



Extended Phase 1 Habitat Survey

Jasmin Green, Birchwood, Lincoln

**For JH Walter On Behalf Of Birchwood Big Local
Partnership Board**

Delta-Simons Project No. 16-1044.01

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Recommendation 3 (Planning)

Following the issue of the National Planning Policy Framework (NPPF, 2012) by the Department for Communities and Local Government (DCLG), "*The planning system should contribute to and enhance the natural and local environment by: Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity...*"; and, therefore, for this particular development the use of native plant species sourced from local nurseries is recommended in landscape proposals to enhance foraging opportunities for local birds and bats, by increasing the invertebrate diversity on-Site. A species list of recommended trees and shrubs is included within the recommendations section of this Report.

This Extended Phase 1 Habitat Survey Executive Summary is intended as a summary of the assessment of the Site based on information received by Delta-Simons at the time of production. This Executive Summary should be read in conjunction with the full Report.

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**EXTENDED PHASE 1 HABITAT SURVEY
JASMIN GREEN, BIRCHWOOD, LINCOLN
FOR
JH WALTER ON BEHALF OF BIRCHWOOD BIG LOCAL PARTNERSHIP BOARD
DELTA-SIMONS PROJECT No. 16-1044.01**

1.0 INTRODUCTION

1.1 Purpose and Scope of the Survey

Delta-Simons Environmental Consultants Ltd was instructed by JH Walter on behalf of Birchwood Big Local Partnership Board (the 'Client') to undertake an Extended Phase 1 Habitat Survey. The survey was undertaken of land west of Jasmin Road in Birchwood, Lincoln (hereafter referred to as the 'Site'). In addition, public land immediately surrounding the Site was surveyed. The survey was undertaken in order to inform a planning application for the Site.

The aims of the Extended Phase 1 Habitat Survey were to:

- △ Identify habitat types on the Site using the standard methodology devised by the Joint Nature Conservation Committee (JNCC, 2010);
- △ Identify areas of potential for protected species/ species of conservation concern within the Site;
- △ Identify areas of potential for protected species/ species of conservation concern immediately outside the Site;
- △ Identify any invasive plant species included within Schedule 9 of the Wildlife and Countryside Act (WCA) 1981 (as amended);
- △ Prepare a Phase 1 Habitat Survey Plan of the Site; and
- △ Propose recommendations for further surveys, where necessary.

The Site location and the area surveyed are shown in Figure 1.

1.2 Site Description

The Site is centred at Ordnance Survey (OS) grid reference SK 9314 6954 in the western area of Birchwood, Lincoln. The Site covers an area of approximately 2 hectares (ha) and comprises managed grassland with footpaths crossing through and around the grassland. In the north, north-west, and on the southern boundary are

areas of mixed plantation woodland, whilst scattered trees lie within the central grassland and towards the south-western, south-eastern and northern extents of the Site. Small areas of scattered scrub border the woodland in the south, whilst the majority of the boundary comprises fencing with short lengths of wall present on the eastern boundary.

Further grassland and trees continue north of the Site, whilst to the east are a school, medical centre and a shopping centre with car parking. South of the Site are residential properties and gardens, whilst further properties and grassland lie to the west.

Topographically, the majority of the grassland at the Site is relatively flat with shallow embankments present beneath the north-eastern and north-western trees and in the west of the Site. The Site appeared to be well drained and did not support standing water at the time of the survey.

The Site layout is shown in Figure 2.

1.3 Proposed Development

The proposals, which have not yet been finalised, are for a residential development with associated hard and soft landscaping.

2.0 LEGISLATION

2.1 Birds

All wild birds are protected under Section 1 of the WCA 1981 (as amended). Subsection 1(1) makes it an offence to intentionally kill, injure, or take any wild bird; take, damage or destroy the nest of any such bird whilst it is in use or being built; or take or destroy an egg of any such wild bird. It is, furthermore, an offence to either intentionally, or recklessly, disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird. The law covers all species of wild birds including common, pest or opportunistic species.

2.2 Amphibians

All amphibians are protected under the WCA 1981 (as amended), with some species also protected under the European Habitats Directive (92/43/EC), transposed in England and Wales through the Conservation of Habitats and Species Regulations 2010 (as amended). All amphibians are protected from keeping, transporting, selling or exchanging. This means that in practice reasonable measures must be taken to avoid their incidental mortality.

The Great Crested Newt (GCN) is protected under the Conservation of Habitats and Species Regulations 2010 and Schedule 5 / 9(4)(b) and (c) of the WCA 1981 (as amended). It is an offence to deliberately kill, injure, capture GCN or to deliberately disturb this species, or to intentionally or recklessly obstruct access to their places of shelter or protection, to damage or destroy their breeding sites or resting places, or to intentionally or recklessly disturb a GCN whilst in a place of shelter or protection. The legislation applies to all stages of the life cycle including eggs, larvae and juveniles. It should be noted that GCNs spend the majority of their lives on land, venturing up to 500 m (but more usually 250 m) from their breeding ponds and as such any ground works within 500 m of a breeding pond could potentially have an adverse effect on GCNs.

2.3 Reptiles

All six native species of reptiles are protected under the 1981 WCA (as amended), from intentional killing or injury. As such, all reasonable steps must be taken to avoid their incidental mortality when carrying out works.

2.4 Bats

All bats are protected under Section 9(4)(b) and (c) of the WCA 1981 (as amended) and by the Conservation of Habitats and Species Regulations 2010 (as amended).

It is an offence to destroy or damage a breeding site or resting place of a bat, to intentionally or recklessly obstruct access to any place of shelter or protection for bats, to deliberately disturb bat species, to intentionally or recklessly disturb a bat whilst in its place of shelter or protection, or deliberately capture, injure or kill a bat. It should be noted that a breeding site or resting place of a bat is protected whether or not bats are present, as long as it is likely that they will return, and any activity or works damaging or destroying such a breeding site or resting place are likely to require a Natural England European Protected Species Licence (EPSL).

2.5 Badgers

Badgers *Meles meles* and their setts are protected under the 1992 Protection of Badgers Act. Under this Act it is an offence to wilfully kill, injure, take, possess or cruelly ill-treat badgers, or to attempt to do so. It is also an offence to intentionally or recklessly damage, destroy, or obstruct access to any part of a sett, or to disturb an occupied sett, either by intent or negligence. When interpreting the Act, Natural England defines a sett as any structure within an area used by badgers that shows signs of having been occupied by badgers within the last 12 months.

2.6 Plant Species Prohibited from Release into the Wild

The handling and disposal of Japanese knotweed *Fallopia japonica* and giant hogweed *Heracleum mantegazzianum* is covered by several pieces of legislation. The main piece of legislation is Section 14(2) of the WCA 1981 (as amended) which states that 'if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence'. Japanese knotweed and giant hogweed are listed in the Schedule. The Environmental Protection Act 1990 (as amended) is a broad ranging piece of legislation that singles out Japanese knotweed and giant hogweed for special mention. The Act places a 'Duty of Care' on the producer and anyone they employ to dispose of soil or other material contaminated with Japanese knotweed or giant hogweed, such material becomes a controlled waste, which can only be taken to licensed landfill and must be dealt with in an appropriate way.

2.7 Planning

With reference to the National Planning Policy Framework (NPPF), the Office of the Deputy Prime Minister Circular (2005) advises that ecological surveys are undertaken before planning permission is determined. The circular states *“The need to ensure that ecological surveys are carried out should therefore only be left to coverage under planning conditions in exceptional circumstances”* (see References, Appendix I).

3.0 METHODOLOGY

3.1 Data Search

A data search was undertaken by Lincolnshire Environmental Records Centre (LERC) to identify statutory and non-statutory designated sites and protected and notable species within a 1 km radius of the centre of the Site. In addition, a search for designated sites for nature conservation on, or within 1 km of, the Site was performed using the Multi-Agency Geographic Information for the Countryside (MAGIC).

3.2 Extended Phase 1 Habitat Survey

The habitats on the Site and on adjoining land were surveyed on 12th December 2016 by two Delta-Simons ecologists using the standardised JNCC Phase 1 habitat classification and mapping methodology (JNCC, 2010). Dominant plant species were recorded in each different habitat. The plant species nomenclature follows that of Stace (2010).

The following list indicates the species groups that were targeted:

- △ Birds: All species with special reference to key species (such as those on Schedule 1 of the Wildlife and Countryside Act, 1981 (as amended) (WCA 1981)), England Biodiversity Priority Species (EBP) (previously UK Biodiversity Action Plan (UKBAP) species) and Birds of Conservation Concern (BoCC) (Eaton et al., 2015);
- △ Amphibians: GCN;
- △ Reptiles: common lizard, adder, slow-worm, grass snake; and
- △ Mammals: bat (all species), badger.

3.2.1 Birds

Visual and/ or audible identification was made of any birds on the Site or flying over the Site during the survey period. Suitable habitat was, where possible, inspected and any evidence of nesting activity was recorded.

3.2.2 Amphibians

The terrestrial habitats at the Site were assessed for their potential to support amphibian species and a desk search was undertaken in order to identify any water

bodies within 500 m of the Site that were not fragmented from it by physical barriers such as major roads or flowing water bodies.

3.2.3 Reptiles

Suitable habitats for reptiles were identified within areas on-Site. Since reptiles are currently hibernating, natural and artificial refugia (logs, large debris etc.) were not checked beneath for the presence of reptiles.

3.2.4 Bats

An assessment of Bat Roost Potential (BRP) of structures and trees on the Site was completed (Collins, 2016). The survey methodology enables the categorisation of each structure and tree in relation to its value for bats. In addition, the suitability of the on-Site habitats to support foraging and commuting bats was also assessed (see Appendix II).

3.2.5 Badgers

The Site was inspected for badger activity including sett entrances, latrines, footprints, runs through vegetation, guard hairs caught on fences and snuffle holes.

3.2.6 Other Protected or Notable Species

Where applicable, during the survey, evidence was recorded of any protected or notable species, including England Biodiversity Priority (EBP) species, which have not been acknowledged within this section of the Report. Habitats with the potential to support additional protected or notable species were also recorded, if present, during the survey.

3.2.7 Plant Species Prohibited from Release into the Wild

The occurrence of any invasive plant species on the Site was identified in terms of species and stand size.

3.2.8 Surrounding Area

The land beyond the Site boundary was surveyed. Where access was not available to these areas, observations were made from the Site boundary or via public land and highways.

4.0 RESULTS

4.1 Data Search

4.1.1 Habitats

The results of the MAGIC data search and the LERC desk search indicate that one statutory designated site lies within 1 km of the Site. Swanholme Lakes Site of Special Scientific Interest (SSSI) and Local Nature Reserve (LNR) are formed from flooded sand and gravel pits, and are situated 1 km to the south-east. The site is designated for its communities of breeding dragonflies and birds, its uncommon species of submerged plants and rich mosaic of surrounding habitats. The site also supports a range of amphibians, reptiles and invertebrate groups.

Eight non-statutory designated sites were located within 1 km of the Site boundary:

- △ Hospital Plantation Local Wildlife Site (LWS), situated 230 m to the south-west, is believed to have been an area of heathland before it was used as a Second World War airfield. Woodland is now the most predominant habitat with evidence of the original heathland present in areas;
- △ Birchwood Nature Park LWS is situated 360 m to the south and is predominantly neutral grassland with scrub, occasional trees and a number of ditches and ponds. The site supports smooth newts *Lissotriton vulgaris* and common frogs *Rana temporaria*, and flora typical of neutral grassland;
- △ Island Lake LWS, is situated 870 m to the north-east, comprising a lake and a wide range of wetland plants. The site has been noted to have potential feeding habitat for Daubenton's bat *Myotis daubentonii* and pipistrelle species *Pipistrellus* sp.;
- △ Hartsholme West LWS, situated 900 m to the east, is a strip of woodland immediately west of Hartsholme Country Park. A drain situated on site comprises exceptional flora and bryophyte species;
- △ Penistone Lake LWS is a medium-sized lake, situated 900 m to the north. Areas of woodland and ornamental gardens occur along the shoreline, where there is no public access. There are a rich variety of aquatic plant species and the lake is managed to combat algal growth. Goosander *Mergus merganser* are present on the lake during the winter. The site has been noted to have potential feeding

habitat for Daubenton's bat and pipistrelle bat species *Pipistrellus* sp., whilst records of noctule bat *Nyctalus noctula* are also held.;

- △ Meadow Lake LWS, situated 900 m to the north-east, it a small lake surrounded by amenity grassland, a variety of herb species, well-managed shrubs and trees. The lake contains fish and a pair of kingfisher *Alcedo atthis* have been previously recorded attempting to breed on site;
- △ Cinder Plot LWS is a woodland, situated 900 m to the south-west. The woodland is predominately a conifer plantation and is actively managed for timber, but also comprises remnants of ancient woodland and heathland; and
- △ Hartsholme Country Park LWS is a large country park, situated 950 m to the east. The Park is dominated by a substantial lake. Woodland and ornamental plants are present within the heavily managed garden which is open to visitors.

4.1.2 Species

Birds

Recent records of the following species, listed on the Schedule 1 of the WCA (1981, as amended) have been identified within 1 km of the Site, the majority are from within either Swanholme Lakes SSSI/ LNR or Hartsholme Country Park LWS: Kingfisher *Alcedo atthis*; scaup *Aythya marila*; goldeneye *Bucephala clangula*; common crossbill *Loxia curvirostra*; osprey *Pandion haliaetus*; brambling *Fringilla montifringilla*; redwing *Turdus iliacus*; fieldfare *Turdus pilaris* and barn owl *Tyto alba*. Brambling have been recorded adjacent to the Site boundary.

In addition, the following species listed on the BoCC Red List and/or EBP species were also within the data search, the majority from within Hartsholme Country Park: Lesser redpoll *Acanthis cabaret*; pochard *Aythya ferina*; linnet *Linaria cannabina*; house sparrow *Passer domesticus*; song thrush *Turdus philomelos*; starling *Sturnus vulgaris*; spotted flycatcher *Muscicapa striata*; bullfinch *Pyrrhula pyrrhula* and yellowhammer *Emberiza citrinella*. Lesser redpoll and song thrush have been recorded adjacent to the Site boundary. The MAGIC search also revealed records of corn bunting *Emberiza calandra*, grey partridge *Perdix perdix*, lapwing *Vanellus vanellus*, tree sparrow *Passer montanus*, turtle dove *Streptopelia turtur* and yellow wagtail *Motacilla flava* from 2005-2010, all listed on the BoCC Red List and/or EBP species.

Amphibians

Five recent records of GCN were held, all from 2012. The closest records were held for locations 1 km to the south-east and south-west in Swanholme Lakes and Birchwood Nature Park, respectively.

Eight recent records of common toad *Bufo bufo* were held, with the most recent from 2012, recorded 1.5 km to the north, and the closest record from 2006, for a location within Hartsholme Park 1.2 km to the east.

A single record of palmate newt *Lissotriton helveticus* was held from 2012 for a location within Hartsholme Country Park, situated 1 km to the south-east.

Five recent records of smooth newt *Lissotriton helveticus* were held. The closest records were held for locations 1 km to the south-east and south-west in Swanholme Lakes and Birchwood Nature Park, respectively. The most recent records were from 2012, between 1 km and 1.7 km to the south-east and south-west.

The most recent record of common frog *Rana temporaria* was from 2012, for locations 1 km to the south-west and south-east, and 1.6 km to the south-east. The closest record was for a location 750 m to the north-east, near Birchwood Social Club.

Reptiles

No recent records of reptile were within the data search from within 1 km of the Site. However, two recent records of common lizard *Zootoca vivipara* were held from 2006, with the closest record for a location 1.2 km to the east, near Swanholme Lakes. Three recent records of slow-worm *Anguis fragilis* were held. The closest and most recent record was held for a location 1.3 km to the west in 2013. Five recent records of grass snake *Natrix natrix* were held, with the closest record for a location 1.3 km to the east, from 2006, and the most recent record, from 2014, at a location 2 km to the south.

Terrestrial Mammals

Records of at least five species of bats were held. These included:

- △ Three recent records of Brown Long-Eared bat (BLE) *Plecotus auritus* were held from between 2006 and 2013. Both the closest and most recent record was for a location 800 m to the south-west, in Birchwood Nature Park;

- △ Numerous records of noctule bat were held from between 2007 and 2014, with the closest 1 km to the south-east from 2013, and the most recent from 2012 for a location 1.3 km to the south-east;
- △ Three recent records of Daubenton's bat were held, with the closest for a location 1.2 km to the east from 2007;
- △ Six recent records of unidentified pipistrelle species *Pipistrellus* sp. were held from between 2008 and 2014, with the closest and most recent recorded 1.5 km to the east and south, respectively; and
- △ One record of barbastelle bat *Barbastella barbastellus* from 2006, 2 km to the east, near Hartsholme Lake.

Numerous records of unknown bat species *Chiroptera* sp. were held from between 2006 and 2016, with the closest 300 m to the east along Birchwood Avenue.

Two records for badger from 2014 were held for a location 1.5 km to the north.

Other Protected and Notable Species

The results of the LERC data search are available to the Client on request.

4.2 Extended Phase 1 Habitat Survey – Site

The Site is characterised by amenity grassland with scattered trees and areas of woodland crossed by a number of footpaths.

Figure 2 shows the extent of habitat types and boundary features. Descriptions of the habitat types and dominant plant species found at the Site are provided below. Habitat descriptions and codings are by broad habitat type, as listed in the Phase 1 Habitat Survey Manual (JNCC, 2010). Target Notes (TNs) are listed under Appendix III whilst photographs of the Site survey are located in Appendix IV.

A1.3.2 Mixed Plantation Woodland

In the north-east, north-west (Photograph 1) and south of the Site were lengths of plantation woodland providing screening for the adjacent properties. Species recorded within the woodland include Scot's pine *Pinus sylvestris*, field maple *Acer campestre*, hawthorn *Crataegus monogyna*, silver birch *Betula pendula*, pedunculate oak *Quercus*

robur, goat willow *Salix caprea* and sycamore *Acer pseudoplatanus*, with occasional elder *Sambucus nigra*, ash *Fraxinus excelsior* saplings, ivy *Hedera helix* and dog rose *Rosa canina* around the base.

A2.2 Scattered Scrub

Areas of scattered dog rose and cherry *Prunus* sp. were present along the edge of the southern woodland block.

A3.1 Scattered Broadleaved Trees

Within the grassland at the Site were a number of scattered trees including silver birch, rowan *Sorbus aucuparia*, field maple, goat willow, sycamore, pedunculate oak, ash and London plane *Platanus x acerifolia*. Patches of broom *Cytisus scoparius* were present around the scattered trees north-east of the central footpath (Photograph 2).

A3.2 Scattered Coniferous Trees

A small number of Scot's pine were present amongst the scattered trees towards the south-east of the Site.

J1.2 Amenity Grassland

The majority of the Site comprised managed grassland (Photograph 3), with species recorded including annual meadow grass *Poa annua*, perennial ryegrass *Lolium perenne*, dandelion *Taraxacum officinale* agg., ribwort plantain *Plantago lanceolata*, daisy *Bellis perennis*, white clover *Trifolium repens*, moss *Brachythecium rutabulum*, creeping thistle *Cirsium arvense* and yarrow *Achillea millefolium*. Sections of grass had grown longer beneath the trees and areas of woodland, with species including Yorkshire fog *Holcus lanatus*, cock's foot *Dactylis glomerata*, fescue *Festuca* sp., mugwort *Artemisia vulgaris* and rosebay willowherb *Chamerion angustifolium* recorded.

J2.4 Fence

Lengths of metal palisade fencing approximately 2 m high bordered the south-east of the Site, with further metal fencing on the north-eastern boundary with sections of laurel *Laurus nobilis* growing through the fencing in the north (Photograph 4). Various wooden panel fences formed the southern and western boundaries.

J2.5 Wall

A short length of wall approximately 2 m high extended along part of the eastern boundary, with the outer wall of the neighbouring medical building also forming part of the eastern boundary.

J4.1 Hardstanding

Tarmacadam footpaths with streetlights crossed the centre of the Site, with further paths leading off-Site to the north and north-east. A short section of road lay in the south-eastern corner.

4.2.1 Birds

Collared dove *Streptopelia decaocto*, black-headed gull *Chroicocephalus ridibundus*, woodpigeon *Columba palumbus*, robin *Erithacus rubecula*, carrion crow *Corvus corone*, magpie *Pica pica*, starling *Sturnus vulgaris*, blackbird *Turdus vulgaris*, house sparrow *Passer domesticus*, pied wagtail *Motacilla alba*, blue tit *Cyanistes caeruleus* and chaffinch *Fringilla coelebs* were all recorded at the Site during the survey. Starling and house sparrow are both listed on the Red List of BoCC (Eaton *et al.*, 2015). Habitats featured on the Site suitable for nesting birds included the woodland, scattered trees and scattered scrub. No bird nesting activity was observed at the time of the survey, however, old nests were recorded within the trees and woodland at the Site. A bird box was also noted on a tree along the southern boundary (TN 1).

It should be noted that this is not a comprehensive inventory of the bird species which may be present at the Site.

4.2.2 Great Crested Newts

The majority of the Site does not support suitable habitat for GCN due to the short length of the managed grassland, which would offer no shelter for newts should they be present in the local area. The areas of woodland, scattered scrub and longer grass would offer foraging and sheltering habitat, however, these are isolated being within an urban area with limited connectivity to other suitable habitat. A review of aerial photographs and OS maps revealed that there are no ponds within 500 m of the Site to support breeding amphibians. Five recent records of GCN were included within the data search, the closest 1 km from the Site. There are no further recommendations for the species at the Site.

4.2.3 Reptiles

The majority of the Site is unsuitable to support reptiles due to the length of the managed grassland. Sections of the longer grassland beneath the trees would offer limited shelter and foraging for reptiles, however, these are isolated being within an urban area with limited connectivity to other suitable habitat. Recent records of slow-worm, common lizard and grass snake were all included within the data search, with the closest record 1.2 km from the Site boundary, beyond the distance that reptiles would disperse was there connectivity between the two locations. There are no further recommendations for reptiles at the Site.

4.2.4 Bats

No trees at the Site supported any features, such as woodpecker holes or lifted bark, to provide roosting opportunities for bats. The woodland and scrub along the boundaries provide foraging opportunities and commuting links for bats into the wider area. Street lighting is present along the footpaths around the Site, with further lighting present within the properties and car parking adjacent to the eastern boundary and the properties to the south and west. Records of five bat species were included within the data search, the closest record was of a BLE bat approximately 800 m south-west of the Site in 2013.

4.2.5 Badgers

The Site did not support any evidence to indicate that badgers were using or inhabiting it. There were no sett entrances, latrines, snuffle holes, mammal runs or badger dung found within the survey area. The Site is within an urban area frequently disturbed by dog walkers, and separated from the nearest other suitable woodland by a number of residential properties and roads. Two records of badger were included within the data search approximately 1.5 km from the Site. There are no further recommendations for badger at the Site.

4.2.6 Other Protected Species

There was no evidence of other protected species, or habitats that could support them, on the Site.

4.2.7 Plant species prohibited from release into the wild

Invasive plants such as Japanese knotweed, Himalayan balsam and giant hogweed were not recorded on the Site.

4.3 Extended Phase 1 Habitat Survey – Land Adjoining the Site

Further grassland and trees continues north of the Site, whilst to the east are a school, medical centre, nursery and a shopping centre with car parking. South of the Site are residential properties and gardens whilst further properties and grassland lie to the west and north-west.

5.0 CONCLUSIONS AND RECOMMENDATIONS

5.1 Conclusions

The Site comprises managed grassland with footpaths crossing through and around it. In the north, north-west and on the southern boundary are areas of mixed plantation woodland, whilst scattered trees lie within the central grassland and towards the south-west, south-east and north of the Site. Small areas of scattered scrub border the woodland in the south, whilst the majority of the boundary comprises fencing with short lengths of wall present on the eastern boundary.

Swanholme Lakes SSSI and LNR lie within 1.2 km of the Site boundary whilst eight non-statutory sites have also been identified, the closest 300 m from the Site boundary. The majority of the Site currently does not offer potential for many protected/ notable species, and given its urban location it lacks connectivity to any of the designated sites, limiting the potential impact on species known to occur in the local area, should it be developed. Given their distance from the Site, its surroundings and its current managed condition, any development at the Site is not anticipated to have a significant adverse impact on any of the designated sites.

The woodland, trees and scrub at the Site offer potential for nesting birds at the Site. Since no development plan is available for the Site, it is not known how much potential nesting habitat is to be retained, but it is anticipated that a number of trees at the Site will be lost to facilitate the development. Appropriate planting should be included within the landscaping plans for the Site to ensure no reduction in nesting potential occurs at the Site. Furthermore, should clearance of nesting habitat be required, appropriate mitigation should be put in place to ensure no disturbance to active nests.

The woodland and woodland edge habitats offer foraging and commuting features for bats and should be retained as part of the development, where possible. Furthermore, appropriate mitigation should be put in place to ensure no increased light spill onto woodland edge habitat.

5.2 Recommendations

Recommendation 1 (Nesting Birds)

- △ If any habitat removal or felling works are to be undertaken on areas of woodland, scattered trees and scattered scrub featured on the Site, these

should be performed either before early March or after late August in order to avoid the main bird nesting season. Conflict with the development can be avoided by clearing the Site of any suitable nesting habitat outside of the breeding period in advance of any proposed works; and

- △ If, however, Site clearance works are deemed necessary during the nesting period an experienced ecologist will be required to check the Site habitats immediately prior to works commencing to confirm that no nesting birds will be affected by the proposed works.

Recommendation 2 (Bats)

The woodland at the Site offers suitable habitat for commuting and foraging bats. It is recommended that, where possible, these habitats are retained and that a sensitive lighting plan is developed such that the proposed development does not increase light spill onto these habitats.

Recommendation 3 (Planning):

Following the issue of the National Planning Policy Framework (NPPF, 2012) by the Department for Communities and Local Government (DCLG), "*The planning system should contribute to and enhance the natural and local environment by: Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity...*"; and, therefore, for this particular development we recommend the following:

- △ The use of native plant species sourced from local nurseries is recommended in landscape proposals to enhance foraging opportunities for local birds and bats, by increasing the invertebrate diversity on-Site. Species providing berries or a source of nectar are of particular benefit to wildlife. A species list of recommended trees and shrubs is given below:
 - △ Beech *Fagus sylvatica*;
 - △ Elder *Sambucus nigra*;
 - △ Field maple *Acer campestre*;
 - △ Silver birch *Betula pendula*;
 - △ Rowan *Sorbus aucuparia*;

- △ Small-leaved lime *Tilia cordata*;
 - △ Bird cherry *Prunus padus*;
 - △ Blackthorn *Prunus spinosa*;
 - △ Hazel *Corylus avellana*;
 - △ Hawthorn *Crataegus monogyna*;
 - △ Holly *Ilex aquifolium*;
 - △ Honeysuckle *Lonicera periclymenum*;
 - △ Lavender *Lavendula angustifolium*;
 - △ Wild privet *Ligustrum vulgare*;
 - △ Walnut *Juglans regia*; and
 - △ Guelder-rose *Viburnum opulus*.
- △ Installation of eight bird nest boxes (four suitable for small hole nesting birds such as blue tits and great tits, two open fronted box suitable for robins and wrens, and two terrace nest boxes suitable for house sparrows). Apart from the terrace nest boxes, which should be installed under the eaves of buildings, they should be placed on suitable trees around the Site. All boxes should be installed in a sheltered and undisturbed position at a height of at least 3 m, and avoiding a southerly aspect; and
- △ Installation of two bat boxes (including one Schwegler 2F bat box and one Schwegler 1FF bat box, or similar products) on appropriate trees at the Site. These should be placed to avoid a northerly aspect, at a height of at least 3 m in order to avoid disturbance from humans or predators and in an area least likely to be affected by noise and light spill, and close to trees for cover.

Delta Simons can provide further advice on the type and locations of bird and bat boxes for the Site once the final development plans are known.

6.0 LIMITATIONS OF SURVEY

6.1 Limitations

The behaviour of animals can be unpredictable and may not conform to characteristics recorded in current scientific literature. This Report, therefore, cannot predict with absolute certainty that animal species will occur in apparently suitable locations or habitats or that they will not occur in locations or habitats that appear unsuitable.

Whilst every effort was made to access all parts of the Site, not all external regions were able to be accessed for the inspection. Delta-Simons had not obtained permission to access the residential buildings near to the Site. It should be noted that on a single inspection it is not possible to define the presence or absence of many species.

6.2 Disclaimer

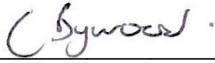
The recommendations contained in this Report represent Delta-Simons' professional opinions, based upon the information referred to in Section 1.0 of this Report, exercising the duty of care required of an experienced Ecology Consultant. Delta-Simons does not warrant or guarantee that the Site is free of Bats or other protected species.

No part of the survey included an assessment of the materials and conditions of any buildings. No part of the survey included an asbestos assessment, nor did it represent an appraisal of other deleterious materials or hazardous substances.

This Report was prepared by Delta-Simons for the sole and exclusive use of the Client and for the specific purpose for which Delta-Simons was instructed as defined in Section 1.0 of this Report. Nothing contained in this Report shall be construed to give any rights or benefits to anyone other than the Client and Delta-Simons, and all duties and responsibilities undertaken are for the sole and exclusive benefit of the Client and not for the benefit of any other party. In particular, Delta-Simons does not intend, without its written consent, for this Report to be disseminated to anyone other than the Client or to be used or relied upon by anyone other than the Client. Use of the Report by any other person is unauthorised and such use is at the sole risk of the user. Anyone using or relying upon this Report, other than the Client, agrees by virtue of its use to indemnify and hold harmless Delta-Simons from and against all claims, losses

and damages (of whatsoever nature and howsoever or whensoever arising), arising out of or resulting from the performance of the work by the Consultant.

This Report was prepared by:



Catherine Bywood

Ecologist

Date 4th January 2017

This Report was reviewed and authorised by:

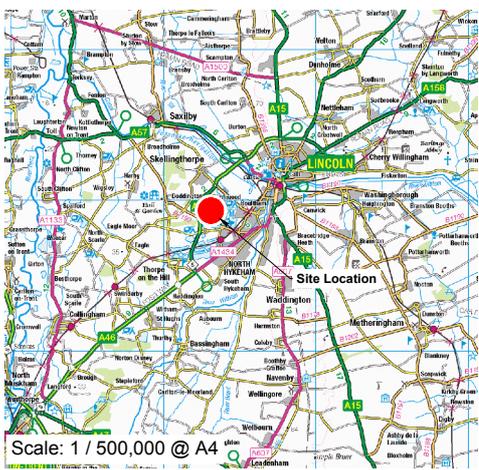


Charlotte Sanderson

Associate & Ecology Team Leader

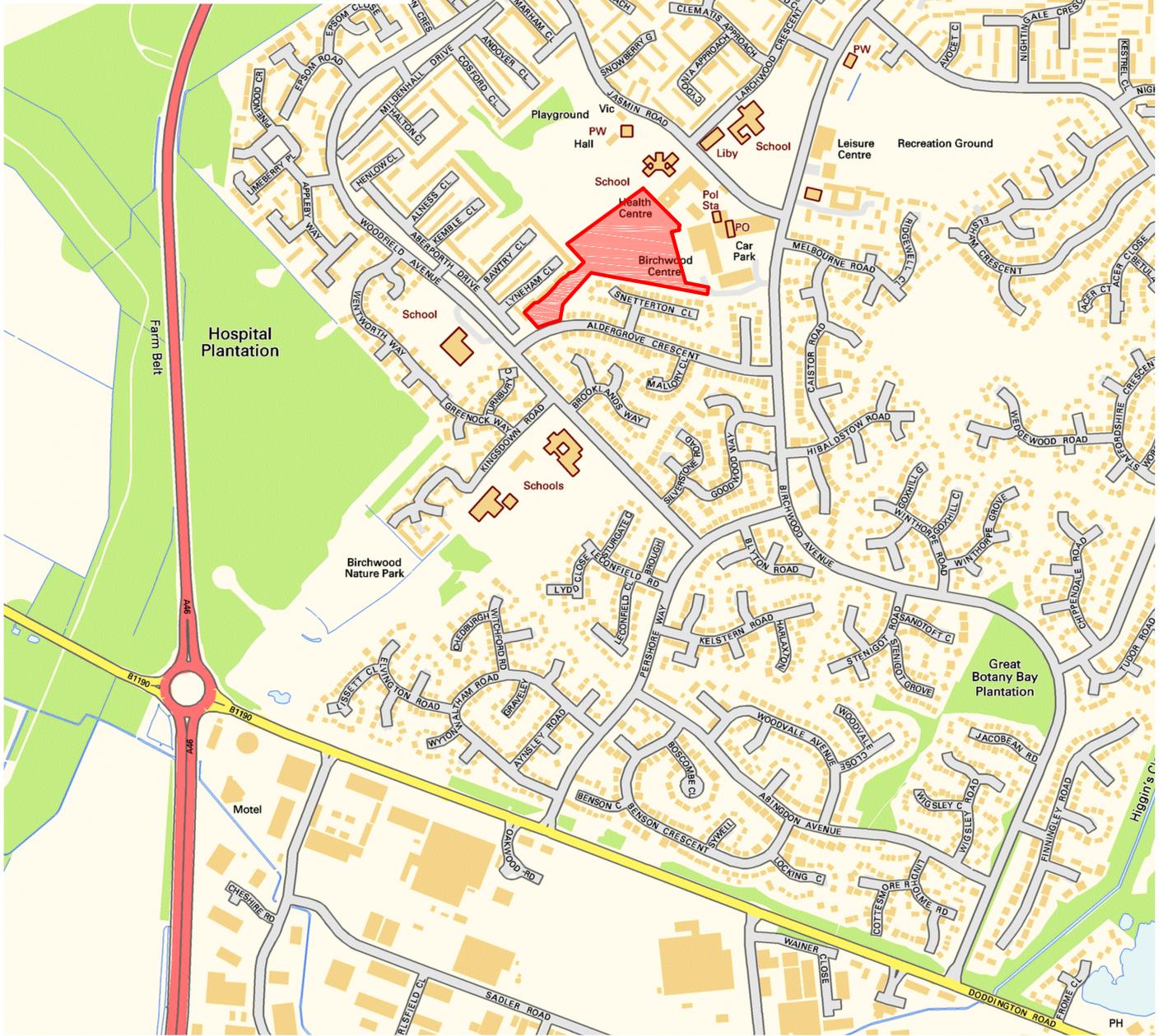
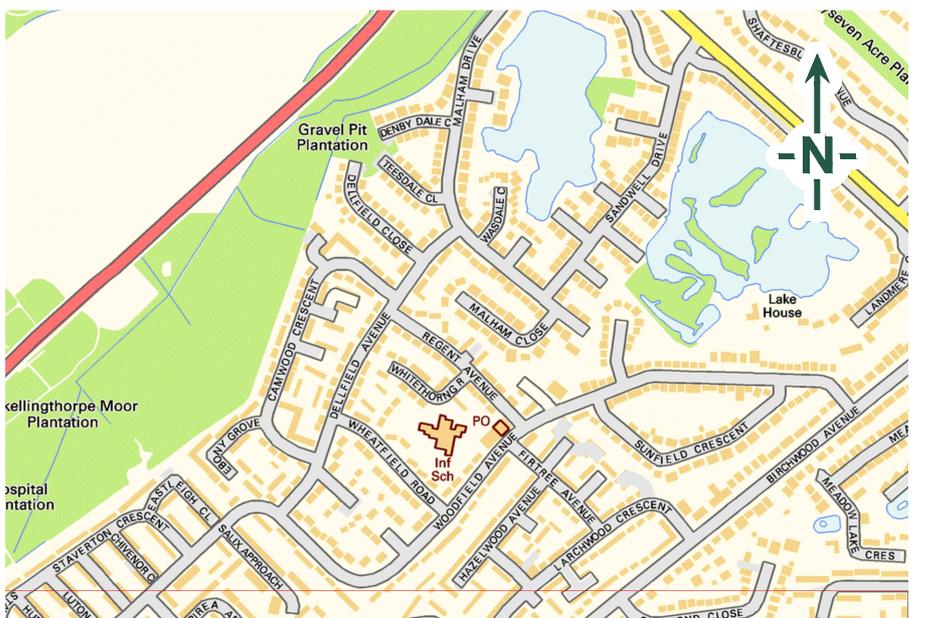
Date 4th January 2017





LEGEND

 Site Boundary



Scale: 1 / 10,000 @ A4

Contains OS data ©, Crown Copyright and Database Right (2016)



TITLE:
Site Location Map
Jasmin Green, Birchwood
Lincoln

DRAWN BY: PH
CHECKED BY: CB
DATE: 19 December 2016

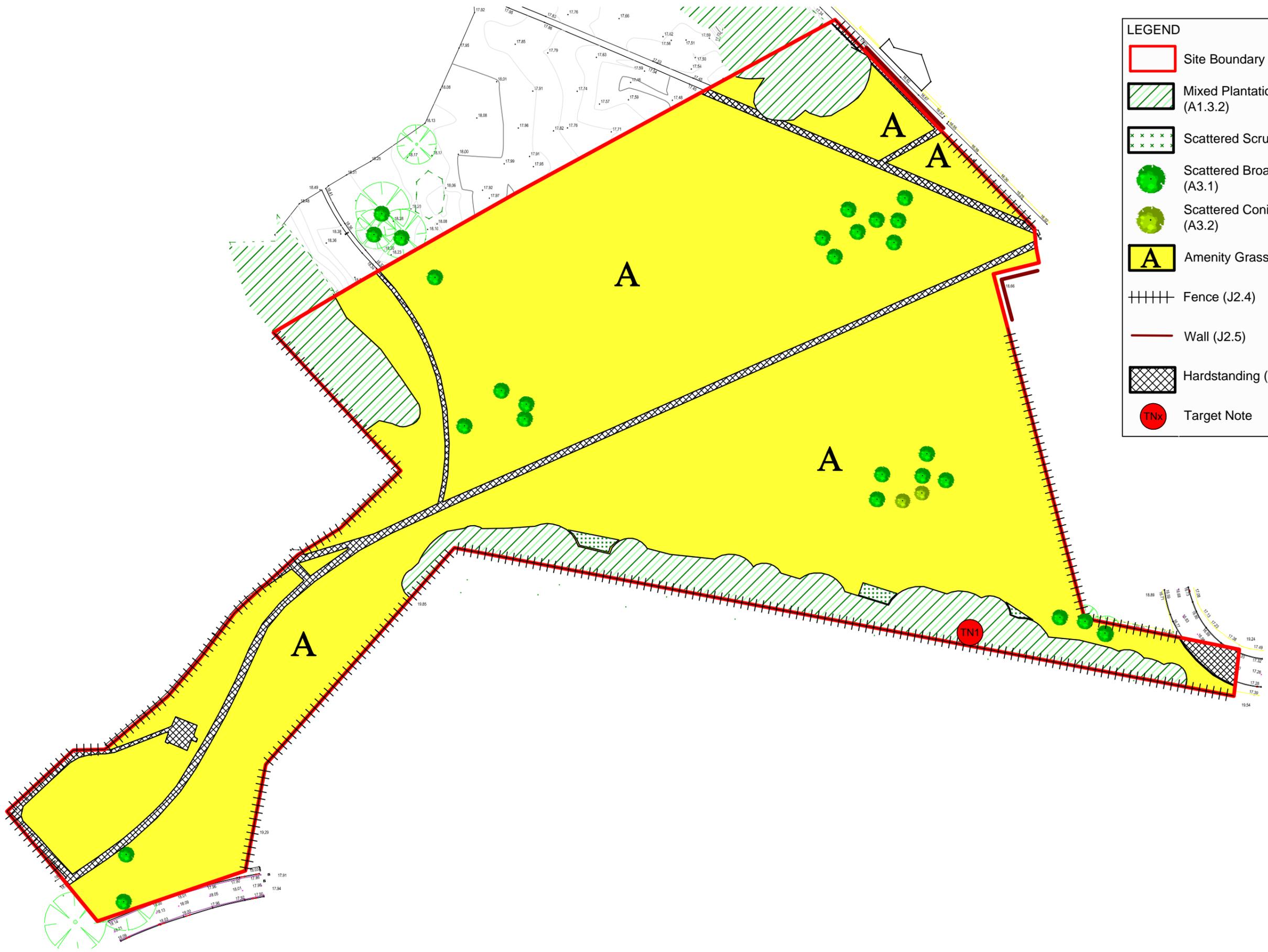
SCALE: To Scale@A4
REVISION: 1

PROJECT NO:
16-1044.01
FIGURE NO:
1



LEGEND

-  Site Boundary
-  Mixed Plantation Woodland (A1.3.2)
-  Scattered Scrub (A2.2)
-  Scattered Broadleaved Trees (A3.1)
-  Scattered Coniferous Trees (A3.2)
-  Amenity Grassland (J1.2)
-  Fence (J2.4)
-  Wall (J2.5)
-  Hardstanding (J4.1)
-  Target Note



TITLE:
Extended Phase 1 Habitat Survey
Jasmin Green, Birchwood
Lincoln

DRAWN BY: PH	SCALE: Not to Scale
CHECKED BY: CB	REVISION: 1
DATE: 21 December 2016	

PROJECT NO: 16-1044.01
FIGURE NO: 2





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Guidance on Assessing the Potential Suitability of Development Sites to Support Bats

(adapted from Collins, J. (ed)).

Suitability	Description	
	Roosting	Commuting and Foraging
Negligible	<p>An inspected structure or tree which is considered to have no features of importance for roosting bats.</p> <p>No further constraints apply to the method or timing of proposed works.</p>	<p>Negligible habitat features on-Site to support commuting or foraging bats</p>
Low	<p>A structure with at least one or more features suitable to support opportunistic individual bats. However, inadequate space, shelter, protection and conditions, and the low suitability of surrounding habitats means that it is unlikely to be used as a maternity or hibernation roost site.</p> <p>A tree of adequate age and stature to support potential roosting features, however, either no features, or only features of limited potential recorded from the ground.</p>	<p>Habitat with potential to support low numbers of commuting bats due to its quality and connectivity. For example, a gappy hedgerow or unvegetated stream that is isolated from the surrounding landscape.</p> <p>Alternatively, suitable but isolated habitats suitable to support low numbers of foraging bats such as a lone tree or a patch of scrub.</p>
Moderate	<p>A structure or tree with one or more potential roost sites that are of adequate size, shelter and protection, with suitable conditions and surrounding habitat to support a bat roost not of high conservation status (with respect to roost type not individual species conservation status).</p>	<p>Linear habitat continuity connecting to the wider landscape offering potential to support commuting bats, such as rows of trees and scrub or linked back gardens.</p> <p>Habitat such as trees, scrub, grassland or a waterbody with connectivity to the wider landscape offering foraging opportunities for bats.</p>
High	<p>A structure or tree with one or more potential roost sites that are suitable for use by large numbers of bats on a regular basis and for long periods of time due to their size, shelter, protection, conditions and the surrounding habitat.</p>	<p>Continuous high-quality habitat with strong connectivity to the wider landscape that is likely to be used by commuting bats on a regular basis, such as flowing waterbodies, hedgerows, rows of trees and woodland edges.</p> <p>High quality habitat with strong connectivity to the wider landscape that is likely to be regularly used by foraging bats, such as broadleaved woodland, tree-lined watercourses and grazed parkland.</p> <p>Site is close to, and connected to, known roost sites</p>





Target Notes

Target Note 1 **Bird box within a tree along the southern boundary**



**Jasmin Green, Birchwood, Lincoln
Delta-Simons Project No. 16-1044.01**



Photograph 1 – Woodland along the north-western boundary



Photograph 2 – Scattered trees in the east of the Site

**Jasmin Green, Birchwood, Lincoln
Delta-Simons Project No. 16-1044.01**



Photograph 3 – Managed grassland and central footpath at the Site



Photograph 4 – Fencing and building along the north-eastern boundary