

12 APPENDICES: Ecology

APPENDIX 12.1: LEGISLATION POLICY AND GUIDANCE

LEGISLATION, POLICY AND GUIDANCE

1.1 SPECIES PROTECTION

1.1.1 A level of statutory protection is afforded to specific species; the various statutes of which provide this protection include the following:

- The Wildlife & Countryside Act (WCA) 1981;
- Countryside and Rights of Way (CROW) Act 2000;
- The Conservation of Habitats and Species Regulations 2010;
- Natural Environment and Rural Communities Act (NERC) 2006; and
- Wild Mammals (Protection) Act 1996.

Bats

1.1.2 All species of bat and their roosts are protected under the *WCA 1981* (as amended) and *The Conservation of Habitats and Species Regulations 2010*, which is the implementation of the EC Directive on the *Conservation of Natural Habitats and Flora and Fauna, 1992* (the Habitats Directive). This makes it illegal to:

- Intentionally kill, injure or take a bat;
- Damage or destroy a breeding site or resting place of a bat;
- Deliberately disturb a bat, including disturbance of a bat which is likely to:
 1. Impair their ability to survive, to breed or reproduce, to rear or nurture their young, or to hibernate or migrate.
 2. Affect significantly the local distribution or abundance of bats.
- Possess, transport or sell a bat.

1.1.3 A European Protected Species (EPS) licence can be issued by Natural England for scientific, research purposes (including survey work), and for the disturbance of bats in relation to a development. Licences can only be granted if there is no satisfactory alternative or if the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

Otters

1.1.4 Otters are protected under the *WCA 1981* (as amended) and *The Conservation of Habitats and Species Regulations 2010*, which is the implementation of the EC Directive on the *Conservation of Natural Habitats and Flora and Fauna, 1992* (the Habitats Directive). This makes it illegal to:

- Intentionally kill, injure or take an otter;
- Damage or destroy a breeding site or resting place of an otter;
- Deliberately disturb an otter, including disturbance of an otter which is likely to:
 3. Impair their ability to survive, to breed or reproduce, to rear or nurture their young, or to hibernate or migrate.
 4. Affect significantly the local distribution or abundance of otters.
- Possess, transport or sell an otter.

1.1.5 An EPS licence can be issued by Natural England for the disturbance of otters in relation to a development. Licences can only be granted if there is no satisfactory alternative or if the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

1.2 PLANNING POLICY

National Planning Policy

National Planning Policy Framework (NPPF) March 2012

1.2.1 Published in March 2012, the NPPF sets out the Government's planning policies for England.

1.2.2 The NPPF states that the planning system should contribute to and enhance the natural and local environment by:

- recognising the wider benefits of ecosystem services; and,
- 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.

1.2.3 Planning policies and decisions should encourage the effective use of land by re-using land that has been previously developed (brownfield land), provided that it is not of high environmental value. Local planning authorities may continue to consider the case for setting a locally appropriate target for the use of brownfield land.

1.2.4 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. Distinctions should be made between the hierarchy of international, national and locally designated sites, so that protection is commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks.

1.2.5 Local planning authorities should:

- set out a strategic approach in their Local Plans, planning positively for the creation, protection, enhancement and management of networks of biodiversity and green infrastructure; and,
- maintain the character of the undeveloped coast, protecting and enhancing its distinctive landscapes, particularly in areas defined as Heritage Coast, and improve public access to and enjoyment of the coast.

1.2.6 Great weight should be given to conserving landscape and scenic beauty in National Parks, the Broads and Areas of Outstanding Natural Beauty, which have the highest status of protection in relation to landscape and scenic beauty. The conservation of wildlife and cultural heritage are important considerations in all these areas, and should be given great weight in National Parks and the Broads.

1.2.7 Planning permission should be refused for major developments in these designated areas except in exceptional circumstances and where it can be demonstrated they are in the public interest. Consideration of such applications should include an assessment of:

- the need for the development, including in terms of any national considerations, and the impact of permitting it, or refusing it, upon the local economy;
- the cost of, and scope for, developing elsewhere outside the designated area, or meeting the need for it in some other way; and,
- any detrimental effect on the environment, the landscape and recreational opportunities, and the extent to which that could be moderated.

1.2.8 To minimise impacts on biodiversity and geodiversity, planning policies should:

- plan for biodiversity at a landscape-scale across local authority boundaries;

- identify and map components of the local ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by local partnerships for habitat restoration or creation;
- promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations, linked to national and local targets, and identify suitable indicators for monitoring biodiversity in the plan; and,
- where Nature Improvement Areas are identified in Local Plans, consider specifying the types of development that may be appropriate in these Areas.

1.2.9 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;
- proposed development on land within or outside a Site of Special Scientific Interest likely to have an adverse effect on a Site of Special Scientific Interest (either individually or in combination with other developments) should not normally be permitted. Where an adverse effect on the site's notified special interest features is likely, an exception should only be made where the benefits of the development, at this site, clearly outweigh both the impacts that it is likely to have on the features of the site that make it of special scientific interest and any broader impacts on the national network of Sites of Special Scientific Interest;
- development proposals where the primary objective is to conserve or enhance biodiversity should be permitted;
- opportunities to incorporate biodiversity in and around developments should be encouraged;
- planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland and the loss of aged or veteran trees found outside ancient woodland, unless the need for, and benefits of, the development in that location clearly outweigh the loss; and,
- the following wildlife sites should be given the same protection as European sites:
 - potential Special Protection Areas and possible Special Areas of Conservation;
 - listed or proposed Ramsar sites; and
 - sites identified, or required, as compensatory measures for adverse effects on European sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

1.2.10 The presumption in favour of sustainable development does not apply where development requiring appropriate assessment under the Birds or Habitats Directives is being considered, planned or determined.

1.2.11 By encouraging good design, planning policies and decisions should limit the impact of light pollution from artificial light on local amenity, intrinsically dark landscapes and nature conservation.

1.2.12 Planning law requires that applications for planning permission must be determined in accordance with the development plan, unless material considerations indicate otherwise. The National Planning Policy Framework must be taken into account in the preparation of local and neighbourhood plans, and is a material consideration in planning decisions. Planning policies and decisions must reflect and where appropriate promote relevant EU obligations and statutory requirements.

Planning Policy Statement (PPS) 9: Biodiversity and Geological Conservation

1.2.13 PPS 9 sets out the Government's national planning policies on protection of biodiversity through the planning system. These policies are incorporated into development planning documents at regional and

local scales, and are also of material worth in considering individual planning applications. There is a sequential approach to biodiversity in the planning process set out in Key Principles I (vi), which is as follows:

- Avoidance of harm;
- Consideration of reasonable alternatives;
- Mitigation where harm cannot be avoided;
- Compensation where impacts cannot be prevented or adequately mitigated against; and;
- *“if that significant harm cannot be prevented, adequately mitigated against, or compensated for, then planning permission should be refused.”*

1.2.14 PPS 9 places particular emphasis upon natural habitat types that are recognised as being of principal importance (under Section 41, NERC Act 2006), and advises that opportunities to enhance and extend these are desirable; and that development proposals incorporating good design that provide new opportunities for the enhancement of biodiversity at a site are viewed favourably by the local planning authorities.

Local Planning Policy

Barnsley Core Strategy

1.2.15 The BCS provides a spatial strategy for the future development of Barnsley up to the year 2026. The Core Strategy sets out the key elements of the planning framework for Barnsley, and the approach to its long term physical development. The BCS went through a process of public consultation between February and April 2010.

1.2.16 Within the BCS the following policies are relevant to the assessment:

- CSP 33 – Green Infrastructure states that:

“We will create, maintain and enhance an integrated network of connected and multi-functional open spaces that:

- *provides attractive environments where people want to live, work, learn, play, visit and invest;*
- *meets the environmental, social and economic needs of communities across the borough and the wider City Regions;*
- *enhances the quality of life for present and future residents and visitors;*
- *helps to meet the challenge of climate change;*
- *enhances biodiversity and landscape character;*
- *improves opportunities for recreation and tourism;*
- *respects local distinctiveness and historical and cultural heritage; and*
- *maximises potential economic and social benefits.*

At a strategic level Barnsley's Green Infrastructure network includes the following corridors which are shown on the Green Infrastructure Diagram 5:

- *River Dearne Valley Corridor;*
- *River Dove Valley Corridor;*
- *River Don Valley Corridor;*
- *Dearne Valley Green Heart Corridor; and*
- *Historic Landscape Corridor.*

The network of green infrastructure will be secured by protecting open space, creating new open spaces as part of new development, and by using developer contributions to create and improve green infrastructure.

We will produce a Green Infrastructure Strategy for Barnsley which will be informed by the Leeds City Region and South Yorkshire Green Infrastructure Strategies”.

■ CSP 34 – Protection of Green Belt states that;

“The general extent of the Green Belt is shown on the Core Strategy Key Diagram.

Its detailed boundaries will be shown on the Proposals Maps which will accompany the Development Sites and Places DPD.

In order to protect the countryside and open land around built up areas the extent of the Green Belt will be safeguarded and remain unchanged.

The Green Belt boundaries will be subject to localised review only which may result in changes necessary to deliver the Borough's spatial strategy.

Development in the Green Belt must meet the requirements of PPG2”.

■ CSP 35 – Green Space states that;

“We will work with partners to improve existing green space to meet the standards in our Green Space Strategy.

Green space refers to any land within or close to towns and village that is or could be used by people for recreation or by wildlife.

We will only allow development proposals that result in the loss of green space where:

- *an assessment shows that there is too much of that particular type of green space in the area which it serves and its loss would not affect the existing and potential green space needs of the borough; or*
- *an appropriate replacement green space of at least an equivalent community benefit, accessibility and value is provided in the area which it serves; or*
- *the development is for small scale facilities needed to support or improve the proper function of the green space.*

We will assess the need for green space against the standards in our Green Space Strategy”.

■ CSP 36 – Biodiversity and Geodiversity states that.

“Development will be expected to conserve and enhance the biodiversity and geological features of the Borough by:

- *protecting and improving habitats, species, sites of ecological value and sites of geological value with particular regard to designated wildlife and geological sites of international, national and local significance, ancient woodland and species and habitats of principal importance identified in Section 74 of the Countryside and Rights of Way Act 2000 and in the Barnsley Biodiversity Action Plan;*
- *maximising biodiversity and geodiversity opportunities in and around new developments; and*
- *conserving and enhancing the form, local character and distinctiveness of the river corridors of the Dearne and Dove as natural floodplains and important strategic wildlife corridors.*

Development which may harm a biodiversity or geological feature will not be permitted unless effective mitigation and/or compensatory measures can be ensured”.

APPENDIX 12.2: EXTENDED PHASE 1 HABITAT SURVEY



UNITED
BY OUR
DIFFERENCE



Title: Old Mill Lane, Barnsley, South Yorkshire:
Extended Phase 1 Habitat Survey

Client: Peel Holdings

Date: November 2011

QUALITY MANAGEMENT

Issue/revision	Issue 1	Revision 1	Revision 2	Revision 3
Remarks				
Date	24/11/2011			
Prepared by	Matt Oakley			
Signature				
Checked by	Richard Gill			
Signature				
Authorised by	Richard Gill			
Signature				
Project number	20470			
File reference	Old Mill Lane Ex Phase 1 Survey			

WSP Environment & Energy
One Queens Drive
Birmingham
B5 4PJ

Tel: 0121 352 4700
Fax: 0121 352 4701

www.wspenvironmental.com

1152332

CONTENTS

EXECUTIVE SUMMARY	1
1 INTRODUCTION	2
2 METHODOLOGY	3
3 RESULTS	6
4 EVALUATIONS AND RECOMMENDATIONS	11
5 CONCLUSIONS	Error! Bookmark not defined.
6 REFERENCES	13
Figure 12.2 Extended Phase 1 Habitat Survey	14

Appendix A	Notes and Limitations
Appendix B	Legislative Backgroun
Appendix C	Site Photogrpahs

EXECUTIVE SUMMARY

Site Name	Old Mill Lane, Barnsley
Site Location	Old Mill Lane, Barnsley, South Yorkshire National Grid Reference SE 351 072
Survey Type	Extended phase 1 habitat survey
Survey Date	5 May 2011
Site Description	Site is approximately 6.5 hectares in size, consisting of numerous buildings, broadleaved plantation woodland, bare ground, hard standing and flowing water (River Dearne).
Species Present	Daubenton's bats (<i>Myotis daubentonii</i>)
Species Potentially Present	Other bat species Otters (<i>Lutra lutra</i>) Water vole (<i>Arvicola amphibious</i>)
Ecological Constraints	Roosting bats in a culvert within the site adjacent to River Dearne. Nesting birds.
Recommendations for Further Survey Work	Bat emergence surveys of the culvert. Bat activity surveys of the site. Water vole and otter survey of the River Dearne



1 INTRODUCTION

1.1 BASELINE

1.1.1 WSP Environmental Limited (WSPE) was instructed by Peel Holdings (the client) to undertake an extended Phase 1 habitat (Institute of Environmental Assessment (IEA, 1995) and Joint Nature Conservation Committee (JNCC), 2007) of an area of land (the Site) situated at Old Mill Lane, Barnsley, South Yorkshire proposed for future redevelopment into mixed use.

1.1.2 The extended Phase 1 habitat survey was undertaken on 5th May 2011 by Matt Oakley, Senior Ecologist with WSPE, which included the mapping of vegetation and preparation of Target Notes (TN), to provide a broad habitat inventory for the Site and inform the need for any necessary subsequent protected species surveys or other important species and habitat surveys.

1.1.3 The aim of this study is to:

- Undertake a desk-top study to identify any existing information regarding protected habitats and species within a defined radius of the Site;
- To carry out a Site survey to provide a description of the existing broad habitat types, and to identify the presence or potential presence of any protected species;
- Produce a report detailing the findings of the desk-top study and the Site survey, including any key ecological constraints to the proposed development;
- Provide recommendations for further necessary ecological survey work, and any mitigation measures required; and
- Identify any enhancement measures that may be available.

1.1 SITE OVERVIEW AND DETAILS OF THE PROPOSALS

1.1.1 The Site is centred on National Grid Reference SE 351 072 and covers an area of approximately 6.5 hectares (ha) (see **Figure 12.1** for Site boundary). The Site is bordered to the west by Old Mill Lane, to the south by Twibell Street, to the north by Burton Road and to the east by Dearne Valley Country Park. The Site is set within the urban landscape of Barnsley with both residential and commercial developments in close proximity to the Site. To the west of the Site is The Fleets, a lake next to the River Dearne, and to the east is the Dearne Valley Country Park which consists of a mix of grassland, woodland and ponds..

1.1.2 The Site includes numerous buildings, broad leaved plantation woodland, bare ground, hardstanding and the River Dearne.

1.1.3 The client's aspiration is to redevelop the Site into mixed use.

1.2 STUDY LIMITATIONS

1.2.1 The extended Phase 1 habitat survey was undertaken during the optimal period (April to September) and therefore the type of habitats present and the plant species recorded at the time of the survey are sufficient to allow a robust classification of the value of each habitat type to be made.

1.2.2 Species lists included in the extended Phase 1 habitat survey TN's are not necessarily an exhaustive inventory of all species occurring at the Site. They are intended to illustrate the general species-richness of a particular area, and draw attention to any species that may be considered uncommon or unusual.

1.2.3 General notes and limits pertaining to ecological surveying are provided in **Appendix A**.



2 METHODOLOGY

2.1 OVERVIEW

2.1.1 The study comprised two phases: a desk study consultation exercise and field survey comprising an extended Phase 1 habitat survey. By combining the two phases it is possible to identify and evaluate the ecological value of the Site in order to determine the potential impacts of the re-development of the Site.

2.2 DESK STUDY

2.2.1 The purpose of the desk study is to review information available in the public domain and to obtain information held by statutory and non-statutory consultees. Information was requested for the Site and an area within a 2 kilometre (km) radius of the Site as recommended in the Institute of Environmental Assessment's '*Guidelines for Baseline Ecological Assessment*' (1997). This was extended to 5km as recommended in the *Bat Mitigation Guidelines* (English Nature, 2004).

2.2.2 Information was requested from the following organisations:

- Yorkshire Wildlife Trust (YWT);
- Barnsley Metropolitan Borough Council (BMBC);
- South Yorkshire Bat Group (SYBG); and
- The Environment Agency (EA).

2.2.3 The following meta-databases were searched for information regarding protected habitats and species:

- NBN (National Biodiversity Network) Gateway;
- MAGIC (Multi-Agency Geographic Information for the Countryside); and
- Nature on the Map – <http://www.natureonthemap.org.uk>.

2.2.4 The following report detailing previous survey work undertaken at the Site has been reviewed:

- *Old Mill Lane (A61) Culvert, Barnsley: Bat Survey* (Eric Bennett Consultancy, 2004); and
- *Old Mill Lane Culvert Bat Roost Site (Candidate Site): NHS Assessment and Phase 1 Survey* (TEP, 2011).

2.3 FIELD SURVEY

2.3.1 The field survey of the Site was conducted on 5th May 2011.

Extended Phase 1 habitat survey

2.3.2 The extended Phase 1 habitat survey of the Site aims to record the broad habitat types present, as well as identify any evidence of protected or notable species, or habitat with the potential to support such species. This is achieved through direct observation and through searching for field signs for each species (IEA, 1995).

2.3.3 The dominant plant species were recorded and habitats classified according to their vegetation types and presented in the standard Phase 1 habitat survey format (JNCC, 2007). TN's were made on species and habitats of conservation interest.

2.3.4 Evidence of any species protected by law, or other species of particular conservation interest was recorded where they were found during the field surveys. Because of the habitats present on Site, special attention was paid to the potential suitability for the following species:

- Bats (*Chiroptera*);
- Otter; and
- Water vole.



Bat Roost Potential Assessment

2.3.5 Seven buildings on Site (TN1-7) were assessed by a licenced bat worker (licence number 20102281) to determine their potential to support roosting bats. The survey was commensurate with good practice, following the guidance set out in *Bat Surveys Good Practice Guidelines* (BCT, 2007). Each building was classified as having either negligible, low, moderate, high potential, or as a confirmed bat roost, dependent upon the features of the building. These features include gaps under roof and ridge tiles, and around leaf flashing; holes in the roof or gable end of the building; and gaps under the eaves.

2.3.6 All buildings were externally assessed. None of the buildings exhibited any potential to support roosting bats and therefore no internal survey of any of the buildings was undertaken.

2.3.7 The criteria for assessing the potential of each building to support roosting bats are outlined below in Table 1.

Table 1: Criteria for Bat Roost Potential Assessment of Buildings

Bat Roost Potential	Description
Negligible	The structure lacks any features suitable for roosting bats.
Low	The structure may have some interest to roosting bats, i.e external roosting features such as fascia or soffit boards, but is considered to be sub-optimal to the extent that bats would not be anticipated to use it.
Moderate	The structure exhibits features suitable to be for use by roosting bats, such as internal and external cavities well insulated from external weather conditions, but is less than ideal in some way. It may be situated in less than ideal habitat, lacking suitable commuting corridors.
High	The structure exhibits a number of features suitable for use by roosting bats i.e numerous roosting opportunities such as dark, enclosed roof voids; the structure has a high degree of connectivity with likely navigation routes; and the building is located within suitable foraging habitat, likely to be noticed by commuting bats.
Confirmed	Positive signs of bats are recorded within the structure (internally or externally), such as individual bats or bat droppings.

2.3.8 Mature trees on Site were assessed for their potential to support roosting bats, following the guidance set out in *Bat Surveys Good Practice Guidelines* (BCT, 2007). Each tree was categorised according to the BCT guidelines based upon the features of the tree, taken to include cracks, splits and holes in the trunk and branches, as well as a covering of dense ivy.

2.3.9 The criteria for assessing the potential of each building to support roosting bats are outlined below in Table 2.

Table 2: Criteria for Bat Roost Potential Assessment of Structure

Tree Category	Description
1	Confirmed bat roost tree with field evidence of the presence of bats, e.g. droppings, scratch marks, grease marks or urine staining.
2a	Trees that have a high potential to support bat roosts - the tree exhibits a number of features suitable for use by roosting bats i.e numerous roosting opportunities such as dark, enclosed upward leading cavities and the tree has a high degree of connectivity with likely navigation routes.
2b	Trees with a moderate/low potential to support bat roosts - the tree exhibits features suitable to be for use by roosting bats, such as holes and cracks in the trunk, but is less than ideal in some way.
3	Trees with negligible potential to support bat roosts – the tree lacks features suitable for use by bats to the extent that bats would not be anticipated to use it.



2.4 LEGISLATIVE BACKGROUND

2.4.1 Relevant legislation pertaining to the Proposed Development of the Site and the species either present or potentially present is detailed in **Appendix B**.

3 RESULTS

3.1 DESK STUDY

Statutory Sites

3.1.1 No internationally or nationally designated sites are present within 2km of the Site.

3.1.2 Dearne Valley Park Local Nature Reserve (LNR) is situated adjacent to the eastern Site boundary. The reserve has been developed from relict habitats and reclaimed colliery around the river valley. The reserve consists of ancient acidic oak woodland, mixed plantation and willow dominated woodland, as well as areas of open grassland and scrub and a mosaic of wetland habitats including two ponds.

Non-statutory Sites

3.1.3 Two Local Wildlife Sites (LWS) and one proposed LWS are present within 2km of the Site, which are detailed below in Table 3:

Table 3:Details of LWS within 2km of Site

Designated Site	Status	Distance and Direction from the Site	Summary
Old Mill Lane Culvert Bat Roost	Candidate LWS	Within Site	Nationally important Daubentons bat roost within Old Mill Lane culvert adjacent to the River Dearne which flows through the Site. Peak count of 412 bats recorded in 1990.
Cliffe Wood	LWS	0.35km east	The site is a mosaic of habitats including woodland, scrub, grassland, marsh and open water. Much of the woodland is a good example of oak/birch woodland and there are areas of representative willow carr.
Barnsley Canal at Wilthorpe	LWS	0.7km north west	The site includes a stretch of the canal, part of the old course of the river, swamp and grassland. The site supports an assemblage of breeding and over wintering birds and the area supports populations of amphibians such as common toad, common frog and smooth newt. Great crested newt have also been reported at Willowbank.

Protected Species

3.1.4 The following protected species relevant to the scheme have been recorded within the Desk Study Search Area:

Otters

3.1.5 Otters have been recorded on the River Dearne 700 metres (m) north west of the Site in 2007. They have also been recorded 3.2km south east of the Site.

Bats

3.1.6 SYBG provided records of bats within 5km of the Site, as recommended by the *Bat Mitigation Guidelines* (English Nature 2004). The following species have been recorded:

- Daubentons bat – a roost of over 400 bats has been recorded within the Site since the 1990's;

- Soprano pipistrelle (*Pipistrellus pygmaeus*);
- Common pipistrelle bat (*Pipistrellus pipistrellus*); and
- Brown long-eared bat (*Plecotus auritus*).

3.1.7 A number of consultees have provided details of the Daubentons bat roost located within the culvert adjacent to the River Dearne in the south west of the Site (see **Figure 12.2**).

3.1.8 The brick culvert is approximately 2m wide, 1.5m high and 90m long, running from the River Dearne banks adjacent to the Old Mill Lane road bridge within the Site (Eric Bennett 2004). The head of the culvert lies beneath the entrance threshold to the former gas site. The roost chamber itself is hidden between the tarmac road surface and the roof of the culvert approximately 1.04m below the road surface, although the exact size of the roost chamber is currently unknown. The bats gain access to the roost chamber through small openings in a manhole type feature in the culvert roof.

3.1.9 In addition there are five small and much older stone culverts leading off the main culvert and crossing beneath Old Mill Lane (see **Figure 12.2**).

3.1.10 A number of monitoring surveys have undertaken at this Site since 1990 when the bat roost was first discovered. The counts have been summarised below in Table 4:

Table 4: Peak counts of Daubentons bats within culvert

Year	Peak Count (individual bats)	Surveyor
1990	412	National Bat Monitoring Programme
1991	325	National Bat Monitoring Programme
1992	316	National Bat Monitoring Programme
1993	309	National Bat Monitoring Programme
1994	286	National Bat Monitoring Programme
1995	266	National Bat Monitoring Programme
1996	196	National Bat Monitoring Programme
1997	261	National Bat Monitoring Programme
1998	No records	National Bat Monitoring Programme
1999	258	National Bat Monitoring Programme
2000	304	National Bat Monitoring Programme
2001	No records	National Bat Monitoring Programme
2002	257	National Bat Monitoring Programme
2003	293	National Bat Monitoring Programme
2010 (September)	67	TEP (on behalf of BMBC)
2011	82	Eric Bennett

3.1.11 There is no evidence that the bats use the culvert in the winter months due to the fact that during high water levels the culvert floods.

Fish

3.1.12 The EA provided records for the River Dearne 2km east of the Site between 2007 and 2010. Species recorded here are:



- Barbel (*Barbus barbus*);
- Common bream (*Abramis brama*);
- Brown trout (*Salmo trutta morpha fario*);
- Bullhead (*Cottus gobio*);
- Chub (*Leuciscus cephalus*);
- Dace (*Leuciscus leuciscus*);
- Gudgeon (*Gobio gobio*);
- Minnow (*Phoxinus phoxinus*);
- Roach (*Rutilus rutilus*);
- Stone loach (*Barbatula barbatula*);
- Perch (*Perca fluviatilis*); and
- Pike (*Esox lucius*).

Aquatic Invertebrates

3.1.13 The EA provided records for the River Dearne 700m north west of the Site between 1995 and 2010. The lowest Biological Monitoring Working Party (BMWP) score recorded was 30 (May 1995) and the highest was 105 (May 2009). The BMWP is an index for measuring the biological quality of rivers using species of macroinvertebrates as biological indicators. Since 2008, the scores recorded have been 77, 101, 105, 95 and 75, with an average BMWP score of 90.6. This score equates to a river quality of Good, clean but slightly impacted.

White clawed crayfish

3.1.14 Trevor Mayne BMBC Biodiversity Officer supplied details of white-clawed crayfish (*Austropotamobius pallipes*) surveys that were undertaken by the county recorder in 2010 of the River Dearne at both the Site, and upstream and downstream of the Site. No white-clawed crayfish were recorded during these surveys, and combined with the fact that signal crayfish have been recorded within the River Dearne, and the history of pollution within the River Dearne, white-clawed crayfish are not thought to be present within the River Dearne in Barnsley.

Flora and Habitats

3.2 FIELD SURVEY

3.2.1 The Site comprises of the following habitats:

- River Dearne (G2);
- Broad-leaved plantation woodland (A1.2);
- Hardstanding;
- Buildings (J3.6); and
- Bare ground (J4).

Habitat descriptions

3.2.2 The survey results below should be read in association with the extended Phase 1 habitat map (**Figure 12.1**). These descriptions are based on the findings of the May 2011 survey.

River Dearne (G2)

3.2.3 The River Dearne flows west to east through the centre of the Site. At the western end of the Site, where the river flows into the Site underneath Old Mill Lane, the River Dearne is shallow and fast flowing with a substrate



consisting of rocks and boulders. There is a culvert on the northern bank of the river adjacent to the bridge which is known to support a large Daubentons bat roost (TN1).

3.2.4 From the western boundary of the Site up until the gas holder (TN2) on the southern bank the river is confined within tall retaining walls, thereafter the river is within more naturally vegetated banks. The whole section is thickly covered with trees, mostly Sycamore (*Acer pseudoplatanus*) and alder (*Alnus glutinosa*) overhanging and shading the river and creating a tunnel effect.

3.2.5 As the River Dearne flows east through the Site the channel becomes wider and deeper and the banks are dominated by scrub and marginal aquatic plants such as common reed (*Phragmites australis*) and meadowsweet (*Filipendula ulmaria*). Invasive species Japanese knotweed (*Fallopia japonica*), giant hogweed (*Heracleum mantegazzianum*) and Himalayan balsam (*Impatiens glandulifera*) are all present growing on the banks of the River Dearne towards the eastern end of the Site (TN3).

3.2.6 The River Dearne as it flows through Barnsley has been classified as being of Good quality following Biological Monitoring Working Party (BMWP) guidance.

Broad-leaved plantation woodland (A1.2)

3.2.7 A strip of broad-leaved woodland is present along the northern and southern banks of the River Dearne. The main species present are alder, willow (*Salix* sp.) and sycamore, many of which overhang the river channel. The ground flora is relatively sparse here due to the density of the woodland canopy.

Hardstanding

3.2.8 Areas of hardstanding are present throughout the Site south of the River Dearne associated with the buildings, which has no ecological value.

Buildings (J3.6)

3.2.9 Five warehouses are present south of the River Dearne (TN4-8), along with the gas holder at the centre of the Site and a small brick built electrical substation (TN9) adjacent to the western boundary of the Site. These buildings were assessed for their potential to support roosting bats and have all been classified as having Negligible potential due to them lacking any suitable features such as roof voids, or gaps beneath loose roof and ridge tiles and gaps behind lead flashing.

Bare ground

3.2.10 During the extended Phase 1 habitat survey undertaken in April 2011 construction of the road to access the proposed development had already commenced and therefore the majority of the Site north of the River Dearne consists of bare ground with the associated construction materials and plant and equipment.

Species

Bats

3.2.11 All of the buildings within the Site were classified as having Negligible potential to support roosting bats.

3.2.12 All of the trees within the Site were classified as Category 3 trees (BCT 2007) meaning they all have Negligible potential to support roosting bats.

3.2.13 The culvert adjacent to the River Dearne is known to support a large Daubentons bat roost, with peak counts of 400 bats recorded.

3.2.14 The River Dearne and the plantation woodland along its bank provide good foraging habitat for bats,

Birds

3.2.15 The Site does not possess any features that would suggest it would be of any special ornithological value. The small strip of broad leaved plantation woodland is likely to be used by small numbers of commoner nesting bird species. The buildings also provide nesting locations, although no evidence of this was recorded during the extended Phase 1 habitat survey undertaken in April 2011.

3.2.16 The River Dearne provides suitable foraging habitat for kingfisher (*Alcedo atthis*), although given the lack of suitable overhanging banks it is unlikely that this species breeds within the Site. No records of this species being present within 2km of the Site were returned during the 2011 desk study consultation.



Water vole

3.2.17 The River Dearne provides sub-optimal habitat for this species. The western end of the rivers banks have been reinforced with metal sheeting on both sides making it unsuitable for this species. The eastern end of the River Dearne, as it flows towards the Dearne Valley Country Park becomes more vegetated, providing more opportunities for this species to burrow and forage.

Otter

3.2.18 The River Dearne provides an optimal dark corridor of movement through the landscape for this species, which is known to have linear territories of up to 40km for males. There is no suitable locations for an otter breeding holt either within or adjacent to the Site.

Other species

3.2.19 No evidence of any other protected species was recorded within or adjacent to the Site.



4 EVALUATIONS AND RECOMMENDATIONS

4.1 EVALUATION

Protected Sites and Habitats

4.1.1 Dearne Valley Park LNR is adjacent to the eastern boundary of the Site, and Cliffe Wood and Barnsley Canal at Wilthorpe are within 0.35km and 0.7km of the Site boundary respectively. The proposed development will not have any direct impact upon any of these sites. It is not anticipated that any significant impacts to these sites would occur during the operational phase of the proposed development.

4.1.2 The River Dearne provides habitat for bats, including the large Daubentons bat roost known to be present within the Site, and otters. Rivers are also a United Kingdom Biodiversity Action Plan priority habitat. Measures will need to be undertaken to protect this habitat during both the construction and operational phases of the proposed development.

4.1.3 The woodland strip along the River Dearne provides a dark corridor of movement along the River Dearne and this habitat should be retained within any development proposals for the Site.

Species

4.1.4 The Site is known to support roosting Daubentons bats.

4.1.5 The habitats on Site have the potential to support the following legally protected species:

- Other bat species;
- Water vole;
- Otter; and
- Birds.

4.1.6 The culvert supports roosting bats. Further survey work will need to be undertaken to determine the exact numbers of roosting bats in this location, along with the potentially significant foraging areas and commuting routes within the Site.

4.1.7 The River Dearne has potential to be used by commuting otters, as recent records exist of this species both west and east of the Site.

4.1.8 The River Dearne provides sub-optimal habitat for water vole and no records exist for this species within 2km of the Site. It is unlikely that water vole are present within the Site.

4.1.9 A number of common bird species are likely to breed in the area and an indicative species list has been compiled during the Phase 1 habitat survey. Although this does not constitute a full breeding bird survey, the level of baseline information gathered for this assessment is considered to be appropriate to the scale of the potential impacts to breeding birds.

Impacts

4.1.10 Bats and their roosts are protected from disturbance, damage and destruction under the *The Conservation of Habitats and Species Regulations 2010*. Attention will need to be paid to the presence of bats within on the culvert on Site, to comply with existing legislation. The loss of any roosts could affect future juvenile recruitment to the local bat population.

4.1.11 Otters and their places of shelter are also protected from disturbance, damage and destruction under the *The Conservation of Habitats and Species Regulations 2010*. Attention will need to be paid to the potential presence of otters commuting along the River Dearne to comply with existing legislation. Increases in lighting and noise disturbance in the vicinity of the river could prevent otters commuting through the site to reach favoured breeding or foraging sites.

4.1.12 Site clearance activity could also lead to the destruction of bird's nests depending upon what time of year this takes place. All species of wild birds and their nests are protected, with Schedule 1 birds receiving extra protection, under the *Wildlife & Countryside Act, 1981*.



4.2 RECOMMENDATIONS

Bats

4.2.1 Further survey work should be undertaken to determine the value of the Site for bat species. Emergence surveys of the culvert should be undertaken, with two to three surveys being carried out between May and September to record any potential maternity (breeding) roosts. The loss of any roost will need to be compensated for within the development of the Site, typically on a like for like basis. Any work affecting a roost will need to be carried out under the provision of a European Protected Species licence granted by Natural England.

4.2.2 It is recommended that two bat activity surveys are also undertaken to determine the location of any potentially significant foraging or commuting locations within the Site. These surveys should be undertaken between April and September and could be undertaken immediately following the emergence surveys.

Otter and Water Vole

4.2.3 An otter survey should be undertaken on the River Dearne to determine if the river is used by commuting otters. This survey involved searching the banks of the river for signs of otter presence such as spraints, prints, feeding remains and slides. Whilst undertaking the otter survey it is also recommended that signs of water vole presence are searched for which include burrows, latrines and feeding remains.

4.2.4 The otter survey can be undertaken at any time of the year, though it is recommended that this survey is undertaken between April and September during the optimal time to record water vole presence.

Birds

4.2.5 As a general recommendation, buildings and vegetation should be removed outside of the bird breeding season, which is generally considered to be March to August inclusive. If this is not possible then buildings and vegetation should be checked immediately prior to removal by a suitably qualified ecologist. Any active nests identified must be retained with a 5m buffer until such time as the nest is deemed, by a suitably qualified ecologist to be no longer supporting young.

4.2.6 Artificial nesting sites, such as nest boxes, should be provided within the proposals, and swift boxes could be installed on new buildings to provide nesting sites for this declining species.

General Recommendations

4.2.7 Wherever possible mature trees should be retained, in particular native species that supports invertebrate communities which in turn provide a foraging resource for bats and birds. This habitat is not easily replaceable, without extensive cost.

4.2.8 Native planting with wildlife friendly species around the Site will enhance the value of the Site to invertebrate species which in turn will increase foraging opportunities for bats and birds.

4.2.9 Increases in artificial lighting should be avoided in the vicinity of the River Dearne to maintain its viability as a foraging site for bats and commuting route for otters and bats.



5 REFERENCES

DEFRA (Department for Food, Environment and Rural Affairs) et al. (2002) *MAGIC (Multi-Agency Geographic Information for the Countryside)*. Available at: <http://www.magic.gov.uk/> [Date accessed 02.08.07]

HMSO Countryside and Rights of Way Act 2000.

HMSO The Conservation of Habitats and Species Regulations 2010

HMSO Wildlife and Countryside Act 1981.

Institute of Environmental Assessment (1997) Guidelines for Baseline Ecological Assessment.

Nature Conservation Committee (1990) Handbook for Phase I habitat survey: A Technique for Environmental Audit.

Stace, C. (1997) *New Flora of the British Isles*. 2nd Edition. Cambridge University Press.

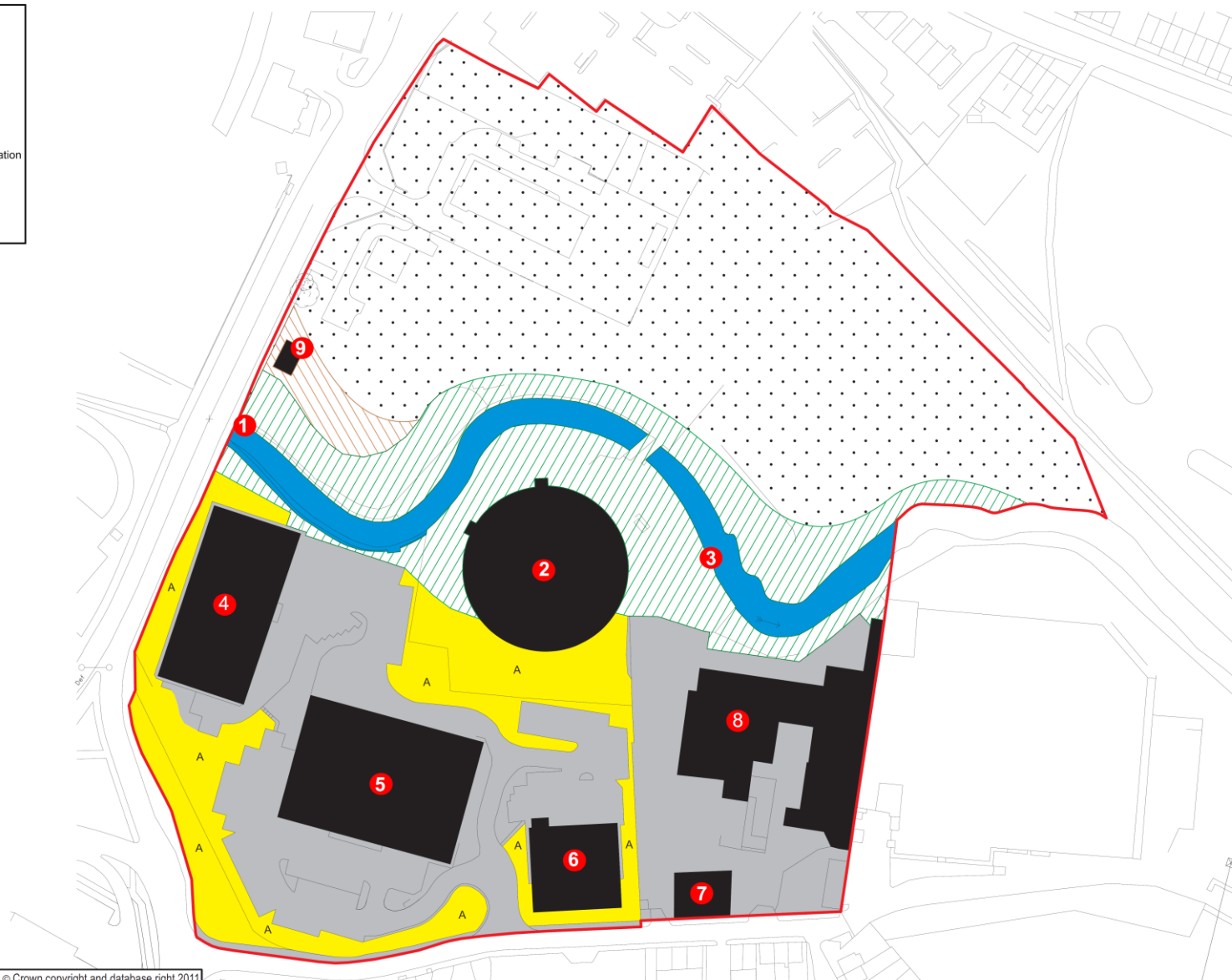
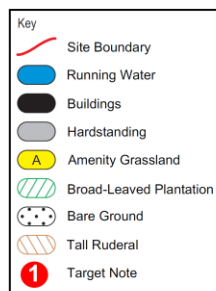


Figure 12.1 Extended Phase 1 Habitat Survey

TARGET NOTES

- 1 Culvert containing Daubentons bat roost;
- 2 Gas holder;
- 3 River Dearne with Japanese knotweed, giant hogweed and Himalayan balsam;
- 4 Warehouse building;
- 5 Warehouse building;
- 6 Warehouse building;
- 7 Warehouse building;
- 8 Warehouse building; and
- 9 Electrical substation.





Contains Ordnance Survey data © Crown copyright and database right 2011

PROJECT: Old Mill Lane, Barnsley
PROJECT No: 20470
CLIENT: Peel Holdings PLC

DRAWN: GH
CHECKED: MO
APPROVED: MO
REVISION: A
DATE: October 2014





Appendix A Notes and Limitations

WSP Environmental staff and their sub-consultants have endeavoured to identify the presence of protected species wherever possible on site, where this falls within the agreed scope of works.

Up to date standard methodologies have been used, which are accepted by Natural England (previously English Nature) and other statutory conservation bodies. No responsibility will be accepted where these methodologies fail to identify all species on site. WSP cannot take responsibility where Government, national bodies or industry subsequently modify standards.

The results of the survey and assessment work undertaken by WSP Environmental were representative at the time of surveying.

WSP Environmental has advised on the optimum survey season for a particular habitat/species prior to undertaking the survey work. However, WSP Environmental cannot accept responsibility for the accuracy of surveys undertaken outside this period.

WSP Environmental cannot accept responsibility for data collected from third parties.



Appendix B Legislative Background

Bats

All species of bat and their roosts are protected under the Wildlife and Countryside Act (WCA) 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010, which is the implementation of the EC Directive on the Conservation of Natural Habitats and Flora and Fauna, 1992 (the Habitats Directive). This makes it illegal to:

- Intentionally kill, injure or take a bat;
- Damage or destroy a breeding site or resting place of a bat;
- Deliberately disturb a bat, including disturbance of a bat which is likely to:
 - Impair their ability to survive, to breed or reproduce, to rear or nurture their young, or to hibernate or migrate.
 - Affect significantly the local distribution or abundance of bats.
- Possess, transport or sell a bat.

Breeding and resting sites of bats, commonly called roosts, are defined as 'any structure or place which is used for shelter or protection', irrespective of whether bats are resident.

In addition to these pieces of legislation, further protection is afforded to bats by 'An Agreement on the Conservation of Bats in Europe' (under the Bern Convention) to which the United Kingdom Government is a signatory. This Agreement places obligations on the Government to protect important bat roosts or foraging areas.

The United Kingdom (UK) Biodiversity Action Plan (BAP) forms part of the UK government's commitment to conserve and enhance national biodiversity following the Rio Convention on Biodiversity in June 1992. The UK BAP Framework describes the UK's biological resources and commits a detailed plan for the protection of these resources. Three types of action plan (Species Action Plans (SAPs), Habitat Action Plans (HAPs) and Local Biodiversity Action Plans (LBAPs)) have been developed which set priorities for nationally and locally important habitats and wildlife.

Wild birds

All species of wild bird and their nests are protected under the WCA 1981 (as amended by the Countryside and Rights of Way Act 2000). This makes it illegal to:

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

Schedule 1 of the Act contains a list of birds which are conferred extra protection. Under the legislation it is illegal to:

- Intentionally or recklessly disturb a Schedule 1 bird whilst it is building a nest or is in or near a nest containing eggs or young; and
- Intentionally or recklessly disturb dependent young of such a bird.

Water vole

5.1.2 The water vole is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). The legislation makes it an offence to:

- Intentionally kill, injure or capture a water vole;
- Possess or control a live or dead water vole, or any part of a water vole or anything derived from a water vole;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place which a water vole uses for shelter or protection – whether occupied or not; and



- Sell, possess or transport a water vole for the purpose of sale, and advertising the buying or selling of a water vole.

5.1.3 The Statutory Nature Conservation Organisation (SNCO) (in this case Natural England) and the Environment Agency should be consulted when any development or maintenance works may affect a water vole population. The SNCO will not issue licences specifically to cover development or waterway maintenance activities in respect to water vole populations. If works cannot be reasonably avoided then the “*incidental result of an otherwise lawful action*” defence will need to be relied upon which provides for the carrying out of lawful operations from which some harm to the species would otherwise be an offence. Attention must be paid to the presence of water voles and as far as is reasonable appropriate action taken to safeguard the animals and the places they use for shelter and protection. If after all options for conserving the water vole population have been considered, that the best outcome for water voles is capture and translocation to a different location, then this action is considered by the SNCO to be outside the scope of the defence. This is because the intentional capture of water voles is unlikely to be considered *incidental* and therefore a conservation licence will need to be obtained from SNCO if it is deemed that the translocation will produce a net conservation benefit to the water vole population concerned.

Otters

5.1.4 Otters are protected under the *Wildlife and Countryside Act 1981* (as amended) and *The Conservation of Habitats and Species Regulations 2010*, which is the implementation of the EC Directive on the *Conservation of Natural Habitats and Flora and Fauna, 1992* (the Habitats Directive). This makes it illegal to:

- Intentionally kill, injure or take an otter;
- Damage or destroy a breeding site or resting place of an otter;
- Deliberately disturb an otter, including disturbance of an otter which is likely to:
 1. Impair their ability to survive, to breed or reproduce, to rear or nurture their young, or to hibernate or migrate.
 2. Affect significantly the local distribution or abundance of otters.
- Possess, transport or sell an otter.

5.1.5 A European Protected Species (EPS) licence can be issued by Natural England for the disturbance of otters in relation to a development. Licences can only be granted if there is no satisfactory alternative or if the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

Appendix C Site Photographs



Plate 1: Bare Ground



Plate 2: Bare Ground



Plate 3: Plantation woodland along the River Dearne



Plate 4: River Dearne at the western end of the Site



Plate 5: River Dearne in the middle of the Site

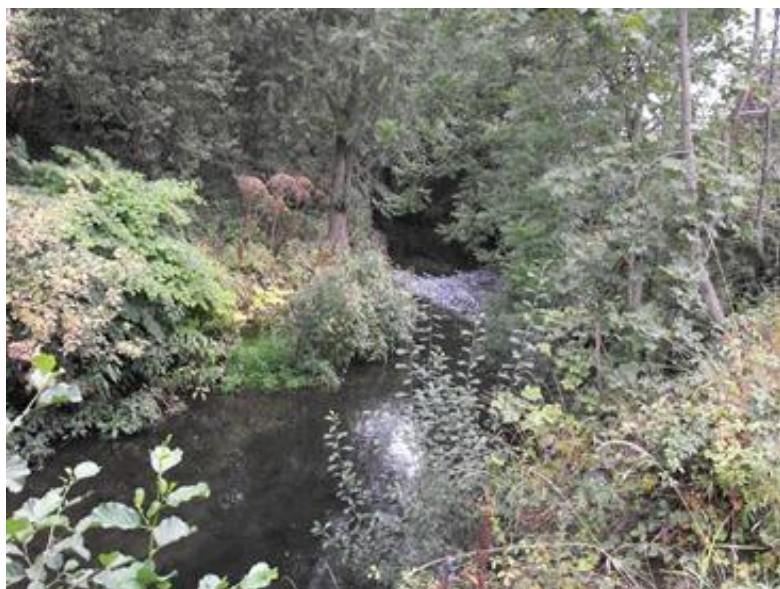


Plate 6: River Dearne at the end of the eastern end of the Site (showing Japanese knotweed, Himalayan balsam and giant hogweed)

APPENDIX 12.3: BAT, OTTER AND WATER VOLE REPORT



UNITED
BY OUR
DIFFERENCE



Title: Old Mill Lane, Barnsley: Bat, Otter and Water
Vole Survey Report

Client: Peel Holdings

Date: 25 November 2011

QUALITY MANAGEMENT

Issue/revision	Issue 1	Revision 1	Revision 2	Revision 3
Remarks				
Date	25/11/2011			
Prepared by	Matt Oakley			
Signature				
Checked by	Rich Gill			
Signature				
Authorised by	Rich Gill			
Signature				
Project number	20470			
File reference	Old Mill Lane Bat Water Vole and Otter			

WSP Environment & Energy

1st Floor Keble House
Southernhay Gardens
Exeter
EX1 1NT

Tel: 01392 267500
Fax: 01392 267599

www.wspenvironmental.com

1152332

CONTENTS

EXECUTIVE SUMMARY	1
1 INTRODUCTION	2
2 LEGISLATION	3
3 METHODOLOGY	5
4 RESULTS	7
5 EVALUATION	8
6 RECOMMENDATIONS	Error! Bookmark not defined.

Figure 1 – Location of Bat Roost

Appendix A – Survey Limitations

EXECUTIVE SUMMARY

WSP Environmental Limited (WSPE) were instructed by Peel Holdings to undertake further ecological surveys for bats, water vole and otter for an area of land at Old Mill Lane, Barnsley, South Yorkshire, which is proposed for future development into commercial use.

The surveys were undertaken in July and August 2011, which included bat emergence surveys of a culvert adjacent to the River Dearne, bat activity surveys of the Site, and water vole and otter surveys of the River Dearne.

The surveys have identified that the culvert supports a large Daubenton's bat maternity roost, and the River Dearne provides an important foraging site and commuting route for the bats. The remainder of the Site provides poor foraging habitat. No evidence of water vole or otter presence was recorded on the River Dearne within or adjacent to the Site.

1 INTRODUCTION

1.1 BACKGROUND

1.1.1 WSP Environmental (WSPE) was requested by Peel Holdings to undertake bat (*Chiroptera*), otter (*Lutra lutra*) and water vole (*Arvicola amphibious*) surveys of an area of land (the Site) situated at Old Mill Lane, Barnsley, South Yorkshire (hereafter referred to as the Site) proposed for future redevelopment into mixed use.

1.2 SITE OVERVIEW

1.2.1 The Site is centred on National Grid Reference SE 351 072 and covers an area of approximately 6.5 hectares (ha) (see **Figure 1** for Site boundary). The Site is bordered to the west by Old Mill Lane, to the south by Twibell Street, to the north by Burton Road and to the east by Dearne Valley Country Park. The Site is set within the urban landscape of Barnsley with both residential and commercial developments in close proximity to the Site. To the west of the Site is The Fleets, a lake next to the River Dearne, and to the east is the Dearne Valley Country Park which consists of a mix of grassland, woodland and ponds..

1.2.2 The Site includes numerous buildings, broad leaved plantation woodland, bare ground, hardstanding and the River Dearne.

1.2.3 An extended Phase 1 habitat survey of the Site undertaken by WSPE in May 2011, which included a desk study, confirmed the presence of a large Daubentons bat (*Myotis daubentonii*) roost within a culvert adjacent to the River Dearne (see **Figure 1**). The river was also noted to have the potential to be used as a commuting and foraging route for otter, and whilst not optimal for water vole the river also has the potential to support this species.

1.3 OBJECTIVES

1.3.1 Further to the previous survey works undertaken at the Site additional bat emergence and activity surveys, and a water vole and otter survey was commissioned in order to:

- identify the presence of roosting bats within the culvert, and also identify any significant foraging areas or commuting routes both within and immediately adjacent to the Site;
- identify the presence of water vole and otter within the Site boundary;
- assess the potential impact of the proposed development work on any bat, water vole or otter populations present; and
- propose appropriate compensation and/or mitigation measures which could be taken to ameliorate foreseeable negative impacts on the bat, water vole or otter populations as a result of the proposed work.

1.3.2 The survey methodology applied is outlined in Section 3, with the survey results and evaluation presented in Sections 4 and 5 respectively. Recommendations for mitigation and enhancement have been made within the accompanying Ecological Impact Assessment for the proposed development (WSP, 2011).

1.4 STUDY LIMITATIONS

1.4.1 General notes and limits pertaining to ecological surveying are provided in Appendix A.

2 LEGISLATION

2.1.1 A level of statutory protection is afforded to specific species; the various statutes of which provide this protection include the following:

- The Wildlife & Countryside Act (WCA) 1981;
- Countryside and Rights of Way (CROW) Act 2000;
- The Conservation of Habitats and Species Regulations 2010;
- Natural Environment and Rural Communities Act (NERC) 2006; and
- Wild Mammals (Protection) Act 1996.

2.2 BATS

2.2.1 All species of bat and their roosts are protected under the WCA 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010, which is the implementation of the EC Directive on the Conservation of Natural Habitats and Flora and Fauna, 1992 (the Habitats Directive). This makes it illegal to:

- Intentionally kill, injure or take a bat;
- Damage or destroy a breeding site or resting place of a bat;
- Deliberately disturb a bat, including disturbance of a bat which is likely to:
 1. Impair their ability to survive, to breed or reproduce, to rear or nurture their young, or to hibernate or migrate.
 2. Affect significantly the local distribution or abundance of bats.
- Possess, transport or sell a bat.

2.2.2 Breeding and resting sites of bats, commonly called roosts, are defined as 'any structure or place which is used for shelter or protection', irrespective of whether bats are resident.

2.2.3 In addition to these pieces of legislation, further protection is afforded to bats by 'An Agreement on the Conservation of Bats in Europe' (under the Bern Convention) to which the United Kingdom (UK) Government is a signatory. This agreement places obligations on the government to protect important bat roosts or foraging areas.

2.2.4 The UK Biodiversity Action Plan (BAP) forms part of the UK government's commitment to conserve and enhance national biodiversity following the Rio Convention on Biodiversity in June 1992. The UK BAP Framework describes the UK's biological resources and commits a detailed plan for the protection of these resources. Three types of action plan (Species Action Plans (SAPs), Habitat Action Plans (HAPs) and Local Biodiversity Action Plans (LBAPs)) have been developed which set priorities for nationally and locally important habitats and wildlife.

2.2.5 Seven species of bat are included within the priority species list of the UK BAP. The Devon LBAP lists greater horseshoe bat as a priority species.

2.2.6 Works that will disturb bats or damage or destroy a bat roost require a licence from Natural England. Licences can only be granted if there is no satisfactory alternative or if the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

2.3 WATER VOLE

2.3.1 The water vole is fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). The legislation makes it an offence to:

- Intentionally kill, injure or capture a water vole;

- Possess or control a live or dead water vole, or any part of a water vole or anything derived from a water vole;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place which a water vole uses for shelter or protection – whether occupied or not; and
- Sell, possess or transport a water vole for the purpose of sale, and advertising the buying or selling of a water vole.

2.3.2 The Statutory Nature Conservation Organisation (SNCO) (in this case Natural England) and the Environment Agency should be consulted when any development or maintenance works may affect a water vole population. The SNCO will not issue licences specifically to cover development or waterway maintenance activities in respect to water vole populations. If works cannot be reasonably avoided then the “incidental result of an otherwise lawful action” defence will need to be relied upon which provides for the carrying out of lawful operations from which some harm to the species would otherwise be an offence. Attention must be paid to the presence of water voles and as far as is reasonable appropriate action taken to safeguard the animals and the places they use for shelter and protection. If after all options for conserving the water vole population have been considered, that the best outcome for water voles is capture and translocation to a different location, then this action is considered by the SNCO to be outside the scope of the defence. This is because the intentional capture of water voles is unlikely to be considered incidental and therefore a conservation licence will need to be obtained from SNCO if it is deemed that the translocation will produce a net conservation benefit to the water vole population concerned.

2.4 OTTERS

2.4.1 Otters are protected under the Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010, which is the implementation of the EC Directive on the Conservation of Natural Habitats and Flora and Fauna, 1992 (the Habitats Directive). This makes it illegal to:

- Intentionally kill, injure or take an otter;
- Damage or destroy a breeding site or resting place of an otter;
- Deliberately disturb an otter, including disturbance of an otter which is likely to:
 1. Impair their ability to survive, to breed or reproduce, to rear or nurture their young, or to hibernate or migrate.
 2. Affect significantly the local distribution or abundance of otters.
- Possess, transport or sell an otter.

2.4.2 A European Protected Species (EPS) licence can be issued by Natural England for the disturbance of otters in relation to a development. Licences can only be granted if there is no satisfactory alternative or if the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

3 METHODOLOGY

3.1 BAT EMERGENCE SURVEYS

3.1.1 Two dusk emergence surveys of the culvert adjacent to the Old Mill Lane bridge over the River Dearne at the western end of the Site were undertaken on the 18th July and the 31st August 2011, to determine the potential impacts to roosting bats within the culvert as a result of the proposed development.

3.1.2 The dusk surveys began approximately 30 minutes before sunset and continued for 1.5 hours after sunset. A total of two Natural England licenced bat workers (licence no. 20113033 and 20104693) equipped with time expansion (Petterson D-240X) and dual-mode (Bat Box Duet) bat detectors, were positioned situated either side of the bridge to record emerging bats travelling both upstream and downstream of the culvert.

3.1.3 Temperature, wind speed/direction and cloud cover were recorded at the beginning and end of each of the surveys, and a note was made of any significant weather changes during the survey (i.e. heavy showers).

3.1.4 All surveys were conducted during suitable weather conditions (dry, low wind, air temperature above 8°C), detailed below in Table 1.

3.1.5 After completion of each survey session, the digital bat recordings were analysed where appropriate using BatScan v8.7 songoram analysis software (Batbox Ltd) to confirm species identification.

3.1.6 The surveys were commensurate with the methodologies outlined in *Bat Survey: Good Practice Guidelines* (BCT, 2007)

Table 1: Weather Conditions for Bat Emergence Surveys

Date	Time	Sunset	Temperature (°C)		Cloud cover / Wind / Precipitation
			Start	Finish	
18/07/2011	21.00 – 10.45	21.23	17.5	16.0	30%, calm, and dry.
31/08/2011	19.40 – 21.30	19.58	15	15	20%, calm and dry.

3.2 BAT ACTIVITY TRANSECTS

3.2.1 Two nocturnal bat activity transects were carried out immediately following the emergence surveys undertaken on the 18th July and 31st August 2011, to determine flight paths, commuting routes and feeding areas of any bats present. These surveys utilised time expansion (Petterson D-240X) bat detectors to assist in the location and identification of any bats present

3.2.2 A transect route was designed to encompass the broad habitat types on Site, paying particular attention to areas deemed most suitable to support bats including the River Dearne and the plantation woodland. Two experienced surveyors walked the transect route twice on each of the survey visits.

3.2.3 On each occasion the activity surveys began approximately 1.5 hours after sunset and lasted a period of 1.5 to 2 hours. During the survey, the surveyors stopped at up to 10 sample points along their route for a period of 3 minutes to record any bat activity. The surveys recorded the species present, level of use by bats and identified areas of concentrated bat activity.

3.2.4 The surveys were conducted during suitable weather conditions (dry, low wind, air temperature above 8°C) (see **Table 1** above). The survey was commensurate with good practice following standard methodologies (BCT, 2007).

3.2.5 After completion of each survey session, the digital bat recordings were analysed using BatScan v8.7 songoram analysis software (Batbox Ltd) to confirm species identification.

3.3 WATER VOLE

3.3.1 The water vole survey was undertaken on the 2 July 2010 by suitably qualified and experienced WSPE ecologists using the standard methodologies of Strachen et al. (2006). The surveys were undertaken within the optimal period for finding water vole activity (April – October), and particularly evidence of territorial marking, which increases during the breeding season. Signs that were searched for along the each of the watercourses were:

- Faeces;
- Latrines;
- Feeding stations or cropped vegetation;
- Burrows (above and below the water level);
- Cropped 'gardens' or 'lawns' around burrow entrances;
- Footprints;
- Runs in the vegetation;
- Actual sightings; and
- Sounds of water vole entering the water.

3.3.2 Where burrows were recorded, they were assessed for their level of use. Active burrows are characterised by clean open tunnel entrances free of any debris or vegetation, the presence of footprints, or other signs of evidence nearby. Disused burrows tend not to show any recent signs of entering; may have become overgrown with vegetation and lack any other signs of water vole activity in the immediate vicinity.

3.4 OTTER

3.4.1 The otter survey was undertaken on the 2 July 2010 by suitably qualified and experienced WSPE ecologists following the methodology detailed in the New Rivers and Wildlife Handbook (RSPB, NRA & RSNC, 1994).

3.4.2 Due to the unlikely event of actual observation, the survey concentrated on locating field signs indicating otter presence or use. Such field signs include:

- Spraints – characteristic sweet-smelling, black tar-like (where fresh/relatively recent i.e. within a few weeks) or grey crumbly (when old) faecal deposits usually containing fish scales, bones and occasionally invertebrate exoskeleton and bird feathers;
- Footprints – In good substrate typically asymmetrical and showing five toes arched around a large pad and, depending on substrate, webbing and claw marks. Poorer, generally coarser substrates do not often enable the identification of otter footprints;
- Feeding remains;
- Slides – routes into and out of the water, which are usually associated with terrestrial routes such as short cuts around meanders or along traditionally used otter paths/routes;
- Couch – above ground resting place. Usually associated with cover such as dense scrub, rushes or reed, flood debris or fallen trees. Many couches are rarely used whilst other more so. Difficult to prove use without radio tracking; and
- Holt – below ground resting site usually associated with sprainting. Sometimes used with greater frequency than couches and can be important for breeding (natal holt) where other signs are usually absent. Notoriously difficult to find or prove without radio tracking.

4 RESULTS

4.1 BAT EMERGENCE SURVEYS

4.1.1 Counts of 67 Daubentons bats on the 18th July and 61 Daubentons bats on the 31st August were recorded emerging from the culvert at dusk.

4.1.2 No other species of bat were recorded roosting within the Site during the emergence surveys.

4.2 BAT ACTIVITY SURVEYS

4.2.1 During the activity surveys significant Daubentons bat foraging activity was recorded under the bridge and outside of the culvert opening. Small numbers of soprano (*Pipistrellus pygmaeus*) and common pipistrelle (*Pipistrellus pipistrellus*) were also recorded foraging and commuting along the River Dearne during the activity surveys undertaken in 2011.

4.2.2 The bats were recorded foraging both downstream of the roost entrance and upstream to the west of the Site. The tree canopy and tall retaining walls provides an ideal dark corridor through the Site and wider landscape for foraging and commuting bats.

4.2.3 Apart from the river corridor, which is sheltered from artificial light spill by the strip of broad-leaved plantation woodland and therefore remains dark, the Site provides poor foraging habitat as it consists of bare ground, buildings and hardstanding, and only one common pipistrelle was recorded commuting over the bare ground in the north east of the Site during the August 2011 activity survey.

4.3 WATER VOLE AND OTTER SURVEYS

4.3.1 No evidence of either of these species being present within or adjacent to the Site was recorded during the survey.

5 EVALUATION

5.1 BATS

5.1.1 The counts of Daubentons bats recorded in 2011 were significantly less than those recorded between 1990 and 2003, when the National Bat Monitoring Programme surveyed the culvert annually.

5.1.2 It is known through consultation that the culvert was flooded in 2007, which is the most likely cause of the reduced numbers of roosting bats. It is unknown as to whether the reduced numbers of bats are due to the fact that a percentage of the colony moved to another roosting site or whether the bats were killed when the culvert flooded.

5.1.3 Even though the numbers of bats are greatly reduced, the roost is still a large maternity roost as numbers of Daubentons bats maternity roosts average 20-50 individuals. The roost is classified as being of **MODERATE** to **HIGH** nature conservation significance as defined in the *Bat Mitigation Guidelines* (English Nature, 2004), given that it is a maternity roost of a rarer species and it has been in-situ within the culvert since at least 1990 when it was first recorded.

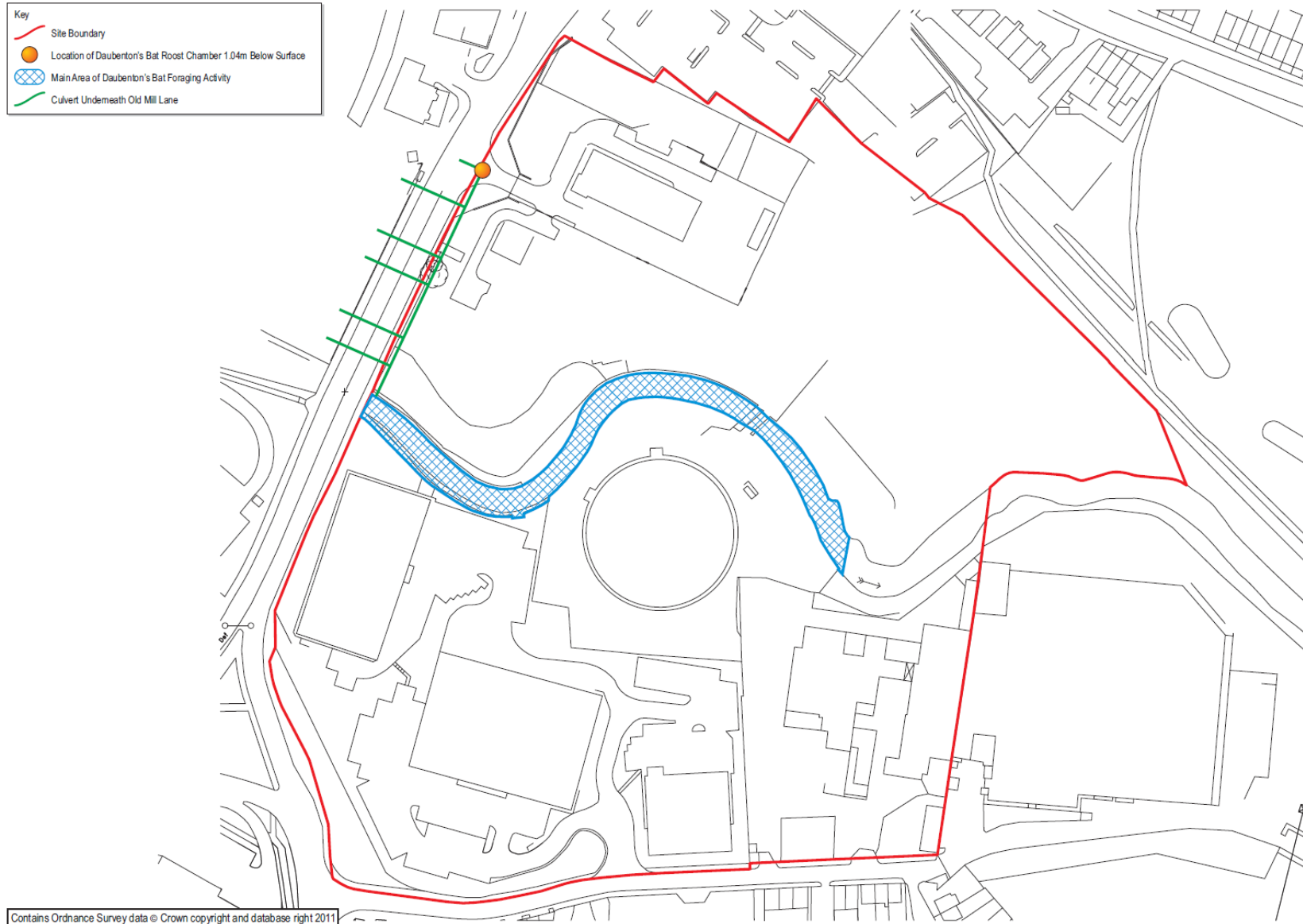
5.2 OTTER

5.2.1 Although no evidence of otter was recorded either within or adjacent to the Site, given the records of otter both upstream and downstream of the Site, and the fact that individual otters can have territories extending to 40km of linear habitat it is likely that otters commute through the Site.

5.3 WATER VOLE

5.3.1 The banks of the River Dearne within the Site are suboptimal for this species given that they have shallow gradients which prevent burrowing and are heavily shaded and riparian vegetation is therefore sparse along the majority of the River Dearne that flows through the Site.

Figure 1 – Location of Bat Roost



PROJECT: Old Mill Lane, Barnsley
 PROJECT No: 20470
 CLIENT: Peel Holdings PLC

DRAWN: GH
 CHECKED: MO
 APPROVED: MO
 REVISION: A
 DATE: October 2011



Appendix A Survey Limitation

WSP Environmental staff and their sub-consultants have endeavoured to identify the presence of protected species wherever possible on site, where this falls within the agreed scope of works.

Up to date standard methodologies have been used, which are accepted by Natural England (previously English Nature) and other statutory conservation bodies. No responsibility will be accepted where these methodologies fail to identify all species on site. WSP cannot take responsibility where Government, national bodies or industry subsequently modify standards.

The results of the survey and assessment work undertaken by WSP Environmental were representative at the time of surveying.

WSP Environmental has advised on the optimum survey season for a particular habitat/species prior to undertaking the survey work. However, WSP Environmental cannot accept responsibility for the accuracy of surveys undertaken outside this period.

WSP Environmental cannot accept responsibility for data collected from third parties.

APPENDIX 12.4: WHITE CLAWED CRAYFISH SURVEYS

APPENDIX 12.5: BAT REPORT (ERIC BENNETT)

Eric Bennett Consultancy Ltd

Protected species survey and advice

5 Lynwood Drive, Carlton, Barnsley. S71 3ES

Tel: 01226 723220

Fax: 01226 727511

E-mail: eric.bats@uwclub.net

Old Mill Lane (A61) Culvert **Barnsley**

Bat Survey

March 2004.

Surveyor	Experience
Mr Eric Bennett	Licensed bat worker with 15 years experience. Licensed by English Nature and Countryside Council for Wales for all bat species in all counties. EN Licence No: 20031612 CCW Licence No: OTH:CSAB:37:2003

Revision record.

Date	Details
2 February 2004.	Original report
3 March 2004.	Revised report following scheme redesign to create island over roost site for protection.

Table of contents

1	Introduction	1
2	Development Proposals	1
3	Survey Methodology	1
4	Survey Results	2
4.1	Background	2
4.2	Existing survey records	2
4.3	Topographical survey results	4
4.4	Site habitats	4
4.5	Status	4
5	<u>Evaluation of survey results</u>	5
5.1	<u>Evaluation of habitats</u>	5
5.2	<u>Evaluation of survey results</u>	5
5.3	<u>Evaluation of legal situation</u>	5
5.4	<u>Licensing arrangements</u>	5
5.5	Conservation status	6
6	<u>Impact assessment</u>	6
6.1	<u>Short term impacts</u>	6
6.2	<u>Long term impacts</u>	7
7	<u>Mitigation</u>	7
8	<u>Recommendations</u>	8
9	<u>Appendices</u>	9
1	<u>Legal situation</u>	9
2	<u>Licensing</u>	9
3	<u>New DEFRA Licensing requirements</u>	11

1. Introduction

- 1.1 The survey was required in connection with highway improvement proposals for Old Mill Lane, Barnsley (A61). The site is located at O.S. Grid Ref. SE 351072

2. Development Proposals

- 2.1 The proposals are part of ongoing improvements to the A61 Quality Bus Corridor into Barnsley and involve the construction of a new light controlled junction, to replace two existing junctions accessing the former Gas Depot and Wickes Store and to facilitate the re-development of the former Gas Site for a retail store.

3. Survey Methodology

- 3.1 The report is based on existing knowledge and records covering the monitoring of the site since 1991.
- 3.2 A topographical survey was carried out on 19th November 2003, to determine the precise position of the roost site below the roadway and its depth.

4. Survey Results

4.1 Background

- 4.1.1 The culvert is located close to Barnsley town centre, where the A61 Old Mill Lane crosses the River Dearne. It is an important roosting site for Daubenton's bat *Myotis daubentonii*.
- 4.1.2 The main feature of the site is a brick culvert approximately 2 metres wide, 1.5 metres high and 90 metres long, running from the River Dearne banks adjacent to the road bridge, within the boundary wall of the former British gas depot site. The head of the culvert lies beneath the entrance threshold to the gas site. The roost chamber itself is hidden between the tarmac road surface and the roof of the culvert and nothing was known of its size, construction or its depth below the tarmac road surface. The bats gain access to the roost chamber through small openings in a manhole type feature in the culvert roof.
- 4.1.3 In addition there are five small and very much older stone culverts leading off the main culvert and crossing beneath Old Mill Lane. The origin of these culverts is probably connected with the former mill and millrace shown on the 1779 Enclosure map. The line of the main culvert is clearly marked on the 1850 first edition of the Ordnance Survey map. Remnants of the millrace can still be seen as earthworks west of Old Mill Lane.
- 4.1.4 The bat colony was discovered in 1990 and, in order to protect the bats, the culvert entrance was grilled by British Gas, in early 1991, to a design and recommendations supplied by the Robert Stebbings Consultancy.
- 4.1.5 Patterns of usage have been identified by annual monitoring surveys since 1991. During the 11 years when June counts have been made, 8 have been over 250 and two over 300 with the highest recorded June count of breeding females at 309. The highest overall count was 412 in July 1990 that included juveniles.
- 4.1.6 Bats emerge from the culvert entrance at dusk and appear to congregate in the downstream, heavily tree lined section of the river between the culvert and the end of the gas site, in the immediate post sunset period before moving off to feeding areas. Core feeding areas appear primarily to be the Fleets and to a lesser extent the Dearne Valley Park. These areas are generally accessed from the river corridor but bats flying upstream from the roost detour through the adjacent small woodland area to avoid the weir.

4.2 Existing survey records

- 4.2.1 Annual June counts have been made for a number of years as part of the National Bat Colony Survey and later the National Bat Monitoring Programme. Other counts have been made to determine seasonal usage of the site.
- 4.2.2 Between 1990 and 1993, simultaneous counts were made at the culvert entrance (to count the total number of bats emerging) and beside the bridge on the west side of Old Mill Lane (to count the number of bats flying upstream to feed over the Fleets) These counts are entered in brackets in the table below and also expressed as a percentage with generally about 70-80 % of the bats in the culvert feeding west of Old Mill Lane, probably over the Fleets. On two or three occasions in 1991/92, these westerly movements of bats were higher than the numbers counted out of the culvert, so another undiscovered roost site clearly exists.
- 4.2.3 There is no evidence that the site is used during the winter, when the culvert is occasionally inundated.

Table showing records of bats counted.

Year	Date	May	Jun	Jul	Aug	Sep
1990	24/6		(171)			
1990	27/6		(185)			
1990	11/7		(203)			
1990	23/7		(261)			
1990	29/7			412		
1990	06/9					170

Year	Date	May	Jun	Jul	Aug	Sep
1991	26/5	186 (192) 103%				
1991	11/6		197 (142) 72%			
1991	08/7			251 (172) 68%		
1991	22/7			325 (268) 82%		
1991	05/8				177 (227) 128%	
1992	09/6		271 (198) 73%			
1992	13/7			316 (240) 76%		
1992	18/8				127 (171) 134%	
1993	01/6		309 (133) 43%			
1993	08/6		294 (210) 71%			
1994	06/6		286			
1994	20/6		283			
1995	20/6		266			
1996	04/6		168			
1996	18/6		196			
1997	02/6		170			
1997	10/6		261			
1998	No records					
1999	09/6		212			
1999	25/6		258			
2000	05/6		278			
2000	14/6		304			
2001	No records					
2002	12/6		257			
2002	16/6		152 count interrupted.			
2003	08/6		293			

4.3 Topographical Survey

- 4.3.1 A topographical survey was carried out on 19th November 2003, to determine the precise position of the roost site below the roadway and its depth.
- 4.3.2 At the point where the roost site is located at the head of the culvert, the level of the inside of the culvert is 1.04 metres below the tarmac road surface. The roost chamber is within that figure but the nature or size of the chamber is unknown. It must be assumed therefore that the top of the feature may be quite near to the road surface.
- 4.3.3 Two open manhole chambers, about 600mm square, were noted in the culvert roof. One near the river boundary fence to the gas site was uncovered and clearly used by children to gain access to the culvert. The second was at the mid point of the culvert and covered at the top. Both of these chambers were visibly about 900mm deep from the crown of the culvert.
- 4.3.4 It seems likely that the roost chamber may be a similar structure, possibly with an iron cover below the tarmac road surface.

4.4 Site habitats

- 4.4.1 In habitat terms the river downstream passes through a series of meanders with the gas site on the north bank and various industrial premises on the south bank. The river is confined within tall retaining walls until after the gasholder, thereafter the river is within more naturally vegetated banks. The whole section is thickly covered with trees, mostly Sycamore *Acer pseudo-platanus* overhanging the river and creating a tunnel effect. Beyond the gas site the river turns abruptly south and runs straight and parallel to the former railway line, now a footpath.
- 4.4.2 Upstream from the culvert, the river immediately passes beneath the A61 Old Mill Lane and after a short stretch crosses a tall weir. Between the bridge and the weir the river is confined within tall concrete walls but returns to a naturally vegetated bank above the weir. The north bank here has a small woodland area, predominantly Sycamore *Acer pseudo-platanus*, but also some Crack Willow *Salix fragilis*, Silver Birch *Betula pendula*, Beech *Fagus sylvatica*, Hawthorn *Crataegus monogyna* and Elder *Sambucus nigra*. There is a substantial area of Giant Hogweed *Heracleum mantegazzianum*. Three very large mature specimens, two Sycamore *Acer pseudo-platanus* and one Beech *Fagus sylvatica* dominate this area.

4.5 Status

- 4.5.1 The culvert and surrounding habitats along the River Dearne, is a candidate site for inclusion in the list of Natural Heritage Sites in the Barnsley Unitary Development Plan (UDP).
- 4.5.2 In terms of colony size, this is a very large colony for Daubenton's bat *Myotis daubentonii* with June counts of breeding females up to 309 bats and with the highest recorded count at 412 (July 1990). Average nursery colony size for this species is 20-50 bats. Only 2 or 3 nursery roost sites for Daubenton's bat are known to be of similar stature in Britain and this is probably the largest.
- 4.5.3 All species of bat are fully protected under the Wildlife & Countryside Act 1981 and the Habitats Regulations 1994. Further information is given on the legislation and on D.E.F.R.A. licensing arrangements later in this report.
- 4.5.4 The scrub area west of Old Mill Lane, is listed in the UDP as a nature conservation site. This recognises its importance as a "commuting route" for bats feeding areas at the Fleets, avoiding the weir.
- 4.5.5 The trees along the river corridor are protected by a Tree Preservation Order.

5. Evaluation of Survey Results

5.1 Evaluation of habitats

- 5.1.1 In order to support a colony as large as this, the feeding habitat is clearly very suitable indeed. The presence of large water bodies, all linked by the River Dearne is a combination that is capable of supporting an unusually large colony of these bats.

5.2 Evaluation of Survey Results

- 5.2.1 The culvert itself supports a nationally important nursery roost of Daubenton's bats *Myotis daubentonii*. Only 2 or 3 roosts of similar size are known nationally and this is probably the biggest.
- 5.2.2 The habitats along the river corridor form vital connective habitat or "bat commuting routes" and core feeding areas. The loss or fragmentation of this connective habitat and any degradation of the feeding areas would seriously prejudice the future viability of the roost site and the colony.
- 5.2.3 These features are included in the Barnsley Local Biodiversity Action Plan

HAP 15 Running Water
HAP 16 Open Water

5.3 Evaluation of Legal situation.

- 5.3.1 All bats are fully protected under the Wildlife & Countryside Act 1981 and the Habitats Regulations 1994. Under this legislation, it is an offence to intentionally or recklessly kill, injure, capture or disturb bats or to damage, destroy or obstruct access to any place used by bats for shelter or protection.
- 5.3.2 The culvert is confirmed as a bat roost in respect of the legislation.
- 5.3.3 There is a defence under the legislation, where the disturbance is the result of a lawful operation that could not reasonably have been avoided. In order to benefit from this defence, English Nature must be consulted and allowed reasonable time to provide advice.
- 5.3.4 Where bats may be affected by development proposals, a licence is required from the Department for the Environment, Food and Rural Affairs (DEFRA). Further information is given in the following section and the procedure for this is set out in Appendix 2 & 3.

5.4 Licensing arrangements

- 5.4.1 DEFRA's published guidelines on the licence procedure indicate that if, on the basis of survey information and specialist knowledge of the species concerned, the proposed activity is **reasonably likely** to result in an offence then, as in this case, a licence may be required. If the works can be carried out without disturbance to the bats or the roost a licence will not be required.
- 5.4.2 That application will require the production of a detailed Method Statement, setting out clearly how the scheme can be implemented whilst meeting the following test:-
- **“the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range”**
- 5.4.3 The approved Method Statement will form part of any licence issued.
- 5.4.4 DEFRA announced changes to the European Protected Species application process, taking effect from 1 September 2003. These are incorporated in an updated appendix 2 and detailed in Appendix 3 and should be carefully considered by developers. The main change relates to the requirement for applicants to submit a “Reasoned Statement of Application”. This requires details to be provided on land use and allocations, planning history and policies etc.
- 5.4.5 More particularly it requires applicants to provide a clear and reasoned case of the need for the proposed activity, detailing how and why the activity meets the two tests:-
- **Regulation 44 (2) (e) “preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment”**
 - **Regulation 44 (3) (a) “that there is no satisfactory alternative”**

5.5 Conservation status

- 5.5.1 Status of species present.

Common name	Scientific Name	Status	Distribution
Daubenton's Bat	Myotis daubentonii	Widespread/Common Not threatened	Found feeding over most lakes, reservoirs, canals and smooth flowing rivers. A number of roost sites are known in the Barnsley Area but mostly only 5-30 bats.

6. Impact Assessment

6.1 Short term impacts during development

Impact	Mitigation
Potentially risk of breaking into the roost chamber, killing or injuring large numbers of bats during road construction work.	The scheme has been redesigned to locate a traffic island over the roost site. This will be constructed on top of the existing road surface, to avoid the risk from excavations.
Potential risk of breaking into the culvert during building work.	The culvert (away from the roost site) will be uncovered by hand digging to avoid risk of damage and will be protected, under the roadway and footpath with a reinforced concrete slab to avoid the possibility of damage from ad-hoc excavations in the future.
Disturbance to bats during road construction work.	Choice of design and materials to reduce noise and vibration around the roost site. No excessive noise or disturbance during April to September inclusive.

6.2 Long term impacts after completion of development.

Disturbance may cause colony to abandon the site.	Minimise disturbance with season of work and care in reducing noise & vibration.
Threat to roost from future excavations in the highway.	Protect the culvert and the roost site with a reinforced concrete layer beneath the road and footpath construction. Carefully record the site in Public Utility records.
Threat to emerging bats from recreational use of the river corridor eg. riverside footpath route.	Any proposals should avoid passing close to the culvert entrance to keep this area as undisturbed as possible. Screed planting & fencing may be required.
Threat to bats use of the river corridor from lighting.	Any new or altered lighting scheme must be designed in such a way that the river corridor is maintained with light levels no greater than existing at present. Car park lighting to the development site must be directional.

7 Mitigation

- 7.1 Overall, the culvert is 90 metres long and currently 19 metres lie outside the gas site under the public highway. The bat roost has always been vulnerable to excavations in the highway. Breaking through the road surface into the roost chamber could result in the total destruction of this colony in minutes.
- 7.2 This scheme for creating a new access involves alterations to the existing road alignment affects an additional 6 metres of the culvert being exposed under the highway.
- 7.3 The culvert is therefore more vulnerable to damage, both in the short term during construction but also in the long term through excavations in the highway. A robust scheme of mitigation will be required to deal with both of these elements.
- 7.4 In addition, there are two further threats, indirectly related to this scheme, concerning future development of the site. These concern car park lighting (the need to maintain the river corridor in

darkness) and possible recreational developments involving the creation of a footpath route along the river banks (need to keep public access well away from the culvert entrance).

- 7.5 No excavation work should be carried out within 3 metres of the centre line of the culvert and no work should be carried out in the vicinity of the culvert that might cause significant noise or vibration, between the months of May to September inclusive, when the bats are breeding.
- 7.6 Excavation works over the culvert should be done with extreme care and should be done by hand. The culvert should then be protected by a reinforced concrete slab constructed over the line of the culvert below the public highway and footpath.
- 7.7 It is noted that the scheme has been redesigned to place the roost site beneath a new traffic island and that the island will be raised up to a height of 400mm above the existing road surface to ensure that no excavation is necessary over the roost.
- 7.8 Two existing manhole features along the culvert will need attention. The manhole at the centre point of the culvert offers the potential for creating an additional roosting site for the colony. A suggested design for this is attached for your consideration. The exposed manhole chamber near the entrance of the culvert should be permanently sealed for safety and to prevent disturbance.
- 7.8 In relation to the development of the site, the design should seek to protect the line of the culvert from future disturbance. There should also be careful attention given to car park lighting proposals to maintain the river corridor in darkness. Any proposals for new riverside footpath links should aim to avoid public access close to the culvert entrance or develop the adjacent land in such a way that public access is made more likely.

8 Recommendations

- 8.1 If the works can be carried out as described, without disturbance to the bats, a DEFRA licence application will not be required. This will, however, need to be kept under review, in case scheme modifications result in a need to change that advice.
- 8.2 If a licence application does become necessary, this process generally takes 30 working days from submission. The application would require the production of a detailed Method Statement on how the development aims can be achieved whilst maintaining the population of the species concerned. Further details of the licensing process are given in the appendices. The culvert has been confirmed as a bat roost and should not be disturbed in any way until a licence has been issued.
- 8.3 Building work could go ahead around the culvert provided that disturbance is not caused as described in this report. The work to the two manholes should be carried out outside the breeding season (May to September).
- 8.4 Timing of the works will be important. A more detailed timetable of works for this scheme will need to be devised when scheme details have been progressed sufficiently.
- 8.5 That in any discussions over the future details of the development to take place on the former gas site, the developers should be made aware of the need to protect the culvert in the site design, to carefully design lighting schemes to maintain the river corridor in darkness and to ensure that there is no public access to the river bank within 30 metres of the culvert entrance.

9 Appendices.

Appendix 1 Legal situation relating to bats as protected species.

- 1 There are two main pieces of legislation. The **Wildlife & Countryside Act 1981** covers wildlife in the UK and the **Habitats Regulations 1994** covers wildlife across all European member states. This legislation has been updated by the **Countryside & Rights of Way Act 2000**. Both pieces of legislation cover broadly the same areas.
- 2 **It is an offence to intentionally or recklessly kill, injure or capture or disturb bats or to damage, destroy or obstruct access to any place used by bats for shelter or protection.**
- 3 A breeding or resting site of any bat is known as a bat roost. A bat roost is any structure a bat uses for shelter or protection. Because bats tend to reuse the same roosts each year, legal opinion is that the roost site is protected whether or not the bats are present at the time. English Nature, (the government body for nature conservation in England) advise that it is an offence to damage or destroy a bat roost at any time of year.
- 4 Planning Policy Guidance Note **PPG9 – Nature Conservation**.provides that the presence of a protected species is a material consideration when a Local Planning Authority is considering a development proposal which, if carried out, would be likely to result in harm to the species or its habitat. Local Authorities should consult English Nature before granting planning permission and should consider attaching appropriate planning conditions.
- 5 Under the **Habitats Regulations** bats of all species are regarded as European Protected Species (EPS) and as such the level of protection is very broad. Developers need to be aware of the implications of encountering EPS's on development sites. An understanding of the legislation and the licensing procedures should ensure that any nature conservation considerations are addressed at the earliest stages of the planning process. Finding EPS's on a development site at a later stage could result in expensive delays whilst a licence is sought or even offences being committed.

Appendix 2 - Licensing arrangements in relation to bats.

1. Where development proposals are likely to affect a roost site, a licence is required from the Department for the Environment, Food & Rural Affairs (DEFRA). In determining such an application, three tests must be met.
 - To preserve public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.
 - That there is no satisfactory alternative.
 - That the action proposed will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range.
- 2 A determination of the first two tests will be made by DEFRA after consultation with the Local Planning Authority and DEFRA will expect the planning position to be fully resolved. This is usually necessary to determine whether there is any satisfactory alternative and that the work is of overriding public interest.
- 3 In considering the third test DEFRA will seek advice from the government's statutory nature conservation adviser English Nature. EN will base it's advice on whether the proposed mitigation work is sufficient to maintain the conservation status of the species concerned.
- 4 DEFRA generally expect the licensing process to take about 30 working days although contentious cases might take longer.

5 Licence applications are generally made after planning permission has been given and must include the following:-

- A copy of the full planning permission.
- Written authority from the owner/occupier to permit entry to any employees of DEFRA and English Nature for the purposes of monitoring or inspecting the work.
- Written authority from the owner/occupier stating that the Applicant is acting on their behalf.
- A report or Method Statement which clearly describes how the proposed work will be carried out. This will include information regarding the methods used and results of the survey upon which the work programme is based. All reports must include details on all the headings in the defined method statement.
- A Reasoned Statement of Application setting out the legal basis on which the application is being made.

6 DEFRA will write to the local planning authority for information but if the following items can be included in the application it may speed up the process.

- A copy of the report to Planning Committee.
- A copy of the Planning Committee minutes for the meeting at which approval was given.

7 In cases where planning permission is not required DEFRA will require the application to include more detailed information on the proposed development, the purpose of the development and the legal basis under which it may take place. The development or associated activity may result from a statutory requirement under other legislation or be permitted under a Permitted development Order.

8 The person applying for the Licence “the Applicant” has to be suitably qualified and experienced in bat matters. The Applicant is then responsible for ensuring that the measures contained in the Licence (if approved) are carried out. From 1 November 2002, all applications must also be signed by both the Developer and the Contractor.

9 A Developer cannot operate lawfully without the Licence Applicant undertaking the work specified in the Licence. Licence applications must include written authority from the site owner/occupier to permit entry for monitoring and inspection purposes. At no time should Licence Applicants be denied access to the site for the purpose of fulfilling Licence conditions.

10 A DEFRA Wildlife Adviser will contact licensees to arrange an accompanied site visit to an active licensed site at anytime. Wildlife advisers will only make unaccompanied site visits if the applicant is unable to be present and a representative cannot attend or if DEFRA considers an unannounced site inspection is required.

11 If the Applicant becomes concerned that offences are being committed on the site by the developer or a third party which mean that Licence conditions cannot be met, the Applicant has a duty to report those offences to the body that issued the licence.

Appendix 3 – New DEFRA Licensing provisions taking effect from 1 September 2003.

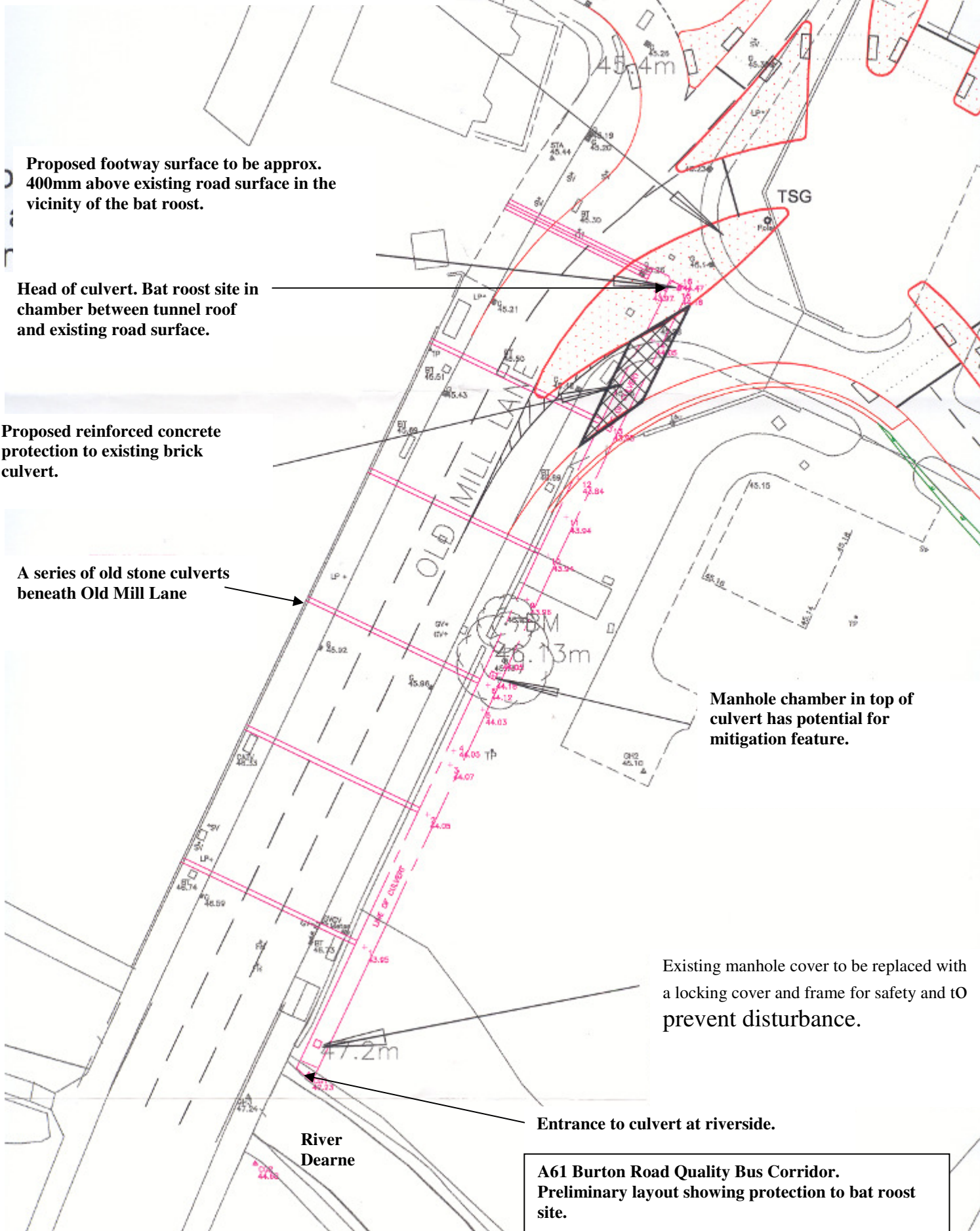
1 Changes to the licence application procedure were announced by DEFRA on 29 August 2003, to take effect from 1 September 2003. These changes are set out below.

2 DEFRA have joined forces with the Rural Development Service to introduce a system of compliance checks. A DEFRA Wildlife Adviser will contact licensees to arrange an accompanied site visit to an

active licensed site at anytime. Wildlife advisers will only make unaccompanied site visits if the applicant is unable to be present and a representative cannot attend or if DEFRA considers an unannounced site inspection is required.

- 3 There are two significant changes to the application form. Firstly a section has been included for the applicant to indicate the purpose of the licence application by use of tick boxes (ie public health or public safety, overriding public interest, prevention of damage to livestock, fisheries etc)
- 4 Secondly, a new document, known as a “Reasoned Statement of Application” has to be completed and appended to the application form. The purpose of the document is to allow the applicant (and their client) to present, in a standard format, the legal basis on which the application is being made. It will give an opportunity to the applicant (and their client) to provide their justifications as to how and why they believe the proposed development meets the requirements of the Habitats Regulations two tests of public health & public safety and no satisfactory alternative (appendix 2 (1) above.
- 5 The reasoned statement should be clear and concise and provide rational and reasoned justifications. Information and documentation must be provided to substantiate any claims made in the statement. DEFRA will use the information given in the statement to assist in determining whether it is satisfied that the tests have been met.
- 6 It is very important that the standard prescribed format is used. Failure to provide the information required may be grounds for refusal and the request made for the submission of a revised document. Applications may also be refused on the grounds that the statement contains insufficient information on which to determine the issues.
- 7 DEFRA will consult the Local Planning Authority on all licence applications, in addition to any other interested party, if it considers it appropriate to do so. The Reasoned Statement document will be provided to them for comment by written representations. Copies of any written representations received in response to consultations may be sent to applicants for information and further comment, if considered necessary. This may only be necessary where conflicting information is received.
- 8 The requirements to meet the third test, the favourable conservation status (appendix 2(1) above, will continue to be assessed through the Method Statement by English Nature.

Proposed central reserve to be free of street furniture and pedestrian crossing facilities with the exception of the primary traffic signal shown. (TSG)



Proposed footway surface to be approx. 400mm above existing road surface in the vicinity of the bat roost.

Head of culvert. Bat roost site in chamber between tunnel roof and existing road surface.

Proposed reinforced concrete protection to existing brick culvert.

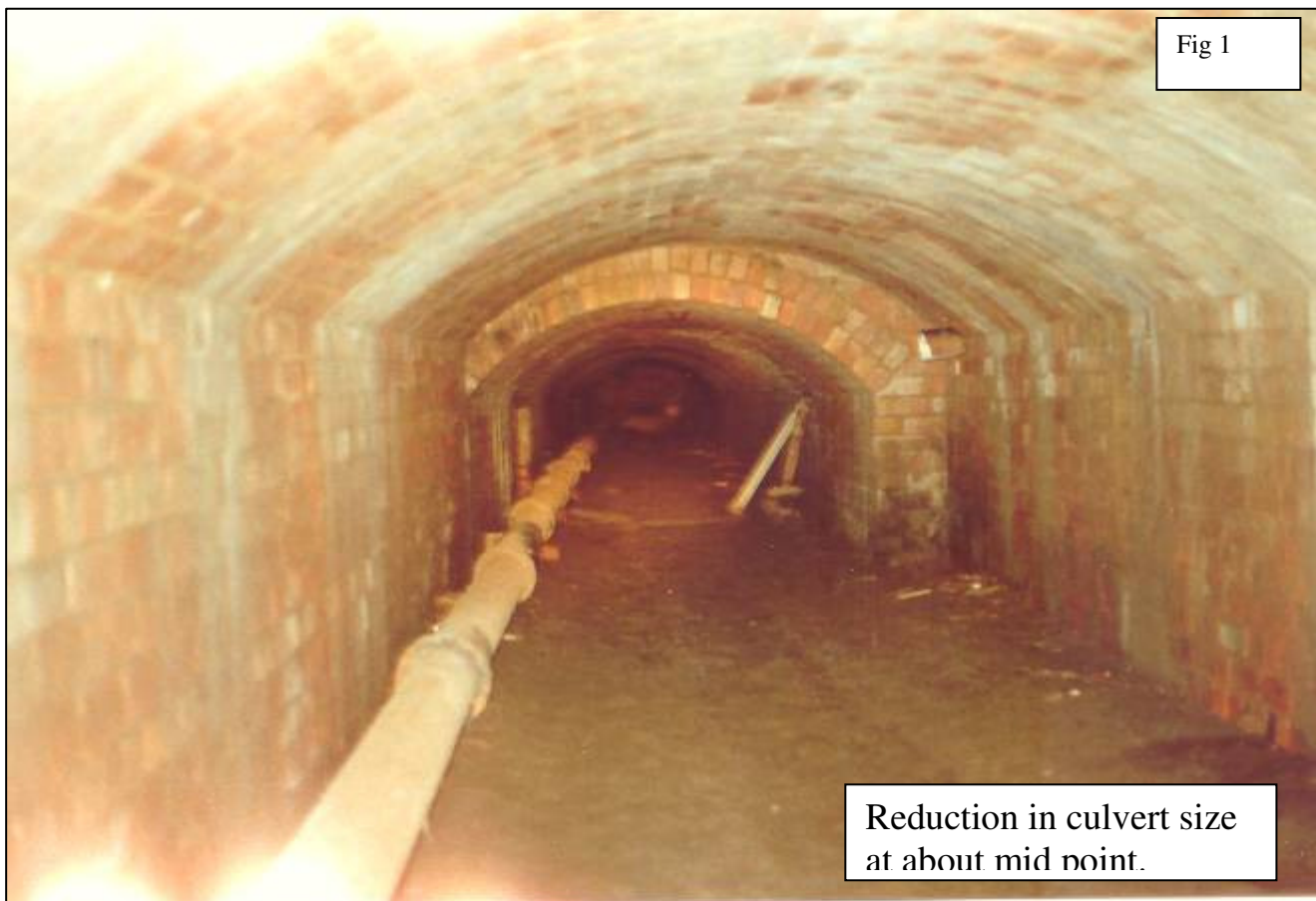
A series of old stone culverts beneath Old Mill Lane

Manhole chamber in top of culvert has potential for mitigation feature.

Existing manhole cover to be replaced with a locking cover and frame for safety and to prevent disturbance.

Entrance to culvert at riverside.

A61 Burton Road Quality Bus Corridor. Preliminary layout showing protection to bat roost site.



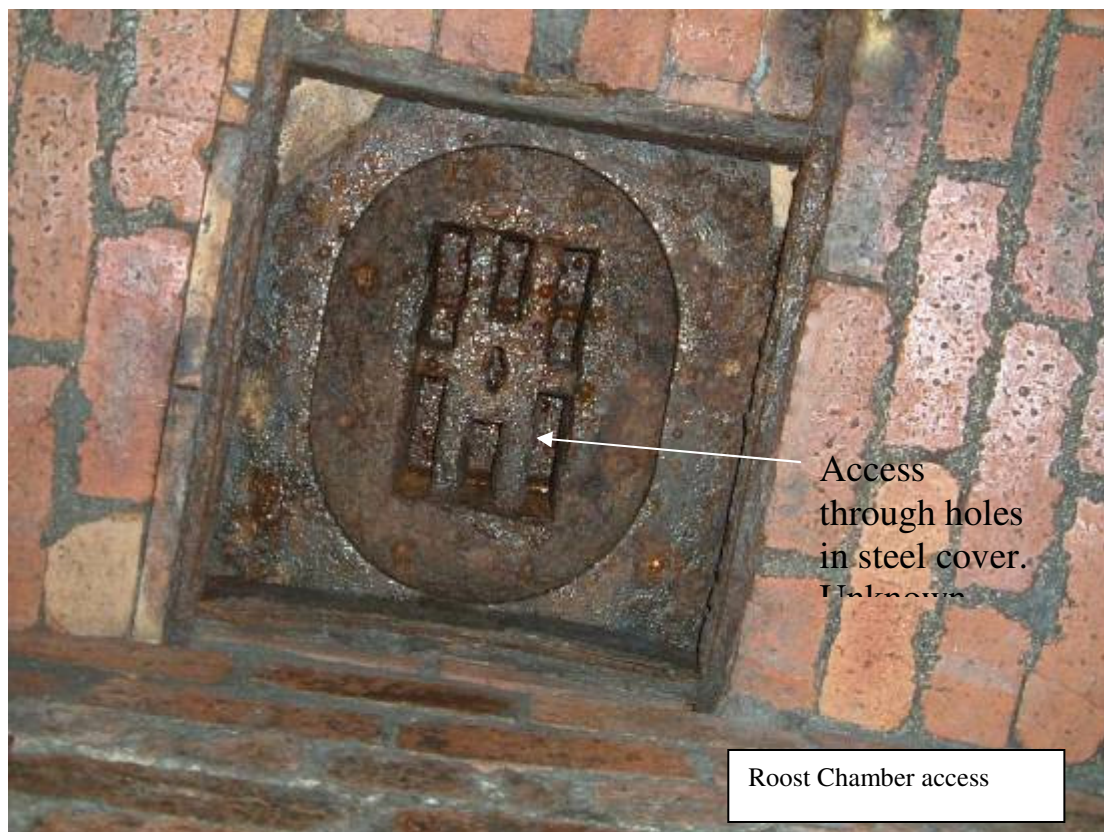
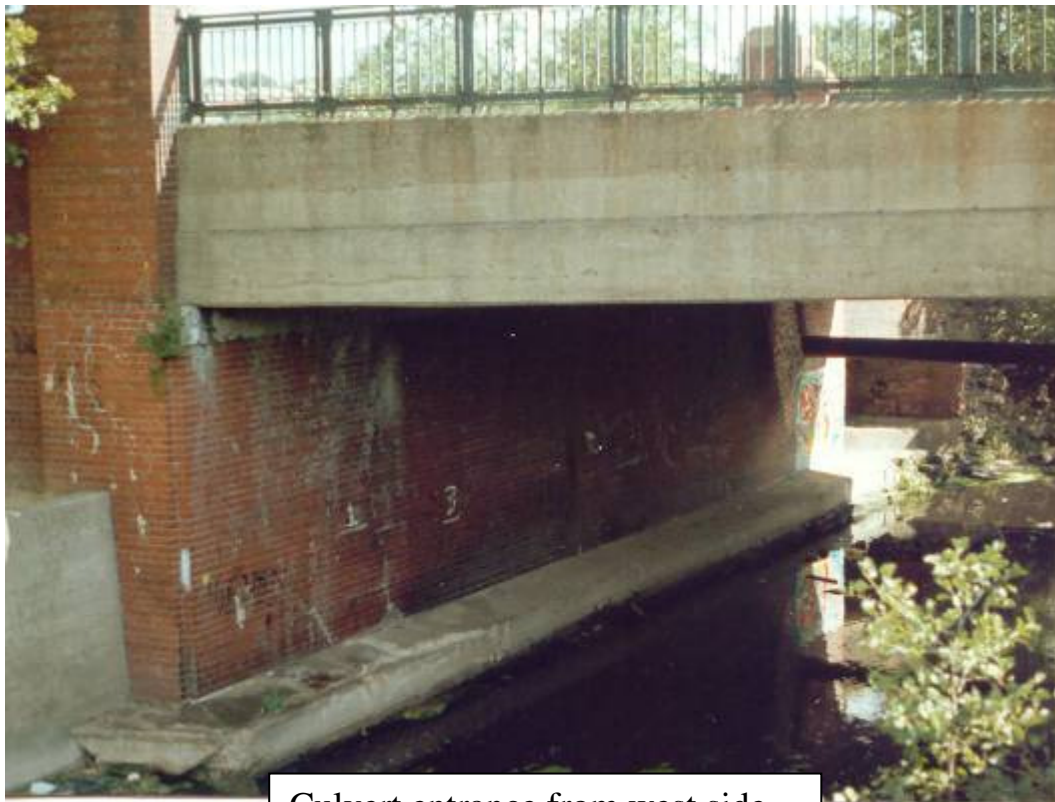


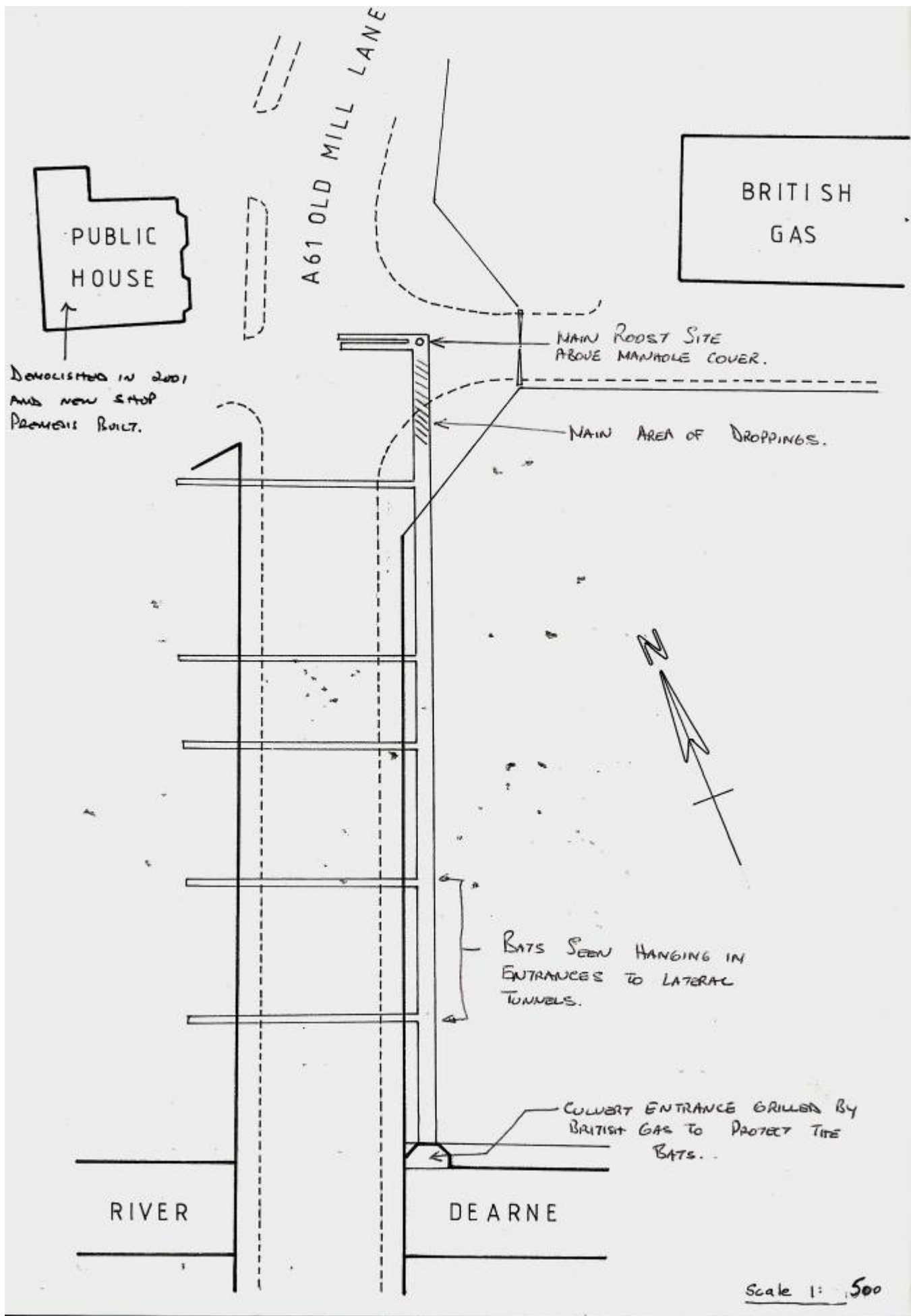
Fig 3



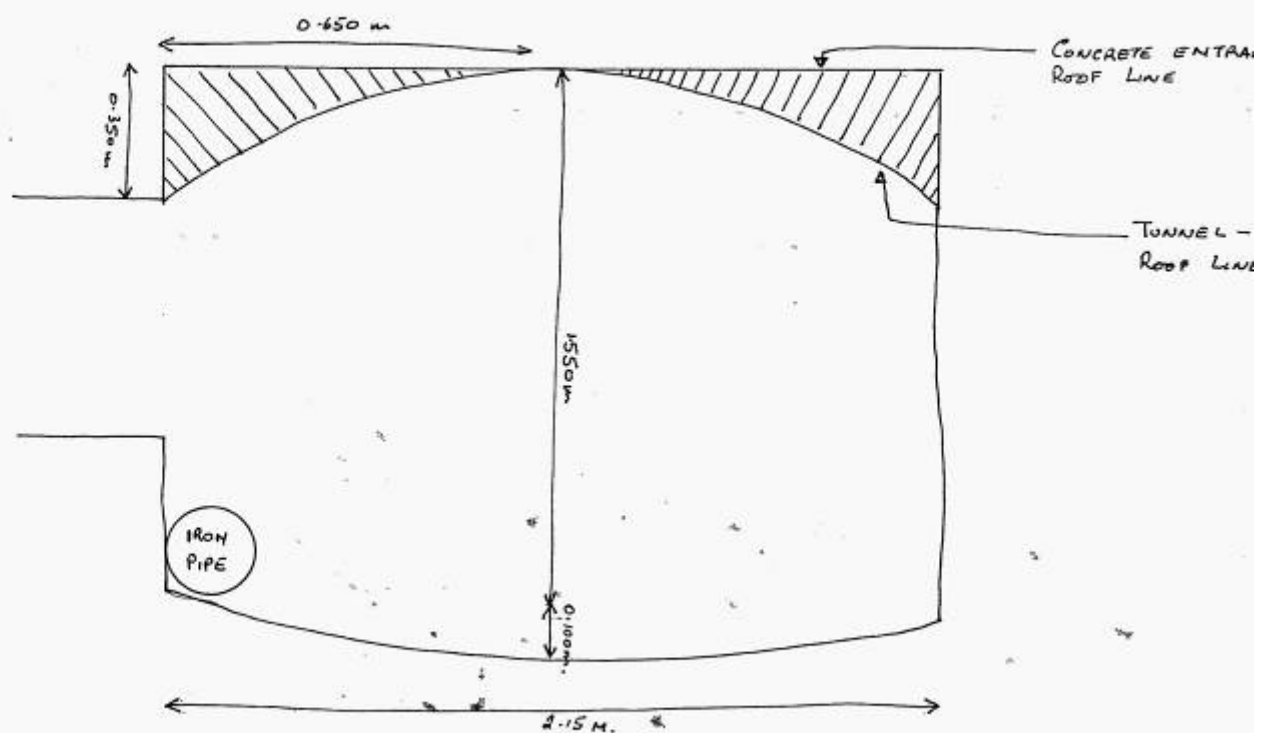
Culvert entrance prior to grilling.



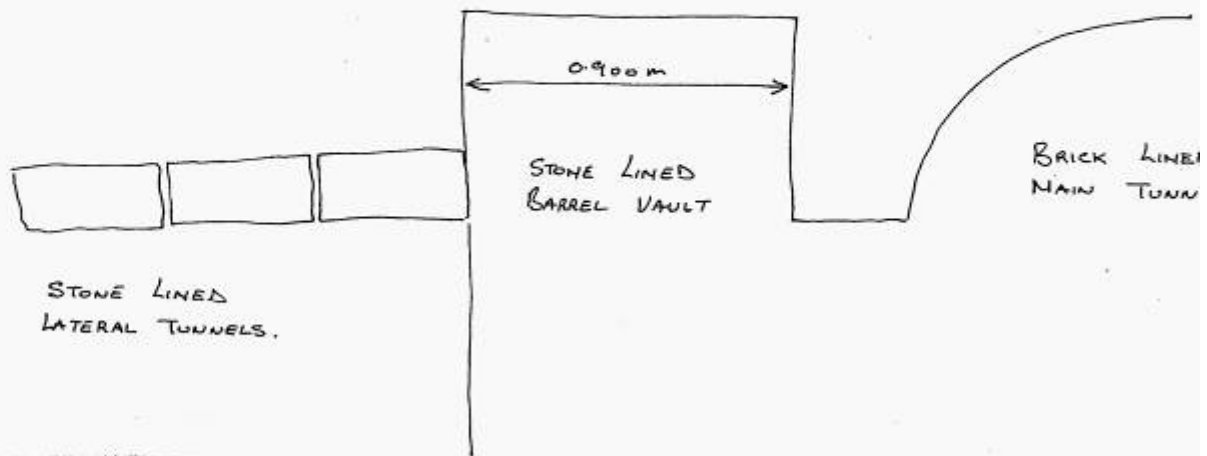
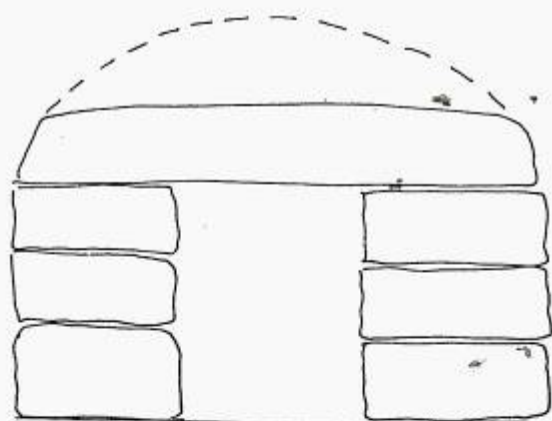
Culvert entrance from west side
of Old Mill Lane.



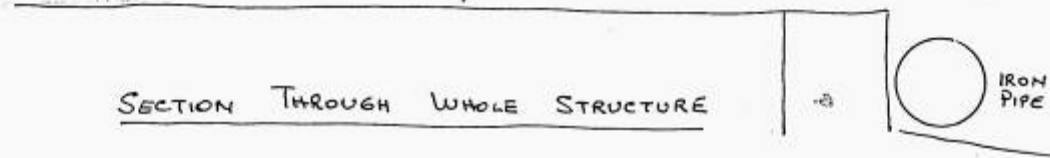
SECTION - MAIN TUNNEL



SECTION - LATERAL TUNNELS

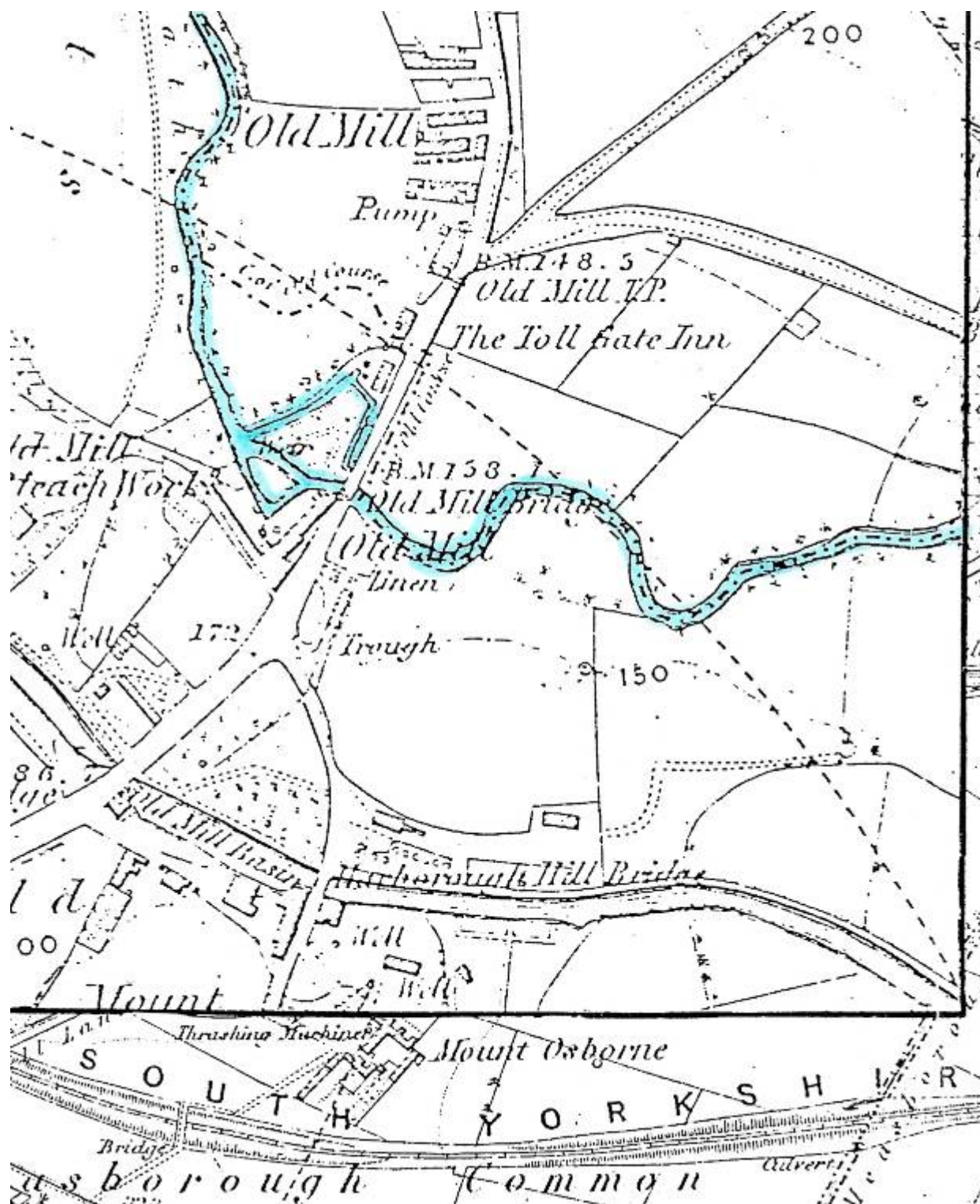


SECTION THROUGH WHOLE STRUCTURE

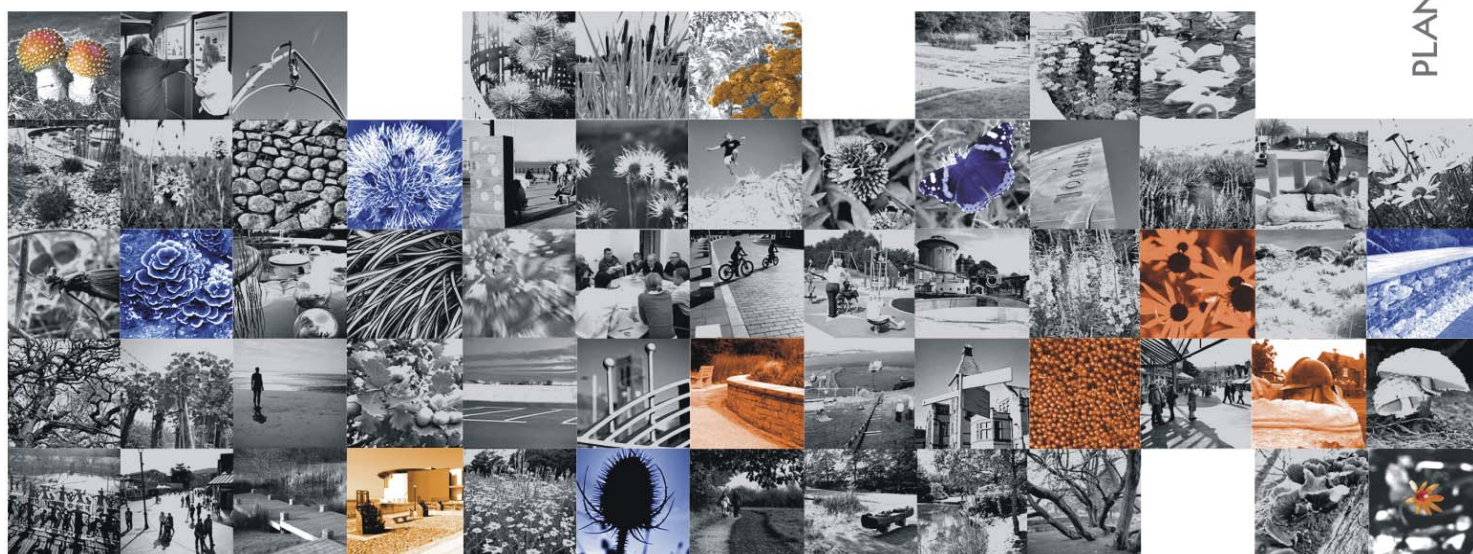




1850 OS



APPENDIX 12.6: BAT REPORT (TEC)



Old Mill Lane Culvert Bat Roost (Candidate site)

NHS Assessment and Phase 1 Survey

Prepared by
TEP

for

Barnsley Metropolitan Borough Council

January 2011

Genesis Centre
Birchwood Science Park
Warrington
WA3 7BH

T: 01925 844004
F: 01925 844002
E: tep@tep.uk.com
W: www.tep.uk.com



(Report Ref 2481.40)

Site Name:	Old Mill Lane Culvert Bat Roost
Site Area:	10.27ha
Survey Date:	September 2010
Nearest Settlement:	Honeywell, Smithies
Grid Reference at Centre:	434979, 407486
Surveyor(s)	LAC, VG, RH (2010) Eric Bennett, Bat Consultancy (Mar 2004)

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 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 pipistrelles were also abundant and foraging upstream and downstream of the culvert. Lower frequencies of soprano pipistrelles were also noted.

Giant hogweed (*Heracleum mantegazzianum*) 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.

Target Note:	TN1	
Habitat:	Scattered scrub and trees	
Species List:		
Scientific Name	Common Name	Frequency
<i>Crataegus monogyna</i>	Hawthorn	D
<i>Acer pseudoplatanus</i>	Sycamore	F
<i>Impatiens glandulifera</i>	Himalayan Balsam	F
<i>Rubus fruticosus</i> agg.	Bramble	F
<i>Salix caprea</i>	Goat Willow	F
<i>Salix fragilis</i>	Crack Willow	F
<i>Sambucus nigra</i>	Elder	F
<i>Urtica dioica</i>	Nettle	F
<i>Alliaria petiolata</i>	Garlic Mustard	O
<i>Angelica sylvestris</i>	Wild Angelica	O
<i>Artemisia vulgaris</i>	Mugwort	O
<i>Betula pendula</i>	Silver Birch	O
<i>Corylus avellana</i>	Hazel	O
<i>Dryopteris filix-mas</i>	Male-fern	O
<i>Elymus caninus</i>	Bearded Couch	O
<i>Epilobium hirsutum</i>	Great Willowherb	O
<i>Geum urbanum</i>	Wood Avens	O
<i>Rosa canina</i> agg.	Dog Rose	O
<i>Rubus idaeus</i>	Raspberry	O
<i>Stachys sylvatica</i>	Hedge Woundwort	O
<i>Symphytum x uplandicum</i>	Russian Comfrey	O
<i>Tanacetum vulgare</i>	Tansy	O
<i>Aegopodium podagraria</i>	Ground-elder	R
<i>Circaea lutetiana</i>	Enchanter's Nightshade	R
<i>Fraxinus excelsior</i>	Ash	R
<i>Malva moschata</i>	Musk Mallow	R
<i>Phyllitis scolopendrium</i>	Hart's-tongue	R
<i>Silene dioica</i>	Red Campion	R
<i>Stellaria holostea</i>	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
<i>Agrostis stolonifera</i>	Creeping Bent	F
<i>Arrhenatherum elatius</i>	False Oat-grass	F
<i>Dactylis glomerata</i>	Cock's-foot	F
<i>Holcus lanatus</i>	Yorkshire-fog	F
<i>Plantago lanceolata</i>	Ribwort Plantain	F
<i>Trifolium pratense</i>	Red Clover	F
<i>Achillea millefolium</i>	Yarrow	O
<i>Anthriscus sylvestris</i>	Cow Parsley	O
<i>Arctium minus</i>	Lesser Burdock	O
<i>Centaurea nigra</i>	Knapweed	O
<i>Elytrigia repens</i>	Common Couch	O
<i>Festuca rubra</i>	Red Fescue	O
<i>Heracleum sphondylium</i>	Hogweed	O
<i>Hypochaeris radicata</i>	Common Cat's-ear	O
<i>Lolium perenne</i>	Ryegrass	O
<i>Odontites verna</i>	Red Bartsia	O
<i>Plantago major</i>	Greater Plantain	O
<i>Tanacetum vulgare</i>	Tansy	O
<i>Taraxacum sp.</i>	Dandelion species	O
<i>Taraxacum sp.</i>	Dandelion	O
<i>Medicago lupulina</i>	Black Medick	R
<i>Senecio jacobaea</i>	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
<i>Acer pseudoplatanus</i>	Sycamore	A
<i>Fallopia japonica</i>	Japanese Knotweed	A
<i>Fraxinus excelsior</i>	Ash	A
<i>Arrhenatherum elatius</i>	False Oat-grass	F
<i>Chamerion angustifolium</i>	Rosebay Willowherb	F
<i>Dactylis glomerata</i>	Cock's-foot	F
<i>Impatiens glandulifera</i>	Himalayan Balsam	F
<i>Rubus fruticosus</i> agg.	Bramble	F
<i>Urtica dioica</i>	Nettle	F
<i>Alnus glutinosa</i>	Alder	O
<i>Artemisia vulgaris</i>	Mugwort	O
<i>Betula pendula</i>	Silver Birch	O
<i>Centaurea nigra</i>	Knapweed	O
<i>Corylus avellana</i>	Hazel	O
<i>Crataegus monogyna</i>	Hawthorn	O
<i>Dryopteris filix-mas</i>	Male-fern	O
<i>Elymus caninus</i>	Bearded Couch	O
<i>Festuca rubra</i>	Red Fescue	O
<i>Heracleum mantegazzianum</i>	Giant Hogweed	O
<i>Leucanthemum vulgare</i>	Oxeye daisy	O
<i>Rosa canina</i> agg.	Dog Rose	O
<i>Salix caprea</i>	Goat Willow	O
<i>Salix fragilis</i>	Crack Willow	O
<i>Sambucus nigra</i>	Elder	O
<i>Symphytum x uplandicum</i>	Russian Comfrey	O

<i>Tanacetum vulgare</i>	Tansy	O
<i>Cornus sanguinea</i>	Dogwood	R
<i>Hypericum perforatum</i>	Perforate St John's-wort	R
<i>Linaria vulgaris</i>	Common Toadflax	R
<i>Quercus petraea</i>	Sessile Oak	R
<i>Scrophularia auriculata</i>	Water Betony	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
<i>Glyceria maxima</i>	Reed Sweet-grass	D
<i>Epilobium hirsutum</i>	Great Willowherb	F
<i>Lycopus europaeus</i>	Gypsywort	O
<i>Salix fragilis</i>	Crack Willow	O
<i>Stachys palustris</i>	Marsh Woundwort	O
<i>Typha latifolia</i>	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	
<i>Crataegus monogyna</i>	Hawthorn	D	
<i>Salix fragilis</i>	Crack Willow	D	
<i>Rubus fruticosus agg.</i>	Bramble	F	
<i>Urtica dioica</i>	Nettle	F	
<i>Alnus glutinosa</i>	Alder	O	
<i>Corylus avellana</i>	Hazel	O	
<i>Salix caprea</i>	Goat Willow	O	
<i>Sambucus nigra</i>	Elder	O	
<i>Acer platanoides</i>	Norway Maple	R	
<i>Calystegia silvatica</i>	Large Bindweed		R
<i>Geum urbanum</i>	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
<i>Alnus glutinosa</i>	Alder	D
<i>Geum urbanum</i>	Wood Avens	F
<i>Impatiens glandulifera</i>	Himalayan Balsam	F
<i>Moss sp.</i>	Moss species	F
<i>Rubus fruticosus agg.</i>	Bramble	F
<i>Salix fragilis</i>	Crack Willow	F
<i>Typha latifolia</i>	Greater Reedmace	F
<i>Agrostis stolonifera</i>	Creeping Bent	O
<i>Alliaria petiolata</i>	Garlic Mustard	O
<i>Betula pendula</i>	Silver Birch	O
<i>Calystegia silvatica</i>	Large Bindweed	O

<i>Corylus avellana</i>	Hazel	O
<i>Crataegus monogyna</i>	Hawthorn	O
<i>Fraxinus excelsior</i>	Ash	O
<i>Juncus articulatus</i>	Jointed Rush	O
<i>Lycopus europaeus</i>	Gypsywort	O
<i>Salix caprea</i>	Goat Willow	O
<i>Sambucus nigra</i>	Elder	O
<i>Carex sp.</i>	Sedge species	R
<i>Cornus sanguinea</i>	Dogwood	R
<i>Plantago major</i>	Greater Plantain	R
<i>Pteridium aquilinum</i>	Bracken	R
<i>Scrophularia auriculata</i>	Water Betony	R

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

Target Note:	TN7	
Habitat:	Broadleaved plantation	
Species List:		
Scientific Name	Common Name	Frequency
<i>Acer campestre</i>	Field Maple	F
<i>Betula pendula</i>	Silver Birch	F
<i>Cornus sanguinea</i>	Dogwood	F
<i>Corylus avellana</i>	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
<i>Acer pseudoplatanus</i>	Sycamore	D
<i>Crataegus monogyna</i>	Hawthorn	F
<i>Rubus fruticosus agg.</i>	Bramble	F
<i>Epilobium hirsutum</i>	Great Willowherb	O
<i>Fagus sylvatica</i>	Beech	O
<i>Salix fragilis</i>	Crack Willow	O
<i>Sambucus nigra</i>	Elder	O
<i>Heracleum mantegazzianum</i>	Giant Hogweed	R
<i>Solidago virgaurea</i>	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 Natural Heritage 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 NHS site 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.

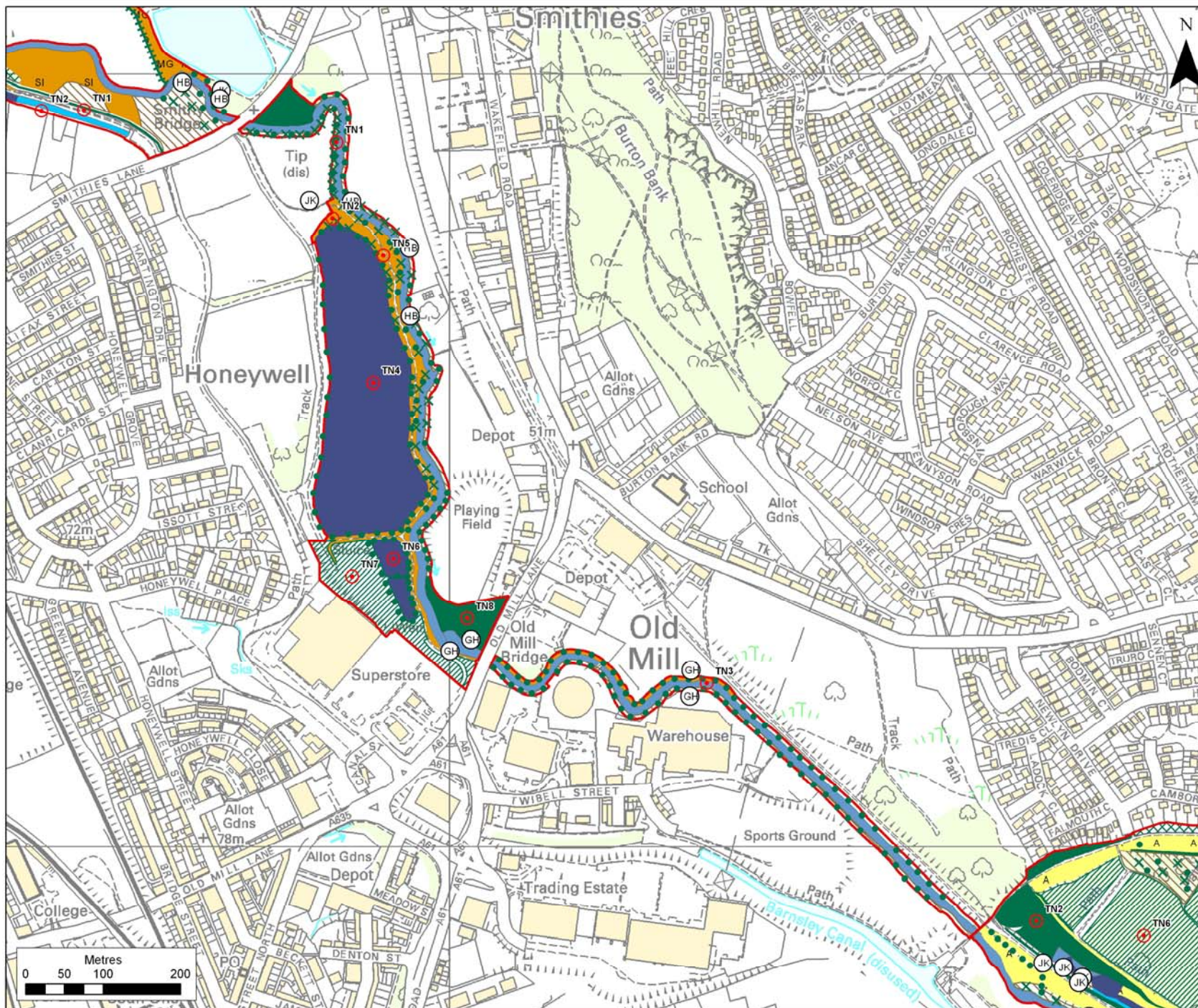
Adjacent sites should also be monitored to establish their importance for foraging and identify other roost sites. The culvert should also be monitored seasonally to establish accurate patterns of use, particularly whether any hibernation occurs in Daubenton's bats or any other bat species.

Action: Adopt as Natural Heritage 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



Natural Heritage Sites

Site Name

Old Mill Lane -
Candidate Site

Area

10.27ha

Nearest Settlement

Honeywell

Key

- Study Boundary
- Target Notes
- JK Japanese Knotweed
- HB Himalayan Balsam
- GH Giant Hogweed
- x 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



This map is reproduced from Ordnance Survey material with the permission of Ordnance Survey on behalf of the Controller of Her Majesty's Stationary Office © Crown copyright. Unauthorised reproduction infringes Crown copyright and may lead to prosecution or civil proceedings. 100022264 (2010)

G2481.010 November 2010