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Ecological Assessment
Barnsley Markets
Barnsley

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Report Title:	Ecological Assessment Barnsley Market, Barnsley
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Summary Statement

The site has been found to be of very low ecological value, based on its supporting a very limited range of common species poor habitats.

The CEAG building was subject to a bat survey and was assessed as having very limited roosting potential. No further surveys are required in this respect.

General recommendations are included in terms of preventing impacts on nesting birds.

Introduction

Brooks Ecological Ltd was commissioned to undertake an Ecological Assessment of land around Barnsley Markets (SE 347 063). This report is provided as an update to an original ecological assessment carried out by Enviros Consulting Ltd. In 2004.

Site Proposals

The proposals involve the demolition of existing buildings on site to make way for new development.

Potential impacts

The following potential impacts are highlighted and the report which follows sets out the significance of these impacts relative to the ecological value of the site and the potential presence of protected or notable species:

- Clearance of scrub vegetation;
- Removal of trees;
- Demolition of existing buildings.

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.

Designated Sites

A search of the MAGIC website was undertaken. The MAGIC site is a Geographical Information System that contains all statutory (e.g. Sites of Scientific Interest [SSSI's]) as well as many non-statutorily listed habitats (e.g. Ancient woodlands and grassland inventory sites). It is a valuable tool when considering the relationship of a potential development site with nearby important habitats. One designated site was located within the search area.

- Dearne Valley Park: a Local Nature Reserve located approximately 1km to the north east of the development. Adjacent to the River Dearne, the site is reclaimed derelict land and is now an urban park with areas of ancient acidic oak woodland, wetlands and grassland habitats.

The following non-stautory locally designated Natural Heritage Sites are found within 2km of the development.

- Barnsley Canal at Wilthorpe: located 1.6km from the site, this is a stretch of canal, and contains wetland and grassland habitats.

- Cliffe Wood: adjacent to the Dearne Valley Park, this has a mixture of ancient Oak/Birch woodland, a mixed plantation area and an area of wet, Willow dominated woodland; as well as areas of open grassland and scrub.

The site is located some distance from these sites separated from them by extensive built up areas. Development is very unlikely to have any impacts on these designated sites.

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 development site includes an area of Barnsley town centre surrounded by retail units, pedestrian areas and a network of roads. With the exception of some limited landscaping associated with town centre, there are few open green spaces in the immediate vicinity of the site with the exception being a public park off Church Lane some 400m to the north west. To the east of the development, residential areas provide a limited network of vegetation while an area of woodland is now established at Hoyle Mill approximately 500m to the east around to the site of a former colliery. The River Dearne with associated wetland and parks lies around 1km to the east. There are no visible ponds visible within 500m of the development boundary.

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 contains no examples of these habitats.

Local Biodiversity Action Plan

The local BAP is 'Barnsley Biodiversity Action Plan'. Under this BAP plans have been created for the species or groups listed in Table 1.

Table 1: Species Action Plans

Species/group	Potentially on site	Likely to be significantly affected?
Great Crested Newt (*Triturus cristatus*	**Yes**	**Possibly**
Skylark (*Alauda arvensis*)	No	N/A
White-clawed Crayfish (*Austropotomobius pallipes*)	No	N/A
Grey Partridge (*Perdix perdix*)	No	N/A
Twite (*Carduelis flavirostris*)	No	N/A
Little Ringed Plover (*Charadrius dubius*)	No	N/A
Bluebell (*Hyacinthoides non-scripta*)	No	N/A
Glow Worm (*Lampyris noctiluca*)	No	N/A
Barn Owl (*Tyto alba*)	No	N/A
Lapwing (*Vanellus vanellus*)	No	N/A
Water Vole (*Arvicola terrestris*	No	N/A
Otter (*Lutra lutra*)	No	N/A
Bats	**Yes**	**No**
Hedgehog (*Erinaceus europaeus*)	No	No
Kestrel (*Falco tinnunculus*)	No	No
Tree Sparrow (*Passer montanus*)	No	No
Bullhead (*Cottus gobio*)	No	N/A
Dingy Skipper (*Erynnis tages*)	No	N/A
Salmon (*Salmo salar*)	No	N/A

Action plans have also been produced for the habitats in Table 2, below.

Table 2: Habitat Action Plans

Habitat	Present on site	Likely to be significantly affected?
Upland Oakwood	No	N/A
Lowland Mixed Deciduous Woodland	No	N/A
Wet Woodland	No	N/A
Wood Pasture and Parkland	No	N/A
Arable Field Margins	No	N/A
Floodplain Grazing Marsh	No	N/A
Lowland Meadows	No	N/A
Lowland Dry Acidic Grassland	No	N/A
Lowland Heathland	No	N/A
Upland Heathland	No	N/A
Blanket Bog	No	N/A
Ponds	No	N/A
Purple Moor Grass and Rush Pasture	No	N/A
Reedbeds	No	N/A
Rivers	No	N/A
Open Mosaic Habitats on Previously Developed Land	No	N/A
Hedgerows	No	N/A

Records

A data search carried out by BMBC for the original Enviros report showed that there were “no ecological records of any note” for the town centre. Additional records were also obtained from the Barnsley Bat Group. As part of the update of the ecological assessment, a search was made for any listed records for notable and protected species recorded since 2004.

The Barnsley area does not have any dedicated ecological record holder at this time. So a search was made for records of any additional protected or otherwise notable species where collected from the National Biodiversity Network (NBN) Gateway website. This search revealed that no new records are held for the Barnsley Town Centre area.

The Barnsley Bat Group does hold a number of records for bats within a 2km radius of the development although these tend to be centred around the north western area of the town which has a higher number of mature trees. Records closer to the development are limited to single grounded or found within buildings. A single pipistrelle bat species was found in a shop on Market Hill, while an indeterminate species of bat was seen close to the offices opposite the railway. At the time of writing, records since 2006 had yet to be returned from the bat group.

Phase 1 Habitat Survey

Survey Method

The survey was carried out on the 19th of April 2011 by an experienced field ecologist and member of the Institute of Ecology and Environmental Management (IEEM).

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 application site is made up predominately of built environment within the town centre of Barnsley.

The following habitats were identified:

- Buildings/Hardstanding
- Scrub
- Trees

Buildings/Hardstanding

The development site is located within Barnsley town centre and includes a multi storey car park, council buildings, retail units and the former CEAG building along with associated roads and pavements. The buildings will be addressed within the bat roost potential section of the report.

Scrub

Within the grounds of the former CEAG building, small areas of scrub are established on areas of former car parking. This is dominated by butterfly bush (*Buddleia davidii*) with occasional elder (*Sambucus nigra*), cherry laurel (*Prunus laurocerasus*) and saplings of birch (*Betula pendula*) sycamore (*Acer pseudoplatanus*). Alongside the railway which borders the CEAG but lies outside the development boundary small patches of scrub dominated by dog rose (*Rosa canina agg.*) along with limited areas of cocksfoot (Dactylis glomerata)

(*Dactylis glomerata*), willow herbs(*Epilobium sp.*) and oil seed rape (*Brassica napus*).



Figure 1

View of CEAG building from the west showing small areas of scrub

Trees

These are limited to relatively immature specimens and are likely to be remnants of former landscaping at the CEAG building. They are chiefly located at the south eastern corner of the site alongside the A61. Species include birch, sycamore and laburnum (*Laburnum anagyroides*).

Fauna

Bats

None of the trees on site are mature enough to offer any features such as rot holes, inclusions etc. suited to bat roosting. The site is likely unlikely to provide much in terms of foraging for local bat populations given the small areas of vegetation and isolation from other suitable habitat. The potential for buildings to support bats is discussed in the bat roost potential section of the report.

Amphibians

There are no water bodies on the site and no ponds within 500m. It is highly unlikely that any amphibians will be using the site.

Reptiles

The site contained no suitable reptile habitat. Railways have been known to be used as dispersal routes for this group, however the very limited vegetation along the railway line that crosses the town centre, along with high levels of disturbance make it highly unlikely that reptiles will be found here.

Birds

It is possible that the scrub and trees on the site could provide nesting for a range of common bird species. Birds have also been observed nesting with the walls of the CEAG building.

Protected mammals

With the possible exception of bats, the site does not offer any suitable habitat for any protected species of mammals. No evidence of badger was found on the site.

Invasive Plants

No invasive plant species were observed during the survey.

Bat Roost Potential Survey

An original bat survey was carried out in June 2006 by Barnsley Bat Group (Eric Bennett). The building was assessed as being unlikely to support bats and a single emergence survey showed no evidence of bats using the building. Brooks Ecological were commissioned to provide an update to this survey.

Box 1 *Legal background*

Bats are afforded full protection under The Wildlife and Countryside Act (1981) plus amendments, and the Conservation of Habitats and Species Regulations 2010. 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.

There are no defences against contravention of the Conservation of Habitats and Species Regulations 2010 which means that it is important for detailed and well designed bat surveys to be carried out, 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.

Box 2 *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:

<u>Transitional roosts:</u>

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 is 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 3 below.

Table 3: bat species recorded within 100km of the application site

Species	National status
Pipistrelles (*Pipistrellus pipistrellus* and *P. pygmaeus*)	widespread/common
Nathusius' Pipistrelle (*Pipistrellus nathusii*)	Widespread/rare
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
Alcathoe's (*Myotis alcathoe*)	Local/unknown

Method

A thorough daytime inspection of the site was made in April 2011 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 building was classified according to the following criteria set out in Table 4 below, developed with reference to the Bat Mitigation Guidelines (2004), Bat Workers Manual (2004) and the Bat Conservation Trust Good Practice Guidelines (2007).

Table 4: 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 over 5 years experience of carrying out bat surveys in a professional capacity, holds an English Nature scientific licence for all counties of England (20102428) and is an active member of the West Yorkshire Bat Group.

Results

The CEAG building is located at the eastern end of the development and is bordered by the main A61 to the east with extensive built development on the other sides. The building is not well linked to any substantial foraging habitat with the nearest area of woodland some 500m to the east. A small stretch of disused canal is located 680m to the north east with the River Dearne beyond and although these habitats would provide good foraging for local bat populations, there is no significant vegetation features to link them with the site.

The building itself dates from the early part of the twentieth century and is a large square structure with three storeys at the front rising to four storeys at the rear.



Figure 2

CEAG building: viewed from the south

The flat roof features a small parapet walls faced with concrete coping stones, all of which appeared well secured with no visible access points. The solid brick walls feature a row of ornate concrete pillars at the northern elevation and despite the fact that the building has been empty for a number of years, is in overall reasonable condition.

The large metal framed windows appear well sealed with no crevices which could offer roosting potential for bats. A search of the walls revealed a few areas where brickwork was missing creating gaps, umbering four in total, which could potentially offer occasional roosting space for small numbers of bats. However, several of the gaps appeared to be used by nesting birds, probably pigeons, with splashings visible down the walls.



Figure 3

Western elevation of building showing area of missing brickwork

At the rear of the building is a large modern steel clad extension with pitched roof; this section of the building offered no potential roosting space for bats.

To the north east of the main building is a small modern single storey structure which may have been used to house a generator. This building also has a

combination of steel cladding and solid brick walls with a flat roof topped with what appear to be railway sleepers.



Figure 3

Small brick outbuilding on CEAG site.

This building provided little in the way of roosting potential for bats.

A search was made for evidence of roosting such as droppings on the external walls of both buildings , though none was found.

Evaluation

The building is assessed as having very limited bat roosting potential given that roosting features are generally absent with the exception of small gaps within the solid brick walls. These gaps are only likely to offer occasional roosting spaces for small numbers of common bat species as they do not lead to larger roosting potential that a cavity could offer. In addition most of the gaps already appear to be used by nesting birds. The location of the building, unconnected to good foraging habitat also reduces the likelihood of bats being found roosting here. The activity survey carried out by Barnsley Bat Group in 2006 recorded a single common pipistrelle passing the site and no bats were found roosting within the building. Given that the condition of the building has not changed significantly since the previous survey, it would seem sensible to assume that bats are still unlikely to be found on the site and demolition can go ahead without the need for further survey.

However, even where surveys have been carried out which demonstrate absence of roosting, site workers should always be aware that bats can move into buildings previously found not to support them. On this basis work should proceed with care and if a bat is found during demolition, works should stop immediately and a professional ecologist and/or the bat helpline on 0845 1300 228 (Bat Conservation Trust) should be contacted. The local office of Natural England should also be contacted to seek advice.

Overall Evaluation and Recommendations

The site is assessed as being of very low ecological value being largely made up of buildings and hard standing with very limited species poor habitats. No evidence of the controlled plant Japanese knotweed was seen during this survey suggesting that the spraying regime implemented has proved successful in its control.

The following recommendation is made in order to ensure that no wildlife legislation is contravened as part of the development:

- Any clearance of trees, hedges or scrub after the 1st of March should be preceded by a nesting bird survey to ensure that the Wildlife and Countryside Act (1981) is not contravened through the destruction of nests and that any active nests are identified and adequately protected during the construction phase of the development.

The UK government's 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. Plans for the development could include native shrub and tree planting as part of the landscaping of the site. This could serve to improve biodiversity on this site by creating a green network across the area . This could include species such as hazel, blackthorn, ash and field maple.

References

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