WYG Planning & Environment

part of the WYG group

National Grid Property Holdings Limited

Old Mill Lane, Barnsley

Extended Phase 1 Habitat Survey Report

26 July 2013

Arndale Court, Otley Road, Headingley, Leeds, LS6 2UJ

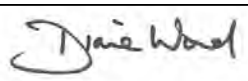
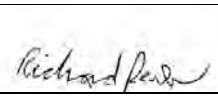
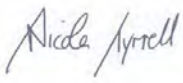
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Executive Summary

Site Description and Scope of Works		
Barnsley Gasholder is located off Old Mill Lane, Barnsley in South Yorkshire. The gasholder is decommissioned. The purpose of this report is to update the risk assessment for liabilities at the gasholder station and to review the land use changes since the last ecological constraints plan was produced in 2007.		
Potential Constraints	**Yes**	**No**
Bats		
Has the site been assessed for bats?	✓	
Are there any structures or trees on site which have the potential to support roosting bats? (see section 4.2.5)	✓	
Breeding Birds including Barn Owls		
Has the site been assessed for breeding birds including barn owls?	✓	
Are areas of hedgerow, scrub, woodland, trees or other features likely to be used by nesting birds? (see section 4.2.4)	✓	
Badgers		
Has the site been assessed for badgers?	✓	
Is there any evidence of badgers on or near the application site including setts, foraging or commuting? (see section 4.2.6)	✓	
Great crested newts		
Has the site been assessed for great crested newts?	✓	
Is there suitable habitat for great crested newts on, or close to the application site? (see section 4.2.2)		✓
Reptiles		
Has the site been assessed for reptiles?	✓	
Is there suitable habitat on the site for reptiles? (see section 4.2.3)	✓	
Other protected species (water voles, otters)		
Has the site been assessed for water voles and otters and white-clawed crayfish?	✓	
Is there suitable habitat on the site for water voles?(see section 4.2.8)		✓
Is there suitable habitat on the site for otters? (See section 4.2.7)	✓	
Is there suitable habitat on the site for white-clawed crayfish? (See section 4.2.1)		✓
Other features of nature conservation interest		
Does the application site support Habitats of Principal Importance or Local Biodiversity Action Plan Priority Habitats?		✓
Does the application site support Species of Principal Importance or Local Biodiversity Action Plan Species?	Potential	
UKBAP bird species.		
Have details of biodiversity enhancements been included with the report?		✓
Recommendations	**Yes**	**No**
Are further surveys recommended?	✓	
If 'Yes' list surveys		

• Reptile • Bat emergence/re-entry • Bat activity • Badger • Otter		
Is mitigation (including avoidance/compensation) and enhancement recommended?	✓	
If 'Yes' list recommended mitigation and enhancement measures • Barnsley Metropolitan Borough Council (BMBC) must be consulted and their consent given before activities are carried out which are likely to impact Dearne Valley LNR/Country Park and Old Mill Lane Culvert Bat Roost LWS. • Ecological input into landscape and planting proposals and enhancement of biodiversity value of scheme design. • Follow the Environment Agency's PPG5 (works in, near or liable to affect watercourses) and PPG21 (pollution incident response planning). • Any vegetation clearance should be timed outside of the bird breeding season (March to September inclusive) or if not possible, should be checked for nests by an ecologist. • Invasive plant species should be contained, controlled and eradicated from site. Injurious weeds may need to be controlled should future use of the site be as grazing land. • Mitigation to be recommended after further surveys are complete.		

1.0 Introduction

1.1 Background

WYG was commissioned by National Grid Property Holdings Limited in May 2013 to undertake an extended Phase 1 Habitat survey of Barnsley Gasholder, Old Mill Lane, Barnsley, South Yorkshire (hereafter referred to as 'the site'). The boundary for the site is shown in Figure 1, Appendix A and encompasses both the NGG and NGPH sites. The central Ordnance Survey national grid reference for the site is SE351071. The purpose of this report is to update the risk assessment for liabilities at the gasholder station and to review the land use changes since the last ecological constraints plan was produced in 2007.

1.2 Site Location and General Description

The site consists of a decommissioned gasholder and surrounding land to the east of Old Mill Lane, adjacent to the north and south of Old Tannery Road in Barnsley, South Yorkshire. The River Dearne flows from west to east through the site. The land surrounding the site to the north, south and west of the site is in retail use and to the east adjacent to the site boundary is Dearne Valley Local Nature Reserve (LNR).

1.3 Development Proposals

National Grid Property Holdings Limited are aiming to update their risk assessments for liabilities at the site for proposed use as vacant/open storage.

1.4 Survey and Reporting Objectives

The ecological investigations undertaken by WYG included the following:

- A desk study to obtain existing information on statutory and non-statutory sites of nature conservation interest, and records of protected/notable species within the site and its environs;
- An extended Phase 1 Habitat survey involving a walkover of the site to record habitat types and dominant vegetation, including any invasive species, and a reconnaissance survey for evidence of protected fauna or habitats capable of supporting such species;
- An investigation of any buildings or built structures and trees for their potential to support bats, including a survey of internal and external features; and

- An assessment of the potential ecological constraints to the proposed works at the site and recommendations for further survey, avoidance, mitigation, and enhancement where appropriate.

2.0 Desk Study

2.1 Methodology

Information was obtained from Barnsley Biological Records Centre (BBRC), the ecological records centre for Barnsley, regarding the presence of nature conservation designations and protected and notable species within 1.5km of the proposed development site. In addition, a search for designations was made of Natural England's interactive, web-based MAGIC (Multi Agency Geographic Information for the Countryside) database.

The data search covers:

- Statutory nature conservation designations, such as National Nature Reserves and Sites of Special Scientific Interest;
- Non-statutory nature conservation designations, such as Wildlife Sites;
- Protected species, such as badgers *Meles meles*, great crested newts *Triturus cristatus* and bat species; and
- Notable species, such as those listed in the UK and local Biodiversity Action Plan.

Please note that Tree Preservation Orders (TPOs) and Conservation Area designations have not been checked as part of the desk study, extended Phase 1 Habitat survey or considered further in this report. TPO's are however, included in the Ecological Constraints Plan (WYG, 2007) and the Local Planning Authority should be consulted regarding any proposed works that may affect TPO's.

2.2 Data Search Results

Please refer to Appendix B for key environmental legislation with regards to habitats and species.

2.2.1 Statutory Sites

- Dearne Valley LNR is adjacent to the east of the site. The LNR was designated for ancient acidic oak woodland, wetland and grassland habitats. The majority of the LNR is also Dearne Valley Country Park.

- Dearne Valley Country Park is immediately adjacent to the east of the site. Country Parks are designated to provide easy access to the countryside for those living in towns and cities.

2.2.2 Non-statutory Sites

There are three non-statutory designated sites lying within or partly within 1.5km of the site.

- Old Mill Lane Culvert Bat Roost Local Wildlife Site (LWS) – is immediately adjacent to the site as this LWS is part of the River Dearne. The culvert also runs beneath the site. The citation is in Appendix D.
- Cliffe Wood (LWS) is approximately 400m to the south east of the site.
- Barnsley Canal at Wilthorpe (LWS) is approximately 750m to the north west of the site.

2.2.3 Protected and Notable Species

Flora

No flora records were received from BBRC as they had not received any from the data search area.

Invertebrates (includes White-clawed Crayfish (*Austropotamobius pallipes*)

No records of invertebrates were received from BBRC as they had not received any from the data search area.

Great Crested Newts

No records of great crested newts were received from BBRC as they had not received any from the data search area.

Reptiles

No records of reptiles were received from BBRC as they had not received any from the data search area.

Birds

Records of four bird species were recorded within the site. The records from BBRC are summarised in Table 1 below. Records from within the site and in the same 1km grid square as the site have been underlined:

Table 1 – Protected and notable birds within 1.5km of the centre of the site

Scientific name	Common name	Designation	Date recorded	No. of records	Location
Turdus iliacus	Redwing	Sch 1 WCA	1990	1	The Fleets, Barnsley
Sturnus vulgaris	Starling	UK BAP NERC	2008-2012	52	Barnsley
Emberiza schoeniclus	Reed bunting	UK BAP NERC	2012	1	Barnsley Canal at Wilthorpe
Parus montanus	Willow tit	UK BAP NERC	2005-2013	3	Old Mill Lane, Barnsley Canal at Wilthorpe
Prunella modularis	Dunnock	UK BAP NERC	2009-2013	44	Barnsley
Turdus philomelos	Song thrush	UK BAP NERC	2005-2013	8	The Fleets, Barnsley
Caprimulgus europaeus	Nightjar	UK BAP NERC	2011	1	Barnsley
Vanellus vanellus	Lapwing	UK BAP NERC LBAP	2009	1	Smithies
Passer domesticus	House sparrow	UK BAP NERC	2008-2013	77	Barnsley, Old Mill Lane
Alcedo atthis	Kingfisher	Sch 1 WCA UK BAP NERC	2005-2013	4	The Fleets, Dearne Valley, Old Mill Lane
Cuculuc canorus	Cuckoo	UK BAP NERC	2012	1	Barnsley Canal at Wilthorpe

Scientific name	Common name	Designation	Date recorded	No. of records	Location
		LBAP			
Pyrrhula pyrrhula	Bullfinch	UK BAP NERC	2005-2013	3	Old Mill Lane, Barnsley

Key:

WCA: Species listed under the Wildlife and Countryside Act (1981)
NERC: Species listed under section 41 of the Natural Environment and Rural Communities Act (2006)
UKBAP: UK Biodiversity Action Plan species
LBAP: Local Biodversity Action Plan species (Barnsley Biodiversity Action Plan 2007-2012)

Kingfisher, bullfinch, song thrush and willow tit were recorded in the Old Mill Lane Culvert Bat Roost LWS citation (See Appendix D).

Bats

BBRC provided the following records of four species of bat. Bat roost details were not received as BBRC do not hold them:

Table 2 – Bat records within 1.5km of the centre of the site received from BBRC

Scientific name	Common name	Designation	Date recorded	No. of Records	Location
Pipistrellus pipistrellus	Common pipistrelle	EPS WCA LBAP	1987-2012	34	Barnsley, Barnsley Canal at Wilthorpe, The Fleets, Old Mill Lane,
Pipistrellus pygmaeus	Soprano pipistrelle	EPS WCA UK BAP LBAP	2001	1	Dearne Valley,
Myotis Daubentonii	Daubenton's bat	EPS WCA LBAP	1987-2012	44	The Fleets, Old Mill Lane, Barnsley Canal at Wilthorpe,

Scientific name	Common name	Designation	Date recorded	No. of Records	Location
					Dearne Valley, Old Town,
Nyctalus noctula	Noctule bat	EPS WCA NERC UK BAP	1987-1992	8	The Fleets, Dearne Valley,

Key:

EPS: European Protected Species: Species listed under the Conservation of Habitats and Species Regulations (2012).

WCA: Species listed under the Wildlife and Countryside Act (1981)

NERC: Species listed under section 41 of the Natural Environment and Rural Communities Act (2006).

UKBAP: UK Biodiversity Action Plan species

LBAP: Local Biodversity Action Plan species (Barnsley Biodiversity Action Plan 2007-2012)

Records of a Daubenton's bat maternity roost have been recorded in a chamber of the culvert that runs beneath the western boundary of the site (Appendix C: Target Notes 14 and 15). The maximum number of bats counted was 412 in 1990 and the latest records are 67 bats in 2010 (Appendix D).

Badgers

No records of badger *Meles meles* were received from BBRC. Local badger groups do not supply data to BBRC, so badger records may be under-represented. A three hole badger sett was recorded on site in the Ecological Constraints Plan (WYG, 2007) (See Appendix A).

Otter

Two records of otter *Lutra lutra* were received from BBRC in 2007 in The Fleets approximately 450m to the north of the site and one record from 2011 in the River Dearne within the Old Mill Lane Culvert Bat Roost LWS adjacent to the site (See Appendix D).

Water Voles

Two records of water vole *Arvicola amphibius* from 2001 were received from BBRC in Dearne Valley approximately 790m to the south east of the site.

Other species

Other records of notable species received from BBRC were:

- One record of hedgehog *Erinaceus europaeus* from 2012 in Cliffe Wood approximately 900m to the south east of the site (protected under NERC, UK BAP and Barnsley LBAP).

Invasive Species

Records of Japanese knotweed *Fallopia japonica*, Himalayan balsam *Impatiens glandulifera* and giant hogweed *Heracleum mantegazzianum* within Old Mill Lane Culvert Bat Roost LWS in 2010 which is adjacent to the site were received from BBRC (See Appendix D).

3.0 Survey Methodology

An extended Phase 1 Habitat survey was conducted within the site boundary (See Appendix A) on the 15th May 2013 in accordance with the methodology in JNCC, (2010). All areas of the site were investigated and as recommended by English Nature's *Badgers and Development* (2002) guidance document, a 30m buffer around the site was investigated for evidence of badger activity where access was possible.

3.1 Habitats

The vegetation and habitat types within the site were noted during the walkover survey in accordance with the categories specified for a Phase 1 Vegetation and Habitat Survey (Joint Nature Conservation Committee, 2010). Dominant plant species were recorded for each habitat present.

3.2 Protected and Notable Species

The site was inspected for evidence of and its potential to support protected or notable species, especially those listed under the *Conservation of Habitats and Species Regulations 2010 (as amended),* the *Wildlife & Countryside Act 1981* (as amended), including those given extra protection under the *Natural Environment and Rural Communities (NERC) Act 2006* and *Countryside & Rights of Way (CRoW) Act 2000*, and listed on the UK and local Biodiversity Action Plans.

The following species were considered:

3.2.1 Great Crested Newts

The site was appraised for its suitability to support great-crested newts. The assessment was based on guidance outlined in the Joint Nature Conservation Committees' published *Herpetofauna Workers' Manual* (Gent, T. & Gibson, S., 2003) and the *Great Crested Newt Conservation Handbook* (Langton *et. al.*, 2001).

The Oldham *et. al.* (2000) Habitat Suitability Index (HSI) was applied to ponds on site that were identified using Ordnance Survey maps and aerial images.

3.2.2 Reptiles

The site was appraised for its suitability to support reptiles. The assessment was based on guidance outlined in the Joint Nature Conservation Committees' published *Herpetofauna Workers' Manual* (Gent, T. & Gibson, S., 2003).

3.2.3 Bats

The buildings/trees within the boundary were appraised by an experienced ecologist from WYG for their suitability to support breeding, resting and hibernating bats using survey methods based on those outlined in the Bat Conservation Trust's *Bat Surveys: Good Practice Guidelines* (Hundt, L., 2012) and English Nature's *Bat Mitigation Guidelines* (Mitchell-Jones, A.J. & McLeish, A.P. (Eds), 2004).

3.2.4 Badgers

The site was surveyed for evidence of badger setts or other badger activity such as paths, latrines or signs of foraging. Methodologies used and any setts recorded were classified according to published criteria (Harris *et. al.*, 1989). A 30m buffer zone around the expected zone of influence was surveyed as recommended in English Nature's *Badgers and Development* (2002).

3.2.5 Otters

Water courses on site were assessed for their suitability to support otters. This assessment was based on guidance outlined in *Monitoring the Otter* (Chanin, P., 2003).

3.2.6 Water Voles

Following methods set out in the *Water Vole Conservation Handbook* (Strachan & Moorhouse, 2011), an assessment of water bodies and water courses within and adjacent to the site was undertaken to determine their suitability to support water voles and a search for evidence of activity, including droppings, latrines, burrows, footprints and feeding lawns, was undertaken of any areas considered suitable.

3.2.7 Other Species

The site was also appraised for its suitability to support other protected or notable fauna including mammals, birds and invertebrates in accordance with the Chartered Institute for Ecology and

Environmental Management's *Guidelines for Preliminary Ecological Appraisal* (2012). Evidence of any current or historical presence of such species was recorded.

3.3 Invasive Species

The site was searched for evidence of invasive plant species, such as Japanese knotweed, Himalayan balsam, giant hogweed, New Zealand pygmyweed *Crassula helmssii*, wall cotoneaster *Cotoneaster horizontalis*, rhododendron *Rhododendron ponticum* (and hybrids) and floating pennywort *Hydrocotyle ranunculoides* (see Appendix B Table B2 for full list).

3.4 Limitations

The River Dearne and its banks were fenced off and inaccessible at the time of the survey. Although the river is outside of the redline boundary, species that the river supports (e.g. otter) could potentially be affected by any development to the site.

To determine likely presence or absence of protected species usually requires multiple visits at suitable times of the year. As a result, the survey undertaken focussed on assessing the *potential* of the site to support species of note, which are considered to be of principal importance for the conservation of biodiversity with reference to the *National Planning Policy Framework* (Department for Communities and Local Government, 2012), especially those given protection under UK or European wildlife legislation.

The details of this report will remain valid for a period of two years. Beyond this period it is recommended that a new review of the ecological conditions is undertaken.

4.0 Survey Results

An extended Phase 1 Habitat plan showing the location of key ecological features is included in Appendix A.

4.1 Habitats

4.1.1 Semi-natural Broad-leaved Woodland

This habitat occurred in the area to the north of the River Dearne, a strip to the south of the river and a small stand to the east of the gasholder. The dominant tree species present were ash *Fraxinus excelsior* and sycamore *Acer pseudoplatanus.* Other species recorded were hawthorn *Crataegus monogyna,* elder *Sambucus nigra,* horse chestnut *Aesculus hippocastanum* and rowan *Sorbus aucuparia.* The understorey contained brambles *Rubus fruticosus* agg., common nettle *Urtica dioica* and wood avens *Geum urbanum.* (Appendix C: Target Note 12).

4.1.2 Broad-leaved Plantation

Between the verge of Old Tannery Road and the northern boundary of the semi-natural broad-leaved woodland was a strip of newly planted broad-leaved trees. This habitat contained ash, field maple *Acer campestre,* holly *Ilex aquifolium* and common whitebeam *Sorbus aria* saplings. (Appendix C: Target Note 13).

4.1.3 Scattered Trees

Scattered broad-leaved trees both mature and semi-mature occurred throughout the site mainly around the boundaries of the gasholder site. The species were ash, sycamore and rowan.

4.1.4 Scattered Scrub

There were some small stands of scattered brambles scrub to the west of the site adjacent to the broad-leaved woodland.

4.1.5 Semi-improved Neutral Grassland

This habitat occurred around the gasholder and in a strip along the northern verge of Old Tannery Road (Appendix C: Target Note 11). The dominant grass species was cocksfoot *Dactylis glomerata* and the grassland contained the common herb species ribwort plantain *Plantago lanceolata,* garlic mustard *Alliaria*

petiolata, cleavers *Galium aparine,* selfheal *Prunella vulgaris,* red campion *Silene dioica,* rosebay willowherb *Chamerion angustifolium,* daisy *Bellis perennis,* dandelion *Taraxacum* sp(p), common ragwort *Senecio jacobaea,* creeping buttercup *Ranunculus repens,* white clover *Trifolium repens,* black medick *Medicago lupulina,* spear thistle *Cirsium vulgare,* cow parsley *Anthriscus sylvestris,* tufted vetch *Vicia cracca* and common nettle.

Ragwort and spear thistle are injurious weeds legislated for under the Weeds Act 1959 (See Section 5.4).

4.1.6 Amenity Grassland

There was a strip of amenity grassland that appeared to be regularly mown along the southern verge of Old Tannery Road. This was dominated by typical lawn species.

4.1.7 Ephemeral/Short Perennial

This habitat occurred to the west of the site colonising a gravelled area between hard standing and scattered scrub and trees. Herbs present included buddleia *Buddleja davidii,* coltsfoot *Tussilago farfara,* shepherd's purse *Capsella bursa-pastoris,* rosebay willowherb and silver birch *Betula pendula* saplings.

4.1.8 Running Water

The River Dearne flows from west to east through the site. The banks were fenced off at the top so access could not be gained. The broad-leaved woodland adjacent to the fence (Refer to 4.1.1 above) continued down the banks as far as could be seen. Rivers are a UKBAP and Barnsley LBAP habitat.

4.1.9 Bare Ground

The area to the north of Old Tannery Road was bare ground covered with hardcore and was being used to store containers (Appendix C: Target Note 11). There were three ash saplings in the centre of this part of the site. There was another area of bare ground around the south of the junction of Old Mill Lane and Old Tannery Road.

4.2 Protected and Notable Species

4.2.1 Invertebrates

The habitats and flora on site are common and widespread and likely to support common species of invertebrates only. White-clawed crayfish occur in some streams in the west of Barnsley (Carr, G. & Parker, M. 2009). However, there are no records of this species in the River Dearne itself (Nunn, A.D. *et. al.,* 2007) and the species is decreasing in its range. This species is not considered further in this report.

4.2.2 Great Crested Newts

There are no ponds within the site or within 500m of the site that do not have a major barrier to newt dispersal between them and the site. Therefore there is no habitat suitable to support breeding great crested newts and so this species is not considered further in this report.

4.2.3 Reptiles

The only reptile known in the Barnsley area is the grass snake *Natrix natrix* (Barnsley Biodiversity Trust, undated). The banks of the River Dearne are potential grass snake habitat; however, the part of the river that flows through the site is heavily shaded by woodland which is not favoured by this species. Grass snakes could potentially swim through the site or use the site as a connecting corridor between the grasslands and wetlands to the west and east of the site.

4.2.4 Birds

The woodland and scattered scrub on site have the potential to support a range of UKBAP and common nesting birds during the breeding season and provide roosting and feeding habitat during the rest of the year. The River Dearne has potential to support waterfowl. Records of the Schedule 1 species kingfisher were received for the river in Old Mill Lane in the same 1km grid square as the site; however, no sightings of this species or their places of shelter were identified during the survey. Kingfisher and other bird species may have been under-recorded during the survey since access to the river was prevented by the security fenceline.

4.2.5 Bats

The buildings and trees on site were assessed for their potential to support roosting bats (See Appendix E for assessment criteria).

Buildings

There were two buildings to the west of the site adjacent to Old Mill Lane. The larger of the two to the south was a single storey brick built building with a flat roof (Appendix C: Target Note 9). The building was well sealed and had no bat access points and no potential to support roosting bats. The smaller of the buildings to the north was a single storey brick and stone built building with a flat roof (Appendix C; Target Note 10). This building was also well sealed and pointed and had no access points or potential to support roosting bats.

Trees

There was one mature ash tree to the east of the gasholder that had holes from missing limbs with potential to support roosting bats (Appendix C: Target Note 3). This tree is considered to have high potential to support roosting bats (Category 1: Hundt, L. 2012).

The semi-natural broad-leaved woodland within the site contained trees that showed no obvious bat roost potential from the ground. This woodland however, did contain trees of a size and age that may contain cracks, holes and crevices that could not be observed from the ground. The woodland en-bloc has been classified as moderate (Category 2: Hundt, L. 2012).

Bat Roost in Culvert Under the Site

There is historic evidence of a Daubenton's bat maternity roost in a chamber of the culvert that passes underneath the western boundary of the site (Appendix C: Target Note 14). The culvert has an entrance grille below the eastern side of the Old Mill Lane road bridge (Appendix C: Target Note 15). At the highest count in 1990, there were 412 bats in the roost. The last recorded survey in 2010, was in the late summer when maternity colonies are known to disperse and 67 Daubenton's bats were recorded (Appendix D). Old Mill Lane Culvert Bat Roost was designated a LWS because of the unusually large size of the Daubenton's bat maternity colony it contains.

Foraging and Commuting Bats

The woodland edges on site are suitable habitat for foraging and commuting bats and there are records of Daubenton's bat and common pipistrelle foraging and commuting along the River Dearne (Appendix D). The river acts as a commuting corridor to The Fleets and wetlands to the west and the woodlands and wetlands of the Dearne Valley LNR to the east. The site has been assessed as having high quality habitat for bats because of the presence of the bat roost, the river, the woodlands and the previous records of foraging and commuting bats within the site.

4.2.6 Badgers

A three hole badger sett was recorded on the Ecological Constraints Plan (WYG, 2007) (See Appendix A). The location was checked during the survey and there was still a three hole badger sett in exactly the same position. The sett was disused at the time of the survey with debris littering and partially blocking the entrance holes (Appendix C: Target Note 7). No other signs of badgers or their setts were seen during the survey.

4.2.7 Otters

There are recent records of otter in the River Dearne (See Section 2.2.3). The banks of the river could not be accessed during the survey, so the potential for otters to build holts in the banks adjacent to the site is unknown. Should the banks not be canalised and contain overhanging tree roots from the surrounding woodland, they would be suitable for otter holts (Chanin, P., 2003).

4.2.8 Water Voles

The River Dearne was fast flowing, is prone to flood events and was heavily shaded by the surrounding woodland making the habitat sub-optimal and less likely to be inhabited by water voles (Strachan, R & Moorhouse, T., 2006).

4.2.9 Other Species

The River Dearne has the potential to support brown/sea trout *Salmo trutta* (UKBAP) and bullhead *Cottis gobia* (EPS, Barnsley LBAP). There are no records of salmon *Salmo salar* (UKBAP and Barnsley LBAP) or river lamprey *Lampetra fluviatilis* (UKBAP) in the river catchment (Nunn, A.D.*et. al.*, 2007). Other species observed during the survey were rabbits *Oryctolagus cuniculus* in the scattered scrub and trees.

4.3 Invasive Species

Invasive plant species recorded during the survey were Japanese knotweed and giant hogweed. See Appendix C: Target Notes 1, 2, 4, 5, 6 and 8 for descriptions and photographs and Appendix A: Figure 1 for locations.

5.0 Ecological Impacts and Recommendations

5.1 Statutory and Non-statutory Sites

5.1.1 Statutory Sites

Dearne Valley LNR is adjacent to the east of the site. This area is also a country park. Impacts from any development on the site may impact on the LNR/Country Park. Barnsley Metropolitan Borough Council (BMBC) must be consulted and their consent given before activities are carried out which are likely to impact the LNR/Country Park.

5.1.2 Non-statutory Sites

Old Mill Lane Culvert Bat Roost LWS lies beneath and adjacent to the site. BMBC must be consulted and their consent given before activities are carried out which are likely to impact the LWS.

Cliffe Wood LWS lies approximately 400m to the south east of the site and Barnsley Canal at Wilthorpe LWS is approximately 750m to the north west of the site. Any development on site is unlikely to impact these LWSs because of the distance between them and the site.

5.2 Habitats

For the purposes of updating risk assessments for liabilities at the site with a view to using the site for vacant/open storage, general recommendations for ecological input into sustaining biodiversity on site have been made.

The River Dearne is a UKBAP and Barnsley LBAP habitat. It is recommended that the river and its banks are not impacted upon. Should any riparian habitat be lost or impacted by future activity on site, it would require restoration after works were complete. Ecological input into any future planting proposals would encourage no net loss of biodiversity. It is also recommended that mitigation measures following the procedures in the Environment Agency's PPG5 (works in, near or liable to affect watercourses) and PPG21 (pollution incident response planning) are implemented during any works near the river to avoid pollution incidents.

Any future development should incorporate appropriate enhancement measures and aim for no net loss of biodiversity. In order to achieve this, ecological input into the design and layout of any development should

be sought and the final landscape design should incorporate appropriate native species planting. However, it should be noted that if the habitats on site are found to be supporting protected species as a result of additional surveys (See sections 5.3.1, 5.3.3, 5.3.4 and 5.3.5), enhancement measures may need to be adapted accordingly.

The remaining habitats are assessed as being species-poor and do not contain any notable plant species. No further botanical survey work is considered necessary in these habitats.

5.3 Protected and Notable Species

5.3.1 Reptiles

All species of native reptiles are afforded varying degrees of legal protection under the *Wildlife and Countryside Act 1981(as amended).*

The river banks and land adjacent to them have the potential to support grass snake. It is recommended that before any works on site that are likely to impact these areas are undertaken; reptile surveys are carried out. The surveys involve an initial seven survey visits within the optimal survey season of March to September in accordance with the guidelines in Froglife (1999). Should any species of reptile be identified whilst onsite, further surveys (up to a further thirteen) may be required to provide a population estimate. Avoidance and mitigation measures would be recommended if deemed relevant.

5.3.2 Birds

All nesting birds are protected from disturbance whilst nesting by the *Wildlife and Countryside Act 1981 (as amended).*

The habitats on site which are likely to be used as nesting sites are scrub, woodland and scattered trees. It is recommended that mitigation should include that vegetation clearance should be carried out outside the main breeding season (breeding season is from March to September inclusive). If this is not possible, works affecting bird nesting habitat during this period should be undertaken under the supervision of a suitably qualified and experience ecologist who should check vegetation for active nests prior to clearance works commencing, identify any areas that should be avoided and implement an appropriate buffer zone, the extent of which varies depending on species. It should also be noted that some bird species can nest outside of the breeding season mentioned above. Should any nests be identified or suspected to be

present on site at any time of year then works should cease and an appropriately qualified and experienced ecologist contacted to attend site and provide advice on appropriate working methods.

5.3.3 Bats

All species of British bats and their roosts are fully protected under the *Wildlife & Countryside Act 1981* (as amended) and the *Conservation of Habitats and Species Regulations 2010 (as amended)*.

Bat Roost Surveys

The known bat roost in the culvert should have presence/likely absence surveys undertaken prior to any works being carried out upon the site. This would involve at least three dusk emergence and three dawn re-entry surveys on separate days in suitable weather conditions to gain sufficient information on the population size of the colony. As the roost is a known maternity roost, surveys should be concentrated around May to July inclusive when bats are actively using maternity roosts and young are present. Should works need to be undertaken that may impact upon the roost or in close proximity to it, then it will be necessary to engage with Natural England at the earliest point in the design process to discuss the proposals. Depending on the nature of proposed works and the outcome of consultation with Natural England it may be necessary to apply for a European Protected Species licence.

It is recommended that the ash tree which has been assessed as having high potential to support roosting bats (See 4.2.5) should have presence/likely absence surveys undertaken should this be impacted upon or potentially disturbed by activity in close proximity to it. This would involve a minimum of one dusk emergence and one dawn re-entry survey undertaken on separate days between May and September inclusive during suitable weather conditions in accordance with the guidelines in Hundt, L. (2012). If a roost or perch is found during these surveys, further dusk or dawn surveys may be necessary to accurately determine species and numbers of bats present, and roost type (e.g. maternity or non-breeding roost). If roosting bats were to be found to be present, it may then be necessary to apply for a European Protected Species licence in order for works to be undertaken on the tree or for development activity in close proximity to it.

Bat Activity Surveys

The woodland edges and river corridor have been assessed as being of high value to foraging and commuting bats. In accordance with the guidelines in Hundt, L. (2012), it is recommended that bat activity

transect surveys are undertaken to establish the directions, locations and timings of flying bats. These surveys can pinpoint more accurately if and where in the woodland bats may be roosting, and if further surveys of any likely roost sites are necessary. The surveys would involve up to two visits a month between April to September inclusive. At least one of the surveys should comprise dusk and pre-dawn surveys within a 24-hour period.

Additionally, two automated bat recorders would be left to collect data over four consecutive nights each month (April to September inclusive).

5.3.4 Badgers

Badger and their setts are protected under the *Protection of Badgers Act 1992.*

Although the badger sett on site is not in current use and no other signs of badger were recorded during the survey, badgers are highly mobile species and the sett could be easily re-excavated at any time in the future. It is recommended that an update badger survey of the site is carried out at least nine months in advance of a known date for works commencing to check if the species has re-colonised the site. This would allow time for licensing and mitigation, should it be required. It is recommended that badger activity surveys are carried out in the winter or early spring months when the die-back of vegetation increases the visibility of badger setts and signs of their activity.

Should a badger sett need to be excluded or destroyed then a badger derogation licence would be required. In such a case additional surveys to establish the territory of the clan (bait marking surveys) and identification of a suitable location for a replacement, artificial sett may be required to satisfy the conditions of a derogation licence. There are strict time constraints associated with interference to a badger sett (including works within 30m that may disturb the badgers occupying the sett). No works that would constitute interference would be permitted within 30m of a badger sett during the breeding season (1st December to 30th June inclusive). This time constraint should be considered in the programming of any future works on site.

5.3.5 Otters

The otter and its habitat are protected under *Wildlife and Countryside Act 1981* (as amended) and the *Conservation of Habitats and Species Regulations 2010 (as amended)*. The European sub-species is listed as globally threatened in the IUCN Red List.

There are recent records of otters in the River Dearne (See Section 2.2.3) and there may be potential for otter to use the banks and land adjacent to them for shelter (holts/hovers/resting places), foraging and commuting. Should any works be likely to impact upon the river, its banks or surrounding land, it is recommended that otter surveys are carried out in advance. The surveys would involve two checks for field signs of otter in the river where it runs through the site plus a buffer of 50m either side of the site boundary. They can be carried out at any time of the year, as long as water levels are not variable and not during heavy rain.

If an otter place of shelter is found during these surveys, it may be necessary to apply for a European Protected Species licence in order for works to be undertaken. An impact to otter can include potentially disturbing activities within 30m of a shelter.

5.4 Invasive Species

It would be an offence under *Schedule 9, Part II of the Wildlife and Countryside Act 1981 (as amended)* to cause Japanese knotweed or giant hogweed to spread. Any material containing these species is also identified as 'controlled waste' under the *Environment Protection Act 1990* and must be transported by a licensed specialist waste contractor and disposed of properly at permitted landfill sites.

Invasive non-native plants can cause problems for native UK species and reduce biodiversity. Japanese knotweed can block footpaths and damage concrete, tarmac, flood defences and the stability of river banks. Giant hogweed can cause harm to human health. It is recommended that these invasive plants are eradicated from site.

Three stands of Japanese knotweed were found on site (See 4.3 above). Japanese knotweed can be contained, controlled and removed by a programme of spraying with specific herbicides, digging up to be removed from site or buried on site or by other measures. Further details can be found in the Environment Agency's Knotweed Code of Practice (2006).

Three stands of giant hogweed were found on site (See 4.3 above). Giant Hogweed can be removed by digging up to be removed from site or buried on site or through a programme of spraying with herbicides or by other measures. Further details can be found in the Environment Agency's Managing Invasive Non-native Plants (2010).

As the site is near water, the use of herbicides would need to be carefully used in accordance with the Environment Agency's Knotweed Code of Practice (2006).It is recommended that an ecologist and

specialist invasive plant control contractor is instructed to advise on the most effective and pragmatic means of containing, controlling and removing these species from site. Early engagement is advised in order to employ the most cost-effective and environmentally sustainable mitigation measures.

Injurious Plant Species

Ragwort and spear thistle are injurious weeds legislated for under the Weeds Act 1959 (See Section 4.1.5). Ragwort is poisonous to horses and cattle and should future use of the site be as grazing land, the plant would need to be controlled. Further details are available in Defra's Code of Practice on How to Prevent the Spread of Ragwort (2004).

Spear thistle is less likely to need control measures.

5.5 Enhancement

It is recommended that, once the results of the protected species surveys recommended above are known, ecological input into the design and layout of any development proposal is sought at an early stage in the design process. This allows the ecological impacts of the development to be minimised where possible and appropriate compensation, mitigation, and/or enhancement to be incorporated in the design.

6.0 Summary of Recommendations

- **Statutory Sites:** BMBC must be consulted and their consent given before activities are carried out which are likely to impact Dearne Valley LNR/Country Park.
- **Non-statutory Sites:** BMBC must be consulted and their consent given before activities are carried out which are likely to impact Old Mill Lane Culvert Bat Roost LWS.
- **Habitats:** Ecological input into the design and layout of any development should be sought and the final landscape design should incorporate appropriate native species planting.
- **River Dearne:** Mitigation measures following the procedures in the Environment Agency's PPG5 (works in, near or liable to affect watercourses) and PPG21 (pollution incident response planning) should be implemented during any works near the river to avoid pollution incidents.
- **Reptiles:** Reptile surveys are recommended which involve an initial seven survey visits within the optimal survey season of March to September. Should any species of reptile be identified, further surveys (up to a further thirteen) may be required to provide a population estimate.
- **Breeding Birds:** Vegetation clearance should be carried out outside the main breeding season (March to September inclusive). If this is not possible, works affecting bird nesting habitat during this period should be undertaken under the supervision of a suitably qualified and experienced ecologist.
- **Bats:** The known bat roost in the culvert should have at least three dusk emergence and three dawn re-entry surveys on separate days concentrated around May to July inclusive.

  It is recommended that the ash tree with bat roost potential has a minimum of one dusk emergence and/or dawn re-entry survey undertaken on separate days between May and September inclusive. If a roost is found during any of these surveys, further dusk or dawn surveys may be necessary to accurately determine species and numbers of bats present and roost type.

  It is recommended that bat activity surveys are undertaken around the woodland edges; up to two a month between April to September inclusive. Additionally, two automated bat recorders would be left to collect data over four consecutive nights during each of these months.

- **Badgers:** An update badger survey is recommended to be conducted at least nine months in advance of any proposed works on site. It is recommended that this survey is undertaken in the winter or early spring months when optimal survey conditions are present.
- **Otters:** An otter survey of the River Dearne is recommended which would involve two checks for field signs of otter in the river where it runs through the site plus a buffer of 50m either side of the site boundary. They can be carried out at any time of the year, provided water levels are not variable. Surveys should not be undertaken during heavy rain or if a rainfall event has occurred in the previous five days.
- **Invasive Species:** It is recommended that an ecologist and specialist invasive plant control contractor are instructed to advise on containment, control and eradication of Japanese knotweed and giant hogweed from the site.
- **Injurious Weeds:** Should future use of the site be as grazing land, ragwort would need to be controlled.

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Appendix A - Figures

Figure 1 – Extended Phase 1 Habitat Survey Plan

N

DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS



KEY

- NGG SITE BOUNDARY
- NGPH SITE BOUNDARY
- SEMI-NATURAL BROAD LEAVED WOODLAND
- BROAD LEAVED PLANTATION
- SCATTERED TREES
- SCATTERED SCRUB
- SI — SEMI-IMROVED NEUTRAL GRASSLAND
- A — AMENITY GRASSLAND
- HARDSTANDING
- BUILDINGS
- EPHEMERAL / SHORT PERENNIAL
- RUNNING WATER
- FENCE
- UNDERGROUND CULVERT
- (1) TARGET NOTE

0 10 20 30 40 50 m

SCALE 1:1000

REV	DESCRIPTION	BY	CHK	APP	DATE

Client:

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OLD MILL LANE
BARNSLEY

Drawing Title:

EXTENDED PHASE 1 HABITAT SURVEY PLAN

Scale @ A3	Drawn Date	Checked Date	Approved Date
1:1000	CM 28.05.13	RP 28.06.13	NT 11.07.13

Project No.	Office	Type	Drawing No.	Revision
E7773-4	LDS	ECO	01	

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Figure 2 – Ecological Constraints Plan (WYG, 2007)

DO NOT SCALE: Contractor to check all dimensions and report any omissions or errors

KEY

- SITE BOUNDARY
- BOUNDARY OF PROPERTY IN NGPH OWNERSHIP
- HISTORICAL LAYOUT
- 30m EXCLUSION ZONE AROUND BADGER SETT
- JK — JAPANESE KNOTWEED
- JAPANESE KNOTWEED STEMS. ORIGINAL ORIGIN MAY BE DIFFERENT TO CURRENT LOCATION
- GIANT HOGWEED
- INDIVIDUAL PLANTS OF GIANT HOGWEED
- APPROXIMATE LOCATION OF A BADGER SETT WITH THREE ENTRANCE HOLES
- TPO — TREE PRESERVATION ORDER

NOTES:
1. ECOLOGIST TO BE ON SITE WHEN EXCAVATIONS ARE TAKNIG PLACE AROUND INVASIVE SPECIES' (e.g JAPANESE KNOTWEED & GIANT HOGWEED)
2. VOLUME FOR OFF-SITE DISPOSAL MAY INCRESE

REMOVAL OFF-SITE WITH CYANIDE CONTAMINATED MATERIAL FROM AREA A4. MAY INCRESE VOLUME FOR OFF-SITE DISPOSAL

REMOVAL WITH HYDROCARBON CONTAMINATION FROM AREAS A3 & A7. POSSIBLE ON SITE TREATMENT OR DISPOSAL TO LANDFILL

REMOVAL WITH HYDROCARBON CONTAMINATION FROM AREAS A3 & A5. POSSIBLE ON SITE TREATMENT OR DISPOSAL TO LANDFILL

REMOVAL OFF-SITE WITH CYANIDE CONTAMINATED MATERIAL FROM AREA A8. MAY INCRESE VOLUME FOR OFF-SITE DISPOSAL

WHEEL WASH NEEDED TO PREVENT SPREAD OF INVASIVE SPECIES.

APPROXIMATE LOCATION OF BRICK CULVERT WHERE BATS WERE IDENTIFIED IN 2002

NO REGROWTH OF JAPANESE KNOTWEED OBSERVED

JAPANESE KNOTWEED STEMS

POTENTIALLY NEEDS TO BE REMOVED FOR ON SITE TREATMENT

AREA COVERED WITH TREES AND BUSHES

UNEVEN GROUND IN WOODED AREA

BADGER SETT

20m EXCLUSION ZONE AROUND BADGER SETT

GEOMEMBRANE PLACED FOR STOCKPILING & TREATMENT AREAS TO PREVENT SPREAD OF GIANT HOGWEED.

RIVER DEARNE

STEEP RIVER BANK

BARNSLEY HOLDER STATION

GASHOLDER No.1

GASHOLDER No.2

GAS HOLDER

Scale (metres)
0 10 20 30 40 50

Rev	Description	By	Chk	App	Date

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Civil Electrical Environmental Health & Safety Highways Management Services Mechanical Rail Structural Town Planning Transportation

Project: E7773

OLD MILL LANE
BARNSLEY

Drawing Title:
ECOLOGICAL CONSTRAINTS PLAN - MITIGATION METHODS

Scale at A1	Drawn By	Date	Checked By	Date	Approved By	Date
1:500	CM	08.08.07	AP	09.08.07	PG	09.08.07

Project No.	Office	Type	Drawing No.	Revision
E7773	4104	ENV	121	

APPROVAL ☐ INFORMATION ☒ TENDER ☐ CONTRACT ☐ CONSTRUCTION ☐

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Appendix B – Biodiversity and Environmental Legislation, Conventions & Threatened Lists

Introduction

The UK has ratified a number of Conventions and implemented legislation pertaining to the protection of biodiversity and habtiats, either independently or as member state of the European Union. These are defined and summarised below.

Lists of theatened, endagered and extinct species are also provided, together with asummaryexplanation of each.

Bern Convention (1982)

The *Convention on the Conservation of European Wildlife and Natural Habitats* (the *Bern Convention*) was adopted in Bern, Switzerland in 1979, and was ratified in 1982. Its aims are to protect wild plants and animals and their habitats listed in Appendices1 and 2 of the of the Convention, and regulate the exploitation of speices listed in Appendix 3. The regulation imposes legal obligations on participating countires to protect over 500 plant species and more than 1000 animals.

To meet its obligations imposed by the Convention, the European Community adopted the *EC Birds Directiv*e (1979) and the *EC Habitats Directive* (1992 – see below). Since the Lisbon Treaty, in force since 1st December 2009, European legislation has been adopted by the European Union.

Biodiversity Action Plan (BAP)

The UK *Biodiversity Action Plan* (UKBAP–UK Steering Group, 1995; UK Biodiversity Group, 1998 - 2000) lists and prioritises habitats and species and sets national targets to be achieved. The intent of the UKBAP, however, is much broader than the protection and enhancement of less common species, and is meant to embrace the wider countryside as a whole (Biodiversity 2020: A Strategy for England's Wildlife and Ecosystem Services, Defra, 2011).

The UK BAP has recently undergone a review (Biodiversity Reporting and Information Group, June 2007)resulting in the identification of 391 'Priority' Species Action Plans (SAPs), 45 'Priority' Habitat Action Plans and 162 Local Biodiversity Action Plans.

Local Biodiversity Action Plans (LBAP) identify habitat and species conservation priorities at a local level (typically at the County level), and are usually drawn up by a consortium of local Government organisations and conservation charities.

In 2010 a revised and updated Strategic Plan for Biodiversity, including the Aichi Biodiversity Targets, for the 2011-2020 period was adopted. This new plan will be the overarching framework on biodiversity, not only for the biodiversity-related conventions, but for the entire United Nations system.

Currently the UK and devolved countries are working to translate this overarching international framework into national biodiversity strategies and action plans that progress towards adopting the Aichi Biodiversity Targets.

Birds Directive (BD)

The *EC Directive on the Conservation of Wild Birds* (791409/EEC) or '*Birds Directive*' was introduced to achieve favourable conservation status of all wild bird species across their distribution range. In this context, the most important provision is the identification and classification of Special Protection Areas (SPAs) for rare or vulnerable species listed in Annex 1 of the Directive, as well as for all regularly occurring migratory species, paying particular attention to the protection of wetlands of international importance.

Birds of Conservation Concern (BoCC)

This is a review of the status of all birds occuring regularly in the United Kingdom. It is regularly updated and is prepared by leading bird conservation organisations, including the British Trust for Ornithology (BTO), Joint Nature Conservation Committee (JNCC) and The Royal Society for the Protection of Birds (RSPB).

The latest report was produced in 2009 (Eaton *et al,* 2009) and identified 52 red list species, 126 amber species, and 68 green species. The criteria are complex, but generally:

- Red list species are those that have shown a decline of the breeding population, non-breeding population or breeding range of more than 50% in the last 25 years.
- Amber list species are those that have shown a decline of the breeding population, non-breeding population or breeding range of between 25% and 50% in the last 25 years. Species that have a UK breeding population of less than 300 or a non-breeding population of less than 900 individuals are also included, together with those whose 50% of the population is localasied in 10 sites or fewer and those whose 20% of the European population is found in the UK.
- Green list species are all regularly occurring species that do not qualify under any of the red or amber criteria are green listed

Bonn Convention

The Convention on the Conservation of Migratory Species of Wild Animals or '*Bonn Convention*' was adopted in Bonn, Germany in 1979 and came into force in 1985. Participating states agree to work together to preserve migratory species and their habitats by providing strict protection to species listed in Appendix I of the Convention. It also establishes agreements for the conservation and management of migratory species listed in Appendix II.

In the UK, the requirements of the convention are implemented via the *Wildlfie & Countryside Act 1981* (as amended), *Widlife (Northern Ireland) Order 1985*, *Nature Conservation and Amenity Lands (Northern Ireland) Order 1985* and the *Countryside and Rights of Way Act 2000* (CRoW).

Habitats Directive

The *Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Fauna and Fora*, or the '*Habitats Directive*', is a European Union directive adopted in 1992 in response to the Bern Convention. Its aims are to protect approximately 220 habitats and 1,000 species listed in its several Annexes.

In the UK, the *Habitats Directive* is transposed into national law via the *Conservation of Habitats and Species (Amendment) Regulations 2012* in England, Scotland and Wales, and via the *Conservation (Natural Habitats, &c) Regulations (Northern Ireland) 1995 (as amended)* in Northern Ireland.

Protection of Badgers Act 1992 (PBA 1992)

The main legislation protecting badgers in England and Wales is the *Protection of Badgers Act 1992* (the 1992 Act). Under the 1992 Act it is an offence to: wilfully kill, injure, take or attempt to kill, injure or take a badger; dig for a badger; interfere with a badger sett by, damaging a sett or any part thereof, destroying a sett, obstructing access to a sett, causing a dog to enter a sett or disturbing a badger while occupying a sett.

The 1992 Act defines a badger sett as: "any structure or place which displays signs indicating current use by a badger."**National Planning Policy Framework (2012)**

Following the publication of the National Planning Policy Framework (NPPF) in March 2012, *Planning Policy Statement 9*(PPS9)*: Biodiversity and Geological Conservation (*2005) has been withdrawn. However, *ODPM 06/2005: Biodiversity and Geological Conservation –Statutory Obligations and their impact within the Planning System* (the guidance document that accompanied PPS9) has not been withdrawn and, where

more detailed guidance is required than is given within the NPPF, local planning authorities will continue to rely on ODPM 06/2005.

This guidance requires local planning authorities to take account of the conservation of protected species when determining planning applications and makes the presence of a protected species a material consideration when assessing a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.

In the case of European Protected Species such as bats, planning policy emphasises that strict statutory provisions apply (including the *Conservation of Habitats and Species (Amendment) Regulations 2012*), to which a planning authority must have due regard.

Where developments requiring planning permission are likely to impact upon protected species it is necessary that protected species surveys are undertaken and submitted to meet the requirements of paragraph 98 of ODPM Circular 06/2005 which states that:

'*The presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.*'

General guidance within the body of the NPPF which are also potentially relevant to the possible presence of bats at the site includes the following statements:

"The planning system should contribute to and enhance the natural and local environment by:

- *protecting and enhancing valued landscapes, geological conservation interests and soils;*
- *recognising the wider benefits of ecosystem services;*
- *minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures"*

"Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged."

"When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- *if significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;"*

Species of Principal Importance in England

Section 41 (S41) of this Act requires the Secretary of State to publish a list (in consultation with Natural England) of habitats and species which are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies including local and regional authorities, in implementing their duty under Section 40 of the *Natural Environment and rural Communities (NERC) Act 2006*, to have regard to the conservation of biodiversity in England, when carrying out their normal (e.g. planning) functions. The S41 list includes 65 habitats of principal importance and 1,150 species of principal importance.

The Conservation of Habitats and Species (Amendment) Regulations 2012

The *Conservation of Habitats and Species Regulations 2012 (as amended)* came into force on 16th August 2012 and amend the *Conservation of Habitats and Species Regulations 2010* to ensure the various provisions of Directive 92/43/EC ('the Habitats Directive') are transposed in a clear manner.

Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species (listed in Annexes I or II of the Habitats Directive respectively) to the European Commission. These sites, if ratified by the European Commission, are then designated as Special Protection Areas (SPAs) within six years. The 2012 amendments include that public bodies help preserve, maintain and re-establish habitats for wild birds.

The Regulations also make it an offence to deliberately capture, kill, disturb or trade in the animals listed in Schedule 2, or pick, uproot, destroy, or trade in the plants listed in Schedule 5 (see Table B1).

Table B1 Schedules of the Conservation of Habitats and Species (Amendment) Regulations 2012

Schedule 2 – European Protected Species of Animals	Schedule 5 – European Protected Species of Plant

Common name	Scientific name	Common name	Scientific name
Horseshoe bats	*Rhinolophidae* - all species	Shore dock	*Rumex rupestris*
Common bats	*Vespertilionidae* - all species	Killarney Fern	*Trichomanes speciosum*
Wild Cat	*Felis silvestris*	Early Gentian	*Gentianella anglica*
Dolphins, porpoises and whales	*Cetacea* – all species	Lady's-slipper	*Cypripedium calceolus*
Dormouse	*Muscardinus avellanarius*	Creeping Marshwort	*Apium repens*
Pool Frog	*Rana lessonae*	Slender Naiad	*Najas flexilis*
Sand Lizard	*Lacerta agilis*	Fen Orchid	*Liparis loeselii*
Fisher's Estuarine Moth	*Gortyna borelii lunata*	Plantain, Floating-leaved water	*Luronium natans*
Newt, Great Crested	*Triturus cristatus*	Yellow Marsh Saxifrage	*Saxifraga hirculus*
Otter	*Lutra lutra*		
Lesser Whirlpool Ram's-horn Snail	*Anisus vorticulus*		
Smooth Snake	*Coronella austriaca*		
Sturgeon	*Acipenser sturio*		
Natterjack Toad	*Bufo calamita*		
Marine Turtles	*Caretta caretta*, *Chelonia mydas*, *Lepidochelys kempii*, *Eretmochelys imbricata*, *Dermochelys coriacea*		

The Hedgerow Regulations 1997

The *Hedgerow Regulations 1997* were made under Section 97 of the *Environment Act 1995* and came into force in 1997. They introduced new arrangements for local planning authorities in England and Wales to protect important hedgerows in the countryside, by controlling their removal through a system of notification. Important hedgerows are defined by complex assessment criteria, which draw on biodiversity features, historical context and the landscape value of the hedgerow.

Wildlife and Countryside Act 1981 (as amended)

This is the principal mechanism for the legislative protection of wildlife in the UK. This legislation is the chief means by which the '*Bern Convention*' and the *Birds Directive* are implemented in the UK. Since it was first introduced, the Act has been amended several times.

The Act makes it an offence to (with exception to species listed in Schedule 2) intentionally:

- kill, injure, or take any wild bird,
- take, damage or destroy the nest of any wild bird while that nest is in use, or
- take or destroy an egg of any wild bird.

In addition, the Act makes it an offence (subject to exceptions) to:

- intentionally or recklessly kill, injure or take any wild animal listed on Schedule 5,
- interfere with places used for shelter or protection, or intentionally disturbing animals occupying such places.
- The Act also prohibits certain methods of killing, injuring, or taking wild animals

Finally, the Act also makes it an offence (subject to exceptions) to:

- intentionally pick, uproot or destroy any wild plant listed in Schedule 8, or any seed or spore attached to any such wild plant,
- unless an authorised person, intentionally uproot any wild plant not included in Schedule 8,
- sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Following all amendments to the Act, Schedule 5 'Animals which are Protected' contains a total of 154 species of animal, including several mammals, reptiles, amphibians, fish and invertebrates. Schedule 8 'Plants which are Protected' of the Act, contains 185 species, including higher plants, bryophytes and fungi and lichens. A comprehensive and up-to-date list of these species can be obtained from the JNCC website.

Part 14 of the Act makes unlawful to plant or otherwise case to grow in the wild any plant which is listed in Part II of Schedule 9.

Table B2 provides a comprehensive list of plant species listed in this schedule. It is recommended that plant material of these species is disposed of as bio-hazardous waste, and these plants should not be used in planting schemes.

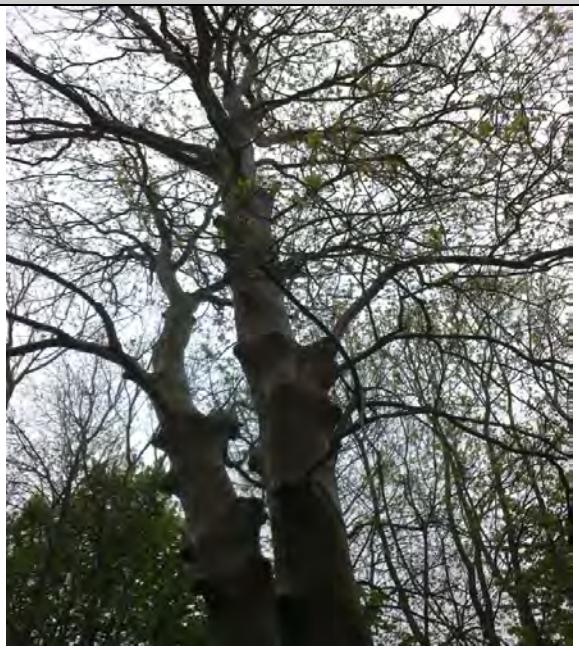
Table B2 Invasive plant species listed in Schedule 9 of the *Wildlife & Countryside Act 1981* (as amended)

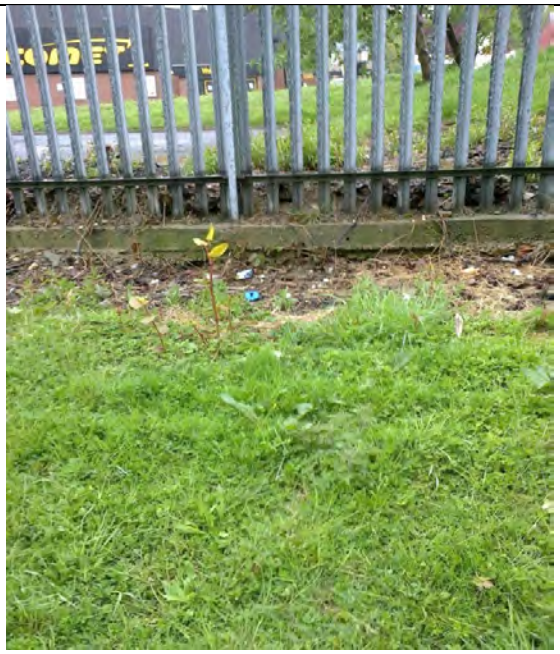
Common name	Scientific name
Perfoliate Alexanders	*Smyrnium perfoliatum*
Red algae	*Grateloupia luxurians*
Variegated yellow archangel	*Lamiastrum galeobdolon* subsp. *argentatum*
Yellow azalea	*Rhododendron luteum*
Himalayan balsam	*Impatiens glandulifera*
Wall cotoneaster	*Cotoneaster horizontalis*
Entire-leaved cotoneaster	*Cotoneaster integrifolius*
Himalayan cotoneaster	*Cotoneaster simonsii*
Hollyberry cotoneaster	*Cotoneaster bullatus*
Small-leaved cotoneaster	*Cotoneaster microphyllus*
False Virginia creeper	*Parthenocissus inserta*
Virginia creeper	*Parthenocissus quinquefolia*
Purple dewplant	*Disphyma crassifolium*
Fanwort or Carolina water-shield	*Cabomba caroliniana*
Water fern	*Azolla filiculoides*
Hottentot fig	*Carpobrotus edulis*
Three-cornered garlic	*Allium triquetrum*
Giant hogweed	*Heracleum mantegazzianum*
Water hyacinth	*Eichhornia crassipes*
Giant kelp	*Macrocystis* spp.
Giant knotweed	*Fallopia sachalinensis*
Hybrid knotweed	*Fallopia japonica* × *Fallopia sachalinensis*
Japanese knotweed	*Fallopia japonica*
Few-flowered garlic	*Allium paradoxum*
Water lettuce	*Pistia stratiotes*
Parrot's-feather	*Myriophyllum aquaticum*

Common name	Scientific name
Floating pennywort	*Hydrocotyle ranunculoides*
Duck potato	*Sagittaria latifolia*
Floating water primrose	*Ludwigia peploides*
Water primrose	*Ludwigia grandiflora*
Water primrose	*Ludwigia uruguayensis*
Rhododendron	*Rhododendron ponticum*
Rhododendron	*Rhododendron ponticum* × *Rhododendron maximum*
Giant rhubarb	*Gunnera tinctoria*
Japanese rose	*Rosa rugosa*
Giant salvinia	*Salvinia molesta*
Green seafingers	*Codium fragile*
Californian red seaweed	*Pikea californica*
Hooked asparagus seaweed	*Asparagopsis armata*
Japanese seaweed	*Sargassum muticum*
Laver seaweeds (except native species)	*Porphyra* spp
Australian swamp stonecrop or New Zealand pygmyweed	*Crassula helmsii*
Wakame	*Undaria pinnatifida*
Curly waterweed	*Lagarosiphon major*
Waterweeds	*Elodea* spp.

Appendix C – Target Notes and Site Photographs

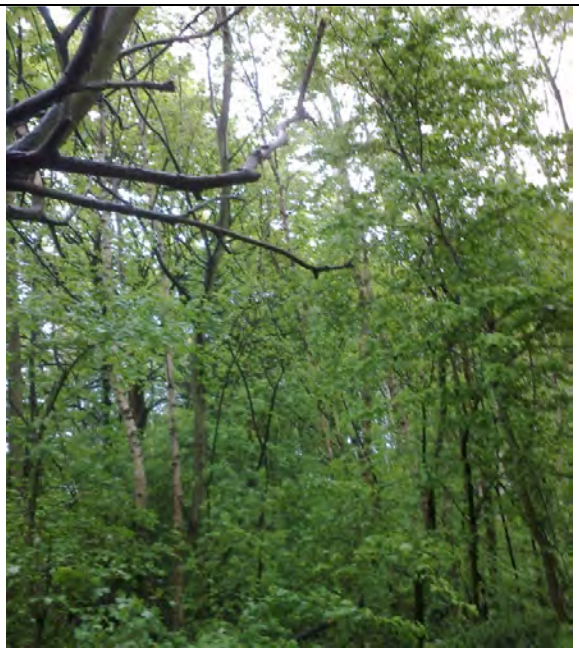
Target Note	Notes	Photo
1	**Giant Hogweed.** One giant hogweed plant in east of gasholder site.	
2	**Stand of Japanese knotweed.** Approximately 5m x 5m in extent to the east of the gasholder site.	

Target Note	Notes	Photo
3	**Ash tree.** With holes from missing limbs and assessed as Category 1 bat roost potential.	
4	**Japanese knotweed.** Stand approximately 4m x 2m in extent to north of gasholder site.	

Target Note	Notes	Photo
5	**Giant hogweed.** One plant to north west of gasholder site.	
6	**Japanese knotweed.** One small plant to the south of the gasholder site.	

Target Note	Notes	Photo
7	**Badger sett.** Not in current use with the entrance hole partly blocked with debris.	
8	**Giant hogweed.** Stand of four plants in area of scattered scrub and trees at the west of the site.	

Target Note	Notes	Photo
9	**Larger building to the south with no bat roost potential.**	
10	**Smaller building to the north with no bat roost potential.**	

Target Note	Notes	Photo
11	**North of Old Tannery Road.** Showing semi-improved grassland verge and area of hard standing.	
12	**Semi-natural broad-leaved woodland.**	

Target Note	Notes	Photo
13	Area of newly planted woodland.	
14	Point where chamber containing bat roost lies under the site.	See Figure 1: Extended Phase 1 Habitat Plan for location.

Target Note	Notes	Photo
15	**Entrance grille of culvert on river bank.** Leads to chamber containing bat roost.	

Appendix D – Citations for Old Mill Lane Culvert Bat Roost LWS Provided by BBRC

PLANNING DESIGN ENVIRONMENT



54. Old Mill Lane Culvert Bat Roost

Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH

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TEP

LWS Assessment and Phase 1 Survey

Site Name:	Old Mill Lane Culvert Bat Roost
Site Area:	10.27ha
Survey Date:	September 2010
Nearest Settlement:	Honeywell, Smithies
Grid Reference at Centre:	SE34979, 07486
	LAC, VG, RH (2010)
Surveyor(s)	Eric Bennett, Bat Consultancy (Mar 2004)
	Pete Middleton, Environmental Consultancy (2011)

Site Description:

This site is located on the River Dearne, where it flows in a south-easterly direction just to the north-east of Barnsley Town Centre. The valley is crossed by the A61, heading from the town centre. The river contains a series of culverts associated with the road, the river and former mill races. The main culvert is approximately 2m wide by 1.5m and is estimated to be 90m long. It runs parallel to Old Mill Road to the former mill site and contains five side tunnels along its length which pass beneath Old Mill Road. Since 1990 this culvert has been known to support an important maternity roost for Daubenton's bat (*Myotis daubentonii*). The colony emerges from the grilled culvert entrance to feed along the river course and over the large waterbody at The Fleets (TN4), lying within the site boundary to the north-west of the A61.

The course of the Dearne is tree-lined, both upstream and downstream of the A61 bridge, with broader woodlands and plantations outside the site boundaries

downstream. Downstream, the site is confined to a narrow strip along the river course where the banks have a lot of sycamore (*Acer pseudoplatanus*) and ash (*Fraxinus excelsior*) in the stretch as far east as the gasworks. Beyond that, to the south-east, the banks are lower with silver birch (*Betula pendula*) and goat willow (*Salix caprea*) dominated scrub/woodland with taller alders (*Alnus glutinosa*) along the river edge.

Upstream of the A61 the landscape of the floodplain opens out into recreation grounds and bodies of standing water. There is still a fringe of mixed deciduous tree growth along the heavily modified river banks to the north-west of the A61 bridge. Giant hogweed *(Heracleum mantegazzianum)* was noted both upstream and downstream of Old Mill Lane.

South of The Fleets there is a large area of plantation within the site (TN7), north-east of the superstore. There is also broadleaved woodland preset on the opposite bank of the Dearne (TN8). Former lagoons (TN6) that survive as tree-lined bodies of standing water are also present south of The Fleets. The Fleets is a large open waterbody with generally sparsely vegetated banks and little marginal vegetation present. The margins which are vegetated contain mainly reed sweet-grass (*Glyceria maxima*) and great willowherb (*Epilobium hirsutum*). As well as being used as a foraging resource for local bats, these waters are also fished by local anglers. There is a neutral grassland dominated bank with scattered trees and scrub (TN3, TN5) located between the large waterbody and the river. To the north scattered growth continues along the river course and there is some goat willow scrub (TN1, TN2). North-west of Smithies Lane the valley opens out into a much more rural landscape, beyond the site boundaries.

Important Species:

Daubenton's bat is a European protected species (receiving full protection in the UK under the Conservation of Habitats and Species Regulations 2010) and also receives some protection under the wildlife and Countryside Act 1981 as amended. All bats are considered as Local Biodiversity Action Plan Priority species. The Daubenton's colony which occupies the culvert near the bridge of the A61 is a maternity colony. Counts in September 2010, near the end of the maternity season, confirmed 67 bats exiting via the grilled culvert entrance. Significant proportions of the colony turned immediately to pass under the bridge, foraging along the river corridor to The Fleets. Smaller numbers also headed downstream. Common pipistrelle *(Pipistrellus pipistrellus)* were also abundant and foraging upstream and downstream of the culvert.

Giant hogweed is a Schedule 9 listed invasive species and poses a risk to public health and safety. Japanese knotweed and Himalayan balsam, also Schedule 9 species, occur throughout the site along the river banks and under the tree cover

The corridor supports breeding kingfisher *(Alcedo atthis)* a schedule 1 species, UKBAP breeding willow tit *(Poecile montanus),* bullfinch *(Pyrrhula pyrrhula)* and song thrush *(Turdus philomelos).*

Additionally, otter *(Lutra lutra)* has been recorded in 2011 on the River Dearne.

Target Note:	TN1
Habitat:	Scattered scrub and trees
Species List:	

Scientific Name	Common Name	Frequency
Crataegus monogyna	Hawthorn	D
Acer pseudoplatanus	Sycamore	F
Impatiens glandulifera	**Himalayan Balsam**	**F**
Rubus fruticosus agg.	Bramble	F
Salix caprea	Goat Willow	F
Salix fragilis	Crack Willow	F
Sambucus nigra	Elder	F
Urtica dioica	Nettle	F
Alliaria petiolata	Garlic Mustard	O
Angelica sylvestris	Wild Angelica	O
Artemisia vulgaris	Mugwort	O
Betula pendula	Silver Birch	O
Corylus avellana	Hazel	O
Dryopteris felix-mas	Male-fern	O
Elymus caninus	Bearded Couch	O
Epilobium hirsutum	Great Willowherb	O
Geum urbanum	Wood Avens	O
Rosa canina agg.	Dog Rose	O
Rubus idaeus	Raspberry	O
Stachys sylvatica	Hedge Woundwort	O

Symphytum x uplandicum	Russian Comfrey	O
Tanacetum vulgare	Tansy	O
Aegipodium podagraria	Ground-elder	R
Circaea lutetiana	Enchanter's Nightshade	R
Fraxinus excelsior	Ash	R
Malva moschata	Musk Mallow	R
Phyllitis scolopendrium	Hart's-tongue	R
Silene dioica	Red Campion	R
Stellaria holostea	**Greater Stitchwort**	**R**

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN2
Habitat:	Neutral grassland

Species List:

Scientific Name	**Common Name**	**Frequency**
Agrostis stolonifera	Creeping Bent	F
Arrhenatherum elatius	False Oat-grass	F

Dactylis glomerata	Cock's-foot	F
Holcus lanatus	Yorkshire-fog	F
Plantago lanceolata	Ribwort Plantain	F
Trifolium pratense	Red Clover	F
Achillea millefolium	Yarrow	O
Anthriscus sylvestris	Cow Parsley	O
Arctium minus	Lesser Burdock	O
Centaurea nigra	Knapweed	O
Elytrigia repens	Common Couch	O
Festuca rubra	Red Fescue	O
Heracleum sphondylium	Hogweed	O
Hypochaeris radicata	Common Cat's-ear	O
Lolium perenne	Ryegrass	O
Odontites verna	Red Bartsia	O
Plantago major	Greater Plantain	O
Tanacetum vulgare	Tansy	O
Taraxacum sp.	Dandelion species	O
Taraxacum sp.	Dandelion	O
Medicago lupulina	Black Medick	R
Senecio jacobaea	Ragwort	R

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN3
Habitat:	Broadleaved woodland

Species List:

Scientific Name	Common Name	Frequency
Acer pseudoplatanus	Sycamore	A
Fallopia japonica	**Japanese Knotweed**	**A**
Fraxinus excelsior	Ash	A
Arrhenatherum elatius	False Oat-grass	F
Chamerion angustifolium	Rosebay Willowherb	F
Dactylis glomerata	Cock's-foot	F
Impatiens glandulifera	**Himalayan Balsam**	**F**
Rubus fruticosus agg.	Bramble	F
Urtica dioica	Nettle	F
Alnus glutinosa	Alder	O
Artemisia vulgaris	Mugwort	O
Betula pendula	Silver Birch	O
Centaurea nigra	Knapweed	O

Corylus avellana	Hazel	O
Crataegus monogyna	Hawthorn	O
Dryopteris felix-mas	Male-fern	O
Elymus caninus	Bearded Couch	O
Festuca rubra	Red Fescue	O
Heracleum mantegazzianum	**Giant Hogweed**	**O**
Leucanthemum vulgare	Oxeye daisy	O
Rosa canina agg.	Dog Rose	O
Salix caprea	Goat Willow	O
Salix fragilis	Crack Willow	O
Sambucus nigra	Elder	O
Symphytum x uplandicum	Russian Comfrey	O
Tanacetum vulgare	Tansy	O
Cornus sanguinea	Dogwood	R
Hypericum perforatum	Perforate St John's-wort	R
Linaria vulgaris	Common Toadflax	R
Quercus petraea	**Sessile Oak**	**R**
Scrophularia auriculata	Water Figwort	R

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN4
Habitat:	Open water, swamp

Species List:

Scientific Name	Common Name	Frequency
Glyceria maxima	Reed Sweet-grass	D
Epilobium hirsutum	Great Willowherb	F
Lycopus europaeus	Gypsywort	O
Salix fragilis	Crack Willow	O
Stachys palustris	Marsh Woundwort	O
Typha latifolia	Greater Reedmace	O

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN5
Habitat:	Scattered scrub, scattered trees

Species List:

Scientific Name	Common Name	Frequency
Crataegus monogyna	Hawthorn	D
Salix fragilis	Crack Willow	D

Rubus fruticosus agg.	Bramble	F	
Urtica dioica	Nettle	F	
Alnus glutinosa	Alder	O	
Corylus avellana	Hazel	O	
Salix caprea	Goat Willow	O	
Sambucus nigra	Elder	O	
Acer platanoides	Norway Maple	R	
Calystegia sylvatica	Large Bindweed		R
Geum urbanum	Wood Avens	R	

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN6
Habitat:	Open water, scattered trees

Species List:

Scientific Name	**Common Name**	**Frequency**
Alnus glutinosa	Alder	D
Geum urbanum	Wood Avens	F
Impatiens glandulifera	Himalayan Balsam	F

Moss sp.	Moss species	F
Rubus fruticosus agg.	Bramble	F
Salix fragilis	Crack Willow	F
Typha latifolia	Greater Reedmace	F
Agrostis stolonifera	Creeping Bent	O
Alliaria petiolata	Garlic Mustard	O
Betula pendula	Silver Birch	O
Calystegia sylvatica	Large Bindweed	O
Corylus avellana	Hazel	O
Crataegus monogyna	Hawthorn	O
Fraxinus excelsior	Ash	O
Juncus articulatus	Jointed Rush	O
Lycopus europaeus	Gypsywort	O
Salix caprea	Goat Willow	O
Sambucus nigra	Elder	O
Carex sp.	Sedge species	R
Cornus sanguinea	Dogwood	R
Plantago major	Greater Plantain	R
Pteridium aquilinum	Bracken	R
Scrophularia auriculata	Water Figwort	R

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN7
Habitat:	Broadleaved plantation

Species List:

Scientific Name	Common Name	Frequency
Acer campestre	Field Maple	F
Betula pendula	Silver Birch	F
Cornus sanguinea	Dogwood	F
Corylus avellana	Hazel	F

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Target Note:	TN8
Habitat:	Semi-natural broadleaved woodland

Species List:

Scientific Name	Common Name	Frequency
Acer pseudoplatanus	Sycamore	D

Crataegus monogyna	Hawthorn	F
Rubus fruticosus agg.	Bramble	F
Epilobium hirsutum	Great Willowherb	O
Fagus sylvatica	Beech	O
Salix fragilis	Crack Willow	O
Sambucus nigra	Elder	O
Heracleum mantegazzianum	Giant Hogweed	R
Solidago virgaurea	Goldenrod	R

D = Dominant, A = Abundant, F = Frequent, O = Occasional, R = Rare

Management Issues:

Perhaps the greatest priority is to ensure that any management of the road surface, riverbanks and traffic flows does not deleteriously affect the important bat roost areas below the ground surface. It is essential to the integrity of the bat roost that suitable flyways are maintained and protected to preserve foraging and dispersal routes for the bats from the roost to the main feeding areas along the River Dearne and over The Fleets and other local waterbodies.

Invasive species occur throughout the site. Of primary concern is the presence of giant hogweed, where it occurs in locations that could be accessed by members of the public, as this species presents a risk to public health and safety.

Diversity:

This site does not hold any significant botanical diversity and the aquatic habitats are generally man-made or heavily modified. However the bat roost is of national ecological value and is the primary reason for the recommended designation of this site.

Naturalness:

The banks of the River Dearne are highly modified throughout the length of this narrow linear site. Beyond the edges of the river course there are a series of embankments and artificially created waterbodies. However, the bat roost occupies totally artificial habitat, showing how some species adapt well to unnatural structures within their habitats. Most of the plant species present here are locally native and no doubt help to support a range of native invertebrates, birds and mammals.

Rare or Exceptional Features:

An important feature is the old culvert complex and access points supporting the Daubenton's bat roost. This maternity colony is considered to be the most important for this species in the Borough and is thought to be of national importance due to its size. Previous counts have regularly recorded over 250 breeding females. The peak count was recorded in 1990 identified 412 bats and included juveniles.

Counts in 2010 may appear to be considerably lower than these earlier records, but it must be appreciated that the 2010 count was made late in the maternity season, when the colony is likely to be dispersing. The 2010 count, though likely to under record the colony size, is still above the average colony size for this species, normally counted at around 20-50 individuals.

The course of the River Dearne throughout the length of the site is also a feature of value.

Fragility:

The maternity roost is highly vulnerable to disturbance at inappropriate times of year during the course of any road management activity, redevelopment at the former mill or any changes to the river corridor. Even minor works to the road or other surfaces over the culvert could lead to significant disturbance. Any modification to the road surface above the roost chamber, which is situated very close below the surface, could potentially kill or injure a large number of bats in a very short space of time.

Development activities, including road improvements, can however be appropriately mitigated under licence. Of significant concern though is the loss of riverside trees and scrub on the other side of Old Mill Lane. Any fragmentation of the tree lined corridors that connect the maternity roost with the important feeding areas upstream could be disastrous, potentially resulting in roost failure. The stretch of river connecting the roost site to the closest primary foraging habitat at The Fleets contains a large weir. The majority of bats have been recorded leaving the channel of the river just on the other side of Old Mill Road to fly and forage in the tree/scrub area along river bank in order to bypass the weir. These riverside habitats are therefore crucial to the maintenance of the roost.

The maternity colony is vulnerable to disturbance at the roost entrance at inappropriate times. The entrance is grilled, but the grill was unlocked at the time of the 2010 roost count.

Another threat to the integrity of the roost is fluctuating water levels. Flooding of the culvert could result in complete loss of the colony.

The river itself is vulnerable to contamination incidents along its length upstream that could spread downstream and affect this site with possibly damaging pollutants.

Typicalness:

The modified water course is fairly typical for the Barnsley area, reflecting the need to protect the nearby town centre from flooding incidents.

The use of the culvert by Daubenton's bats is not unusual for this species, but the large colony size is very uncommon. Only two or three Daubenton's roosts approaching the size supported at this site have been recorded in Britain. The roost is of high ecological value.

The range of plant species present is generally typical for urban riparian habitats.

Recorded History & Cultural Associations:

There is a long history of exploitation of the river and its banks along this stretch of the Dearne. The name Old Mill Lane relates to former milling activities here. The mill and mill race are shown on the 1779 Enclosure Map, but presumably date from long before that time.

The high slope of Burton Bank, just to the east, is the site for a Quaker burial ground established in the 1650s, indicating the length of time this section of the valley has been locally important.

The disused Barnsley Canal formerly ran parallel to the River Dearne, just to the south and west of the site. There is much social and industrial history locally that could be usefully researched to add value to the interpretation of this site.

Connectivity within the Landscape:

The River Dearne forms an integral part of this site, with strong links along the valley to other sites of wildlife value, both upstream and downstream. Beyond the flat valley bottom here the surrounds are mainly urban/industrial and built-up, being so close to the centre of Barnsley.

The bankside trees and scrub along the river are vital for the future viability of the Daubenton's bat roost.

Value for appreciation of Nature and Learning:

The Dearne Way runs along the valley, just to the west and south of the site, between the river and the course or the disused canal. There are also public footpaths along the northern bank of the river downstream of Old Mill Lane. The site is well connected by roads and pavements with Barnsley centre, just to the south-west.

The proximity of this site to Barnsley makes it very accessible for a number of local schools however bat roosts do not lend themselves to large scale visits/disturbance.

Recommendations:

The historic records of the Daubenton's maternity colony could potential quality the site for notification as a Site of Special Scientific Interest (it having been, in the height of the maternity season, an exceptionally large roost with a long history of use at this site). Further monitoring over the maternity season (potentially over more than one season) is essential in order to verify the current size of the roost.

The size of the Daubenton's maternity colony is certainly sufficient to warrant designation of this site as a Local Wildlife Site under the species selection criteria. The site boundaries should include all bankside habitats leading up to Smithies Lane and down to the adjacent Cliff Wood LWS downstream.

The future of the maternity colony is dependant upon the avoidance of disturbing or damaging activities that could affect the integrity of the culvert and of the roost chamber. Protection protocols should be established and advertised to ensure that awareness of the roost and roost chamber is raised prior to and during any road works or development activities. The potential requirement for a licence should be identified for any such works.

A management plan should ideally be formulated to encapsulate monitoring and maintenance objectives, such as inspecting the condition of the roost entrance and

completing any necessary remedial works and undertaking river corridor habitat improvements that will strengthen corridors (particularly where structural habitats are missing) and alleviate flood risk.

Adjacent sites should also be monitored to establish their importance for foraging and identify other roost sites. The culvert should also be monitored seasonally to establish accurate patterns of use, particularly whether any hibernation occurs in Daubenton's bats or any other bat species.

Action:

Adopt as Local Wildlife Site

Monitor maternity colony through the maternity season to determine whether

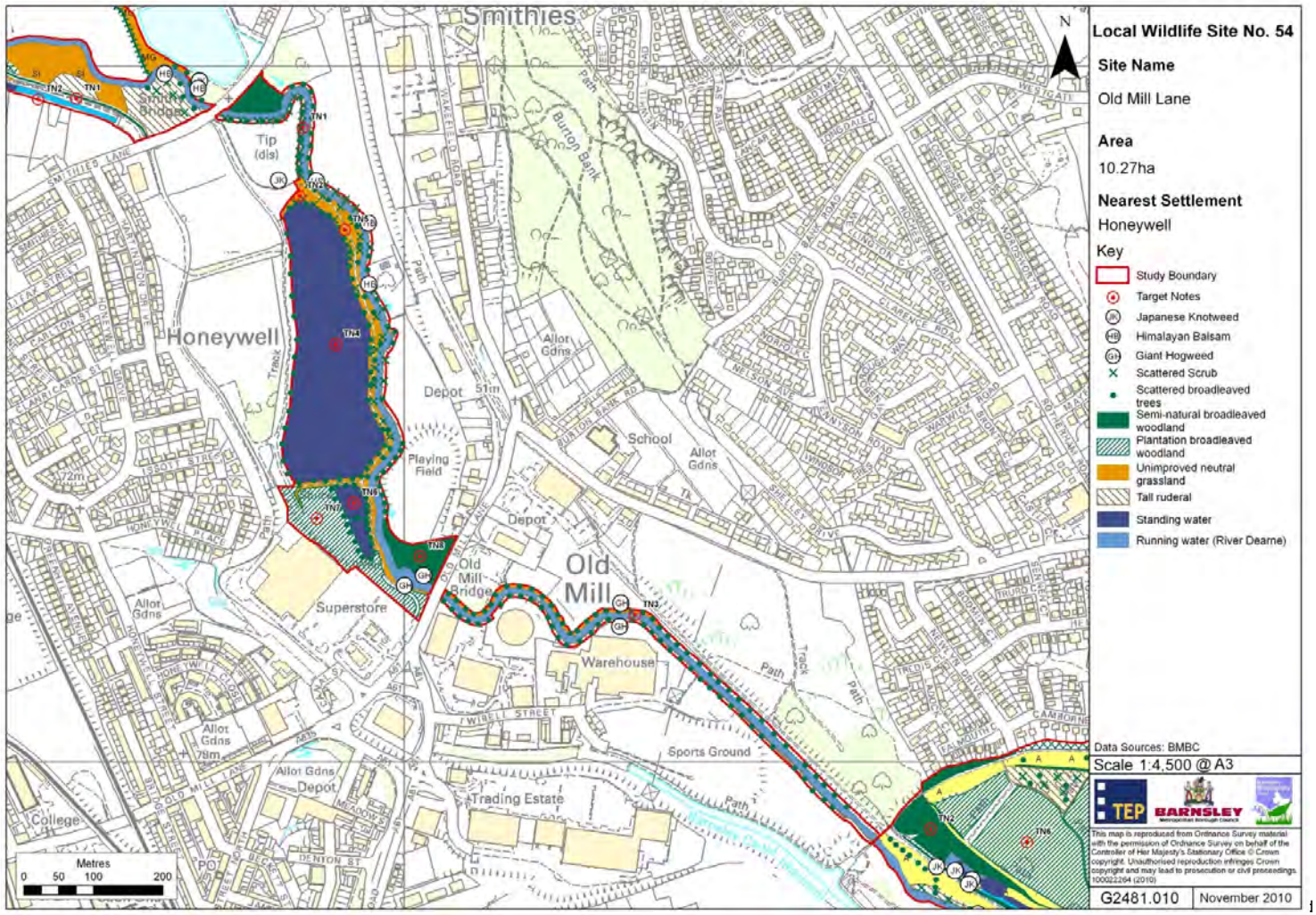
the site qualifies for notification as a SSSI

Establish whether the site is use for hibernation roosting by Daubenton's

bats or any other species of bat

Establish protection and management protocols for the long-term security of

the roost


Smithies
Honeywell
Old Mill
Tip (dis)
Burton Bank
Depot
Playing Field
School
Allot Gdns
Old Mill Bridge
Superstore
Warehouse
Sports Ground
Trading Estate
College
Depot
Path
Track
Metres
0 50 100 200
N
Local Wildlife Site No. 54
Site Name
Old Mill Lane
Area
10.27ha
Nearest Settlement
Honeywell
Key
Study Boundary
Target Notes
Japanese Knotweed
Himalayan Balsam
Giant Hogweed
Scattered Scrub
Scattered broadleaved trees
Semi-natural broadleaved woodland
Plantation broadleaved woodland
Unimproved neutral grassland
Tall ruderal
Standing water
Running water (River Dearne)
Data Sources: BMBC
Scale 1:4,500 @ A3
TEP
BARNSLEY
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G2481.010
November 2010

Appendix E – Bat Roost and Habitat Assessment Criteria (Hundt, L. (2012)

Table E1: Features of Trees Commonly Used by Bats for Roosting and Shelter (Taken from Hundt, L. 2012).

Features of Trees Used as Bat Roosts	Signs Indicating Possible Use by Bats
Natural holes Woodpecker holes Cracks/splits in major limbs Loose bark Hollows/cavities Dense epicormic growth (bats may roost within it) Bird and bat boxes	Tiny scratches around entry point Staining around entry point Bat droppings in, around or below entrance Audible squeaking at dusk or in warm weather Flies around entry point Distinctive smell of bats Smoothing of surfaces around cavity

Table E2: Categories of Bat Roost Potential in Trees. Taken from Hundt. L (2012)

Tree Category	Description
Category 1*	Trees with multiple highly suitable features capable of supporting larger roosts.
Category 1	Trees with definite bat potential, supporting fewer suitable features that category 1* trees or with potential for use by single bats.
Category 2	Trees with no obvious potential, although the tree is of a size and age that elevated surveys may result in cracks or crevices being found; or the tree supports some features which may have limited potential to support bats.
Category 3	Trees with no potential to support bats.

Table E3: Features of Buildings and Built Structures Potentially Used by Bats in Summer. (Taken from Hundt, L. 2012)

Likelihood of bats being present	Feature of the building/built structure
Higher	• Pre 20th century or early 20th century construction • Agricultural buildings of traditional brick, stone or timber construction • Large and complicated roof void with unobstructed flying spaces

Likelihood of bats being present	Feature of the building/built structure
	• Large (>20cm) roof timbers with mortise joints, cracks and holes • Entrances for bats to fly through • Poorly maintained fabric providing ready access points for bats into roofs, walls, bridges, but at the same time not being too draughty and cool. • Roof warmed by the sun, in particular south facing roofs • Weatherboarding and/or hanging tiles with gaps • Low level of disturbance by humans • Bridge structures, follies, aqueducts and viaducts over water and/or wet ground • For rarer species building or built structure is located in the core area of the distribution • Buildings and built structures in proximity to each other providing a variety of roosting opportunities throughout the year • Buildings or built structures close to good foraging habitat, in particular mature trees, parkland, woodland or wetland, especially in rural setting
Lower	• Modern, well maintained buildings or built structures that provide few opportunities for access by bats • Small cluttered roof space • Buildings and built structures comprised primarily of pre-fabricated steel and sheet materials • Cool, shaded, light or draughty roof voids • Roof voids with a dense over of cobwebs and no sections of clean ridge board • High levels of regular disturbance • Highly urbanised location with few or no mature trees, parkland, woodland or wetland • High levels of external lighting.

Table E4: Criteria for Assessing the Value of Habitat Features for Bats (Taken from Hundt, L. 2012).

Value	Criteria
Low Increasing site value for bats High	• No features likely to be used by bats (for roosting, foraging, and commuting). • Small number of potential (opportunistic) roost sites (i.e. probably not maternity roosts or hibernacula). • Isolated habitat that could be used by foraging bats e.g. a lone tree or patch of scrub (not parkland). • Isolated site not connected by prominent linear features to suitable adjacent / other foraging habitat. • Several potential roosts in the buildings, trees or other structures. • Habitat could be used by foraging bats e.g. trees, shrub, grassland or water. • Site is connected with the wider landscape by linear features that could be used by commuting bats e.g. lines of trees and scrub or linked back gardens. • Buildings, trees or other structures (such as mines, caves, tunnels, ice houses and cellars) with features of particular significance for roosting bats. • Habitat of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland. • Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river/stream valleys or hedgerows. • Site is close to known roost. • Bats recorded or observed using an area for foraging or commuting close to a potential roost.
Confirmed presence	• Evidence indicates a building, tree or other structure is used by bats e.g.: ○ bats seen roosting or observed flying from a roost or freely in the habitat ○ droppings, carcasses, feeding remains, etc. found; and/or bats heard 'chattering' inside on a warm day or at dusk.

Appendix F - Report Conditions

WYG Environment Planning Transport Ltd

C1 – Report Conditions

ECOLOGY PHASE 1 HABITAT SURVEY

This report is produced solely for the benefit of National Grid Property Holdings Limited and no liability is accepted for any reliance placed on it by any other party unless specifically agreed in writing otherwise.

This report is prepared for the proposed uses stated in the report and should not be used in a different context without reference to WYG. In time improved practices, fresh information or amended legislation may necessitate a re-assessment. Opinions and information provided in this report are on the basis of WYG using due skill and care in the preparation of the report.

This report refers, within the limitations stated, to the environment of the site in the context of the surrounding area at the time of the inspections. Environmental conditions can vary and no warranty is given as to the possibility of changes in the environment of the site and surrounding area at differing times.

This report is limited to those aspects reported on, within the scope and limits agreed with the client under our appointment. It is necessarily restricted and no liability is accepted for any other aspect. It is based on the information sources indicated in the report. Some of the opinions are based on unconfirmed data and information and are presented as the best obtained within the scope for this report.

Reliance has been placed on the documents and information supplied to WYG by others but no independent verification of these has been made and no warranty is given on them. No liability is accepted or warranty given in relation to the performance, reliability, standing etc of any products, services, organisations or companies referred to in this report.

Whilst skill and care have been used, no investigative method can eliminate the possibility of obtaining partially imprecise, incomplete or not fully representative information. Any monitoring or survey work undertaken as part of the commission will have been subject to limitations, including for example timescale, seasonal and weather related conditions.

Although care is taken to select monitoring and survey periods that are typical of the environmental conditions being measured, within the overall reporting programme constraints, measured conditions may not be fully representative of the actual conditions. Any predictive or modelling work, undertaken as part of the commission will be subject to limitations including the representativeness of data used by the model and the assumptions inherent within the approach used. Actual environmental conditions are typically more complex and variable than the investigative, predictive and modelling approaches indicate in practice, and the output of such approaches cannot be relied upon as a comprehensive or accurate indicator of future conditions.

The potential influence of our assessment and report on other aspects of any development or future planning requires evaluation by other involved parties.

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during

construction. WYG accept no liability for issues with performance arising from such factors

November 2008

WYG Environment Planning Transport Ltd