indicated that there are no substantive ecological constraints or concerns relating to the proposal for the Site, but that the section of the water-course titled Black Brook, that runs through the Site, is of local importance as a wildlife corridor and as a habitat that has the potential to support protected species.

Measures for protecting Black Brook, and the associated potential occurrence of protected species, are specified in section 4.3.1 of this report. Implementation of these measures is best enforced by means of a planning condition.

In addition, section 4.3.2 of the report provides guidance on additional best-practice measures and opportunities for biodiversity enhancement in the Site. Implementation of the additional best-practice recommendations is not enforceable, but where it is possible to incorporate them into the scheme this will demonstrate accordance with a key principle of Planning Policy Statement 9.

1.0 INTRODUCTION

1.1 Overview

In October 2011, Ribble Ecology was commissioned to undertake an ecological survey and assessment for a plot of land to the north of Sheffield Road, Chapel-en-le-Frith, Derbyshire. This was in connection with a planning application for proposed redevelopment of the industrial land for housing.

A plan showing the red-line boundary of the survey area was supplied with the commission.

The land spans approximately 1.5 hectares (ha) and is centred at grid reference **SK 06414 80925**. Hereafter within this report it is termed the 'Site' or the 'Application Site'.

1.2 Objectives

Ribble Ecology identified the objectives of the survey and assessment to be as follows:-

- Undertake an Extended Phase 1 Habitat Survey at the Application Site and throughout the surrounding land, in accord with the JNNC guidelines[1].
- Investigate all vegetation and habitat types and compile one or more plant species lists where appropriate.
- Identify any occurrences of rare and/or protected plant species at the Site and also any non-native invasive plant species as listed on Schedule 9 of the Wildlife and Countryside Act 1981.
- With the aid of aforementioned plant species lists identify NVC communities and UK BAP Priority Habitats.
- Undertake habitat appraisal for protected species such as: badger; water vole; great crested newt and Schedule 1 birds.
- Similarly, undertake habitat appraisal for UK BAP Priority Species and other wildlife such as breeding birds.
- Where possible, include searches for field signs and evidence of the actual presence of protected and priority species.
- From the survey results, identify any ecological concerns or constraints and provide feedback on appropriate mitigation and compensation measures to avoid impacts on protected species and other local wildlife.

2.0 METHODOLOGY

2.1 Data search & desk study

As standard, Ribble Ecology used a range of desk and internet based resources to obtain background information prior to attending the Application Site. For the land north of Sheffield Road the desk study covered an area of 5 - 10km radius around the Site, with the internet resources being as follows:

- Bing Maps (http://www.bing.com/maps) and Google Earth for aerial photographs, including historic photographs in the case of Google Earth.

[1] Ref: *Handbook for Phase 1 Habitat Survey – a technique for Environmental Audit" published by the Joint Nature Conservation Committee (JNCC 2003).*

- Bing Maps for a 1:25,000 Ordnance Survey map snapshot/extract.
- Multi-Agency Geographic Information for the Countryside (MAGIC) collaborative databse website (www.magic.defra.co.uk), for information on key environmental schemes and statutory designations.
- National Biodiversity Network (NBN) Gateway (www.nbn.org.uk), for collated low-resolution records of protected and priority species occurrence.

A request for existing ecological data for a 2km radius around the Application Site was submitted to the ecological records centre at Derbyshire Wildlife Trust (DWT), primarily with the aim of obtaining information about any occurrences of the following:

- Local, non-statutory sites of ecological interest (known as Local Wildlife Sites in Derbyshire);
- Recorded occurrences of protected species;
- Recorded occurrences of UK BAP priority species and priority habitats;

2.2 Personnel, date, weather conditions & any limitations

The survey work was undertaken on **25th October 2011**, by the suitably experienced ecologist Ms Lorna Bousfield B.Sc.(Hon's).MIEEM, Principal Ecologist at Ribble Ecology. The desk study and preparation of this report has also been undertaken by Ms Bousfield.

The weather conditions were appropriate for completing all aspects of the survey, being dry with sunshine and with light wind (Beaufort 2). The air temperature was 13° Celsius throughout the survey.

The seasonal timing of the survey was inappropriate for recording breeding birds and many flying invertebrates (butterflies, bees and dragonflies) but habitat appraisal was used as a means of determining suitability and *potential* for such wildlife.

2.3 Vegetation & habitats

An Extended Phase 1 Habitat Survey was conducted throughout the Application Site and onto adjoining land where possible. The Phase 1 Habitat Survey is a standardised method used to record habitat types and characteristic vegetation, as set out in the "*Handbook for Phase 1 Habitat Survey – a technique for Environmental Audit*" published by the Joint Nature Conservation Committee (JNCC 2003). It is 'Extended' through the additional recording of specific features indicating the presence, or likely presence, of protected species or other species of nature conservation significance.

Plant species lists were compiled where appropriate and the Site and survey area was searched for uncommon plant species, *UK Biodiversity Action Plan (BAP)* Priority Species and plant species listed as protected in the *Wildlife and Countryside Act 1981*.

All higher plant nomenclature within this report is written in accord with *Stace's New Flora of the British Isles (Stace, C. A. 1997)*.

Searches were carried out for the presence of invasive species listed in the *Wildlife and Countryside Act 1981 (as amended), on Schedule 9 (as updated April 2010)*.

Any occurrences of UK BAP Priority Habitat were noted and where possible the plant species lists were also used to identify *National Vegetation Classification (NVC)*

communities (Rodwell, J. S. Volumes 1 – 5, 1991 – 2000), as the NVC provides a systematic and comprehensive analysis of British vegetation.

2.4 Fauna

Bat species

UK bat species are provided full legal protection under Schedule 5 (section 9) of the *Wildlife and Countryside Act 1981 (as amended)* and under *The Conservation of Habitats and Species Regulations 2010*, making them European Protected Species. In combination this legislation make it illegal to intentionally kill, injure, harm or disturb bats and illegal to damage, disturb or obstruct access to bat roosts.

The remit of the commission did not include a licensed bat survey of the buildings; it is understood that this was to be undertaken by another surveyor. However, to provide a complete appraisal of the Site, Ms Bousfield assessed the habitat suitability in respect of foraging and commuting bats whilst undertaking the Extended Phase 1 Survey.

Badger

Badgers *Meles meles* and their setts are protected under the *Protection of Badgers Act 1992*. This legislation makes it illegal to kill, injure or take badgers or to interfere with a badger sett, with the Act defining 'a sett' as being "any structure or place which displays signs indicating current use by a badger".

The Application Site was searched for evidence of badger, with the aim of identifying any combination of the following field signs:

a) Sett holes, wider than high, often with spoil heaps in front, sometimes also with discarded bedding;

b) Disturbed ground and small holes from foraging activity;

c) Trampled dispersal pathways and breach points under boundary fences;

d) Distinctive hairs, snagged on fences etc. or found at sett entrances;

e) Dung pits/ latrines;

f) Characteristically shaped footprints;

g) Scratching at the base of trees and other features.

Birds

Wild birds, their nests and their eggs are protected under Part 1 of the *Wildlife and Countryside Act 1981*, which makes it illegal to kill or injure a bird and to destroy its eggs or its nest whilst it is in use or being built. Game birds are an exception and are protected under the separate *Game Acts*, which fully protect them during the close season. In addition, certain bird species (e.g. species such as barn owl and kingfisher) are specially protected under Schedule 1 of the *Wildlife and Countryside Act 1981 (as amended),* making it illegal to disturb these birds and their young at the nest.

All visible and audible birds were recorded during the survey, following the standard recording methodology and codes of the *British Trust for Ornithology (BTO) Common Birds Census* (Marchant 1983).

Habitats at the Application Site were assessed for their *potential* value for nesting, roosting, feeding, and wintering birds, as indicated by the amount of shelter and species diversity amongst the shrubs, trees and other vegetation types in the Site.

Great crested newt & other amphibians

Great crested newts (GCNs) *Triturus cristatus* are provided full legal protection under Schedule 5 (section 9) of the *Wildlife and Countryside Act 1981 (as amended)* and under *The Conservation of Habitats and Species Regulations 2010*, making them a European Protected Species. In combination this legislation make it illegal to intentionally kill, injure, harm or disturb GCN and illegal to damage, destroy or obstruct access to any place used by sheltering or breeding GCN.

Prior to attending the Application Site an Ordnance Survey map and Google Earth aerial photographs were checked for evidence of ponds within 250m unobstructed dispersal range of the Site. As there was no evidence of ponds it was concluded that no further survey work would be required in relation to GCN or other amphibians.

Water vole & otter

Water voles *Arvicola amphibious* and their habitat are provided full legal protection under Schedule 5 (section 9) of the *Wildlife and Countryside Act 1981* (as amended), which makes it illegal to intentionally kill, injure or take water voles and to damage, disturb or destroy their 'place of shelter', i.e. their habitat.

In England and Wales otters *Lutra lutra* are protected under Section 9(4)(b) and (c) of Schedule 5 of the *Wildlife and Countryside Act* and they are fully protected under the *Conservation of Species and Habitats Regulations 2010*. Collectively, this makes it illegal to deliberately or intentionally capture, injure, kill, harm or disturb otter and illegal to damage, destroy or obstruct access to an otter holt.

Otter and water vole are both characteristically associated with a wide range of aquatic habitat types, including ponds, field drains, reservoirs, wetlands and rivers.

The water course passing through the Application Site (Black Brook) was made the subject of a detailed habitat appraisal for water vole and otter along the entire section that passes through / alongside the Site (approx. 200m long). Searches for field signs indicative of otter and/or water vole were carried out at localised points, as described in the 'results' section of this report.

Reptiles

Reptile species are afforded differing levels of protection. The species known to occur within 10km of the Site are grass snake *Natrix natrix*, common lizard *Zootoca vivipara* and slow worm *Anguis fragilis*, which are provided partial legal protection under Schedule 5 (section 9) of the *Wildlife and Countryside Act 1981* (as amended), which only makes it illegal to intentionally kill or injure them.

Habitats throughout the Application Site were assessed for their suitability and potential to support these species. Based on the habitat appraisal it was then concluded that no further survey work was required.

Other wildlife

Any evidence of other wildlife occurrences, such as deer, brown hare, hedgehog and notable invertebrates were to be recorded during the survey.

3.0 RESULTS

3.1 Data search & desk study

The Site is centred at grid reference **SK 06414 80925** and the data search results for land and features around this point are summarised in **Tables 1 – 3**. A key to the abbreviations used in Tables 2 and 3 is as follows:

Key to abbreviations:
DWT = Derbyshire Wildlife Trust
NBN Gateway = National Biodiversity Network Gateway

Table 1: Statutory and local (non-statutory) sites of biological interest

Name & status	Grid reference & distance from the Site	Primary reasons for designation
Lower Peaslows Farm Meadow SSSI	Grid ref. SK 079807. Approx. 1.5km east of the Site at the closest point.	0.69ha. Nationally important for species-rich, unimproved neutral grassland
Castleton SSSI	Grid ref. SK 120820. Approx 3km east at the closest point.	823.9ha. Species-rich limestone grasslands, several of which differ from other Derbyshire limestone grasslands as they are damp, bryophyte-rich swards over brown calcareous soils.
Combs Reservoir SSSI	SK 038795. Approx 2.8km south-west at the closest point.	32.1ha. One of a very few sites in Britain which periodically support an unusual community of short-lived mosses and liverworts.
Bowden Hall Pond LNR	Approx. 585m north of the Site at the closest point	0.9107ha. Designated for its '*Standing open water'*
Brookside Pastures LNR	Approx. 660m south at the closest point	18.8544ha. Designated for its '*Unimproved neutral grassland – wet'*
Wash Pasture *potential* LNR	Approx. 360m south at the closest point.	7.459ha. Designated for its 'Rush-pasture'

Table 2: All post-1990 collated records of protected species occurrences

Species	Data source & Year(s)	Approx. location, distance &/or direction from the Site
Common pipistrelle *Pipistrellus pipistrellus*	NBN Gateway. 1993 - 2007	>25 records (field records / passes). Those with high resolution are all recorded to the west of the Site, most in excess of 2km away. Two records are within 2km radius
Sporano pipistrelle *Pipistrellus pygmaeus*	NBN Gateway. 2007	3 records (field records / passes) at 100m resolution, for locations approx 2km west of the Site.
Daubenton's *Myotis daubentonii*	NBN Gateway. 1998 – 2010	>25 records (field records / passes). All are at 10km square resolution.

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Table 2: All post-1990 collated records of protected species occurrences		
Species	**Data source & Year(s)**	**Approx. location, distance &/or direction from the Site**
Natterer's *Myotis natterii*	NBN Gateway 2002 - 2004	8 records, all in excess of 5km away from the Site, to the north
Otter *Lutra lutra*	NBN Gateway. 1993	1 record, presented as a general record for the 10km square in which the Site is situated.
Water vole *Arvicola amphibius*	DWT 1997 NBN Gateway. 1997 - 2001	One record at general grid ref. SK0680, which is either along Smithy Brook or Warm Brook, at least 250m from the section of Black Brook that runs through the Site. >30 records, at 2km square resolution, many within 2km radius of the Site.
Noctule *Nyctalus noctula*	NBN Gateway. 2007	1 record, located >5km west of the Site.
White-clawed crayfish	DWT 1999 NBN Gateway. 1996, 1997, 1999, 2000	2 records of occurrence in Black Brook, one approx. 280m east (upstream) of the section of brook running through Site & one approx. 950m north-west (downstream) of the section of brook in the Site. 6 records for approx. 1.1km north (downstream) of the Site and several further north, beyond this. Also one record upstream in Black Brook, approx. 280m east
Schedule 1 birds: Fieldfare, Kingfisher, Merlin, Peregrine, Redwing	NBN Gateway. 2001 – 2010	A range of records at **10km resolution** for the square in which the Site is situated.

Table 3: All collated post-1990 records of UK and/or Greater Manchester BAP priority species occurrences		
Species	**Data source & Year(s)**	**Approx. distance from the Site**
Birds: Bulfinch, Cuckoo, Grasshopper warbler, Linnet, Tree sparrow, Herring Gull, Lesser Redpoll, Reed Bunting, Ring Ouzel, Spotted Flycatcher, Skylark, Twite, Willow Tit, Wood Warbler, Yellowhammer, Yellow wagtail	NBN Gateway. 2001 – 2010	A range of records at **10km resolution** for the square in which the Site is situated. Several are directly associated with the 2km square in which the Site is situated.
Amphibians: Common toad	DWT.	At grid ref. SK067818, which is approx. 585m north of the Site at the closest point

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Table 3: All collated post-1990 records of UK and/or Greater Manchester BAP priority species occurrences		
Species	**Data source & Year(s)**	**Approx. distance from the Site**
Reptiles: Slow worm Grass snake Common lizard	NBN Gateway. 1996 1990 1990 - 2006	1x record of slow worm and grass snake. Both records at 1km resolution but **>5km away** from the Site, to the west and north respectively. 16 records of common lizard occurrence, all to 1km resolution and located **>2km away**, to the north of the Site
Mammals: Hedgehog	NBN Gateway. 2010	1 record at 10km resolution.

In summary, desk study shows that all occurrences of SSSIs are beyond 1km from the Application Site. In addition, all Local Wildlife Sites are situated beyond 250m away, and are separated from the Site by the presence of houses and roads, thus they are not within a potential zone of influence of the proposed redevelopment.

There are records of a range of protected species having been detected in the wider surrounding area within the last 20 years (i.e. post-1990). Water vole and white-clawed crayfish have been detected within 1km of the red-line boundary and located along Black Brook (which passes through the Site) so from the data it appears that these are the two species requiring greatest consideration.

Most of the records for other protected species are distant from the Site and/or general for the 10km square in which the Site is situated. The same is true of the BAP priority species that are presented in Table 3. Nonetheless, in the first instance, the ecologist conducting the walkover survey of the Site has given consideration to all such species i.e. determining likelihood of occurrence in the Site or immediate surrounding area.

3.2 Vegetation & habitats

3.2.1 Location & surroundings

Fig. 1a (see Appendix 1) presents a labelled aerial photograph of the Application Site and its surrounds (© Google Earth).

Fig. 1b (see Appendix 1) presents a vegetation and habitat map, as prepared using the survey results from the walkover survey.

The Site is an approximately 1.5 hectare (ha) plot of land that is currently used for industrial purposes, namely what appears to be the storage and maintenance of haulage vehicles and the maintenance of busses. It is orientated with a long, linear boundary (approx. 215m) along its northern side, to the north of which there is undeveloped land that comprises a large pasture field and a patch of former allotments.

There is also a long western boundary (approx. 260m) and this meets with undeveloped green space (parkland) along about 50% of its length, then the rear gardens of residential properties along the remaining 50%.

The short, southern boundary of the Site measures about 65m long and this abuts the intersection between Sheffield Road, the A624 Market Street and the B5470 Buxton Road. Vehicular access to the Site is off Sheffield Road.

The short, eastern boundary measures approx. 75m and adjoins developed land, which is also used for industrial purposes and comprises a mixture of buildings and hard-standings.

3.2.2 Features within the Site

The land throughout the Application Site is predominantly developed and used for industrial purposes, but with strips and patches of vegetated land around the peripheries and with a belt of vegetated land along the banks of the Black Brook water-course, which passes through the Site.

Photographs and descriptions of habitat features and vegetation types throughout the Site are provided as follows.

Hard-standings, buildings & bare & disturbed ground

It is estimated that hard-standings, buildings and compacted bare ground cover at least 80% of the Application Site.

The buildings are of various construction types, with walls of brick, breeze block, stone and corrugated sheets. Their roofs are mostly composed of corrugated sheets, but with slate on the pitched roofs of the buildings adjoining Sheffield Road / Market Street. All of the buildings appeared to be functional at the time of the survey. They were not supporting rupestral (wall-growing) plant communities.

The hard-standings comprise a mixture of tarmac, concrete and compacted stone. Predominantly they are in use for the movement and storage of heavy vehicles (see **Photo. 1**, below) and the only vegetation that they support is the scattered and peripheral occurrence of opportunistic ruderal plants, including herb robert *Geranium robertianum*, annual meadow-grass *Poa annua* and common mosses.

Photo. 1: The hard-standings in the Site

There is no occurrence of rare plant species and no example of an NVC community or BAP Priority Habitat.

Grassland

As indicated on **Fig. 1b** (appended) there is localised occurrence of mesotrophic coarse grassland along the northern side of the Site and also in small patches near Black Brook (see **Photo's 2 & 3**, next page).

Photo 2: Grassland along north boundary

Photo. 3: Grassland alongside Black Brook

False oat grass *Arrhenatherum elatius* and red fescue *Festuca rubra* are the dominant grasses in these coarse grassland swards, accompanied by commonly occurring grassland herbs (see **Table 4** in Appendix 2 for the full species list). The species composition is characteristic of an *MG1: Arrhenatherum elatius* NVC community (*MG1a Festuca rubra* sub-community). There are no rare species within the swards and there is no example of a BAP Priority Habitat.

There is also a short-mown grassland lawn in the south of the Site (see **Photo. 4**).

Photo. 4: Grassland lawn in the south of the Site

The lawn is short-mown and species-poor, with abundant perennial rye-grass *Lolium perenne* and dandelion *Taraxacum officinale*. There is no occurrence of rare plant species and the composition is an example of an *MG7: Lolium perenne* NVC community. It is not an example of a BAP Priority Habitat.

Conifers & lombardy poplars

As shown on **Fig. 1b**, an approximately 100m long section of the Site's western boundary is lined with conifers. These are substantial, mature trees (est. ≥8m tall) and they are planted very closely so their foliage forms a dense screen (see **Photo. 5**). Several lombardy poplars *Poplus nigra x italica* have also been planted alongside the conifers. The dry and shaded ground beneath the trees is bare and these planted trees are not forming an example of an NVC community or a BAP Priority Habitat.

Photo. 5: Young trees

Young broadleaf trees & scrub

Aside from the banks of Black Brook, which are described separately under the next sub-heading, there is one location within the red-line boundary where a combination of young trees, bramble scrub and tall-herbaceous plants are the main vegetation type.

This is in the western part of the Site, as labelled on **Fig.1b** where there is an approximately 350m^2 area of unmanaged land to the rear (west) of two functional buildings. There has been natural colonisation and establishment of ash *Fraxinus excelsior,* goat willow *Salix caprea* and sycamore *Acer pseudoplatanus* saplings, with an understorey of sparse bramble *Rubus fruticosus* and broad-leaved dock *Rumex obtusifolius* (see **Photo. 6**).

Photo. 6: Young trees & scrub in western part of the Site

There is no evidence of traditional woodland ground flora in this western part of the Site and the vegetation is not forming an example of an NVC community. There is no evidence of rare plant species and there is no example of a BAP Priority Habitat.

The banks & channel of Black Brook (within & alongside the Site)

The water-course titled Black Brook passes through the Application Site. In total there is a 240m long section of the water-channel that is directly *associated with* the Site's boundaries; an approximately 165m long section is situated *within* the red-line boundary and an approximately 75m long section runs *parallel with* the western boundary (although there is a 10 – 15m separation distance from the boundary line, the brook's bank still rises to meet with the Site and this section of the water-course is within the zone of influence of the proposed works).

The brook's water flow is in a north-westerly direction and the potential zone of influence of the proposed re-development also extends downstream of the Site, i.e. in this north-westerly direction.

Along the 240m section that is associated with the Site the water channel varies between 2.5m and 4.0m wide. At the time of survey, on average the water was approximately 0.25m deep, with localised deeper parts reaching 0.35m and shallower parts only 0.15m. The bed has a thin layer of silt and abundant loose stones.

Relative to the ground level of the Application Site, the channel is recessed by 2.5 – 4m, with moderately steep banks.

Within the easternmost part of the Site there is a 20m long section of the brook that passes through a large culvert (see **Photo. 7**, plus **Fig.1b** for location). Quite central to the Site there is also a 4m long section of the water channel across which there is a concrete bridge. In both such locations the water channel still has a natural bed and remains free flowing.

Photo. 7: Water entering the culvert that passes under the Site's access road

Where there is an open channel, the margins are predominantly natural, but locally there are short lengths of stone retaining wall (see **Photo. 8**).

The stone retaining walls are supporting rupestral (wall-dwelling) mosses and opportunistic, shade-tolerant plants; there is locally abundant *Hypnum cupressiforme*, *Bryum capillare* and ivy *Hedera helix*, plus occasional herb robert and shining crane's-bill *Geranium lucidum.* There is no example of a distinct NVC community and no example of a BAP Priority Habitat.

Photo. 8: South-eastern end of the brook, showing stone retaining wall

Notwithstanding whether the *margins* comprise retaining walls or are naturalised, the *banks* of the brook are mostly naturalised and are supporting broadleaf trees of mixed ages and species. There are young and semi-mature ash, sycamore, rowan *Sorbus acuparia*, norway maple *Acer platanoides*, alder *Alnus glutinosa*, hawthorn *Crataegus monogyna*, elder *Sambucus nigra* and crack willow *Salix fragilis*. The associated ground flora is locally dominated by ivy, but elsewhere comprises a mixture of sparse bramble, herb bennett *Geum urbanum*, common nettle *Urtica dioica*, wild angelica *Angelica sylvestris*, hogweed *Heracleum sphondylium* and willowherb species.

Notably there are two large, dead, poplar trees on the north-eastern bank, approximately at grid reference SK 06350 80968.

Invasive species

No evidence of invasive plant species has been detected within or adjacent to the red-line boundary of the Site.

3.3 Fauna

3.3.1 Bats

As stated in the methodology, a bat survey of the buildings was not part of the remit within the Extended Phase 1 Habitat Survey.

However, an appraisal of habitat suitability for foraging and commuting bats was included as part of the survey and assessment, with the results summarised as follows:-

- The open spaces associated with the extensive areas of hard-standing are of negligible value to foraging or commuting bats.
- The water channel and banks of Black Brook are of high potential value for foraging and commuting bats; with the channel being recessed in relation the levels of the Site it is very sheltered and with there being adjacent tree-lined banks it is likely to provide a significant food source for several bat species, most likely including pipistrelles *Pipistrellus* sp., daubenton's *Myotis daubentonii* and possibly whiskered/brandt's *Myotis mystacinus / brandtii*.
- In the wider surrounding area there is good quality habitat to the north of the Site (see **Fig. 1a**) as there is a large belt of broadleaf trees and extensive green space. This heightens the potential for bat colonies to be present in the nearby surrounding area.

In summary, it is judged that the 'wildlife corridor' of Black Brook requires consideration for the protection and retention of habitat for foraging and commuting bats but that unless a licensed bat survey demonstrates the presence of roosting bats, other parts of the Site are not of substantive value to bats, especially not the hard-standings.

3.3.2 Badger

There is no survey evidence of the presence of badger at Site or on the adjoining land. In addition, the data search has provided no existing records of the presence of badger at the Site or in the surrounding area. From the habitats that are present, coupled with the regular use of the Site by heavy goods vehicles and by people (including dog walkers that pass through) it is judged that colonisation by badger is very unlikely and that no further consideration of the species is required.

3.3.3 Birds

The only birds recorded during the walkover survey were blackbird *Turdus merula*, Robin *Erithacus rubecula* and Magpie *Pica pica*. All were associated with trees along the banks of Black Brook.

As it was a sub-optimal time of year to record active birds within the Site, desk study results (as listed in Tables 2 and 3) have been called-upon and habitats have been assessed in respect of their suitability to support the birds that are listed. It is assessed that the water channel and bankside habitats of Black Brook are suitable to *potentially* support foraging kingfisher *Alcedo atthis* (Schedule 1 species) but that there is no suitable habitat for nesting kingfisher.

It is possible that yellow wagtail (BAP Priority Species) could nest along the water-course, and it is also possible for a range of commoner garden passerine (small, perching) birds to nest and forage in the shrub and trees alongside the brook, including dunnock *Prunella modularis* (BAP Priority Species), song thrush *Turdus philomelos* (BAP Priority Species), robin, blackbird and chaffinch *Fringilla coelebs*.

Elsewhere in the Site, the hard-standings provide no habitat value and the buildings are of limited potential value to nesting birds, but opportunistic use by house sparrow, starling, wren, pigeon species and corvid species cannot be entirely discounted and it is possible that the results of an internal and external bat survey of the buildings will also provide more information about the presence or absence of nesting birds.

In summary, consideration of breeding birds will be necessary, both in terms of retaining the habitats along Black Brook and in mitigating the timing of clearance works in relation to vegetation and buildings so that there is no contravention of the legal protection afforded to breeding birds.

3.3.4 Great crested newt & other amphibians

There are no records of GCN occurrence in the data search results and there are no ponds associated with the Site or within an accessible dispersal radius around its boundaries. There is no reasonable likelihood of GCN occurrence at the Site and there is no requirement for further survey or for further consideration of GCN or other amphibians in relation to the proposal.

3.3.5 Water vole

The results of the data search and desk study indicate that water voles have been detected in the wider surrounding area within the past 10 - 20 years. An appraisal of

the habitat value of the surveyed section of Black Brook concludes the following:

- The water-course is suitably deep and gentle-flowing to provide an escape route from predators
- The gradient and substrate composition of the natural banks is suitable for burrowing and even at locations where there are stone retaining walls there are potential cracks and gaps that may be utilised by the species.
- The bankside plants provide suitable shelter and a good food source for the species.
- Although the Application Site is very actively used, the water channel and lower banks appear to be left entirely undisturbed by people and vehicles.

In summary, the aquatic and bankside habitat is of high quality and suitability for water vole and it is assessed that there is high likelihood of the species being present.

However, due to the Site survey being undertaken at a sub-optimal time of year, a full search for evidence of was not carried out along the entire section of brook running through the Site and where searches *were* carried out at localised locations there was no evidence of the species.

Notwithstanding the there is no conclusive survey evidence of the presence of water vole it is judged that consideration of this species and the aquatic and bankside habitat of Black Brook is necessary, both in terms of retaining the habitat and ensuring that *if* there are any points at which disturbance is required on the banks (none are known of at the time of writing), such works are to be preceded by further survey and professional guidance in relation to the species.

3.3.6 Otter

The habitat along the surveyed section of Black Brook is suitable for the occurrence of transient and foraging otter, but the desk study and data search have not revealed any records of the presence of this species in the wider surrounding area within the last 15 years.

It is judged that there is insufficient shelter or undisturbed habitat for otter to establish a holt within the Site, but the potential for occurrence of a foraging or lying-up otter using the Site cannot be discounted.

Consideration of otter and protection of the 'wildlife corridor' habitat along Black Brook should therefore be incorporated into the scheme so that the potential for occurrence of this species is not reduced by implementation of the proposals.

3.3.7 Reptiles

Habitat assessment indicates there is very low likelihood of occurrence of reptile species in the Application Site. There is an absence of the combination of basking, foraging, sheltering and hibernating habitats that are required by these species. Hard-standings, buildings, short-mown grass and the shaded, tree-covered habitats of Black Brook's banks are unsuitable for reptiles. It is concluded that reptiles do not require further consideration in relation to the proposal.

3.3.8 Other wildlife

The data search and desk study show that white-clawed crayfish *Austropotamobius pallipes* has been detected in Black Brook within the last 10 - 15 years.

The white-clawed crayfish is protected under Section 9(4)(b) and (c) of Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and under The Conservation of Habitats and Species Regulations 2010. It is also a priority species under the UK Biodiversity Action Plan.

White-clawed Crayfish habitats include small streams, rivers, lakes, and reservoirs; they prefer slightly alkaline well oxygenated water with a rocky bed and with limited sediment. In the surveyed section of Black Brook the bed substrate of the water-channel is optimal for this species, as is the water depth, clarity and flow-rate. Whether or not the species is still present will be mostly dependant on whether the invasive signal crayfish *Pacifastacus leniusculus* has colonised, which is unknown (to ecologists at Ribble Ecology) at the time of writing.

In the absence of such information it must be assumed that white-clawed crayfish could still be present and as such it is necessary to take this into consideration and ensure that no aspect of the proposed re-development will impact on the water-quality or bed substrate within the brook.

4.0 SUMMARY, ASSESSMENT & RECOMMENDATIONS

4.1 Summary

The results from the desk study, data search and walkover survey show that there are the following ecological considerations at the Application Site:

- Statutory/non-statutory sites of ecological interest = no concerns or constraints.
- BAP Priority Habitats and/or rare or protected plant species = no concerns or constraints.
- Invasive plant species = no concerns or constraints.
- Presence of a local 'wildlife corridor' = the section of Black Brook running through the Site is of local value as a wildlife corridor and as such it requires retention and protection in accord with a key principle of PPS9.
- Bats = the section of Black Brook running through the Site provides suitable habitat for foraging and commuting bats and this requires retention and protection in accord with a key principle of PPS9.
- Badger, great crested newt, other amphibians and reptiles = no concerns or constraints
- Water vole = the section of Black Brook running through the Site provides suitable habitat for all life requirements of water vole so it requires retention and protection to ensure no breach of the legal protection afforded to the species.
- Otter = the section of Black Brook running through the Site provides suitable habitat for sheltering and foraging otter so it requires retention and protection in accord with a key principle of PPS9.
- Breeding birds = the trees and shrubs throughout the Site (primarily alongside Black Brook but also at localised other locations) are suitable for use by low numbers of breeding birds. Localised parts of the buildings may also be suitable for use by nesting birds. The standard precautions for protecting breeding birds will be needed at the Site.
- White-clawed crayfish = there is potential for this protected species to be present within the water-channel of Black Brook so it requires retention and protection to ensure no breach of the legal protection afforded to the species.

In summary, the section of Black Brook that runs through the Site is the primary ecological feature of interest, with associated potential for occurrence of several protected and priority species.

4.2 Assessment

It is understood that the planning application at the Application Site is for re-development of the built land to provide residential use instead of industrial use.

The proposal plan that has been submitted to Ribble Ecology (drawing No. 01, dated April 2011) shows that all existing industrial buildings in the Site will be removed, but that houses alongside Market Street will be retained.

It appears that the water channel and associated banks of Black Brook will be retained as a 'wildlife corridor' through the re-developed Site, but that the 4m wide bridge/culvert that currently crosses the brook within the centre of the Site shall be removed and access to the western part of the Site will be via a road that is situated to the south of the water-course, rather than crossing it.

The proposed layout of the re-developed Site appears sensitive and it is predicted that, provided a small number of precautionary actions are applied to protect the brook and its wildlife prior to and during implementation, the proposal can successfully be achieved with no negative impacts.

All necessary protective measures are described in section 4.3.1, below.

In addition, section 4.3.2 suggests opportunities for practical and achievable biodiversity *enhancement* at the Site, all of which would demonstrate additional contribution towards a key principle of PPS9 as a measure of best-practice. These recommendations are not enforceable, but are to be taken into consideration where possible

4.3 Recommendations

The recommendations arising from the survey and assessment work are for a combination of essential and best-practice measures. Those listed under sub-heading '*4.3.1 Essential measures'* are best enforced as the subject of one or more planning conditions. Those listed under sub-heading '*4.3.2 Additional opportunities*' are not enforceable, but where it is possible to incorporate them into the scheme this will demonstrate accordance with a key principle of PPS9, under which it is appropriate for developments to facilitate retention or enhancement of biodiversity value where possible.

4.3.1 Essential measures

Protection of Black Brook's water channel and banks (including water vole and otter habitat): The design of the re-development appears appropriate in that it allows full retention of the water course and banks. To ensure that the habitats are fully protected throughout the re-development works it is essential that ***temporary metal fencing*** is installed to denote a protective stand-off from the brook. This fencing must be installed so that it not only protects the water channel and banks, but it also protects the roots of the trees on the banks by being installed in accord with *BS5837 (2005): Trees in relation to construction – Recommendations*. This fencing will also serve to protect the habitat along the brook so any current use by water vole and/or otter (if present) can continue undisturbed.

Protection of breeding birds and retention of habitat value: The standard protection of breeding birds is applicable throughout the Site. The bird nesting season is typically regarded as ***March to August inclusive*** so where possible the clearance of any shrubs, scrub and buildings with potential to support nesting birds is to take place *outside* this breeding season. Where such timing is not possible then extra due diligence will be required prior to and during the clearance, with a suitably experienced ecologist undertaking a survey to identify any locations where avoidance of nesting birds is necessary.

Protection of bats and retention of habitat value: Any actions relating to the buildings need to be covered by the guidance of a licensed bat surveyor, as presented in a separate ecological report. Foraging and commuting bats must be able to use unlit habitat along Black Brook and must be able to pass elsewhere through the Site without encountering excessive lighting so the use of outdoor lighting needs to be restricted so it is only used to light paths and roads, rather than air-space around trees and houses. All outdoor lighting is to be kept at a low level, directional and/or screened or hooded to ensure that there is no light spill affecting the brook or tree canopies.

Protection of water quality: As a standard requirement of the Environment Agency it will be necessary to ensure that the re-development work does not detrimentally affect the water quality of Black Brook, both during the implementation and throughout the long-term use of the new houses and roads. This includes protection against the spillage of chemicals and the release of sediments or other materials into the water channel. Protection of the water quality is always important, but is particularly important where there is potential for white-clawed crayfish to be present in the brook.

4.3.2 Additional opportunities

Water-course enhancement: Opportunities to remove culverts and bridges are regarded favourably by the Environment Agency. Where it is possible to remove the 4m wide bridge/culvert from the centre of the Site this will provide additional bankside habitat, which will be a positive impact on Site biodiversity. The wildlife value of the reinstated bank is to be maximised by ensuring that no non-native, garden exotic plants are introduced at this location. The newly exposed bank should either be left to colonise naturally or it should be seeded with a *native* wildflower grassland mix and/or planted with *native* shrubs and trees.

Native species planting: Where any landscape planting adjoins the natural habitats of Black Brook, it is recommended that native species should be planted. An array of suitable trees, shrubs and plants is available, but some suggestions are listed below:

- **Small trees**: rowan *(Sorbus acuparia)*, crab apple *(Malus sylvestris)*, alder *(Alnus glutinosa)*.
- **Shrubs**: holly *(Ilex aquifolium)*, hazel *(Corylus avellana)*, hawthorn *(Crataega monogyna)*, elder *(Sambucus nigra)*, guelder rose *(Viburnum opulus)*.
- **Climbers**: honeysuckle *(Lonicera periclymenum)*, ivy *(Hedera helix)*, field rose *(Rosa arvensis)*.
- **Herbaceous plants and ferns**: herb bennett *(Geum urbanum)*, purple loosestrife *(Lythrum salicaria)*, male fern *(Dryopteris filix-mas)*, meadowsweet *(Filipendula ulmaria)*.

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6. APPENDIX 1

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Scale: approx. 1:2000

0m 100m

© Google

Central grid reference: SK 06414 80925

Fig. 1a

Google earth image of the Site at Sheffield Rd, Chapel-en-le-frith

Ribble Ecology ref: RB-11-40_Fig.1a

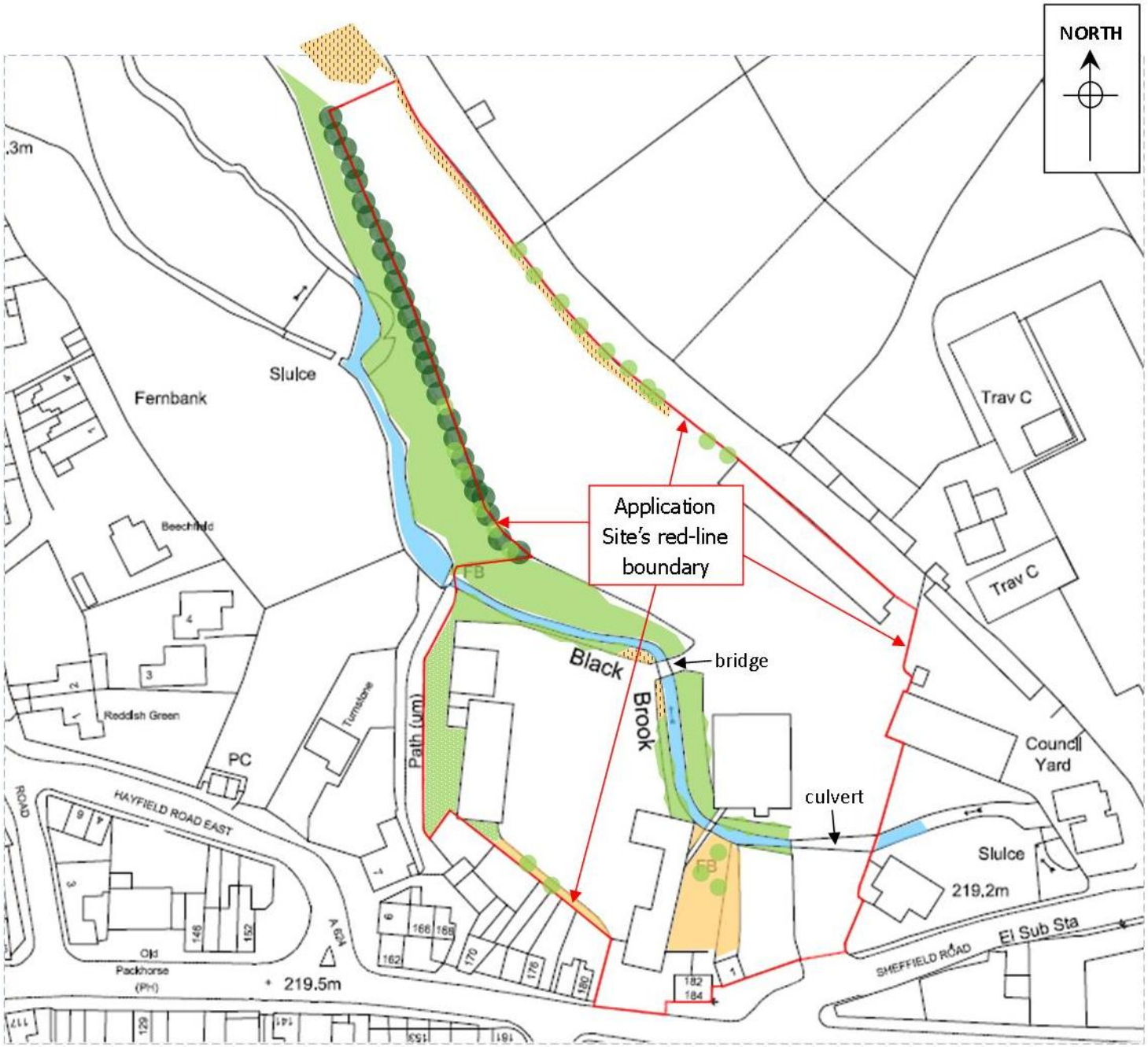

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Fig. 1b

Vegetation & habitat map of the Site at Sheffield Rd, Chapel-en-le-frith

Key

- Surveyed section of Black Brook
- Young trees & scrub
- Broadleaf trees alongside brook
- Individual broadleaf trees
- Conifers
- Coarse mesotrophic grassland
- Mown lawn grassland

Ribble Ecology ref:
RB-11-40_Fig.1b

Scale: approx. 1:1500

0m — 50m

Central grid reference:
SK 06414 80925

7.0 APPENDIX 2

Table 4. Plant species list for the coarse grassland			
Species common name	**Species Latin name**	**Distribution**	**Estimated % cover**
Grasses and herbaceous plants			
Bramble	*Rubus fruticosus*	VL	1%
Broad-leaved dock	*Rumex obtulifolius*	O/LF*	5%
Broad-leaved willowherb	*Epilobium montanum*	VL	<1%
Butterbur	*Petasites hybridus*	VLF	1%
Cleavers	*Galium aparine*	VLF	<1%
Cock's-foot	*Dactylis glomerata*	VLF	2%
Common bird's-foot trefoil	*Lotus corniculatus*	VLF	<1%
Common knapweed	*Centaurea nigra*	VL	<1%
Common mouse-ear	*Cerastium fontanum*	O	<1%
Common nettle	*Urtica dioica*	VLF	1%
Common ragwort	*Senecio jacobaea*	O	1%
Couch	*Elytrigia repens*	VL	<1%
Creeping buttercup	*Ranunculus repens*	VLF	2%
Creeping thistle	*Crisium arvense*	VLF	2%
Dandelion	*Taraxacum officinalis*	O	<1%
False oat-grass	*Arrhenatherum elatius*	F/LA*	30%
Field horsetail	*Equisetum arvense*	VL	<1%
Ground elder	*Aegopodium podagraria*	VLF	1%
Herb Robert	*Geranium robertianum*	VL	<1%
Hogweed	*Heracleum sphondylium*	VL	1%
Perennial rye-grass	*Lolium perenne*	VLF	2%
Red clover	*Trifolium repens*	VLF	1%
Red fescue	*Festuca rubra*	F/LA*	30%
Ribwort plantain	*Plantago lanceolata*	O/LV	1%
Rosebay willowherb	*Chamerion angustifolium*	VL	<1%
Rough meadow grass	*Poa trivialis*	O/LF	2%
Self-heal	*Prunella vulgaris*	O/VLF	<1%
Smooth meadow grass	*Poa pratense*	O/LF	2%
Timothy	*Phleum pratense*	VLF	1%
White clover	*Trifolium repens*	VLF	1%
Yorkshire fog	*Holcus lanatus*	LF	5%
Bryophytes			
Hypnum cupressiforme	Moss species	LA	2%
Rytidiadelphus squarrosus	Moss species	LA	2%
Key: D = Dominant; A = Abundant; F = Frequent; O = Occasional; R = Rare; L = Locally, v = very			