The Trustees of the Chatsworth Settlement

High Shann, Keighley

Phase 1 Habitat and Protected Species Scoping Survey

RTC/225836

Issue | 19 November 2012

Job number 225836-00

ARUP

Ove Arup & Partners Ltd
Admiral House Rose Wharf
78 East Street
Leeds LS9 8EE
United Kingdom
www.arup.com

Contents

Figures

No table of figures entries found.

1 Introduction

Ove Arup and Partners Ltd (Arup) have been commissioned by The Trustees of Chatsworth Settlement in relation to the future development of High Shann, off Shann Lane, Keighley (the site). The purpose of the Phase 1 Habitat Survey is to provide a record of the semi-natural vegetation and wildlife habitats within and adjacent to the site. Additionally, the survey sought to ascertain the presence of any other sensitive ecological receptors and / or likely absence of protected species and species of conservation concern.

1.1 Site Description

The site lies immediately adjacent to Shann Lane in High Utley, on the outskirts of Keighley, West Yorkshire. The northern, southern and eastern perimeters are bordered by residential dwellings. The site itself is pasture subdivided into three fields by dry-stonewalls and fences. The site is elevated to the south and falls significantly to the north and east creating localised wet and damp areas of grassland.

1.2 Landscape Context

The wider landscape is characterised by the South Pennine Natural Area. A Natural Area is a combination of geology, wildlife, land use and cultural heritage particular to a landscape. Natural Areas link historical and cultural development of an area to its wildlife and natural features.

The essential character of the South Pennies Natural Area consists of gently sloping wild open plateaux that stand high above the major urban areas of Manchester, Huddersfield, Burnley, Blackburn and Bradford. The Natural Area is part of four counties, West Yorkshire, Greater Manchester, Lancashire and North Yorkshire. It is an internationally important area, special for its heather moorlands, acid Millstone Grit rock, ornithological diversity, steep wooded cloughs and traditional farming methods. It is also a major water catchment area for the surrounding towns, with many Victorian reservoirs built to cater for industrial and domestic use.

1.3 Study Objectives

The ecological study included a walkover survey to identify the habitats present and to establish the site's potential to support legally protected species or other species of nature conservation importance. The potential ecological constraints and opportunities relating to the future development of the site have been identified and recommendations for further survey work have been made where appropriate.

1.4 Report Structure

The report includes:

- Section 2: Legal Context.

- Section 3: Methodology.
- Section 4: Results.
- Section 5: Evaluation and Recommendations.
- Section 6: Summary.

2 Legal Context

There is a comprehensive system of legislation, both domestic and international, which aims to protect biodiversity at the landscape, habitat and species level. Much of this legislation pertaining to biodiversity exists within and also independently of the planning process.

2.1 Legislation

2.1.1 Wildlife and Countryside Act 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 Schedule 1 (birds), Schedule 5 (animals other than birds and invertebrates) and Schedule 8 (plants).

2.1.2 Countryside and Rights of Way Act 2000

This Act affords a greater level of protection to Sites of Special Scientific Interest (SSSIs), provides enhanced 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 in the relevant Schedules of the Act.

2.1.3 Natural Environment and Communities Act 2006

The Natural Environment and Rural Communities (NERC) Act 2006 is designed to help achieve a rich and diverse natural environment and thriving rural communities. The Act implements key elements of the Government's Rural Strategy published in July 2004 and includes under Section 40 a duty to conserve biodiversity; specifically Subsection (1) states 'Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity.'

2.1.4 The Protection of Badgers Act 1992

This Act brings together all the legislation that is specific to badgers *Meles meles*, 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.

2.1.5 EC Directive Conservation of Natural Habitats & Flora (92/43/EEC)

The Conservation of Habitats and Species Regulations 2010 are the British response to the Habitats and 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).

The Regulations for the protection of European Protected Species have been amended and consolidated with key changes including the removal of most of the defences from regulation 40 and regulation 43 including the removal of the 'incidental result of an otherwise lawful operation' defence, and the increase in the threshold for the offence of deliberately disturbing a European Protected Species. Proposals that will affect European protected species will be dependent on the successful submission of a licence application to the Wildlife Licensing Unit of Natural England upon granting of planning permission. European protected species include all species of bats, great crested newt *Triturus cristatus*, and European otter *Lutra lutra*, amongst others.

2.2 Policy and Initiatives

2.2.1 UK Biodiversity Action Plan

The existence of the UK Biodiversity Action Plan (BAP), 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 priority habitats and species for which Habitat Action Plans (HAPs) and Species Action Plans and (SAPs) have been produced. 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. Bradford BAP, discussed below.

2.2.2 Bradford Biodiversity Action Plan (BAP)

The Bradford BAP is the first step in the Council's response to the national biodiversity initiatives. It sets out habitats and species of regional, national and international importance within the Bradford District and the document is intended to take forward the UK Biodiversity Action Plan at a District level. The primary aim of the plan is to enable the conservation and enhancement of biodiversity within Bradford District and therefore contribute to the maintenance of national and global biodiversity. It identifies where action needs to be taken to implement national targets for habitats and species and identifies the appropriate mechanisms to ensure delivery. Potential objectives of the Bradford BAP relevant to the proposed development relate to in-bye grassland, lapwing and brown hare.

2.2.3 Non-statutory Local Sites

Non-statutory local sites are referred to as Bradford Wildlife Areas (BWAs) and Sites of Ecological or Geological Importance (SEGI) within the region. These sites are of county importance for their wildlife value. They have no statutory protection but are recognised by Local Authorities and statutory agencies and their presence is fully considered when determining planning applications.

3 Methodology

3.1 Desk Study

Protected species and designated site records within a 2km radius surrounding the site were requested from West Yorkshire Ecology (WYE).

Ecological data searches were carried out using the following internet based nature conservations websites:

- Multi-Agency Geographic Information for the Countryside (MAGIC) website - www.magic.gov.uk
- National Biodiversity Network (NBN) - http://data.nbn.org.uk
- Nature on the Map - http://www.natureonthemap.org.uk
- UK Biodiversity Action Plan - http://www.ukbap.org.uk/
- Biodiversity Action Reporting System (BARS) http://ukbars.defra.gov.uk/ (which is in the process of replacing the UK BAP website).

Ordnance Survey maps were examined for the presence of known waterbodies within a 250m radius of the site.

A review has also been undertaken of the previous ecological survey work and associated report, undertaken in connection with the site in 2007:

- *'Land off Shann Lane, High Utley, Keighley – Basic Ecological Assessment and recommendations – October 2007'* (Environment Research & Advisory Partnership)

3.2 Field Survey

A walkover survey of the site was undertaken in September 2012. Habitats were identified using the standard Phase 1 Habitat Survey methodology (JNCC, 2010). The purpose of this survey was to update the Basic Ecological Assessment undertaken by the Environment Research & Advisory Partnership in 2007. 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 and Bradford BAP priority species, as also assessed. Unless otherwise specified, detailed faunal surveys were not undertaken at this stage; rather the potential for the site to support each species or species group was assessed based on the known range of each species or species group and the suitability of the habitats within the site. Field signs or sightings of such species were recorded as observed.

The plant species recorded in this report do not constitute a complete list of the species present on the site; rather they are used as an indication of habitat type and condition.

3.2.1 Waterbodies

Any waterbodies present within the survey area were assessed as to their potential to support breeding populations of great crested newts. This assessment was

undertaken using the Habitat Suitability Index (HSI) developed by Oldham *et al*. (2000), which considers several ecological parameters such as location, desiccation, water quality, waterbody area, etc. A value is recorded for each parameter and combined to determine an index of breeding suitability for great crested newts. The HSI is represented by a value from 0 to 1, the higher the value the more likely the waterbody may support breeding great crested newt.

3.2.2 Invasive Species

The occurrence of controlled invasive species such as Japanese knotweed *Fallopia japonica*, giant hogweed *Heracleum mantegazzianum*, and Himalayan balsam *Impatiens glandulifera*, were also recorded, where evident.

4 Results

4.1 Desk Study

4.1.1 International / National Designations

There are no nationally or internationally designated sites (e.g. Special Protection Areas (SPAs), Special Areas for Conservation (SACs) and Sites of Special Scientific Interest (SSSIs)) for nature conservation within 2km of the site. The nearest site, (South Pennies Moors SSSI/SAC/SPA) is over 3.5km away to the north east at Ilkley Moor. This site forms part of the wider Southern Pennines designation lying between Ilkley in the north and the Peak District National Park boundary in the south. The majority of the site is within West Yorkshire but it also covers areas of Lancashire, Greater Manchester and North Yorkshire. The largest moorland blocks are Ilkley Moor, the Haworth Moors, Rishworth Moor and Moss Moor.

4.1.2 Local Designations

There were a number of third tier sites identified within 2km of the site. These include three Sites of Ecological or Geological Importance (SEGI):

- Beechcliffe Ings
- Holme House Woods
- Leeds to Liverpool Canal

All of the SEGIs were approximately 1-1.75km away from the site with minimal connectivity between Shann Lane. This is largely due to the proximity of Keighley which partially surrounds the site.

In addition to the SEGIs there are ten Bradford Wildlife Areas (BWA) within the 2km search area; the majority of which are approximately 1.5km away from the site. As with the SEGI sites there is negligible connectivity with the Shann Lane site. The exception to this is Redcar Tarn (Keighley Tarn) which is situated approximately 1km to the west of Shann Lane.

- Redcar Tarn (SE038432) - Bradford owned and managed by the Countryside Service. The site is a popular recreational area with large populations of wildfowl such as mallard and tufted duck, as well as a variety of gulls. The surrounding fields are known to be an important assembly area for wading birds.

However given the distance between Redcar Tarn and Shann Lane no adverse impacts are envisaged on the BWAs as a result of future works.

4.1.3 Protected Species Records

Protected species records within a 2km buffer of the site were requested from WYE. No records were received for species within the site or within 500-700m of the site boundary. The nearest record relates to the presence of a notable/protected bird species located just off-site beyond the southern perimeter. However the exact location or species could not be determined due to incomplete grid

references. However the record is likely to be associated with the Public Right of Way (PROW), which runs along the southern boundary of the site and is more diversely vegetated. There were no records for badgers within 1km of the site.

A number of bat species were identified within the wider area (e.g. Daubenton's *Myotis daubentonii*, common pipistrelle *Pipistrellus pipistrellus*, whiskered Myotis mystacinus and noctule *Nyctalus noctula*). The majority of the records for known roosts are located to the south west and north of the site.

4.2 Field Survey

The results of the site walkover survey are described below.

4.2.1 Habitats

The Phase 1 Habitat plan is detailed in Drawing 1, which graphically represents the habitats recorded within the site. The following habitat types were identified within and contiguous to the survey area at Shann Lane:

- Scrub and Tall ruderal herbs
- Improved Grassland
- Scattered broadleaved trees
- Field boundaries – dry-stone walls & fences.

4.2.1.1 Scrub and Tall Ruderal Herbs

A mosaic of occasional scrub and tall ruderal vegetation is situated within the Public Right of Way (PRoW). The footpath lies outside the site and runs contiguous to the southern boundary (dry-stone wall) and the Westway housing estate. Scrub and ruderal species recorded included common nettle *Urtica dioica*, wavy-hair grass *Deschapsia flexuosa*, rosebay willowherb *Chamaenerion angustifolium*, cleavers *Galium aparine*, dock *Rumex obtusifolius*, bramble *Rubus fructicosus* agg., tufted vetch *Vicia cracca*, dog rose, *Rosa canina* agg. with occasional hawthorn *Crataegus monogyna* and juvenile sycamore *Acer pseudoplatanus*. The footpath and associated vegetation remains outside the site boundary but provides the area of greatest botanical diversity across the site.

4.2.1.2 Improved Grassland

The majority of the site is composed of improved grass which is grazed by sheep and is species poor. This is evident in terms of the composition and structure of the sward and reflects the grazing patterns within the fields. The lack of species diversity and the presence of coarse herbage denote long-term sheep grazing. Additionally, the sward is closed with an underlying thatch layer which is largely inimical to species richness, irrespective of soil nutrient status. Grassland species recorded included, creeping thistle *Cirsium arvense*, creeping buttercup *Ranunculus repens*, white clover *Trifolium repens*, Timothy *Phelum pratense*, crested dogs-tail *Cynosurus cristatus* and perennial ryegrass *Lolium perenne*. The northern corner of the site was particularly wet with occasional stands of soft rush *Juncus effuses*. Small pockets of improved ruderal vegetation such as nettle and

bramble are located sporadically across the field, usually associated with dunging, fences or field corners.

4.2.1.3 Scattered broadleaved trees

Two mature sessile oaks *Quercus petraea*, are located within the internal field boundary (dry-stone wall) which runs perpendicular from Lower Shann Farm. There is no associated ground flora with the trees and they have significant wind damage. The eastern perimeter of the site encompassing Lower Shann Farm is overhung by a range of trees, many of which are also located within the neighbouring gardens.

4.2.1.4 Field Boundaries

The field boundaries around and internally are a mixture of sheep fencing and dry-stone walls. There is generally no specific vegetation associated with the boundaries. The exception to this is outside the site along the western perimeter adjacent to Shann Lane where made ground by the footpath/verge contains a mixture of ruderal species. This included sow thistle *Sonchus oleraceus*, bindweed *Convolvulus arvensis* and tufted vetch.

No invasive plant species were recorded during the survey.

4.2.2 Fauna

During the Phase 1 Habitat survey signs of protected fauna were recorded if observed or where potentially present due to habitat associations. The protected species groups assessed include:

- Mammals (terrestrial and Chiroptera).
- Herpetofauna (amphibians and reptiles).
- Ornithology.

No detailed assessment has been made for the presence of terrestrial invertebrates since the principal habitat is grazed improved grassland which is largely inimical to invertebrate diversity.

4.2.2.1 Mammals

No signs of badger foraging/activity or setts were recorded within the site or along the periphery. The site itself is open, heavily grazed but also subject to use by walkers with a footpath running from south to north across the site. Additionally, the southern section of the site is the only suitable area for sett construction as the remainder of the site is too wet. This area is accessed by the footpaths and overlooked by the neighbouring houses. Consequently it is not envisaged that badgers are a constraint to any proposed works at the site.

No evidence of hare was observed on site, and as with badgers, the proximity of the residential dwellings is likely to inhibit active use of the site. The surrounding western landscape is likely to offer significant opportunities as it is composed of mixed agricultural, i.e. small pockets of arable and extensive pasture. In relation to more ubiquitous mammal species, such as hedgehog, it is assumed that they are

potentially foraging in the damper parts of the site, but principally heavily dependent on the mosaic of surrounding gardens.

There are no watercourses on site; the nearest is approximately 1km to the south, which has records of otter activity. However the proximity of the site is likely to preclude riparian mammals (otter, water vole and water shrew) from utilising the site.

A number of bat records exist within the wider area, the majority of which have been identified through the record search. The site itself, whilst not floristically diverse and being grazed heavily, is likely to offer a limited foraging resource for bats. However the footpath along the southern perimeter of the site is likely to offer a distinct forging resource and potentially a commuting corridor between the site and other landscape features such as Redcar Tarn.

Of particular note are the two oak trees recorded within the internal field boundary (Drawing 1). Both of these trees were deemed to have a high bat roost potential (Plates 1 & 2, Appendix A) as there were significant opportunities for roosting.

4.2.2.2 Herptofauna

There are no waterbodies on site, the nearest is Redcar Tarn, situated approximately 1km away. The improved grassland may provide limited habitat for common amphibians, particularly where the sward is perpetually wet. However the site is only likely to provide transient habitat for larger reptiles such as grass snake. Consequently, both great crested newts and all native reptile species are not deemed to be a constraint to any proposed works at the site.

4.2.2.3 Ornithology

Regarding notable bird species records, (barn owl, green sandpiper, woodcock, yellow hammer, etc) there were no direct associations with the site. The site itself is likely to offer sporadic foraging opportunities for wading species, however the surround urban matrix and the grazing regime is likely to preclude active use. This is based on the assumption that the wider landscape particularly to the west of the site is likely to offer significantly improved resources and opportunities. This specifically also relates to the recorded assemblages around Redcar Tarn. During the site visit ubiquitous suburban species were recorded including corvids and common passerines.

5 Evaluation and Recommendations

5.1 Habitats

The site is principally composed of areas of species poor improved grassland with occasional scrub and ruderal forbs outside of the southern boundary. The site is typical of intensive grazing and undoubtedly affected by the neighbouring residential housing estates. Although such habitat is generally identified to be relatively species poor, it is considered to be of value in providing a foraging resource for transient fauna (e.g. birds, bats, invertebrates, etc). This particularly relates to the two oak trees within the centre of the site. Consequently the loss of these habitats should be mitigated for by providing enhanced habitat. All replacement planting should utilise native species, preferably of local provenance, in keeping with the habitats and species established within the wider landscape. Consideration should be given to the structure of such replacement planting to maximise edge and habitat variability. It is suggested that the north eastern corner of the site which is poorly drained and appears to remain wet throughout the year is utilised for any future habitat creation scheme.

5.2 Fauna

No key mammal or herpetofauna species were recorded on site and it is acknowledged that the site is largely unsuitable for most species, with limited opportunities. Consequently any future landscaping or habitat creation should seek to maximise opportunities, as far as is reasonable possible, for many of the generic mammal and amphibian species.

5.2.1 Bats

It is currently understood that the two oak trees will be retained and incorporated within any future development. This is subject to the arboricultural recommendations; whilst the trees provided high roost potential, they require hazard and condition assessments to ensure they do not pose a health and safety risk. In any event if the trees are to be felled/pruned or to be impacted upon by future scheme lighting, further bat survey work will be required.

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 2010 as European protected species. Under the legislation, it is an offence to intentionally kill, injure or take a bat as well as intentionally or recklessly damage, destroy or obstruct access to any structure or 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 therefore recommended that if the trees are likely to be impacted upon, as detailed above, bat emergence surveys are undertaken for the trees. In line with current guidance, it is recommended that two emergence survey visits are undertaken of the identified features, at least one of which must be a dawn re-emergence survey visit (BCT, 2012). The optimal time period to undertake bat surveys is between May to August, although surveys may be undertaken in April and September (weather dependent).

5.2.2 Ornithology

The habitats identified within the proposed site are unlikely to support protected or notable bird species. However the fields are considered to provide a limited foraging / feeding resource within the present context. The neighbouring land is likely to provide an optimal resource in terms of foraging, breeding/nesting and limited disturbance. However it is recommended that any future development seeks to incorporate appropriate measure to support edge species by providing nesting opportunities (e.g. nesting boxes) and planting of suitable species which provide a foraging resource. Specifically this includes scrub/shrub species that provide fruit and seeds, etc. Replacement planting specifications should endeavour to provide continuous linkages to off site vegetated corridors (e.g. neighbouring hedgerows, etc) which already exist in the wider landscape.

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. Certain birds (listed in Schedule 1 of the 1981 Act) receive extra protection. For these species it is an offence to recklessly disturb a species whilst it is on its nest or the dependant young. It is recommended that all works affecting potential bird nesting habitat should be carried out outside the breeding season (usually taken to occur from March to August inclusive). If works during the breeding season are unavoidable then the suitable nesting areas must be surveyed by a qualified ecologist immediately prior to the clearance taking place. If the survey confirms the absence of nesting birds within the works areas then work can be permitted, providing it is done within three days of the survey. If a nest site is discovered then work / vegetation clearance can only continue as long as the active bird nest is not destroyed or until nesting has ceased and young have fledged.

6 Summary

This section provides a summary of the key conclusions and recommendations required in order to ensure legal compliance:

- Bats: Under take additional survey work if trees are impacted upon by any future development.
- Habitat creation/Landscaping: Preparation of ecological and landscape strategy for detailed design to ensure existing habitats are replaced and enhanced. The strategy should address the basic requirements of most species particularly mammals, birds and amphibians, to ensure ecological permeability within and off site.

This report is the result of the survey work undertaken in September 2012. It should be noted that the survey only records what is present at the time of the survey.

References

BCT (Bat Conservation Trust), (2012) *'Bat Surveys – Good Practice Guidelines – 2nd Edition'*

Joint Nature Conservation Committee (JNCC), (2010) *'Handbook for Phase 1 Habitat Survey. A technique for environmental audit'* Revised re-print. JNCC: Peterborough

Oldham, R.S., Keeble, J., Swan, M.J., and Jeffcote, M., (2000) 'Evaluating the suitability of habitats for great crested newt (*Triturus cristatus*)' *Herpetological Journal* 10: 143-15

Figures

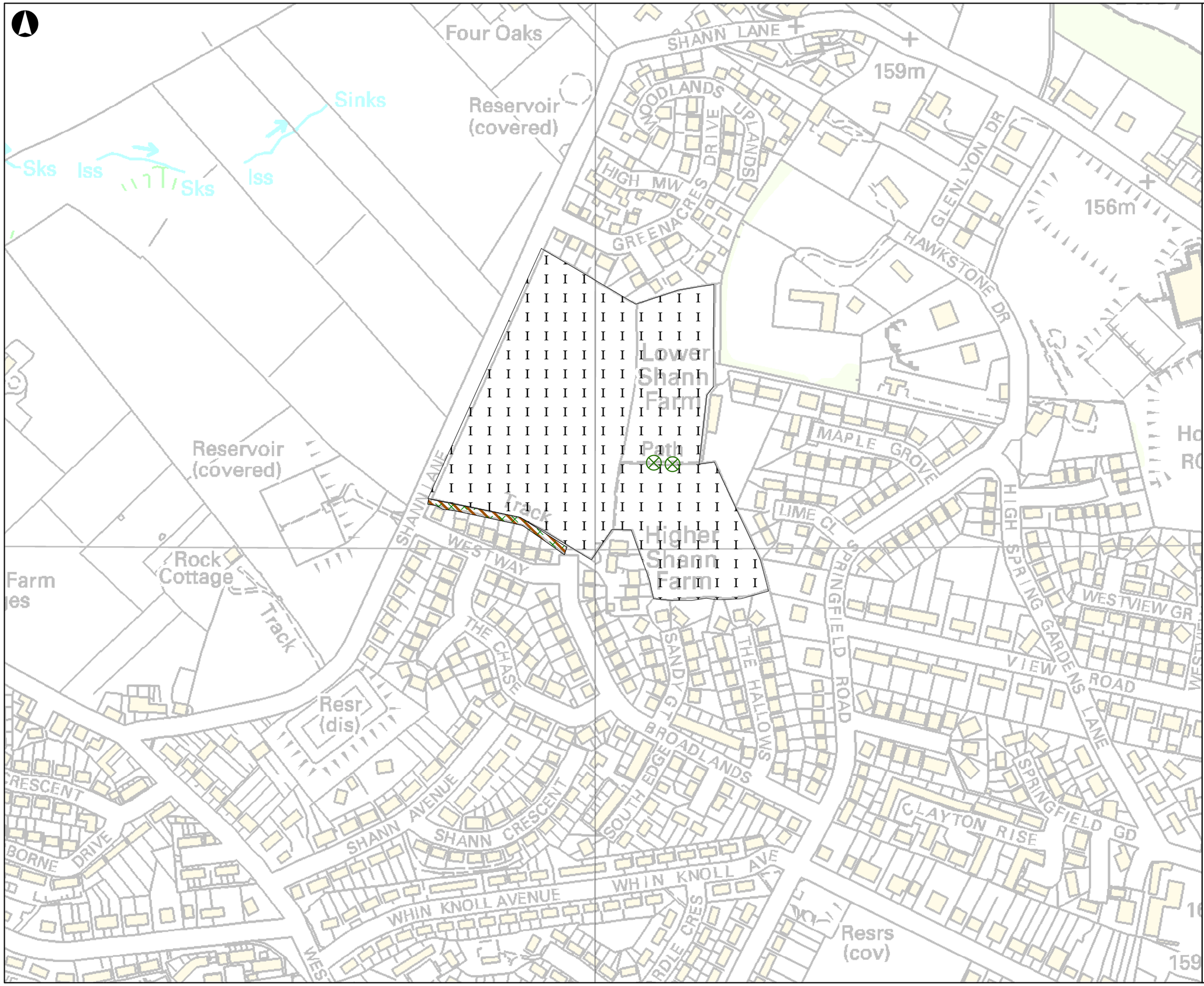
Appendix A - Plates

Plate 1: High bat roost potential trees (sessile oak) within the site.

Plate 2: Detail of roosting opportunities within trees.

Appendix B - Data Search Results

A3



Legend

Phase 1 Habitat Mapping

- A2.2- Scattered Scrub
- B4- Improved Grassland
- C3.1- Tall Ruderal Herbs
- Mature Trees

Issue	Date	By	Chkd	Appd
P0	2012-10-17	KG	KG	RC

Metres

0 40 80 160

ARUP

Rose Wharf 78 East Street
Leeds LS9 8EE United Kingdom
t +44 113 237 8344 f +44 113 242 8573
www.arup.com

Client

Chatsworth Settlement Trustees

Job Title

HIGH SHANN, KEIGHLEY

Drawing 1 - Phase 1 Habitat Survey

Scale at A3

1:3,000

Job No	Drawing Status
225836-00	**Preliminary**

Drawing No	Issue
Drawing 1	**P0**

17/10/2012 12:18:26

MXD Location