

Preliminary Ecological Appraisal and Bat Roost Potential Survey

Pear Tree Farm, St James Road, Long Sutton

Presented to **Mr G. Franklin**

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deltasimons



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Executive Summary

Scope of Works	Delta-Simons Environmental Consultants Ltd was instructed by Robert Doughty Consultancy on behalf of Mr G. Franklin ('the Client') to undertake a Preliminary Ecological Appraisal (PEA) and Bat Roost Potential (BRP) Survey of an area of land at Pear Tree Farm off St James Road inLong Sutton (the 'Site'). The PEA comprised a Phase 1 Habitat Survey and protected species assessment, including a BRP survey, which were completed on 13th April 2017. The survey was undertaken to inform a planning application for a residential development at the Site. Whilst the survey was undertaken in April 2017, this Report has been written in February 2018 to reflect any changes in legislation and best practice.
Current Site Status	The Site comprises a series of farm buildings set around a hardstanding yard within the eastern extent of the Site, and a field of poor semi-improved grassland and tall ruderals within the western extent. Intact hedgerow characterises the field boundaries, with broadleaved trees scattered throughout the Site.
Proposed Development	The proposed development will comprise demolition of the existing buildings at the Site and the construction of a single residential property extending within the northern and eastern extent. Furthermore, it is understood that the boundary hedgerows and scattered trees will be retained as part of the development proposals.
Results: **Habitats on-Site**	The following habitats are found on the Site: ▲ Dense scrub; ▲ Scattered broadleaved trees; ▲ Poor semi-improved grassland; ▲ Tall ruderals; ▲ Spoil; ▲ Intact species-poor hedgerow; ▲ Dry ditch; ▲ Buildings; ▲ Bare ground; and ▲ Hardstanding.
Habitats adjoining the Site	The Site is situated within a rural setting with surrounding agricultural fields and associated boundary hedgerows. St James' Road defines the northern Site boundary, whilst to the east a grass field, with scattered trees and boundary hedgerows, extends to a residential property with associated out buildings.
Potential for Protected/ Notable Species	The trees, hedgerows and scrub at the Site provide suitable habitat for nesting birds, whilst evidence of nesting activity of pigeon and small passerine birds was also recorded within several of the buildings. A barn owl was recorded to fly out of one of the barns at the southern Site boundary at the time of the survey, where evidence, including white droppings and pellets, indicated it uses the roof beams and light fitting to perch. No evidence of barn owl nesting was recorded at the Site and most of the buildings were not found to provide suitable ledges. However, a custom-made nest box integrated into the central barn, which was not in use at the time of the survey, may provide opportunities for barn owl to nest or roost. Most of the agricultural buildings were open on one or more aspects and lacked the structural and climatic conditions suitable to support roosting bats and were, therefore, assessed as having negligible BRP. However, Building 3 featured a pitched roof with

	both slate and pan tiles set on roofing felt. Gaps between the tiles may provide roosting opportunities for a small number of bats and this building was, therefore, assessed as having low BRP. In addition, a toilet block on the eastern Site boundary (Building 2b) featured a small void created by internal ceiling boarding. Gaps within the pan tiled roof provided potential access points for bats and, therefore, this building was also assessed as having low BRP. Three ash trees on the northern Site boundary (TN 1) featured ivy growth which may provide opportunities for roosting bats or hide suitable features within the tree behind. These were, therefore, assessed as having low BRP. The boundary hedgerows and trees also provide suitable commuting and foraging corridors for any bats that occur within the local area. No evidence of badger was recorded at the time of the survey, however, the surrounding agricultural landscape provides suitable habitat for this species, which may venture onto the Site during the proposed works.
Requirement for Further Surveys	Nocturnal bat surveys are required of Buildings 2b and 3, assessed as having low BRP, to determine the presence or likely absence of a roost and the requirement for any mitigation. Surveys must be completed during the peak active bat season (May – August, inclusive).
Construction and Operational Phase Recommendations and Enhancement Measures	The detailed recommendations set out within the Report are summarised below: <u>Nesting Birds</u> If any habitat removal or management works are to be undertaken on areas of hedgerow, scrub and trees at the Site, these should be performed either before early March or after late August, to avoid the main bird nesting season. In addition, demolition or renovation of the buildings should also be undertaken outside the nesting bird season. Conflict with the development can be avoided by clearing the Site of any suitable nesting habitat outside of the breeding period in advance of any proposed works. If, however, Site clearance works are deemed necessary during the nesting period an experienced ecologist will be required to check the Site habitats immediately prior to works commencing to confirm that no nesting birds will be affected by the proposed works. <u>Barn owls</u> Prior to the removal of the nest box from within the on-Site barn, it should first be checked for evidence of use by a suitably experienced ecologist, and appropriate mitigation applied. Furthermore, to compensate for the loss of shelter, and to enhance the Site for barn owls, two barn owl boxes should each be installed either on one of the retained trees at the Site, or on a pole situated at an appropriate location on-Site following the development. <u>Bats</u> ▲ It is understood the trees assessed as having low BRP are to be retained, however, should any management works be required, this should be completed under a method statement which could include a single dawn survey completed during the active bat season (April – October, inclusive) on the morning prior to the works being undertaken, or alternatively a licenced bat ecologist trained to use specialist tree climbing equipment could undertake a thorough inspection of the potential roost features immediately prior to works commencing. ▲ The detailed lighting design on Site should be functional and directional. It should avoid excessive up-lighting and light spill, particularly onto any vegetation retained or planted on Site. <u>Excavations</u> As is general good practice for Sites where badgers and hedgehogs may occur, it is recommended that no excavations or trenches are left uncovered overnight during the

	development works in order to prevent any mammals from becoming trapped. Alternatively, ramps can be provided to enable them to climb out of trenches or excavations. Hedgehogs ▲ Initial clearance works of any ground vegetation should be undertaken carefully in order to minimise the risk of harming any hedgehogs that may be present. If any hedgehogs are found, they should be caught using gloves and released into suitable habitat away from harm; and ▲ All fencing within the development should allow access and egress for hedgehogs. This requires 13 cm^2 access to be left in a coordinated network to enable access and egress between suitable foraging habitats throughout the Site, and to the wider landscape. Hedgehogs require territories of up to 1 km and, as such, it is important large feeding areas are made available. Hedgehogs do not generally damage domestic gardens and this size of hole is not large enough for most household pets, or rabbits, to use. **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. As such any retained trees both on-Site and adjacent to the Site, should be protected during both the constructional and operational phase of the development **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.	

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1.0 Introduction

1.1 Purpose and Scope of the Survey

Delta-Simons Environmental Consultants Ltd was instructed by Robert Doughty Consultancy on behalf of Mr G. Franklin ('the Client') to undertake a Preliminary Ecological Appraisal (PEA) and Bat Roost Potential (BRP) Survey of land at Pear Tree Farm off St James Road, Long Sutton in Lincolnshire (hereafter referred to as the "Site"). In addition, public land immediately surrounding the Site was surveyed, where access allowed. The survey was undertaken to inform a planning application for a residential development at the Site. Whilst the survey was undertaken in April 2017, this Report has been updated in February 2018 to reflect any changes in legislation and best practice.

The aims of the PEA and BRP were to:

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

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

1.2 Site Description

The Site is centred at Ordnance Survey (OS) grid reference TF 4086 2027, to the north-east of Sutton St James in Lincolnshire. The Site covers an area of 1.1 hectare (ha) and comprises a series of farm buildings set around a hardstanding yard within the eastern extent of the Site, and a field of poor semi-improved grassland and tall ruderals within the western extent. Intact hedgerow characterises the field boundaries, with broadleaved trees scattered throughout the Site.

The Site is situated within a rural setting with surrounding agricultural fields and associated boundary hedgerows. St James' Road defines the northern Site boundary, whilst to the east a grass field, with scattered trees and boundary hedgerows, extends to a residential property with associated out buildings.

The Site layout is shown in Figure 2.

1.3 Proposed Development

The proposed development will comprise demolition of the existing buildings at the Site and the construction of a single residential property extending within the northern and eastern extent. Furthermore, it is understood that the boundary hedgerows and scattered trees will be retained as part of the development proposals.

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, including:

- National Planning Policy Framework (NPPF, 2012);
- The Conservation of Habitats and Species Regulations 2017;
- 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 PEA and BRP has 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; 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 January 2018, available records of protected and notable species were collated from the local record centre, Lincolnshire Environmental Records Centre (LERC), along with the non-statutory designated sites within a 1 km radius of the Site centre. A search for international statutory designated sites for nature conservation within 6 km of the Site centre was undertaken, together with a search for national statutory designated sites for nature conservation within 1 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.

3.2 Survey

The habitats on the Site and on adjoining land up to 10 m was visually assessed on the 13th of April 2017 by two Delta-Simons ecologists. Since 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*
  - Mammals: bat (all species) and badger *Meles meles*.
- Aquatic habitats were assessed for their potential to support, and any signs of otter *Lutra lutra*, water vole, *Arvicola amphibius* white clawed crayfish *Austropotamobius pallipes*, GCN, and barred grass snake.
- Widespread terrestrial and aquatic 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*, and New Zealand pygmyweed *Crassula helmsii*.

3.2.1 Birds

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

3.2.2 Amphibians

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

3.2.3 Reptiles

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

3.2.4 Bats

The Site was assessed for its suitability to support roosting and foraging bats (see Appendix C).

An assessment of BRP of structures and trees on the Site was completed by two surveyors (one of whom holds a Natural England Bat Survey Licence), and with reference to the guidelines specified within Natural England's Bat Mitigation Guidelines (2004), and the Collins (2016) Good Practice Guidelines. The survey method enables each building and tree to be categorised in relation to its value for roosting bats. In addition, the suitability of the on-Site habitats to support foraging and commuting bats was also assessed (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.

Where access permitted, 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). 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 and bat detectors were used during both internal and external surveys to detect signs of bats or 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 Water Voles

Suitable habitats for water vole on-Site and immediately off-Site were identified and assessed.

3.2.7 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.

3.2.8 Invasive Species

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

3.2.9 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.

3.2.10 Limitations to the Survey

At the time of the survey, Delta-Simons was not able to access the interior of all buildings at the Site. However, the design and structure of those that were not accessed allowed sufficient information to assess their condition for roosting bats.

There were no limitations to the survey in terms of timing and weather conditions.

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.

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 LERC data search are available to the Client on request.

Designated Sites

The results of the MAGIC data search and the LERC desk search indicated that there are no international statutory designated sites within 6 km of the Site and no national statutory designated or non-statutory designated sites within 1 km of the Site centre.

4.2 Survey

4.2.1 Habitats on Site

The Site is characterised by several farm buildings and hardstanding habitat within the eastern extent and a field of poor semi-improved grassland and tall ruderal vegetation, with boundary hedgerows within the western extent. 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:

Dense Scrub

Dense bramble *Rubus fruticosus* agg. scrub had colonised an unmanaged area within the south-eastern corner of the Site (Photograph 1).

Scattered Broadleaved Trees

Broadleaved trees were scattered throughout the Site and included predominately semi-mature ash *Fraxinus excelsior,* elder *Sambucus nigra,* wild cherry *Prunus avium*, horse chestnut *Aesculus hippocastanum*, and whitebeam *Sorbus aria*. Three ash trees on the northern Site boundary featured dense ivy *Hedera helix* growth (Photograph 2).

Poor Semi-Improved Grassland

The western extent of the Site was unmanaged at the time of the survey and supported areas of poor semi-improved grassland (Photograph 3). Dominant species included Yorkshire fog *Holcus lanatus,* perennial ryegrass *lolium perenne* and cocks foot *Dactylis glomerata,* with frequent hogweed *Heracleum sphondylium,* cleavers *Galium aparine,* common nettle *Urtica dioica* and occasional spear thistle *Cirsium vulgare.*

Tall Ruderals

Tall ruderal vegetation had colonised unmanaged areas within the western extent of the Site (Photograph 3) and within the south-eastern corner. This was dominated by common nettle, hogweed and cleavers.

Spoil

Two spoil heaps, containing bricks, rubble and wood, were present within the south-eastern corner of the Site and had been colonised by scrub and ruderal vegetation (Photograph 4).

Intact Species-Poor Hedgerow

Hawthorn hedgerow characterised the western and much of the northern and southern Site boundaries, with occasional elder also present. The hedgerow was unmanaged with a maximum height of approximately 8 m. Though leggy in places, the hedgerow provided a continuous corridor of vegetation and was, therefore, considered intact.

Dry Ditch

A small ditch extended along the southern extent of the eastern Site boundary. This was dry at the time of the survey and had been colonised by nettles, indicating it rarely supports water.

Buildings

A total of 11 farm buildings were present at the Site.

Building 1 comprised a wooden framed cart shed with corrugated metal sheeting on the northern, eastern and western aspects (Photograph 5). Thin wooden roof beams supported a double pitched metal sheet roof. Being open on the southern aspect, the building was internally light and draughty with no enclosed roof void. Two water tanks, with brick bases, were present to the north of the cart shed.

Building 2a, on the eastern Site boundary, comprised a garage/storage building (Photograph 6). It was a single storey wooden frame building, with a brick wall forming the eastern aspect and large wooden doors on the western aspect. The wooden doors were in a deteriorating condition with those at the northern extent open and displaced from their hinges. It supported a pitched roof of corrugated suspected asbestos cement sheeting. Internally the building was light and draughty.

Extending to the south, Building 2b comprised a single storey breeze block structure supporting a pitched clay pan tiled roof (Photograph 7). The northern extent featured wooden roof beams and was draughty and cobwebbed, with no enclosed void. Where roof felt was not present and the tiles did not lay flat, daylight was visible. The southern extent featured a toilet block and supported internal ceiling boarding creating an enclosed, and inaccessible, void. Several gaps were noted between tiles where they were not lying flat.

Building 3 comprised a large Dutch barn to the south (Photograph 8) and a brick structure with a hay loft to the north (Photograph 9). The Dutch barn comprised a wooden frame structure with brick walls to the east and west, wooden slats at the northern and southern gables and featured a multiple pitched corrugated metal sheet roof. Open at the southern aspect and a doorway to the north, the building was internally light and draughty with no enclosed roof void. A home-made owl box was present at the southern apex (Photograph 10). The northern extent comprised a brick structure with a pitched slate and pan tiled roof. Numerous gaps were noted beneath the roof tiles and at the ridge. Internally the western extent ground floor, and eastern extent was light due to windows and open doorways. The hay loft at the western extent was predominately dark and though several gaps were noted in the roof structure, did not appear to be significantly affected by draughts. A deteriorating wooden lean to was present at the northern aspect of the building.

Building 4 adjoined the eastern corner of Building 3 and comprised a wooden frame barn with a pitched metal sheet roof (Photograph 8). The western aspect was open with wooden cladding at the apex, whilst the remaining aspects featured wooden and metal upper walls and breeze block lower walls. Internally the building was light and draughty with no enclosed void.

Buildings 5, 6 and 7, located towards the southern Site boundary, comprised metal and wooden framed barns with breezeblock and corrugated suspected asbestos cement sheet walls and multiple pitched roofs (Photograph 11). Each was open on the northern aspect and were internally light and draughty.

Building 8 comprised a wooden barn featuring a pitched suspected asbestos cement sheet roof (Photograph 12). It was in a poor state of repair with the internal ceiling boarding partially collapsed.

Building 9, towards the centre of the Site, comprised a long, low structure previously used to house livestock and which at the time of the survey was used for storage (Photograph 13). The concrete walls supported a pitched suspected asbestos cement sheet roof, with translucent panels. The ridge was open, causing the internal space to be light and draughty.

Building 10, at the western edge of the yard, comprised a brick barn with a pitched suspected asbestos cement sheet roof, and metal sheet clad walls (Photograph 14). No internal access was available at the time of the survey, however, the building was not anticipated to support an enclosed void and the roof structure appeared intact, with no obvious gaps or crevices.

Building 11 comprised a large barn with brick lower walls and suspected asbestos cement sheet upper walls (Photograph 14). It featured curved and gently sloped roof sections with translucent panels. No internal access was available at the time of the survey, however, the internal space was anticipated to be light with no enclosed void.

Bare Ground

The north-eastern corner of the Site featured an area of bare ground, supporting stone and gravel, which had been colonised by occasional cleavers, white dead nettle *Lamium album,* red dead nettle *Lamium purpureum,* teasel *Dipsacus sylvestris* and creeping thistle *Cirsium arvense* (Photograph 15).

Hardstanding

The eastern extent of the Site was characterised by a hardstanding access track, extending from the northern Site boundary, and an open yard surrounded by the farm buildings.

4.2.2 Habitats immediately surrounding the Site

The Site is situated within a rural setting with surrounding agricultural fields and associated boundary hedgerows. St James' Road defines the northern Site boundary. To the east, beyond a band of broadleaved woodland supporting elder, ash and field maple *Acer campestre*, a grass field with scattered trees and boundary hedgerows extends to a residential property with associated out buildings.

4.3 Notable and Protected Species Assessment Relevant to the Site

Birds

The data centre provided records of two bird species listed on Schedule 1 of the WCA (1981, as amended) within 1 km of the Site centre in the last ten years. This included:

- One record of marsh harrier *Circus aeruginosus,* 500 m south of Site in 2012; and
- Two records of corncrake *Crex crex,* 560 m north of the Site in 2016.

Extensive records of birds listed on the Red List of BoCC have been recorded within 1 km of the Site centre, including lesser redpoll *Acanthis cabaret*, skylark *Alauda arvensis*, cuckoo *Cuculus canorus*, yellowhammer *Emberiza citronella*, linnet *Linaria cannabina*, yellow wagtail *Motacilla cinereal*, house sparrow *Passer domesticus*, tree sparrow *Passer montanus*, grey partridge *Perdix perdix*, turtle dove *Streptopelia turtur,* starling *Sturnus vulgaris* and lapwing *Vanellus vanellus*.

The hedgerows, scrub and trees at the Site provide suitable habitat for nesting birds, including some of those listed above, whilst evidence of nesting activity of wood pigeon *Columba palumbus* and small passerine birds was also recorded within several of the buildings. A barn owl *Tyto alba* was recorded to fly out of Building 6 at the time of the survey, where evidence, including white droppings and pellets (Photograph 16), indicated it uses the roof beams and light fitting to perch. Further old barn owl pellets were identified within Buildings 3,4 and 5. No evidence of barn owl nesting was recorded at the Site and most of the buildings were not found to provide suitable ledges. However, a custom-made nest box integrated into Building 3, which was not in use at the time of the survey, may provide opportunities for barn owl to nest or roost. No signs of barn owl use were found within it to indicate it had previously been used by this species. The grassland within the western extent of the Site may provide suitable foraging opportunities for barn owl.

Great Crested Newts

The Site did not support any standing water at the time of the survey, and the dry ditch within the south-eastern extent of the Site was colonised by nettles, indicating it rarely holds water. A review of aerial photographs and OS maps revealed that there are no ponds within 500 m of the Site to support breeding amphibians, and the data search did not return any records of this species within 1 km of the Site centre. Whilst the grassland and ruderal vegetation within the western extent of the Site may provide suitable terrestrial habitat, given the lack of aquatic habitat and records of amphibians within the local area GCNs are considered likely to be absent from the Site. GCN are not considered to be a constraint at this Site and are not considered further within this Report.

Reptiles

The Site was not considered to support the structural mosaic of habitats suitable to support reptiles. No reptiles have been recorded within 1 km of the Site centre in the last ten years. Reptiles are not considered to be a constraint at this Site and are not considered further within this Report.

Bats

Most of the agricultural buildings were open on one or more aspects and lacked the structural and climatic conditions suitable to support roosting bats and were, therefore, assessed as having negligible BRP. However, the brick built northern extent of Building 3 featured a pitched roof with both slate and pan tiles set on roofing felt. No evidence of bats was identified within the hay loft beneath, however, gaps between the tiles may provide roosting opportunities between the tiles and felting for a small number of bats. This building was, therefore, assessed as having low BRP. In addition, the toilet block within Building 2b featured a small void created by internal ceiling boarding. Gaps within the pan tiled roof provided potential access points for bats and, therefore, this building was also assessed as having low BRP.

Three ash trees on the northern Site boundary (TN 1) featured ivy growth which may provide opportunities for roosting bats or hide suitable features within the tree behind. These were, therefore, assessed as having low BRP.

The boundary hedgerows and trees also provide suitable commuting and foraging corridors for any bats that occur within the local area, with limited artificial light at the Site and within the surrounding area. The data search identified two bat species that have been recorded within 1 km of the Site centre within the last 10 years, these included:

- Three field records of *Chiroptera sp* with the closest and most recent noted 360 m south of the Site in 2012; and
- One field record of Daubenton's bat *Myotis daubentonii* 380 m south of the Site in 2014.

Badgers

The Site did not support any evidence to indicate that badgers were using or inhabiting it. There were no sett entrances, latrines, snuffle holes, mammal runs or badger dung found within the survey area. Furthermore, the data search did not reveal any records of badger within 1 km of the Site centre. The surrounding agricultural landscape does, however, provide suitable habitat for this species and the grassland within the western extent of the Site may provide foraging opportunities should badger occur within the local area.

Water Voles

The data search provided thirteen water vole records within 1 km of the Site in the last ten years, with the closest water vole 220 m south of the Site in 2016. However, the ditch at the Site was shallow and did not support any standing water. Furthermore, there is no connectivity between the Site any other aquatic habitats such that water vole are not considered to be a constraint at this Site and are not considered further within this Report.

Other Protected Species

The unmanaged vegetation at the Site provides suitable habitat for hedgehog which have been recorded 510 m to the south-west of the Site in 2012.

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

Invasive Species

No widespread invasive species were recorded during the Site survey.

Hedgerows

No hedgerow at the Site supported sufficient species or features to meet the criteria of an 'Important' hedgerow according to the Hedgerow Regulations.

5.0 Evaluation

Designated sites-statutory sites/ non-statutory sites

The results of the desk study indicated that there are no international statutory designated sites within 6 km of the Site and no national statutory designated or non-statutory designated sites within 1 km of the Site centre. The proposed development is, therefore, not considered to pose any adverse impact upon designated sites.

Habitats

The Site comprises farm buildings and hardstanding within the eastern extent of the Site, and grassland and ruderal vegetation surrounded by hedgerow in the western extent. All existing buildings are to be demolished, whilst loss of other habitats is considered to be minimal, with the proposed residential property predominately covering the existing built area. The proposed development has the potential to enhance the biodiversity at the Site through sensitive planting.

Species

The hedgerows, scrub and trees at the Site provide suitable habitat for nesting birds, whilst the buildings provide further nesting opportunities. Any clearance or management works to these habitats would, therefore, require appropriate mitigation to ensure no nesting birds are disturbed. The majority of trees and hedgerows at the Site are to be retained and, therefore, the loss of suitable nesting habitat is considered to be minimal and the Site will continue to provide suitable nesting habitat following the development, with opportunities to enhance the Site with the installation of nest boxes.

A barn owl was recorded to fly out of Building 6 at the time of the survey. No evidence of barn owl nesting was recorded at the Site and most of the buildings were not found to provide suitable ledges. However, a custom-made nest box integrated into Building 3 may provide opportunities for barn owl to nest or roost in the future and appropriate mitigation is required to ensure no nesting barn owls are disturbed, and that adequate compensation is provided to maintain opportunities for this species at the Site.

Buildings 2b and 3 were assessed as having low BRP due to the presence of an enclosed roof void and gaps beneath roof tiles. Further surveys are required to determine the presence or likely absence of a roost and to inform a thorough assessment of the likely impacts of development.

Three ash trees on the northern Site boundary were also assessed as having low BRP due to the presence of ivy. It is understood these trees are to be retained and will continue to provide the current level of opportunities for roosting bats. However, should they require any management works, appropriate mitigation will be required to ensure no bats are harmed.

The boundary hedgerows and trees also provide suitable commuting and foraging corridors for any bats that occur within the local area. It is understood that the majority of the boundary hedgerows and trees are to be retained at the Site and will continue to provide suitable habitat. Any lighting required at the Site will need to be sensitive to nocturnal wildlife such that dark corridors are maintained.

The Site did not support any evidence to indicate that badgers were using or inhabiting it, however, the surrounding landscape provides suitable habitat for this species and the grassland within the western extent of the Site may provide opportunities for badger should they occur within the local area. There is, therefore, the potential for badger to venture onto Site during the proposed development.

The unmanaged vegetation at the Site provides suitable habitat for hedgehog which have been recorded within the local area. There is, therefore, the potential for this species to be present and to be disturbed during initial clearance works such that precautionary measures should be applied to protect this species from harm. The Site will, however, continue to provide suitable habitat for this species following the development.

6.0 Recommendations

6.1 Further Survey Requirement

The findings of the initial Site assessment have identified potential for bats within Buildings 2b and 3. As such, surveys to identify presence or likely absence of these species are recommended to inform the development proposals. The survey requirements and their seasonal constraints are given in Table 1, below. All surveys listed (unless otherwise stated) are to current guidance.

Table 1: Scope of Recommended Protected Species Surveys

Species	Scope of Survey	Seasonal Constraints
Bats	Buildings 2b and 3 were assessed as having low BRP and require a single nocturnal bat survey to determine the presence/likely absence of roosting bats.	May – August (inclusive)

6.2 Construction and Operational Phase Protection/Enhancement Measures

Species Protection

Nesting Birds

If any habitat removal or management works are to be undertaken on areas of hedgerow, scrub and trees at the Site, these should be performed either before early March or after late August, to avoid the main bird nesting season. In addition, demolition or renovation of the buildings should also be undertaken outside the nesting bird season. Conflict with the development can be avoided by clearing the Site of any suitable nesting habitat outside of the breeding period in advance of any proposed works. If, however, Site clearance works are deemed necessary during the nesting period an experienced ecologist will be required to check the Site habitats immediately prior to works commencing to confirm that no nesting birds will be affected by the proposed works.

Barn Owls

Prior to the removal of the nest box from within the on-Site barn, it should first be checked for evidence of use by a suitably experienced ecologist, and appropriate mitigation applied. Furthermore, to compensate for the loss of shelter, and to enhance the Site for barn owls, two barn owl boxes should each be installed either on retained trees at the Site, or on a pole situated at an appropriate location on-Site following the development.

Bats

- It is understood the trees assessed as having low BRP are to be retained, however, should any management works be required, this should be completed under a method statement which could include a single dawn survey completed during the active bat season (April – October, inclusive) on the morning prior to the works being undertaken, or alternatively a licenced bat ecologist trained to use specialist tree climbing equipment could undertake a thorough inspection of the potential roost features immediately prior to works commencing.
- The detailed lighting design on Site should be functional and directional and in line with current guidance (BCT, 2009; BCT, 2014; Stone, E.L. (2013). It should avoid excessive up-lighting and light spill. The vegetation retained or planted on Site should be unlit.

Excavations

As is general good practice for Sites where badgers and hedgehogs may occur, it is recommended that no excavations or trenches are left uncovered overnight during the development works in order to prevent any mammals from becoming trapped. Alternatively, ramps can be provided to enable them to climb out of trenches or excavations.

Hedgehogs

- Initial clearance works of any ground vegetation should be undertaken carefully in order to minimise the risk of harming any hedgehogs that may be present. If any hedgehogs are found, they should be caught using gloves and released into suitable habitat away from harm; and
- All fencing within the development should allow access and egress for hedgehogs. This requires 13 cm^2 access to be left in a coordinated network to enable access and egress between suitable foraging habitats throughout the Site, and to the wider landscape. Hedgehogs require territories of up to 1 km and, as such, it is important large feeding areas are made available. Hedgehogs do not generally damage domestic gardens and this size of hole is not large enough for most household pets, or rabbits, to use.

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. As such any retained trees both on-Site and adjacent to the Site, should be protected during both the constructional and operational phase of the development

General Site Enhancement

Following the issue of the NPPF (2012), by the Department for Communities and Local Government (DCLG), "*The planning system should contribute to and enhance the natural and local environment by: Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity…*"; and, therefore, 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. It is recommended that where trees are planted, they have a functional understorey. A species list of recommended trees and shrubs is provided in Appendix F; and
- Installation of bird nest and/ or bat boxes on buildings or trees to be retained around the Site. Delta Simons can provide further advice on the type and locations of bird and bat boxes for the Site once the final development plans are known.

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 Plan



LEGEND

Site Boundary

Scale: 1 / 10,000 @ A4

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deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Site Location Plan
Pear Tree Farm, St James Road
Long Sutton

DRAWN BY:	SCALE:	PROJECT NO:
AW	To Scale@A4	17-0252.01
CHECKED BY:	REVISION:	FIGURE NO:
JB	1	1
DATE: 14 February 2018		

Figure 2 – Extended Phase 1 Habitat Survey Plan



Site Plan Provided by Client

deltasimons
Environment - Health & Safety - Sustainability

TITLE:
Extended Phase 1 Habitat Plan
Pear Tree Farm, St James Road
Long Sutton

DRAWN BY: AW	SCALE: Not to Scale	PROJECT NO: 17-0252.01
CHECKED BY: JB	REVISION: 1	FIGURE NO: 2
DATE: 14 February 2018		

Appendix A – Relevant Legislation

Relevant Legislation

National Planning Policy Framework

The National Planning Policy Framework (NPPF), advises that ecological surveys are undertaken before planning permission is determined. It sets out, amongst other points, how at an overview level the '*planning system should contribute to and enhance the national and local environment by:*

…recognising the wider benefits of ecosystem services;

minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures…'

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 '*commensurate with their status and gives appropriate weight to their importance and the contribution that they make to wider ecological networks.*'

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

'- if significant harm resulting from a development cannot be avoided…adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;

…opportunities to incorporate biodiversity in and around developments should be encouraged;

planning permission should be refused for development resulting in the loss or deterioration of irreplaceable habitats, including ancient woodland…unless the need for, and benefits of, the development in that location clearly outweighs the loss…'

In addition, the Office of the Deputy Prime Minister circular 06/ 2005 remains current; this 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.*'

The Conservation of Habitats and Species Regulations 2017

The Conservation of Habitats and Species Regulations 2017 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 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.

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.

Water Voles

The water vole *Arvicola amphibius* received limited legal protection up until April 1998 through its inclusion in Schedule 5 of the WCA 1981 (as amended) for some offences. This protection was extended on 6th April 2008, so the water vole is now fully protected under Section 9, which includes protection of their resting places.

Legal protection makes it an offence to:

- Intentionally kill, injure or take (capture) a water vole;
- Possess or control a live or dead water vole, or any part of a water vole;
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection; or intentionally or recklessly disturb water voles while they are using such a place; and
- Sell, offer for sale or advertise for live or dead water voles.

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

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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 Semi-mature ash tree with ivy cover, assessed as having low BRP.

Appendix E – Photographs



Photograph 1 – Dense scrub within the south-eastern extent of the Site



Photograph 2 – Semi-mature ash trees along the northern boundary assessed as having low BRP



Photograph 3 – Poor semi-improved grassland and ruderal vegetation within the western extent of the Site



Photograph 4 – Spoil pile within the western extent of the Site



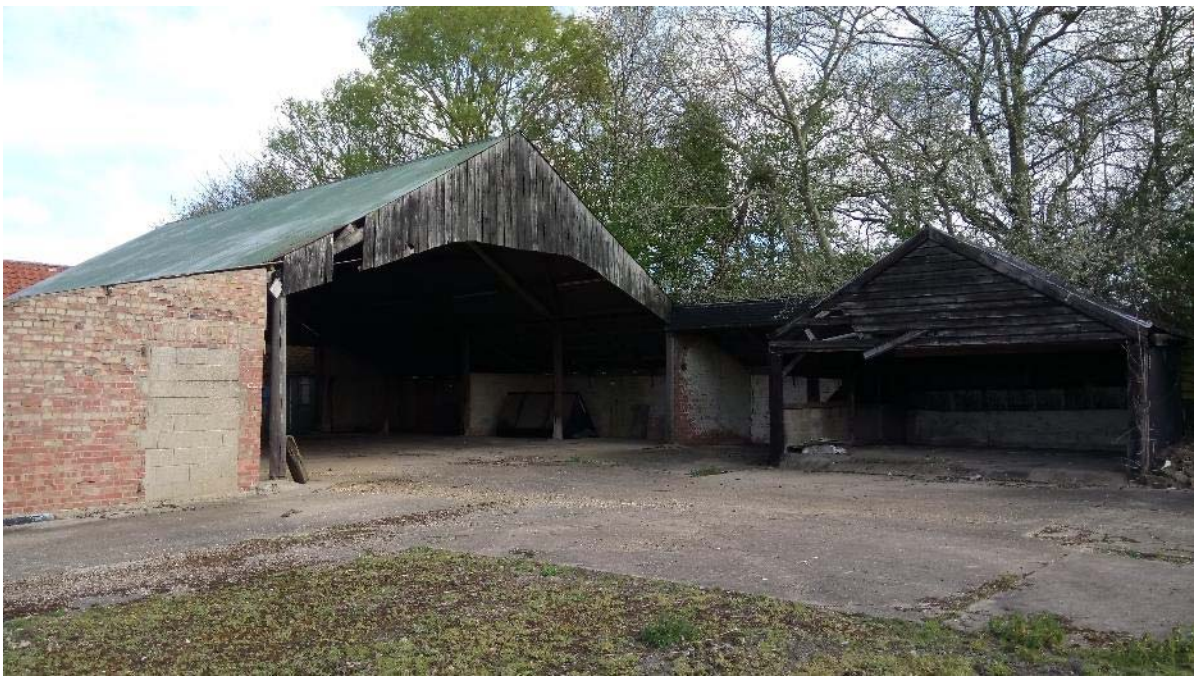
Photograph 5 – South-western corner of Building 1



Photograph 6 – Western aspect of Building 2a



Photograph 7 – Western aspect of Building 2b



Photograph 8 – Southern aspect of Building 3 (left) and western aspect of Building 4 (right)



Photograph 9 – Western aspect of Building 3



Photograph 10 – Owl box within Building 3



Photograph 11 – Northern aspect of Buildings 5 and 6



Photograph 12 – North-western aspect of Building 8



Photograph 13 – Interior of Building 9



Photograph 14 – Western aspects of Buildings 10 and 11



Photograph 15 – Bare ground within the north-eastern extent of the Site



Photograph 16 – Barn owl evidence and location an individual flew from during the survey

Appendix F – 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*;
- Small-leaved lime *Tilia cordata*;
- 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*;
- Wood avens *Geum urbanum*; and
- Yellow archangel *Lamiastrum galeobdolon*.