WYG Engineering

part of the **WYG** group

Barnsley College

Honeywell House

Centre for Sustainable Construction & Renewable Energies

Ecology Phase 1 Habitat Survey

Tree Condition and Value Report

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1.0 Introduction

The following document provides an Ecology Phase 1 Habitat Survey and a Tree Condition and Value Report for the site of the proposed new Sustainable Construction and Renewable Energies Centre for Barnsley College which is to be constructed on the Honeywell site. The Centre will be known as Honeywell House.

Both reports were prepared for the whole of the Honeywell Site in May 2009 and there have been no site changes since they were issued. The Ecology Phase 1 Habitat Survey is included in Appendix A and the Tree Condition and Value Report in Appendix B.

Honeywell House is to be located on a part of the site and its location with regard to the above reports is shown on two site plans included in Appendix C.

2.0 Ground Conditions

The site is shown by the British Geological Survey 1:10000 map to be underlain by approximately 10m of sandstone of the Kents Rock (or Kents Thin Rock) sandstone member of the Middle Coal Measures Formation of Upper Carboniferous age.

A Ground Conditions Report, dated July 2006, was prepared by WYG Environmental for the Sports Hall project at the Honeywell site which is adjacent the proposed site for Honeywell House. This included a historical review of the area which includes the site of the proposed new Sustainable Construction and Renewable Energies Centre. From historical plans it is apparent that the site has been reworked over many years and more recently it was a registered landfill.

The 1855 OS map indicates that site was being tipped on, probably by the spoil generated by the construction of the railways. Some areas were then used as allotment gardens until further tipping started in the 1980's.

The site has been discussed with the Contaminated Land Officer and Building Control Officer of Barnsley Metropolitan Council. They confirmed that there is a closed landfill on the site which accepted inert waste and material described as not being expected to give rise to landfill gas in substantial quantities. This filling is recorded as having commenced in 1984 and was completed in 1989. A copy of a letter dated 03 July 2006 from Barnsley Metropolitan Borough Council to WYG is attached in Appendix D.

Barnsley College staff also advised that additional material was placed on the site in 2001 and 2002 during construction of the Music Centre on the Honeywell site and topsoil was also placed in this area in 2007 when the new Sports Centre was constructed.

A mining report was obtained from the South Yorkshire Mining Advisory Service (SYMAS). This report states that there is no evidence that there has been any shallow mine workings in either the Kents Thin or the Kents Thick coal seams which lie beneath the site. Working of the Barnsley Coal Seam took place around 1834 at a depth of approximately 100m below existing ground level however any movement associated with these workings will have ceased.

The site is not in an area affected by Radon gas.

Appendix A

Ecology Phase 1 Habitat Survey

WYG Environment
part of the **WYG** group

Barnsley College

Barnsley College, Honeywell Campus - Submission of Reserved Matters

Ecology Phase 1 Habitat Survey

May 2009

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1.0 Introduction

1.1 Background

WYG was commissioned by Barnsley College to undertake an Ecology Phase 1 Habitat Survey at Barnsley College Honeywell Campus, in Barnsley, South Yorkshire (hereafter referred to as 'The Site'). The Ecology Phase 1 Habitat Survey was carried out in order to support the reserved matters planning application for the proposed redevelopment of the site. The results of the survey are provided in this report. The report conditions are contained in Appendix E.

1.2 Site Description

The site is currently used by Barnsley College and contains a cluster of college buildings, including a sports hall and music centre. The site also contains a large amount of recreational amenity grassland space with scattered trees; areas of semi-improved grassland and scrub; and sports grounds facilities including an Astroturf sports pitch and tennis courts.

1.3 Development Description

The proposals are for a mixed development comprising 63 residential units, 2,460m^2 of office floorspace, parking, new areas of public open space, including a play area, and onsite relocation of the existing sports hall and tennis courts.

1.4 Survey Objectives

The principal objectives of this study were to undertake a site walkover survey to identify habitats present and to make an assessment of the site's potential to support legally protected species or other species of nature conservation importance. The survey also aimed to identify any invasive non-native plant species, e.g. Japanese knotweed *Fallopia japonica*, giant hogweed *Heracleum mantegazzianum* on the site.

Based on the results of these studies, potential ecological constraints and opportunities relating to the proposed development have been identified and recommendations for further work have been made as appropriate.

2.0 Planning and Legislative Framework

This section provides information on:

- National planning guidance
- Local planning guidance
- Biodiversity policy guidance
- Designated sites
- Protected and notable species
- Invasive species

2.1 National Planning Guidance

National planning policy is governed by a range of documents including Planning Policy Statements (PPSs). The Local Authority's Structure Plan and Local Plan are local planning policy documents that reflect national policy. Other relevant documents that inform these documents (with regards to the biodiversity protection) are the UK Biodiversity Action Plan (UKBAP) and the local Biodiversity Action Plan (LBAP).

2.1.1 PPS9: Biodiversity and Geological Conservation

The document, 'Working with the Grain of Nature' sets out the Government's broad aim that planning, construction, development and regeneration should have minimal impacts on biodiversity and enhance it wherever possible (DEFRA, 2002). This aim has been incorporated within PPS9, published in August 2005 implementing national policy with respect to the protection of biodiversity (ODPM, 2005). Key principles relevant to this report include:

1i) Development plan policies and planning decisions should be based upon up-to-date information about the environmental characteristics of their areas. These characteristics should include the relevant biodiversity and geological resources of the area. In reviewing environmental characteristics local authorities should assess the potential to sustain and enhance those resources.

1ii) Plan policies and planning decisions should aim to maintain, and enhance, restore or add to biodiversity and geological conservation interests. In taking decisions, local planning authorities should ensure that appropriate weight is attached to designated sites of international, national and local importance; protected species; and to biodiversity and geological interests within the wider environment.

1iv) Plan policies should promote opportunities for the incorporation of beneficial biodiversity and geological features within the design of development.

1v) Development proposals where the principal objective is to conserve or enhance biodiversity and geological conservation interests should be permitted.

1vi) The aim of planning decisions should be to prevent harm to biodiversity and geological conservation interests. Where granting planning permission would result in significant harm to those interests, local planning authorities will need to be satisfied that the development cannot reasonably be located on any alternative sites that would result in less or no harm. In the absence of any such alternatives, local planning authorities should ensure that, before planning permission is granted, adequate mitigation measures are put in place. Where a planning decision would result in significant harm to biodiversity and geological interests which cannot be prevented or adequately mitigated against, appropriate compensation measures should be sought. If that significant harm cannot be prevented, adequately mitigated against, or compensated for, then planning permission should be refused.

PPS9 requires up-to-date information on the biodiversity present in a given site to enable planners to make an informed decision.

2.2 Local planning guidance

The current statutory development plan for Barnsley which covers the site is the Barnsley Unitary Development Plan (UDP), which sets out the council's policies and proposals for the use and development of land and buildings. The UDP contains the following policies relating to ecology and nature conservation:

'Policy GS15 - The Council will seek to safeguard important habitats and species from any activities which would cause disturbance, pollution or other damage. All development proposals should, where

appropriate, include measures to conserve and enhance existing features of nature conservation interest and to create new nature conservation areas.

Policy GS16 – Development likely to have an adverse effect, either directly or indirectly, on the conservation value of a National Nature Reserve or Site of Special Scientific Interest or any habitat or species protected by law, will only be permitted if it can be demonstrated that other material considerations outweigh the special interest of the site.

Policy GS117 - Sites which are designated as or potential Ramsar Sites, Special Protection Areas, or Special Areas of Conservation will be given the protection afforded to Sites of Special Scientific Interest. In addition, development proposals will be allowed only if there is no alternative solution and if there are imperative reasons of overriding public interest for them. Where such sites host a priority habitat or species (as listed in the EC Habitats Directive) development should only proceed if required for reasons of human health or public safety.

Policy GS18 – Any development which may adversely affect, directly or indirectly, a Local Nature Reserve, a Natural Heritage Site, Ancient Woodland, a Regionally Important Geological Site or other Nature Conservation Sites identified on the proposals maps, will not be approved unless it can be clearly demonstrated that there is a case for the development which outweighs the case for safeguarding the conservation interest of the site after available measures to avoid, mitigate or compensate for any adverse affects have been taken into account. In which case, the Council will seek to minimise the adverse impact and/or secure compensatory provision including, where appropriate, through planning conditions or obligations.

Policy GS22 – The Council will seek the retention and management of existing hedgerows, woodlands and trees both individually and in groups.

Policy GS23 – The Council will actively support the development of extensive new woodland and hedgerow planting and its appropriate management for landscape, ecological, recreational and ultimately economic benefit.'

Barnsley UDP pg 173 – 181

(http://www.barnsley.gov.uk/bguk/docs/planningpolicy/UDP/volume1-strategy-policy-justification.pdf)

2.3 Biodiversity policy guidance

'Biodiversity: The UK Action Plan' (HMSO 1994; updated 2007) was developed in response to The Earth Summit, held in Rio de Janeiro in 1992. The UK Biodiversity Action Plan lists a number of priority habitats and species for conservation action in the UK. Although the Action Plan does not confer any statutory legal protection, in practice many of the species listed already receive statutory legal protection under UK and/or European legislation. In addition, Priority Species and Habitats in the UK BAP are Species and Habitats of Principal Importance for the Conservation of Biodiversity under Section 74 of the Countryside and Rights of Way Act 2000 (CRoW 2000). This places a duty on government departments to have regard for these species and habitats when carrying out their functions, and it is now government policy under PPS 9 to consider these habitats and species when determining planning applications. Section 74 states that 'It is the duty of a listing authority to take, or to promote the taking by others of, such steps as appear to the authority to be reasonably practicable to further the conservation of the living organisms and types of habitat included in any list published by the authority under this section.'

As part of the action plan process, Local Biodiversity Action Plans (LBAPs) must also be produced for every county in the UK. Other public bodies may also produce LBAPs. These LBAPs highlight local biodiversity issues, with specific action plans being implemented for priority habitats and species where they occur.

The LBAPs set out a series of objectives for the conservation of priority species and habitats, (as identified in the UK-wide Biodiversity Action Plan of 1994), where they occur in each district, county or region.

The site falls within the Barnsley district administrative boundaries. The Barnsley Biodiversity Action Plan (BAP) includes 6 Flagship Species Action Plans, 18 Habitat Action Plans and 13 Species Action Plans (see Table 1 below).

Table 1 Barnsley BAP Flagship Species, Habitat and Species Action Plans

Flagship Species Action Plans	Habitat Action Plans	Species Action Plans
▪ Otter	▪ Upland oak woodland	▪ Brown hare
▪ Pipistrelle bat	▪ Upland mixed ash woodland	▪ Water vole

Flagship Species Action Plans	Habitat Action Plans	Species Action Plans
▪ Lapwing	▪ Wet woodland	▪ Great crested newt
▪ Barn owl	▪ Parkland	▪ White-clawed crayfish
▪ Bluebell	▪ Ancient and species-rich hedgerows	▪ Bittern
▪ Glow worm	▪ Cereal field margins	▪ Grey partridge
	▪ Floodplain grazing marsh	▪ Little ringed plover
	▪ Lowland meadows	▪ Skylark
	▪ Lowland dry acidic grassland	▪ Song thrush
	▪ Lowland heathland	▪ Tree sparrow
	▪ Upland heathland	▪ Twite
	▪ Rush pasture	▪ Linnet
	▪ Reedbeds	▪ Corn bunting
	▪ Ponds and canals	
	▪ Running water	
	▪ Standing water	
	▪ Urban-built up areas	
	▪ Post Industrial derelict and degraded land	

2.4 Designated sites

2.4.1 Statutory Designations

Sites with statutory designations receive varying degrees of legal protection under UK statute and European Directives. There are a number of statutory designations used for sites of high nature conservation value in the UK, which are made depending upon the importance of the site in a local, regional, national or international context.

2.4.2 Non-Statutory Designations

Non-statutory sites are afforded no statutory legal protection, but are normally recognised by local planning authorities and statutory agencies as being of local nature conservation value. The protection afforded to such sites is usually discretionary, through Local Plan Policies (see above). Non-statutory sites are designated by the local authority, usually in partnership with the County Wildlife Trust (or equivalent).

2.5 Protected and notable species

A number of species are protected under UK and international legislation. In the UK, primary protection is provided under the Wildlife and Countryside Act 1981 (as amended). Species of European importance receive additional protection under the Conservation (Natural Habitats, &c.) Regulations 1994, as amended; others may receive protection through specific legislation (such as the Protection of Badgers Act, 1992).

Species listed under Section 74 of the CRoW Act 2000, whilst not necessarily legally protected, can be a material planning consideration.

2.6 Invasive species

Japanese knotweed, giant hogweed and other non-native invasive plants are listed under Section 14 of the Wildlife and Countryside Act 1981 (as amended). This makes it an offence to plant them in the wild or otherwise cause them to grow. The Environmental Protection Act 1990 also lists them as 'controlled waste' to be disposed of properly. These provisions mean that if these species occur on a site proposed for development or other work which may disturb the ground, control of these species is likely to be required.

3.0 Methodology

3.1 Desk Study

The following organisations have been consulted to obtain ecological data, specifically relating to legally protected sites and species;

- Yorkshire Wildlife Trust;
- Barnsley Metropolitan Borough Council Countryside Department;
- South Yorkshire Badger Group;
- Barnsley Bat Group;
- South Yorkshire Herptile Group; and
- West Yorkshire Ecology (Ecological Data Centre)

In addition a search for relevant nature conservation information was made of the following websites;

- www.magic.gov.uk
- www.searchnbn.net

3.2 Site Walkover

A site visit and walkover ecology survey of the site was conducted on the 29th April 2009 prior to the commencement of any site works.

3.2.1 Flora

Habitats on site were identified according to standard Phase 1 Habitat Survey (JNCC, 2003) definitions. Any legally protected habitats and/or other habitats of nature conservation importance, e.g. UK or Barnsley Biodiversity Action Plan (BAP) priority habitats, were recorded. The location of trees within or overhanging the site was mapped. The site was also searched for the invasive, non-native plant species Japanese knotweed and giant hogweed which are both listed in Schedule 9, Part II of the Wildlife and Countryside

Act 1981 (as amended) which makes it an offence 'to plant or otherwise encourage' the growth of these plant species.

3.2.2 Fauna

In conjunction with the habitat survey, the potential for the site to support any legally protected faunal species and/or other faunal species of nature conservation importance, e.g. UK or Barnsley Biodiversity Action Plan (BAP) priority species was assessed.

Buildings and any suitable structures on site[1] were assessed for their potential to support roosting bats using the criteria set out in Table 2 which is based on the Bat Survey Good Practice Guidelines (Bat Conservation Trust, 2007). Where the potential for roosting bats is considered negligible, no further surveys are recommended. Where the bat roosting potential is considered to lie between 'low' and 'high', bat activity surveys are recommended, with the level of survey effort dependent on the assessed value of the habitat.

Detailed faunal surveys were not undertaken at this time; rather the potential for the site to support each species / species group was assessed based on the known range of each species / species group and the suitability of the habitats within the site. In addition, field signs or sightings of such species were recorded as seen.

[1] Trees on site were surveyed for their potential to support roosting bats by a WYG Arboriculturalist (refer to Arboriculture Report for Barnsley College, WYG 2009)

Table 2 Criteria for assessing the value of habitat features within the landscape for roosting bats (based on the Bat Survey Good Practice Guidelines, Bat Conservation Trust, 2007).

Value[2]	Criteria
Negligible	• No features visible[3] that could be used by bats (for roosting, foraging or commuting)
Low ↓ Moderate ↓ High	• Small number of potential roosts, most likely less significant ones (i.e. probably not maternity roosts or hibernacula). • Isolated habitat that could be used by foraging bats e.g. a lone tree or patch of scrub but not parkland. • Isolated site not connected by prominent linear features (but if suitable foraging habitat is adjacent it may be valuable if it is all that is available). • Several potential roosts in the buildings, trees *or* other structures. • Habitat could be used by foraging bats e.g. trees, shrub, grassland or water. • Site is connected with the wider landscape by linear features that could be used by commuting bats e.g. lines of trees and scrub or linked back gardens. • Buildings, trees or other structures (such as mines, caves, tunnels, ice houses and cellars) with features of particular significance for roosting bats. • Habitat of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland. • Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river/stream valleys or hedgerows. • Site is close to known roost.
Confirmed presence	• Evidence indicates a building, tree or other structure is used by bats[4] e.g.: ○ bats seen roosting or observed flying from a roost or freely in the habitat ○ droppings, carcasses, feeding remains, etc. found; and/or bats heard 'chattering' inside on a warm day or at dusk

[2] There are no clearly defined categories of habitat value; rather there is a continuum from low-high value for bats
[3] See Table 6.2 Features of buildings and built structures that are considered to influence use by bats in summer – BCT Guidelines 2007
[4] As per Box 6.2 Standard Information to be recorded in inspection survey – BCT Guidelines 2007

Value[2]	Criteria
	○ Bats recorded/observed using an area for foraging or commuting.

4.0 Baseline Conditions

Refer to Appendix A Desk Study Consultation.

4.1 Pre-existing Ecological Information

4.1.1 Designated Sites

Nationally Designated Sites

There are no nationally designated sites (e.g. Sites of Special Scientific Interest (SSSIs), Special Protected Area (SPA) and/or Special Area of Conservation (SAC)) on and/or within 2km radius of the site.

Locally Designated Sites

There are no Sites of Scientific Interest (SSSIs) within a 2km search area.

Dearne Valley Park Local Nature Reserve (LNR) is located approximately 1km to the east of the site. The site is designated for its acidic oak woodland and mosaic of wetland habitats.

There are two Sites of Interest for Nature Conservation (SINCs) within a 2km search radius. Barnsley Canal at Wilthorpe (located approximately 2km north of the site, approximate grid reference SE 336084) and Cliff Wood (located approximately 2km east of the site, approximate grid reference SE 365067). Barnsley Canal at Wilthorpe is cited for the canal itself and surrounding habitat features including river, swamp and grassland. Cliff Wood is cited for its mosaic of habitats including woodland, scrub, grassland, marsh and open water.

Ancient woodland

There are no areas of ancient woodland on site or within 2km of the search area.

Registered Park and Garden

There is one Registered Park and Garden, Loche Park, located approximately 1.5km south of the site.

4.1.2 Protected and Notable Species Records

Awaiting full consultation results from:

- Barnsley Metropolitan Borough Council Countryside Department;
- South Yorkshire Badger Group; and
- South Yorkshire Herptile Group

Bats

Barnsley Bat Group provided 10 records of bats within a 1km search radius of the site (refer to Appendix A). No records were found for the site itself. The nearest record is a pipistrelle roost of 74 bats located approximately 250m east of the site (Roy Hall Cash and Carry).

Badger

West Yorkshire Ecology (WYE) holds no records of badger *Meles meles* within a 2km radius of the site.

Telephone consultation with Monica Ward at South Yorkshire Badger Group highlighted that badger activity on, and/or within, close proximity of the Barnsley College site is likely to be limited. Badger activity is known to be low within the centre of Barnsley and the likely presence of badger on site is considered to be negligible.

The NBN Gateway holds no recent records (i.e. within the last 10-15 years) of badger.

Otter

West Yorkshire Ecology (WYE) holds one record of otter within 2km radius of the site. The record is of tracks/trials/prints of otter at Smithy Bridge on the River Dearne (dated 17/01/07) approximate grid reference SE 34730792.

Reptiles

West Yorkshire Ecology (WYE) holds no records of reptiles within 2km radius of the site.

The NBN Gateway holds no recent records (i.e. within the last 10-15 years) of grass snake *Natrix natrix*, slow worm *Anguis fragilis*, common lizard *Zootoca vivipara* or adder *Vipera berus* within the SE30 10km grid square.

4.1.3 Proximity of nearest water body/course to site

There are no water bodies and/or water courses on site. The nearest water bodies/course is Fleets Lake and the River Dearne both are located approximately 500m to the east of the site, beyond the Leeds to Sheffield railway line.

5.0 Results

The results of the Phase 1 Habitat Survey are shown on the Phase 1 Habitat Plan (Appendix B), associated Targets Notes (Appendix C) and Plates Sheet (Appendix D). A description of the site and assessment of its potential to support key faunal groups is given below.

5.1 Habitats

The following habitats were recorded on site:

- Buildings and hard-standing
- Amenity Grassland
- Semi-improved grassland
- Scrub
- Trees
- Hedgerow
- Tall ruderal
- Ephemeral/short perennial
- Ornamental/introduced shrubs

5.1.1 Buildings and hard-standing

The site currently has seven buildings with associated hard-standing car parking, roadways and footpaths across the site. The description of the buildings is provided below:

Building 1 - Barnsley College Sports Facility (Target Note 9, Plate 1)

Barnsley College Sports Facility is a modern two storey building. It is brick built with plastic and metal cladding. The roof is corrugated and has PVC windows.

Buildings 2 and 3 - Two Portakabin buildings (Target Note 19, Plate 2)

The two Portakabin buildings are single storey metal frame buildings; flat roofed and with PVC windows.

Building 4 - Music Rooms building (Target Note 21, Plate 3)

The Music Rooms building is a single storey brick building with wood frame windows and wooden soffit. The roof is made of corrugated metal/plastic with fitted sky lights. There is no apparent roof void.

Building 5 - Barnsley College Honeywell (Target Note 29)

The Barnsley College Honeywell building is primarily a two storey, brick-built building with wooden windows. The roof is pitched and hipped with clay ridge and slate roof tiles and sky lights erected in parts (Plate 4). Towards the north-western corner of the building, the building is single storey and flat roofed (Plate 5). The south-western corner of the building comprises a modern metal framed structure (Plate 6).

Building 6 - Performing Arts Centre (Target Note 30, Plate 7)

The Performing Arts Centre building is a brick built, single storey building with metal cladding towards the tops of the walls, PVC windows and a flat roof.

Building 7 - Electric and gas sub-station (Target Note 31, Plate 8)

The sub-station building is brick built and has a pitched roof with cement roof and ridge tiles. There are vents on the wooden window and door shutters and there is a metal flashing base around the upper structure to the building.

Additionally, the site has hard-standing sports ground facilities i.e. tennis courts (Target Notes 1 and 5) and an astroturf football pitch (Target Note 10) located to the north and east of the site and respectively.

5.1.2 Amenity grassland

Amenity grassland is one of the dominant habitats across the site (Target Note 4, Plate 9). The grassland primarily comprises annual meadow grass *Poa annua*, fescue sp. *Festuca sp.*, cocksfoot *Dactylis glomerata* and Yorkshire fog *Holcus lanatus*, with other forbs including broad-leaved dock *Rumex obtusilfolius*, dandelion *Taraxacum* sp., common mouse ear *Cerastium fontanum*, tufted vetch *Vicia cracca* and white clover *Trifolium repens*.

5.1.3 Semi-improved grassland

Semi-improved grassland is located primarily towards the south of the site (Target Note 16, Plate 10). Patches of this habitat are also present in the north of the site (Target Note 2). The species composition includes those species recorded within the the amenity grassland with other species including perennial rye grass *Lolium perenne*, meadow fox-tail *Alopecurus pratensis*, tufted hair grass *Deschampsia cespitosa*, cow parsley *Anthriscus sylvestris*, ribwort plantain *Plantago lanceolata*, colt's foot *Tussilago farfara*, creeping buttercup *Ranunculus repens*, common nettle *Urtica dioica*, red dead nettle *Lamium purpureum*, ragwort *Senecio jacobaea*, cleavers (goosegrass) *Galium aparine*, spear thistle *Cirsium vulgare* and common field speedwell *Veronica persica*.

5.1.4 Scrub

Towards the south of the site are dense areas of scrub and trees (Target Note 16, Plate 11). Due to the dense vegetation and uneven ground, the areas of scrub could not be acessed during the survey. Patches of scrub are also scattered within the areas of semi-improved grassland. The dominant scrub species comprised bramble *Rubus fruticosus*, nettle, hawthorn *Crataegus monogyna*, hogweed *Heracleum sphondylium*, broad-leaved dock *Rumex obtusifolius*, sycamore *Acer pseudoplatanus* and silver birch *Betula pendula*.

5.1.5 Trees

Scattered young and early-mature trees are present across the site within the amenity grassland and include the following species; silver birch, rowan *Sorbus aucuparia*, goat willow *Salix caprea*, sycamore, Lombardy poplar *Populus nigra*, alder *Alnus glutinosa*, hornbeam *Carpinus betulus*, ornamental cherry *Prunus* sp., field maple *Acer campestre* and Norway maple *Acer platanoides*.

Mature trees are present towards the west of the site including ash *Fraxinus excelsior*, sycamore and hawthorn (Plate 12).

5.1.6 Hedgerow

Along the northern boundary of the site there is a species-poor hedgerow which merges into an area of scrub (Target Note 3, Plate 13). Species present include hawthorn and cotoneaster.

5.1.7 Tall Ruderal

There is a small linear area of tall ruderal habitat along the north-east boundary of the site dominated by nettles.

5.1.8 Ephemeral/short perennial

There are some areas of ephemeral/short perennial habitat with patches of bare ground, throughout the site (Target Note 12, Plate 14). The vegetation here consists of a mixture of generally low-growing plants particularly ribwort plantain, clover *Trifolium* sp., dandelion, pineappleweed *Matricaria discoidea*, fever few *Tanacetum parthenium*, scentless mayweed *Tripleurospermum inodorum*, with grass species including cock's foot and taller ruderal species such as spear thistle, broad-leaved dock and ragwort.

5.1.9 Ornamental/Introduced Shrub

A small area of ornamental and introduced shrub is located to the north west of the site (Target Note 27) including species such as rhododendron and cotoneaster.

5.2 Birds

The scrub, trees, semi-improved grassland, tall ruderal habitat and buildings on site provide potential breeding bird habitat. Species which could potentially be present include BAP species such as song thrush *Turdus philomelos* and linnet *Carduelis cannabina*.

5.3 Mammals

5.3.1 Bats

The buildings and trees on site were surveyed for their potential to support roosting bats.

Buildings

The Barnsley College Sports Facility, two portakabins and Performing Arts building have no notable bat access points. The walls are well pointed, the roofs are flat with no void and the windows are well sealed. No evidence of bats was found externally. These buildings were therefore considered as having **negligible potential** for supporting roosting bats.

The Music Rooms building has limited potential access points suitable for bats. The only gaps evident are into the wooden soffits where there is an apparent space between the soffit and wall (see Plate 15). No evidence of bats was found externally. This building was therefore considered as having **low potential** for roosting bats.

The Barnsley College Honeywell is primarily well sealed. There are no notable bat access points into the flat roofed sections and modern built structure to the building. On the main building, the pitched roof appears well sealed as a whole and no gaps appear to be evident into the ridge. There are however a few potential bat access points, beneath the lead flashing (particularly on the south eastern elevation of the building, Plate 16) and beneath lifted roof tiles. No evidence of bats was recorded externally. The Barnsley College Honeywell building was therefore surveyed as having **moderate potential** for supporting roosting bats.

The electric/gas sub-station has a few potential bat access points. These are within gaps in the wall where it is partially collapsing (Plate 17), within the air vents, and one or two gaps beneath lead flashing and lifted tiles (Plate 18). No evidence of bats was recorded externally. This building was therefore also surveyed as having **low-moderate potential** for supporting roosting bats.

Trees

Trees were surveyed for their potential to support roosting bats by a WYG Arboriculturalist/Ecologist. Two trees, one on site - Tree 80 an ash (Target Note 26, Plate 19) and one directly adjacent to the western boundary -Tree 158 a Norway maple (refer to Arboriculture Report, WYG 2009) were considered as having potential for roosting bats. The ash and Norway maple were rated **moderate** and **high potential** for roosting bats respectively.

Habitat

The scrub and trees on site provide potentially good foraging habitat for bats. Additionally the Leeds to Sheffield, and Huddersfield to Sheffield Railways bordering the east and south of the site respectively, provide potentially good habitat linkages for commuting bats from the site to the wider landscape.

5.3.2 Badgers

The dense scrub and tree habitat on site provide potential habitat for badger; however the area could not be accessed for full survey. The vegetative banks on the east side of the site sloping down towards the

fencing adjacent to the Leeds to Sheffield Railway were surveyed for badger (where access could be gained). No signs of badger were recorded.

5.3.3 Otter

There are no water courses on site. The nearest water course is the River Dearne located approximately 500m to the east of the site.

5.4 Reptiles

The semi-improved grassland and scrub habitat located to the south of the site may provide suitable habitat for reptile. Adjacent to and just outside the southern boundary line of the proposed development footprint (Target Note 15), there is an area of bare ground with a number of bricks and rubble piles which may provide suitable refugia for reptiles. However, no reptiles were seen during the walkover and given that the majority of the site is well maintained and heavily disturbed, the likelihood for reptiles to exist on site is negligible.

5.5 Amphibians

There are no ponds on and/or within 500m of the site (Ordnance Survey 1:25,000 map).

5.6 Invertebrates

The areas of semi-improved grassland and scrub on site are particularly favourable for invertebrates compared to the rest of the site. Orange tip butterfly *Anthocharis cardamines* and small tortoiseshell butterfly *Aglais urtica* were recorded on site during the walkover.

5.7 Invasive Plants

Japanese knotweed is present on site. Six stands were identified within and/or directly adjacent to the site boundary[5]:

- Stand 1 (Target Note 14, Plate 20) ~ 15m x 2m

[5] It is important to note that that only a rough estimation on the size and location of Japanese knotweed is given and mapped. The whole of the site could not be accessed and/or walked over at the time of survey therefore an unexpected presence of Japanese knotweed (incl. new growth) may occur.

- Stand 2 (Target Note 17, Plate 21) ~6m x 2m
- Stand 3 (Target Note 18, Plate 22). Difficult to quantify size due to location behind fence.
- Stand 4 (Target Note 22, Plate 23). Primarily dead canes. Difficult to quantify size due to location behind fence.
- Stand 5 (Target Note 23, Plate 24). Primarily dead canes but sprigs of new growth present. ~8m x 5m.
- Stand 6 (Target Note 24, Plate 25). Dead canes and new growth. ~5m x 2m.

It is important to note that Japanese knotweed is also evident in the area to the south of the site outside the site boundary (Target Note 15). Due to the dense scrub to the south of the site there may be Japanese knotweed present which presently has not been surveyed and/or accounted for.

6.0 Discussion of Potential Ecological Constraints

6.1 Designated Sites

There are no nationally designated sites on site and/or within a 2km radius.

The nearest designated site is Dearne Valley Park Local Nature Reserve (LNR) located approximately 1km to the east of the site. This LNR is not anticipated to be impacted on by any of the proposed works on site.

6.2 Habitats

Urban habitats i.e. Urban Built-up Areas, provide a valuable wildlife resource, and as such the Barnsley LBAP includes Urban Habitats. Many of the species with action plans are found in urban areas e.g Pipistrelle bat, song thrush and tree sparrow.

Current factors causing loss or decline of this BAP Habitat, which may be relevant this site, include some of the following:

- New development, causing loss of natural habitats.
- Unsympathetic management of open space, including inappropriate use of chemicals.
- The felling of trees for safety, especially those with cavities, removing nesting sites for birds and roosting sites for bats. In some instances hibernating bats have been killed by tree felling.
- The use of toxic timber treatment chemicals in roof spaces, poisoning bats.
- The conversion of old buildings/barns etc. to residential or other use without taking account of existing wildlife.
- Removal of 'weed' species which produce nectar and seeds for wild creatures. Many cultivated plants and flowers are not as attractive to wildlife as native species.
- Over-manicured gardens providing few opportunities for wildlife. Most gardens have space for a bit of 'wilderness' where wildflowers are allowed to flourish.

- Property repairs causing loss of roosting sites for birds and bats, especially the entombing of bats in wall cavities etc by blocking access holes.
- Overstocking garden ponds with fish can result in loss of plant and invertebrate populations.

It is therefore important that the above factors are considered during development/construction and thus avoid potential impacts on species which utilise urban habitats (as per Section 6.3. below).

6.3 Protected/BAP Species

6.3.1 Birds

There is potential for birds to nest within the semi-improved grassland, scrub, trees and buildings on site.

All wild birds in the UK are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy the nest (whilst being built or in use) or its eggs. Bird species listed in Schedule 1 of the 1981 Act receive further protection which makes it an offence to intentionally or recklessly disturb these species while building a nest or in, on or near a nest containing eggs or young; or to disturb dependent young of such a bird.

It is recommended that any works affecting potential bird nesting habitat, i.e any vegetation clearance, should be carried out outside the breeding season (March to September inclusive). If this is not possible suitable nesting habitat should be checked for nests by a suitably qualified ecologist immediately prior to its removal. If nests are found, clearance of the relevant vegetation will need to be delayed until young have fledged and left the nest.

6.3.2 Bats

Buildings

The Barnsley College Sports Facility, two portakabin buildings and Performing Arts building were surveyed as having **negligible potential** for roosting bats. No further surveys are therefore recommended at this time, and bats are not considered, at this stage, to pose a constraint to works proceeding on these buildings. In the unlikely event bats are identified at any time during works, all works should stop and an experienced bat ecologist should be contacted for advice immediately.

The Barnsley College Honeywell building, Music Rooms building and sub-station were surveyed as having **low-moderate potential** for roosting bats. It is therefore recommended that an internal survey (where access can be gained) and nocturnal bat activity surveys (comprising dusk emergence and dawn re-entry surveys) be undertaken on these buildings prior to any construction/demolition works to determine the presence or likely absence of roosting bats.[6]

Trees

Two trees on site (Tree 80 ash and Tree 158 Norway maple - refer to Arboriculture Report, WYG 2009) were surveyed as having potential for roosting bats. The ash and Norway maple tree were rated as having **moderate potential** and **high potential** for roosting bats respectively. The survey was undertaken from ground level and both trees were observed to have discernible crevices. It is therefore recommended prior to any felling of these trees that on the first instance an internal endoscopic survey be undertaken at height to further determine the potential for roosting bats where possible. Depending on the results of the internal survey, nocturnal bat activity surveys (dusk emergence and dawn re-entry surveys) may subsequently also be required.

Legislation

All sixteen British bat species are fully protected through their inclusion in Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and in Schedule 2 of The Conservation (Natural Habitats, &c.) Regulations 1994 (as amended) as a European protected species, implementing the EC Habitats Directive in the UK.

Under the legislation, it is an offence to deliberately kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or resting place used for shelter or protection by a bat or disturb an animal while it is occupying a structure or place which it uses for that purpose. It is also an offence to possess or advertise/sell/exchange a bat (dead or alive) or any part of a bat.

No offence is committed if work is done under, and in accordance with, a licence issued under the Habitats Regulations. Habitats Regulations licences (sometimes called European Protected Licences) permit work

[6] It is important to note that the potential value of a structure to support roosting bats may vary, and move either up or down following the findings of additional surveys. Surveying for bats is often an iterative process, with later surveys being informed by earlier ones (BCT, 2007).

that would otherwise constitute an offence by disturbing bats and/or damaging or destroying their roosts; this might include demolishing a building containing a bat roost, converting a barn or felling a tree. In each case the roost is either destroyed or damaged. A Habitats Regulations licence application consists of an application form, a Method Statement, Reasoned Statement and Local Planning Authority (LPA) Consultation document (to be completed by the relevant Local Authority planning Officer. The Method Statement is prepared by an ecologist and comprises survey information, assessment and mitigation/enhancement measures. These measures are designed to establish that "the action authorized will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range" (Habitats Regulations 44(3)(6)).

6.3.3 Badgers

The scrub habitat on site provides potentially suitable habitat for badger. However, no signs of badger were recorded. No recent records of badger were held by NBN Gateway or West Yorkshire Ecology. Consultation with South Yorkshire Badger Group also indicated that the likely presence of badgers on site is negligible. Given all of the aforementioned, it is considered that badger do not pose an ecological constraint at this time.

6.3.4 Reptiles

The semi-improved grassland and scrub interface on site provide suitable habitat for reptiles. However, no recent records of reptiles were held by NBN Gateway or West Yorkshire Ecology.

6.4 Invasive Plant Species

Japanese knotweed was recorded on site. The Wildlife and Countryside Act 1981 (as amended) provides the primary controls on the release of non-native species into the wild in Great Britain. It is an offence under section 14(2) of the Act to 'plant or otherwise cause to grow in the wild' any plant listed in Schedule 9, Part II, which includes Japanese Knotweed. This could include cutting the plant or roots and disturbing surrounding soil if not correctly managed. Japanese knotweed is classed as 'controlled waste' under the Environmental Protection Act 1990. This requires disposal at licensed landfill sites and it should not be included with normal household waste.

It should be recognised that rhizomes can extend up to 7m and therefore earthworks within this distance of a stand could potentially spread rhizome. Japanese knotweed can spread by the movement of

contaminated soil (e.g. vehicle tyres, incorrect disposal, windblown fragments etc.) (Hathaway, 2000). If development is likely to disturb areas occupied by Japanese knotweed then guidelines for the control of this species will need to be followed. The Environment Agency (www.environment-agency.gov.uk) has produced a Code of Practice for the Management, Destruction and Disposal of Japanese knotweed.

Even if Japanese knotweed will not to be directly disturbed by construction there is the risk it may subsequently spread within the site potentially resulting in damage to new structures on site in the longer term.

It is recommended that further advice should be sought as soon as possible on the management of Japanese knotweed at this site taking into account the nature of site proposals and the programme of works.

7.0 Recommendations for Conservation Enhancement

Taking the requirements of PPS9 into account (see section 2.1.1), opportunities should be sought where possible for nature conservation enhancement at this site.

It is proposed that two ponds will be created on site (refer to WYG Landscape Report, 2009). This would not only create a valuable visual landscape and amenity feature but would also enhance the site's ecological value for biodiversity. The planting of marginal vegetation species within these ponds, e.g. rush species such as soft rush *Juncus effusus* and yellow iris *Iris pseudacorus* would create marginal habitat for nesting waterfowl and breeding amphibians.

Opportunities may exist to enhance the site for bat and bird species by the incorporation of bat/bird boxes onto trees and/or into built structures. LBAP and UKBAP priority species such as the pipistrelle bat *Pipistrellus pipistrellus* could potentially benefit from the provision of appropriate bat boxes (see http://www.alanaecology.com/acatalog/Bat_Boxes.html). The House sparrow (UKBAP), Red List) could also potentially benefit from such initiatives (see http://www.alanaecology.com/acatalog/Bird_Boxes.html). Such measures would therefore be beneficial to nature conservation and show compliance with the latest policy guidance.

Opportunities may also exist to develop any the semi-improved grassland and scrub area which is retained to the south of the site as a field meadow and/or natural wilderness area which would be beneficial for invertebrate species and breeding birds.

8.0 References

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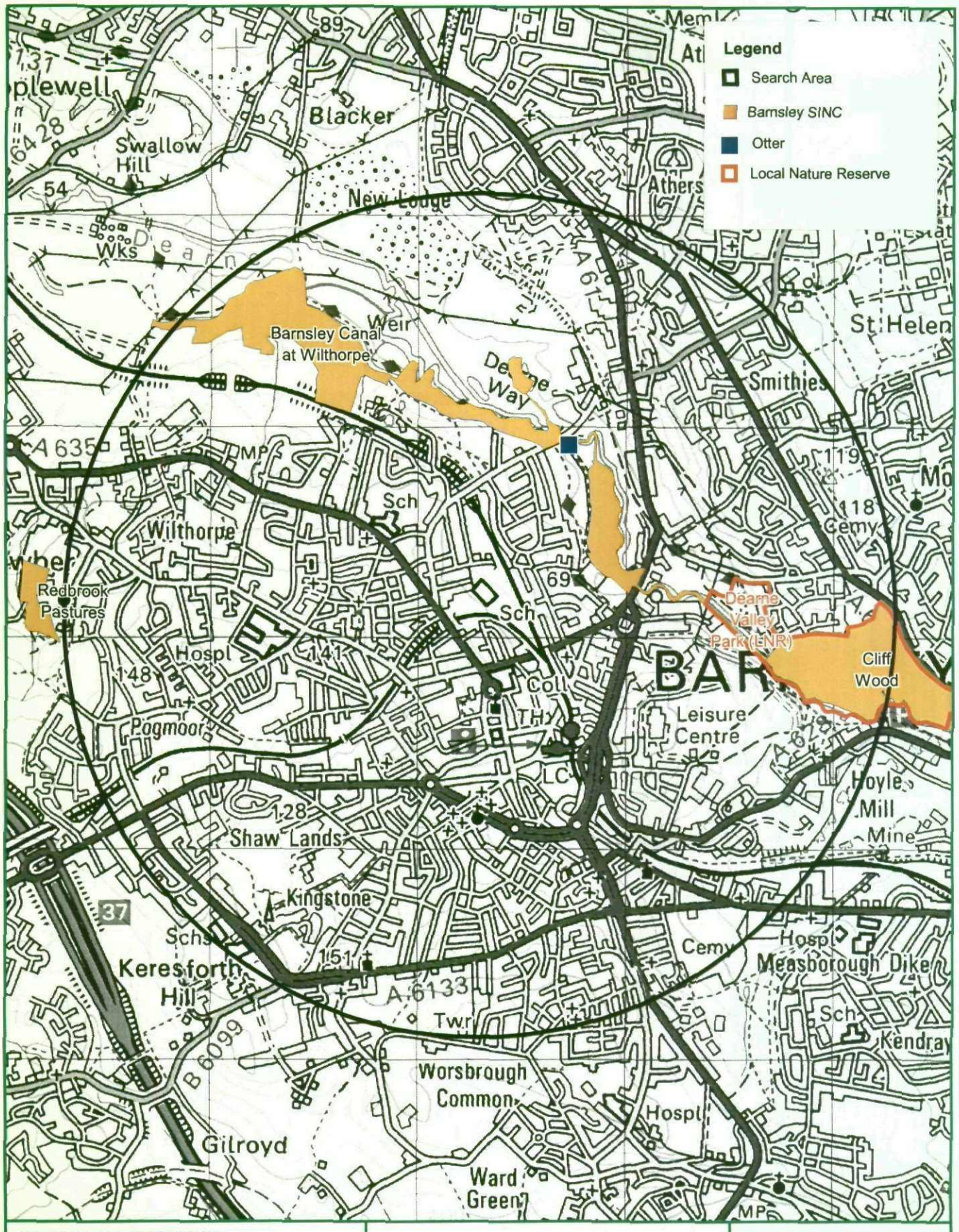
Appendices

Appendix A – Desk Study Consultation

A056021 -Barnsley College Honeywell Campus

Site Name	District	Roost Type	NGR	Species	Count	Date
Southwell Street	Old Town	House	SE336067	Indet	+ Report	13/10/00
Bond Road	Old Town	House	SE339073	Leislers	2	12/07/05
Melvinia Crescent	Wilthorpe	House	SE338078	Pipistrelle	+ (21-50)	15/07/99
Kensington Road	Barnsley	House	SE339071	Pipistrelle	75	29/06/92
Monkey Tunnel	Wilthorpe	Footpath tunnel (rly)	SE336080	Daubentons	5	05/09/02
Western Street 2	Barnsley	House	SE340068	Pipistrelle	213	12/06/91
Barnsley Telephone Exchange	Barnsley	Telephone Exchange	SE 344068	45 Pipistrelle	2 + Dr	01/09/00
Western Street 1	Barnsley	House	SE340068	Pipistrelle	59	07/08/89
Roy Hall Cash & Carry	Barnsley	Offices	SE353072	Pipistrelle	74	13/07/90
Old Mill, A61, Culvert	Old Mill	Culvert	SE351072	Daubentons	412	24/06/90



N W E S

0 0.5 1
kilometres

West Yorkshire Ecology
West Yorkshire Joint Services

2KM DATA SEARCH

BARNSLEY COLLEGE

Registry of Deeds, Newstead Road, Wakefield, WF1 2DE Ph/Fax: 01924 306 793 Email: ecology@wyjs.org.uk

Site Name: Barnsley Canal at Wilthorpe Parish:

Grid Reference: SE 336084 Area: 33.3 ha

SITE DESCRIPTION

The disused Barnsley Canal at Wilthorpe and its surrounding habitats are located between the River Dearne and the railway line, north of Wilthorpe at an altitude of 50 m AOD. The site includes a stretch of the canal, part of the old course of the river, swamp and grassland.

The disused canal is largely dry in the west of the site and dominated by reed-grass (Glyceria maxima). To the west it is also dominated by great reedmace (Typha latifolia) with bur-reed (Sparganium erectum) and saplings of birch (Betula species). The canal has water further east and a complete cover of common duckweed (Lemna minor). East of the next footbridge the water is open and contains broad-leaved pondweed (Potamogeton natans), Canadian pondweed (Elodea canadensis) and whorled water-milfoil (Myriophyllum verticillatum), a nationally scarce plant. Towards Smithy Bridge the canal is dry and dominated by reed-grass with unbranched bur-reed (Sparganium emersum). Brown sedge (Carex disticha) grows on the site and is a rare plant in the district. An increasing dominance of Typha and Glyceria were noted in 2003 together with a marked increase in willow scrub.

A variety of habitats are found either side of the canal. In the west and south of the canal is a large area of short turf, unimproved neutral grassland. The dominant grass is crested dog's-tail (Cynosurus cristatus) with common bent (Agrostis capillaris) and a rich diversity of meadow flowers including autumnal hawkbit (Leontodon autumnalis), centaury (Centaurium erythraea), meadow buttercup (Ranunculus acris), sneezewort (Achillea ptarmica), marsh thistle (Cirsium palustre), field scabious (Knautia arvensis), bladder campion (Silene vulgaris) and common tormentil (Potentilla erecta). The grassland is broken up by a small wooded area of hawthorn (Crataegus monogyna) and a dry pond dominated by hard rush (Juncus inflexus).

North of the canal is the site of Wilthorpe Marsh, which has been drained. A few small marshy areas remain and these are dominated by great reedmace with soft rush (Juncus effusus) water-plantain (Alisma plantago-aquatica), common water-starwort (Callitriche stagnalis) and autumnal starwort (C. hermaphroditica), a nationally scarce plant. Other plants include water mint (Mentha aquatica) jointed rush (Juncus articulatus), marsh bedstraw (Galium palustre), common skullcap (Scutellaria galericulata) and lesser water-parsnip (Berula erecta), a rare plant in the district.

The old course of the River Dearne contains great reedmace, bur-reed, common duckweed, green water-cress (Nasturtium officinale), curled pondweed (Potamogeton crispus) and fennel-pondweed (P. pectinatus), Canadian pondweed, water-plantain and lesser water-parsnip.

Between the old river and the canal is an area of acid grassland dominated by common bent and red fescue (Festuca rubra) with a variety of herb species including common tormentil, devil's-bit scabious (Succisa pratensis), common knapweed (Centaurea nigra) and yarrow (Achillea millefolium).

An area of swamp with small pools north of the river is dominated by great reedmace with lesser pond sedge (Carex acutiformis), a rare plant in the district, and lesser water-parsnip with small pools. Adjacent to the swamp is a slope of grassland with

common bent grass, devil's-bit scabious and hawkweeds (Hieracium species). A small marsh dominated by dense soft rush with sneezewort, devil's-bit scabious, common skullcap and gipsywort (Iycopus europaeus) is found north of the larger swamp area.

The site supports breeding sedge and reed warbler, lesser whitethroat, kingfisher (a Bird of Conservation Concern) and sparrowhawk. Snipe, redshank and little ringed plover visit the site on passage. In autumn there is a large roost of swallows using the areas of great reedmace. In winter areas of scrub are used by feeding and roosting thrushes, finches and buntings, sometimes in large numbers. The old course of the river is used for fishing and contains good diverse fish populations of roach, perch, tench, bream, carp, dace, bleak and pike. The area supports populations of amphibians such as common toad, common frog and smooth newt. Great created newt have also been reported at Willowbank (pers. Comm. J Lunn 2003).

Wilthorpe Marsh was a very rich site entomologically and it is not known how much of this interest has been lost due to the drainage scheme. A rare sawfly, Dolerus megapterus is found on the vegetation of the canal and this is the first record for this species in Yorkshire. Dragonflies and damselflies on the site include the brown aeshna Aeshna grandis, emerald damselfly Lestes sponsa, a rare species in South Yorkshire and common sympetrum Sympetrum striolatum.

SITE EVALUATION

Criteria

Size: This is a fairly large site with a mosaic of habitats including a large area of species -rich unimproved grassland.

Diversity: The site is centred on the canal which contains a diversity of aquatic plants. Diversity is added to the sit by the inclusion of species-rich neutral grassland and acid grassland and swamp areas. The site supports breeding, wintering and passage birds, amphibians and a variety of insect life.

Naturalness: The canal is man-made and the vegetation communities on the site are semi-natural and unmanaged.

Rarity: Myriophyllum verticillatum is a nationally scarce plant found in 75 10 x 10 km squares in Great Britain (NCC, 1989). Callitriche hermaphroditica is a nationally scarce plant found in 79 10 x 10 km squares in Great Britain. Berula erecta and Carex disticha are rare plants in Barnsley. Carex acutiformis is only found in one other site in the district. Dolerus magapterus is a rare insect in Britain and the first record for this species in Yorkshire. (Lestes sponsa) is a rare insect in South Yorkshire (G. Blunt, 1987)

Fragility: The site for Callitriche hermaphroditica is vulnerable to drying out as it exists in the remnants of a previous marsh, now drained for agricultural improvement. Myriophyllum verticillatum is found in a stretch of the canal with algae which could increase and smother out the rare plant. Much of the site was be subject to a proposal for opencast coal mining in 1993.

Typicalness: The various wet and dry habitats in the site contain a typical range of plant species for the particular vegetation communities. A variety of characteristic animal life is found in the habitats on the site.

Evaluation of important features

Site Feature		Importance		
1.	Habitat type			District
	Woodland			Low
	Grassland			High
	Standing water			High
	Swamp			High
	Marsh			Average
2.	Species	National	County	District
	Myriophyllum verticillatum	High*		
	Callitriche hermaphroditica	High*		
	Berula erecta			Average*
	Carex acutiformis			Average*
	Carex disticha			Average*
	Breeding birds			Average
	Passage birds			Average
	Dolerus megapterus	Average*	High*	
	Lestes sponsa			High*

2.	Species	National	County	District
	Great Crested Newt	Average*	High*	

* Requires survey to verify current status.

Existing site designations: NHS

Site justifications: The Barnsley Canal at Wilthorpe is a rich mosaic of wet and dry habitats centred on the disused canal, some of which are vulnerable and may be lost. The habitats of particular note include the canal itself, a large area of unimproved, neutral species-rich grassland and swamp communities. The site contains two nationally scarce plants, Myriophyllum verticillatum and Callitriche hermaphroditica. It supports a variety of fauna including good populations of freshwater fish, amphibians, breeding and passage birds and the rare sawfly Dolerus megapterus, a first record for Yorkshire.

Barnsley Biodiversity Action Plan
HAP 7 Flood Plain Grazing March
HAP 8 Lowland Meadows
HAP 9 Lowland Dry Acid Grassland
HAP 14 Ponds and Canals

SITE MANAGEMENT

Management objective:
To maintain the present habitats on the site.

Initial Management:

Remove algae from area of Myriophyllum verticillatum.
An urgent task is to clear some great reedmace from the swamp area to increase the area of open water and encourage species diversity.
Urgent liaison with landowner to seek protection for area of swamp with Callitriche hermaphroditica.
Investigate sources of pollution in old course of river.
Boundary fencing to protect parts of site, e.g. beside canal, from overgrazing by ponies.

Ongoing management:

Monitor populations of rare plants and initiate management as necessary.
Consider dredging out canal to Smithy Bridge to give more open water habitats for Myriphyllum verticillatum to spread.

Constraints:
Landowner who drained Wilthorpe Marsh may not be amendable to agreeing to conservation measures to protect the C. hermaphroditica. Possible liaison through FWAG or NFU.
Financial implications of dredging canal.
Uncontrolled grazing by ponies on parts of the site was noted in 1990/1 and is still occurring in 2003.
An invasive alien water plant, water fern (Azolla filiculoides) was abundant in some areas of the canal and also in some ponds (2003). This plant is difficult to control and may smother the water's surface to the detriment of native aquatic species.

Opportunities:

Opencast proposals have put the site as a high profile to local people so they may be willing to assist in management, e.g. monitoring rare plants. Approach local contractors to see if they would lend plant and operator to dredge canal.

SITE CONSTRAINTS AND OPPORTUNITIES

Constraints:

Opencast proposals in 1993. New proposals in 2003.
Urban fringe problems such as litter and burnt-out cars.

Opportunities:

Much local interest in site, so good site for NHS publicity.
Barnsley MBC ownership of the canal gives opportunities for conservation management and interpretative information on the special interest.
BMBC have discussed possible Local Nature Reserve Status with English Nature.

REVIEW OF BARNSLEY NHS SITES – FEBRUARY/MARCH 2003

Barnsley Canal at Wilthorpe

1. Site Boundaries
The site boundaries, as shown on the 1990 Survey map, are confirmed as being correct. This site linked to NHS 26 Cliff Wood by the candidate NHS Old Mill Lane.

2. Main Habitat Components
The main habitat components, as shown on the 1990 Habitat map, are confirmed as being correct, but see Sections (3), (4) and (5) below.

3. Habitat Change/Loss
It is likely that Typha latifolia and Glyceria maxima have both spread and increased in abundance since the 1990/1 Survey. The willow scrub fringing the disused Barnsley Canal is also very frequent and invasive now.

4. Notable/Rare Species
A number of species are listed as being nationally or locally rare, in the 1990 Survey, including Myriophyllum verticillatum and Callitriche hermaphroditica (nationally rare), and Berula erecta, Carex acutiformis and C. disticha locally rare. In addition to these plants, two invertebrates, Dolerus megapterus and Lestes sponsa are also listed as being rare in the county and/or district sense.

It would be very worthwhile to conduct a survey this summer (2003) to establish that all these plant and animal species are still present. None of the plant species was seen in March 2003, and it is suspected that the aquatic vegetation changes highlighted in (3) above and discussed at more length in (5) below, may have had some impact on the frequency and distribution of these rarer species.

5. Potential/Actual Threats
Much of the Barnsley Canal itself, as well as the other water bodies and margins of the River Dearne, are choked with either (or both) abundant Typha latifolia and Glyceria maxima. These species are very invasive and their detritus builds up over time and lowers the water table, eventually producing a seral succession from open water – through swamp – marshland – and leading ultimately to carr woodland.

More importantly, the scarce plant species interest will undoubtedly be lost if the spread of these tall, aggressive colonists is allowed to continue, and the open water areas completely disappear. Furthermore, the locally abundant willow scrub fringing some sections of the canal is overhanging or falling into the water. This willow scrub needs urgent cutting back or complete removal.

Considerable clearance of both Typha latifolia and Glyceria maxima needs to be undertaken as a matter of urgency. This valuable wetland habitat may already be impaired and is certainly suffering and degraded at the present time because of the spread of these aggressive species.

Horses have access to the towpath of the canal from the adjacent fields to the north and there will inevitably be some grazing of the marginal vegetation and unnecessary trampling and puddling of the towpath itself (this was very evident in March 2003, when the towpath was a quagmire in places). Numerous horses were also grazing the fields to the south of the canal which are identified as being botanically rich in the 1990 Survey. It is suspected that this severe horse grazing will have a somewhat deleterious effect on the grassland vegetation.

There was also quite a degree of fly tipping noted in and around the canal, and a dumped and burned out car in the marshy field by the River Dearne.

Site Name: Cliff Wood Parish:

Grid Reference: SE 365067 Area: 30.5 ha

SITE DESCRIPTION

Cliff Wood is located at Cundy Cross in the centre of Barnsley and in the corridor of the River Dearne, at an altitude of 50 m AOD. The river forms the southern boundary of the site. The site is a mosaic of habitats including woodland, scrub, grassland, marsh and open water.

Grassland adjacent to the road in the north is planted with hawthorn (Crataegus monogyna) and wild cherry (Prunus avium). The main blocks of woodland comprise scrubby oak (Quercus species) and birch (Betula species). The northern area of woodland has an understorey of bracken (Pteridium aquilinum) and bramble (Rubus fruticosus) with a ground flora of creeping soft-grass (Holcus mollis) and wavy hair-grass (Deschampsia flexuosa). A new pond in the south of this area has willow (Salix species) around it. The woodland is divided by a disused section of the Barnsley canal and in the old canal banks are found white willow (Salix alba), goat willow (S.caprea) and alder (Alnus glutinosa). The wood slopes upwards to the north-west and has a tree cover of birch, oak and hazel (Corylus avellana).

The route of the old canal is now a wide, grassy path with woodland sloping away to the south and a bank sloping upwards to the north. The upper bank adjacent to the path has been planted with white poplar (Populus alba), cherry (Prunus species), white willow, hazel, guelder rose (Viburnum opulus), alder and horse chestnut (Aesculus hippocastanum). Bracken dominates the open areas. Single trees of the same species have been planted with white poplar and broom (Cytisus scoparius) with occasional field horsetail (Equisetum arvense). The banks south of the path comprise birch, hawthorn, oak and rowan (Sorbus aucuparia) with bracken and bramble.

A grassy area with copses of trees is found in the west of the site with a plantation of mixed deciduous trees of ash (Fraxinus excelsior), beech (Fagus sylvatica), oak, birch and hazel to the east. A new pond south of this plantation is edged by willow and great reedmace (Typha latifolia) with lesser water-parsnip (Barula erecta) in the water. The adjacent lake is used for fishing and has small trees scattered around the banks.

The southern part of the woodland is wetter with goat willow, crack willow (Salix fragilis) and common sallow (S. cinerea) and a wetland area of tall herbs including nettle (Urtica dioica), bittersweet (Solanum dulcamara) and an abundance of hemlock water-dropwort (Oenanthe crocata), a rare plant in the district. Small, open flush areas of marshy grassland contain common-spotted orchid (Dactylorrhiza fuchsii). Further east a wetland area comprises great reedmace and soft rush (Juncus effusus) with lesser pond sedge (Cares acutiformis), a rare plant in the district.

Willow carr of goat willow is found east of the spring and further east is dense woodland of ash, rowan and oak with hawthorn, hazel and elder (Sambucus niga) and bracken and bramble in the open areas. The eastern part of the wood is a steep bank down to the road with old coppice of hazel and sessile oak (Quercus petraea). Other trees include ash, field maple (Acer campestre) and birch with a mixed ground cover of ivy (Hedera helix), wood sage (Teucrium scorodonia), bittersweet and bracken. Scrubby grassland is adjacent to the road and includes yellow toadflax (Linaria vulgarias), coltsfoot (Tussilago farfara) and pineapple weed (Matricaria matricariodes).

SITE EVALUATION

Criteria

Size: Cliff Wood is an average -sized site. It has a large population of Oenanthe crocata, a rare plant in Barnsley.

Diversity: The site comprises a great variety of habitats including dry and wet woodland, scrub, grassland, marsh and open water with a correspondingly large number of plant species.

Naturalness: The site is under active management and there are areas of plantation woodland. Much of the site comprises semi-natural habitats.

Rarity: Cliff Wood is located in the middle of an urban area where there is no other woodland and is thus a scarce habitat in the locality. Oenanthe crocata is a rare plant in Barnsley and found in abundance in Cliff Wood. Carex acutiformis is only also a rare plant in Barnsley.

Fragility: The location of Cliff Wood in the centre of an urban area poses threats from illegal tipping and the possibility of infill residential development. Barnsley MBC own the site and would seek to retain its integrity.

Typicalness: Much of the woodland is a good example of oak/birch woodland and there are areas of representative willow carr.

Evaluation of important features

Site Feature		Importance		
1.	Habitat type			District
	Woodland			Average
	Scrub			Low
	Grassland			Low
	Marsh			High
	Open water			Low
2.	Species	National	County	District
	Oenanthe crocata			Average*
	Carex acutiformix			Average*

* - Requires survey to verify current status on the site.

Existing site designations: NHS

Site justifications: Cliff Wood is a diverse area of woodland, grassland and wetland habitats in Barnsley town centre, where there are few semi-natural habitats. It includes good examples of oak/birch woodland and willow carr, an abundance of Oenanthe crocata and an area of Carex acutiformis, both rare plant species in the district.

Barnsley Biodiversity Action Plan
HAP 1 Upland Oak Woodland
HAP 3 Wet Woodland
HAP 14 Ponds and Canals

SITE MANAGEMENT

Cliff Wood is owned by Barnsley MBC. A management plan for the site is required to balance the needs of recreation and nature conservation on the site.

Management objective:
To maintain and enhance the present diversity of habitats.

Initial Management:
Consider early selective felling of some trees in the densely planted woodland area to encourage woodland flora.
Clear some tall herb vegetation from the wetland area to encourage diversity of wetland plants.

Ongoing management:

Constraints:
Current lack of management plan covering the various interests of the site. Present site management is biased towards recreation.

Opportunities:
Owned by Barnsley MBC, so opportunities for management to be carried out within the management plan, *possibly with involvement of local people.*

SITE CONSTRAINTS AND OPPORTUNITIES

Constraints:
Threats to site from activities such as motorcycling and tipping.

Opportunities:
Site very well-used by local people and crossed by many public paths (not shown on boundary map as the network is complex).
Ownership by Barnsley MBC gives opportunity to promote NHS and encourage community involvement in site, which may discourage tipping and other damaging activities.
Environmental education opportunities with nearby schools.

REVIEW OF BARNSLEY NHS SITES - FEBRUARY/MARCH 2003

Cliff Wood

1. Site Boundaries
The site boundaries, as shown on the 1990 Survey Map, were identified as being correct. This site linked to NHS 25 Barnsley Canal at Wilthorpe by the candidate NHS Old Mill Lane.

2. Main Habitat Components
The main habitat compartments shown on the 1990 Survey Map were identified as being correct.

3. Habitat Change/Loss
No habitat change or loss noted. Many parts of the site are still managed for recreation and on the day of the survey it was obvious that it is heavily utilised by the public especially around the ponds. Much of the site still contains valuable habitats.

4. Notable/Rare Species
Not evident during survey (March 2003).

5. Potential Threats
None

Appendix B – Ecology Phase 1 Habitat Plan

[redacted] SCALE: CO[redacted] TO CHECK [redacted] ONS AND REPORT ANY OMISSIONS OR ERRORS

KEY

- SITE BOUNDARY
- DENSE SCRUB
- SCATTERED SCRUB
- SCATTERED TREES
- SEMI-IMPROVED GRASSLAND
- AMENITY GRASSLAND
- INTRODUCED SHRUB
- TALL RUDERAL
- JAPANESE KNOTWEED
- EPHEMERAL / SHORT PERENNIAL WITH BARE GROUND
- BUILDINGS
- BARE GROUND
- HARDSTANDING
- FENCE
- TARGET NOTE

0 12.5 25 37.5 50 62.5 m

SCALE 1:1250

DRAFT ISSUE

REV	DESCRIPTION	BY	CHK	APP	DATE

Client:

BARNSLEY COLLEGE

ARNDALE COURT
HEADINGLEY
LEEDS
LS6 2UJ

TEL: +44 (0)113 278 7111
FAX: +44 (0)113 275 0623
e-mail: enviro@wyg.com

Project: A056021

BARNSLEY COLLEGE
HONEYWELL CAMPUS
SUBMISSION OF RESERVED MATTERS

Drawing Title:

EXTENDED PHASE 1 HABITAT SURVEY

Scale @ A2	Drawn	Date	Checked	Date	Approved	Date
1:1250	CM	01.05.09				

Project No.	Office	Type	Drawing No.	Revision
A056021	4104	584	01	

Appendix C – Target Notes

Target Notes

Target Number	Notes
1	Hard-standing tennis courts.
2	Semi-improved grassland with scrub. The species composition includes; Annual meadow grass *Poa annua*, fescue sp. *Festuca sp.*, cocksfoot *Dactylis glomerata* and Yorkshire fog *Holcus lanatus* with other forbs including broadleaved dock *Rumex obtusilfolius*, dandelion *Taraxacum* sp., common mouse ear *Cerastium fontanum*, tufted vetch *Vicia cracca* and white clover *Trifolium repens*.. Other species also present; perennial rye grass *Lolium perenne*, meadow fox-tail *Alopecurus pratensis*, tufted hair grass *Deschampsia cespitosa*, cow parsley *Anthriscus sylvestris*, ribwort plantane *Plantago lanceolata*, colt's foot *Tussilago farfara*, creeping buttercup *Ranunculus repens*, common nettle *Urtica dioica*, red dead nettle *Lamium purpureum*, ragwort *Senecio jacobaea*, cleavers (goosegrass), *Galium aparine*, spear thistle *Cirsium vulgare* and common field speedwell *Veronica persica*.
3	Hawthorn tree and hedge along northern boundary which extends into an area of scrub. Hedge is species poor with hawthorn and bramble. Species present include hawthorn and cotoneaster.
4	Amenity grassland. One of the dominant habitats on site. The grassland comprises primarily of annual meadow grass *Poa annua*, fescue sp. *Festuca sp.*, cocksfoot *Dactylis glomerata* and Yorkshire fog *Holcus lanatus* with other forbs including broadleaved dock *Rumex obtusilfolius*, dandelion *Taraxacum* sp., common mouse ear *Cerastium fontanum*, tufted vetch *Vicia cracca* and white clover *Trifolium repens*..
5	Astroturf football pitch.
6	Amenity grassland which has become slightly overgrown.
7	Tall ruderal habitat dominated by nettles.

Target Number	Notes
8	Hard-standing car-park.
9	Barnsley College Sports Facility. New building. Negligible potential for roosting bats. It is brick built with plastic and metal cladding. The roof is corrugated and has PVC windows. Limited access points for bats. Negligible potential.
10	Tennis courts.
11	Play area set within amenity grassland.
12	Ephemeral/short perennial with bare ground. Species present comprise ribwort plantain, clover *Trifolium* sp., dandelion; pineappleweed *Matricaria discoidea*, fever few *Tanacetum parthenium*, scentless mayweed *Tripleurospermum inodorum*, grass species including cock's foot and taller ruderal species such as spear thistle, broadleaved dock and ragwort.
13	Area of semi-improved grassland. Fairly dense. Potentially suitable for reptile? Suitable for nesting birds.
14	Japanese knotweed in and just outside the site. (Stand 1) ~ 15m x 2m.
15	Area outside the southern boundary of the site. Contains patches of Japanese knotweed. Also, rubble piles and semi-improved grass and scrub habitat present. Suitable for reptiles? Area looks to be disturbed regularly by youths.
16	Dense scrub and trees. Difficult to survey due to dense vegetation and uneven ground. Potential for breeding birds and foraging bats.
17	Stand of Japanese knotweed (Stand 2). ~6m x 2m
18	Stand of Japanese knotweed (Stand 3). Difficult to quantify size due to location behind fence.
19	Two portokabin buildings. Limited access for bats. Negligible bat potential.

Target Number	Notes
20	Line of poplar trees.
21	Music Rooms building. Brick built with wooden soffit. Potential access points between soffit and wall. Low potential for bats.
22	Stand of Japanese knotweed (Stand 4). Primarily dead canes but sprigs of new growth present. ~8m x 5m.
23	Stand of Japanese knotweed (Stand 5) Primarily dead canes but sprigs of new growth present. ~8m x 5m.
24	Stand of Japanese knotweed (Stand 6). Dead canes and new growth. ~5m x 2m.
25	Area of mature trees set in amenity grassland.
26	Ash tree. Potential for roosting bats.
27	Area of introduced/ornamental shrub.
28	Row of poplar trees.
29	Barnsley College Honeywell building. Primarily a two storey, brick built building with wood windows. Pitched and hipped roof with clay ridge and slate roof tiles and sky lights erected in parts. Towards the north western corner of the building, the building is one storey and flat roofed. Towards the south western most corner of the building it is built in a modern metal framed structure. Few potential access points into main building. Moderate potential for roosting bats.
30	Performing Arts Centre building. brick built, one storey building with metal cladding towards the tops of the walls, PVC windows and a flat roof. No notable bat access points. Negligible bat roost potential.
31	Substation building. Pitched roof with cement roof and ridge tiles. There are vents on the wooden window and door shutters and there is a metal

Target Number	Notes
	flashing base around the upper structure to the building. few potential bat access points. These are within gaps in the wall where it is partially collapsing, within the air vents, and one or two gaps beneath lead flashing and lifted tiles. No evidence of bats was recorded externally. This building was therefore also surveyed as having low-moderate potential for supporting roosting bats.

Appendix D – Plates

Plates

Plate 1 Barnsley College Sports Ground Facility

Plate 2 Two portokabin buildings

Plate 3 Music Rooms building

Plate 4 Barnsley College Honeywell main building

Plate 5 Barnsley College Honeywell –flat roof sections to north western corner of building

Plate 6 Barnsley College Honeywell – modern built structure to south western corner of building

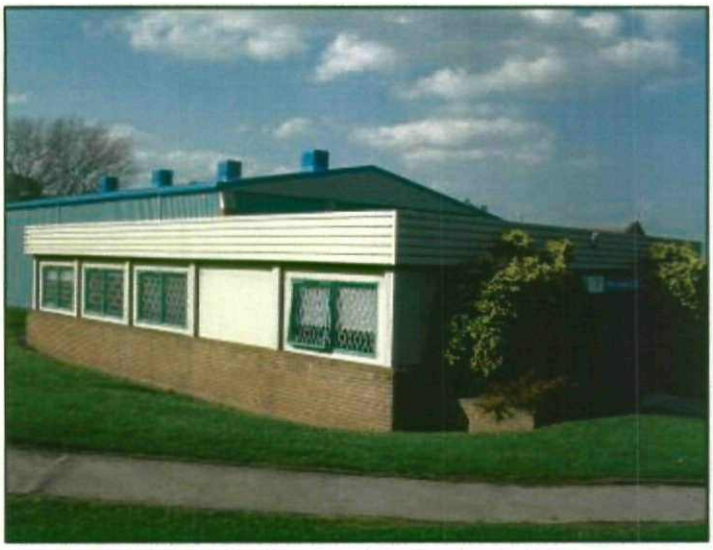


Plate 7 Performing Arts Centre Building

Plate 8 Substation

Plate 9 Amenity grassland

Plate 10 Semi-improved grassland

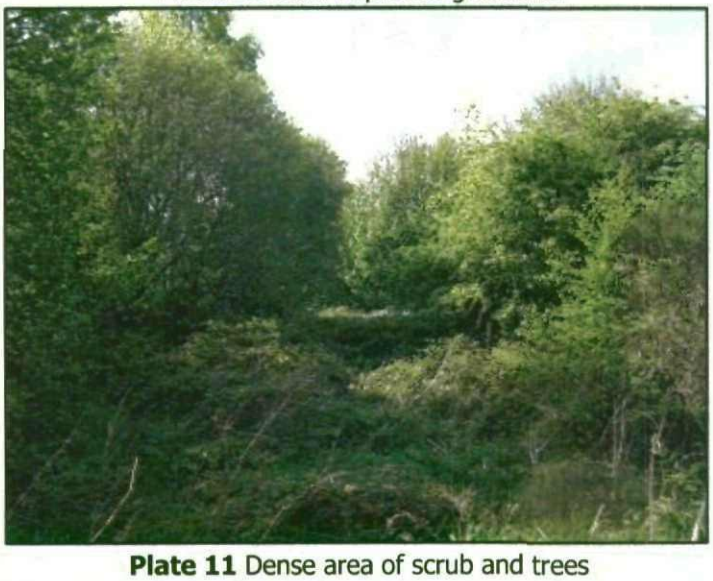


Plate 11 Dense area of scrub and trees

Plate 12 Mature trees

Plate 13 Hedgerow

Plate 14 Ephemeral/short perennial

Plate 15 Apparent gaps (thumb width) into wooden soffit potentially suitable for bats

Plate 16 Gaps beneath lead flashing on main Barnsley College Honeywell Building

Plate 17 Gaps within the brickwork of the substation wall, which may provide potential access for bats

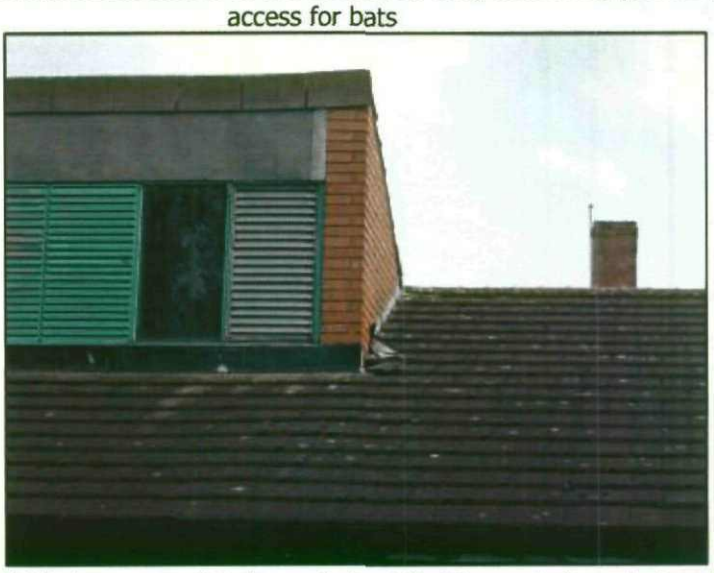


Plate 18 Potential bat access points beneath lead flashing and air vents in substation building

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m)				Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
73	*London plane*	*M*	668	1	18	4	2	4	9	4	G	G	• *Hanging broken branch and dead wood.* • No other significant defects.	• *Remove hanging branch and dead wood.*	20-40	B1	8.0	202
74	London plane	M	796	1	18	4	2	9	9	2	G	G	• No significant defects.	• No action	20-40	B1	9.5	286
75	Highclere's holly	MA	255	1	8	0	2	2	2	2	G	G	• No significant defects.	• No action	20-40	B1	3.1	29
76	Sycamore	M	398	1	15	4	4	1.5	3	5	G	G	• Misshapen crown due to competition with neighbouring trees. • No significant defects.	• No action	10-20	C1	4.8	72
77	Sycamore	M	350	1	15	4	4	5	3	1.5	G	G	• Misshapen crown due to competition with neighbouring trees. • No significant defects.	• No action	10-20	C1	4.2	55
78	Sycamore	M	461	1	15	4	3	5	3	5	G	G	• Mower wounds to roots. • No significant defects.	• No action	20-40	B1	5.5	96
79	Sycamore	M	605	1	13	4	4.5	4	4.5	6	G	G	• Occluded pruning wounds to trunk. • Scar on limb at 6m - occluding.	• No action	20-40	B1	7.3	165
80	Ash	M	621	1	15	4	6	7	5	4	F	F	• Cavities present in both leaders. • Mower wounds to roots. • Moderate to good bat roost potential.	• Carry out bat emergence and re-entry surveys prior to felling or pruning works.	10-20	C1	7.4	174
81	London plane	M	605	1	18	6	7	7	2	5	G	G	• Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	20-40	B1	7.3	165
82	Common lime	M	477	1	15	3	4.5	5	4.5	4	F	F	• Signs of decay in old pruning wounds. • Misshapen crown due to competition with neighbouring trees.	• No action	10-20	C1	5.7	103

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m) N	E	S	W	Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
83	Field maple	M	318	1	7	3	2	4	4	3	P	F	• Estimated as no access. • Signs of decay where previously pollarded. • Untidy crown.	• No action	10-20	C1	3.8	46
84	Ash	MA	255	1	7	2	3	3	3	3	P	F	• Bifurcates at 1m. • Suspected weak union at bifurcation.	• No action	10-20	C1	3.1	29
85	Alder	Y	159	2	5	2	1	1	1	1	F	F	• DBH is estimate of basal area. • Poor cultural conditions.	• Remove stake.	10-20	C1	1.9	11
86	Alder	Y	159	2	5	2	1	1	1	1	F	F	• DBH is estimate of basal area. • Bark wound on trunk to N. • Poor cultural conditions.	• Remove stake.	10-20	C1	1.9	11
87	Alder	Y	159	3	5	2	1.5	1.5	1.5	1.5	F	F	• DBH is estimate of basal area. • Poor cultural conditions.	• Remove stake.	10-20	C1	1.9	11
88	Alder	Y	95	1	4	2	1	1	1.5	1	F	F	• Poor cultural conditions. • No significant defects.	• No action	10-20	C1	1.1	4
89	Field maple	Y	191	1	4	1.5	2	1.5	1	3	F	F	• DBH measured at 1m. • Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	10-20	C1	2.3	16
90	Field maple	Y	80	1	4	2	1	1	1	1	F	F	• Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	10-20	C1	1.0	3
91	Field maple	Y	143	1	4	1.5	1.5	1.5	1	1.5	F	F	• DBH measured at 1m. • Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	10-20	C1	1.7	9
92	Alder	MA	127	1	6	2	1.5	1.5	1.5	1.5	F	F	• Mower wounds to roots. • Poor cultural conditions.	• Remove stake.	10-20	C1	1.5	7

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m)				Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
93	Field maple	Y	175	1	5	1	3	3	1.5	2.5	F	F	• DBH measured at 0.5m. • Minor pruning wounds on trunk which are occluding well. • Misshapen crown due to competition with neighbouring trees. • Poor cultural conditions.	• No action	10-20	C1	2.1	14
94	Field maple	Y	223	1	5	1	3	3	1	3	F	F	• DBH measured at 0.5m. • Minor pruning wounds on trunk which are occluding well. • Misshapen crown due to competition with neighbouring trees. • Poor cultural conditions.	• No action	10-20	C1	2.7	22
95	Lombardy poplar	M	796	1	19	3	3	3	3	3	G	G	• Minor pruning wounds on trunk which are occluding well. • Mower wounds to roots. • Small dead wood present <5cm.	• No action	20-40	B1	9.5	286
96	Lombardy poplar	M	621	2	19	9	3	2	3	2	P	F	• Major limb to S may fail - target present.	• No action	10-20	C1	7.4	174
97	Sycamore	M	668	1	13	9	2	2	3	2	P	P	• Base measured. NE stem pollarded - tree now unbalanced and in poor condition.	• Fell	<10	R	8.0	202
98	Lombardy poplar	M	573	1	19	11	2	2	2.5	2	P	F	• Bifurcates at 10m resulting in narrow fork which may fail given the top heavy nature of the tree.	• No action	10-20	C1	6.9	148
99	Lombardy poplar	M	668	1	19	7	3	2	3	2	P	F	• DBH measured at 1m. • Bifurcates at 1m resulting in a narrow fork which may fail given the top heavy nature of the tree.	• No action	10-20	C1	8.0	202
100	Lombardy poplar	M	541	1	19	10	2	2	2	2	P	F	• Decay in trunk. • Limb to S has suspect fork union which may fail given the top heavy nature of the tree.	• No action	10-20	C1	6.5	132

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m)				Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
101	Lombardy poplar	M	605	1	19	8	2	2	3	1	P	F	• Limb to N has suspect fork union which may fail given the top heavy nature of the tree.	• No action	10-20	C1	7.3	165
102	Lombardy poplar	M	605	1	19	9	3	2	3	2	F	F	• Poor form. • Stubs left by poor pruning.	• No action	10-20	C1	7.3	165
103	Lombardy poplar	M	589	1	19	9	2	2	3	1.5	F	F	• Poor form. • Stubs left by poor pruning.	• No action	10-20	C1	7.1	157
104	Lombardy poplar	M	573	1	19	9	2	2	2	1	F	F	• Poor form. • Stubs left by poor pruning.	• No action	10-20	C1	6.9	148
105	Lombardy poplar	M	812	1	19	4	3	2	4	3	F	F	• One-sided crown. • No significant defects. • Targets present (cars, buildings and people)	• No action	10-20	C1	9.7	298
106	Silver birch	Y	95	1	5	2	1	1	1	1	F	F	• Misshapen crown due to competition with neighbouring trees.	• Remove stake.	10-20	C1	1.1	4
107	Silver birch	Y	111	1	6	2	1	1	1	1	G	F	• No significant defects.	• Remove stake.	20-40	B1	1.3	6
108	Silver birch	Y	95	1	6	2	1	2	1	0.5	P	P	• Bark stripped between 0.7-1.5m. • Tree will have limited life.	• No action	<10	R	1.1	4
109	Rowan	Y	159	2	5.5	1	1	1	1	1	F	F	• Poor form. • Minor pruning wounds on trunk which are occluding well.	• No action	10-20	C1	1.9	11
110	Rowan	Y	159	2	5.5	1	1	1	1	1	F	F	• Base measured. • Minor pruning wounds on trunk which are occluding well. • Poor form.	• No action	10-20	C1	1.9	11
111	Rowan	Y	86	1	4.5	2	1	1	1	1	F	F	• Base measured. • Minor pruning wounds on trunk which are occluding well.	• Remove stake.	10-20	C1	1.0	3
112	Coastal redwood	Y	223	2	6	0	2	2	2	2	G	G	• DBH is estimate of basal area. • No significant defects.	• No action	40+	A1	2.7	22

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m)				Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
113	Hawthorn	M	350	3	6	0.5	3	3	3	3	G	G	• DBH is estimate of basal area. • No significant defects. 3 stems from 0.2m	• No action	20-40	B1	4.2	55
114	Coastal redwood	Y	223	1	5	0	2	2	2	2	G	G	• No significant defects.	• No action	40+	A1	2.7	22
115	Coastal redwood	Y	255	1	7	0	2	2	2	2	G	G	• No significant defects.	• No action	40+	A1	3.1	29
116	Sycamore	Y	318	9	6	0.5	2	2	2	2	F	F	• DBH is estimate of basal area. • 9 stems off old stump now rotten.	• No action	10-20	C1	3.8	46
117	Hawthorn	M	350	1	7	3	4	3	3	1	G	G	• No significant defects.	• No action	20-40	B1	4.2	55
118	Hawthorn	M	477	2	7	3	3	1	4	4	G	G	• Base measured. • No significant defects.	• No action	20-40	B1	5.7	103
119	Lombardy poplar	M	955	1	19	2	3.5	3	3	3	P	F	• Trifurcates at 1m. • Suspect weak unions which may fail.	• No action	10-20	C1	11.5	412
120	Lombardy poplar	M	827	1	19	3	2	3	3	2	F	F	• No significant defects.	• No action	10-20	C1	9.9	310
121	Sycamore	M	621	1	15	4	5	6	6	5	F	F	• Blackened bark which could indicate the beginnings of sooty bark disease. • No other significant defects.	• No action	10-20	C1	7.4	174
122	Ornamental cherry	M	366	1	5	2	3	3	3	3	G	G	• In courtyard. • Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	10-20	C1	4.4	61
123	Alder	Y	239	2	5	0.5	2	2	2	2	G	G	• DBH is estimate of basal area. • No significant defects.	• No action	10-20	C1	2.9	26
124	Ash	Y	111	1	5	0.5	1	1	1	1	G	G	• No significant defects.	• No action	10-20	C1	1.3	6
125	Ash	Y	159	1	5	1	2	2	2	1.5	G	G	• No significant defects.	• No action	10-20	C1	1.9	11

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m) N	E	S	W	Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
126	Ash	Y	175	1	5.5	1	2	2	2.5	2	G	G	• No significant defects.	• No action	10-20	C1	2.1	14
127	Ash	Y	255	3	6	0.5	2	2	2	2	G	G	• DBH is estimate of basal area. • No significant defects.	• No action	10-20	C1	3.1	29
128	Ash	Y	207	1	6	0.5	3	2.5	3	3	G	G	• No significant defects.	• No action	10-20	C1	2.5	19
129	Silver birch	MA	255	1	6	3	3	2	3	2	F	F	• Estimated as no access. • Lost leader. • Poor form.	• Fell	<10	R	3.1	29
130	Sycamore	MA	255	1	8	3	4	3	4	5	F	F	• Estimated as no access. • Growing against retaining wall. • No significant defects.	• No action	10-20	C1	3.1	29
131	Sycamore	MA	477	Many	11	2	4	4	4	4	F	F	• DBH is estimate of basal area. • No significant defects.	• No action	10-20	C1	5.7	103
132	Sycamore	MA	477	Many	11	2	4	4	4	4	F	F	• DBH is estimate of basal area. • No significant defects.	• No action	10-20	C1	5.7	103
133	Sycamore	MA	477	Many	11	2	4	4	4	4	F	F	• DBH is estimate of basal area. • No significant defects.	• No action	10-20	C1	5.7	103
134	Sycamore	M	446	1	13	5	5	5	5	5	G	G	• Estimated as no access. • In neighbouring property. • Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	20-40	B1	5.3	90
135	Sycamore	M	573	1	13	5	5	4	4	6	G	G	• Minor pruning wounds on trunk *which are occluding well.* • No significant defects.	• No action	20-40	B1	6.9	148
136	Laburnum	OM	875	1	10	5	3	5	4	3	P	F	• Minor pruning wounds on trunk which are occluding well. • Declining.	• No action	10-20	C1	10.5	347

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m)				Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
137	Sycamore	M	573	1	13	6	5	5	4	5	F	F	• Estimated as no access. • Minor pruning wounds on trunk which are occluding well. • Previously pollarded - 3 stems at 4m. • No significant defects.	• No action	10-20	C1	6.9	148
138	Red horse chestnut	M	557	1	10	4	3	2	3	3	F	F to P	• Minor pruning wounds on trunk which are occluding well. • Canker on trunk.	• No action	10-20	C1	6.7	140
139	Sycamore	M	621	1	13	5	4	5	4	4	G	G	• Estimated as no access. • Minor pruning wounds on trunk which are occluding well. • No significant defects. • Beyond fence.	• No action	20-40	B1	7.4	174
140	Sycamore	M	573	1	14	4	4	2.5	6	3	G	G	• Estimated as no access. • Minor pruning wounds on trunk which are occluding well. • No significant defects. • Beyond fence.	• No action	20-40	B1	6.9	148
141	Sycamore	M	525	1	14	5	5	3	4	4	F	F	• Estimated as no access. • Minor pruning wounds on trunk which are occluding well. • No significant defects. • Beyond fence. • Large dead wood over path.	• Remove dead wood.	10-20	C1	6.3	125
142	Common lime	M	541	1	13	3	6	4	4	3	P	F	• Some dieback in crown. • Dead wood over path. • Beyond fence.	• Remove dead wood.	10-20	C1	6.5	132
143	Sycamore	M	716	1	14	5	4	3.5	5	4	G	G	• Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	20-40	B1	8.6	232
144	Sycamore	MA	255	1	8	3	4	3	4	2	G	G	• Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	20-40	B1	3.1	29

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m)				Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
145	Sycamore	M	621	1	14	6	5	3.5	6	4	F	F	• Minor pruning wounds on trunk which are occluding well. • Minor decay at pruning wound 6m on W. No other significant defects.	• No action	10-20	C1	7.4	174
146	Red horse chestnut	M	446	1	12	5	3	2	3	3	F	F	• Minor canker on trunk.	• No action	10-20	C1	5.3	90
147	Red horse chestnut	M	557	1	12	5	4	3	4	2.5	F	F	• Minor canker on trunk plus decay.	• No action	10-20	C1	6.7	140
148	Red horse chestnut	M	414	1	11	4	3	3	4	2	P	P	• Extensive canker and fasiculation to trunk and branches.	• Fell	<10	R	5.0	77
149	Red horse chestnut	M	350	1	9	4	3	2	2	3	F	F	• Canker to trunk and minor rot holes.	• No action	10-20	C1	4.2	55
150	Sycamore	M	684	1	14	6	5	5	6	3	G	G	• Minor pruning wounds on trunk which are occluding well. • Previously pollarded at 5m. • No significant defects.	• No action	20-40	B1	8.2	212
151	Sycamore	M	382	1	13	5	4	1.5	4	2.5	F	F	• Misshapen crown due to competition with neighbouring trees. • Large dead wood over path. • No other significant defects.	• Remove dead wood.	10-20	C1	4.6	66
152	Sycamore	M	732	1	14	5	6	3	6	7	G	G	• Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	20-40	B1	8.8	242
153	Turkey oak	M	573	1	12	4	4	3	4	4	G	G	• Estimated as no access. • In neighbouring property. • Dead wood over path. • No other significant defects.	• Remove dead wood.	20-40	B1	6.9	148

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m)				Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
154	Common lime	MA	207	1	7	3	4	5	3	1	F	F	• Estimated as no access. • Misshapen crown due to competition with neighbouring trees. • Leaves very small possibly showing signs of stress.	• No action	10-20	C1	2.5	19
155	Beech	M	955	1	15	4	8	5	8	9	G	G	• Estimated as no access. • In neighbouring property. • Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	20-40	B1	11.5	412
156	Turkey oak	M	859	1	14	6	7	7	7	5	G	G	• Estimated as no access. • In neighbouring property. • No significant defects. • Dead wood over path.	• Remove dead wood.	20-40	B1	10.3	334
157	Common lime	M	350	1	12	3	4	5	4	3	G	G	• Estimated as no access. • In neighbouring property. • No significant defects.	• No action	20-40	B1	4.2	55
158	Norway maple	M	796	1	13	4	5	4	5	5	F	F	• Estimated as no access. • In neighbouring property. • Cavities in trunk. • Moderate to good bat roost potential.	• Bat emergence and re-entry surveys are recommended prior to felling or any pruning works.	10-20	C1	9.5	286
159	Ash	M	955	1	14	5	7	7	7	7	P	F	• Estimated as no access. • In neighbouring property. • Stag-heading. • Minor pruning wounds on trunk which are occluding well.	• No action	10-20	C1	11.5	412
160	Alder	MA	286	1	8	2	3	3	3	3	G	G	• No significant defects. • Growing by wall.	• No action	20-40	B1	3.4	37
161	Alder	Y	111	1	6	2	2	2	2	2	G	G	• No significant defects.	• No action	20-40	B1	1.3	6
162	Sycamore	M	477	1	12	2	4	4	4	4	F	F	• Estimated as no access. • Damaging wall. • Wire in trunk.	• Remove	<10	R	5.7	103

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m)				Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
163	Rowan	Y	159	1	5	0	1	1	1	1	F	F	• DBH is estimate of basal area. • No significant defects.	• No action	10-20	C1	1.9	11
G1	Group-sycamore and hawthorn	MA	286	Many	10	2	As Plan	As Plan	As Plan	As Plan	F	F	• Line/group of trees on railway with misshapen crowns due to pruning operations (line clearance)	• No action	10-20	C1	3.4	37
G2	Group - sycamore, hawthorn, goat willow	Y-MA	318	Many	5 to 12	0 to 4	As Plan	As Plan	As Plan	As Plan	F	F	• Estimated as no access. • Area of trees and bramble scrub.	• No action	10-20	C1	3.8	46
G3	Group - goat willow, silver birch, sycamore, hawthorn, alder and elder	Y-M	318	Many	2 to 11	0.5 to 2	As Plan	As Plan	As Plan	As Plan	F	F	• Estimated as no access. • Group of self-set trees and scrub. • Some major dead wood present.	• No action	10-20	C1	3.8	46
G4	Group - goat willow and sycamore	Y	95	Many	5	1	As Plan	As Plan	As Plan	As Plan	F	F	• Group of young self-set trees. • Japanese knotweed is also present.	• No action	10-20	C1	1.1	4
G5	Group - goat willow	Y	95	Many	5	0	As Plan	As Plan	As Plan	As Plan	F	F	• Estimated as no access. • Self-set scrub.	• No action	10-20	C1	1.1	4
G6	Group - Lombardy *poplar*	Y	70	Many	6	0.5	As Plan	As Plan	As Plan	As Plan	F	F	• Estimated as no access. • Suckers from old stump or root *system.*	• No action	10-20	C1	0.8	2

Appendix B – Tree quality and value assessment categories

Table B1. From BS5837:2005, Table 1 – 'Cascade chart for tree quality assessment'.

TREES FOR REMOVAL		
Category and definition	***Criteria***	***Plan colour***
Category R Those in such a condition that any existing value would be lost within 10 years and which should, in the current context, be removed for reasons of sound arboricultural management.	• *Trees that have a serious, irreversible, structural defect, such that their early loss is expected* due to collapse, including those that will become unviable after removal of other R category tree (ie: where, for whatever reason, the loss of companion shelter cannot be mitigated by pruning) • Trees that are dead or are showing signs of significant, immediate, and irreversible overall decline • Trees infected with pathogens of significance to the health and/or safety of other trees (eg: Dutch elm disease) or very low quality trees suppressing adjacent trees if better quality • NB: Habitat reinstatement may be appropriate (eg: R category tree used as a bat roost: installation of bat box in nearby tree).	*Dark red*

TREES TO BE CONSIDERED FOR RETENTION				
Category and definition	***Criteria - Subcategories***			***Plan colour***
	1. Mainly arboricultural values	**2. Mainly landscape values**	**3. Mainly cultural values, including conservation**	
Category A **Those of high quality and value:** in such a condition as to be able to make a substantial contribution (a minimum of 40 years is suggested).	Trees that are particularly good examples of their species, especially if rare or unusual, or essential components of groups, or of formal or semi-formal arboricultural features (eg: the dominant and/or principal trees within an avenue).	Trees, groups or woodlands which provide a definite screening or softening effect to the locality in relation to views into or out of the site, or those of particular visual importance (eg: avenues or other arboricultural features assessed as groups).	Trees, groups or woodlands of significant conservation, historical, commemorative or other value (eg: veteran trees or wood-pasture).	Light green
Category B **Those of moderate quality and value:** in such a condition as to make a significant contribution (a minimum of 20 years is suggested).	Trees that might be included in the high category, but are downgraded because of impaired condition (eg: presence of remedial defects including unsympathetic past management and minor storm damage).	Trees present in numbers, usually as groups or woodlands, such that they form distinct landscape features, thereby attracting a higher collective rating than they might as individuals but which are not, individually, essential components of formal or semi-formal arboricultural features (eg: trees of moderate quality within an avenue that include better, A category specimens), or trees situated mainly internally to the site, therefore individually having little visual impact on the wider locality.	Trees with clearly identifiable conservation or other cultural benefits.	Mid blue
Category C **Those of low quality and value:** currently in adequate condition to remain until new planting could be established *(a minimum of 10 years is suggested)*, or young trees with a stem diameter below 150mm.	Trees not qualifying in higher categories.	Trees present in groups or woodlands, but without this conferring on them significantly greater landscape value, and/or trees offering low or only temporary screening benefit.	Trees with very limited conservation or other cultural benefits.	Grey
	NB: Whilst C Category trees will usually not be retained where they impose a significant constraint on development, young trees with a stem diameter of less than 150mm should be considered for relocation.			

Appendix C – Species list and potential tree height

6.0 Survey results

The survey results are shown in the survey schedule (Appendix A) and partially summarised on the Tree Constraints Plan (Appendix D).

The survey assessed one hundred and sixty-three individual trees and six groups of trees and shrubs.

Three trees of high quality and value (Category A) have been identified on the site within the areas surveyed. These include three coastal redwood species trees (tree no's. 112, 114, 115). All these trees are attractive trees with currently limited public visibility given their size and no significant defects, which are able to make a substantial contribution for a minimum of 40 years.

Eighty-one individual trees have been assigned to the moderate quality and value category (Category B). These include four Norway maple, four ash, three Italian alder, two apple, twenty one Lombardy poplar, twenty sycamore, two hornbeam, five common lime, one rowan, two black poplar, five hawthorn, one blue Atlantic cedar, five London plane, one Highclere holly, two turkey oak, one beech and two alder species trees. All these trees are healthy attractive trees with no significant defects. They are all in a condition as to be able to make a significant contribution for a minimum of 20 years. Many of these trees are large prominent trees, but are down-graded to this category because they have estimated safe useful life expectancies of less than 40 years. The value of all these trees can be expected to increase as they mature.

Seventy-two individual trees and six groups of trees of low quality and value (Category C) have been identified. These include Norway maple, goat willow, ornamental cherry, rowan, hornbeam, ash, sycamore, common lime, field maple, alder, Lombardy poplar, silver birch, laburnum, red horse chestnut and hawthorn species trees. Trees and shrubs in this category include young trees that are easily replaced and small-growing species which have a relatively low potential amenity value.

Seven individual trees require felling because of their condition, irrespective of any development proposal (Category R). These include three sycamore, three silver birch and a red horse chestnut species trees. Although these trees do not require immediate felling, they have estimated safe useful life expectancy of less than 10 years and it would be prudent to fell and replace them within any redevelopment scheme.

7.0 Recommendations

7.1 Tree quality and value categories

Trees on the site represent a constraint that should be taken into account when designing future development. Of these, the greatest constraint is represented by the three high quality trees and eighty-one moderate quality trees. It is recommended that all these trees are retained within the development with sufficient space to avoid construction damage and allow their future development.

Where possible, low (C category) quality and value trees should be retained, but their presence should not represent a significant constraint on the design.

The seven trees requiring removal irrespective of the development proposal should obviously not represent a constraint.

7.2 Work recommendations

The survey schedule (Appendix A) contains preliminary work recommendations. These recommendations do not take account of development proposals and it is likely additional felling and pruning will be necessary to accommodate any development proposals (see arboricultural method statement).

Most of the recommended works are not essential and can be postponed for up to 12 months until the development proposal has been finalised and approved. However the following works are more essential and it is recommended that they are carried out within 6 months:

- No. 97 – sycamore - fell

All works carried out should comply with BS3998:1989 '*British Standard Recommendations for Tree Work*'.

The status of the trees with regards to statutory protection should be resolved (see section 3.0) before any felling or pruning works take place. All legislation should be complied with.

7.3 Sustainable tree retention

In order to allow for the long-term sustainable retention of trees, two requirements need to be met. The first is that there is no adverse physical impact on the trees. This can be met by ensuring that no adverse construction takes place within the RPA given in the survey schedule and shown on the tree constraints plan.

In addition to reducing the physical impact on the tree, it is also important to allow the space for trees to grow and develop without causing significant nuisances such as severe loss of light to adjacent properties that will lead to pressure for their future felling or severe pruning. Provisional maximum heights are given in Appendix C and it is recommended that this information is taken account of during the design process.

7.4 Construction phase tree protection

It is recommended that all retained trees on or immediately adjacent to the site should be protected by protective fencing during the site clearance and construction phases. This construction exclusion zone should protect the RPA and ensure that trees to be retained and their essential rooting zone is not damaged during the works.

All potentially damaging operations should be excluded from within the construction exclusion zone, including: excavation, changes to levels, temporary access, vehicle parking or movements, fires and the storage, disposal or mixing of materials and chemicals.

This report should be read in conjunction with the accompanying arboricultural method statement and Tree Protection Plan (WYG 2009). The plan shows the location and design of the protective fencing and other tree protection measures, such as ground protection. It should also show trees to be retained and removed. The method statement includes procedures and details for tree protection and a schedule and specification for remedial works to trees that are necessary in order to accommodate the proposed development.

7.5 Grounds maintenance

Some of the mature trees in the recreation ground have bark wounds on the root buttresses and surface roots which appear to have been caused by mowers. This damage is commonly found on trees growing within areas of large amenity grassland mowed by gang-mowers. Over time this continual wounding can cause significant damage to trees and lead to the development of decay. To reduce mower bark damage it is recommended that an area of grass 1.0m wide around each tree is either left unmowed or mowed by a non self-propelled mower with the blades set at a height above that of any protruding roots.

8.0 References

BSi. 1989. *BS 3998:1989 British Standard Recommendations for Tree Work.* British Standards Institute.

BSi. 2005. *BS5837:2005. Trees in Relation to Construction – Recommendations.* British Standards Institute.

DETR. 2000. *Tree Preservation Orders: a Guide to the Law and Good Practise.* Department of the Environment, Transport and the Regions.

Johnson, O. and More, D. 2004. *Collins Trees Guide.* Collins, London.

Appendices

Appendix A – Tree survey schedule

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m)				Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
1	Norway maple	MA	382	1	10	2	5	6	3	5	G	G	• Misshapen crown due to competition with neighbouring trees. • Small dead wood. • Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	20-40	B1	4.6	66
2	Norway maple	MA	366	1	10	2	5	6	4	2	G	G	• Misshapen crown due to competition with neighbouring trees. • Minor pruning wounds on trunk which are occluding well. • Small dead wood. • No significant defects.	• No action	20-40	B1	4.4	61
3	Norway maple	MA	446	1	10	2	3	7	6	5	G	G	• Dominant tree of group of three. • Minor pruning wounds on trunk which are occluding well. • Small dead wood. • Minor cavity at 1.8m. • No other significant defects.	• No action	20-40	B1	5.3	90
4	Ash	MA	382	1	9	4	4.5	6	3.5	4	F	F	• Large bark wound to the western side of the trunk - now occluding. • No other significant defects.	• No action	20-40	B1	4.6	66
5	Italian Alder	MA	223	1	10	2	2.5	2	2	3	G	G	• Misshapen crown due to *competition with neighbouring* trees. • No significant defects.	• No action	20-40	B1	2.7	22
6	Italian Alder	MA	223	1	10	2	2.5	3	3	1.5	G	G	• Misshapen crown due to competition with neighbouring trees. • No significant defects.	• No action	20-40	B1	2.7	22
7	Italian Alder	MA	207	1	10	2	3	3	2	2	G	G	• Misshapen crown due to competition with neighbouring trees. • No significant defects.	• No action	20-40	B1	2.5	19

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m)				Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
8	Norway maple	MA	414	1	10	2	4.5	7	3	4	F	G	• Large trunk wound to N 0.1-2m, occluding but unlikely to occlude completely and may cause problems in the future.	• No action	10-20	C1	5.0	77
9	Norway maple	MA	430	1	12	3	3.5	4.5	5	5	G	G	• Occluded trunk wounds to N and S. • No significant defects.	• No action	20-40	B1	5.2	84
10	Ash	MA	271	1	9	2.5	4	3.5	2	4	G	G	• Mower wounds to roots. • No significant defects.	• No action	20-40	B1	3.2	33
11	Ash	MA	350	1	11	3.5	3.5	4	4.5	4	G	G	• No significant defects.	• No action	20-40	B1	4.2	55
12	*Malus sp.*	M	318	1	5	2	4.5	3.5	4.5	4	G	G	• No significant defects.	• No action	20-40	B1	3.8	46
13	Ash	MA	382	1	11	3	4	4	4.5	4	G	G	• Mower wounds to roots. • No significant defects.	• No action	20-40	B1	4.6	66
14	Lombardy poplar	M	780	1	19	3	2	2.5	3.5	2	G	G	• Occluding wound to western buttress. • No significant defects.	• No action	20-40	B1	9.4	275
15	Lombardy poplar	M	589	1	19	3	1.5	2	3	1	G	G	• Occluding wound to north-eastern buttress. • No significant defects.	• No action	20-40	B1	7.1	157
16	Lombardy poplar	M	477	1	17	2.5	1	2	2	1	G	G	• Occluding wound to northern buttress. • No significant defects.	• No action	20-40	B1	5.7	103
17	Lombardy poplar	M	652	1	19	1.5	1.5	1	3	1.5	G	G	• No significant defects.	• No action	20-40	B1	7.8	193
18	Lombardy poplar	M	684	1	20	2	1.5	2	2.5	1	G	G	• Occluding wound to western buttress. • No significant defects.	• No action	20-40	B1	8.2	212
19	Lombardy poplar	M	541	1	19	2	1	2	2	1	G	G	• Occluding wounds to northern and western buttresses. • No significant defects.	• No action	20-40	B1	6.5	132

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m)				Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
20	Lombardy poplar	M	621	1	20	2.5	1.5	2	2.5	1.5	G	G	• Wounds to lower trunk (W). • No significant defects.	• No action	20-40	B1	7.4	174
21	Lombardy poplar	M	573	1	20	2	1.5	2	2.5	1.5	G	G	• No significant defects.	• No action	20-40	B1	6.9	148
22	Lombardy poplar	M	525	1	19	3	1	2	2	1.5	G	G	• Occluded Mower wounds to roots. (W). • No significant defects.	• No action	20-40	B1	6.3	125
23	Lombardy poplar	M	637	1	20	1.5	1	3	2	1.5	G	G	• Wound to NE buttress. • No significant defects.	• No action	20-40	B1	7.6	183
24	Lombardy poplar	M	414	1	17	3	1	1.5	1.5	1	G	G	• Occluding wound to north-western buttress. • No significant defects.	• No action	20-40	B1	5.0	77
25	Lombardy poplar	M	461	1	16	3	1	2	2	1.5	G	G	• Occluding wound to southern buttress. • No significant defects.	• No action	20-40	B1	5.5	96
26	Lombardy poplar	M	700	1	19	3	1.5	3	2	2	G	G	• No significant defects.	• No action	20-40	B1	8.4	222
27	Lombardy poplar	M	414	1	17	3	1	2	2	1	G	G	• Occluding wound to southern buttress. • No significant defects.	• No action	20-40	B1	5.0	77
28	Lombardy poplar	M	414	1	19	3	1	2	1.5	1	G	G	• Occluding wound to northern buttress. • No significant defects.	• No action	20-40	B1	5.0	77
29	Lombardy poplar	M	446	1	19	2	1	2	2	1.5	G	G	• Dead wood present <5cm. • No significant defects.	• No action	20-40	B1	5.3	90
30	Lombardy poplar	M	461	1	20	3	1.5	2	2	1.5	G	G	• Dead wood present <5cm. • No significant defects.	• No action	20-40	B1	5.5	96
31	Lombardy poplar	M	668	1	21	3	2	3	3	2	G	G	• Occluding wound to western buttress. • No significant defects. • Dead wood present >5cm.	• No action	20-40	B1	8.0	202

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m)				Physio-logical condn.	Struct-ural condn.	Comments	Preliminary work recommendations	Rem-aining contri-bution (yrs)	Qual-ity and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
32	Lombardy poplar	M	477	1	20	2	2	2	2	1	G	G	• No significant defects.	• No action	20-40	B1	5.7	103
33	Lombardy poplar	M	589	1	20	3	2	2	3	1.5	G	G	• Damage to buttress bark (N). • No significant defects.	• No action	20-40	B1	7.1	157
34	Sycamore	MA/M	493	1	12	3	5	6	6	4	G	G	• Bifurcates at 1m. • Occluding pruning wounds to trunk. • No significant defects.	• No action	20-40	B1	5.9	110
35	Hornbeam	MA	302	1	7	2	5	5	5	4	G	G	• Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	20-40	B1	3.6	41
36	Hornbeam	Y	143	1	5	2	2	2	2.5	2	G	G	• No significant defects.	• No action	20-40	B1	1.7	9
37	Goat willow	MA/M	366	1	7	2	4	6	4	3	G	G	• Wound to trunk 0-1m occluding well. • No significant defects.	• No action	10-20	C1	4.4	61
38	Malus sp.	M	302	1	5	2	3.5	4	4	4	G	G	• No significant defects.	• No action	20-40	B1	3.6	41
39	Ornamental cherry	M	414	1	6	3	5	5.5	3.5	5.5	G	G	• No significant defects.	• No action	10-20	C1	5.0	77
40	Rowan	MA	191	1	6	2	2.5	2	2	2	G	G	• Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	10-20	C1	2.3	16
41	Ornamental cherry	M	477	1	8	2	5.5	5	6	6	G	G	• Mower wounds to roots. • No significant defects.	• No action	10-20	C1	5.7	103
42	Common lime	MA	302	1	8	3	3	3	3	3	G	G	• Suspect weak branch union to N at crown break. • Mower wounds to roots. • No significant defects.	• No action	20-40	B1	3.6	41
43	Common lime	MA	286	1	8	3	3	3	3	3	G	G	• Mower wounds to roots. • No significant defects.	• No action	20-40	B1	3.4	37

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m)				Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
44	Rowan	MA	191	1	6	3	2	3	3	1.5	G	G	• Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	20-40	B1	2.3	16
45	Hornbeam	MA	286	1	7	3	3.5	4	4	3	F	F	• Large wound to trunk - occluding well. • Mower wounds to roots.	• No action	10-20	C1	3.4	37
46	Ornamental cherry	MA/M	350	1	8	2.5	4	4	4	4	G	G	• Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	10-20	C1	4.2	55
47	Ash	MA	271	1	8	4	4	3	2	3	F	F	• Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	10-20	C1	3.2	33
48	Sycamore	MA	302	1	9	3	3	4	2	4	F	F	• No significant defects.	• No action	10-20	C1	3.6	41
49	Sycamore	MA	286	1	9	3	2	4	5	3	F	F	• Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	10-20	C1	3.4	37
50	Common lime	MA	223	1	8	3	3.5	3	3.5	2	G	G	• Shaded by neighbouring trees. • Twin leader at 4m. • No significant defects.	• No action	20-40	B1	2.7	22
51	Common lime	MA	223	1	9	2	3	2	3	3	G	G	• Misshapen crown due to competition with neighbouring trees. • No significant defects.	• No action	20-40	B1	2.7	22
52	Populus nigra	M	732	1	16	4	7	8	4.5	7	G	G	• Trunk leans to NE. • Mower wounds to roots. • No significant defects.	• No action	20-40	B1	8.8	242
53	Populus nigra	M	827	1	16	4	4.5	9	9	7	G	G	• Trunk leans to SW. • Mower wounds to roots. • No significant defects.	• No action	20-40	B1	9.9	310

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Height (m)	Crown clearance height (m)	Crown spread radius (m)				Physiological condn.	Structural condn.	Comments	Preliminary work recommendations	Remaining contribution (yrs)	Quality and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
54	Sycamore	M	525	1	15	4	5	7	6	1	G	G	• Misshapen crown due to competition with neighbouring trees. • No significant defects.	• No action	20-40	B1	6.3	125
55	Sycamore	M	748	1	16	4	6	5	7	6	G	G	• Base measured. • Trunk bifurcates at 1m. • Possible weak union at bifurcation, but no targets currently present.	• No action	20-40	B1	9.0	253
56	Hawthorn	MA	239	1	6	2	3	2	2	2	F	F	• Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	20-40	B1	2.9	26
57	Sycamore	M	684	1	16	2	4	3	3	6	F	F	• DBH measured below bifurcation (1m). • Misshapen crown due to competition with neighbouring trees. • No significant defects.	• No action	20-40	B1	8.2	212
58	Sycamore	M	430	1	16	4	2	2	5	6	F	F	• Misshapen crown due to competition with neighbouring trees. • No significant defects.	• No action	20-40	B1	5.2	84
59	Sycamore	M	350	1	14	4	2	1.5	1	4	P	P	• Heavily shaded by neighbouring tree.	• Fell	<10	R	4.2	55
60	Sycamore	M	557	1	16	4	2	7	6	2	F	F	• Bifurcates at 2.5m. • Misshapen crown due to competition with neighbouring trees. • No significant defects.	• No action	20-40	B1	6.7	140
61	Sycamore	M	461	1	16	4	4	5.5	4	2	F	F	• Twin leader at 5m. • Misshapen crown due to competition with neighbouring trees. • No significant defects.	• No action	20-40	B1	5.5	96

Ref. no.	Species	Age class	Stem diam. @1.5 m (mm)	Stem no.	Heig-ht (m)	Crown clear-ance height (m)	Crown spread radius (m)				Physio-logical condn.	Struct-ural condn.	Comments	Preliminary work recommendations	Rem-aining contr-ibut-ion (yrs)	Qual-ity and value grade	RPA radius (m)	RPA area (m^2)
							N	E	S	W								
62	Blue atlas cedar	Y	191	1	6	1.5	3	3	3	3	G	G	• Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	20-40	B1	2.3	16
63	Ornamental cherry	M	271	1	6	1.5	2	5	5	5	F	F	• Leans to S due to proximity of neighbouring trees. • Minor pruning wounds on trunk which are occluding well. • No significant defects.	• No action	10-20	C1	3.2	33
64	Sycamore	M	557	1	16	3	6	3	3	7	G	G	• No significant defects.	• No action	20-40	B1	6.7	140
65	Sycamore	M	1082	4	16	3	4	5	6	7	G	G	• Base measured. • No significant defects.	• No action	20-40	B1	13.0	530
66	Sycamore	M	398	1	16	3	3	3	4	4	F	F	• Suppressed by neighbouring tree. • No significant defects.	• No action	10-20	C1	4.8	72
67	Silver birch		0										• Felled	• No action				
68	Sycamore	M	557	1	15	3	3	3	6	5	G	G	• Natural lean to S. • Misshapen crown due to competition with neighbouring trees. • No significant defects.	• No action	10-20	C1	6.7	140
69	Hawthorn	M	286	1	9	2	2	2	2	2	G	G	• No significant defects • .	• No action	20-40	B1	3.4	37
70	Sycamore	M	1194	2	16	4	3	5	5	6	G	G	• Base measured. • Twin stem. • No significant defects.	• No action	20-40	B1	14.3	644
71	London plane	M	684	1	18	3	7	2	4	6.5	G	G	• Minor pruning wounds on trunk which are occluding well. • Misshapen crown due to competition with neighbouring trees. • No significant defects.	• No action	20-40	B1	8.2	212
72	London plane	M	859	1	18	4	9	9	2.5	3	G	G	• No significant defects.	• No action	20-40	B1	10.3	334

Plate 19 Crevice into mature ash tree on site suitable for roosting bats

Plate 20 Japanese knotweed Stand 1

Plate 21 Japanese knotweed Stand 2

Plate 22 Japanese knotweed Stand 3

Plate 23 Japanese knotweed Stand 4

Plate 24 Japanese knotweed Stand 5

Plate 25 Japanese knotweed Stand 6

Appendix E – Report Conditions

WYG Environment Planning Transport Ltd

C1 – Report Conditions

ECOLOGY PHASE 1 HABITAT SURVEY

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

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

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

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

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

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

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

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

The performance of environmental protection measures and of buildings and other structures in relation to acoustics, vibration, noise mitigation and other environmental issues is influenced to a large extent by the degree to which the relevant environmental considerations are incorporated into the final design and specifications and the quality of workmanship and compliance with the specifications on site during construction. WYG accept no liability for issues with performance arising from such factors

November 2008

WYG Environment Planning Transport Ltd

Appendix B

Tree Condition and Value Report

WYG Environment
part of the WYG group

Barnsley College

Barnsley College Honeywell Campus

Tree Condition and Value Report

May 2009

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part of the **WYG** group

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Contents Page

Appendix Contents

1.0 Summary

WYG Environment was commissioned to carry out a tree survey at a site at Barnsley College, Honeywell Campus. The site comprises an existing college campus with a sports complex located within the eastern part of the site.

The site was visited during April 2009 and the trees assessed in accordance with BSS5837:2005 '*Trees in relation to construction – Recommendations*'.

The site contains a number of trees. The most prominent trees are a line of lombardy poplar trees, found growing in the north of the site and visible from Honeywell Road, and a number of trees, including London plane, sycamore, ash and black poplar, growing in a playing field at the north-western extent of the site which are visible from the neighbouring properties and the pedestrian access to the site. As such these trees are considered to provide significant amenity value to the locality.

We are currently awaiting confirmation from the Local Planning Authority on whether trees on the site are subject to a Tree Preservation Order or other statutory protection.

The survey assessed one hundred and sixty-three individual trees and six groups of trees and shrubs.

Three trees of high quality and value (Category A) have been identified on the site within the areas surveyed. These include three coastal redwood species trees. All these trees are attractive trees with high public visibility and no significant defects, which are able to make a substantial contribution for a minimum of 40 years.

Eighty-one individual trees have been assigned to the moderate quality and value category (Category B). These include four Norway maple, four ash, three Italian alder, two apple, twenty one Lombardy poplar, twenty sycamore, two hornbeam, five common lime, one rowan, two black poplar, five hawthorn, one blue Atlantic cedar, five London plane, one Highclere holly, two turkey oak, one beech and two alder species trees. All these trees are healthy attractive trees with no

significant defects which are in such a condition as to be able to make a significant contribution for a minimum of 20 years.

Seventy-two individual trees and six groups of trees of low quality and value (Category C) have been identified. These include Norway maple, goat willow, ornamental cherry, rowan, hornbeam, ash, sycamore, common lime, field maple, alder, Lombardy poplar, silver birch, laburnum, red horse chestnut and hawthorn species trees. Trees and shrubs in this group include young trees that are easily replaced, small-growing species which have a relatively low potential amenity value, multi-stemmed trees of poor visual form, trees whose form has been ruined by poor pruning and trees with significant structural defects that require further investigation.

Seven individual trees require felling because of their condition, irrespective of any development proposal (Category R). These include three sycamore, three silver birch and a red horse chestnut species trees.

Trees on the site represent a constraint that should be taken into account when designing future development. It is recommended that the three high quality and value trees and the eighty-one moderate quality and value trees are retained within the development with sufficient space to protect their root protection areas and provide sufficient space for future development without causing a nuisance. Where possible, low quality and value trees should be retained, but their presence should not represent a significant constraint on the design.

2.0 Scope and brief

WYG has been commissioned by Barnsley College to prepare an arboricultural report in relation to reserved matters planning application for the proposed redevelopment of the Barnsley College Honeywell Campus. The proposals are for a mixed development comprising 63 residential units, 2,460m2 of office floorspace, parking, new areas of public open space, including a play area, and relocation of the existing sports hall and tennis courts.

The application site extends to approximately 7.6 ha. The majority of the site is currently used by Barnsley College and contains a cluster of college buildings, including a sports hall and music centre. The site also contains a large amount of recreational space, including a rugby pitch and some poorly maintained tennis courts.

The survey was carried out by Rossa Donovan NCH (Arb) BSc (Hons), MPhil, PhD MIEEM at WYG Environment.

The report was prepared by David Fawcett M. Arbor. A., HND (Arb), FdSc (Arb), Consultant Arboriculturalist at WYG Environment.

The scope of the report was to prepare a tree survey report for the site in accordance with BSS5837:2005 '*Trees in relation to construction – Recommendations*' (BSi, 2005). This would determine the size, condition and value of trees and shrubs on and immediately adjacent to the site and provide recommendations for remedial work and root protective distances to ensure the future health and stability of retained trees.

Although details relating to the proposed development were provided, the condition and value of trees on the site was assessed irrespective of any development proposal.

3.0 Site Description

3.1 Introduction

The proposed development site comprises an existing college campus with the sports complex located within the eastern part of the site built.

The site, irregular in shape, is bounded by Honeywell Lane and existing residential properties to the north, the Hallam railway line, which runs from Sheffield to Leeds, to the east with the Barnsley to Huddersfield railway and a small area of fenced off grassland aligning the southern boundary of the site. Huddersfield Road / Cockerham Lane and existing residential properties bound the site to the west.

3.2 Topography

The site is situated on the side of a hill with a moderate downward slope from west to east. The site further slopes from the centre of the site to the north towards Honeywell Road and then at the southern extent a generally flat area slopes down to meet Old Mill Lane to the south.

3.3 Geology and soils

The underlying geology is unknown. Soils were not formally inspected, but vegetation growth indicated that they were relatively fertile and apparently well-drained.

3.4 Vegetation

The most prominent trees on the site are located to the north of the site and are visible from Honeywell Lane. These include a number of Norway maple, ash, alder and hawthorn etc which are close to the road, although a line of Lombardy poplars form the most prominent feature given their height and their position close to the top of the slope. These trees are surrounded by grassland and tarmac car parks and access roads. To the north-west of the site a number of trees situated in a park-like setting alongside a playing field include a number of sycamore, London plane, lime and black poplar trees. Of these the London planes and black poplars are especially prominent given their maturity and position close to the edge of the site. Many of the trees close to the northern

and north-western boundaries are large mature and early mature species trees which provide good amenity value for the surrounding area.

The remainder of the site has a tree density ranging from sparse to moderate in the northern and western parts of the site to dense in the south-western part of the site. This dense area of trees comprises numerous young, middle-aged and mature individuals which have colonised the area naturally to form an area of scrub woodland. Much of this area is dominated by sycamore with occasional birch, goat willow and an undeveloped understorey dominated by nettles.

The surrounding area has a variable tree cover. Overall tree and tall shrub density within the immediate area of the site is moderate given the surrounding land use which is dominated by medium-density residential properties and associated green spaces. An area of woodland exists south-west of the site and on the other side of one of the two railway tracks which border the site. This woodland was not included in this arboricultural assessment.

3.5 Site access and visibility

During opening hours, there is open public access to the entire site which includes a college and associated sports pitches.

Most of the trees on the site are highly visible to users of the site. Visibility of the smaller trees is limited to the immediate vicinity, but the larger mature trees in the recreation ground are visible across the whole site and a larger area that includes the surrounding roads and houses.

Given the high level of access and public visibility, trees have the potential for high public amenity value.

4.0 Statutory Tree Protection

Tree Preservation Orders (TPOs) and location within Conservation Areas place various legal restrictions on the felling, pruning or damaging of trees, subject to various exemptions (DETR, 2000).

An enquiry has been made to the Local Planning Authority on the presence of TPOs and Conservation Areas within and adjacent to the site. We have not yet received a reply on the presence of statutory tree protection.

Where trees fall within a Conservation Area, six weeks prior written notice should be served on the LPA before carrying out any felling or pruning work. During this period the LPA may serve a TPO if they wish to prevent the proposed work or control it through conditions. Works are exempt from the need to serve notice under certain circumstances, such as where the trees are dead, dying and dangerous, but it is recommend that thorough evidence of the trees' condition is gathered and the LPA are served with at least 48 hours notice of works to carried out so they can agree that the exemption applies. Carrying out works without having served six weeks notice and where exemptions do not apply is an offence.

There is an exemption for the above statutory controls on tree felling and pruning for works strictly necessary to implement development that has received full planning permission. It is recommended that no tree felling, other than the felling of hazardous trees, is carried out until planning permission has been gained.

5.0 Methodology

The site was visited during April 2009 to carry out an assessment in accordance with BS5837:2005.

A topographical survey was supplied (Malcolm Hughes Land Surveyors drawing number: 9839/1) identifying the position of the trees and this formed the basis of the Tree Constraints Plan (Appendix D).

The following information was collected for each tree: species, age class (see Table 1), height, stem diameter at 1.5m above ground level, crown spread in the four cardinal directions and height of the crown above the ground (excluding basal sprouts and epicormic branches).

Table 1. Age class categories

Age class	*Proportion of life expectancy*
Young	< 1/3
Middle-age	1/3 – 1/2
Early mature	1/2 - 2/3
Mature	>2/3
Over-mature	>2/3 and crown retracting as a result of age

Where multi-stemmed trees and shrubs were identified, the stem diameter was measured close to ground level, immediately above the root buttress flare. Where clusters of stems joining below ground level prevented the measure of a single basal stem diameter, a visual estimate was made of the effective basal stem diameter.

An assessment was made of the trees' physiological and structural condition, noting any disorders or biomechanical features that present an obvious hazard to present or future users of the site or affect the trees' life expectancy. Trees were assessed visually from ground level. No climbed inspection, removal of ivy or detailed investigation of decay was made.

Tree condition can change significantly over a relatively short period of time, and therefore the results and recommendations of this survey can only be held to be valid for a period of 12 months following the survey date.

Preliminary management works are proposed in order to either remove/reduce hazards or promote good future growth of the tree. These recommendations do not take account of any development proposals at this stage. All works carried out should comply with BS3998:1989 *British Standard Recommendations for Tree Work.*

The trees' overall quality and value for retention was assessed in accordance with BS5837:2005 Table 1 (Appendix B). This was dependent on the trees' physiological and structural condition, safe useful life expectancy and arboricultural, landscape, cultural, ecological value and amenity value (as a function of size, prominence, attractiveness and screening).

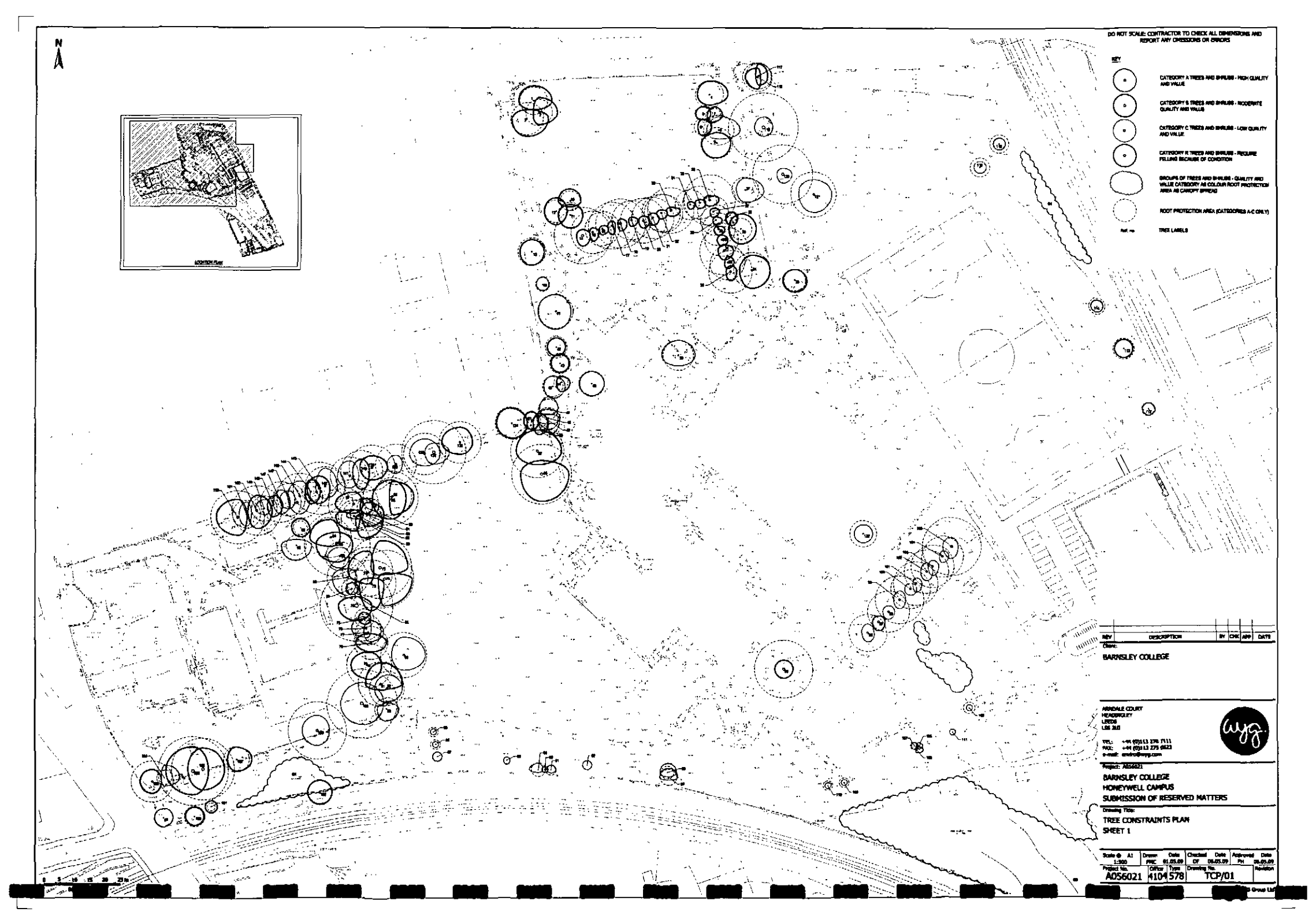
The root protection area (RPA) radius and area for each tree was also calculated in accordance with BS5837:2005. The RPA is an area of ground that provides sufficient soil rooting volume to ensure the survival of the tree.

Table C1. Potential ultimate height for tree and shrub species and cultivars on the survey site, based on Johnson and More (2004) and revised for local conditions.

Species	Common name	Potential height (m)
Alnus glutinosa	Alder	18
Malus spp.	Apple	10
Fraxinus excelsior	Ash	28
Populus nigra	Black poplar	30
Cedrus atlantica f.glauca	Blue Atlantic cedar	30
Sequoia semperverans	Coastal redwood	30
Tilia x europaea	Common lime	30
Acer campestre	Field maple	14
Salix caprea	Goat willow	12
Crataegus monogyna	Hawthorn	10
Ilex X altaclarensis	Highclere holly	10
Carpinus betulus	Hornbeam	20
Alnus cordata	Italian alder	18
Laburnum anagyroides	Laburnum	10
Populus nigra 'Italica'	Lombardy poplar	30
Platanus X hispanica	London plane	30
Acer platanoides	Norway maple	25
Prunus spp.	Ornamental cherry	10
Aesculus X carnea	Red horse chestnut	18
Sorbus aucuparia	Rowan	15
Betula pendula	Silver birch	20
Acer platanoides	Sycamore	28
Quercus cerris	Turkey oak	25

Appendix D – Tree constraints plan

(WYG drawing no. A056021-4104-578-TCP-01-02)


N
DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY OMISSIONS OR ERRORS
KEY
CATEGORY A TREES AND SHRUBS - HIGH QUALITY AND VALUE
CATEGORY B TREES AND SHRUBS - MODERATE QUALITY AND VALUE
CATEGORY C TREES AND SHRUBS - LOW QUALITY AND VALUE
CATEGORY R TREES AND SHRUBS - REQUIRE FELLING BECAUSE OF CONDITION
GROUPS OF TREES AND SHRUBS - QUALITY AND VALUE CATEGORY AS COLOUR ROOT PROTECTION AREA AS CANOPY SPREAD
ROOT PROTECTION AREA (CATEGORIES A-C ONLY)
Ref. no
TREE LABELS
LOCATION PLAN
REV
DESCRIPTION
BY
CHK
APP
DATE
Client:
BARNSLEY COLLEGE
ARNDALE COURT
HEADINGLEY
LEEDS
LS6 3LD
TEL: +44 (0)113 276 7111
FAX: +44 (0)113 275 6523
e-mail: enviro@wyg.com
wyg
Project: A056021
BARNSLEY COLLEGE
HONEYWELL CAMPUS
SUBMISSION OF RESERVED MATTERS
Drawing Title:
TREE CONSTRAINTS PLAN
SHEET 1
Scale @ A1
1:500
Drawn
PWC
Date
01.05.09
Checked
CF
Date
06.05.09
Approved
PH
Date
06.05.09
Project No.
A056021
Office
4104
Type
578
Drawing No.
TCP/01
Revision
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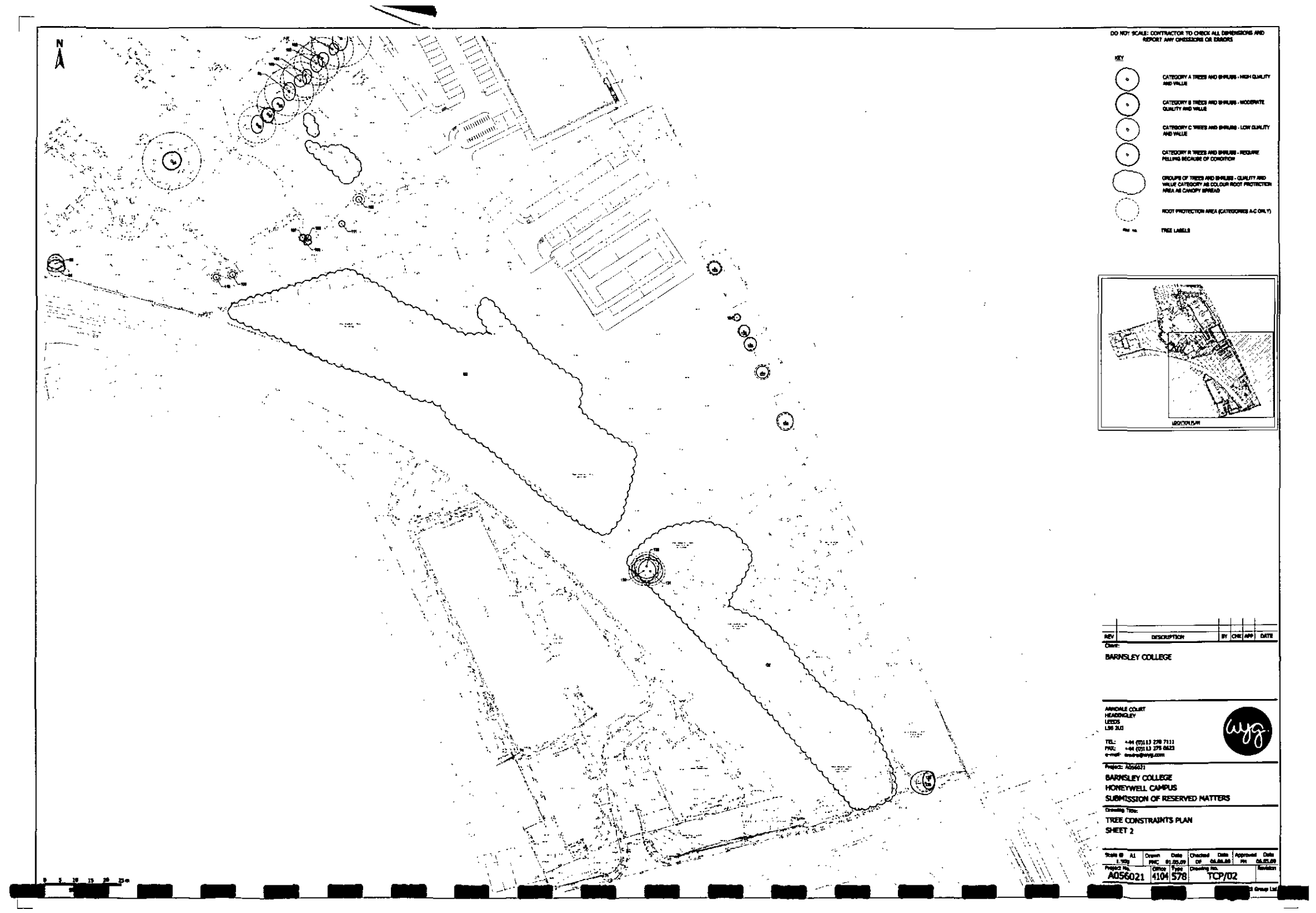
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DO NOT SCALE: CONTRACTOR TO CHECK ALL DIMENSIONS AND REPORT ANY DISCREPANCIES OR ERRORS
KEY
CATEGORY A TREES AND SHRUBS - HIGH QUALITY AND VALUE
CATEGORY B TREES AND SHRUBS - MODERATE QUALITY AND VALUE
CATEGORY C TREES AND SHRUBS - LOW QUALITY AND VALUE
CATEGORY R TREES AND SHRUBS - REQUIRE FELLING BECAUSE OF CONDITION
GROUPS OF TREES AND SHRUBS - QUALITY AND VALUE CATEGORY AS COLOUR ROOT PROTECTION AREA AS CANOPY SPREAD
ROOT PROTECTION AREA (CATEGORIES A-C ONLY)
TREE LABELS
LOCATION PLAN
REV
DESCRIPTION
BY
CHK
APP
DATE
Client:
BARNSLEY COLLEGE
ARNDALE COURT
HEADINGLEY
LEEDS
LS6 2UJ
TEL: +44 (0)113 278 7111
FAX: +44 (0)113 275 0633
e-mail: enquiries@wyg.com
Project: A056021
BARNSLEY COLLEGE
HONEYWELL CAMPUS
SUBMISSION OF RESERVED MATTERS
Drawing Title:
TREE CONSTRAINTS PLAN
SHEET 2
Scale @ A1
1:500
Drawn
PWC
01.05.09
Checked
DF
Date
Approved
PH
Date
Project No.
A056021
Office
4104
Type
578
Drawing No.
TCP/02
Revision
0 5 10 15 20 25m

Appendix C

Honeywell House Site Location

Drawings

A057544-21-C-002A – Habitat Survey
A057544-21-C-003A – Tree Constraint Plan

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

REV	DESCRIPTION	BY	CHK	APP	DATE
A	FIRST ISSUE	MRR	CDL	CDL	11.02.10

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Project:
HONEYWELL CENTRE, BARNSLEY COLLEGE
SUSTAINABLE CONSTRUCTION AND
RENEWABLE ENERGIES CENTRE

Drawing Title:
SITE PLAN
HABITAT SURVEY

Scale @ A1	Drawn	Date	Checked	Date	Approved	Date
1:1000	MRR	11.02.10	CDL	11.02.10	CDL	11.02.10

Project No.	Office	Type	Drawing No.	Revision
A057544	21	C	002	A

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

REV	DESCRIPTION	BY	CHK	APP	DATE
A	FIRST ISSUE	MRR	CDL	CDL	11.02.10

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e-mail: enviro@wyg.com

Project:
HONEYWELL CENTRE, BARNSLEY COLLEGE
SUSTAINABLE CONSTRUCTION AND
RENEWABLE ENERGIES CENTRE

Drawing Title:
SITE PLAN
TREE CONSTRAINTS PLAN

Scale @ A1	Drawn	Date	Checked	Date	Approved	Date
1:1000	MRR	11.02.10	CDL	11.02.10	CDL	11.02.10

Project No.	Office	Type	Drawing No.	Revision
A057544	21	C	003	A

Appendix D

Letter dated 03 July 2006 from Barnsley Metropolitan Borough Council

BARNSLEY
Metropolitan Borough Council

Regulatory Services
Assistant Director: Ken Eastwood, BSc (Hons), MCIEH
Central Offices, Kendray Street, Barnsley. S70 2TN.

My Ref: JSC/140029 Your Ref: E9056 Date: 03 July 2006

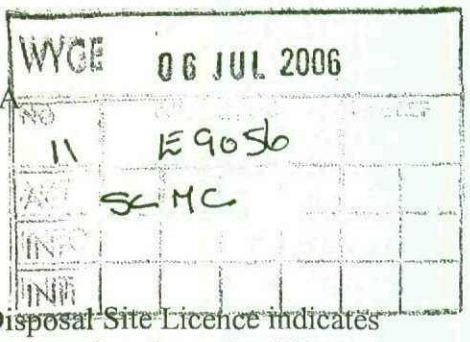
Enquiries To: Mr J Scott PollutionControl@barnsley.gov.uk Dial Direct: (01226) 772456 Fax: (01226) 775699

Dear Sir

Re Barnsley College, Honeywell Site

Further to your fax requesting information in respect of the above site, I can now supply you with the information we hold regarding this site.

Closed Landfill Sites
As you have indicated within your enquiry, there is a closed landfill on the above site, the details of which are listed below:
Reference - 23
Address - Old Mill Lane, Barnsley.
NG Ref. - 434468, 407087
Waste Disposal Licence - WD20 B446
Planning Application - B/84/0865/BA, B/84/1103/BA, B/87/0674/BA
Site Operator - Mr M White and Twibell Plant
Landfill Material - Inert Waste
Total Volume - 4000m^3
Date Commenced - 1984
Date Completed - 1989



This landfill has been classified as Category 4, meaning the Waste Disposal Site Licence indicates the site has been licensed to accept material that would not be expected to give rise to landfill gas in substantial quantities.

Contaminated Land
Under the provisions of the Environmental Protection Act 1990, we have a duty to inspect the borough for contaminated land. As part of this work, records of potential sources of contamination have been complied through the use of historical Ordnance Survey maps and local knowledge.

With regards to Part IIA of the Environmental Protection Act 1990, the closed landfill site will be inspected as to whether they could be determined as 'contaminated land' in respect of the sites current use. We have prioritised all of the sites that have been identified with a previous uses, and

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White Young Green
Arndale Court
Headingley
Leeds
LS6 2UJ

this site is ranked 776 out of 2208 in priority order. However, I am unable to give any timescales as to when this site will be inspected under Part IIA.

I must inform you that the Council make a charge for supplying this information and you will be invoiced accordingly in due course. This charge will be £40 as agreed.

This information is submitted as being the position to-date and other information may be available in records not held by this Authority at the present time. The Borough Council cannot, therefore accept liability or be prejudiced by the views expressed.

Should you wish to discuss this correspondence further, please don't hesitate to contact me.

Yours faithfully

John Scott
Contaminated Land Officer