Aldi Stores Ltd

Regional Office & Distribution Centre, Goldthorpe

Baseline Ecological Survey

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August 20077

This report takes into account the particular instructions and requirements of our client.
It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party

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1 Introduction

Ove Arup and Partners Ltd (Arup) was commissioned by Aldi Stores Ltd to undertake a preliminary ecological assessment of a site bordering Goldthorpe Industrial Estate, in Goldthorpe, South Yorkshire. The proposed development will entail the construction of a regional office and distribution centre for the Aldi chain of supermarkets.

1.1 Site Description

The proposed development site is situated on the western edge of the town of Goldthorpe and is immediately bordered to the north and west by arable farmland. The eastern perimeter of the site is formed by the existing Goldthorpe Industrial Estate and to the south by residential properties. The proposed development site is situated within an arable field surrounded by a mosaic of arable crops and set within a wider agricultural landscape.

1.2 Study Objectives

The objective of this report was to identify ecological features on site that may pose a constraint to development and identify the need for any further survey work. The ecological study included a desk-based study and a walkover survey. The desk-based study endeavoured to obtain and collate existing ecological information relating to the site, with particular attention paid to identifying data relating to the presence of protected species and sites. The walkover survey entailed undertaking a site visit to identify the habitats present and to establish the site's potential to support legally protected species or other species of nature conservation importance.

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

1.3 Document Structure

This report provides the results of the ecological survey undertaken at Goldthorpe. The objectives of this report are to initially ascertain the likely presence or absence, distribution and potential impacts of the development on any ecological receptors, with the intention of supporting any future ecological assessment.

Chapter 2: Legal Context

Chapter 3: Methodology

Chapter 4: Results

Chapter 5: Conclusion & Recommendations

Chapter 6: Survey Update – July 2007

2 Legal Context

2.1 Legislation and National/Local Initiatives

There is a comprehensive system of legislation, both domestic and international, which aims to protect biodiversity at the landscape, habitat/species level; and which are potentially relevant to this scheme are described below. Much of this legislation pertaining to nature conservation exists within and also independently of the planning process.

2.1.1 Wildlife and Countryside Act 1981 (WCA 1981) (as amended)

This is the primary legislation covering endangered species in England and sets out the framework for the designation of Sites of Special Scientific Interest (SSSIs). It confers differing levels of protection on species themselves, their habitats or both depending on their conservation status. Species offered protection by the Act are listed in a series of schedules. These Schedules are subject to a rolling review on a five yearly basis. Protected species are listed under Section 1 (birds), Schedule 5 (animals other than birds and invertebrates) and Schedule 8 (Plants).

2.1.2 Countryside and Rights of Way Act 2000

The Act affords a greater level of protection to Sites of Special Scientific Interest (SSSIs), provides better management arrangements for Areas of Outstanding Beauty (AONBs) and strengthens wildlife enforcement legislation. This Act has amended the Wildlife and Countryside Act by the addition of the term 'recklessly' to Section 1(5) and Section 9 (4) which has resulted in additional obligations with respect to protected species. As such, it is now an offence to intentionally or recklessly disturb protected species listed on the relevant Schedules of the Act.

2.1.3 The Protection of Badgers Act 1992

This Act brings together all the legislation that is specific to badgers, with the exception of their inclusion on Schedule 6 of the Wildlife and Countryside Act 1981, (which prohibits certain methods of taking or capture). The Act makes it an offence to intentionally kill or ill treat a badger, and destroy, disturb or obstruct a sett. Specifically, it imposes restrictions on works carried out within certain distances of badger setts. Any Works that will directly impact on an existing sett are only permitted subject to approval through the issue of a licence from Natural England.

2.1.4 The Conservation (Natural Habitats etc) Regulations 1994

The Conservation (Natural Habitats etc) Regulations 1994 are the British response to the Habitats & Species Directive 1992 issued by the European Community (EC). They offer protection to a number of plant and animal species throughout the EC via the designation of Special Areas of Conservation (SACs). In the United Kingdom these regulations are implemented through the Wildlife and Countryside Act 1981 (as amended). Proposals that would affect European protected species will be dependent on the successful submission of a licence application to the Department for the Environment Food, and Rural Affairs (DEFRA) upon granting of planning permission. European protected species include all species of bats, the great crested newt *Triturus cristatus*, the European otter *Lutra lutra* and the hazel dormouse *Muscardinus avellanarius*.

2.1.5 UK Biodiversity Action Plan (UKBAP)

The existence of the UK Biodiversity Action Plan, published in 1994, arises from the UK Government's commitment to biodiversity made at the 1992 Earth Summit in Rio de Janeiro

and in direct response to the resulting Convention on Biological Diversity. To implement the UK BAP, the UK Biodiversity Group has produced a list of Habitat Action Plans and Species Action Plans (HAPs and SAPs). These nation-wide plans are implemented on a local level, through local biodiversity action plans, which are drawn up by individual Local Authorities, e.g. Barnsley Biodiversity Action Partnership BAP. Under the recently revised Planning Policy Statement (PPS9) (formerly PPG9) all UK BAP priority species are deemed to be a material consideration within the planning process.

2.1.6 Barnsley Biodiversity Action Plan

The Barnsley Biodiversity Action Plan (BAP) has been produced by the Barnsley Biodiversity Trust, providing a practical plan for the conservation and enhancement of wildlife and habitats in the Borough. The BAP identifies priorities for nature conservation in Barnsley, comprising of action plans for 19 species and 18 habitats.

2.1.7 Planning Policy Statement 9 (PPS9)

Planning Policy Statement 9 (PPS9): Biological and Geological Conservation replaced Planning Policy Guidance Note 9 (PPGN9) in August 2005. This document along with a Government Circular (ODPM 06/2005: Statutory Obligations and their Impact within the Planning System) provides details of the protection afforded to wildlife and geological features through the planning system. Species included in the various Schedules annexed to the Wildlife and Countryside Act, 1981 (as amended) and the Conservation (Natural Habitats etc) Regulations, 1994 remain protected and are a Material Consideration (paragraph 98, ODPM Circular 06/2005).

The presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat. Local authorities should consult Natural England before granting planning permission. They should consider attaching appropriate planning conditions or entering into planning obligations under which the developer would take steps to secure the long-term protection of the species. They should also advise developers that they must comply with any statutory species' protection provisions affecting the site concerned. For European protected species (i.e. those species protected under the Habitats Regulations) further strict provisions apply, as explained below, to which planning authorities must have regard.

Additionally, paragraph 16 of PPS9 includes for other species that have been identified as requiring conservation action as species of principal importance for the conservation of biodiversity in England. Local authorities should take measures to protect the habitats of these species from further decline through policies in local development documents. Planning authorities should ensure that these species are protected from the adverse effects of development, where appropriate, by using planning conditions or obligations. Planning authorities should refuse permission where harm to the species or their habitats would result unless the need for, and benefits of, the development clearly outweigh that harm.

3 Methodology

3.1 Desk Study

Goldthorpe is under the Barnsley Metropolitan Borough Council area; however the council have no biological records resource. As the Goldthorpe area overlaps with the Doncaster region, Doncaster Museum, (County Biological Records Centre for the Doncaster Area) was contacted in May 2007 to establish if they held any biological records up to 1 km from the site itself.

The site was also visited in May 2007 by an Arup ecologist; during which an ecological walkover survey was undertaken to record features of interest, such as habitats and protected or threatened species and identify any enhancement opportunities.

Finally, a search for relevant nature conservation information was undertaken on the following websites:

- Multi-Agency Geographic Information for the Countryside (MAGIC) (www.magic.gov.uk);
- National Biodiversity Network (NBN) (www.nbn.org.uk).

3.1.1 Extended Phase 1 Habitat Survey

An extended Phase 1 Habitat Survey was carried out in May 2007 and covered the entire site. Habitats found on the site were identified using the standard Phase 1 Habitat Survey methodology (JNCC 2003) with Target Notes made to describe features of interest. As part of the walkover survey, the potential for the site to support any legally protected faunal species and/or species of nature conservation importance, e.g. UK (BAP) and Barnsley's Local Biodiversity Action Plan (LBAP) priority species was also assessed.

3.1.2 Protected Species

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

3.1.3 Controlled Botanical Species

Japanese knotweed *Fallopia japonica* and giant hogweed *Heracleum mantegazzianum* are two plant species that have been introduced into the UK as garden plants. Subsequently they have escaped into the wild becoming well established with dramatic increases in their national distribution. The growth structure of these species can result in ecological, financial and health and safety problems. Under Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) it is an offence to cause the spread of these species. If these species were identified during the survey their presence was recorded.

4 Results

4.1 Desk Survey

The results of the biological records search undertaken by Doncaster Museums and the web based MAGIC search did not identify any first, second or third tier sites within 1km of the proposed development site. Additionally, there were no records of protected species within 1km of the site. It is important to acknowledge that due to the paucity of data, a definitive situation in relation to third tier sites and protected species cannot be established. However as detailed below the limited biodiversity value of the site is likely to preclude sensitive ecological receptors.

4.2 Survey Results

4.2.1 Flora

The results of the walkover survey undertaken in May 2007 are described below. The following habitat types were identified on the site:

- Arable land
- Ditches/drains
- Species poor hedgerow
- Short ruderal forb/field margin

Arable land

The majority of the site is under intensive arable cultivation and of negligible ecological interest. The complete site is characterised by a young *Cruciferae* crop, (possibly swede or similar species). The field to the immediate west and abutting the site is sown with barley *Hordeum sp. dense;* other similar arable crops dominate the surrounding landscape.

Ditches/drains

The site is characterised by two drains, which run from north to south along the eastern perimeter of the site and form east to west along the northern edge of the field. The drain along the eastern edge of the field is largely dry with occasional wet flushes represented by areas of floating sweet grass *Glyceria fluitans*. The remaining vegetation within the ditch included cow parsley *Anthriscus sylvestris*, cleavers *Galium aparine*, nettle *Urtica dioica*, and bramble *Rubus fructicosus* agg. The larger ditch along the northern edge of the field had a continual flow of water bordered by steep banks. The vegetation recorded included nettle, dock *Rumex obtusifolius*, creeping buttercup *Ranunculus repens*, dandelion *Taraxacum officiale* agg., and cow parsley, amonst others. Graminaceous species recorded included Yorkshire fog *Holcus lanatus,* common bent *Agrostis capillaris* and perennial rye grass *Lolium perenne*. Sporadic small patches of scrub were recorded on the banks and consisted of hawthorn *Crataegus monogyna* and goat willow *Salix caprea*.

Species poor hedgerow

One hedgerow was recorded on the eastern perimeters running contiguously to the partially dry ditch, as described above. The hedgerow is generally scrubby and predominantly

composed of hawthorn, blackthorn *Prunus spinosa*, field maple *Acer campestre*, and elder *Sambucus nigra*; occasional dog rose *Rosa canina* agg. and bramble form the vegetated base.

Short ruderal forb/field margins

The northern edge of the site is characterised by a large field margin or headland. The area has large areas of bare earth, residual crops and ruderal vegetation. Species recorded included cocksfoot *Dactylis glomerata,* brome grasses *Bromus sp.,* hairy bitter-cress *Cardamine hirsute*, fathen *Chenopodium album,* couch grass *Elymus repens*, scarlet pimpernel *Anagallis arvensis,* sun spurge *Euphorbia helioscopia*, silverweed *Potentilla anserine*, creeping buttercup and creeping thistle *Cirsium arvense*.

4.2.2 Fauna

Breeding birds

During the site visit two pairs of lapwing *Vanellus vanellus*, were recorded possibly nesting on the field. Lapwings nest on bare ground or where vegetation is short and particularly in spring-sown arable fields close to pasture or wetland habitat. Anecdotal information relating to the site being utilised by wintering geese has not been validated.

Water voles

Possible evidence of water vole *Arvicola terrestris*, was recorded within the northern drain in the form of a single burrow along the banks. No other signs of water voles were recorded within the field drain, however it should be noted that a specific survey of the whole of each drain was not undertaken during the site walkover. Indeed, the density of vegetation and depth of the drains could easily have obscured any water vole signs.

Other fauna

All of the hedgerow trees/scrub on the site are immature/semi-mature and none provide potential for bat roosts.

There was no evidence of badger activity onsite; this is probably due to the general topographical unsuitability of the site and the associated arable cultivation regimes

4.3 Nature Conservation Evaluation

4.3.1 Site evaluation

There are no protected or designated sites within 1km of the development site.

The majority of the site itself is dominated by arable habitat with marginal semi-natural habitat such as rough grassland and ditches. Of the habitats present on the site, of greatest ecological value are the ditches/field drains, rough grassland and the hedgerow along the eastern boundary. It is noted that these features are largely restricted to the edges of the site and generally away from the immediate area of the proposed development.

In addition the presence, or potential presence, of the following faunal species or species groups may increase the nature value of the site (or the relevant parts of the site):

- The breeding bird assemblage is generally indicative of the onsite habitats. However the presence of lapwing, a UK BAP 'long list' species (not Priority), infers a slightly increased greater level of interest to the site, although onsite numbers are

considered to be relatively low. Like most British birds, the lapwing is granted legal protection under the Wildlife and Countryside Act 1981 (as amended).

- The presence of water vole is possible along the northern drain. Water vole is a UK Biodiversity Action Plan (UK BAP) and Barnsley Metropolitan Borough Council priority species. Due to recent dramatic declines all remaining populations are deemed to be of a high nature conservation importance.

In relation to the anecdotal use of the proposed development site by (predominantly wintering) waterfowl; this remains unsubstantiated and in the context of the immediate agricultural landscape any loss of a foraging/roosting site is deemed to be minimal.

4.4 Potential Ecological Constrains to Development

4.4.1 Flora

No rare, scarce or protected habitats or plants have been identified on the site and in general the habitat value of the site is deemed to be very low as the bulk of the site is within an existing arable field. Of greatest value as habitats in their own right, although unlikely to be regarded as being of any greater than site importance, are the ditches and areas of rough grassland. The proposed development may result in the loss of these habitats. In habitat terms these losses are unlikely to be significant and proposed mitigation utilising appropriate species mixes will potentially create a more diverse and species rich habitat. This rationale is based on the exiting low habitat value of the site and the opportunities to create and enhance future habitats on site. Additionally, mitigation should also seek to incorporate ecological elements into the overall scheme design; this includes the use of structural enhancements, such as bird and bat boxes.

4.4.2 Breeding Birds

All birds are protected under Section 1 of the Wildlife and Countryside Act 1981 (as amended) in that it is an offence to intentionally kill, injure or take any wild bird or take, damage, destroy the nest while in use or being built and takes or destroy an egg. Certain birds (listed in Schedule 1 of the 1981 Act) receive extra protection. For these species, it is also an offence to recklessly disturb a species whilst it is on its nest or the dependent young.

A range of farmland bird species are likely to breed in the hedgerows and the arable field, depending on the cropping regime. The development will result in the loss of the field as a breeding resource for lapwing. However, given the relatively small size of the population involved, it is anticipated that there will be only a very minor impact on the local conservation status of these species.

In order to ensure compliance with the relevant section of the Wildlife & Countryside Act, any works affecting potential bird nesting habitat should be carried out outside the breeding season (usually taken to occur from March to July inclusive).

4.4.3 Water voles

Following a severe national decline associated with habitat loss and predation by feral mink, water vole received habitat protection in 1998 through inclusion on Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) in respect of Section 9(4) only. Under the legislation, it is an offence to intentionally or recklessly damage, destroy or obstruct access

to any structure or place, which water voles use, for shelter or protection or to disturb an animal while it is occupying a structure or place, which it uses for that purpose.

Within the study site, the northern drain may support water voles, whilst the eastern ditch is likely to be suboptimal. The extent of development impacts on the northern drain is unclear at this stage; should works be required within 10 metres of the banks then a specific survey of the northern drain for water voles is required in order to determine presence or likely absence and if necessary advise further on the extent of any mitigation measures that may be required.

If water voles are recorded in the drain and works are scheduled to occur within/close proximity, then the species will require the employment of mitigation measures prior to works beginning. These are likely to include the instigation of positive management of retained habitat and/or the creation of new habitat to compensate for habitat lost. Mitigation may also be required for disturbance to individual populations during construction, e.g. measures to make habitats unsuitable, translocation, etc.

5 Conclusion & Recommendations

The recommendations are not exhaustive but form the general baseline and may require revision if the scope of the works changes or increases.

5.1 Breeding birds

The presence of breeding birds on site could constrain vegetation clearance during the nesting season (March-August). This applies equally to ground nesting species, such as lapwing, as species nesting in or alongside the ditches or hedgerows and hence the whole site, more or less, could be affected. Consequently site clearance should be undertaken as detailed above.

In order to partially compensate for the loss of habitat for declining farmland birds it is recommended that compensatory planting and habitat creation is integrated into the final site landscape designs wherever possible. Habitat enhancements may include the provision of artificial bird boxes on buildings, planting of native species rich hedges and the re-creation of habitats such as ditches or species-rich grassland.

A proactive approach to habitat creation may assist in the determination of any planning application. The statutory nature conservation organisations tend to operate on the principle that compliance with the legislation does not necessarily fulfil the spirit of the relevant planning guidance, which is concerned with protecting the habitat used by protected species as well as the individual animals. Consequently any additional measures to enhance or consider local biodiversity are normally received favourably.

5.2 Water voles

If works are scheduled to affect the northern drain (i.e. works within 10m) a water vole survey and, if water voles were present, suitable mitigation measures would be required. Surveys for water voles may only be undertaken during the voles' active season, i.e. between April and mid October. Mitigation works, if required, may also be subject to similar timing constraints.

6 Survey Update – July 2007

6.1 Survey Update – July 2007

Following on from the recommendations listed in Section 5.2; a survey for water voles within the drains to the north and east was undertaken in July 2007. The results of the survey are detailed below.

6.1.1 Water vole ecology

Water vole *Arvicola terrestris,* are herbivorous rodents feeding on the leaves and stems of plants found within or near to the waters edge. Water voles show a marked preference (but are not restricted to) sites with slow flowing water bodies without extreme water level fluctuations. Permanent water is essential, although water voles may survive at desiccated sites for a time. Additionally, sites that flood regularly in winter are also generally avoided as burrows may flood (Strachan 1998).

The water vole constructs a burrow, which may consist of several entrances at, below and above the waters edge. The tunnels inter-connect and comprise of food storage chambers, nesting chambers and short tunnels leading to bolt holes. The suitability of banks for burrowing is a limiting factor in the presence of water vole. Consequently vegetated earth or clay steep banks suitable for burrowing or the creation of dry nests woven around the base of vegetation tussocks above the water table are essential. However, areas shaded by dense scrub and trees are generally not favoured (Strachan 1998).

Water voles live in colonies strung out along a watercourse in a series of linear territories on the banks. They may utilise either one or both banks depending on the, population density, habitat quality and width of the watercourse. The breeding females establish territories, which are marked by latrines.

Once very common and widespread, the water vole has been declining throughout the twentieth century due to loss and disturbance of riparian habitats. In recent years, this has been exacerbated by the invasive American mink *Mustela vision* (Strachan 1998).

6.1.2 Survey methodology

The standard methodology involves a detailed survey along one side of the bank for a stretch of 500m from April to October, noting field signs such as feeding stations (lawns), latrines, burrows and footprints. (Strachan 1998). Due to dense vegetation along the banks and also to minimise the disturbance to any other species using the area, sampled searches for water vole activity were made every 10-15 metres on both banks rather than a continuous search of one bank as advocated by Strachan (1998).

6.1.3 Results

The eastern drain had completely dried out and was omitted from the survey. The sides of the northern drain were covered in rough grassland with a large proportion of the ditch base dominated by common ruderal species such as cow parsley, dock and nettle. The tops of the banks ran into a continuous strip of agricultural headland composed of a mosaic of self-seeded former crop species. The water level varied from 15cm at the northern end, to approximately 40cm. It was apparent within the ditch that water levels appear to fluctuate widely from current flows up to approximately 1.5m. No signs of water vole activity were

observed. Several burrows were examined which turned out be inconsistent with water vole burrows; in terms of being shallow and having been created by rats. As no other signs of water voles were found and coupled with the fluctuating water levels within the ditch; it is not unreasonable to assume the likely absence of water vole from the ditches onsite. Consequently no additional measures are required.

This report is the result of a survey visit in May and July 2007. During this survey no direct signs of protected species were recorded. It should be noted that any survey only records what is present at the time of the survey. If any signs of protected species are found at a later date the current legislation must be adhered to. It is also advised that if there is a delay of over twelve months in undertaking the works, a re-survey may be required.

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