



Holmes Antill

**Windmill Lane, Loughborough**

**Ecological Appraisal**

September 2012

**FPCR Environment and Design Ltd**

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## 1.0 INTRODUCTION

- 1.1 The following report has been prepared by FPCR Environment & Design Ltd. on behalf of Holmes Antill and details the results of an Ecological Appraisal undertaken on a site off Windmill Lane in Loughborough, Leicestershire (OS Explorer 270 grid reference SK 547 194). The site was originally surveyed in 2005 with the additional and most recent survey undertaken on 13th September 2012. This comprised an Extended Phase 1 Habitat Survey including initial observations of any suitable habitats for or evidence of protected species. This report makes reference to surveys undertaken in both 2005 and 2012.

### Site Location and Context

- 1.2 The site comprised 3 areas (see Figure 1) which are situated either side of a minor road, Moor Lane, to the south-east of Loughborough town centre and intersected by a section of the Grand Union Canal. Surrounding land use to the west is predominantly urban, with residential, light industry and a recreation ground. To the east the land is rural, comprising pasture and a sports ground.
- 1.3 Area 1 was located to the north of Moor Lane. It contained a mosaic of bare ground, ephemeral/ short perennial vegetation, tall ruderal vegetation, scrub and species poor semi-improved grassland with scattered trees. The perimeter was marked by dense scrub and trees with a stream to the north and east of the site and the Grand Union Canal to the west.
- 1.4 Area 2 was located to the south of Moor Lane. This area contained a scrapyard/ waste disposal site, therefore much of this area comprised waste and earth mounds on top of hard standing. Limited tall ruderal and ephemeral vegetation existed to the south of the site, with a row of trees along the stream to the east.
- 1.5 Area 3 comprised former industrial land with a mix of disused and recently demolished works, hard standing, rubble piles and associated hardcore.
- 1.6 There were four buildings on site which were considered to have limited potential for bats.
- 1.7 There was one pond within area 1 of the site. The site is also enclosed by the Grand Union Canal to the west and Hermitage Brook to the north and east.

### Development Proposals

- 1.8 Proposals for the site include the construction of 2, 3 and 4 bedroom residential housing on areas 2 and 3, with area 1 being retained for community use.

## 2.0 METHODOLOGY

### Desk Study

- 2.1 In order to compile existing baseline information, relevant ecological information was requested from both statutory and non-statutory nature conservation organisations including:
- Multi Agency Geographic Information for the Countryside (Magic) website
  - Leicestershire Badger Group
  - Leicestershire Bat Group
  - Leicestershire and Rutland Wildlife Trust
  - Leicestershire Amphibian and Reptile Network
  - Leicestershire Environmental Records Centre (LERC)
- 2.2 Further inspection of colour 1:25000 OS base maps ([www.ordnancesurvey.co.uk](http://www.ordnancesurvey.co.uk)) and aerial photographs from Google Earth ([www.maps.google.co.uk](http://www.maps.google.co.uk)) was also undertaken in order to provide additional context and identify any features of potential importance for nature conservation in the wider countryside.
- 2.3 The search area for biodiversity information was related to the significance of sites and species and potential zones of influence, as follows:
- 5km around the application area for sites of International Importance (e.g. Special Areas of Conservation (SACs), Special Protection Areas (SPAs), Ramsar sites).
  - 2km around the application area for statutory sites of National or Regional Importance (e.g. Sites of Special Scientific Interest (SSSIs).
  - 1km around the application site for non-statutory sites of County Importance (e.g. Sites of Importance for Nature Conservation (SINC) / Local Wildlife Sites (LWS) and species records (e.g.: protected, UK BAP or notable species).

### Flora

- 2.4 The survey was undertaken on 13th September 2012 using the standard Extended Phase 1 Habitat Survey Methodology (JNCC, 2006), as recommended by Natural England, to identify specific habitats and features of ecological interest. Habitats were marked on a base plan and where appropriate, target notes were made. An inspection of the site for the presence of any invasive weed species was also carried out. Features such as trees were considered with regard to their ecological value and potential to provide suitable habitats for protected species.
- 2.5 The habitat survey was undertaken during optimal survey period (May to September). Whilst the plant species lists obtained should not be regarded as exhaustive, sufficient information was obtained to determine broad habitat types and features of interest.

## **Fauna**

- 2.6 Throughout the extended phase 1 survey, consideration was given to the actual or potential presence of protected species, such as, although not limited to, those protected under the Wildlife and Countryside Act 1981 (as amended), the Protection of Badgers Act 1992 and the Conservation of Habitats and Species Regulations 2010. Consideration was also given to the existence and use of the site by other notable fauna such as Biodiversity Action Plan (BAP) or Red Data Book (RDB) species.

## **Bats**

### Building Assessment

- 2.7 The exterior of the buildings were visually assessed by a licensed bat worker from FPCR on the 13<sup>th</sup> of September 2012 for potential access points and evidence of bat activity. Detailed pictures were taken. Features such as small gaps under barge/soffit/fascia boards, raised or missing ridge tiles and gaps at gable ends, which have potential as access points, were sought. Evidence that bats actively used potential access points includes staining within gaps and bat droppings or urine staining under gaps, a note being made wherever these were present. Indicators that potential access points had not recently been used included the presence of cobwebs and general detritus within potential access points. The visual assessment was carried out following periods of dry weather to maximise recording of visible evidence.
- 2.8 The interior of any accessible buildings, including roof voids (where present), were also visually assessed for evidence of bat activity and/or for the potential to be used by bats. Evidence of a roost could be determined as the presence of a dead or live bat(s), concentrated piles or scattered droppings, food remains such as insect wing fragments as well as scratch marks and/or staining. In addition, any basement/cellar areas were also inspected for the above features.

### Nocturnal Survey

- 2.9 During the surveys the surveyors were positioned such that all aspects of the building could be observed. The dusk emergence surveys were undertaken from approximately 20 minutes before sunset until at least 90 minutes following sunset. Over the emergence survey the location and species of any bat observed emerging from the building was recorded. General activity identified within the site was also recorded during the survey. To aid species identification ultrasonic bat detectors (Bat Box Duets) were used. The survey was conducted in appropriate conditions, i.e. ambient temperature above 10°C with little wind and no rain.
- 2.10 As some low potential was recorded in association with B1. The nocturnal survey was undertaken on the 24<sup>th</sup> of September 2012.
- 2.11 The survey methodology/effort described above is based on guidelines set out in 'The Bat Mitigation Guideline (Natural England, 2004)' and 'Bat Survey Good Practise Guidelines (Bat Conservation Trust, 2012)'.

Tree Assessment

- 2.12 There was a small apple orchard on the lawn in front of building 5. These trees were checked for bat potential by visual assessment to identify those supporting features with potential as bat roost sites by a licensed bat worker from FPCR on 18<sup>th</sup> November 2011. Tree habitats represent a valuable resource for breeding, hibernation, feeding and as landmarks for commuting bats. Mature single trees can provide important foraging and roosting opportunities. Features with the potential as roosting sites can include:
- Holes within trunks and main laterals including rot-holes and woodpecker holes
  - Raised, flaking and cracked bark
  - Dense ivy cover, (not a feature in itself but can obscure potential features).
- 2.13 The above survey was repeated on the 13<sup>th</sup> of September 2012.

### 3.0 RESULTS

#### Desk Study

##### Statutory Designations

- 3.1 No international sites of conservation importance were identified within a 5 km radius of the site.
- 3.2 Two sites of national importance were located within 2km of the site boundary.

**Table 2 – Statutory designated sites within 2km**

Name	Designation	Habitat	Approximate distance from site
Loughborough meadows	SSSI	Unimproved meadow, neutral grassland	1.8km north
Cotes grassland	SSSI	Neutral grassland on alluvial gravels	1.3km north

##### Non-statutory Designations

- 3.3 No non-statutory designated sites were identified within 1km of the site boundary.

##### Protected/Notable Species

- 3.4 Data returned from LERC and the local badger group identified the presence of several protected species within a 1km radius of the site boundary.
- 3.5 Leicestershire Badger Group returned records of badger setts between 1.7-2.5km to the southwest and 1.3km to the west of the site. There are no records of badger setts within 1km of the site.
- 3.6 Table 3 details the protected species within 1km of the site boundary.

**Table 3: Protected species within 1km**

Species	Nature Conservation Status	Number of records within 1km
Common Pipistrelle Bat <i>Pipistrellus pipistrellus</i>	Regulation 41 of The Conservation of Habitats and Species Regulation 2010, Section 9 of the Wildlife and Countryside Act 1981, UK BAP	6
Water Vole <i>Arvicola amphibius</i>	Wildlife and Countryside Act 1981 (as amended), UK BAP	2
Otter <i>Lutra lutra</i>	The Conservation of Habitats and Species Regulation 2010, Wildlife and Countryside Act 1981, UK BAP	1



## Site Description

- 3.7 Habitats on site comprised a mosaic of bare ground, ephemeral/short perennial vegetation, tall ruderal vegetation, scrub and species poor semi-improved grassland with scattered trees. Four buildings of various size and structure were contained within the site. There was one pond within area 1 of the site and a stream and canal adjacent to the site.
- 3.8 No non-native, invasive weeds such as Japanese knotweed or giant hogweed were recorded within the site.

## Habitats/Flora

- 3.9 The site consisted of three distinct areas and for the purposes of this report they are identified as: Area 1 – ephemeral/ grassland field, Area 2 – scrapyards/ waste disposal site and Area 3 – former industrial land. The locations of the habitats described below are illustrated in Figure 2 - Phase 1 Habitat Plan with target notes detailed in Appendix 1. A comprehensive species list is detailed in Appendix 2.

### Trees

- 3.10 Trees were abundant along the boundaries of area 1 comprising of crack willow *Salix fragilis*, wych elm *Ulmus glabra* and elder *Sambucus nigra*. Within the semi-improved grassland scattered trees comprised hawthorn and oak. All trees were of immature/semi-mature life stage and in apparent good health with no holes, cavities or cracks recorded.
- 3.11 Willow *Salix sp.* trees lined the east and west site boundary of area 2. All trees were of immature/semi-mature life stage and in apparent good health with no holes, cavities or cracks recorded.
- 3.12 Trees were scattered along the boundary of area 3 and comprised of sycamore *Acer pseudoplatanus*, hazel *Corylus avellana*, silver birch *Betula pendula*, whitebeam *Sorbus aria* and goat willow *Salix caprea*. Five trees along the eastern boundary were preliminarily assessed as having low bat potential due to the dense ivy covering and small rot holes.

### Scrub & Ruderal Vegetation

- 3.13 Scrub and tall ruderal vegetation was extensive within area 1. This was concentrated along the east and west boundaries towards the stream and canal. A small area of dense scrub existed adjacent to the site entrance along with a line of dense scrub through the centre of the site along a raised embankment
- 3.14 The scrub and ruderal vegetation along the watercourses was dominated by willow *Salix sp.*, hedge bindweed *Calystegia sepium*, groundsel *Senecio vulgaris*, nipplewort *Lapsana communis*, rosebay willowherb *Chamerion angustifolium*, cleavers *Galium aparine* and elder *Sambucus nigra*. The dense scrub along the raised embankment was bramble *Rubus fruticosus* agg. dominant, with frequent butterfly bush *Buddleja davidii*, alexander's *Smyrnium olusatrum*, wild angelica *Angelica sylvestris* and wild teasel *Dipsacus fullonum*.

### Semi-Improved Grassland

- 3.15 The northern extent of area 1 comprised species poor semi-improved unmanaged grassland. False oat grass was predominant, with abundant cock's-foot *Dactylis glomerata* and red fescue *Festuca rubra sens. lat.* and occasional tufted hair grass *Deschampsia cespitosa*. Herb species present included alexander's, greater bird's-foot trefoil *Lotus pedunculatus*, cow parsley *Anthriscus sylvestris*, common mouse ear *Cerastium fontanum*, white dead nettle *Lamium album* and gipsywort *Lycopus europaeus*. Meadowsweet *Filipendula ulmaria* was frequent which suggests the grassland is seasonally inundated.
- 3.16 There was a small section of species-poor semi-improved grassland to the south of area 3. Common bent and red fescues were dominant with locally frequent perennial ryegrass. Frequent herb species included scentless mayweed *Tripleurospermum inodorum*, dandelion and evening primrose *Oenothera biennis*.

### Amenity Grassland

- 3.17 Area 3 presented a very small strip of amenity grassland with dominant perennial ryegrass and occasional dandelion, curled dock *Rumex crispus* and smooth sowthistle *Sonchus oleraceus*.

### Ephemeral/short perennial vegetation

- 3.18 The ephemeral/short perennial vegetation in area 1 was scattered across the areas of bare ground and more extensive on the edges of the ruderal and scrub vegetation. Dominant grass species included Yorkshire fog *Holcus lanatus* and creeping bent *Agrostis stolonifera* with occasional timothy *Phleum pratense*, couch *Elytrigia repens* and Italian ryegrass *Lolium multiflorum*. Dominant herb species included white clover *Trifolium repens* and black medick *Medicago lupulina* with frequent dandelion *Taraxacum agg.*, silver weed, perforate St Johns wort *Hypericum perforatum* and yarrow *Achillea millefolium*.
- 3.19 The southern tip of area 2 waste disposal site presented earth mounds with scattered ephemeral/short perennial vegetation. Species composition was similar to the ephemeral/short perennial vegetation in area 1 with the addition of poppy *Papaver rhoeas*, field speedwell, shaggy soldier *Galinsoga quadriradiata* and knotgrass *Polygonum aviculare*.

### Standing water

- 3.20 P1 was located in the north-east of area 1. It was 4m x 7m in size with occasional emergent vegetation and very dense scrub vegetation on the banks. The pond is connected to the stream by a small inlet and is therefore likely to have a slight flow. The water was turbid at the time of survey.

### Water courses

- 3.21 The Grand Union Canal intersects areas 2 and 3 of the site. It is approximately 10-15 metres wide with a towing path and a small bridge located on the north-east tip of area 3.
- 3.22 Hermitage Brook was located to the east of areas 1 and 2 and had a slow flow northwards. It presented a 5 metre wide by 1.5 metre deep channel with gravel/silt beds. The bank profile was steep on the west with a more gradual profile on the east, with the occasional flat section to the north of the site where grassland existed on both sides of the stream. The stream offered limited

marginal vegetation, with only occasional branched bur reed *Sparganium erectum*. The banks were highly vegetated with occasional small gaps in vegetation only where the bank profile was flat.

### **Buildings**

- 3.23 Five buildings are present on site, all of which were in use as storage, offices or workshops. Details are presented within the fauna section below.

### **Hardstanding**

- 3.24 The majority of areas 2 and 3 consisted of hardstanding with rubble, earth and waste mounds. These areas contained a thin, scattered covering of ephemeral vegetation. Ephemeral vegetation was more abundant around the base of abandoned vehicles, skips and waste materials.

### **Fauna**

#### **Bats**

##### Building Assessment

- 3.25 Five buildings were recorded on site and provisionally assessed by an experienced ecologist for their potential for roosting bats.
- 3.26 Building B1 (see table 4 and appendix 3) is a single storey, brick built office unit with a pitched clay tile roof. The building was generally in a good state of repair with potential bat access points limited to occasional gaps under the overhanging eaves and limited gaps under roof / ridge tiles.
- 3.27 Internally, the roof void of B1 was considered to be sub-optimal to support roof-void dwelling species due to the presence modern breathable lining and modern timber trusses. In addition, it was cobwebbed throughout suggesting bats have not been utilising the roof space (at least within the last year or so). No bat evidence was recorded in association with B1 and the building was considered to offer low potential to support roosting bats.
- 3.28 Buildings B2, B3, B4 and B5 were all considered to provide negligible bat roosting potential due to the single skin flat roofs, lack of roof spaces or underlining and the heavy usage of the buildings (see table 4 and appendix 3)

Table 4 – Bat potential of on-site buildings

Building #	Building construction/ description	Potential bat access	Internal Features	Bat potential
B1	Single storey, brick built office block with pitched clay tiled roof. Internally a roof void approximately 3m high to the ridge was present which was cobwebbed throughout. A modern non-permeable roof lining was present beneath the exterior roof tiles.	The roof was generally in a good state of repair with few potential bat access points observed. Limited potential access through the northern eaves plus a small gap under the east gable barge board Occasional gaps under roof / ridge tiles were noted.	Modern timber trusses, breathable felt throughout. Cobwebbed roof beams.	Low/ limited
B2	Small metal one storey porta-cabin with flat roof and external lighting.	No obvious access points.	No roof void or underlining (felt or sarking)	Negligible
B3	Single storey brick built shed with parapets and corrugated plastic flat roof.	Access through small holes in brick work.	No roof void or underlining (felt or sarking)	Negligible
B4	Single storey corrugated metal workshop with a pitched roof.	No obvious access points.	No roof void or underlining (felt or sarking)	Negligible
B5	Single storey brick built outhouse with a pitched corrugated iron roof and timber lining.	Two open windows.	No roof void or underlining (felt or sarking)	Negligible

### Tree Assessment

- 3.29 The majority of trees within the site boundary were in apparent good health with no obvious suitable features which could support roosting bats. However, five trees within area 3 had small rot holes or a dense covering of ivy (Figure 2, Target Note 1). The mosaic of habitats and linear features present also provide potential commuting and foraging corridors for both bats and other mammal and bird species.

### Nocturnal Survey

- 3.30 During the nocturnal survey, no bats were seen emerging from the building within the survey area. Bat activity in the area comprised commuting common pipistrelle to the north of B1 and a number of foraging and commuting common pipistrelle that were not observed, only heard. In addition a noctule *Nyctalus noctula*, was recorded commuting but not visually observed.

**Birds**

- 3.31 Common bird species were noted within the site including blackbird *Turdus merula*, robin *Erithacus rubecula*, and chaffinch *Fringilla coelebs*. Woody and scrub vegetation on the site provided potential foraging and nesting habitat.

**Badger**

- 3.32 No evidence of badger, including the presence of setts, latrines, hairs, prints and snuffle holes were observed at the time of survey.

**Great Crested Newts (GCN)**

- 3.33 One pond P1 was identified on area 1 of the site, which could provide potential aquatic habitat for great crested newts.
- 3.34 Area 1 provides potential terrestrial habitat within the grassland, scrub and wooded areas in particular in proximity to the pond. Areas 2 and 3 provided limited potential as terrestrial habitat comprising largely hardstanding, although included some rubble mounds within these, which could act as refugia. These areas were partially isolated by existing small roads. No ponds were noted on the OS base within 500 metres. Hermitage Brook provides a barrier to movement to habitats from the east.
- 3.35 No great crested newt records were returned within 1km of the site boundary. Surveys undertaken in 2005 at P1 recorded no great crested newts.

**Reptiles**

- 3.36 The site comprised a mosaic of short and long sward grassland and areas of hard standing which provides suitable basking, foraging and feeding areas for reptiles, in particular within Area 1, with areas 2 and 3 being sub-optimal. Scrub and ruderal communities also provided suitable foraging and refuge for a number of reptile species, with the watercourses also providing a potential corridor of movement for grass snake. .
- 3.37 No records of reptiles were returned as part of the desk study. Surveys in 2005 recorded no reptiles of any species

**Otter**

- 3.38 Evidence of otter was recorded along Hermitage Brook during 2005 on the eastern boundary of the site in the form of prints, paths and slides and potential resting places. A local otter population is known to be present within 1km of the site. No evidence of prints, spraints, resting places or paths were observed during the Phase 1 Survey in 2012. However, the survey was undertaken in sub-optimal conditions following rain which may have washed away evidence.
- 3.39 The brook is considered to provide suitable habitat for foraging otters and is ideally located for otters commuting along the canal.

**Water Vole**

- 3.40 The stream is considered unsuitable for water vole as it is heavily over shaded with dense bank vegetation and limited emergent vegetation.

## 4.0 DISCUSSION AND RECOMMENDATIONS

### Proposals

- 4.1 Proposals for the site include the construction of 2, 3 and 4 bedroom residential housing on areas 2 and 3, with area 1 being retained for community use.

### Statutory designations

- 4.2 There were no statutory designated sites of international nature conservation importance within 5km of the site.
- 4.3 Two statutory designated sites have been identified within 2km of the site boundary; Loughborough Meadows SSSI and Cotes Grassland SSSI. Loughborough Meadows and Cotes Grassland SSSI are located approximately 1.8km and 1.3km, respectively, from the site boundary. They are separated from the site by a main road and a railway line which act as barriers to dispersal. The subject site is also largely surrounded by water courses which are barriers to terrestrial species. Due to the distance and isolation of the subject site from the SSSI's it is not considered there will be any significant impacts and is therefore not a constraint on development.

### Non-statutory designations

- 4.4 No non-statutory Local Wildlife Sites have been identified within the 1km search area.

### Habitats

- 4.5 The degree to which habitats receive consideration within the planning system relies on a number of mechanisms, including:
- Inclusion within specific policy (e.g. veteran trees, ancient woodland and linear habitats in NPPF, or non-statutory site designation),
  - Identification as a habitat of principal importance for biodiversity under Natural Environment and Rural Communities Act (NERC) 2006 and consequently identification as a Priority Habitat within the UK or local Biodiversity Action Plan (BAP).
- 4.6 Under the NPPF development should seek to contribute a net gain in biodiversity where possible.
- 4.7 The habitats present on-site are considered to be of low botanical diversity and complexity. The range of grasses and herbs recorded are mainly common species typical of unmanaged grassland or disturbed ground. The large areas of hardcore, hard-standing and rubble covering much of the southern half of the site are of negligible value.
- 4.8 The most valuable habitats are contained within area 1 which is proposed to be left as community greenspace. Therefore, the impacts of construction on these habitats will be negligible. However, there are likely to be some recreational impacts on damp grassland in area 1 through the direct physical damage of vegetation and alterations to soil structure and hydrology brought about by trampling and compaction. It is recommended that public access is restricted through the use of footpaths to keep trampling on the grassland areas to a minimum.

**Protected and or notable species**

- 4.9 Principal pieces of legislation protecting wild species are Part 1 of the Wildlife and Countryside Act 1981 (as amended) (WCA) and the Conservation of Habitats and Species Regulations 2010. Some species, for example badgers, also have their own protective legislation (Protection of Badger Act 1992). The impact that this legislation has on the Planning system is outlined in ODPM 06/2005 Government Circular: Biodiversity and Geological Conservation – Statutory obligations and their Impact within the Planning System.
- 4.10 This guidance states that as the presence of protected species is a material consideration in any planning decision, it is essential that the presence of protected species, and the extent to which they are affected by proposals is established prior to planning permission being granted. Furthermore, where protected species are present and proposals may result in harm to the species or its habitat, steps should be taken to ensure the long-term protection of the species, such as through attaching appropriate planning conditions for example.
- 4.11 In addition to protected species, there are those that are otherwise of conservation merit, such as UK BAP priority species which are also listed as species of principal importance for the purpose of conserving biodiversity under the Natural Environment and Rural Communities (NERC) Act 2006. These are recognised in the NPPF which advises that when determining planning applications, LPA's should aim to conserve and enhance biodiversity by applying a set of principles including:
- If significant harm resulting from a development cannot be avoided....., adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
  - Development proposals where the primary objective is to conserve or enhance biodiversity should be encouraged.
- 4.12 The implications that various identified species or those that are thought reasonably likely to occur may have for developmental design and programming considerations are outlined below.

**Bats**

- 4.13 Bats and their habitats are protected under the Wildlife and Countryside Act 1981 (as amended) and by the Conservation of Habitats and Species Regulations 2010. In summary this makes it an offence to damage destroy or obstruct any place used by bats for breeding and shelter, disturb a bat, or kill, injure or take a bat. Seven bat species are listed as Species of Principal Importance under the provisions of the NERC Act 2006.
- 4.14 Five boundary trees within area 3 were noted to have small rot holes and a dense covering of ivy which may cover other features suitable for bats. Current proposals indicate the retention of all mature trees. However, if any trees are to be subsequently affected by development in the future, further works including classification of roost potential by a licenced bat worker is recommended to confirm mitigation requirements.
- 4.15 Areas 2 and 3 are considered to be of largely limited value to bats, given the extent of hard standing and lack of linear features along several boundaries in the areas to be developed. Habitats in area 1 provide some greater suitability with more semi-natural habitats and a number of linear features that provide suitable foraging and commuting habitat for use by bats throughout the year; however this area will not be subject to development.

- 4.16 Based on the proposals (retention of linear features such as treelines) the size of the affected area and the limited value of the habitats affected, it is considered that bats are unlikely to be significantly impacted by proposals. Therefore it is considered that transect activity surveys are not required in this circumstance.
- 4.17 However as good practice, it is recommended that, lighting adjacent to existing or potential bat habitats should be kept to a minimum and used only where necessary. Lighting should be implemented in accordance with existing good practice.
- 4.18 The good practice lighting scheme will also be implemented throughout the site and lighting should be minimised to the lowest possible levels. The best practice guidelines (Bat Conservation Trust 2012, Institution of Lighting Professionals 2011) can be broadly summarized to factors such as:
- a) Reducing height of lighting columns,
  - b) Placing lighting away from areas of interest, such as linear features.
  - c) Use of directional lighting.
  - d) Limiting lighting proposals to the minimum required.
  - e) Having lights not operational when not required.
  - f) Use of white rather than yellow lighting.
- 4.19 During the survey, no bat evidence was recorded in association with any of the buildings within the site. The majority of the buildings (B2, B3, B4 and B5) were assessed as having negligible potential for roosting bats and the presence of bats can be reasonably discounted and no further surveys are recommended.
- 4.20 However, limited potential bat access points (limited gaps under eaves, roof tiles) and internal roosting features (modern roof construction) were present in association with B1. Therefore, it was recommended that further bat survey work on B1 was undertaken. Due to the low /limited potential for roosting bats offered by the building, it was considered that one dusk/dawn emergence survey was sufficient to ascertain the presence / likely absence of roosting bats.
- 4.21 During the survey, no bats were seen emerging from or entering B1. In addition, despite suitable conditions, bat activity levels were low with only 1 visually observed bat and 4 non-visual bat contacts. Given the features present on the building and the nocturnal survey results, it is considered that the presence of bats within this structure can be reasonably discounted. Therefore there are no constraints to demolition of the structure.
- 4.22 However in the unlikely event bats are recorded during the demolition, works should cease and further advice sought from a qualified bat consultant.

### **Birds**

- 4.23 The mosaic of grassland, trees and scrub habitat within the site provide potential nesting habitat for a range of bird species potentially present in the local area, including a range of UK BAP and BoCC amber and red list species.



- 4.24 All nesting birds and their nests are protected under the Wildlife and Countryside Act, 1981 (as amended). Any removal of woody vegetation including hedgerow, scrub and trees should therefore occur outside of the bird breeding season (March to August inclusive) to minimise the risk of disturbance to breeding birds. If this is not possible, vegetation should be checked prior to removal by a suitably experienced ecologist. If active nests are found, vegetation should be left untouched and suitably buffered from works until all birds have fledged, as confirmed by the ecologist.

#### **Great crested newts**

- 4.25 Areas of greater value to great crested newts will all be retained in area 1, with the areas to be developed of largely limited value to this species. No ponds will be lost as a result of the development.
- 4.26 Great crested newts (GCN) and their habitats in water and on land are protected under the Wildlife and Countryside Act 1981 (as amended), and by the Conservation of Habitats and Species Regulations 2010. These make it an offence to damage, destroy or obstruct any place used by great crested newts for breeding or shelter, disturb a great crested newt, or kill, injure or take any great crested newt. In addition, great crested newt is a UK Biodiversity Action Plan Priority Species and is listed as a Species of Principal Importance under the provisions of the NERC Act 2006.
- 4.27 One waterbody was identified within the site. GCN surveys were carried out on pond 1 during 2005 and concluded that there was no GCN population within the pond. No water bodies were present off-site within 500m of the site boundary and no GCN records were returned for the search area. It is therefore considered unlikely that any newts would have colonised this pond in the interim period and no further surveys are recommended.

#### **Reptiles**

- 4.28 All common reptiles are protected from killing or injury under the Wildlife & Countryside Act 1981 (as amended) and are priority species on the UKBAP.
- 4.29 Area 1 offers a mosaic of bare ground with a variety of grass sward heights and vegetation structures which provides a suitable habitat for common reptiles. This area will be retained. However, there are no reptile records within 1km of the site and reptile surveys undertaken during 2005 determined the absence of reptiles species on site. Areas 2 and 3 provide more limited suitability, with large areas of hardstanding, which isolate any small areas of more suitable habitat, which are less likely to support reptiles as a result. Scrub areas adjacent to watercourses may provide some limited areas of habitat for grass snake in particular
- 4.30 Given area 1 provides some suitability and there are off-site connections, precautionary mitigation measures are recommended should works affect any suitable habitat. The majority of suitable habitat within the site (area 1) is being retained and enhanced. However, where there is a need for small scale vegetation removal, in order to minimise the risk of adversely impacting upon reptile species, good practice methods are recommended during vegetation clearance. Displacement techniques should be used in suitable areas to be lost. This work should only be undertaken during the active reptile season and during suitable weather conditions (April to October inclusive and temperatures above 10°C with no rain).

The relevant areas should first be slowly directionally strimmed away from the working areas in the direction of appropriate retained habitats either onsite or offsite. Any areas of habitat to be retained should be left uncut. The vegetation should be given two cuts, the first to 200mm and the second 2-3 hours later to 50mm. All arisings should be removed from the working areas to prevent potential areas of refugia from being used by reptiles moving across the area. Any animals caught should be relocated to the retained on-site or off-site habitats. The working areas should be regularly strimmed if necessary during suitable weather to prevent formation of suitable habitat for use by reptiles.

### **Otter**

- 4.31 Otters and their resting places are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation (Natural Habitats & c.) Regulations 1994. It is an offence under these pieces of legislation to kill, injure or take an otter from the wild; to damage or obstruct a holt; or disturb an otter in its resting place. Otters are listed on both the UK BAP and LBAP.
- 4.32 Evidence of otter was recorded along Hermitage Brook during 2005 however, no evidence of prints, spraints, resting places or paths were observed during the Phase 1 Survey in 2012. The survey was undertaken in sub-optimal conditions and it is considered likely otters still utilised both the canal and the brook.
- 4.33 Within the proposed development there will be no impact upon the stream directly however, as otters are active in the local area some precautionary mitigation is recommended to ensure that this species is not affected during the construction phase of the proposed development.
- 4.34 An otter monitoring survey will be conducted by a suitably qualified ecologist prior to each phase of construction. This survey should determine that the level of otter activity has not altered significantly from that described in this report.
- 4.35 Providing that the level of activity has not altered then the mitigation will involve the following precautionary mitigation to ensure that otter are not affected by construction operations:
- Site operatives will be made aware of the presence of otters and the need for a duty of care when working close to the water courses.
  - Where deep excavations are left open over-night shallow, sloping batters and covers will be used to prevent animal becoming trapped in the working area.

### **Water Vole**

- 4.36 The stream was considered to provide sub-optimal habitat for water vole, therefore the impact upon this species can be reasonably discounted. Water voles are not considered to be a constraint on development.

### **Biodiversity Enhancements**

- 4.37 Under NPPF, development should seek to ensure biodiversity on site is maintained and enhanced where possible. This re-development offers the opportunity to enhance the biodiversity of the local area through good landscape design and appropriate management of the undeveloped area 1. It is recommended that the habitats are maintained through the use of a Habitat Management Plan which is likely to include the control of scrub encroachment onto the grassland.

- 4.38 Consideration should also be given to the provision of bird boxes, to be affixed to suitable retained trees to enhance nesting opportunities for birds in the local area and therefore contribute to requirements of NPPF via biodiversity enhancement. A selection of hole- and open-fronted designs should be used in order to encourage a variety of species.
- 4.39 To further enhance the site for bats, and therefore contribute to the requirements of NPPF through enhancement of biodiversity, it is recommended that bat boxes, including hibernation and maternity designs, be erected high up within retained mature trees within or adjacent to habitat corridors.
- 4.40 Consideration should be given to the enhancement of pond 1 and creation of further ponds within the undeveloped community area. These should be designed specifically to maximise their biodiversity value with wide shallow draw down zones, scalloped edges and deep central areas. Ponds should be planted with locally native marginal and aquatic vegetation. A denser and taller area of vegetation should be planted around the peripheries of the ponds to provide additional habitats for invertebrates and terrestrial habitats for amphibians.

## 5.0 SUMMARY

- 5.1 Proposals for the site include the construction of 2, 3 and 4 bedroom residential housing on areas 2 and 3, with area 1 being retained for community use.
- 5.2 There are no statutory designated sites within 5km of the site boundary. Two sites of national importance are located within 2km of the site boundary; Loughborough Meadows SSSI and Cotes Grassland SSSI. It is not considered that there will be any negative impacts upon these sites due to the distance and isolation of the subject site from the designated sites.
- 5.3 There are no non-statutory designated sites within 1km of the site boundary.
- 5.4 The site is considered to be of low biodiversity value within the local area. Features of value within the site include semi-improved grassland, ruderal and scrub communities, woodland and trees.
- 5.5 To avoid disturbance to breeding birds, any removal of woody vegetation will be undertaken outside of the bird-breeding season (March to September inclusive). If this is not possible, vegetation will be checked prior to removal by an experienced ecologist.
- 5.6 There is one pond within the site in area 1. Surveys carried out in 2005 determined the absence of great crested newts at that time and it is considered unlikely that they will have colonised the pond in the interim period.
- 5.7 Surveys carried out in 2005 found reptile species to be absent from the site at that time, however areas of the site remain suitable for reptile species, in particular grass snake, therefore precautionary mitigation measures are recommended.
- 5.8 The stream to the east of the development site is known to support otter, although no evidence was recorded on site in 2012. Precautionary mitigation measure should be following during in the construction phase.
- 5.9 No bat roosts ere recorded within the buildings on site (including one structure which underwent a nocturnal survey) and it is considered that demolition to these structures can proceed without further action.
- 5.10 Potential for further enhancement of the site include the provision of bat and bird boxes, pond creation and appropriate habitat management. Planting should utilise native species where possible.
- 5.11 No evidence of suitable habitat for other protected species was recorded during the Phase 1 Habitat survey.

**Appendix 1 – Target Notes**

Target note number	Area	Description
TN1	Area 3	Five trees were preliminarily assessed as having low bat potential due to dense ivy covering and small rot holes.
TN2	Area 1	There were a number of vehicles, skips and waste materials in the courtyard of area 1. Ephemeral vegetation was abundant around the base of these.

## Appendix 2 – Full Species List

### Semi-Improved grassland

<i>Anthriscus sylvestris</i>	Cow Parsley
<i>Arrhenatherum elatius</i>	False Oat-grass
<i>Carex hirta</i>	Hairy Sedge
<i>Cerastium fontanum ssp. vulgare</i>	Common mouse-ear
<i>Cirsium arvense</i>	Creeping Thistle
<i>Dactylis glomerata</i>	Cock's-foot
<i>Deschampsia caespitosa</i>	Tufted Hair-grass
<i>Epilobium tetragonum</i>	Square-stalked Willowherb
<i>Festuca rubra agg.</i>	Red Fescue
<i>Filipendula ulmaria</i>	Meadowsweet
<i>Hordeum murinum</i>	Wall Barley
<i>Hypericum perforatum</i>	Perforate St. John's-wort
<i>Hypochaeris radicata</i>	Common Cat's-ear
<i>Lamium album</i>	White Dead-nettle
<i>Lolium perenne</i>	Perennial Rye-grass
<i>Lotus pedunculatus</i>	Large Bird's-foot-trefoil
<i>Lycopus europaeus</i>	Gipsywort
<i>Medicago lupulina</i>	Black Medick
<i>Oenothera biennis</i>	Common Evening-primrose
<i>Plantago major</i>	Greater Plantain
<i>Senecio jacobaea</i>	Common Ragwort
<i>Smyrniolum olusatrum</i>	Alexanders
<i>Taraxacum officinale agg.</i>	Dandelion
<i>Tragopogon pratensis</i>	Goat's-beard
<i>Trifolium arvense</i>	Hares-foot clover
<i>Tripleurospermum inodorum</i>	Scentless mayweed

### Trees

<i>Acer pseudoplatanus</i>	Sycamore
<i>Betula pendula</i>	Silver Birch
<i>Crataegus monogyna</i>	Hawthorn
<i>Corylus avellana</i>	Hazel
<i>Fraxinus excelsior</i>	Ash
<i>Malus sylvestris sens. lat.</i>	Apple
<i>Salix caprea</i>	Goat Willow
<i>Salix fragilis</i>	Crack Willow
<i>Sambucus nigra</i>	Elder
<i>Salix cinerea</i>	Grey Willow
<i>Sorbus aria</i>	Whitebeam
<i>Robinia pseudoacacia</i>	False Acacia
<i>Quercus robur</i>	Pedunculate Oak
<i>Ulmus glabra</i>	Wych Elm

### Ephemeral/ Short Perennial

<i>Achillea millefolium</i>	Yarrow
<i>Agrostis stolonifera</i>	Creeping Bent
<i>Anagallis arvensis</i>	Scarlet Pimpernel
<i>Artemisia vulgaris</i>	Mugwort
<i>Atriplex prostrata</i> agg.	a goosefoot
<i>Capsella bursa-pastoris</i>	Shepherd's-purse
<i>Chamerion angustifolium</i>	Rosebay Willowherb
<i>Cirsium arvense</i>	Creeping Thistle
<i>Convolvulus arvensis</i>	Field Bindweed
<i>Conyza canadensis</i>	Canadian Fleabane
<i>Elytrigia repens</i>	Common Couch
<i>Epilobium hirsutum</i>	Great Willowherb
<i>Epilobium montanum</i>	Broad-leaved Willowherb
<i>Epilobium parviflorum</i>	Hoary Willowherb
<i>Galinsoga quadriradiata</i>	Shaggy Soldier
<i>Glyceria fluitans</i>	Floating Sweet-grass
<i>Holcus lanatus</i>	Yorkshire-fog
<i>Hypericum perforatum</i>	Perforate St. John's-wort
<i>Juncus bufonius</i> agg.	Toad Rush [agg.]
<i>Lactuca serriola</i>	Prickly Lettuce
<i>Leontodon autumnalis</i>	Autumnal Hawkbit
<i>Lolium multiflorum</i>	Italian Rye-grass
<i>Lolium perenne</i>	Perennial Rye-grass
<i>Medicago lupulina</i>	Black Medick
<i>Melilotus officinalis</i>	Ribbed Melilot
<i>Oenothera biennis</i>	Common Evening-primrose
<i>Papaver rhoeas</i>	Common Poppy
<i>Pastinaca sativa</i>	Wild Parsnip
<i>Persicaria maculosa</i>	Redshank
<i>Phleum pratense</i> sens.lat.	Timothy
<i>Picris echioides</i>	Bristly Oxtongue
<i>Plantago lanceolata</i>	Ribwort Plantain
<i>Plantago major</i>	Greater Plantain
<i>Poa annua</i>	Annual Meadow-grass
<i>Polygonum aviculare</i> agg.	Knotgrass [agg.]
<i>Potentilla anserina</i>	Silverweed
<i>Potentilla reptans</i>	Creeping Cinquefoil
<i>Ranunculus repens</i>	Creeping Buttercup
<i>Rumex obtusifolius</i>	Broad-leaved Dock
<i>Solidago canadensis</i>	Canadian Goldenrod
<i>Sonchus oleraceus</i>	Smooth Sow-thistle
<i>Stachys sylvatica</i>	Hedge Woundwort
<i>Tanacetum vulgare</i>	Tansy
<i>Taraxacum officinale</i> agg.	Dandelion
<i>Trifolium pratense</i>	Red Clover
<i>Trifolium repens</i>	White Clover
<i>Tripleurospermum inodorum</i>	Scentless Mayweed
<i>Urtica dioica</i>	Common Nettle
<i>Veronica agrestis</i>	Green Field-speedwell
<i>Vicia sativa</i>	Common Vetch

### Ephemeral vegetation (Area 3)

<i>Achillea millefolium</i>	Yarrow
<i>Anisantha sterilis</i>	Barren Brome
<i>Anthriscus sylvestris</i>	Cow Parsley
<i>Artemisia vulgaris</i>	Mugwort
<i>Bellis perennis</i>	Daisy
<i>Calystegia sepium</i>	Hedge Bindweed
<i>Conyza canadensis</i>	Canadian Fleabane
<i>Crepis biennis</i>	Rough Hawks-beard
<i>Equisetum arvense</i>	Field Horsetail
<i>Euphorbia peplus</i>	Petty Spurge
<i>Fallopia convolvulus</i>	Black Bindweed
<i>Geranium robertianum</i>	Herb-robert
<i>Holcus lanatus</i>	Yorkshire-fog
<i>Lactuca serriola</i>	Prickly Lettuce
<i>Lamium purpureum</i>	Red Dead-nettle
<i>Linaria purpurea</i>	Purple Toadflax
<i>Lolium perenne</i>	Perennial Rye-grass
<i>Persicaria maculosa</i>	Redshank
<i>Poa annua</i>	Annual Meadow-grass
<i>Potentilla anserina</i>	Silverweed
<i>Rubus fruticosus agg.</i>	Bramble
<i>Senecio jacobaea</i>	Common Ragwort
<i>Senecio squalidus</i>	Oxford Ragwort
<i>Senecio vulgaris</i>	Groundsel
<i>Stellaria media</i>	Common Chickweed
<i>Tussilago farfara</i>	Colt's-foot

\*some species included in the ephemeral list may also be found in the semi-improved grassland

#### Tall Ruderal and Scrub

<i>Angelica sylvestris</i>	Wild Angelica
<i>Buddleja davidii</i>	Butterfly-bush
<i>Carex hirta</i>	Hairy Sedge
<i>Calystegia sepium</i>	Hedge bindweed
<i>Chamerion angustifolium</i>	Rosebay Willowherb
<i>Convolvulus arvensis</i>	Field Bindweed
<i>Crocsmia x crocosmiiflora</i>	Montbretia
<i>Dactylis glomerata</i>	Cock's-foot
<i>Dipsacus fullonum</i>	Wild Teasel
<i>Foeniculum vulgare</i>	Fennel
<i>Galium aparine</i>	Cleavers
<i>Hedera helix ssp. helix</i>	Common Ivy
<i>Juncus effusus</i>	Soft Rush
<i>Lapsana communis</i>	Nipplewort
<i>Lycopus europaeus</i>	Gipsywort
<i>Rubus fruticosus agg.</i>	Bramble
<i>Salix cinerea</i>	Grey Willow
<i>Scrophularia nodosa</i>	Common Figwort
<i>Senecio jacobaea</i>	Common Ragwort
<i>Senecio vulgaris</i>	Groundsel
<i>Solanum nigrum</i>	Black Nightshade



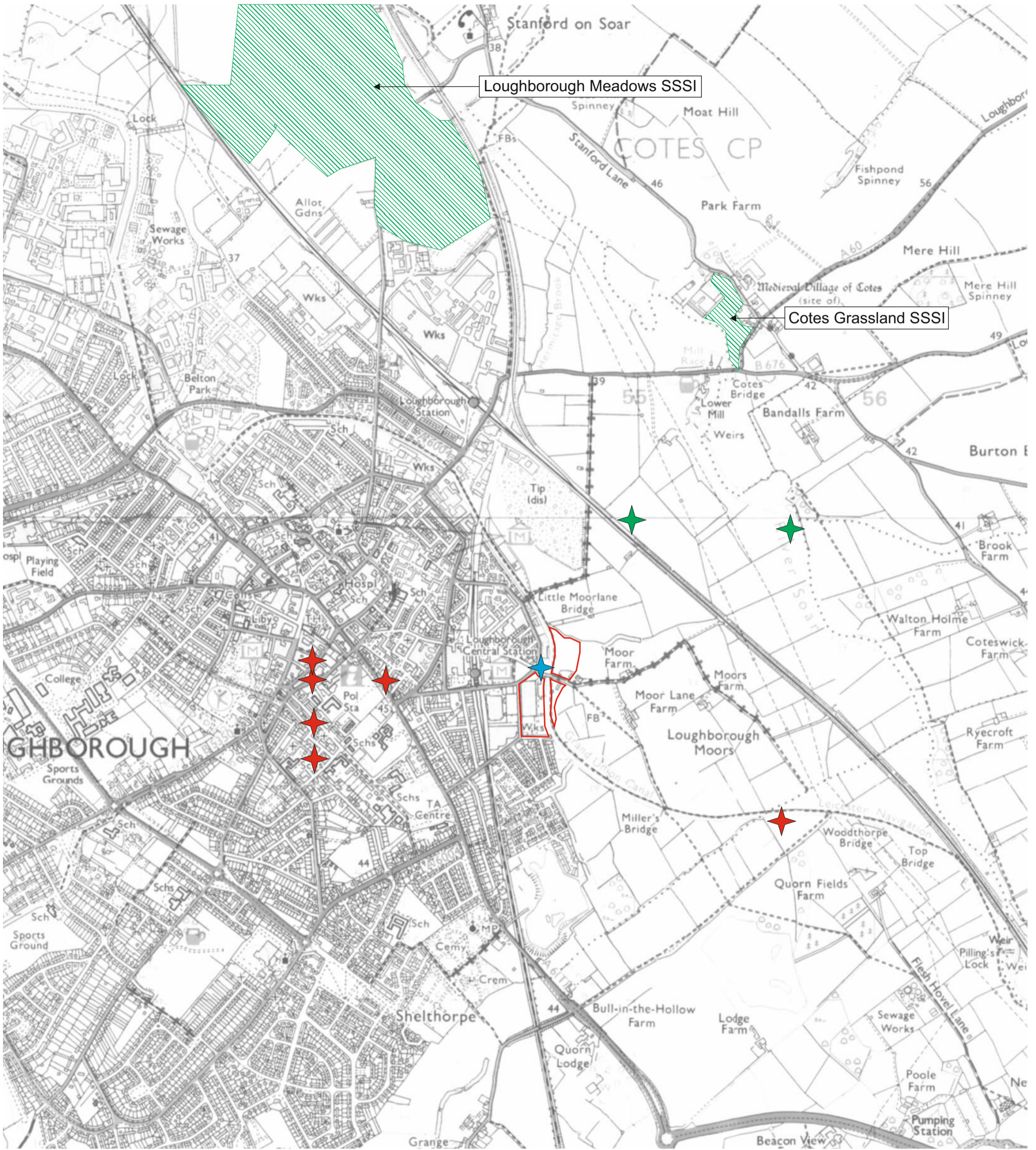
*Solidago canadensis*

Canadian Goldenrod

### Appendix 3 – Building descriptions and bat potential

Building reference number	Building construction/ description	Structural features						Features of note	Potential Bat access	Evidence of occupation
		Gables	Barge boards	Soffits	Facias	Flashing	Roof void			
B1	One storey, brick built office block with pitched clay tiled roof. Internally a roof void approximately 3m high to the ridge was present which was cobwebbed throughout. A modern non-permeable roof lining was present beneath the exterior roof tiles.	✓	✓	✓	✓	×	✓	Some mortar missing on gable end tiles. External lighting on all sides of the building.	The roof was generally in a good state of repair with few potential bat access points observed. Access into roof void was noted through the northern eaves plus a small gap under the east gable barge board. Occasional gaps under roof / ridge tiles were noted.	None
B2	Small metal one storey porta-cabin with flat roof and external lighting.	×	×	×	×	×	×	None	No obvious access points.	None
B3	Single storey brick built shed with parapets and corrugated plastic flat roof.	×	×	×	×	×	×	Large amount of cobwebs inside the building.	Very limited access through small holes in brick work.	None
B4	Single storey corrugated metal workshop with a pitched roof.	✓	×	×	×	✓	×	None	Unsuitable for bats	None
B5	Single storey brick built outhouse with a pitched corrugated iron roof and timber lined. Outhouse used for storage and very open to light.	×	×	✓	✓	×	×	Timber lintels about the doors.	Two open windows	None

## FIGURES



-  Site Boundary
-  Statutory Designated Site
-  Otter  
*Lutra lutra*
-  Water Vole  
*Arvicola amphibius*
-  Common Pipistrelle Bat  
*Pipistrellus pipistrellus*

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Holmes Antill  
Windmill Lane, Loughborough  
Leicestershire

SITE LOCATION AND  
DESK TOP DATA PLAN

NTS @ A3







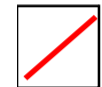
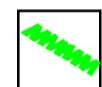




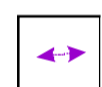





MRG

September 2012



**Figure 1**



-  Improved grassland
-  Amenity grassland
-  Rank/rough grassland
-  Scrub
-  Woodland
-  Hardcore /bare earth
-  Site boundary
-  Hedgerow
-  Hardstanding
-  Tree
-  Open Water
-  Building
-  Mammal paths
-  Earth piles
-  Wood /vegetation piles
-  Brick piles
-  Unprocessed scrap
-  Target notes



The Sowden Group  
Windmill Lane, Loughborough

**EXTENDED PHASE 1 SURVEY PLAN**

**Figure 2**

not to scale October 2005