Preliminary Ecological Appraisal and Bat Survey Report

Villa Farm, Folly Lane, Norton Disney

Presented to **T R Holmes (Farms) Ltd**

Issued: September 2021

Delta-Simons Project No. 21-1575.02

deltasimons

Delta-Simons Environmental Consultants Limited
Head Office: 3 Henley Office Park, Doddington Road, Lincoln, LN6 3QR
Tel: 01522 882555 | www.deltasimons.com

recycle

INOGEN® ALLIANCE

Report Details

Client	T R Holmes (Farms) Ltd
Report Title	Preliminary Ecological Appraisal and Bat Survey Report
Site Address	Villa Farm, Folly Lane, Norton Disney, Lincoln, Lincolnshire, LN6 9JL
Project No.	21-1575.02
Delta-Simons Contact	Jennifer Britt (Jennifer.britt@deltasimons.com)

Quality Assurance

Issue No.	Status	Issue Date	Comments	Author	Technical Review	Authorised
1	Final	30th September 2021		[redacted]	[redacted]	[redacted]
				Becky Hodgins Graduate Ecologist	**Jennifer Britt Principal Ecologist**	**Jennifer Britt Principal Ecologist**

About us

Delta-Simons is a trusted, multidisciplinary environmental consultancy, focused on delivering the best possible project outcomes for customers. Specialising in Environment, Health & Safety and Sustainability, Delta-Simons provide support and advice within the property development, asset management, corporate and industrial markets. Operating from across the UK we employ over 180 environmental professionals, bringing experience from across the private consultancy and public sector markets.

As part of Lucion Services, our combined team of 500 in the UK has a range of specialist skill sets in over 50 environmental consultancy specialisms including asbestos, hazardous materials, ecology, air and water services, geo-environmental and sustainability amongst others.

Delta-Simons is proud to be a founder member of the Inogen Environmental Alliance, enabling us to efficiently deliver customer projects worldwide by calling upon over 5000 resources in our global network of consultants, each committed to providing superior EH&S and sustainability consulting expertise to our customers. Through Inogen we can offer our Clients more consultants, with more expertise in more countries than traditional multinational consultancy.

Delta-Simons is a 'Beyond Net-Zero' company. We have set a Science-Based Target to reduce our Scope 1 and Scope 2 carbon emissions in line with the Paris Agreement and are committed to reducing Scope 3 emissions from our supply chain. Every year we offset our residual emissions by 150% through verified carbon removal projects linked to the UN Sustainable Development Goals. Our consultancy services to you are climate positive.

If you would like support in understanding your carbon footprint and playing your part in tackling the global climate crisis, please get in touch with your Delta-Simons contact above who will be happy to help.

Executive Summary

Scope of Works	Delta-Simons Environmental Consultants Ltd was instructed by Grace Machin on behalf of T R Holmes (Farms) Ltd ('the Client') to undertake a Preliminary Ecological Appraisal (PEA) and Bat Roost Potential (BRP) Survey of an area of land at Villa Farm situated off Folly Lane, Norton Disney (the Site'). The PEA, comprising a Phase 1 Habitat Survey and protected species assessment, and BRP survey was completed on 27th July 2021. In additional three nocturnal bat surveys were undertaken in August and September 2021, of the residential building previously recorded to support roosting and hibernating bats. The surveys were undertaken to inform the Client of any ecological constraints at the Site relating to the development proposals and make recommendations for further survey work and/or mitigation measures where necessary, as well as potential ecological enhancements.
Current Site Status	The Site is characterised by a series of vacant buildings surrounded by woodland, scrub and ruderal vegetation.
Proposed Development	It is understood that the proposed development will comprise of two four-bedroom dwellings, two standalone garages and soft landscaping.
Results: **Habitats on-Site**	The following habitats are found on the Site: ▲ Mixed plantation woodland; ▲ Dense and scattered scrub; ▲ Scattered broadleaved trees; ▲ Poor semi-improved grassland; ▲ Tall ruderals; ▲ Intact hedgerow – species poor; ▲ Dry ditch; ▲ Wall; ▲ Buildings; and ▲ Hardstanding.
Habitats Adjoining the Site	Agricultural land surrounds the Site, with Folly Lane adjacent to the eastern Site boundary.
Potential for Protected/Notable Species	The woodland, hedgerow, trees and scrub on-Site and immediately adjacent to the Site boundaries provided suitable habitat for nesting birds, whilst the buildings offer additional nesting opportunities. The residential building on-Site was recorded to support up to three small common pipistrelle day roosts. It was also previously recorded to support a small number of hibernating brown long-eared bats, however, subsequent vandalism is anticipated to have reduced the suitability of the building to support hibernating bats. The Site also offers suitable foraging and commuting habitat for bats, most notably barbastelle and Myotis species which were recorded in low numbers and are known to occur in the local area. Whilst no evidence of badger or hedgehog were recorded on-Site during the survey, the Site and surrounding land offers opportunities for these species.
Requirement for Further Surveys	The surveys undertaken are considered sufficient to inform the development proposals and no further surveys are deemed necessary at this time.

Construction and Operational Phase Recommendations and Enhancement Measures	The detailed recommendations set out within the Report are summarised below: **Nesting Birds** ▲ Any vegetation clearance works and demolition of buildings should be performed either before early March or after late August in order to avoid the main bird nesting season; and ▲ If, however, works are necessary during the nesting period an experienced ecologist will be required to check the Site habitats immediately prior to works commencing to confirm that no nesting birds will be affected by the proposed works, and works would then need to proceed within the following 24 hours. **Bats** ▲ A European Protected Species licence (EPSL) is required to allow the lawful demolition of Building 1. This must include an appropriate mitigation strategy including sensitive timing of works, sensitive working methodologies and appropriate compensation measures. Depending on timescales to works commencing on-Site, this may require updated nocturnal bat surveys to establish an up-to-date assessment of the roost status; ▲ As a precautionary measure, any removal of, or works to, semi-mature and mature trees will be undertaken following an inspection, and where necessary a dawn return survey by a licenced bat ecologist. In the unlikely event that any roosting bats are identified then Natural England would be consulted, and where necessary any works undertaken under licence. In addition, should works be required to the buildings in the south of the Site they should first be assessed for their potential to support roosting bats; and ▲ Any required lighting at the Site should be kept to the minimum required for safety and security and where possible be switched, or sensor motion controlled. The detailed lighting design on Site should be functional and directional and in line with current guidance. <u>Badgers</u> A pre-commencement survey should be undertaken to provide an update on any badger activity at the Site and to allow appropriate mitigation to be applied, where necessary. <u>Hedgehogs</u> Vegetation clearance should be undertaken with an awareness for the potential presence of hedgehog. In the event that an individual is found it should be carefully moved, with gloved hands, to an area of suitable habitat away from the proposed works. <u>Excavations</u> It is recommended that no excavations or trenches are left uncovered overnight during the development works to prevent badgers and hedgehogs from becoming trapped. Alternatively, ramps can be provided to enable them to climb out of trenches or excavations. **Site Protection** ▲ All works on Site should follow an appropriate working methodology to avoid inadvertent damage to any habitats and associated fauna retained on, or surrounding, the Site. This includes the protection of retained trees in accordance with the arboricultural report prepared for the Site. **Site Enhancements** A list of recommendations to enhance the biodiversity of the Site are found in Section 6.0 of this Report.

This Preliminary Ecological Appraisal and Bat Roost Potential Survey Executive Summary is intended as a summary of the assessment of the Site based on information received by Delta-Simons at the time of production. This Executive Summary should be read in conjunction with the full Report.

Table of Contents

Tables

Figures

Drawings

Appendices

1.0 Introduction

1.1 Purpose and Scope of the Survey

Delta-Simons Environmental Consultants Ltd was instructed by Grace Machin on behalf of T R Holmes (Farms) Ltd ('the Client') to undertake a Preliminary Ecological Appraisal (PEA) and Bat Roost Potential (BRP) Survey of land at Villa Farm to the north-west of Norton Disney in Lincolnshire (hereafter referred to as the "Site"). In addition, three nocturnal bat surveys were undertaken of the residential property previously identified as supporting roosting and hibernating bats. The surveys were undertaken to inform the Client of any ecological constraints at the Site, to recommend further surveys and/or mitigation measures, where appropriate, as well as potential enhancements and to inform a planning application for development of residential dwellings at the Site.

The aims of the surveys were to:

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

The Site location and the Site red line/survey area are shown in Figure 1.

1.2 Site Description

The Site is centred at Ordnance Survey (OS) grid reference SK 85837 60068, to the west of Norton Disney in Lincolnshire. The Site covers an area of approximately 1.3 hectares (ha) and comprises two unoccupied residential properties and various derelict agricultural/storage buildings with surrounding woodland, scrub and ruderal vegetation. The Site is surrounded by arable land, with Folly Lane to the east.

The Site layout is shown in Figure 2.

1.3 Proposed Development

It is understood that the proposed development will comprise the demolition of buildings and the construction of two residential properties and garages. Access is to be along the existing track. It is understood that the majority of the woodland at the Site is to be retained and that no works are proposed within the southern extent of the Site (Drawing 1).

2.0 Legislation & Policy Summary

Specific habitats and species of relevance to the Site receive legal protection in the United Kingdom under various pieces of legislation and policy, including:

- National Planning Policy Framework (NPPF, 2021);
- The Conservation of Habitats and Species Regulations 2017 (as amended);
- The Wildlife and Countryside Act (WCA) 1981 (as amended);
- The Countryside and Rights of Way (CRoW) Act 2000;
- The Natural Environment and Rural Communities Act (NERC) 2006;
- The Hedgerow Regulations 1997; and
- The Protection of Badgers Act 1992.

Where relevant, this appraisal takes account of the legislative protection afforded to specific habitats and species. The legislation surrounding each faunal or floral species or group is provided in Appendix A and references are included in Appendix B.

3.0 Methodology

The surveys have been undertaken to the following current guidance: CIEEM (2017), Guidelines for Preliminary Ecological Appraisal; Collins ed. (2016) Bat Surveys for Professional Ecologists Good Practice Guidelines, English Nature (2004) Bat Mitigation Guidelines and BS 42020: 2013 Biodiversity. Code of Practice for Planning and Development.

3.1 Desk Study

Data Search

A data search was undertaken to identify statutory and non-statutory designated sites and records of protected and notable species.

In September 2021 available records of protected and notable species were collated from the local record centres, Greater Lincolnshire Nature Partnership (GLNR) and Nottinghamshire Biological and Geological Records Centre (NBGRC), along with the non-statutory designated sites within a 2 km radius of the Site centre. A search for international statutory designated sites for nature conservation within 6 km of the Site was undertaken, together with a search for national statutory designated sites for nature conservation within 2 km of the Site centre, using the Multi-Agency Geographic Information for the Countryside (MAGIC) website.

In addition, free and publicly accessible Ordnance survey maps and aerial photographs were searched for waterbodies on, or within, 500 m of the Site boundary. This information has been used to assess the Site for its potential for amphibians, the results of which are found in Section 4.3.

Review of Previous Surveys

Where available, information was gathered on any previous ecological surveys that have been conducted at the Site. The following survey reports were reviewed:

- ES Chapter – Ecology and Nature Conservation, Villa Farm, April 2018, Delta-Simons; and
- ES Chapter Addendum– Ecology and Nature Conservation, Villa Farm, September 2019, Delta Simons (16-0967.05).

3.2 Survey

The habitats on the Site and land immediately adjacent to the Site, were surveyed on 27th July 2021 by a Delta-Simon's ecologist. Where access was not permitted to the surrounding land, it was visually assessed from the Site boundary.

The following was undertaken during the survey:

- Habitats were classified and mapped using the standard JNCC Phase 1 habitat classification and methodology (JNCC, 2010). Dominant plant species were recorded in each different habitat. The plant species nomenclature followed that of Stace (2010);
- Terrestrial habitats on-Site were surveyed for the presence of, or potential for the following protected or notable species:
  - Birds: All species with special reference to key species (such as those on Schedule 1 of the WCA, 1981 (as amended), England Biodiversity Priority Species (EBP) (previously UK Biodiversity Action Plan (UKBAP) species) and Birds of Conservation Concern (BoCC) (Eaton et al., 2015);
  - Amphibians: Great Crested Newt (GCN) *Triturus cristatus*;
  - Reptiles: common lizard *Zootoca vivipara*, adder *Vipera berus*, slow worm *Anguis fragilis* and barred grass snake *Natrix helvetica*; and
  - Mammals: bat (all species) and badger *Meles meles*.
- Widespread terrestrial invasive species listed on Schedule 9 of the WCA 1981 (as amended) were recorded. These are Japanese knotweed, *Fallopia japonica* giant knotweed *Fallopia sachalinensis* hybrid knotweed,

Fallopia baldschuanica, giant hogweed *Heracleum mantegazzianum* and Himalayan balsam *Impatiens glandulifera*.

3.2.1 Birds

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

3.2.2 Amphibians

The terrestrial habitats at the Site were assessed for their potential to support amphibian species and a desk search was undertaken (see Section 3.1).

3.2.3 Reptiles

A cold-searching method was employed which involved identifying suitable habitats for reptiles within areas on-Site and immediately off-Site. Natural and artificial refugia (logs, large debris and so on) were lifted and examined for the presence of reptiles and their field signs (such as shed skins).

3.2.4 Bats

Preliminary Habitat Assessment

An assessment of the habitats on-Site and beyond the Site boundary was undertaken to identify potential commuting and foraging corridors, and suitable foraging sites. This enabled the suitability of the Site for bats to be determined (see Appendix C).

Preliminary Roost Assessment

An assessment of BRP of structures and trees on the Site was completed with reference to the guidelines specified within Natural England's Bat Mitigation Guidelines (2004), and the Collins (2016) Good Practice Guidelines. The survey method enabled each building and tree to be categorised in relation to its value for roosting bats (see Appendix C).

The exterior of the buildings on the Site were visually assessed for potential bat access points and evidence of bat activity. Features such as small gaps/crevices beneath eaves or within the brick work which had potential as bat access points into the building, were sought. Evidence that these potential access points were actively used by bats included staining within gaps and bat droppings or urine staining under gaps. Indicators that potential access points were likely to be unused by bats included the presence of cobwebs and general detritus within the apertures.

The interior of the buildings was assessed for evidence of bat activity, particularly beneath features that bats may use for roosting and/or as an access point(s), where access allowed. Features such as gaps within walls or beams, as well as evidence of bats including dropping and urine staining, moth wings and dead bats were sought from the roof void floor and sides.

A high-powered torch, endoscope and bat detector were used during both internal and external surveys to detect signs of bats or bat activity.

All of the trees on, or within close proximity (approximately 10 m) to, the development footprint at the Site were assessed for their potential to support a bat roost, where access allowed. Binoculars were used to check the trees for suitable features to support bats such as cracks, crevices and hollows in the trunks or branches as a result of decay, weathering or pruning. These are all features more commonly associated with mature or semi-mature trees. Furthermore, these features can be concealed by ivy *Hedera helix*, or dense woody ivy can itself provide the necessary features to support an occasional bat roost.

Roost Presence/Absence and Characterisation Surveys

Three separate nocturnal bat surveys were undertaken of the residential building at the Site (Building 1). This involved two dusk emergence surveys and separate dawn return survey to determine the extent of bat activity associated with the building at the Site.

The dusk surveys commenced approximately fifteen minutes prior to sunset and ceased approximately one and a half hours following sunset. Given the lack of lighting at the Site, this was considered sufficient to assess the presence/likely absence of a bat roost, covering the average emergence time of those species likely to occur in the local area. The dawn survey commenced approximately one and a half hours prior to sunrise and finished at sunrise, or fifteen minutes after depending on light, weather conditions and bat activity. The surveyors were equipped with handheld full spectrum bat detectors and recording equipment. Recordings were made of any bats seen and/or heard and the species, the timing, activity, location and direction of flight. Table 1 provides details of the surveys and locations of the surveyors.

Table 1 – Timings, Weather Conditions and Location of Surveyors

Date	Timing	Weather	Surveyor Location
02/08/2021	20.43 – 22.26 (sunset 20.56)	14°C, dry, 1/8 cloud cover, F1 wind	1 – north-west corner of the B1 2 – eastern aspect of the B1 3 - south-west corner of the B1
17/08/2021	20.12 – 21.57 (sunset 20.27)	16 °C, dry, 8/8 cloud cover, F2 wind	
03/09/2021	04:15 – 06:17 (sunrise 06:16)	14 °C, dry, 8/8 cloud cover, F1 wind	

With reference to the Bat Mitigation Guidelines (2004), Collins (2016) and professional judgement, the weather conditions during the dusk/dawn surveys were considered suitable for bat activity.

3.2.5 Badgers

The Site was inspected for signs of badger activity, including sett entrances, latrines, footprints, runs through vegetation, guard hairs caught on fences and snuffle holes, and its suitability to support this species assessed.

3.2.6 Other Protected or Notable Species

Where applicable, during the survey, evidence was recorded of any other protected or notable species, including England Biodiversity Priority (EBP) species. Habitats with the potential to support additional protected or notable species were also recorded, if present, during the survey.

3.2.7 Invasive Species

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

3.2.8 Hedgerows

An assessment of any hedgerows at the Site, which will be adversely affected by the proposed development, was undertaken using the standard hedgerow survey methodology outlined in the Hedgerow Regulations 1997. The purpose of the assessment was to ascertain whether the hedgerows are classified as 'nationally important' and, therefore, protected under the Hedgerow Regulations 1997. The assessment involves a scoring system which relies on particular features, number of woody and floral species present within the hedgerow habitat, and the age of the hedgerow.

3.2.9 Limitations to the Survey

Due to safety concerns relating to the structural integrity of the residential building on Site (Building 1) resulting from previous vandalism and damage, no internal inspection was undertaken. However, three nocturnal bat surveys were completed such that this is not considered to be a significant limitation to the assessment of value to bats and associated impacts.

Dense scrub restricted access to some areas of the Site, including the southern area which supported a number of building structures. Observation of these areas was made from the edge of the impenetrable vegetation. It is understood that no works are proposed for the southern extent of the Site such that this is not considered to be a significant limitation to the conclusions of this Report.

The baseline conditions described in this Report were accurate at the time at which the survey was undertaken. Should at least two years pass by, and/or conditions on-Site/Site usage change prior to the commencement of works, an update survey should be undertaken.

3.2.10 Details of the Surveyors

Table 2 – Details of Surveyors

Name and Experience of Surveyor	PEA	BRP	Presence/Absence Surveys
Jennifer Britt ACIEEM, Natural England Licence No. 2015-13633-CLS-CLS 11 years' survey experience	✓	✓	✓ (02/08/2021) (03/09/2021)
Becky Hodgins Graduate Ecologist 2 years' survey experience			✓ (17/08/2021)
Catherine Bywood ACIEEM, 6 years' survey experience			✓ (All)
Charlotte Sanderson-Lewis Natural England Licence No. 2015-14429-CLS-CLS 15 years' survey experience			✓ (02/08/2012) (18/08/2021)
Hannah Green Graduate Ecologist 1 year's survey experience			✓ (03/09/2021)

4.0 Results

4.1 Desk Study

The pertinent information from the data search is set out below for designated sites, whilst species are discussed in the relevant species sections. Full results of the GLNP and NBGRC data search are available to the Client on request.

Designated Sites

The results of the MAGIC desk search and the LERC and NBGRC data searches indicate that there are no international statutory designated sites within 6 km of the Site, or national statutory designated sites within 2 km of the Site centre. Furthermore, the Site does not fall within a Site of Special Scientific Interest (SSSI) Impact Risk Zone. Statutory designated sites are, therefore, considered to be outside the zone of influence for the development and this receptor is not considered further within this assessment.

The LERC and NBGRC data searches indicated 10 non-statutorily designated sites within 2 km of the Site centre, the closest being Hill Holt Local Wildlife Site (LWS) situated approximately 300 m to the north-east of the Site. Table 3 sets out the designated sites identified.

Table 3 – Non-Statutory Designated sites within 2 km of the Site centre

Site Name	Designation	Distance and Direction from Site Boundary	Designation Criteria Summary/Description
Hill Holt	LWS	300 m north-east	Hill Holt is designated for the Lowland mixed deciduous woodland. It is also designated as Ancient Woodland
Potter Hill Plantation	LWS	450 m north-west	Potter Hill Plantation is designated for its woodland canopy and ancient woodland indicator species
South Scaffold Lane, Collingham	LWS	580m west	A green lane and species-rich hedgerow of botanical interest.
Hawdin's Wood	LWS	830 m east	Hawdin's is designated for the Lowland dry acid grassland
Stapleford Moor	LWS	1 km south	Stapleford Moor is designated for the Lowland dry acid grassland and Lowland mixed deciduous woodland
Turfmoor	LWS	1 km south of the Site	A tract of commercial forestry with notable acidic communities along the rides. Turfmoor LWS also forms part of Lincolnshire's Stapleford Moor LWS.
Norton's Big Wood	LWS	1.7 km east	Norton's Big Wood is designated for the Ancient & Semi-Natural Woodland
Wheatley Hill Verges	LWS	1.9 km west	Notably herb-rich verges along little-used lanes.
Green Lane Pond and Drain, Collingham	LWS	2 km north-west	A deep pond with a rich diversity of marsh and sub-aquatic species

Stapleford Lane	LWS	1.7 km south	Roadside verges with notable grassland

Preview of Previous Surveys

The Environmental Statement and Addendum prepared by Delta-Simons in April 2018 and September 2019, respectively, assessed the impacts of development on an area of land including the Site and adjacent agricultural land, informed by a suite of baseline surveys conducted in 2016-2019. Pertinent results of these surveys are summarised below:

- A total of four Wintering Bird Surveys (WBS) were completed at the site in 2018. Twenty-nine species of birds were recorded on-site during the survey visits. Overall, the wintering bird assemblage recorded during the surveys was considered to be of Local value due to its relatively low diversity and number of birds, and the fact that the site was likely to be used in combination with surrounding arable land and woodland.
- Breeding Bird Surveys (BBS) of the site undertaken in 2018 recorded a total of 41 different bird species at the site and within the wider land ownership to the east, with the addition of a further species (tawny owl Strix *aluco*) recorded during a nocturnal bat survey. All species recorded on-site were common or widespread within the county of Lincolnshire and across the United Kingdom. A large flock of fieldfare *Turdus pilaris* was notable on the first visit, however, these were considered to be a late winter flock, especially given the weather conditions at the time, and are not considered to breed at the Site. No other significant numbers of, or flocks, of notable species, were recorded during the surveys and the breeding bird assemblage on Site is recognised as being of no more than of Site value.
- Three ponds were identified within 500 m of the site which had connectivity to it, all of which were located within Hill Holt LWS. Of the off-Site ponds, two were found to be dry, therefore, no further assessment was completed. One pond was considered to have a Habitat Suitability Index Assessment (HSI) score indicating a 'Good' suitability to support GCNs. However, given the suitable terrestrial habitat immediately surrounding the ponds, the limited suitable habitat on-site, the lack of GCN records despite recent surveys, and the lack of ponds to the south and west, the likelihood that GCN would disperse onto the Site if present within the surrounding area was considered to be limited. GCN were not considered to be a constraint to development.
- No evidence of badger activity was recorded at the site, however, two disused badger setts were recorded within land to the east, with numerous mammal paths and a dung pit also recorded within the surrounding area, indicating the presence of this species.
- A total of 23 buildings were recorded at the site. The majority of these were considered to lack the structural and/ or climatic conditions suitable to support roosting bats, with many being internally light, draughty and lacking insulation. The residential building, however, supported an enclosed roof void, which in November 2016 was found to have previously supported a roost(s), with old droppings recorded throughout both of the roof voids. During the nocturnal bat surveys undertaken during the 2018 active bat season the residential building was found to support an individual roosting common pipistrelle *Pipistrellus pipistrellus* bat on one of the three survey visits. As such it was considered that the building supported a single or small number of this species on occasion as a day roost. Regular foraging and commuting activity of common pipistrelle bats was recorded within the vicinity of the residential building, with occasional soprano pipistrelle *Pipistrellus pygmaeus*, Brown Long-Eared bat (BLE) and a *M*yotis species also recorded, but not using the building to roost.
- During an update survey in May 2019, an individual common pipistrelle bat was recorded to emerge from behind the wooden boarding of a window on the western aspect, before returning to the same location one minute later. Another common pipistrelle was then recorded to emerge from the building at a gap in the roof in the eastern aspect, resulting from vandalism. These results were considered consistent with the previous surveys such that it was concluded the building supports a small number (1-2 bats) of males or non-breeding females, likely used on occasion as a day roost. Regular foraging and commuting activity of common pipistrelle bats was recorded within the vicinity of the residential building, with an individual Myotis sp. pass and four distant foraging passes of barbastelle *Barbastella barbastellus* recorded over of four-minute period.
- The residential building was also recorded to support two hibernating BLE bats during the 2017/2018 hibernation season. However, vandalism and removal of lead flashing and roof tiles during 2018 was considered to have altered the internal climatic conditions of the roof void and, therefore, reduced the suitability of the building to support hibernating bats.

- Several trees at the site were assessed as having low BRP in 2016 and 2018 due to lifted bark, woodpecker holes, rot holes, dead wood, split branches and ivy growth. This was confirmed to remain consistent during the BRP survey in 2019. These included seven scattered trees around the field boundaries at the site, as well as several trees within the on-site woodlands.
- Bat activity surveys undertaken during April-September 2019 recorded generally limited bat activity across the site, with small numbers of common pipistrelle and soprano pipistrelle predominately associated with the woodland and boundary hedgerows. Very low numbers of BLE and Myotis species (likely daubentons *Myotis daubentonii,* whiskered/brandts *Myotis mystacinus/brandtii* were also recorded, as well as noctule *Nyctalus noctula* passes considered to represent individual flying at height across the site. Automated bat detector surveys recorded results consistent with the transect surveys, and also recorded very low numbers of barbastelle passes.

4.2 Survey

4.2.1 Habitats on Site

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

Habitats recorded on Site are:

Mixed Plantation Woodland

The Site was dominated by mixed plantation woodland comprising Leyland cypress *Cupressus × leylandii,* pedunculate oak *Quercus robur*, aspen *populus tremula,* silver birch *Betula pendula*, hybrid black poplar *Populus x canadensis,* Scot's pine *Pinus sylvastris*, sycamore *Acer pseudoplatanus,* cherry *Prunus* sp., hawthorn *Crataegus mongyna*, white poplar *Populus alba*, Norway spruce *Picea abies,* elder *Sambucus nigra*, atlas cedar *Cedrus atlantica*,horse chestnut *Aesculus hippocastanum,* Lombardy poplar *Populus nigra*, apple *Malus* sp., ash *Fraxinus excelsior,* false acacia *Robinia pseudoacacia*, laurel *Laurus nobilis* and, hazel *Corylus avellana*. Some of the trees supported varying levels of ivy *Hedera helix*, which also formed the ground cover along with common nettle *Urtica dioica* and occasional evening primrose *Oenothera biennis* beneath more open areas of the canopy (Photographs 1 and 2).

Dense and Scattered Scrub

Bramble *Rubus fruticosus* agg. scrub colonised areas around the derelict buildings at the Site and formed dense patches at the woodland edge in the northern (Photograph 3) and southern areas of the Site, as well as along the roadside verge at the eastern Site boundary.

Scattered Broadleaved Trees

Scattered broadleaved trees were present at the western Site boundary, comprising young and semi-mature hybrid black poplar, sycamore, rowan *Sorbus aucuparia*, ash, silver birch, hawthorn, pedunculate oak and cherry (Photograph 4).

Poor Semi-Improved Grassland

Poor semi-improved grassland formed the roadside verge along the eastern Site boundary. The grassland was managed to a short sward at the time of the survey and was dominated by perennial ryegrass *Lolium perenne,* with frequent cow parsley *Anthriscus sylvestris,* hogweed *Heracleum sphondylium* and occasional nettles.

Tall Ruderals

Common nettle and willowherb *Chamaenerion angustifolium* had colonised an unmanaged area of former grassland in the northern area of the Site (Photograph 4) and formed patches, adjacent to the dense scrub in the south. Further nettles colonised areas around the buildings at the Site, including an area to the west of the residential property which had been recently cleared of shrubs and small number of trees to enable better access to the building. This area also supported creeping thistle *Cirsium arvense.*

Buildings and Structures

The Site supported a total of 25 buildings/structures and an additional three small wooden structures. These comprised a variety of construction type and former use, including semi-detached residential properties, metal and wooden sheds, Nissen huts and garages.

Building 1 comprised two derelict semi-detached brick-built residential properties with a hipped formed concrete tiled roof. The building was single storey, with internal stairways leading to substantial roof voids. Boarded windows were present at the top of each of the staircases. A flat roofed porch extended on the western aspect and the northern-most property featured a wooden framed sunroom on the eastern aspect. The building has been subjected to significant vandalism in recent years, with trespassers removing the metal flashing around the chimney stacks and gulleys of the roof. This has resulted in large holes in the roof structure and subsequent water ingress into the interior (Photograph 5-7). Internally both properties appeared to have been unoccupied for considerable time and were damp, with extensive damage to the ceilings and plaster visible from the doorway. Due to subsequent safety concerns no internal inspection was undertaken as part of the current survey.

Building 2 comprised a wooden shed/ garage with a pitched felt roof (Photograph 8) and an adjacent flat roof structure comprising wooden boarding and corrugated gently sloped roof. Windows and open doorways made both building sections internally light and draughty. The building was in poor condition with evidence of roof collapse, and a gap along the length of the ridge.

Building 3 comprised a row of garages constructed of corrugated metal sheeting (Photograph 9), whilst Building 4 comprised a further metal garage that was open on the southern aspect and featured missing panels on the western elevation (Photograph 10). Both buildings were in a poor state of repair.

Building 5 was a wooden structure that had partially collapsed at the time of the survey and Building 6 was a small wooden horse box in poor condition. Building 7 comprised a single storey structure constructed of a combination of metal and suspected asbestos cement sheets, with a pitched roof and ventilation pipes at the ridge (Photograph 11). Windows on the eastern aspect exposed the internal space to natural light and the building was noted to be draughty with no insulation Daylight was visible along the length of the ridge.

Building 8 was a wooden, open sided cart shed with a gently sloped suspected asbestos cement and metal sheet roof which was used for storage at the time of the survey. Building 9a and b comprised collapsed wooden structures with no roofs present (Photograph 12), whilst Building 9c comprised a further open sided structure of corrugated metal sheeting which was in a poor state of repair.

Buildings 10 and 15 comprised Nissen huts made from prefabricated steel. Building 10 was open ended (Photograph 13), whilst Building 15 featured wooden doors on the ends and windows set within the western aspect (Photograph 15). Both buildings were single skinned and in a poor state of repair.

Building 11 appeared to be a temporary wooden structure situated adjacent to Building 12, which was a large wooden shed with corrugated metal sheeting and a pitched roof (Photograph 14). Internally Building 12 supported occasional wooden boarding that was in poor condition with evidence of damp and warping. Building 13 was a small wooden and metal storage structure. Buildings 14 comprised an open sided metal barn, whilst Building 16 comprised a wooden, open ended garage and adjacent wooden structure with a partially collapsed roof.

Buildings 17 - 23 were surrounded by dense scrub and were inaccessible at the time of the survey with observations obscured by the vegetation. However, they appeared to comprise deteriorating wooden sheds with either pitched felt or corrugated metal sheet roofs, an open sided metal barn and open stable building constructed of breezeblocks. The buildings all appeared to be in a poor state of repair.

Hardstanding/Bare Ground

Due to limited recent activity at the Site the access track from the north of the Site and around the buildings had become colonised by floral species including daisy *Bellis perennis*, common ragwort *Jacobaea vulgaris*, field forget-me-not *Myosotis arvensis*, dandelion *Taraxacum* agg., black medick *Medicago lupulina*, creeping buttercup *Ranunculus repens* and cranesbill *Geranium* sp.

Intact Species-Poor Hedgerow

A hawthorn hedgerow bordered the woodland along the eastern Site boundary.

Dry Ditch

A dry ditch ran north - south through the Site. The ditch was heavily overshaded by the adjacent woodland and scrub. It featured shallow banks and did not appear to support regular standing water.

Wall

A brick wall was present to the west of the residential property. This was not considered of any particular ecological note.

4.2.2 Habitats Immediately Surrounding the Site

Agricultural land lies to the north, south and west of the Site and to the east beyond Folly lane.

4.3 Notable and Protected Species Assessment Relevant to the Site

Birds

Data records provided by the LERC identified eight records of birds listed on the Schedule 1 of the WCA (1981) as amended and 20 species recorded on the Red List of BoCC. Of these species, tree sparrow *Passer montanus*, house sparrow *Passer domesticus*, fieldfare *Turdus pilaris*, corn bunting *Emberiza calandra,* starling *Sturnus vulgaris*, yellow wagtail *Motacilla flava* and yellowhamer *Emberiza citronella* could utilise the Site for foraging and nesting opportunities.

The mixed plantation woodland, dense scrub, scattered broadleaved trees and hedgerows provide suitable bird nesting opportunities, with further potential associated with ledges and crevices with the buildings at the Site. No bird nesting activity was observed at the time of the inspection. Bird species recorded at the time of the survey were great tit *Parus major*, blackbird *Turdus merula*, wood pigeon *Columba palumbus,* wren *Troglodytes troglodytes*, and yellowhammer. No birds listed on Schedule 1 of the WCA were recorded. It should be noted that this is not a comprehensive inventory of the bird species which may be present at the Site.

Great Crested Newts

The data search revealed records of common toad *Bufo bufo* and common frog *Rana temporaria* within Hill Holt LWS, approximately 500 m to the east of the Site in 2008, whilst common frog, common toad and smooth newt *Lissotriton vulgaris* were also recorded at a location approximately 700 m to the west of the Site in 2008. Common toad and common frog have also been identified within Stapleford Moor LWS, 1 km to the south of the Site in 2008 and 2004, respectively. Negative results have been returned for GCNs from surveys undertaken within the local area to the Site, however, the species was recorded within a garden pond approximately 1 km to the north-west of the Site, beyond the A46, in 2010.

The Site did not support any standing water. Whilst the woodland and scrub may offer suitable terrestrial habitat for amphibian species, a review of aerial photographs and OS maps did not identify any ponds within 500 m of the Site to support breeding amphibians. Furthermore, given the lack of GCN records within 1 km of the Site, despite previous surveys, GCN are not considered to be a constraint at this Site and are not considered further within this Report.

Reptiles

Data records provided showed three recent records of the common lizard within 2 km of the Site centre, recorded in 2017, the closet recorded 1.7 km south of the Site. In addition, two records of grass snake were identified, one from Hill Holt LWS and one from Norton Big Wood LWS, both recorded in 2008. No evidence of reptiles was recorded on the Site. The Site is considered to lack the structural mosaic suitable to support reptiles, with limited basking opportunities, and no direct connectivity of suitable habitat to the LWSs in which reptiles have been recorded. Reptiles are not considered to be a constraint at the Site and are not considered further within this Report.

Bats

The data search identified one roost record within 2 km of the Site centre. This was a BLE roost located within Hill Holt Wood LWS to the east of the Site recorded in 2017. The data search also provided field records of at least nine bat species within 2 km of the Site centre in the past 10 years, including:

- Brandt's bat, BLE, common pipistrelle, soprano pipistrelle, barbastelle, daubenton's bat and whiskered bat recorded within Hill Holt Wood LWS between 2015 and 2017, as part of radio tracking surveys, harp trapping, walked transects and incidental sightings;
- Brandt's bat, BLE, common pipistrelle, daubentons, leisler's bat *Nyctalus leisleri,* noctule, natterers *Myotis nattereri,* soprano pipistrelle and whiskered bat recorded within Potter Hill Plantation LWS in 2015, as part of harp trapping surveys;
- Common pipistrelle, noctule and an unidentified *Myotis* sp. within Norton Big Wood LWS in 2014; and
- Common pipistrelle, soprano pipistrelle, *Myotis* sp. and noctule recorded near the village of Collingham in 2015 as part of walked transects.

From an internet search further information has been identified regarding the Nottinghamshire Barbastelle Project, a Summary Report of which was produced in January 2018 (Nottinghamshire Bat Group, 2018). This project began in 2015 and included walked and driven bat detector transects, deployment of static detectors, advanced catching techniques (mist nets, harp traps, and occasionally acoustic lures) and radio-tracking a selection of healthy female barbastelle. This summary report provides a preliminary map which illustrates approximately half of the location data acquired for three individual bats radio-tracked in late July and early August 2016. Whilst the pixel quality of the map limits interpretation, it does show a number of confirmed roosts within 5 km of the Site, including a main or satellite roost within Hill Holt Wood to the east. The map also shows two of the three radio tracked bats detected within the agricultural fields to the south-eastern and north of the Site, as well as crossing the A46 to land to the north.

Preliminary Roost Assessment

A total of 25 buildings were recorded at the Site. The majority of these were considered to lack the structural and/ or climatic conditions suitable to support roosting bats, with many being internally light, draughty and lacking insulation. External and internal inspections of the buildings, where access allowed, did not identify any evidence of roosting bats. They were, therefore, assessed as having negligible BRP. Building 1, previously identified to support a small number of common pipistrelles as a summer day roost and a small number of hibernating BLE bats, continued to offer BRP, although the internal conditions may have deteriorated due to the extent of vandalism and subsequent exposure to inclement weather conditions. Features such as lifted roof tiles, gaps in the wooden soffits and behind the warped wooden boarding on the windows on the western aspect were noted. An inspection of external features did not identify any evidence of roosting bats. These features and the large holes in the roof structure resulting from previous vandalism also provide potential access into the interior of the building. No internal inspection was undertaken due to health and safety concerns relating to the structural integrity of the building, however, given the previously identified roosts, Building 1 was assessed as having high BRP. Large holes in the roof are considered to have altered internal climatic conditions such that the buildings suitability to support hibernating bats is considered to have significantly deteriorated and its value to hibernating bats considered to be low.

Several trees at the Site were assessed as having low BRP due to ivy growth. The comprised three poplar and an individual sycamore tree along the access track to the north and a row of ivy clad poplar trees in the southern extent of the Site (TN1). Whilst the ivy was relatively thin at the time of the survey it did obscure some areas of the trunk beneath such that as a precaution the trees were assessed as having low BRP.

Presence/Absence and Roost Characterisation Surveys

The nocturnal bat surveys identified a small number of common pipistrelle bats roosting within Building 1. This comprised individual bats accessing three different locations of the building, however, two of the access points were through the large holes in the roof structure such that the exact roost location(s) within the roof could not be determined. The third location was associated with the wooden boarding to the window on the western aspect. The results of the surveys are summarised below, illustrated in Figures 3 - 5 and raw data provided in Appendix F.

Dusk Emergence Survey - 2nd August 2021

The first bat recorded was a common pipistrelle 16 minutes after sunset, recorded above the trees to the west of the building. An individual common pipistrelle bat was recorded to emerge from one of the holes in the eastern aspect of the roof 30 minutes after sunset. A second common pipistrelle bat was recorded to emerge from a roost behind the wooden window boarding on the western aspect of the building 31 minutes after sunset. Common pipistrelle foraging and commuting passes were recorded by each surveyor, intermittently throughout the survey, predominately of individual bats, and a peak count of two bats recorded. Activity appeared to be associated with the adjacent woodland habitats, with least activity recorded to the east of the building. An individual unseen noctule commuting pass was recorded, likely flying at height across the Site. An individual myotis sp. commuting pass was also recorded to the west of the building. This was unseen and faint, likely associated with the adjacent woodland .

Dusk Emergence Survey - 17th August 2021

The first bat recorded was a common pipistrelle seen by all three surveyors commuting above the building from the north-east, 18 minutes after sunset. Two common pipistrelle bats were recorded to emerge from one of the holes in the eastern roof elevation 25 minutes after sunset. Individual common pipistrelle foraging and commuting passes were then recorded by each surveyor, intermittently throughout the survey. Least activity was recorded to the east of the building. An individual unseen Myotis bat was recorded commuting to the west of the building, likely associated with the adjacent woodland.

Dawn Return Survey - 3rd September 2021

No bats were recorded to return to roost during the survey. The last bat was recorded 17 minutes before sunrise, leaving to the south. Individual common pipistrelle bats were recorded commuting and foraging around the building and adjacent woodland, although limited activity was recorded to the east. An individual BLE bat was also recorded foraging to the south and north of the building, before leaving the area to the south.

Badgers

The data search identified five records of badger within 2 km of the Site centre in the last 10 years. Two associated with Folly Lane which lies adjacent to the Site, details are confidential due to welfare issues. Whilst the woodland and scrub at the Site offer suitable sett digging opportunities, the Site did not support any evidence to indicate that badgers were using or inhabiting it at the time of the survey. There were no sett entrances, latrines, snuffle holes, mammal runs or badger dung found within the survey area. Whilst dense scrub prevented access to certain areas of the Site, no mammal paths were identified to indicate badger activity.

Other Protected Species

The data records provided showed one record of hedgehog *Erinaceus europaeus* within 2 km of the Site centre, this was recorded in 2013, 960 m north-west of the Site. The habitats at the Site offer foraging, shelter, dispersal and hibernation opportunities for hedgehogs.

Invasive Species

The data search did not identify any pertinent records of invasive species within 2 km of the Site centre in the last 10 years. No Schedule 9 invasive species were recorded at the Site during the survey.

Hedgerows

The hedgerow at the Site lacked sufficient number of woody species and other features such that it is not considered to qualify as ecologically important according to the Hedgerow Regulations.

5.0 Evaluation

Designated sites-statutory sites/non-statutory sites

The results of the desk search indicate that there were no international designations within 6 km of the Site and no statutory designated sites within 2 km of the Site centre. Ten non-statutory designated sites have been identified within 2 km of the Site centre. Due to the localised nature of the potential construction effects, it is considered unlikely that the proposed development will have any direct effect on the majority of the non-statutory designated sites that have been identified. The closest LWS to the Site at a distance of 300 m to the north-east is Hill Holt LWS, however, this is considered to be of a sufficient distance from the Site and with further arable land separating it such that any temporary indirect effects from increased disturbance as a result of lighting, noise and vibration will be negligible.

Habitats

The proposed development will result in the demolition of the majority of buildings at the Site. Loss of scrub and ruderal vegetation is also anticipated to facilitate the construction of the new dwellings and creation of formal landscaped garden areas, however, current plans do not show the extent of proposed clearance. The current development plan indicates that the majority of woodland habitat is to be retained and appropriate protection will be required during the construction phase of development. It is also understood that no works are proposed within the southern extent of the Site. Habitat loss, particularly woodland, should be minimised and any required losses should be appropriate compensated through additional landscape planting and/or appropriate management of the retained woodland to enhance its ecological value.

Species

The Site offers extensive suitable habitat for nesting birds, the majority of which appears to be retained as part of the proposals. There is, however, potential for direct adverse effects on birds that utilise the Site as a result of any required clearance and demolition of the buildings. In addition, construction works being carried out within proximity to nesting birds may affect them indirectly, depending on the works being carried out, and the species of bird affected. Noise and vibration disturbance effects may result in birds being repeatedly flushed off nests, causing disruption to feeding activity, or even abandonment of nests. Mitigation should be put in place to ensure that no nesting birds are disturbed as a result of any necessary vegetation clearance, demolition of the buildings and construction at the Site.

Building 1 has previously been found to support a small number of hibernating BLE bats, although its suitability has been decreased as a result of vandalism, and supports up to three small summer day roosts of common pipistrelle bat(s). The proposed demolition of the building will result in the permanent loss of the roost(s) as well as the potential to kill or injure individual bats if present. A EPSL is required to facilitate the demolition and ensure appropriate mitigation and compensation measures are applied. Depending on timescales to full planning consent and commencement of works on-Site, the EPSL application may require updated surveys should more than one season (12 months) pass from the date of this Report.

It is understood that the majority of trees are to be retained at the Site, including those assessed as having low BRP due to ivy growth. However, a precautionary approach should be taken prior to any tree removal or management to confirm current roost potential and ensure appropriate application of mitigation, as required.

Bat activity recorded during the roost presence/absence surveys, whilst relatively low and dominated by common pipistrelle, also included less common and more light intolerant species including BLE and myotis species. Retention of the majority of woodland habitat at the Site will continue to offer suitable foraging and commuting corridors for bats that occur, however, any lighting at the Site has the potential to adversely impact upon bats and a sensitive lighting scheme is essential to maintain the Sites value for local bat species.

Whilst no evidence of badger was recorded at the Site during the survey, the habitats at the Site and in surrounding land offers opportunities for this species. There is, therefore, the potential for individuals to occupy the Site and to venture across the Site during the proposed works. Appropriate precautionary measures are required to prevent harm any badger that occur.

Whilst no evidence of hedgehog was recorded during the survey, the Site and surrounding land offers suitable habitat for this species and as such mitigation measures should be put in place during works to ensure that if present, hedgehogs do not become trapped during constructions works and care should be taken to ensure that hedgehogs are not harmed during vegetation clearance works.

6.0 Recommendations

6.1 Further Survey Requirement

The surveys undertaken are considered sufficient to inform the development proposals and no further surveys are deemed necessary at this time.

6.2 Construction and Operational Phase Protection/Enhancement Measures

Species Protection

Nesting Birds

- Any vegetation clearance/management or demolition of the buildings should be performed either before early March or after late August in order to avoid the main bird nesting season; and
- If, however, works are necessary during the nesting period an experienced ecologist will be required to check the Site habitats immediately prior to works commencing to confirm that no nesting birds will be affected by the proposed works, and works would- then need to proceed within the following 24 hours.

Bats

- A EPSL is required to allow the lawful demolition of Building 1. A mitigation strategy will be prepared and submitted as part of the licence application. Works to renovate the building supporting a bat roost would be completed under a Method Statement that includes timing constraints so that the most sensitive periods for bats are avoided; supervision of works by a Natural England licenced bat ecologist; and hand removal of sensitive features for bats.
- In order to compensate for the potential loss of hibernation opportunities, a hibernation bat box should be installed on a suitable nearby tree to be retained. This will be of woodcrete construction (Schwegler 1FW, or similar approved product).
- In order to compensate for the loss of the summer roosts, integrated roost opportunities will be provided within the new buildings at the Site. This could include access points provided through the use of appropriate bat tiles and lifted ridge tiles with corresponding gaps created within bitumen felting (not breathable membrane) and internal roof beams with be left exposed to create suitable perches, and/or integrated bat bricks.
- Depending on timescales to works commencing on-Site, this may require updated nocturnal bat surveys to establish an up-to-date assessment of the roost status. In addition, should any works be required to the buildings in the south of the Site access should be gained to undertake a BRP assessment and any associated surveys.
- As a precautionary measure, any removal of, or works to, semi-mature and mature trees should be undertaken following an inspection, and where necessary a dawn return survey by a licenced bat ecologist. In the event that any roosting bats are identified, appropriate mitigation would be applied, including application of a licence from Natural England.
- Any required lighting at the Site should be kept to the minimum required for safety and security and where possible be switched, or sensor motion controlled. The detailed lighting design on Site should be functional and directional and in line with current guidance (BCT and ILP, 2018); BCT, 2014; Stone, E.L. (2013) through:
  - The use of lights utilising light emitting diodes (LED) without UV elements, therefore reducing the attraction of invertebrates to the lights;
  - Only luminaires with 0 % upward light ratio should be used and fitted on the horizontal to avoid excessive up-lighting, back lighting and light spill onto boundary hedgerows and trees;
  - A warm white spectrum (between 2000 – 3000 Kelvin) should be used in order to reduce blue light component, therefore reducing the number of invertebrates attracted to the lights;
  - Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats;

- Ideally the lux levels should be kept to the minimum required for security and safety; and
- Any compensatory or enhancement roosting habitats should be unlit.

Badgers

A pre-commencement survey should be undertaken to provide an update on any badger activity at the Site and to allow appropriate mitigation to be applied, where necessary.

Hedgehogs

Vegetation clearance should be undertaken with an awareness for the potential presence of hedgehog. In the event that an individual is found it should be carefully moved, with gloved hands, to an area of suitable habitat away from the proposed works.

Excavations

It is recommended that no excavations or trenches are left uncovered overnight during the development works to prevent badgers and hedgehogs from becoming trapped. Alternatively, ramps can be provided to enable them to climb out of trenches or excavations.

Site Protection

All works on Site should follow an appropriate working methodology to avoid inadvertent damage to any habitats and associated fauna retained on, or surrounding, the Site. This includes the protection of retained trees in accordance with the arboricultural report prepared for the Site.

General Site Enhancement

Following the issue of the NPPF (as revised 2021), by the Ministry of Housing, Communities and Local Government, *"Planning policies and decisions should contribute to and enhance the local environment by (d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures…"* ; and, therefore, we recommend the following principles of design should be followed:

- Planting should aim to enhance retained or adjacent vegetation and be of native species, or those of known value to wildlife, sourced from local nurseries to enhance foraging opportunities for local birds and bats, by increasing the invertebrate diversity on-Site. A species list of recommended trees and shrubs is provided in Appendix G;
- Installation of bird nest boxes suitable to support species of conservation concern and known to occur in the local area. As such these could include integrated house sparrow terrace nest boxes within the new buildings at the Site and/or tree sparrow nest boxes within the retained woodland; and
- Installation of bat boxes suitable to support a range of locally occurring species within the retained woodland at the Site.

7.0 Disclaimer

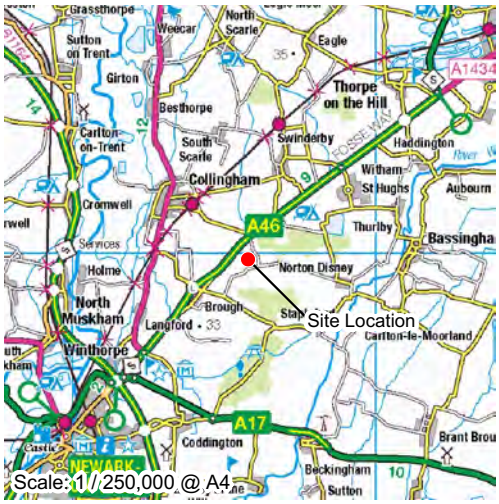
The recommendations contained in this Report represent Delta-Simons' professional opinions, based upon the information referred to in Section 1.0 of this Report, exercising the duty of care required of an experienced Ecology Consultant. Delta-Simons does not warrant or guarantee that the Site is free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

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

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

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

Figure 1 – Site Location Map



LEGEND

Site Boundary

Potter Hill Farm
South Potter Hill Farm
Hill Holt
Birch Holt
Hill Holt Farm
Villa Farm
Folly Lane
The Big Thorns
High Spring
Low Spring
Brills Farm
Newark Road
Grove Farm
Norton Bottoms
A46
A17
N

0 250 m

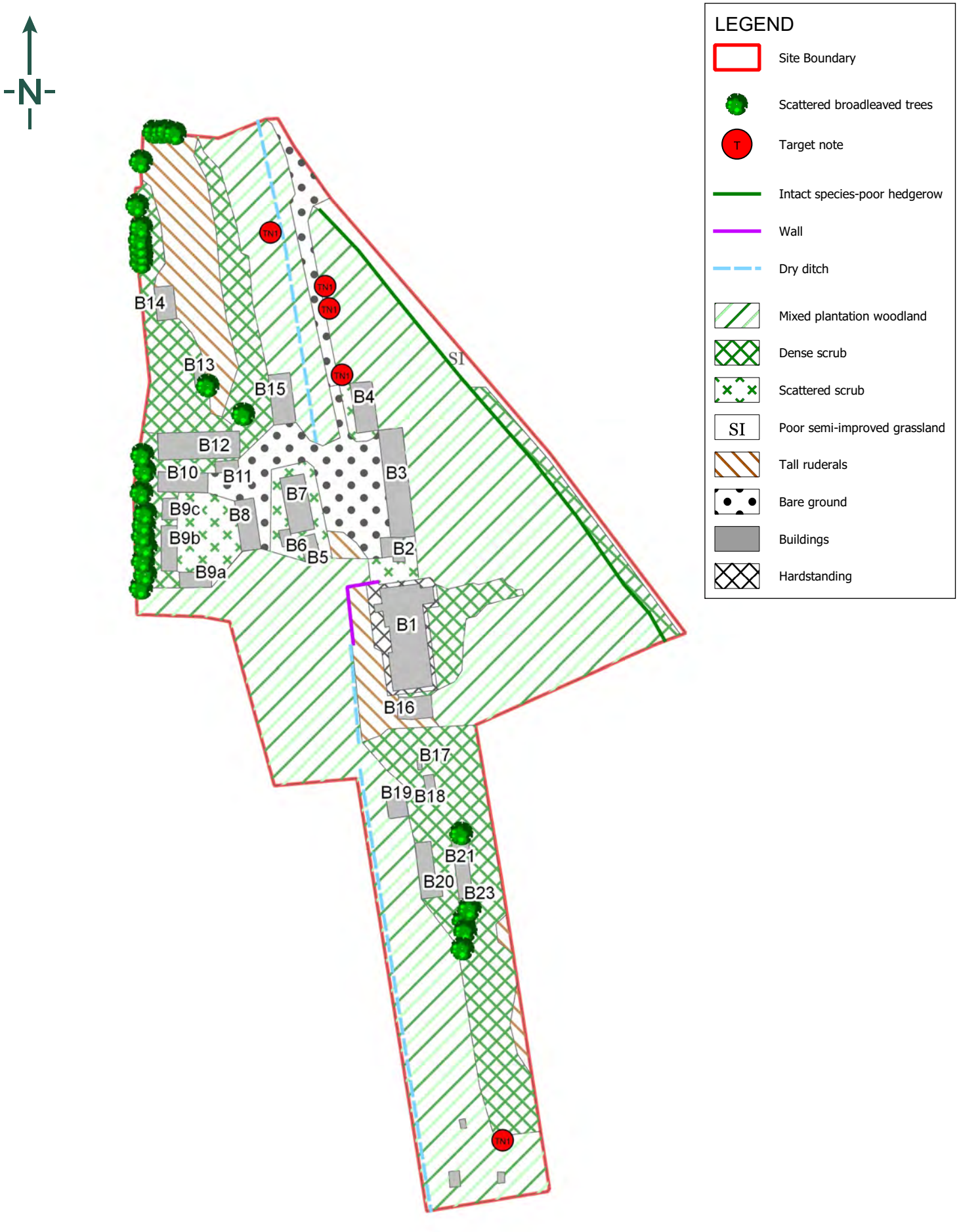
Scale: 1:10000 @ A4

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Site Location Map
Villa Farm, Folly Lane
Norton Disney

DRAWN BY:	SCALE (@A4):	PROJECT NO:
JB	1:10000	21-1575
CHECKED BY:	REVISION:	FIGURE NO:
CB	0	1
DATE: 24 September 2021		

Figure 2 – Phase 1 Habitat Survey Plan



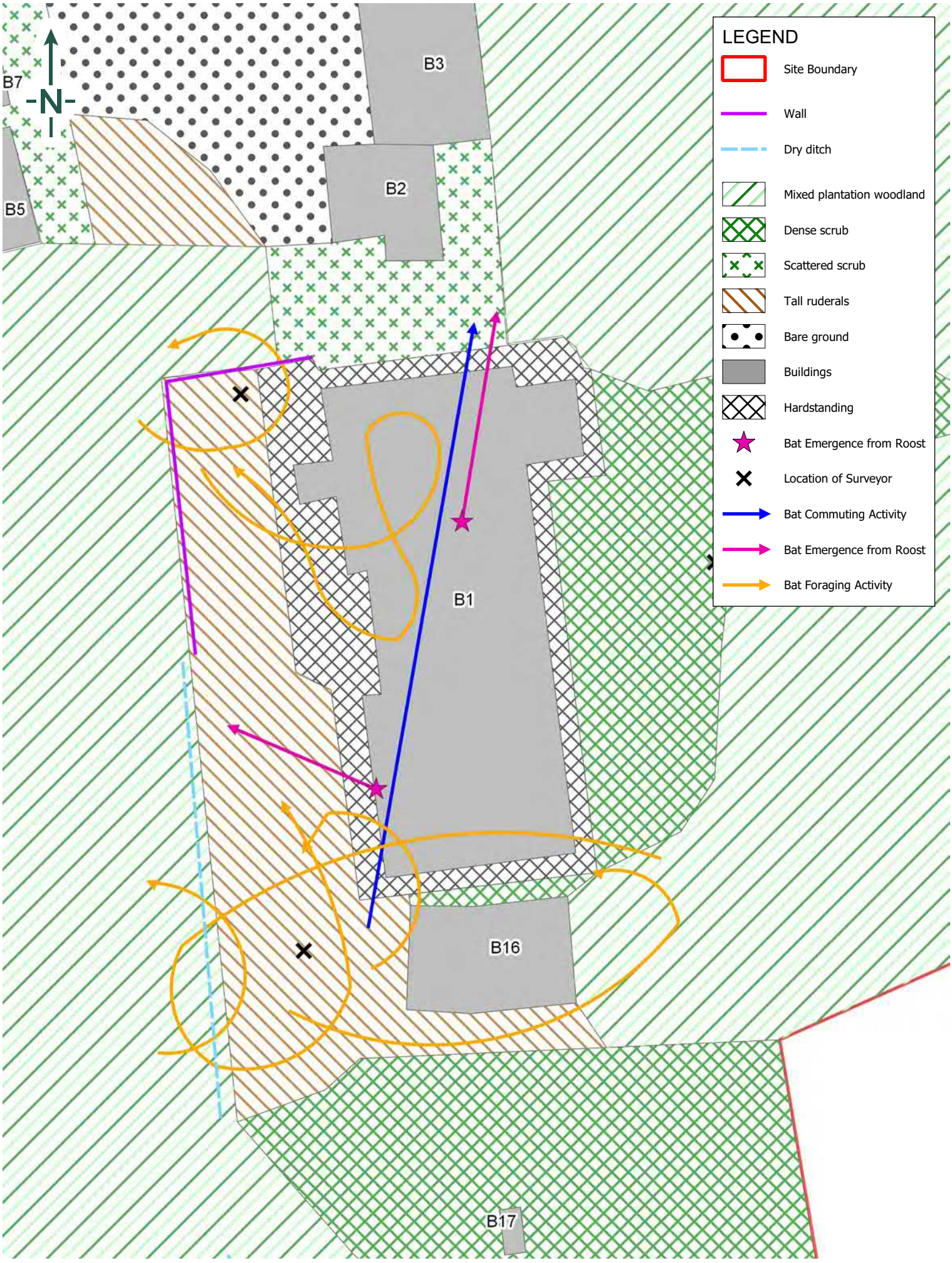
Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Phase 1 Habitat Survey Plan
Villa Farm, Folly Lane
Norton Disney

DRAWN BY:	SCALE (@A4):	PROJECT NO:
JB	1:1118	21-1575.02
CHECKED BY:	REVISION:	FIGURE NO:
CB	-	2
DATE:		
30 September 2021		

Figure 3 – Location of Surveyors and Results of the Dusk Survey 2/8/21



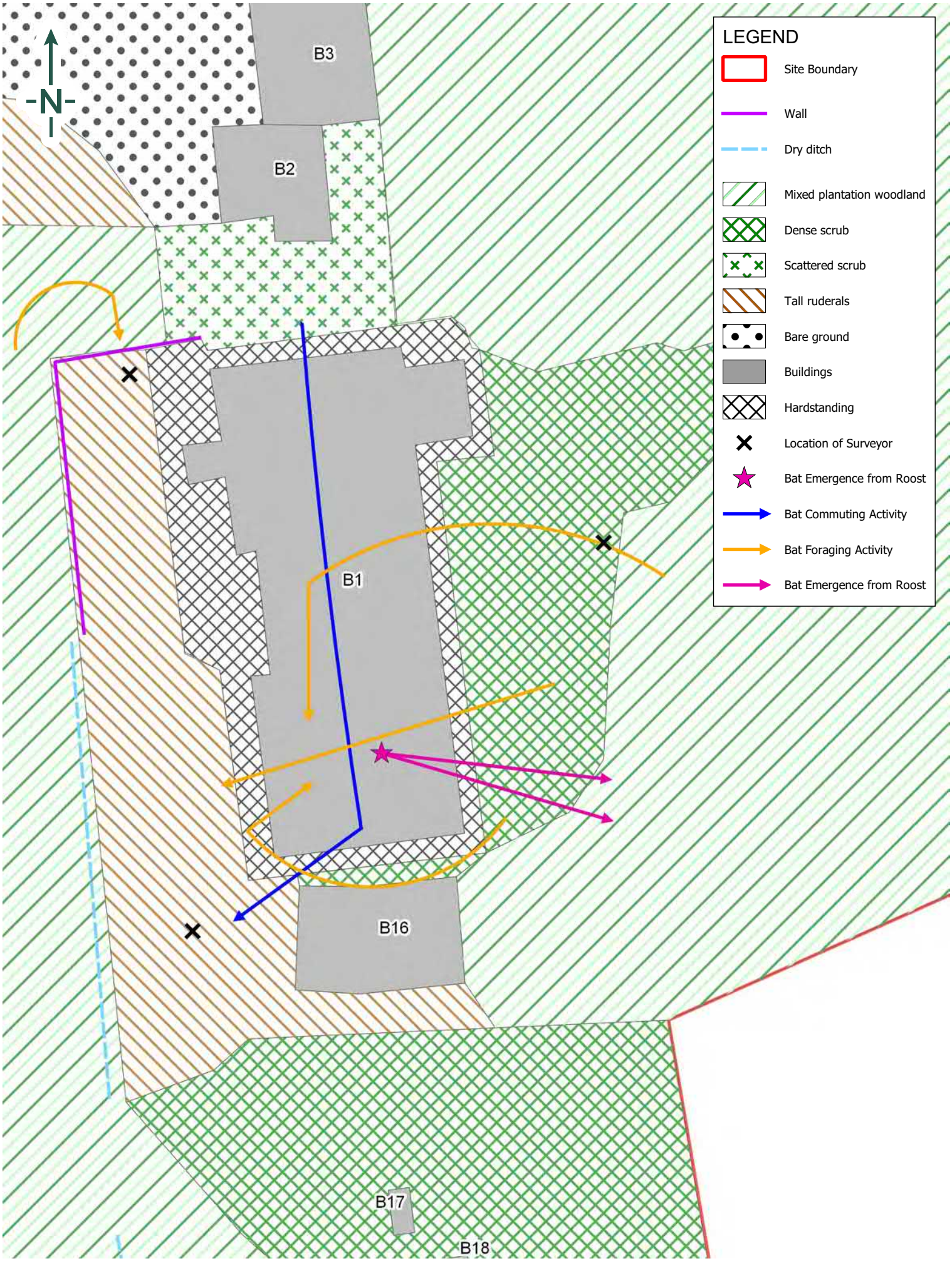
Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Location of Surveyors and Results of the Dusk Survey 02/08/2021
Villa Farm, Folly Lane, Norton Disney

DRAWN BY:	SCALE (@A4):	PROJECT NO:
JB	1:223	21-1575.02
CHECKED BY:	REVISION:	FIGURE NO:
CB	-	3
DATE:		
24 September 2021		

Figure 4 – Location of Surveyors and Results of the Dusk Survey 17/8/21



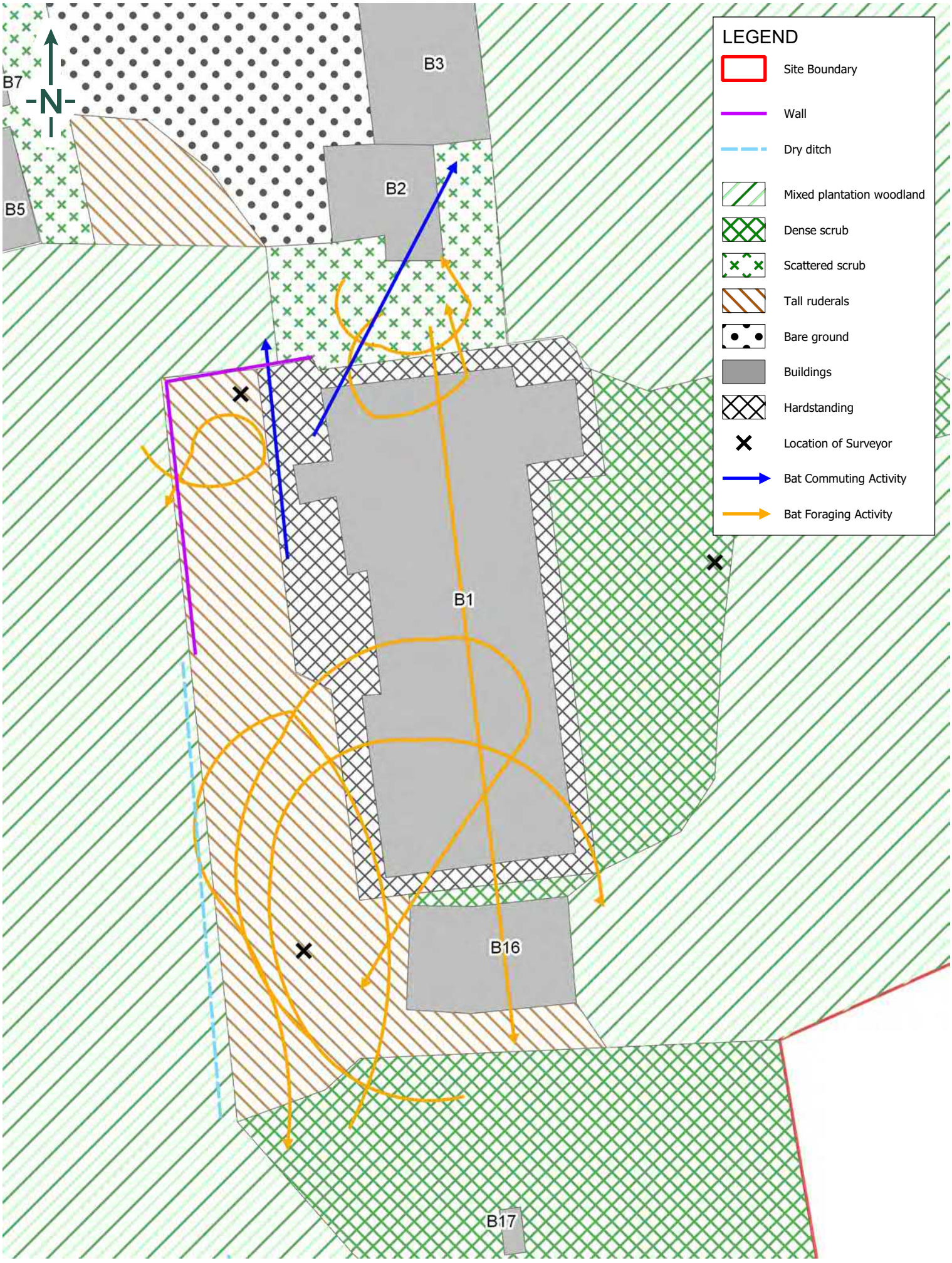
Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Location of Surveyors and Results of the Dusk Survey 17/08/2021
Villa Farm, Folly Lane, Norton Disney

DRAWN BY:	SCALE (@A4):	PROJECT NO:
JB	1:223	21-1575.02
CHECKED BY:	REVISION:	FIGURE NO:
CB	-	4
DATE:		
24 September 2021		

Figure 5 – Location of Surveyors and Results of the Dawn Return Survey 3/9/21



Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Location of Surveyors and Results of the Dawn Survey 03/09/2021
Villa Farm, Folly Lane, Norton Disney

DRAWN BY:	SCALE (@A4):	PROJECT NO:
JB	1:223	21-1575.02
CHECKED BY:	REVISION:	FIGURE NO:
CB	-	5
DATE:		
24 September 2021		

Drawing 1 – Indicative Proposed Layout

Scale Bar
0 25m 50m
10m 20m 30m 40m

Do not scale, use figured dimensions only. All discrepancies to be notified to Artech Designs Limited.
This drawing remains the copyright of Artech Designs Limited.

Existing vehicular access

N

Plot 1

Plot 2

Private Drive

FOLLY LANE

Point	Easting	Northing	Elevation
9002	485701.907	360512.240	33.194
9003	485736.115	360458.940	35.266
8008	485786.782	360275.801	36.444
8010	485822.208	360176.100	36.174
8003	485854.722	360126.242	36.192
8004	485981.222	360095.064	36.099
8005	485954.429	359992.159	35.835
8006	486008.388	359917.613	35.182
9500	486111.816	359704.042	34.807
8009	486117.479	359666.098	34.939
9501	486118.956	359656.642	34.847

Schedule:

Dwelling Unit Mix:
Plot 1 - 370m² or 3983ft²
Plot 2 - 383m² or 4122ft²
(Min. 4 Bed Dwellings to each plot)

Parking Provision:
Each dwelling unit has a min. 3no Garage/Carport parking spaces

Site Block Plan

Revision	Description	Date

Client

Residential Development
Villa Farm, Folly Lane, Walton Disney
Lincoln, Lincolnshire

Drawing: Site Block Plan
Status: Feasibility
Scale: 1:200 @ A1
Date: July 2021
Drawing No: 154 ????
Revision: Drawn by mdf

artech DESIGNS
Artech Designs Ltd
Architectural Consultants
44 Church Road - Saxilby
Lincoln - LN1 2HJ
Tel 01522 503362
Mob 07808 815366
martin@artechdesigns.co.uk
www.artechdesignsw.co.uk

DRAFT

Appendix A – Relevant Legislation

Relevant Legislation

National Planning Policy Framework

The revised National Planning Policy Framework (NPPF), sets out, amongst other points, how '*Planning policies and decisions should contribute to and enhance the natural and local environment by:*

"Minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressure"

The NPPF states that this should be achieved through local planning development frameworks and gives recommendations for criteria based policies which recognise the hierarchy of designated sites which range from internationally important habitat, to sites of importance at a local level and ensure that protection is *"in a manner commensurate with their statutory status or identified quality in the development plan.*"

A list of principles which local planning authorities should follow when determining planning applications is included in the NPPF:

- *"If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- *Development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact on the features of the site that make it of special scientific interest, and any broader impacts on the national network of Sites of Special Scientific Interest;*
- *Development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons[1] and a suitable compensation strategy exists;*
- *Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate"*

The following should be given the same protection as habitats sites:

- Potential Special Protection Areas and possible Special Areas of Conservation;
- Listed or proposed Ramsar sites; and
- Sites identified, or required, as compensatory measures for adverse effects on habitats sites, potential Special Protection Areas, possible Special Areas of Conservation, and listed or proposed Ramsar sites.

It is also worth noting that where there are potential impacts upon internationally designated sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites) as a result of a proposed development, *"The presumption in favour of sustainable development does not apply where the plan or project is likely to have a significant effect on a habitats site (either alone or in combination with other plans or projects), unless an appropriate assessment has concluded that the plan or project will not adversely affect the integrity of the habitats site."*

In addition, the Office of the Deputy Prime Minister circular 06/2005 remains current. It states that '*The presence of a protected species is a material consideration when a planning authority is considering a development proposal'. The circular advises that local authorities should consult Natural England before granting planning permission if the proposals could adversely affect a protected species.*'

[1] For example, infrastructure projects (including nationally significant infrastructure projects, orders under the Transport and Works Act and hybrid bills), where the public benefit would clearly outweigh the loss or deterioration of habitat.

The Conservation of Habitats and Species Regulations 2017 (as amended)

The Conservation of Habitats and Species Regulations 2017 (as amended) are the British response to the Habitats & Species Directive 1992, and consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The 1994 Regulations transposed Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law.

The Regulations for the protection of European Protected Species (EPS) have been amended and consolidated with key changes including the removal of most of the defences from Regulation 40 and Regulation 43 including the removal of the 'incidental result of an otherwise lawful operation' defence, and the increase in the threshold for the offence of deliberately disturbing a EPS. Proposals that will affect European protected species may require a licence from Natural England to allow an otherwise unlawful act. In the 2009 a new offence of 'breaching condition of an EPS licence' was added to the regulations. The licensing process is separate from and planning process. European protected species include all species of bats, great crested newt *Triturus cristatus*, dormouse *Muscardinus avellanarius*, and European otter *Lutra lutra*, amongst others.

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

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

The Countryside and Rights of Way (CRoW) Act 2000

The CROW Act, introduced in England and Wales in 2000, amends and strengthens existing wildlife legislation detailed in the WCA. It places a duty on government departments and the National Assembly for Wales to have regard for biodiversity, and provides increased powers for the protection and maintenance of SSSIs.

The Act also contains lists of habitats and species (Section 74) for which conservation measures should be promoted, in accordance with the recommendations of the Convention on Biological Diversity (Rio Earth Summit) 1992.

The Natural Environment and Rural Communities (NERC) Act 2006

Section 40 of the NERC Act places a duty upon all local authorities and public bodies in England and Wales to promote and enhance biodiversity in all of their functions. Section 41 (England) list habitats and species of principal importance to the conservation of biodiversity in England. These species and habitats are a material consideration in the planning process.

The Hedgerow Regulations 1997

Under the Hedgerow Regulations 1997, it is against the law to remove or destroy certain hedgerows without permission from the local authority.

Local planning authority permission is required before removing hedges that are at least 20 metres (66 feet) in length more than 30 years old and contain certain species of plant. The authority will assess the importance of the hedgerow using criteria set out in the regulations.

Species

Birds

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

Amphibians

All native amphibians are protected under the WCA 1981 (as amended), with some species also protected under the European Habitats Directive (92/43/EC), transposed in England and Wales through the Conservation of Habitats and Species Regulations 2017. All amphibians are protected from keeping, transporting, selling or exchanging. This means that in practice reasonable measures must be taken to avoid their incidental mortality.

The Great Crested Newt (GCN) is protected under the Conservation of Habitats and Species Regulations 2017 (as amended) and Schedule 5/9(4)(b) and (c) of the WCA 1981 (as amended). It is an offence to deliberately kill, injure, capture GCN or to deliberately disturb this species, or to intentionally or recklessly obstruct access to their places of shelter or protection, to damage or destroy their breeding sites or resting places, or to intentionally or recklessly disturb a GCN whilst in a place of shelter or protection. The legislation applies to all stages of the life cycle including eggs, larvae and juveniles. It should be noted that GCNs spend the majority of their lives on land, venturing up to 500 m (but more usually 250 m) from their breeding ponds and as such any ground works within 500 m of a breeding pond could potentially have an adverse effect on GCNs.

Reptiles

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

Bats

All bats and their resting places are protected under Section 9(4)(b) and (c) of the WCA 1981 (as amended) and by the Conservation of Habitats and Species Regulations 2017 (as amended).

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

Badgers

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

Invasive Species

Invasive species are plant species which are prohibited from release into the wild. There is an extensive list (currently 42) which are set out in section 14(2) of the WCA 1981 (as amended) which states that '*if any person plants or otherwise causes to grow in the wild any plant which is included in Part II of Schedule 9, he shall be guilty of an offence*.'

The most widespread of these are Japanese knotweed *Fallopia japonica* and giant hogweed *Heracleum mantegazzianum* which are also is covered by several pieces of legislation. The Environmental Protection Act 1990 (as amended) is a broad ranging piece of legislation that singles out Japanese knotweed and giant hogweed for special mention. The Act places a 'Duty of Care' on the producer and anyone they employ to dispose of soil or other material contaminated with Japanese knotweed or giant hogweed, such material becomes a controlled waste, which can only be taken to licensed landfill and must be dealt with in an appropriate way.

Appendix B – References

References

BS 42020:2013 Biodiversity. Code of Practice for Planning and Development

BCT (2014) Artificial lighting and wildlife Interim Guidance: Recommendations to help minimise the impact artificial lighting

BCT and Institution of Lighting Professionals (2018). Bats and artificial lighting in the UK

Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. CIEEM, Winchester

Collins, J. (ed.) (2016) Bat surveys for Professional Ecologists: Good practice Guidelines (3rd edition). The Bat Conservation Trust, London

Eaton MA, Aebischer NJ, Brown AF, Hearn RD, Lock L, Musgrove AJ, Noble DG, Stroud DA and Gregory RD (2015) Birds of Conservation Concern 4: the population status of birds in the United Kingdom, Channel Islands and Isle of Man. British Birds 108, p 708–746

English Nature (now Natural England) (2004) Bat Mitigation Guidelines. English Nature, UK

GOV.UK. Pollution prevention for businesses [online]. Available from https://www.gov.uk/guidance/pollution-prevention-for-businesses

Joint Nature Conservation Committee (2010). Phase 1 habitat classification and mapping methodology. JNCC, UK

Ministry of Housing, Communities & Local Government (2021). National Planning Policy Framework

Multi-Agency Geographic Information for the Countryside (MAGIC) [online]. Available at: www.magic.gov.uk

Stace, C. (2010). New Flora of the British Isles 3rd edition. University Press, Cambridge

Stone, E.L. (2013) Bats and lighting: Overview of current evidence and mitigation guidance

The Conservation of Habitats and Species Regulations 2017 (as amended). HMSO

The Countryside and Rights of Way Act 2000. HMSO

The Natural Environment and Rural Communities Act 2006. HMSO

The Hedgerow Regulations 1997. HMSO

The Protection of Badgers Act 1992. HMSO

Wildlife and Countryside Act 1981 (as amended). HMSO

Appendix C – Assessment of Structures, Trees and Habitats for Bats

Assessment of Structures, Trees and Habitats for Bats

Guidance on Assessing the Potential Suitability of Development Sites to Support Bats (adapted from Collins, J. (ed)).

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

Appendix D – Target Notes

Target Notes

Target Note 1 Ivy clad trees with BRP

Appendix E – Site Photographs

Site Photographs

Photograph 1 – Woodland bordering the access track at the northern extent of the Site

Photograph 2 – Woodland within the centre of the Site

Photograph 3 – Dense scrub and tall ruderals in the northern extent of the Site

Photograph 4 – Scattered trees at the western Site boundary

Photograph 5 – Western aspect of Building 1 with roost location behind wooden boarding

Photograph 6 – Eastern roof elevation of Building 1 with roost access point in roof structure

Photograph 7 – Missing roof tiles and warped boarding on Building 1

Photograph 8 – Building 2

Photograph 9 – Building 3

Photograph 10 – Building 4

Photograph 11 – Building 7

Photograph 12 – Building 9a and b

Photograph 13 – Building 10

Photograph 14 – Buildings 11 (left) and 12 (right)

Photograph 15 – Building 15

Appendix F – Results of the Nocturnal Bat Surveys

Results of the Nocturnal Bat Surveys

Dusk Survey 02/08/2021

Surveyor Location	Time of Sighting	Location of Sighting	Species	Behaviour (e.g. swarming, foraging, commuting)	Peak count	Comments
North-west corner	21.15 – 21.35	Flew from west foraging over the dwelling and trees	Common Pipistrelle	Foraging	1	No bats recorded to emerge from a roost. Regular common pipistrelle activity around the building and adjacent woodland Individual myotis pass likely in woodland to the west
	21.40		Common Pipistrelle	Foraging	1	
	21.44	Heard not seen	Common Pipistrelle	Foraging	1	
	21.47		Noctule	Commuting	1	
	21.49	Flew from west foraging over the dwelling and trees	Common Pipistrelle	Foraging	1	
	21.51	Heard not seen	Common Pipistrelle	Foraging	1	
	22.21		Common Pipistrelle	Foraging	1	
	22.25	Heard not seen, faint, likely in the trees to the west	Myotis Sp.	Commuting	1	
Eastern aspect	21.25	Heard not seen	Common Pipistrelle	Foraging	1	Individual common pipistrelle bat emerged from a hole in the roof Intermittent common pipistrelle activity
	21.27		Common Pipistrelle	Foraging	2	
	21.28		Common Pipistrelle	Foraging	1	
	21.29	Emerged from the hole on the roof next to chimney and flew to the north	Common Pipistrelle	Emergence	1	
	21.30	Flew across the dwelling to the trees in the north	Common Pipistrelle	Commuting	1	
South-west corner	21.15	Above trees to the west	Common Pipistrelle	Foraging	1	Individual common pipistrelle bat emerged from behind wooden window boarding Regular common pipistrelle activity around house and adjacent woodland
	21.18		Common Pipistrelle	Foraging	1	
	21.24	Around the tree to the south of the building	Common Pipistrelle	Foraging	1	
	21.26		Common Pipistrelle	Foraging	1	
	21.29	Along western aspect of the building	Common Pipistrelle	Foraging	1	
	21.30	Emerged from behind wooden boarding on western aspect of the building	Common Pipistrelle	Emergence	1	
	21.34	North to south over the trees	Common Pipistrelle	Foraging	1	
	21.37	East to west	Common Pipistrelle	Foraging	1	
	21.40	From trees to north over house and trees to the west	Common Pipistrelle	Foraging	1	

	21.41	From east over house and trees	Common Pipistrelle	Foraging	1	
	21.46	Over trees to the south-west	Common Pipistrelle	Foraging	1	

Dusk Survey 17/08/2021

Surveyor Location	Time of Sighting	Location of Sighting	Species	Behaviour (e.g. swarming, foraging, commuting)	Peak count	Comments
Eastern aspect	20.42	Seen but not heard	Common Pipistrelle	Commuting	1	Two common pipistrelle bats emerged from hole in roof adjacent to southern chimney. Regular common pipistrelle activity, largely unseen and likely within trees or above the building out of sight of surveyor (recorded by other surveyors).
	20.48	East to west	Common Pipistrelle	Foraging	1	
	20.52	Emerged from hole in the roof adjacent to southern chimney and both flew to the east	Common Pipistrelle	Emergence	2	
	21.02	Heard not seen	Common Pipistrelle	Foraging	1	
	21.22		Common Pipistrelle	Foraging	1	
	21.26		Common Pipistrelle	Foraging	1	
	21.31		Common Pipistrelle	Foraging	1	
	22.37		Common Pipistrelle	Foraging	1	
	22.37		Common Pipistrelle	Foraging	1	
	22.41		Common Pipistrelle	Foraging	1	
	22.50		Common Pipistrelle	Foraging	1	
South-west corner	20.42	From east to west over the dwelling	Common Pipistrelle	Commuting	1	No bats recorded to emerge from a roost. Regular common pipistrelle activity Individual unseen myotis pass likely to the west of the surveyor in the adjacent woodland.
	20.48	From east to west over dwelling	Common Pipistrelle	Foraging	1	
	21.07	From east to north	Common Pipistrelle	Foraging	1	
	21.10	From south to north . Not recorded on bat detector but likely pipistrelle from observations	Common Pipistrelle	Commuting	1	
	21.12	Seen above the dwelling, flew to the south. Not recorded on bat detector but likely pipistrelle from observations	Common Pipistrelle	Foraging	1	
	21.18	Heard not seen	Common Pipistrelle	Commuting	1	
	21.21	Heard not seen	Myotis Sp.	Commuting	1	
North-west corner	20.41	Above the building	Common Pipistrelle	Commuting then foraging	1	No bats recorded to emerge from a roost. Regular common pipistrelle activity above building and woodland to the west.
	20.48	Heard not seen, brief pass	Common Pipistrelle	Foraging	1	
	21.07		Common Pipistrelle	Foraging	1	
	21.09	Above trees to the west	Common Pipistrelle	Foraging	1	

	21.16	Above the north-west corner of the building and adjacent trees	Common Pipistrelle	Foraging	1	
	21.17	Heard not seen	Common Pipistrelle	Foraging	1	
	21.20		Common Pipistrelle	Foraging	1	
	21.22	Heard not seen, faint	Common Pipistrelle	Foraging	1	
	21.25	Above the north-west corner of the building and adjacent trees	Common Pipistrelle	Foraging	1	
	21.29	Heard not seen	Common Pipistrelle	Foraging	1	
	21.34	Heard not seen faint	Common Pipistrelle	Foraging	1	
	21.47	Above the north-west corner of the building and adjacent trees	Common Pipistrelle	Foraging	1	
	21.53	Above the north-west corner of the building and adjacent trees	Common Pipistrelle	Foraging	1	

Dawn Survey 03/09/2021

Surveyor Location	**Time of Sighting**	**Location of Sighting**	**Species**	**Behaviour (e.g. swarming, foraging, commuting)**	**Peak count**	**Comments**
Eastern aspect	05.25 – 05.35	Above building	Common pipistrelle	Foraging	2	No bats recorded to return to roost. Two bats foraging above the building for a period of ten minutes
South-east corner	05.17	Heard not seen, likely above trees to the west	Common pipistrelle	Commuting	1	No bats recorded to return to roost. Regular common pipistrelle activity. Individual BLE foraging around building then left to the south.
	05.19	Heard not seen, very brief	Common pipistrelle	Commuting	1	
	05.23	Heard not seen	Common pipistrelle	Commuting	1	
	05.24		Common pipistrelle	Commuting	1	
	05.26	Round the south-western corner of the building	BLE	Commuting	1	
	05.29 – 05.33	Above southern aspect of building, back and forth, left to the south	BLE	Foraging	1	
	05.34	Heard not seen	Common pipistrelle	Commuting	1	
	05.35		Common pipistrelle	Commuting	1	
	05.47		Common pipistrelle	Commuting	1	
	05.49	From the south, along west of building and back	Common pipistrelle	Foraging	1	
	05.57	From the south, along west of building and back	Common pipistrelle	Foraging	1	

North-west corner	05.05	Above north-western corner	Common pipistrelle	Foraging	1	No bats recorded to return to roost. Regular common pipistrelle activity. Individual BLE foraging above building.
	05.18	Heard not seen	Common pipistrelle	Foraging	1	
	05.23		Common pipistrelle	Foraging	1	
	05.25	South to north	Common pipistrelle	Commuting	1	
	05.26	Heard not seen	Common pipistrelle	Foraging	1	
	05.27	Round north-western corner of the building and adjacent vegetation	Common pipistrelle	Foraging	1	
	05.28	Heard not seen	BLE	Foraging	1	
	05.29	Above building	BLE and Common pipistrelle	Foraging	2	
	05.30	Above buildings to the north	Common pipistrelle	Commuting	1	
	05.35	Heard not seen	Common pipistrelle	Commuting	1	
	05.35	Above building	Common pipistrelle	Foraging	1	
	05.37	Above north-western corner and adjacent vegetation	Common pipistrelle	Foraging	1	
	05.47	Heard not seen	Common pipistrelle	Foraging	1	
	05.49		Common pipistrelle	Foraging	1	

Appendix G – Native Floral Species to Plant for Wildlife Enhancement On-Site

Native Floral Species to Plant for Wildlife Enhancement On-Site

The following list gives good examples of plants for different conditions which have value for native fauna either as a food source or shelter. To maximise value for wildlife plants should ideally be native, not cultivars, and sourced locally where possible. Planting should look to provide food at all levels, with underplanting of trees with shrubs or species rich grassland to provide maximum value out of an area and add interest to planting schemes.

Note: it is currently generally not advised to plant ash because of ash die back. However, ash is a very valuable plant for wildlife especially as a semi-mature and mature tree. Therefore, if locally sourced trees or self-sets known to be free of the fungus are available then these should be incorporated. Additionally, trees not showing signs of being affected should be retained where possible.

Trees and Shrubs

Large trees

- Beech *Fagus sylvatica*;
- Bird cherry *Prunus padus*;
- Elm *Ulmus procera*;
- Oaks *Quercus robur* and *Q. petraea*;
- White willow *Salix alba*;
- Field maple *Acer campestre*;
- Silver birch *Betula pendula*;
- Rowan *Sorbus aucuparia*;
- Small-leaved lime *Tilia cordata*; and
- Walnut *Juglans regia*.

Medium/Small Trees

- Alder *Alnus glutinosa*;
- Apples *Malus* spp. (local varieties can be found);
- Field maple *Acer campestre*;
- Holly *Ilex aquifolium*;
- Pears *Pyrus* spp.;
- Rowan *Sorbus aucuparia*;
- Silver birch *Betula pendula*;
- Yew *Taxus baccata*;
- Elder *Sambucus nigra*;
- Hazel *Corylus avellana*;
- Hawthorn *Crataegus monogyna*;
- Honeysuckle *Lonicera periclynemum*;
- Wild privet *Ligustrum vulgare*;
- Blackthorn *Prunus spinosa*; and
- Guelder-rose *Viburnum opulus*.

Plants for hedgerows and woodland understoreys

A combination of shrubs and climbers can make attractive hedges of great benefit for wildlife, as well as providing a functional boundary. Standard trees should be incorporated in hedgerows, with ash, oak and wayfarer tree three traditional choices, depending on the region. These should be marked so as not to be cut during management works. In addition, undersowing with a suitable shade tolerant wildflower mix is important to maximise value.

Trees and shrubs suitable for hedges and understorey planting

- Blackthorn *Prunus spinosa*;
- Buckthorn *Rhamnus catharticus*;
- Field maple *Acer campestre*;
- Holly *Ilex aquifolium*;
- Elder Sambucus nigra;
- Guelder rose *Viburnum opulus*;
- Hawthorn *Crataegus monogyna*;
- Hazel *Corylus avellana*;
- Privets, including wild privet *Ligustrum vulgare*; and
- Spindle *Euonymus europaeus*.

Climber and scramblers suitable for hedgerows and understorey planting

- Dog rose *Rosa canina*;
- Field rose *Rosa arvensis*;
- Ivy *Hedera helix*;
- Honeysuckle *Lonicera periclymenum*;
- Wild clematis/old man's beard *Clematis vitalba*; and
- Hop *Humulus lupulus*.

Understorey flowering plants providing ground cover for shady areas

These species flower early before trees are in full leaf, and will do well in areas that become shady later in the year.

- Bluebell *Hyacinthoides non-scripta*;
- Bugle *Ajuga reptans*;
- Wild daffodil *Narcissus pseudonarcissus*;
- Foxglove *Digitalis purpurea*;
- Lords-and-ladies/cuckoopint *Arum maculatum*;
- Primrose *Primula vulgaris*;
- Sweet violet *Viola odorata*; and
- Wood avens *Geum urbanum*.