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PRELIMINARY ECOLOGICAL APPRAISAL

Stud Farm, Barnsley
Report Reference: BG16.133
March 2016



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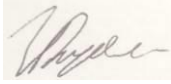
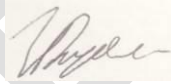
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1 Summary

- 1.1 Brindle & Green Ecological Consultants Ltd were commissioned by YGI Limited to undertake a Preliminary Ecological Appraisal incorporating a Phase 1 Habitat Survey and Protected Species Assessment at Stud Farm, Barnsley. This report summarises the potential ecological constraints to the full planning application for the development of fifteen residential properties, including the renovation of a farmhouse and conversion of two farm buildings. Proposed site plans are presented in Appendix 6 of this report. The survey was carried out on the 8th March 2016.
- 1.2 The project area is approximately 0.8 ha in total and was dominated by bare ground and improved grassland with a semi-mature treeline and areas of scattered trees and scrub recorded throughout the site. Five buildings were positioned within the southern end of the site which were a former farmstead.
- 1.3 The habitats described within this report have the potential to support a number of protected and/or notable species and as such, further protected species surveys and mitigation methods have been recommended to inform the baseline ecological impacts associated with the proposed development of the site. A full description of the recommendations can be found within Chapter 7, below is a summary of the ecological issues recommended for further consideration as a result of our initial investigations:

Ecological Consideration	Recommendations (e.g. further survey, mitigation)	Timing
Breeding Birds	Initial remedial works should avoid the period between March and August inclusive. Where this is not possible, developers should consider and implement other options appropriate to their scheme (Chapter 7).	Remedial works should take place between October and February, inclusive

Roosting Bats	Low potential buildings should be subjected to a single emergence survey. High potential buildings should be subject to three emergence/re-entry surveys.	May- September
Badger	An ecological 'toolbox talk' should be provided to all site personnel prior to development works commencing.	Pre-development

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2 Introduction

- 2.1 The purpose of this assessment was to provide a Preliminary Ecological Appraisal of the site incorporating a Phase 1 Habitat Survey and Protected Species Assessment to establish the likelihood of the site supporting protected species. The survey provides detail on the need for any additional, more detailed protected species surveys, likely mitigation and any opportunities for enhancement.
- 2.2 The project area is approximately 0.8 ha in total and incorporates the farmstead of Stud Farm, Barnsley (Figure 1). The site is located within the village of Carlton, between the villages of Royston and Athersley. Residential development borders the south-western boundary of the site, with Carlton Parish Church to the north-west. Church Lane lies adjacent to the north-eastern boundary and Spring Lane to the south-eastern boundary with residential development beyond. Site access is located on both the north-eastern and south-eastern site boundaries from Church Street and Spring Lane. Barnsley Canal lies approximately 440m to the north-east of the site and a dismantled railway lies approximately 870m to the east of the site. The site is the subject of a full application for the development of 15 residential properties including the renovation of the current farmhouse, conversion of two of the barns/farm buildings on site and demolition of the remaining two buildings. Design proposals for the site are presented in Appendix 6 of this report.
- 2.2 The legislation relevant to protected species within the United Kingdom is summarised within Appendix 5.
- 2.3 Results and recommendations contained within this report have been prepared by an experienced ecologist and are therefore the view of Brindle & Green Limited. The survey is based on information provided by our client, the development proposals, and the results of the desk study and our survey of the site. This report pertains to this information only.

3 Methodology

3.1 Desk Study

Table 1 below lists organisations and/or resources used as part of the desk study process. Data regarding any known statutory or non-statutory sites in addition to any records for protected species were requested from the following sources:

Table 1. Ecological Data Resources

Consultant	Requested Data	Search Radius	Date Requested
Sheffield Biological Records Centre	Protected and notable species records Local, National and International Site Designations	1.5km	09/03/2016
MAGIC Maps	National and International Site Designations Granted EPS Development Licences	2km	15/03/2016
Curious Ecologists	Curious Ecologists Extended Phase 1 (including Protected Species Survey) under Application No. 2012/0120	N/A	N/A

3.2 Surveyors

Survey carried out by Zoe Dryden BSc (Hons.), Ecologist.

The survey was supervised by Chris Needham BSc (Hons.) MSc. MCIEEM.

3.3 Survey Conditions

The survey was undertaken at 09:00am on the 8th March 2016.

The outside temperature was recorded as 6°C, with dry, sunny conditions, and 3/8 cloud cover.

3.4 Extended Phase 1 Habitat Survey

- 3.4.1 A Phase 1 habitat survey was undertaken following survey guidance (JNCC 2007) to establish the presence and distribution of habitat types within the site and potential ecological constraints to development. A Phase 1 Habitat Map was produced (Appendix 1) and where additional details were required Target Notes have been provided (Appendix 2). A plant species list (Appendix 2) summarising all plants identified on site was produced during the survey, all scientific nomenclature was produced according to Stace (2010).
- 3.4.2 Hedgerows on site were assessed following the Hedgerow Survey Handbook (DEFRA 2007), and defined as species-rich if the structural species making up a surveyed 30m section of hedgerow included at least four native woody species. Results were compiled and assessed against qualifying criteria within the Hedgerow Regulations (1997) and also the UK Biodiversity Action Plan.
- 3.4.3 This survey was extended to note the potential for habitats on-site to support protected and/or notable species including the identification of the suitability of structures for roosting bats, grassland for reptiles, hedgerows for birds and trees for birds and bats. The habitats on site were assessed for their suitability to support protected species in relation to the habitat type found at the site. Any incidental sightings of field signs were noted at the time of survey. Where evidence of, or the confirmed presence of a protected species was identified, further, species specific surveys may be recommended to ensure that the presence or otherwise of a legally protected species is fully considered prior to the determination of any planning approval or guide an EPS development licence.
- 3.4.4 Legislation, guidance and methodology for species relevant to this site are presented in full within Appendix 3 of this report.

3.4.5 Site Evaluation

The habitat and species communities on site were classified into one of the following 6 groups (Table 2), depending on the importance of the habitat community on a local, national or international scale. This table was constructed following The CIEEM EcIA Guidelines, Terrestrial, Freshwater and Coastal (2016) pages 16-17.

Table 2. Definitions of each of the six evaluation brackets, indicating the importance of each habitat type and an example of their possible habitat status.

Evaluation Value	Comparable example
International	An internationally designated site or candidate site, including habitat or species included within Special Protection Areas (SPA) / Special Areas of Conservation (SAC), Ramsar Sites, listed under Annex 1 of the Habitats Directive.
National	Sites designated at UK level, e.g. Sites of Special Scientific Interest (SSSI), supporting species considered nationally threatened or rare. A regularly occurring regionally or county significant population/number of any nationally important species A feature identified as of critical importance within Section 41 of the NERC Act (2006).
Regional	Key Habitat type included within BAP. A regularly occurring, locally significant number of a regionally important species.
County	Designated sites, such as Sites of Biological Importance (SBIs) or viable habitat / species populations of value at a county level (LBAP).
District	District level designated sites, such as Local Wildlife Sites (LWS) or habitats / species populations of value at a district (Which have features qualifying for LWS status). Sites/features that are scarce within the district or which appreciably enrich the district habitat resource.
Local / Site	Habitats or species populations of value in a local (i.e. within ~ 5km of the site) context. Habitats of poor to moderate biological diversity e.g. established conifer plantations, species poor hedgerows and un-intensively managed grassland which supports species which are common to the local area and whose loss can be easily mitigated.

3.5 Limitations

- 3.5.1 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment. The protected and notable species assessment provides a preliminary view of the likelihood of these species occurring on site, based upon the suitability of the habitats, known distribution of the species in the local area and any direct evidence on site. It should not be taken as providing a full and definitive survey of any protected species group.
- 3.5.2 The assessment was undertaken outside of the optimal survey period for phase 1 survey. Certain habitat types such as amenity grassland can be surveyed at any time of the year where the species that they comprise vary very little. Where habitats are more complex and support species with different growing seasons they may be recommended for further more detailed assessments at the appropriate time of the year.

3.6 Report Lifespan

Given the transient nature of the subject we would consider the survey results contained to be accurate for 2 years.

4 Site Context

4.1 Site Description

The application site can be found at: Grid Ref. SE 36624 10088. The site was positioned within a row of detached and semi-detached houses along a residential street, Spring Lane, in the village of Carlton. Church Street bordered the north-eastern boundary of the site and Carlton Parish Church to the north-west of the site, beyond which was residential housing. The site held some connection to the surrounding environment by a network of residential gardens surrounded by linear features including fences and tree lines. The wider environment, outside the village of Carlton, consisted of a large amount of arable fields divided by hedgerows and scattered woodland.



Figure 1. OS map of the project site and surrounding area.

Red line boundary depicts application site.

4.2 **Zone of Influence**

The zone of influence describes the geographic extent of potential impacts of a proposed development. The small scale of suitability of the wider landscape to support foraging bats and birds, coupled with suitable roosting and foraging habitat increases the likelihood of these species being present on site, particularly with the presence of residential development and gardens with surrounding tree lines and fencing connecting the site to the wider environment.

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5 Results

5.1 Desk Study

5.1.1 Designated Sites

The site was subjected to a search for designated sites within a 1.5km radius of the site using data supplied by the Local Records Centre (Sheffield Biological Records Centre) and the online desk based resource MAGIC.

5.1.1.1 Local Records Centre

The data supplied by Sheffield Biological Records Centre was received on the 16th March and is summarised within Table 3. One Statutory and one Non Statutory Site was recorded within a 1.5km radius of the site.

Table 3. Summary of Designated Sites with a 2km radius of the application site

Site Name	Grid Ref	Status	Habitats present on site	Distance and orientation from project site
Carlton Marsh	SE 379 099	LWS/LNR	Ponds, Neutral Grassland, Swamp, Reedbed.	0.9km E
Barnsley Canal	SE 336 084	LWS	Floodplain and Grazing Marsh, Ponds, Lowland Meadows/Neutral Grassland, Lowland Dry Acidic Grassland, Rivers, Wet woodland/willow carr.	0.4km NE

5.1.1.2 Magic Maps

A 2km radius search of the online resource Magic Maps failed to identify any further designated sites.

5.1.2 Protected Species Assessment

Data supplied by Sheffield Biological records Centre also included records of protected species. Full datasets are presented within Appendix 8 of this report. A summary of the closest or most relevant records can be seen in Table 4 below.

Table 4. Summary of relevant protected and priority species records

Species	Grid ref.	Date	Description
Pipistrelle (<i>Pipistrellus</i> <i>sp.</i>)	SE370090 SE3709 SE379103 SE3610 SE363099 SE364104 SE363106 SE370111	1987 - 2014	88 records, closest of which was 0.2km west of the application boundary. Most records were located at Carlton Marsh, approximately 0.9km east of the site. Other locations can be seen in Appendix 9 of this report.
Daubenton's bat (<i>Myotis</i> <i>daubentoni</i>)	SE370090 SE365095 SE379103 SE3710	1993 - 2014	19 records, closest of which was approximately 0.45km south of the application site. Other locations can be seen in Appendix 9 of this report.
Noctule (<i>Nyctalus</i> <i>sp.</i>)	SE3709 SE3710 SE379103	1978 - 2014	28 records, most of which were within Carlton Marsh, approximately 0.9km east of the site. Other locations can be seen in Appendix 9 of this report.
Grass Snake (<i>Natrix natrix</i>)	SE3710 SE379100 SE370090	1991 - 2012	28 records, all within Carlton Marsh, approximately 0.9km east of the site.
Slow-worm (<i>Anguis</i> <i>fragilis</i>)	SE3609	2000	1 record approximately 1.2km south-west of site in Carlton.
Song Thrush (<i>Turdus</i> <i>philomelos</i>)	SE3710 SE3610	1977 - 2013	101 records, 100 of which were recorded at Carlton Marsh, approximately 0.9km from site.
Starling (<i>Sturnus</i> <i>vulgaris</i>)	SE363099 SE3710	1980 - 2009	47 records, 3 closest were approximately 0.3km west of site, rest were Carlton Marsh.
Fieldfare (<i>Turdus pilaris</i>)	SE363099 SE3610 SE3710	1976 - 2013	173 records, closest of which was approximately 0.3km west of site. 2 were at Carlton Canal, rest were at Carlton Marsh.
Redwing (<i>Turdus iliacus</i>)	SE3710 SE356101	1976 - 2013	174 records, 173 of which were approximately 0.9km east of site at Carlton Marsh.
House Sparrow (<i>Passer</i> <i>domesticus</i>)	SE363099 SE3710 SE3611	1977 - 2012	49 records, 6 closest were approximately 0.3km west of site. 4 were over 1km north of site and rest were at Carlton Marsh.

5.2 Habitats

5.2.1 The habitat types recorded on site are summarised below, and the frequency and distribution of habitat types is displayed within a Phase 1 Habitat Survey Map (Appendix 1 and 2).

5.2.2 Table 5 provides a list of habitat types present on site along with their inclusion (or otherwise) in National (NBAP) and/or Local Biodiversity Action Plans (LBAP).

(It should be noted that additional information is included within the text where a classification under Phase 1 survey methodology does not mirror habitat types considered to be conservation priorities).

Table 5. JNCC Habitat Types found on site and inclusion within UK BAP habitats.

Habitat Type	NBAP	LBAP	N/A
Improved Grassland			✓
Bare Ground			✓
Scattered Trees			✓
Scattered Scrub			✓
Hard Standing			✓
Buildings			✓

5.2.3 Improved Grassland

5.2.3.1 The northern half of the site was dominated by improved grassland habitat. Maps and anecdotal evidence suggested that it had previously been utilised as grazing pasture. However, the grassland had been left unmanaged for in excess of two years prior to the survey following a change of ownership. The grassland appeared unmanaged at the time of survey with a varied sward length from 5cm to 100cm. Two further areas of improved grassland were recorded; one to the north of Buildings 2 and 3 and one to the south of Building 1, both of which were unmanaged. Within these areas the grassland was generally shorter, up to 50cm, in length. Maps and anecdotal evidence suggested that the small area of grassland to the south of Building 1 had comprised part of a residential garden.

5.2.3.2 At the time of survey all three areas were dominated by timothy grass (*Phleum pratense*), cock's foot (*Dactylis glomerata*), cleavers (*Galium aparine*) and common nettle (*Urtica dioica*), with abundant cow parsley

(*Anthriscus sylvestris*) and willowherb (*Epilobium sp.*) and frequent creeping buttercup (*Rannunculus repens*), rough chervil (*Chaerophyllum temulum*), ground ivy (*Glechoma hederacea*) and moss (*Brachythecium rutabulum*). However, due to the time of year in which the survey was undertaken, it was not possible to identify all grass species present on site. Additional species which appeared less often included hairy bittercress (*Cardamine hirsuta*), creeping thistle (*Cirsium arvense*), spear thistle (*Cirsium vulgare*), dandelion (*Taraxacum agg.*), ribwort plantain (*Plantago lanceolata*), ragwort (*Senecio jacobaea*), dead nettle (*Lamium sp.*) and dock (*Rumex sp.*).



Figure 2. Improved grassland field comprising the northern half of the site.

5.2.4 Bare Ground

5.2.4.1 There were two areas of bare ground at the southern end of the site, to the east and west of Building 1, which were undergoing some vegetation clearance. The Extended Phase 1 by Curious Ecologists (2012) suggests that one of these areas of bare ground, to the west of Building 1, used to be an area of amenity grassland surrounded by thick tree and shrub cover, utilised as a residential garden. The report also demonstrates that the bare ground to the east of Building 1 used to contain a large, commercial greenhouse. However, upon arrival on site, it was clear that site clearance had included the removal of both the greenhouse to the east of Building 1 and any

previously occurring vegetation to the east and west of Building 1. Large brash piles and wood chippings within these areas of bare ground suggested that site clearance had included ash (*Fraxinus excelsior*), sycamore (*Acer pseudoplatanus*), pine (*Pinophyta*) and bramble (*Rubus fruticosus*).

5.2.4.2 Some species had colonised the outskirts of the cleared ground to the east and west of Building 1. These included creeping buttercup, cleavers, vetch sp. (*Vicia sp.*), ribwort plantain, nettle, dandelion, ragwort, cock's foot, cow parsley and rough chervil. In addition, an area to the south-east of Building 1 was dominated by ivy (*Hedera helix*), with moss, occasional daffodil (*Narcissus pseudonarcissus*), snowdrop (*Galanthus nivalis*) and patches of scattered scrub.



Figure 3. Bare ground to the west of Building 1.



Figure 4. Bare ground in the eastern corner of the site. Building 5 visible in the background.

5.2.5 Scattered Trees

A number of scattered trees were recorded across the site, and were clustered along the south-eastern and south-western boundaries. Individual semi-mature sycamore was recorded in these areas, with the addition of oak (*Quercus sp.*) at the south-western boundary and occasional lime (*Tilia sp.*) and oak at the south-eastern boundary. Occasional immature hawthorn (*Crataegus monogyna*) and cherry laurel (*Prunus laurocerasus*) was present at the northern end of the south-west boundary. Ash and elder (*Sambucus nigra*) saplings were scattered across the site and a single immature pine was present at the south-east corner of Building 1. In addition, a semi-mature tree line was present across the centre of the site, dividing the area of improved grassland at the northern end of the site and the buildings and bare ground to the south. This tree line was dominated by holly (*Ilex aquifolium*), with a single semi-mature sycamore, immature ash and sycamore. Outside of the north-east boundary, a number of mature sycamore were overhanging the boundary.



Figure 5. Scattered tree line at the centre of the site.

5.2.6 Scattered Scrub

There were areas of scattered scrub throughout the site, the largest areas of which were present to the north of the tree line in the centre of the site and on the south-western boundary, adjacent to residential gardens. Scrub comprised willowherb, bramble, with occasional butterfly bush (*Buddleja sp.*) present to the north of Building 2 and dog rose (*Rosa canina*) present to the north of the holly tree line.



Figure 6. Scrub present at the northern end of the south-western boundary,

5.2.7 **Hard Standing**

Hard standing was present at the north-eastern boundary at the access point from Church Street and surrounding the eastern side of Building 1 and the southern side of Building 3.

5.2.8 **Buildings**

There were five buildings on site which can be seen in the Phase 1 Map in Appendix 1. Building 1 was the main farmhouse, Building 5 was an old air raid bomb shelter and Buildings 2, 3 and 4 were farm buildings utilised for equine stabling and a slaughterhouse/butchers used for storage. Only two of the buildings contained loft spaces, Buildings 1 and 3. All buildings were assessed for their suitability to support protected species, which is detailed in Appendix 9 of this report.

5.3 Fauna

5.3.1 Breeding Birds

5.3.1.1 Sheffield Biological Records Centre returned records of 106 bird species, many of which were wetland species. A large majority of records were collected from Carlton Marsh LNR and LWS. Scattered trees throughout the site, a tree line running through the centre of the site and epicormic ivy growth located on the roof of Building 5 and the walls of Building 1B all provided potential nesting habitat for common bird species. In addition, during the survey, disused birds' nests were found in Buildings 2, 3 and 4, one of which was swallow (*Hirundo rustica*). Several incidental bird records were also noted during the survey including kestrel (*Falco tinnunculus*), house sparrow (*Passer domesticus*), dunnoek (*Prunella modularis*), starling (*Sturnus vulgaris*), blackbird (*Turdus merula*), robin (*Erithacus rubecula*) and blue tit (*Cyanistes caeruleus*).

5.3.1.2 Based on a review of the habitat types on site and the list of bird species recorded in the local area, the site is considered to support an assemblage of bird species including some species considered to be of high conservation concern that are either legally protected or UK BAP species, such as starling, house sparrow, tree sparrow (*Passer montanus*), song thrush (*Turdus philomelos*), fieldfare (*Turdus pilaris*) and redwing (*Turdus iliacus*).

5.3.2 Roosting Bats

5.3.2.1 Sheffield Ecological Records Centre returned 137 bat records, of which; 28 were noctules (*Nyctalus sp.*), 19 were Daubenton's (*Myotis daubentoni*), 2 were unknown bat species (*Chiroptera*) and the rest were pipistrelles (*Pipistrellus sp.*). The closest record was of a pipistrelle, just 200m west of the application site.

5.3.2.2 Scattered, semi-mature and mature trees were present throughout the site. Visible trees were assessed and categorised based upon Bat Conservation Trust guidance (see Appendix 5), several of which were found to have Low Potential to support roosting bats due to the presence of cracks, holes, broken branches or thick ivy cover. However none of the trees on the application site were valued as having Moderate or High Potential.

5.3.2.3 The site contained five buildings in total. Following an internal inspection, it was established that only two of these buildings contained roof voids. An external inspection showed that three buildings had tiled roofs, all of which contained slipped and cracked tiles. All information gathered during internal and external building inspections pertaining to existing features which may be suitable to support roosting bats are detailed in Appendix 9 of this report. Each building was categorised following Bat Conservation Trust Guidelines (see Appendix 5), and awarded one of the following categories for its potential to support roosting bats (Table 7):

High	Moderate	Low	Negligible	None
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Table 7. Summary of Bat Roost potential and evidence found within each of the thirteen buildings/structures.

Building Number	Evidence Recorded (e.g. droppings, staining, feeding remains)	Potential Roosting Features	Bat Roost Potential
1A	No evidence.	Lifted roof tiles. Gap in roof under lifted/missing roof tile provides entrance point. Gap in floorboards of loft provides another potential void under the floor.	Low
1B	No evidence.	Lifted and slipped roof tiles. Potential void between sarking and roof tiles.	Low
2	No evidence.	Missing mortar under end roof tiles. Missing mortar from stone walls. Cavities in stone walls.	Low
3A	No evidence.	Unable to enter loft space. Gaps between fascia boards and wall. Lifted roof tiles. Large crack in join between Buildings 3A and 3B.	Low
3B	High number of feeding remains (butterfly wings). A single dropping.	Hole in roof apex, providing entrance. Missing mortar from under ridge tiles. Material lining under roof tiles-potential cavity.	High
3C	No evidence.	Missing stone and mortar from internal wall- provides access to wall cavity.	Low
4A	No evidence.	Gaps between wooden lintels of window and wall. Gaps in mortar on external wall shared	Low

		by Building 4B.	
4B	No evidence.	Slipped, missing and lifted roof tiles. Plasterboard and underlining of tiles create potential cavity.	Low
5	No evidence.	Concrete roof and brick walls intact. Only cavities are spaces between doorway lintels and brick.	Negligible

5.3.3 Foraging and Commuting Bats

The site supported features considered suitable for commuting and foraging bats. Linear features which could be utilised by commuting individuals included a semi-mature tree line at the centre of the site, a mature tree line immediately adjacent to the north-eastern boundary and scattered trees throughout the site. All of these provided connective habitat across the site, providing commuting pathways to the wider environment. These features may subsidise treelines and fences surrounding residential gardens in the village of Carlton.

5.3.4 Badgers (*Meles meles*)

5.3.4.1 Records relating to certain protected species including badger sett locations are sensitive in nature, and due to the risk of public interference are kept confidential. Details of results relating to badger have not been included in the main body of the report due to their sensitive nature, but are contained within a confidential appendix to support the planning submission (Appendix 10).

5.3.4.2 No evidence of badger setts, or activity such as mammal runs, snuffle holes and latrines were found during the survey of the site. In addition, it was clear that a significant amount of vegetation clearance had recently been undertaken and was, in parts of the site, still underway. Suitable habitats on site were ultimately limited to several patches of scattered scrub, suggesting that badgers are unlikely to be using the site.

5.3.5 **Great Crested Newts** (*Triturus cristatus*)

Sheffield Biological Records Centre returned no records of great crested newts within 1.5km of the application site. In addition, no ponds were recorded within 500m of the application site boundaries and there was no aquatic habitat present on site. Terrestrial habitat in the form of grassland of a mixed length sward, scrub and numerous brash piles were present on the application site. However, due to the lack of suitable aquatic habitat within 500m of the site, great crested newts are deemed unlikely to be present in the local surrounding environment.

5.3.6 **Reptiles**

Sheffield Biological Records Centre returned 28 records of grass snake (*Natrix natrix*) within 1.5km of the application site, all of which were located in Carlton Marsh, over 0.9km east of the site. A single record of slow-worm (*Anguis fragilis*) was recorded 1.2km south-east of the site. No evidence of reptiles was recorded during the survey. Potential reptile habitat including grassland, scrub and a large number of brash piles were present on site. However, the site was relatively isolated from further suitable reptile habitat by the residential development in the village of Carlton, beyond which was arable farmland divided by hedgerows. The site was relatively flat, providing little to no basking habitat for common species of reptile and there was no aquatic habitat on or around the site, a habitat favoured by common species of reptile such as grass snake.

6 Evaluation

6.1 Development Proposals

The site is the subject of a full application for the development of 15 residential properties including the renovation of a farmhouse and the conversion of two farm buildings. Design proposals for the site are presented in Appendix 6 of this report.

6.2 Desk Study Impacts

Direct impacts on nearby designated sites as a result of the proposed development are considered unlikely. The application site is positioned over 400m east of Barnsley Canal Local Wildlife Site (LWS) and over 900m east of Carlton Marsh Local Nature Reserve (LNR) and LWS. Although linear features/habitats could connect Barnsley Canal to the application site and it is conceivable for birds and bats to utilise these linkages, the application site is not of a large enough proportion to support large populations of birds. In addition, there were no comparative habitats on the application site which may have had the potential to subsidise the protected habitats of these local wildlife sites and it is therefore difficult to substantiate an effect from the development and impacts on locally designated sites are considered unlikely.

6.3 Habitats

The site was dominated by improved grassland, scattered trees and scattered scrub, all of which have been evaluated as being of low ecological value in a local and regional context. Although there were several semi-mature and mature trees present on the application site, their value was significantly reduced by the presence of a mature tree line adjacent to the northern site boundary and multiple mature scattered trees adjacent to the southern boundary. The loss of these habitats on site is unlikely to impact the local surrounding environment.

6.4 Breeding Birds

The vegetation on site was considered to support suitable nesting habitat for a number of common bird species, and has the potential to support birds of local and national interest. Although the scattered trees and small amount of scrub on site are unlikely to support significant populations, they have the

potential to support small numbers of fieldfare, redwing and song thrush. Disused nests found in three of the buildings on site suggest that buildings have the potential to support small numbers swallow, starling and tree sparrow. In addition, the thick ivy cover of building 5 could provide nesting habitat for house sparrow and other garden bird species. Nesting birds, their nests, eggs and dependent young are fully protected under the Wildlife and Countryside Act 1981 (as amended) and therefore impacts on nesting birds will need to be considered further, in particular in relation to timing of any further clearance works to prevent direct or indirect impacts on nesting individuals. The recommendations section (Chapter 7) of this report sets out important guidance on measures to avoid impacts on these species and measures to support their conservation status.

6.5 Roosting Bats

Scattered trees on site were considered to have Low Potential to support roosting bats, these are outlined in Appendix 1 & 2 of this report. Design proposals and information from the client suggest that most of these trees are to be retained, however it is possible that a small number are to be removed. Removal of these trees could cause disturbance or injury to roosting bats, and the loss of suitable roosting habitat. Bats are protected under The Wildlife and Countryside Act 1981 (as amended) and The Conservation of Habitats and Species Regulations 2010 (as amended). The recommendations section (Chapter 7) of this report sets out important guidance on measures to avoid impacts on these species and measures to support their conservation status.

6.6 Foraging and Commuting Bats

The scattered trees and tree lines may provide useful commuting and foraging habitat for bat species. Design plans suggest that the treeline immediately outside the northern site boundary and many of the mature and semi-mature scattered trees on site are to be retained. Although, it is not clear as to whether some trees are to be removed, impacts to commuting and foraging individuals as a result of this development are considered unlikely. No further works are recommended in relation to foraging and commuting bats.

6.7 **Badgers**

Suitable habitat on site was limited to some scattered scrub and there was no evidence such as setts, mammal runs, snuffle holes or latrines found during the survey. It is confidently assessed that badgers are not reliant upon the application site. However, it is possible that this highly transient species may pass through the site or utilise it for foraging purposes. Badgers are protected by The Protection of Badgers Act 1992, and it is highly possible that badgers passing through the site could become trapped or injured by machinery and building works. Chapter 7 sets out important guidance on measures to avoid impacts on this species and measures to support its conservation status.

6.8 **Great Crested Newts**

There was no suitable aquatic habitat for great crested newts present on or around the application site. Although suitable terrestrial habitat including a grass sward of varying height, scrub and dead wood was present on site, the lack of suitable breeding habitat on and around the application site suggests that great crested newts are unlikely to be present in the surrounding area.

Impacts to local newt populations as a result of this development are considered unlikely and therefore no further work regarding great crested newts are recommended.

6.9 **Reptiles**

The slow-worm record returned by the local records centre was over 1km away from the application site and the grass snake records were located at a Local Wildlife Site 0.9km away, separated from the site by the village of Carlton and a canal, both of which act as barriers to dispersal. Although a small amount of scrub and grassland was present on site, the site did not support a particularly varied habitat and is unlikely to support a significant reptile population. In addition, the recent disturbance to the site caused by trespassers on site and vegetation removal are likely to have deterred reptile species. This, combined with the isolated location of the site, the lack of habitat variation and the flat topography of the site (providing little basking habitat) suggest that reptiles are unlikely to be utilising the site. Reptiles are therefore unlikely to be impacted as a result of this development and no further work regarding reptiles is recommended.

7 Recommendations

The site requires further survey effort to establish the extent of impact to the ecological value of the application site. This information can then be used to guide the Master Plan to ensure that mitigation is employed to retain and enhance local biodiversity.

7.1 Breeding Birds

Breeding Birds	Timing
Recommendations	
Vegetation on site has been identified as being suitable for use by breeding birds. Given their protection, development must be sympathetic to the value of this habitat and potential impacts on breeding birds, their eggs, nests and young. The breeding bird season is generally accepted as being between March and September. Developers should consider and implement the options appropriate to their scheme; a) Undertake vegetation clearance between the months of October and February where possible. b) Any hedgerow proposed for removal between the months of March and September can be netted prior to the commencement of the breeding bird season. This process should be undertaken by a suitably experienced ecologist and the netting should be checked and monitored by an ecologist during its use. c) Any vegetation proposed for removal between the months of March and September should be subjected to a search for active birds' nests 24 hours prior to commencement of works. This should confirm whether all or some clearance is achievable. d) In addition to a pre works check and where netting hasn't been used, the clearance of vegetation between the months of March and September should be supervised by a suitably experienced ecologist.	Initial remedial works should avoid the period between March and August inclusive
Enhancement Prescriptions	
To enhance the development proposal and support National Planning Policy Framework (NPPF) 2012 targets to improve biodiversity, nest boxes could be erected within any new development to provide	Post construction.

additional breeding habitat.	
In particular nest boxes for species such as house sparrows (<i>Passer domesticus</i>), starling (<i>Sturnus vulgaris</i>), swallows (<i>Hirundo rustica</i>), and swifts (<i>Apus apus</i>) should be targeted. An experienced ecologist should be consulted when deciding the type of boxes and their location in order to achieve best results with regards to breeding bird recruitment.	

7.2 Roosting Bats

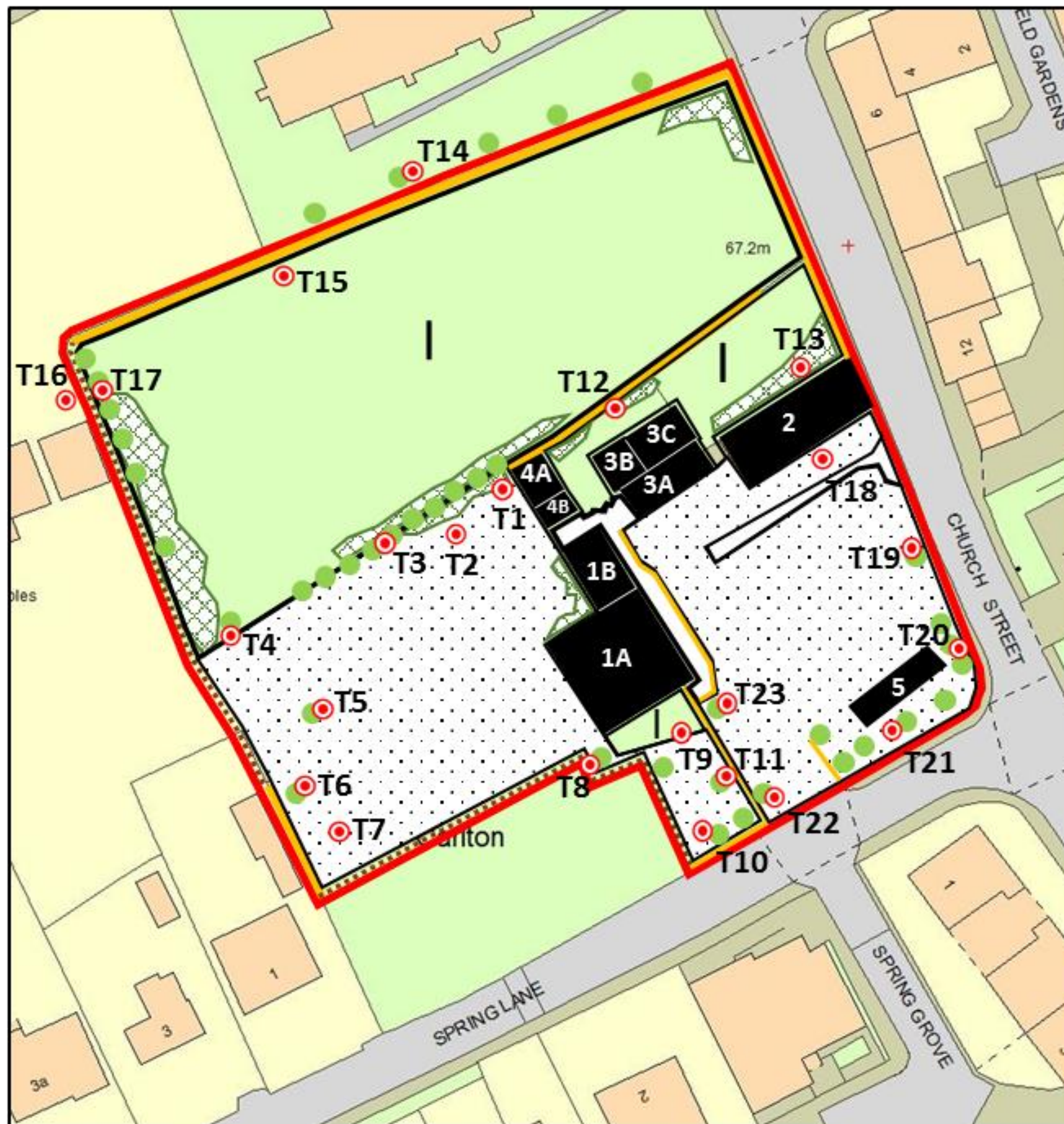
Roosting Bats	Timing
Recommendations	
The following buildings have been awarded Low Potential for their suitability to contain roosting bats: Buildings 1A, 1B, 2, 3A, 3C, 4A and 4B. The following building has been awarded High Potential for its suitability to contain roosting bats: Building 3B. Consequently the above buildings will require further bat surveys to determine the presence of roosting bats and establish any significant movements of bats on site. Buildings should be assessed following the BCT guidelines (Appendix 5) for building assessment. The number of surveys required will be dependent on the building classification; - High Potential buildings will require three dusk/dawn surveys. - Moderate Potential will require two dusk/dawn surveys. - Low Potential will require one dawn survey. Several trees on site were awarded Low Potential to support roosting bats (see Appendix 1 & 2). Design plans suggest that a large number of these trees are to be retained. If any of these trees are to be removed, then they should be soft-felled under the supervision of a suitably experienced ecologist.	For High Potential buildings only: Three surveys between May and September (with at least two surveys undertaken between May and August) For Low Potential buildings only: One survey between May and August
Enhancement Prescriptions	
Design proposals may require amendment following the results of further survey work.	N/A

7.3 Badgers

Badgers	Timing
Recommendations	
It is confidently assessed that badgers are not dependent on the application site. Despite the absence of field signs and potential deterrence from public activities, it is possible that badgers, a highly transient species, may intermittently use the site as connectivity to the adjacent woodland. The recommended mitigation measures are as follows: An ecological 'toolbox talk' should be provided to all site personnel prior to development works commencing. The 'toolbox talk' should include information pertaining to the ecology and protection of badgers, a brief description of field signs and who to contact should badgers be encountered during development works. Any excavations left overnight are to be covered at the end of each working day, or include a means of escape, such as wood planks. In addition, any temporarily exposed open pipe systems are to be capped in such a way as to prevent badgers gaining access.	Pre-development. During construction.
Enhancement Prescriptions	
N/A	N/A

Appendix 1. Phase 1 Habitat Plan

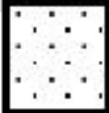
DRAFT



Phase one Habitat Survey

Project: BG16.133

Stud Farm, Barnsley

-  Improved Grassland
-  Scrub
-  Hard Standing
-  Bare Ground
-  Buildings
-  Scattered Trees
-  Stone Wall
-  Fencing
-  Target Note

**brindle&
green**
ecological consultants

Date Created: 09/03/2016

Appendix 2. Phase 1 Target Notes

Target Note Number	Description
T1	Dilapidated greenhouse with smashed glass and remnants of some building foundations- client suggests that a garden centre used to be present on site.
T2	Numerous brash piles along southern edge of holly tree line. Debris includes rubbish and recently felled tree trunks, branches and scrub.
T3	Tall semi-mature unmanaged row of scattered holly with some immature ash and sycamore. All holly are Low Potential as main trunks aren't visible in many cases. All other immature and semi-mature individuals here have Negligible Potential.
T4	Semi-mature oak surrounded by immature elder next to western boundary garden fences - Negligible Potential. Immature pine trees in adjacent garden.
T5	Mature sycamore- partially rotten with several broken branches- Low Potential. Tree trunk recently split, causing part of the tree to fall down onto neighbouring garage. Client in process of removing the fallen section.
T6	Semi-mature sycamore surrounded by ivy, preventing visibility of parts of the trunk- Low Potential.
T7	Numerous brash piles and scrub remains. Machinery present processing brash etc.
T8	Immature pine- Negligible Potential.
T9	Large brash pile containing remnants of trees and pile of wood chippings adjacent.
T10	One immature oak heavily covered with ivy and two semi-mature sycamore with some ivy cover. All Negligible Potential. Ground here is dominated by ivy, with some elder regeneration.
T11	Mature sycamore to south of Building 1 at western side of stone wall - no broken branches present, but trunk heavily covered with ivy, making visibility difficult. Low potential.
T12	Debris against wall – roof tiles, bricks, stone and fence posts etc. Butterfly bush and sapling sycamore and ash against southern side of wall.
T13	Disturbed area with tyre marks running through the middle from improved grassland field to western end of Building 2. Dominated by moss, willowherb and nettle.
T14	Multiple large mature sycamore beyond northern site boundary in church yard, branches hanging over into site. Moderate Potential.
T15	The Immature elder, sycamore and holly just inside northern boundary wall. All Negligible Potential.
T16	Multiple immature, semi-mature and mature trees beyond western site boundary in adjacent garden, including holly, cherry laurel, silver birch and pine.
T17	Immature ash, elder and hawthorn amongst scrub at western boundary. Holly and cherry laurel hanging over western boundary onto site. All Negligible Potential.
T18	Building materials including breezeblocks and brick stacked up against south-eastern wall of Building 2.

T19	Semi-mature sycamore
T20	Immature oak and sycamore at east/south-east end of Building 5. All negligible potential.
T21	Two mature lime, some semi-mature sycamore with ivy cover preventing clear visibility – all Low Potential. Ground here dominated by ivy. Some immature trees-ash and sycamore – Negligible Potential.
T22	Semi-mature sycamore – Low Potential.
T23	Semi-mature tree – Low Potential.

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Plant Species List with DAFOR Scale

Scientific nomenclature follows Stace (2010) for vascular plant species and common names follow BSBI List of British & Irish Vascular Plants and Stoneworts.

Please note that this plant species list was generated as part of a Phase 1 Habitat survey, and does not constitute a full botanical survey.

Abundance was estimated using the DAFOR scale as follows: D = dominant, A = abundant, F = frequent, O = occasional, R = rare, LF = locally frequent

Common Name	Scientific Name	Estimated Abundance (DAFOR)
Ash	<i>Faxinus excelsior</i>	O
Hairy Bittercress	<i>Cardamine hirsuta</i>	R
Blackberry	<i>Rubus fruitcosus</i>	F
Butterfly Bush	<i>Buddleja sp.</i>	R
Cherry Laurel	<i>Prunus laurocerasus</i>	R
Cleavers	<i>Galium aparine</i>	D
Cocks-Foot	<i>Dactylis glomerata</i>	D
Common Nettle	<i>Urtica dioica</i>	D
Cow parsley	<i>Anthriscus sylvestris</i>	A
Creeping Buttercup	<i>Rannunculus repens</i>	F
Creeping Thistle	<i>Cirsium arvense</i>	O
Dead Nettle	<i>Lamium sp.</i>	O
Daffodil	<i>Narcissus pseudonarcissus</i>	O
Dandelion	<i>Taraxacum agg.</i>	O
Dock	<i>Rumex sp.</i>	O
Dog Rose	<i>Rosa canina</i>	O
Elder	<i>Sambucus nigra</i>	F
Ground Ivy	<i>Glechoma hederacea</i>	F
Hawthorn	<i>Crataegus monogyna</i>	O
Holly	<i>Ilex aquifolium</i>	O
Ivy	<i>Hedera helix</i>	D
Lime	<i>Tilia sp.</i>	O
Moss	<i>Brachythecium rutabulum</i>	F
Oak sp.	<i>Quercus sp.</i>	O
Pine	<i>Pinus sp.</i>	R
Ragwort	<i>Senecio Jacobaea</i>	O
Ribwort Plantain	<i>Plantago lanceolata</i>	O
Rough Chervil	<i>Chaerophyllum temulum</i>	F
Silver Birch	<i>Betula pendula</i>	O
Snowdrop	<i>Galanthus nivalis</i>	O
Spear Thistle	<i>Cirsium vulgare</i>	O
Sycamore	<i>Acer pseudoplatanus</i>	F
Timothy	<i>Phleum pratense</i>	D
Vetch sp.	<i>Vicia sp.</i>	R
Willowherb sp.	<i>Epilobium sp.</i>	A

Appendix 3. General References

- Bat Conservation Trust's 'Good Practice Survey Guidelines' (Rev 2012).
- Bell, S. McGillivray, D. (2006) *Environmental Law*. 6th ed. Oxford University Press.
- Byron, H (2000) *Biodiversity and Environmental Impact Assessment: A Good Practice Guide for Road Schemes*. The RSPB, WWF-UK, English Nature and the Wildlife Trusts, Sandy.
- Collins, J (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines*, (3rd edition), Bat Conservation Trust, London
- Defra (2007) *Hedgerow Survey Handbook; A standard procedure for local surveys in the UK*. Defra, London
- Gilbert G, Gibbons DW, Evans J. (1998) *Bird Monitoring Methods: Breeding Bird Survey* (pages 389-393). RSPB.
- Harris S, Cresswell P and Jefferies D (1989). *Surveying Badgers*.
- Joint Nature Conservation Committee (JNCC) *Handbook for Phase 1 habitat survey* (2003). JNCC.
- Langton T, Beckett C and Foster J (2001) *Great Crested Newt Conservation Handbook*. Froglife, Halesworth
- Mitchell-Jones A.J. McLeish, A.P. (2004) *Bat Workers Manual* (3rd Edition). Joint Nature Conservation Committee.
- Mitchell-Jones A.J. *Bat Mitigation Guidelines* 2004. English Nature.
- Oldham R.S., Keeble J., Swan M.J.S. & Jeffcote M. (2000). Evaluating the suitability of habitat for the Great Crested Newt (*Triturus cristatus*). *Herpetological Journal* 10 (4), 143-155
- Rodwell, J.S. Joint Nature Conservation Committee (JNCC). *National Vegetation Classification: Users' handbook* (2006). JNCC.
- Strachan R. MoorHouse T, and Gelling M (2011) *Water Vole Conservation Handbook*. (3rd Edition) Wildlife Conservation Research Unit.
- Rose, F. (2006). *The Wild Flower Key* (Revised edition). Penguin books Ltd, London
- Stace, C. (2010). *Field Flora of the British Isles*. Cambridge University Press
- Sutherland, W.J. (1996) *Ecological Census Techniques*. Cambridge University Press.
- Treweek, J. (1999) *Ecological Impact Assessment*. Blackwell Science.
- Williams, C. (2010) *Biodiversity for Low and Zero Carbon Buildings, A Technical Guide for New Build*. Riba Publishing.

Appendix 4. Legislation, Policy and Guidance

Articles of British wildlife and countryside legislation, policy guidance and both Local and National Biodiversity Action Plans (BAPs) are referred to. The articles of legislation are:

- The Wildlife and Countryside Act 1981 (as amended)
- The Conservation of Habitats and Species Regulations 2010 (as amended)
- Department for Communities and Local Government. National Planning Policy Framework. March 2012
- EC Council Directive on the Conservation of Wild Birds 79/409/EEC
- National Parks and Access to the Countryside Act 1949
- The Protection of Badgers Act 1992
- Land Drainage Act 1991
- The Countryside and Rights of Way Act 2000
- The Natural Environment and Rural Communities Act 2006
- The United Kingdom Biodiversity Action Plan 2006
- Hedgerow Regulations 1997
- Town and Country Planning Act 1990
- Local Biodiversity Action Plan (LBAP).

Appendix 5. Legislation, Guidance and Methodology in Relation to the Identified Constraints

Legislation, Guidance and Methodology

Birds

All nesting birds are protected under the Wildlife and Countryside Act 1981, which makes it an offence to intentionally kill, injure or take any wild bird or take, damage or destroy its nest whilst in use or being built, or take or destroy its eggs. In addition, for species listed on Schedule 1 of the Wildlife and Countryside Act 1981 it is an offence to intentionally or recklessly cause disturbance at, on or near an 'active' nest.

The bird breeding season is typically accepted to start in February and continue through until August, however breeding birds can be found all year round depending on the given species and climatic conditions.

A site's habitat composition, locality, association to designated sites as well as current usage and management are all considered in the decision as to whether further bird related surveys are required. In addition, surveys may be recommended based on incidental bird records collected during a Preliminary Ecological Appraisal, species identified within an ecological data search or target species listed within a local biodiversity action plan.

Bird surveys are carried out in accordance with:

Gilbert G, Gibbons DW, Evans J. (1998) *Bird Monitoring Methods*. RSPB.

Survey Timing

Breeding Bird surveys (BBS): Four visits, evenly spaced between mid-April and mid-June. The standard BBS methodology may require amendment based on climate and weather conditions, the complexity of habitats within a site, the perceived ecological interest of a site and the extent of the survey area.

Wintering Bird surveys (WBS): Four visits, evenly spaced between October and February. The standard WBS methodology may require amendment based on climate and weather conditions, the complexity of habitats within a site, the perceived ecological interest of a site and the extent of the survey area.

Species Specific Surveys: Certain species owing to their migration patterns, habitat requirements, nocturnal habits and other ecological behaviours should be surveyed as per their given methodologies stated within Gilbert, G. et al (1998).

Roosting Bats

All bats in the United Kingdom and their habitats are fully protected under the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2010 (as amended).

It is an offence to damage or destroy any bat roost, intentionally or recklessly obstruct a bat roost, deliberately, intentionally or recklessly disturb a bat or intentionally kill, injure or take any bat.

Areas of concern; can be encountered in many types of structure and care should

therefore be taken when undertaking maintenance or demolition of suitable structures and trees.

Site assessments of buildings, commuting and foraging habitat and trees are undertaken in accordance with:

Collins, J (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines, (3rd edition), Bat Conservation Trust, London

Preliminary Ecological Surveys look for evidence of bat presence such as feeding remains, bat droppings, roosting individuals and staining around potential access points.

The suitability of site features were also assessed because absence of bat evidence, is not confirmation of a negative result. Within buildings these features include suitable enclosed spaces such as slipped or missing roof tiles, gaps and cracks in brickwork, enclosed roof voids, accessibility into wall spaces, gaps along ridge rafters, joints in roof beams and the presence of suitable soffits and fascias.

Within tree features searched for include; natural holes, woodpecker holes, cracks/splits in major limbs, loose bark, hollows, and dense cover of ivy over the tree.

If evidence is found, or a building supports features conducive to supporting roosting bats then further presence / absence bat surveys and/or roost characterisation surveys are recommended.

Survey Timing:

Preliminary Ecological Appraisals can be undertaken throughout the year.

Presence /absence surveys and roost characterisation surveys are undertaken during the bat activity season between **May and September** (Specific timings are relative to the suitability of a structure for supporting protected species and weather dependent)

Bat Activity Transect surveys are carried out between **April and October** (weather dependent)

Hibernation surveys are carried out from **November to March**.

Guideline for assessing the suitability of a structure to support roosting habitat (Buildings and Trees), amended from Collins, J (2016).

Category	Description of roosting habitat	Number of presence / absence surveys required
No Potential	The structure or tree is wholly unsuitable for a bat roost.	None
Negligible Potential	Suitable cavities may exist but these are open to wind, rain or disturbance.	None
Low Potential	This category describes a structure with one or more potential roost sites that could be used by individual bats opportunistically, that less than ideal in	One survey between May and August

	some way. For example, the feature may be subject to intermittent disturbance, and does not provide enough shelter, conditions* space and/or suitable surrounding habitat (e.g unlikely to support a maternity or hibernation roost). This category described a tree of sufficient size and age to support roosting bats, but with no features observed from the ground, or the features only have a limited potential to support roosting bats.	Trees – No further surveys required
Moderate Potential	This category describes a structure or tree considered to have one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions* and surrounding habitat but are unlikely to support a roost of high conservation status (With regard to roost type only – assessments are made irrespective of species conservation status, which is established after presence is confirmed) Features considered to have adequate potential would include cavities of appropriate dimensions that are generally free from disturbance and free from fluctuations in the weather.	Two surveys between May and September (with at least one survey undertaken between May and August) One Dusk emergence and One Dawn re-entry survey to be ideally undertaken at least two weeks apart.
High Potential	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions* and surrounding habitat.	Three surveys between May and September (with at least two surveys undertaken between May and August) One Dusk emergence and One Dawn re-entry survey to be undertaken. The third survey can be either Dusk or Dawn. The surveys should ideally be undertaken at least two weeks apart.
Confirmed	This category is where positive evidence of bats has been recorded. For example, bats are found; bat droppings may be present at a suitable location for roosting bats; existing bat records may be associated with the	Three surveys between May and September (with at least two surveys undertaken between May and August)

	structure.	One Dusk emergence and One Dawn re-entry survey to be undertaken. The third survey can be either Dusk or Dawn. The surveys should be undertaken at least two weeks apart.
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(* in this context conditions refers to the level of disturbance, light, height above ground, temperature, and humidity etc)

If bats are discovered emerging or re-entering any structure, the survey schedule should be appropriately adjusted to increase the survey effort so that sufficient information for roost characterisation can be collected to advise the planning application or EPS development license.

Foraging and Commuting bats

Habitat features on site were assessed for their suitability to support foraging and commuting bat populations. This assessment was independent from the suitability of the site to support roosting bats, and provides information on the likeness of bat foraging activity within the local environment, and the dependence of individuals on these features for commuting to alternative roosting sites, foraging and migration.

Potential suitability of foraging and commuting habitat within an application boundary. Features should be assessed following this guide and professional judgement. Adapted from Collins J (2016)

Category	Description of commuting and foraging habitat	Survey effort to establish the value of commuting and foraging habitat**
Negligible Potential	Negligible habitat features on site likely to be used by commuting or foraging bats	None
Low Potential	Habitat which could be used by low numbers of commuting bats such as an isolated gappy hedgerow, or an unvegetated stream unconnected to suitable habitat in the wider environment. Suitable, yet isolated habitat that could be used by foraging bats such as individual trees, or a patch of scrub.	Transect /spot count/ timed search survey: One survey visit per season: Spring- April/ May Summer- June/July/ Aug Autumn – Sept/ Oct In weather conditions conducive to finding bats AND Static automated surveys: One location per transect, over a five-night period, per season: Spring- April/ May

		Summer- June/July/ Aug Autumn – Sept/ Oct In weather conditions conducive to finding bats <i>Further survey may be required if surveys reveal higher activity than predicted from habitat alone</i>
Moderate Potential	Continuous habitat connected to the wider landscape that could be used by commuting bats, notably tree lines, hedgerows or linked back gardens. Habitat that is connected to the wider landscape which could be used by bats for foraging such as trees, open water, scrub or grassland.	Transect /spot count/ timed search survey One survey visit per month (April to October) In weather conditions conducive to finding bats At least one survey should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period. AND Static automated surveys: Two locations per transect, over a five-night period, per month (April to October) In weather conditions conducive to finding bats
High Potential	Continuous, High-quality habitat that is well connected to the wider landscape which is considered to be highly conducive to commuting bats including river valleys, stream, hedgerows, and woodland edge High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree lined watercourses, and grazed parkland. Site is close to and connected to known roosts.	Transect /spot count/ timed search survey Up to two survey visit per month (April to October) In weather conditions conducive to finding bats At least one survey should comprise dusk and pre-dawn (or dusk to dawn) within one 24-hour period. AND Static automated surveys:

		Three locations per transect, over a five-night period, per month (April to October) In weather conditions conducive to finding bats
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(** This is only a guide for survey effort required, the complexity of the site and the proposed disturbance / loss of features will determine the extent of works required on a site by site basis).

Badgers (*Meles meles*)

Badgers are protected under the Protection of Badgers Act 1992. It is illegal to wilfully kill, injure, disturb or take any badger, or attempt to do so and it is an offence to intentionally or recklessly damage, destroy, or obstruct access to any part of a badger sett.

Site assessments are undertaken in accordance with:
Harris S, Cresswell P and Jefferies D (1989). *Surveying Badgers*.

Badgers can be found along the side of arable fields but as their main diet is earthworms they are more commonly found where there is a patchwork of undisturbed grassland areas where an abundant supply of earthworms can be found. Consequently badgers are more common in areas that are used for grazing farm animals. Other features to be aware of when assessing the likelihood of badgers are suitable hedgerows, woodland and bankings where badgers are able to excavate setts. Also badgers prefer well drained areas and are less common where the water table is relatively high over large areas.

If these types of suitable features are found in or around the project site then badger surveys are recommended.

Survey Timing

Badger surveys can be carried out throughout the year.

Amphibians

The great crested newt (*Triturus cristatus*) and atterjack toad (*Bufo calamita*), are fully protected under Schedule 5 of the wildlife and countryside Act 1981. The legislation protects these amphibians and their place of shelter or protection which may extend 500 metres from the breeding pond.

Great Crested Newt (*Triturus cristatus*)

The great crested newt (*Triturus cristatus*), is fully protected under Schedule 5 of the wildlife and countryside Act 1981 (As amended) and the Habitat regulations 2010, making it an offence to intentionally or recklessly kill, injure, disturb or take great crested newts, intentionally or recklessly damage destroy or obstruct access to any place used by the animal for shelter or protection.

The legislation protects these amphibians and their place of shelter or protection which may extend 500 metres from the breeding pond. Sites should be considered

suitable to support great crested newts if distribution and historical records suggest newts may be present, there is a pond within 500 metres of the development and the development site includes refuges (eg log piles or rubble), grassland, scrub, woodland or hedgerows.

Great crested newt site assessments are undertaken in accordance with: English Nature. (2001) *Great Crested Newt Mitigation Guidelines*. English Nature, Peterborough. and Langton T, Beckett C and Foster J (2001) *Great Crested Newt Conservation Handbook*. Froglife, Halesworth.

When searching for ponds, Brindle & Green apply a total of 4 sources to establish their location; reducing the likelihood of ponds being missed (where one mapping tool may not be 100% accurate). The following sources are used:

OS MAPPING VIA PRO MAP
GOOGLE EARTH PRO
GOOGLE MAPS
OS MAP VIEWER
ON SITE WALKOVER

Great crested newts (GCNs) are found in non-flowing water bodies that are free from high pollution levels, do not contain fish large fish (that can eat GCN eggs and larvae) and have adequate aquatic vegetation or dead leaves for GCNs to lay their eggs on. GCNs can be found foraging or hibernating within the terrestrial habitat linked to their breeding ponds. The surrounding habitat is therefore assessed for its suitability to accommodate GCN.

Habitat Suitability Index (HSI)

The waterbodies identified for survey were initially assessed via GCN Habitat Suitability Index (HSI) score for each of the waterbodies (Oldham et al, 2000).

The HSI is scored between 0 and 1 and can be interpreted as follows:

- <0.5 = poor
- 0.5 – 0.59 = below average
- 0.6 – 0.69 = average
- 0.7 – 0.79 = good
- >0.8 = excellent

Survey Timing:

Mid-March to Mid-June.

Presence/absence surveys of ponds

Undertake at least 4 visits between mid-March and mid-June with at least 2 visits in peak season (usually mid-April to mid-May). Using three methods per visit (preferably torch survey, bottle trapping and egg searching)

Population size class assessments in ponds

Undertake at least 6 visits (if you found newts during the first 4 presence/absence visits) between mid-March and mid-June with at least 3 visits in peak season (usually mid-April to mid-May)

Use torch surveys and bottle trapping on each visit.

Survey adult newts in spring to estimate whether the population is small, medium or large (You can combine results from multiple ponds if the newts regularly move between them, but only for counts you got on the same visit).

The maximum adult count per pond per night, peak counts per pond overall and total site count can be used to calculate the class population:

small - maximum counts up to 10

medium - maximum counts between 11 and 100

large - maximum counts over 100

Reptiles

Two species of reptile, the Sand Lizard (*Lacerta agilis*) and Smooth Snake (*Coronella austriaca*) and their habitats, are fully protected under Schedule 5, Section 9 of the Wildlife and Countryside Act 1981. All other native British reptiles are protected against intentional killing and injury.

British reptiles are found in exposed undisturbed areas. For example, areas without cultivation with differing areas of grassland sward length. Suitable areas include abandoned sand quarries, fallow farmland land, heathland, post-industrial land, railway corridors etc. Grass snake (*Natrix natrix*) are often found in areas of tall vegetation near water bodies.

Common lizard and slow worm favour areas of longer grassland with opportunities to bask in more open areas. Slow worm favour grassland, hedgerows, woodland borders (as do adder) and rural gardens, all of which are present on or near the site. Grass snake can be found near ponds and suitable habitat exists near a number of ponds on site for this species.

If these types of suitable features are found then reptile surveys are recommended.

Edgar P, Foster J and Baker J (2010) Reptile Habitat Management Handbook. Amphibian and Reptile Conservation, Bournemouth.

Gent T and Gibson S (2003) Herpetofauna Workers Manual. JNCC, Peterborough.

Survey Timing.

Surveys can only be undertaken during suitable weather conditions (Between March and September) when temperatures are between 9° C and 18° C. Consequently, the best time of year to survey is spring and autumn.

Botanical Value

There are 60 plant species listed in Schedule 8 of the Wildlife and Countryside Act 1981 where it is an offence to intentionally pick or uproot or destroy any of these plant species.

During the Preliminary Ecological Appraisal notes are taken of areas that could contain rare or local important plant species/communities. Such areas could include mature woodland, calcareous sites, undisturbed areas such as ridge and furrow pasture or even semi-improved areas that have a varied sward length.

If habitat such as these are found on the project area during the Preliminary Ecological Appraisal then a full botanical survey will be recommended.

Survey Timing

Woodland during April.

Open areas from May to July.

Rodwell, J.S. Joint Nature Conservation Committee (JNCC). National Vegetation Classification: Users' handbook (2006). JNCC.

Ecological Enhancement

In March 2012 the Department for Communities and Local Government published the National Planning Policy Framework. This sets out planning policies on protection of biodiversity through the planning system. The document states - *opportunities to incorporate biodiversity in and around developments should be encouraged*. Usually when reviewing how ecological enhancements can be implemented the Local Biodiversity Action Plan for the area is considered.

For new buildings guidance such as in the following will be used:
Williams, C. (2010) *Biodiversity for Low and Zero Carbon Buildings, A Technical Guide for New Build*. Riba Publishing.

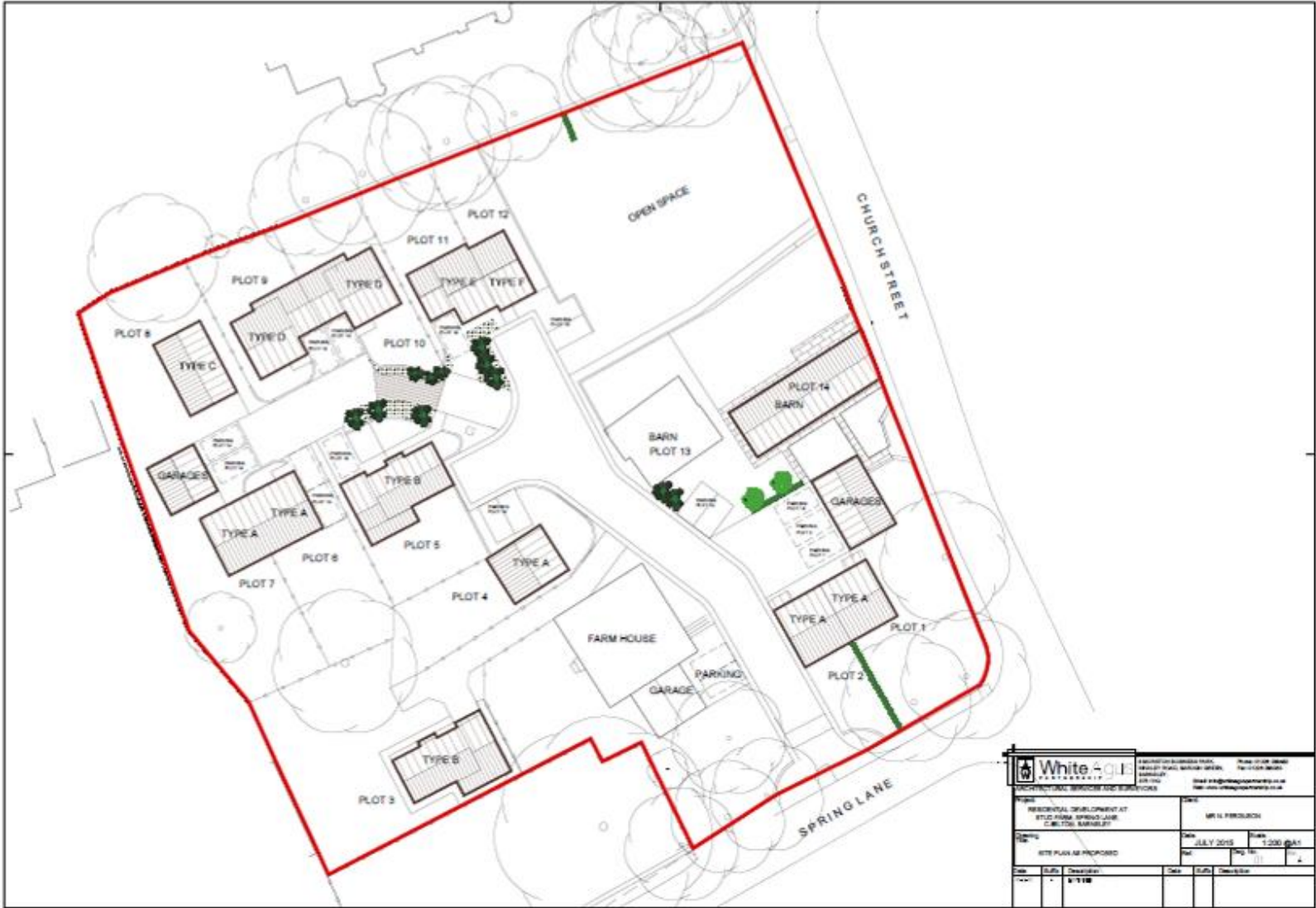
Designated Protected Areas

Designated areas are Sites of Special Scientific Interest (SSSI) while others have been designated as having European protection status. Local authorities can also designate areas for nature conservation and in doing so may impose local authority byelaws to support local nature conservation objectives.

European designated status includes Special Protection Areas (SPAs) that preserve areas for birds and Special Areas of Conservation (SACs) which provides protection for habitats and the species which these habitats supports. Laws stipulate that SSSIs, SPAs and SACs have to be maintained in a 'favourable condition' which requires efforts to preventing any potential impacts to these sites.

Information of Designated Protected Areas is received through Ecological Data Searches and Magic Map searches.

Appendix 6. Proposed Plans



Appendix 7. Magic Data

Two kilometre radius search of the project site.

Site Check Report Report generated on Tue Mar 15 2016

You selected the location: Centroid Grid Ref: SE366100

The following features have been found in your search area:

Local Nature Reserves (England) - points

Reference

1008825

Name

CARLTON MARSH (MAPPED BOUNDARY NOT VERIFIED)

Hectares

27.71

Hyperlink

http://www.lnr.naturalengland.org.uk/special/lnr/lnr_details.asp?themeid=1008825

Local Nature Reserves (England)

Reference

1008825

Name

CARLTON MARSH (MAPPED BOUNDARY NOT VERIFIED)

Hectares

27.71

Hyperlink

http://www.lnr.naturalengland.org.uk/special/lnr/lnr_details.asp?themeid=1008825

Green Belt (England)

Name of Local Plan

Barnsley Unitary Development Plan

Reference

20754642

Status

Adopted

Authority

Barnsley Metropolitan Borough Council, Planning Department

Date Local Plan was Published

20001231

Scale of Original Plan

1:25,000

Square Kilometres

227.049321

Limestone Pavement Orders (England)

No Features found

National Nature Reserves (England) - points

No Features found

National Nature Reserves (England)

No Features found

National Parks (England)

No Features found

National Parks: Lake District and Yorkshire Dales Variation Orders 2012 - subject to confirmation (England)

No Features found

Ramsar Sites (England)

No Features found

Sites of Special Scientific Interest Units (England) - points

No Features found

Sites of Special Scientific Interest Units (England)

No Features found

Sites of Special Scientific Interest (England) - points

No Features found

Sites of Special Scientific Interest (England)

No Features found

Special Areas of Conservation (England) - points

No Features found

Special Areas of Conservation (England)

No Features found
Special Protection Areas (England) - points
No Features found
Special Protection Areas (England)
No Features found
Biosphere Reserves (England) - points
No Features found
Biosphere Reserves (England)
No Features found
Registered Parks and Gardens (England) - points
No Features found
Registered Parks and Gardens (England)
No Features found
Land Management Initiatives (England)
No Features found
National Forest (England)
No Features found
RSPB Reserves (GB) - points
No Features found
RSPB Reserves (GB)
No Features found

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Legend

-  Limestone Pavement Orders (England)
-  Local Nature Reserves (England)
-  National Nature Reserves (England)
-  National Parks (England)

Projection = OSGB36

xmin = 431700

ymin = 408100

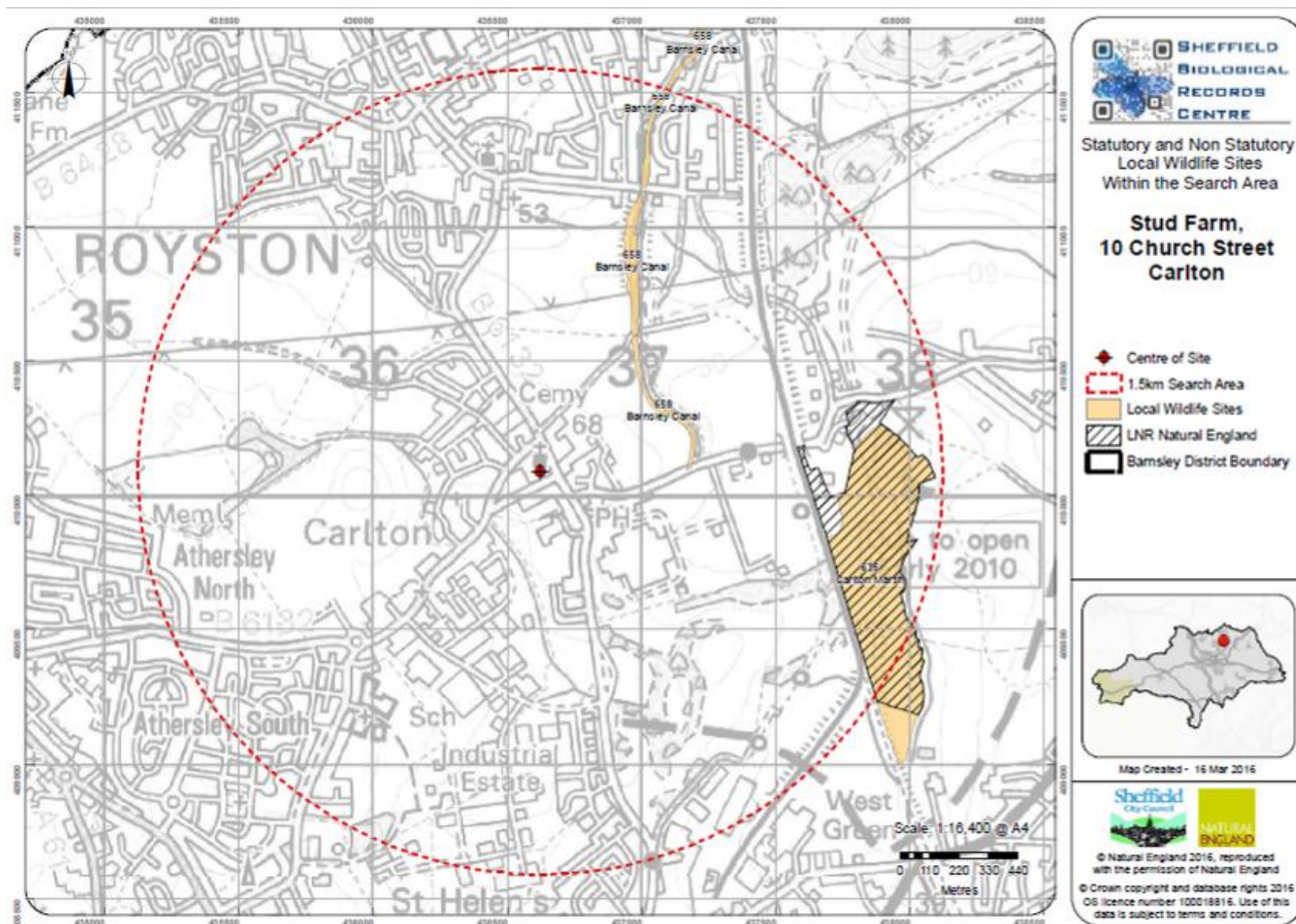
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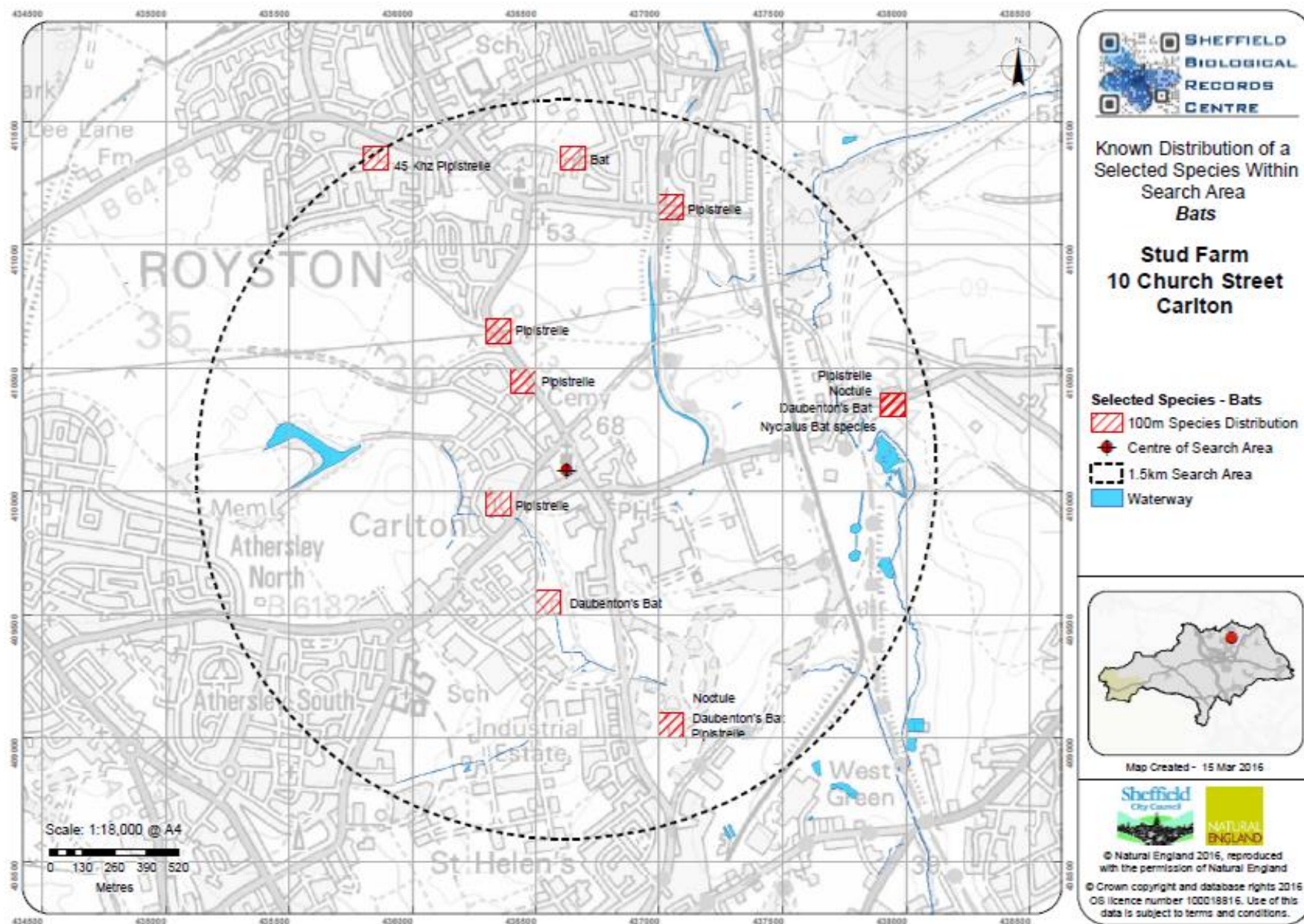
ymax = 412800

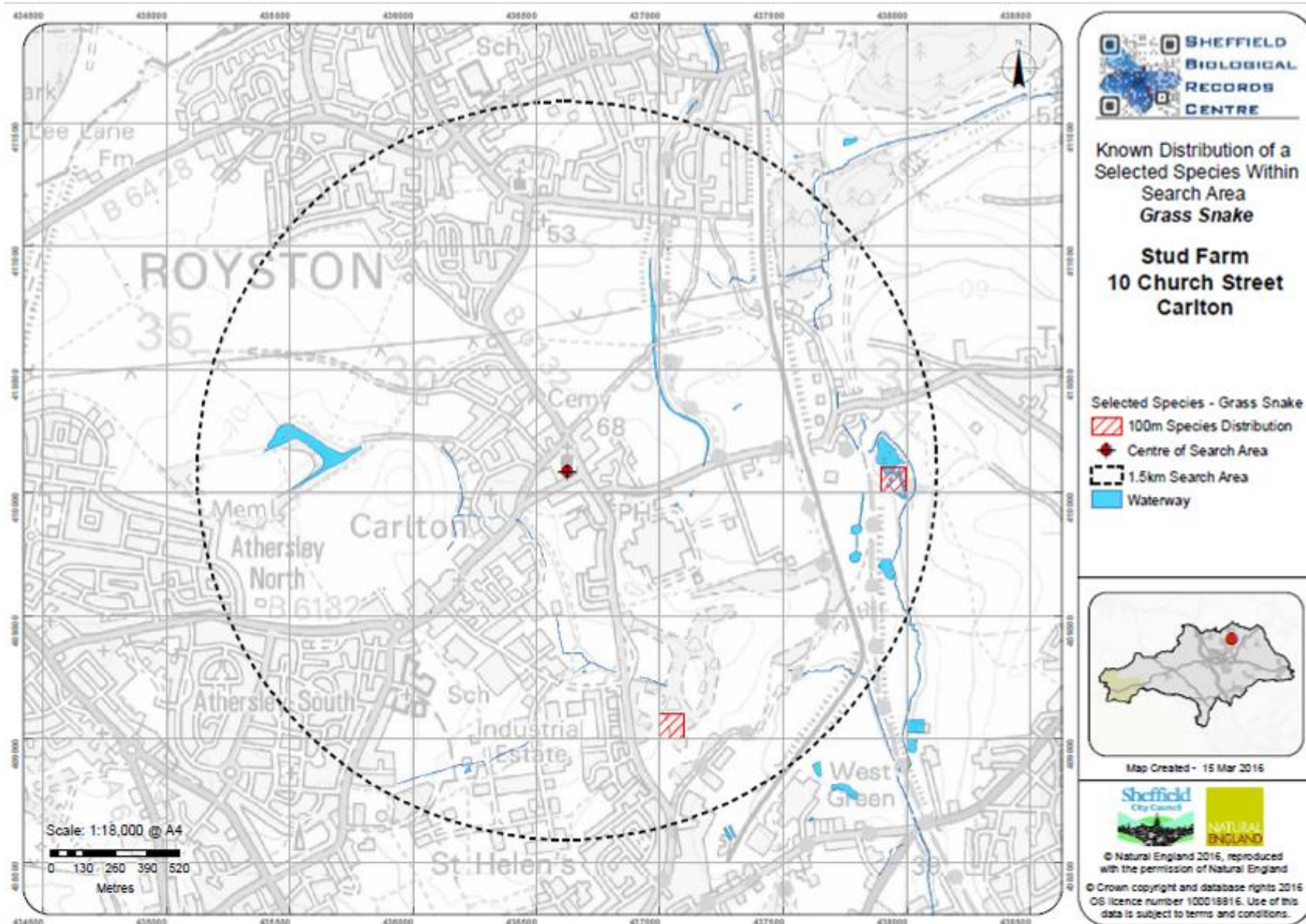
Map produced by MAGiC on 15 March, 2016.
Copyright resides with the data suppliers and the map must not be reproduced without their permission. Some information in MAGiC is a snapshot of the information that is being maintained or continually updated by the originating organisation. Please refer to the metadata for details as information may be illustrative or representative rather than definitive at this stage.

Appendix 8. Ecological Data Search Information

The project site can be found at: Grid Ref: SE 36624 10088. The full data search is available upon request.







Appendix 9. Buildings Descriptions & Photographs

Building 1

For ease of explanation Building 1 has been separated into two distinct structures, which henceforth shall be referred to as Buildings 1A and 1B.

Building 1A

Building 1A was a two-storey farmhouse with a cellar and a partially converted loft space. The walls of the building were stone and mortar and for the most part were well pointed. However, there were some gaps in the mortar below some of the window lintels on the north-eastern face of the building and a gap between the fascia boards and the stone work on the north-western and south-western faces of the building (see Figure 9). The window frames were generally tightly fit to the stonework on all sides of the building. The ground floor windows had been boarded up with metal panels, which in most cases covered the frames as well as the glass, removing any chance of bats entering. There were some gaps present between the fascia boards and the stone walls, particularly on the south-west face. Although the roof contained some lifted roof tiles, there were no slipped or missing tiles and the lead flashing was flat to the brickwork.

Internally, a recent fire inside one of the downstairs rooms of the house had caused fire damage to the walls and ceiling, but was contained to this room. However, wooden stairs, rather than a loft hatch provided entry to the loft space, which could have easily been entered and disturbed by intruders who started the fire. The loft space had been roughly divided into four sections/rooms by plasterboard walls, however, they did not reach the full height of the roof apex. Two large windows were present, one at each gable end of the house, causing three of these rooms to be fairly well lit. The roof was supported by wooden beams, some of which provided gaps between the wood and tiles. The tiles of the roof were not lined, and the majority were heavily covered in cobwebs, however there were some gaps between tiles, and a small number of holes in the roof, through which bats could enter (see Figure 10). The walls inside the roof space were plastered, however the plaster was lifting away from the walls in some places, providing several large crevices in which bats could potentially roost. No evidence of roosting bats was found inside the building.

Building 1B

Building 1B was a single storey stone and mortar building with a loft space contained by a pitched tile roof. The south-eastern side of the building connected to the north-western face of Building 1A and a stone wall connected the eastern corner of Building 1B to the southern face of Building 4B. This wall was covered in part by thick ivy which had spread onto the north-western face of Building 1B, covering part of the stone work. The stone work was generally well-pointed on all sides of the building, with very few cracks. However, there were gaps in the mortar surrounding some of the windows and some missing mortar from the underside of the gable end roof tiles. There were multiple slipped and lifted roof tiles on both the north-eastern and south-western sides of the roof, providing potential gaps which bats could utilise as a roost space. In addition, there was a small section of lifted led flashing and missing mortar from a lifted roof tile.

All but one of the windows were boarded up with metal panelling, which for the most part covered the wooden window frames as well as the glass, reducing the available space for bats to enter. Just one small window was left uncovered. The glass of this window was smashed and the frame was flush with the stonework. There were two doors present on the north-west face of the building, one of which was boarded up by metal sheeting, the other provided access into the building.

The internal loft space contained large windows, making it a brightly lit space. The walls of the internal loft space were plastered, offering no opportunity for bats to enter. The roof interior was boarded up by tight fitting wooden sarking, creating no obvious opportunity for bats to enter the roof space. However, upon closer inspection there was a gap between the plastered walls and the wooden panelling (see Figure 16), which would allow entrance into the main loft space via the lifted tiles on the roof's exterior. Although the underside of the roof tiles were not visible from inside the loft space, it can be assumed that the wooden panelling created a void on the underside of the roof tiles, which could have the potential to be utilised by roosting bats. However, there was no evidence of roosting bats (e.g. feeding remains, droppings) found within the main loft space. This, in addition to the presence of cobwebs suggested that bats were not currently utilising the interior loft space.

Building 2

Building 2 was a single storey stone and mortar barn, with no separate loft space/roof void. The roof consisted of corrugated metal, a material which is not favoured by bats. Roof tiles lined both ends of the corrugated roof, and in some places were missing mortar (see Figure 19). A fire which had taken place over two years prior to the survey had caused the roof to be replaced, which had in part included new wooden frame adjoining the old wooden beams. The building's south-west face was entirely open due to broken double doors. The building contained eight windows, some of which contained small gaps around the frames.

Both the interior and exterior stone walls had numerous gaps of varying sizes due to missing mortar (see Figure 18). Most of these led to the internal cavity of the wall, providing potential roosting space for bats. A small nest was found in one of these holes on the building's internal south-east wall (see Figure 21), and one of the metal roof beams inside the building contained what looked like nesting material. Ivy had grown through a gap between one of the windows and the north-west wall of the building. As the floor had been recently swept, it was not clear as to whether any evidence of roosting bats may have been present,

Building 3

For ease of explanation, Building 3 has been split into three structures; 3A, 3B and 3C.

Building 3A

Building 3A was a single storey barn. The north-western face of which was attached to Buildings 3B and 3C, preventing visibility of a large proportion of the roof's exterior on the north-western elevation. The interior of the roof void was inaccessible due to there being no loft hatch present at the time of survey. The north-eastern end of the building had been utilised as a log store and the ceiling within this section comprised of sarking, supported by interior wooden fascia boards (see Figure 25). The other end of the building had, in the past, been utilised as a butchers and contained a plastered ceiling and tiles walls, all of which were intact.

The south-eastern face of the building contained two single doorways, a double doorway and a window, most of which were flush with the stone work, creating no cracks or crevices. However, there was a gap between the wooden lintel above the double doorway and the stone wall and additional gaps between the fascia boards

and the stone walls of the building. The stone work was well pointed throughout most of the building, however there was a large gap between the mortar/stone work which joined Buildings 3A and 3B, which provided a large crevice which bats could potentially utilise (see Figure 26). The south-eastern roof elevation of Building 3A contained numerous lifted, slipped and missing roof tiles, lifted ridge tiles and missing mortar below ridge tiles and tiles along the edge of the building's gable end.

Building 3B

Building 3B was a stone and mortar barn with a loft space which had remained disused for in excess of two years. The roof was semi-tiled and semi-panelled by corrugated metal and plastic. The north-eastern face was attached to Building 3C and the south-eastern face was attached to Building 3A, reducing visibility to the south-eastern roof elevation. The north-eastern face contained a window and the south-eastern face contained a single door, both of which had gaps between the wooden frame and the stone work, in addition to the door containing a small hole, allowing access to the building. Mortar was missing in several places between stone work on both of the western building faces, creating access to crevices within the stone walls, which could act as potential roosting spaces for bats. The tiles of the south-eastern roof elevation appeared fairly intact, where visible, although there was mortar missing from areas where ridge tiles met the stone work (see Figure 28) on the gable end of the building. The north-western roof elevation comprised opaque corrugated plastic and corrugated metal, materials not favoured by bats.

The building contained some old wooden furniture, suggesting it had at one time been used as an office space. The ceiling which separated the loft space from the rest of the building comprised plaster boarding and the interior walls were plastered. The southern corner of the building was damp, causing the wooden panels in this region to be swollen and unstable. This meant that although the loft space was accessible through a loft hatch, walking around inside wasn't possible and photographic evidence is limited.

Evidence of bats in the form of a single dropping and numerous butterfly wings was found on the ground floor inside the building (see Figures 30 & 31). The roof space was supported by wooden beams, none of which appeared to support any cracks or crevices. The underside of the tiled roof contained a soft lining which appeared intact. It is possible that the void created by the material lining and the roof tiles could support a suitable roof space for bats, accessible via gaps under roof tiles caused by

missing mortar, and potentially through the open loft hatch. In addition, there was a gap at the top of the apex of the north-eastern face of the building which was only visible from the building's loft space (see Figure 29). There were also areas of crumbled and broken brick which weren't entirely visible at the north-eastern end of the building which could contain further cracks and crevices. Although the opaque corrugated roofing increased the level of light in the loft space, there were still some dark areas which bats could take advantage of.

Building 3C

Building 3C was a stone built barn with a metal corrugated roof which contained a dividing wall comprising bricks and wooden panels, suggesting that the building had previously been utilised as equine stabling. The building hadn't been used in excess of two years and the ground was layered with straw and some debris. The roof was supported by wooden beams and metal pillars which supported the beams and lined the north-western end of the building. The south-eastern face of Building 3C was attached to building 3A and the south-western face was attached to Building 3B. The north-western face of the building was open sided, which made the building's interior relatively open to the weather.

The building did not contain a loft space and the corrugated metal roof is an unsuitable material for roosting bats. The north-eastern wall was well pointed and contained no visible gaps or crevices. However, internally, there were several large gaps and crevices where stone and mortar was missing in the south-western adjoining wall to Building 3B which allowed access to the wall's cavity (see Figure 34). In addition, the south-eastern adjoining wall contained several small crevices in which bats could potentially roost. A disused bird's nest was present on one of the wooden beams inside the building (see Figure 35).

Building 4

For ease of explanation, Building 4 has been split into two separate structures; Building 4A and 4B.

Building 4A

Building 4A was a lean-to stable comprising breezeblock, stone and mortar walls and a metal corrugated roof. The building had been disused for in excess of two years. There was evidence of fire damage in the building, with blackened walls and wooden beams. Plaster was falling off the walls inside the building, however there were no

cracks or crevices present. The north-east wall contained two wooden stable doors and a burnt out window. The only crevices which were evident on the building's exterior were between the stone walls and the wooden frames of the doors and window, however all appeared shallow and covered by cobwebs.

A disused bird's nest was present between two wooden beams on the exterior of the north-east face of the building (see Figure 37). The south-west face of the building was attached to the wall which ran between Buildings 4 and 1B, while the north-west face of the building was attached to a stone wall which separated the grass field at the north of the site from the rest of the site. Visibility was poor in both these areas due to scrub and ivy cover. The south-western wall of the building was attached to Building 4B. The upper section of the stone wall connecting these two buildings contained several cracks and crevices where mortar was missing from the stone work.

Building 4B

Building 4B was a brick lean-to building with a tiled roof. The south-western face of the building comprised the stone wall which joined Buildings 4 and 1B. Externally, the roof contained numerous lifted and missing tiles, and a section of the roof had fallen in, exposing part of the internal space to the weather. Both internally and externally, the brickwork was well-pointed leaving no obvious cracks or crevices for use by bats, except for a couple of small gaps around doorways.

Internally, the building was divided by walls into three spaces, a toilet and two storage areas, all of which had remained disused for in excess of two years. Three dilapidated doorways on three different building faces provided entrances to these areas. Whilst there was no loft space, a void was created by the presence of plasterboard which lined the underside of the roof tiles and wooden beams in the larger of the two storage areas, creating a potential space in which bats could roost. This lining was absent in the smaller of the two storage areas and a large area of the roof had collapsed. The ceiling in the toilet area was lined by wooden boarding. A section resembling a loft hatch was missing in this area, revealing a soft material lining the space between the wood ceiling and the roof tiles (see Figure 40). No evidence of roosting bats or birds was found inside the building.

Building 5

Building 5 was a brick and concrete built bomb shelter which had remained disused for in excess of two years. The building contained no loft space and the ceiling was flat and entirely concrete. In addition, the external brickwork was intact and contained no cracks or crevices and there were no soffits or fascia boards surrounding the building.

On first appearance, the building looked as though it may have been a suitable roost space for hibernating bats, due to the popularity of underground and waterlogged bomb shelters and cellars as hibernation sites and the ability of concrete and bricks to maintain a constant temperature. However, upon further inspection, it became clear that the building was entirely above ground and the buildings was open-ended and thus open to potential predators. In addition, there were no deep internal crevices inside the building which might have been used as a roosting site and upon careful inspection, no evidence of roosting or foraging bats was found.

The internal space contained a concrete floor and a lot of pallets and other debris. The internal walls were also intact, containing no obvious cracks or crevices, except for a small number of metal air vents in the walls of the building (see Figure 44), which were relatively open and provided no obvious cover in which to roost. No evidence of roosting or foraging birds was found inside the building. However, the building was heavily covered by ivy and multiple birds were seen to be utilising the thick ivy on the concrete roof.



Figure 7. External view of the north-east face of Building 1A.



Figure 8. External view of the north-eastern roof elevation, showing lifted tiles.



Figure 9. Gap between fascia board and brick wall of Building 1A.



Figure 10. View of loft space within Building 1A, showing potential entry point in roof apex under lifted/missing tile.



Figure 11. View into one of the eaves of Building 1A, showing heavy cobwebbing.

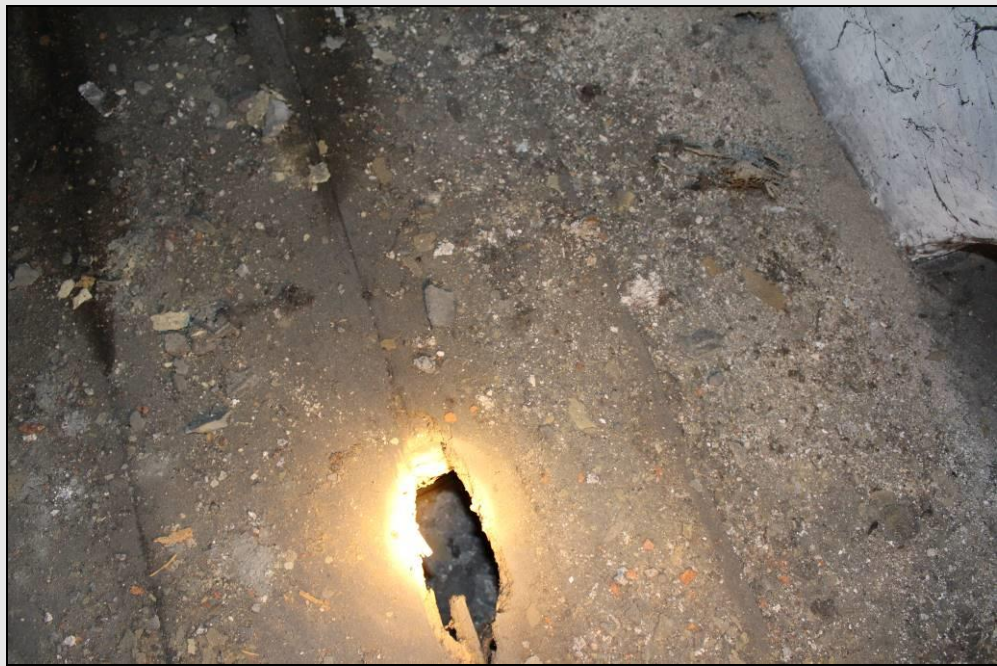


Figure 12. Internal photo of Building 1A loft space showing hole in floor boards, leading to further potential roost space.



Figure 13. External view of south-west face of Building 1B.



Figure 14. External view of south-western roof elevation of Building 1B, showing missing, slipped and lifted tiles.



Figure 15. View of loft space inside Building 1B, showing tightly fitted sarking.



Figure 16. Internal view of loft space in Building 1B, showing gaps between sarking and internal wall, providing potential entrance point between loft space and void between roof tiles and sarking.



Figure 17. External view of the south-east face of Building 2.



Figure 18. External view of south-east face of Building 2, showing a hole leading to the wall's cavity.



Figure 19. External view of Building 2, showing missing mortar from tiles at gable end of building.



Figure 20. Internal view of Building 2, showing open doors at south-west end of building and new wooden beams supporting the roof.



Figure 21. Internal view of hole in south-east wall of Building 2, showing disused nest.



Figure 22. View of gap in one of the internal roof beams of Building 2, showing potential nesting materials.



Figure 23. External view of the south-east face of Building 3A,



Figure 24. External view of south-east roof elevation of Building 3A, showing slipped and lifted tiles.



Figure 25. Internal view of Building 3A, showing tightly fit sarking.



Figure 26. External view of the large crevice between Buildings 3A and 3B.



Figure 27. External view of the south-west face of Building 3B.



Figure 28. External view of the south-east roof elevation of Building 3B, showing gaps in mortar below ridge tiles.



Figure 29. Internal view of loft space of Building 3B, showing potential entry point in the roof's apex.



Figure 30. Internal view of the ground floor of Building 3B, showing numerous potential feeding remains.



Figure 31. Internal view of the ground floor of Building 3B, showing a potential bat dropping.



Figure 32. External view of north-east face of Building 3C (right hand side) and 3A (left hand side).



Figure 33. External view of north-west face of Building 3C.



Figure 34. Internal view of south-west wall of Building 3C which attached to Building 3B, showing large area of missing stone and mortar leading to cavity of wall.



Figure 35. Internal view of Building 3C, showing disused bird's nest on wooden beam.



Figure 36. External view of the north-eastern face of Buildings 4A (right hand side) and 4B (left hand side).



Figure 37. External view of north-east face of Building 4A, showing disused bird's nest between two beams.



Figure 38. Internal view of northern end of Building 4A, showing fire damage to walls and roof.



Figure 39. External view of north-east roof elevation of Building 4B, showing missing and lifted roof tiles.



Figure 40. Internal view of Building 4B, showing missing wooden panels which reveal the underlining of the roof tiles.



Figure 41. Internal view of Building 4B, showing wooden boarding of roof falling down and potential gaps between wooden boarding, beams and roof tiles.



Figure 42. External view of Building 5 from the western corner of the building, showing heavy ivy cover on roof of building.



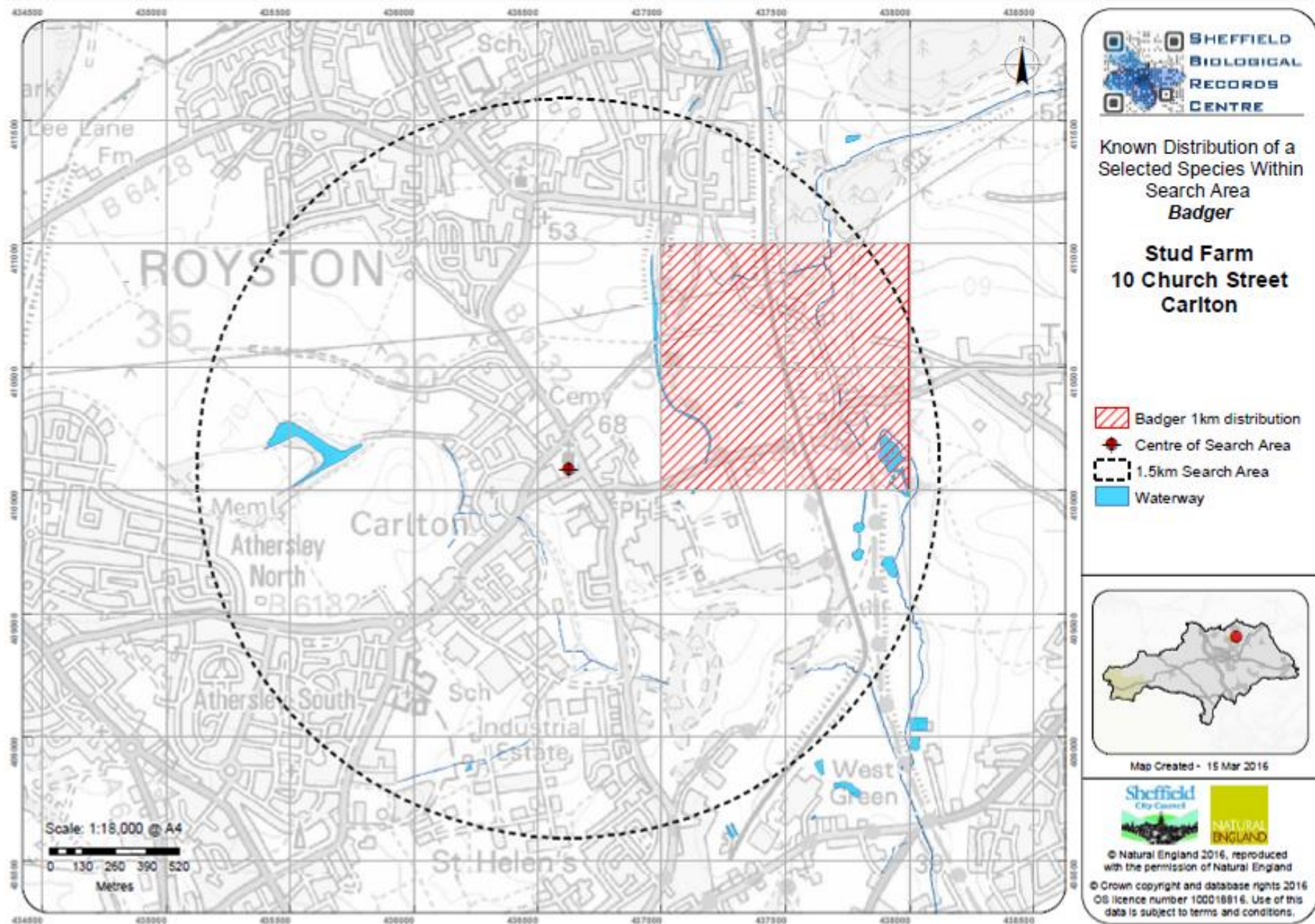
Figure 43. Internal view of Building 5, including entrance at north-eastern end.



Figure 44. Example of air vent inside Building 5.

Appendix 10. Confidential Badger Records

DRAFT



Scientific Name	Location	Date	Grid Reference	Easting	Northing	Details
Meles meles	Carlton	01/01/2012	SE3653809704	435000.00	405000.00	Field signs
Meles meles	Carlton	01/01/2012	SE3687309258	435000.00	405000.00	Field signs
Meles meles	Carlton Marsh LNR	13/09/2000	SE3710	437500.00	410500.00	Crossing Shaw Lane after dark

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