BE Brooks Ecological

Ecological Assessment, Brierley Hall, Church Street, Brierley

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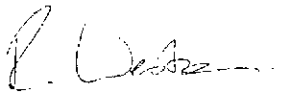

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Summary Statement

The application site is of low ecological value, supporting a limited range of common species poor habitat types.

With the possible exception of bats the site will not support any protected or notable species. Buildings are assessed as having limited roosting potential and recommendations are made to avoid any impacts on bats or their roosts.

Recommendations are also made in relation to avoiding impacts on birds during site clearance and in relation to the control of Japanese knotweed.

Part 1: Ecological Assessment

Introduction

Brooks Ecological Ltd was commissioned to produce an Ecological Assessment of Brierley Hall, Church Street, Brierley, South Yorkshire (SE 409 111).

The assessment presented here was based upon an Extended Phase 1 Habitat Survey of the plot and nearby habitat, a desk study encompassing the wider area and a bat roost potential survey focusing on buildings at the application site. The purpose of the assessment was to identify potential for the site to contain important habitats or species, and consider if development would have a significant impact upon local biodiversity.

Part 1: Desk Study

A desk study was carried out to identify species or habitats that are considered important in a local context and to identify any species recorded locally that may be associated with the application site. This information can be used to help target groups that need to be considered in more detail in order to identify the ecological baseline for the application site.

MAGIC search

A search of the MAGIC website was undertaken. The MAGIC site is a Geographical Information System that contains all statutory (e.g. SSSI's) as well as some non-statutorily protected habitats. It is a valuable tool when considering the relationship of a potential development site with nearby important habitats.

The MAGIC search revealed that there are no statutorily designated sites within 2km of the application site.

English Nature Natural Area

The site falls within *Natural Area 24 Coal Measures*

Based on shale and sandstone deposits natural area 24 is characterized by dense population centres such as Sheffield, Leeds and Wakefield. The area's ecology reflects the changing geology which underlies it and is typified by mixed agriculture, acidic / ancient woodlands, valley wetlands and acidic / neutral grasslands.

There are no nationally important conservation priorities. Local Conservation priorities for the area are;

- Acid Grassland
- Fen, Marsh and Swamp
- Lowland Heathland
- Neutral Grassland
- Rivers and Streams
- Standing and open water
- Wet Woodland

The site does not contain any of these habitats.

Aerial Photography and Detailed Map Study

Aerial photographs published on commonly used websites were studied to place the site in its wider context and to look for ecological features that would not be evident on the ground during the walkover survey. This approach can be very useful in determining if a site is potentially a key part of a wider wildlife corridor or an important node of habitat in an otherwise ecologically poor landscape. It can also identify potentially important faunal habitat (in particular ponds) which could have a bearing on the ecology of the application site. Ponds may sometimes not be apparent on aerial photographs so we also refer to close detailed maps that identify all ponds issues and drains. We use Promap Street + scale maps for this purpose.

The site is located within the village of Brierley bordered by a cemetery to the south while housing and local roads are to the south and west. The open countryside lies directly to the north east dominated by intensive arable farming with scattered pockets of mature trees and hedgerows. The nearest substantial area of woodland is over 1km to the south west. The surrounding countryside contains a network of minor drains though the closest ponds to this site are over 900m to the north, alongside Hemp Dike with the River Dearne over 4km to the south.

Local Biodiversity Action Plan

The site is covered by the Barnsley Biodiversity Action Plan under which plans have been prepared for the following habitats:

- Upland Oak Woodland
- Wet Woodland
- Hedgerows

- Arable Field Margins
- Floodplain Grazing Marsh
- Lowland Meadows
- Lowland Dry Acidic Grassland
- Lowland Heathland
- Upland Heathland
- Purple moor grass and rush pasture
- Reedbeds
- Ponds & Rivers
- Blanket bog
- Open mosaic habitats on previously developed land
- Lowland mixed deciduous woodland
- Wood pasture and parkland

The site is previously developed land and the value of the habitats it contains will be addressed in the relevant sections of the report. It does not contain any other of the habitats listed under the Barnsley Biodiversity Plan.

Species Action Plans prepared for the area are for:

- Bluebell
- Otter
- Bats
- Water Vole
- Great Crested Newt
- White-Clawed Crayfish
- Glow Worm
- Barn Owl
- Bittern
- Grey Partridge
- Lapwing
- Linnet
- Little Ringed Plover
- Skylark
- Tree Sparrow

- Twite
- Hedgehog
- Salmon
- Bullhead
- Dingy skipper
- kestrel

No suitable habitat for these species is found on the site with the possible exception of bats, which will be discussed later in this report.

The site may also provide some foraging habitat for hedgehogs, though as much of the area is exposed open ground providing little in the way of vegetative cover, this is likely to be limited to the overgrown margins of the site. It is felt that the site's development could provide potential for improving habitat for this species.

Data search

South Yorkshire Bat group was contacted for records within 1km of the site. Two records of roosts of unknown species are held for this search area which were located on Monument Drive 369m to the south west and on Common Road, 664m to the east.

Part 2: Extended Phase 1 Habitat Survey

Introduction

The survey was carried out on the 29th of April 2010 by a suitably experienced field ecologist.

Survey Method

The extended Phase 1 survey is a description of habitats based upon the plant species present and also includes evidence of or potential for the presence of legally protected or notable faunal species/groups (e.g. invertebrates). The survey followed a Phase 1 habitat survey methodology (JNCC, 1993) and was extended to assess faunal potential. This involves walking the site, mapping and describing different habitats (for example: woodland, grassland, scrub). Evidence of fauna and faunal habitat is also recorded (for example droppings, tracks or specialist habitat such as ponds for breeding amphibians). This modified approach to the Phase 1 survey is in accordance with the approach recommended by the Guidelines for Baseline Ecological Assessment (IEA, 1995).

Results

The site contains Brierley Hall, a large stone built listed building, which until fairly recently was used as local Council Offices. When the building became empty, it was subject to vandalism and a fire which resulted in a number of buildings attached to the original hall being demolished. The site now contains large areas of hard standing resulting from this demolition along with patches of former landscaping and tarmac drive and parking. This can be classified into the following habitats:

- Buildings
- Hard standing/bare ground
- Rough neutral grassland
- Tall ruderal/scrub mosaic
- Mature trees

Buildings

The site contains three separate buildings including Brierley Hall itself, a detached modern brick built house and a single storey outbuilding. These will be examined more closely in the bat roost potential section of the report.

Hard-standing/bare ground

Large areas of the site are made up of tarmac surface surrounding the buildings which in the main support very few plant species, though in small areas, where the surface has been broken, dandelions (*Taraxacum officianale sp.*) black medick (*Medicago lupulina*) and grasses, predominantly cocksfoot (*Dactylis glomerata*), are beginning to colonise. Several sections of the original hall were demolished after a fire and the site now contains large areas of flattened rubble on the footprint of the former structures. This now supports a mosaic of ruderal plants including creeping thistle (*Cirsium arvense*), buddleia (*Buddleia davidii*), willowherbs (*Epilobium* spp.) broad leaved dock (*Rumex obtusifolius*), Oxford ragwort (*Senecio squalidus*), dandelion, white clover(*Trifolium repens*), cocksfoot, and perennial rye grass (Lolium perenne). There is large spoil heap containing a mixture of top soil and brick rubble which has remained largely free of vegetation apart from occasional patches of dandelion and weld (*Reseda lutea*). An emerging stand of the invasive and controlled plant Japanese Knotweed (*Fallopia japonica*) was found on an area of rubble several metres south east from the front of the modern house on the site (figure 1).

Rough neutral grassland

In front of the main hall, at the western section of the site is an area of unmanaged grassland which will have previously served as a lawn. Perennial rye grass dominates, along with cocksfoot, red fescue (*Festuca rubra*) and meadow grasses (*Poa annua*). Forb species include dandelion, rose bay willow herb(*Chamerion angustifolium*), creeping thistle, chickweed (*Stellaria media*) and creeping buttercup(*Ranunculus repens*). At the western boundary of the site, an area of border planting has been largely colonised by grasses, although additional species such as honesty (*Lunaria annua*), yellow archangel (*Lamiastrum galeobdolon*), red dead nettle (*Lamium purpureum*), garlic mustard (*Alliaria petiolata*)and foxglove(*Digitalis purpurea*) are also present. These borders also contain remnants from the original landscaping including periwinkle (*Vinca minor*) daffodils (*Narcissus sp.*) and tulips (*Tulipa sp.*).

Tall ruderal/scrub mosaic

This is largely limited to the north east corner of the site along the brick wall boundaries of the next door farm. There is also a thin line of scrub which is establishing along the southern boundary fence. This habitat is dominated by bramble (*Rubus fruticosus*) with stands of nettle (Urtica dioica), rose bay willow herb , ground elder (*Aegopodium podagraria*)broad leaved dock with cleavers (*Galium aparine*)and hedge bindweed (*Calystegia sepium*). Shrub species include hawthorn (*Crataegus monogyna*), elder (*Sambucus nigra*), and laburnum (*Laburnum anagyroides*). Several stands of Japanese knotweed are located within this habitat at the south eastern corner where the site borders a footpath and along the north eastern boundary of the site .

Mature trees

A large beech tree (*Fagus sylvatica*) is located at northern end of the site while remaining trees are found along the western boundary and form part of the landscaping of the former council offices. These include smaller specimens of ornamental cherry (*Prunus sp.*) hawthorn and sycamore (*Acer pseudoplatanus*).

Fauna

Amphibians

The application site does not support habitat suitable for breeding amphibians and there are no ponds within a 500m radius makes it reasonable to conclude that great crested newt are very unlikely to be using the site.

Reptiles

The site does not contain any suitable habitat for reptiles and is not connected to habitat able to support them. Their absence from this site can be reasonably concluded without further survey.

Protected mammals

Of this group, only bats could be potentially present on site. For this reason the survey was extended to look thoroughly at the construction and repair of buildings on the site in relation to their possible use by bats, this is known as a Bat Roost Potential Survey the justification, method and results of which are presented below.

No suitable habitat is present for any other protected species of mammal.

Birds

The site has a very limited range of habitats and its location within urban surroundings means it is not suited to any protected or otherwise important bird species or groups. However, the small areas of scrub and mature trees will support common bird species and these are likely to nest here during spring and summer. Clearance of shrub vegetation from the site should be carried out between October and February (inclusive) to avoid potential impacts to nesting birds. If this is not possible, any clearance should be preceded by a nesting bird survey carried out by a suitable qualified ecologist.

Invasive species

Several stands of Japanese knotweed (*Fallopia japonica*) have been found on the site. This plant is listed under the Wildlife and Countryside Act (1981) making it an offence to plant or encourage its growth by disturbing the surrounding soils. Its removal will be required as part of the land owners duty of care and will have to be carried out using specialist contractors. For more detailed information about removal of Japanese knotweed the Environment Agency Guidelines should be consulted.

Part 3: Bat Roost Potential Survey

Bats are afforded full protection under The Wildlife and Countryside Act (1981) plus amendments, and The Conservation (Natural Habitats &c.) Regulations (1994). Under these Acts it is an offence among others, to recklessly kill, injure or disturb bats. It is also an offence to destroy or obstruct a roost even if bats are not in occupancy at the time of the action.

The Conservation (Natural Habitats &c.) (Amendment) Regulations (2007) and (2009) amended the 1994 Regulations. As a result of these amendments the majority of defences against an offence are removed, making prevention of impacting upon bats by developers or any other party even more important. These amendments increases the need for detailed and well designed bat surveys, prior to carrying out activities that may impact upon bat roosts such as demolition of buildings or removal of trees.

Where bats are found within a potential development site, a license from Natural England may need to be secured if works that could otherwise contravene legislation are to be carried out. These licences are only issued where Natural England is satisfied that works are unavoidable and would not have a negative impact on the favourable conservation status of bats. A Natural England license requires that the potential development site has full planning permission and that bats were a material consideration of the planning permission.

Bat roosts

Bats roost in buildings and trees in different locations depending upon time of year and environmental factors such as position of the sun, proximity to heat sources and feeding grounds. The following types are commonly referred to:

Transitional roosts:

Bats frequently gather early in the season (March to April) before dispersing to summer roosts. Bats can be found in high numbers in these roosts for a very short period. Transitional roosts can also be found shortly before hibernation in August to October when bats (depending upon species) can gather in roosts not used earlier in the season.

Maternity roosts:

These are among the most important roosts and are normally occupied from May to August. Depending on the species involved, some maternity roosts can contain a very significant proportion of the local population.

Summer (non-breeding) roosts

Small groups of non-breeding female and male bats can gather in these roosts or bats from a local population may choose to roost individually. There are normally a large number of suitable locations for summer non-breeding roosts and these may be routinely used or used only on an occasional basis. Irregularly used summer roosts can be very hard to find without unreasonable survey effort.

Mating roosts

Around September bats will gather in roost to mate; these are often in different locations than summer or breeding roosts.

Hibernation roosts

As bats in hibernation roosts are highly vulnerable to disturbance and bats can be present in large numbers these are considered to be among the most important bat roosts. Many species of bats roost in large and nationally important hibernation roosts associated with underground sites, many of which are well known and protected. However, the most common bat in the UK (the common pipistrelle) is largely unaccounted for in winter but thought to disperse and roost individually or in small groups in thermally stable cracks and crevices in thick walls or trees.

Local Status

The application site is within the natural range of species of bats listed in table 1.

Table 1 bat species recorded within 100km of the application site

Species	**National status**
Pipistrelles (*Pipistrellus pipistrellus* and *P. pygmaeus*)	widespread/common
Noctule (Nyctalus noctula)	widespread/frequent
Leisler's (Nyctalus leisleri)	widespread/rare
Brown long-eared (Plecotus auritus)	widespread/common
Natterer's (Myotis nattereri)	widespread/frequent
Daubenton's (Myotis daubentonii)	widespread/common
Whiskered/Brandt's (*Myotis mystacinus* and M. *brandtii*)	widespread/scarce

A thorough daytime inspection of the buildings was made in March 2010 in order to look for evidence of bats and assess bat roosting potential. Evidence of bats may take the form of droppings, feeding remains, live bats, dead bats, stains on masonry or timber from the oils in bats' fur and claw marks made by bats regularly roosting in the same location.

Bat roosting potential of the buildings was classified according to the following criteria set out in table 2, developed with reference to the Bat Mitigation

Guidelines (2004), Bat Workers Manual (2004) and the Bat Conservation Trust Good Practice Guidelines (2007).

Table 2 Bat roosting potential in buildings

Roosting potential	Criteria
Good	Buildings that have many areas suitable for roosting with a large number of potential access points. These are normally in sheltered locations, subject to low variation in temperature. Buildings with good potential could be used for a whole range of roosts including maternity roosts.
Moderate	Buildings with a smaller number of areas suitable for roosting, but still supporting features that could be attractive to bats and potentially support maternity roosts.
Limited	Buildings with limited roosting opportunities. These may be in locations that are subject to wide temperature fluctuations and drafts. They could be used as occasional or transient roosts, but are unsuitable for maternity roosts. Buildings that would otherwise be moderate to good potential but have reduced value due to other factors such as exposed location, separation from nearby foraging, or presence of strong lighting.
Very Limited	Buildings that have no obvious places for bats to roost, but could be used on a sporadic or occasional basis for feeding or solitary day roosting.
None	Buildings which appear unsuitable for roosting bats due to clear lack of roosting spaces such as voids etc and/or absence of suitable access points.

Survey work was carried out by Anne Proud BA (Hons), MSc. Anne has received thorough training in bat ecology and survey techniques, delivered by both Peter Brooks and Robert Weston.

Peter has over 10 years experience of carrying out bat surveys in a professional capacity, holds English Nature scientific licence for all counties of England and Conservation licence for West and North Yorkshire. He is a Natural England Roost Warden.

Rob Weston BSc (Hons) MSc MIEEM has several years experience of carrying out bat surveys in a professional capacity. He is a member of the West Yorkshire Bat Group and runs training in bat surveys for student ecologists.

Results

The site is located very close to open countryside linked to it by a network of scattered trees and hedgerows. Brierley Hall is bordered by a cemetery to the south and fields to the east, both of which contain a number of large trees, which together with those already on site, will provide reasonable foraging for local bat populations.

The site contains three separate buildings; the hall itself, a detached house and a single storey outbuilding at the eastern boundary. The outbuilding has solid brick walls and a corrugated metal roof. It contains no features likely to be attractive as roosts, especially given its dilapidated state has exposed most of the structure to the elements. Consequently this building does not need to be considered further in relation to bats.

Brierley Hall

Brierley Hall (figure 1) is a stone three storey listed building which has had a number of extensions added to it over the years. The main section has solid brick walls faced with stone and a double pitched valley roof, hipped at both ends. A two storey extension is attached at the northern elevation, while another is located at the eastern elevation (figure 3); both these sections are of very similar construction to the original hall. Externally, the building appears to be in good repair with sound pointing, while windows and doors are well sealed to the stonework providing no suitable access points for bats. The main building has a stone cornice at the eaves, while the extensions have gutters supported by a series of stone pegs. Both these areas are in good condition with no obvious gaps or access points that could off roosting for bats. There are some small areas on the south east elevation where missing pointing and small gaps created by the demolition of an adjoining building have created cracks that could be used by crevice dwelling bats, though given these spaces do not lead to a wall cavity, these areas are only likely to provide occasional roosts for small numbers of bats.

The roofs of all three stone built sections of the hall have grey slate (flag stone) roofs, well laid and capped by ridge stones soundly cemented in place. Although the roof is in good repair, the nature of its construction allows many minor cavities which can be used by bats as temporary roosting spaces. In addition, there are gaps under the ridge at the eastern elevation, which again could provide temporary roosting for small numbers of bats.

An internal inspection of the roof spaces of the hall showed that the roof stones were unlined, with many areas of the loft open to the floor below making it far too light to be attractive for bats to roost inside. There were smaller areas of the main hall where the attic was still intact, though again, inspection revealed that the roof was unlined and so unlikely to provide much more than occasional roosting. No droppings were found although it was not possible to thoroughly search all roof voids due safety issues.

At the northern elevation of the building is a large two storey modern brick built extension (figure 4) with flat felt roof hidden behind low façade walls. This section of the hall is in good repair with sound pointing and no obvious areas which could offer roosting potential for bats.

Detached house

This is a two storey modern brick building with double pitched tile roof. All pointing is in excellent condition and the UPVC windows are well sealed to the brickwork providing no access points for bats. The roof is in reasonable condition although there are a few slipped tiles on the south east elevation creating gaps which could provide sporadic roosting for small numbers of bats. Pointing at the eastern gable end is sound, although at the western end some of the cement is

missing creating a crevice which again could provide opportunities for occasional roosts.

Evaluation and Recommendations

Both the hall and detached house have been assessed as having limited bat roost potential as they contain features that are only likely to support small numbers of bats using the buildings on a sporadic basis. As the roof of the Hall is unlined, roosting potential is limited to crevices beneath the roof stones while the general good condition of the pointing and lack of wall cavity means that bats are unlikely to find space to roost in other parts of the building. Potential roosting in the detached house is also limited to small areas within the roof and gable ends. The flat roofed extension on the main hall has been assessed as having no roosting potential and can be demolished without further precautions in regard to bats.

Plans for the site include the renovation of the main hall including the demolition of the flat roofed extension. The detached house is also scheduled to be demolished. As the buildings are located close to good foraging habitat and bats can roost in unexpected locations it is sensible to follow a precautionary approach with regard to any renovation affecting the Hall roof and demolition of the detached house. Hence we recommend that that this work takes place when bats are inactive between November 2010 and March 2011. Should work need to be carried out before that time, it would be advisable to carry out an emergence survey to confirm absence of bats.

Although this building is assessed as being unlikely to support bats in its current condition, workers should always be aware that bats can be found even where a building has been assessed as unlikely to support roosts. Should bats be found, work should stop immediately and a professional ecologist and/or the bat helpline on 0845 1300 228 should be contacted. The local office of Natural England should also be contacted to seek advice.

The UK government's latest guidance on nature conservation in relation to development (PPS9) makes it clear that opportunities should be sought through their planning system to use development as an opportunity to enhance sites for wildlife where possible and this has been reinforced in The Natural Environment and Rural Communities Act 2006. The new building could incorporate areas that could be attractive to roosting bats, using "bat bricks" and adapted roof tiles and ridges which can be cheaply and easily be incorporated in to new build projects.

Table 3 – Summary of actions required

Action	Timing	Notes
Minimum required		
Timing of Demolition of detached house Timing of renovations affecting roof of main hall	November 2010-March 2011	Should bats be found work should stop immediately and a professional ecologist contacted
Or: emergence survey	May-September	To be carried out if above works not carried out between November and March

Overall Evaluation and Recommendations

The site is assessed as of low ecological value supporting a very limited range of species poor habitats. It is assumed to support no protected or otherwise notable species.

Specific recommendations are required in relation to the presence of Japanese knotweed on the site and the requirement to avoid impacts on nesting birds.

To avoid any possible impact on bats, demolition of the detached house and/or works affecting the hall roof should take place when bats are inactive (November to March) or be preceded by an emergence survey to establish that bats are not using the buildings as roosts.

To provide suitable habitat for hedgehogs, fencing between gardens should be accessible to this species (i.e.) not close fitting to the ground, and all gardens should contain areas of dense shrub planting for cover. Two hedgehog boxes could be incorporated into the landscaping of less trafficked areas of the site.

Figures

Figure 1

General site view looking east across area of bare ground/rubble. Small stand of Japanese knotweed emerging in the foreground.

Figure 2

View of main hall viewed from the west.

Figure 3
View of extension attached at eastern elevation.

Figure 4
Brick built modern extension at northern elevation of Hall.

Figure 5

Detached house viewed from the south.

References

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