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1 Introduction

1.1 Overview

Sterna Ecology Ltd. was commissioned by Earth and Marine Environmental Consultants (EAME), on behalf of Advanced Proteins, to undertake a Preliminary Ecological Appraisal (PEA) of a single pasture field immediately south-west of the existing and operational Food Ingredients England (FIE) Cheddleton Site, Bones Lane, Cheddleton, Staffordshire. It is proposed to build a new food processing facility on land adjoining the existing FIE Cheddleton site. The Proposed Development Site lies within the planning jurisdiction of Staffordshire Moorlands District Council.

The purpose of the PEA was to map those habitats present within the Site, to record any evidence indicating the presence of protected species and to identify where habitats are potentially suitable for such species. This information was then used to assess the value of the site in terms of the habitats and protected species which it supports or may support, to ensure a robust assessment of the potential impacts of the proposals is made. A mitigation strategy was designed based on the results of the survey, which included recommendations for further surveys where necessary.

1.2 Reasons for Survey

1.2.1 Planning Policy

A range of planning policies are in place which ensure that developers and public bodies consider the potential impacts of any development upon wildlife, and are designed to ensure that there is no net loss in biodiversity as a result of the implementation of such proposals. Key points of such policies are outlined below.

National Planning Policy Framework (2021)

The NPPF outlines the government's policies, including those relating to the conservation and enhancement of the natural environment (Chapter 15), in line with existing wildlife legislation, through the planning process. Planning authorities must take into account the principles detailed within the document when preparing local plans and assessing local development applications.

The following key principles are included within the NPPF which are relevant to ecology and nature conservation:

Habitats and biodiversity

To protect and enhance biodiversity and geodiversity, plans should:

- a) Identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity; wildlife corridors and stepping stones that connect them; and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation; and

- b) Promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species; and identify and pursue opportunities for securing measurable net gains for biodiversity.

When determining planning applications, local planning authorities should apply the following principles:

- a) 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;
- b) 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;
- c) 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 and a suitable compensation strategy exists; and
- d) Development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to incorporate biodiversity improvements in and around developments should be encouraged, especially where this can secure measurable net gains for biodiversity.

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

- a) Potential Special Protection Areas and possible Special Areas of Conservation;
- b) Listed or proposed Ramsar sites; and
- c) 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.

The presumption in favour of sustainable development does not apply where development requiring appropriate assessment because of its potential impact on a habitats site is being planned or determined.

Natural Environment and Rural Communities (NERC) Act (2006).

In addition to the above, public authorities have a duty to conserve biodiversity under the Natural Environment and Rural Communities (NERC) Act, which came into force in 2006. This states that 'any public body or statutory undertaker in England and Wales must have regard to the purpose of conservation of biological diversity in the exercise of their functions...and that decisions of public bodies work with the grain of nature and not against it' (Part 3, Paragraph 60). The Act also includes a range of measures to strengthen the protection of wildlife and habitats.

1.2.2 Wildlife Legislation

In addition to the above, a range of legislation is in place to ensure that habitats and species of conservation importance are protected from harm, either directly or indirectly. Key legislation is provided within the table below.

Table 1: Overview of Key Legislation

Legislation	Relevance
The Conservation of Habitats and Species Regulations 2010	This transposes the EC Habitats Directive 1992 (<i>Council Directive 92/43/EEC on the Conservation of Natural Habitats and of Wild Flora and Fauna</i>) and the EC Birds Directive 1979 (<i>Council Directive 79/409/EEC on the protection of wild birds</i>) into UK law. Annexes I and II of the Habitats Directive list (respectively) habitats and species for which member states are required to establish and monitor SACs. The EC Birds Directive provides a similar network of sites (SPAs) for all rare or vulnerable species listed in Annex I and all regularly occurring migratory species, with particular focus on wetlands of international importance. Together with SACs, SPAs form a network of pan-European protected areas known as 'Natura 2000' sites. The Habitats Regulations also make it an offence (subject to exceptions) to deliberately capture, kill, disturb, or trade in the animals listed in Schedule 2, or pick, collect, cut, uproot, destroy, or trade in the plants listed in Schedule 4.
The Convention on the Conservation of European Wildlife and Natural Habitats (Bern Convention 1979)	The Bern Convention aims to ensure conservation and protection of all wild plant and animal species and their natural habitats (listed in Appendices I and II of the Convention), to increase cooperation between contracting parties, and to afford special protection to the most vulnerable or threatened species (including migratory species).
The Wildlife and Countryside Act 1981 (as amended) (WCA 1981)	The WCA is the primary UK mechanism for statutory site designation (Sites of Special Scientific Interest, SSSIs) and the protection of individual species listed under Schedules 1, 2, 5 and 8 of the Act, each subject to varying levels of protection.
The Countryside and Rights of Way Act 2000	This legislation strengthens the provision of the 1981 WCA (as amended), both in respect of statutory sites such as SSSIs and protected species. It also places a statutory obligation on Local Authorities and other public bodies to further conservation of biodiversity in the exercise of their functions, thus providing a statutory basis to the Biodiversity Action Plan (BAP) process, which began in 1994. Section 74 of the Act lists the habitat types and species of principal importance in England.
Hedgerow Regulations 1997	The Hedgerow Regulations 1997 are intended to protect important countryside hedges from destruction or damage in England and Wales.
Natural Environment and Rural Communities Act 2006	The 'NERC' Act makes provision in respect of biodiversity, pesticides harmful to wildlife, protection of birds and invasive non-native species. Section 40 of the act also introduced a new duty on public bodies to have regard to the purpose of conserving biodiversity in the exercise of their functions.

A number of species protected by the above legislation have the potential to be present on a site such as this. An overview of the key legislation relating to such species is provided within the table below:

Table 2: Summary of Key Species Protection

Species	Key Legal Protection
Bats (all species)	All European species of bat are listed on Annex IV of the EC Habitats Directive as being in need of “strict protection”. This is implemented in Britain under The Conservation of Habitats and Species Regulations 2010. All British bats are included on Schedule 5 of the WCA (1981) and the whole of Section 9 of The Act applies to European bat species. In summary, the above legislation collectively prohibits the following: • Deliberately or recklessly capturing, injuring, taking or killing of a bat; • Deliberately or recklessly harassing a bat; • Intentionally or recklessly disturbing of a bat in its place of rest (roost), or which is used for protection or rearing young; • Deliberately or recklessly damaging, destroying or obstructing access to any resting place or breeding area used by bats; • Deliberately or recklessly disturbing a bat in any way which is likely to significantly affect the local populations of the species, either through affecting their distribution or abundance, or affect any individuals ability to survive, reproduce or rear young; • Possession or advertisement/sale/exchange of a bat (dead or alive) or any part of a bat. In England, licences are issued by Natural England for any actions that may compromise the protection of a European protected species, including bats, under the Habitats Regulations 2010. This includes all developments, regardless of whether or not they require planning permission. Bats are also protected by the Wild Mammals (Protection) Act 1996 and selected species are listed on the UK Biodiversity Action Plan (BAP) and Local Biodiversity Action Plans (LBAPs).
Great Crested Newts	Great Crested newt are protected under European and British law, having the same level of protection as bats (see above). Licenses are issued by Natural England for any actions that may compromise the protection of this species, under the Habitat Regulations 2010. This includes all developments, regardless of whether or not they require planning permission. The species is also listed on the UK and Local BAPs.
Otter	Otter are again protected under European and British law and receive the same level of protection as bats (see above.) The species is listed under Annex II and IV of the Habitats Directive, which is implemented in Britain under The Conservation of Habitats and Species Regulations 2010. Otter are also protected under Schedules 5 and 6 of the WCA 1981, The Wild Mammals (Protection) Act 1996 and are listed as a priority species in Appendix II of the Bern Convention. The species is also listed on the UK and Local BAPs.
Water Vole	Water voles are protected under Schedule 5 of the WCA 1981 (as amended). This

Species	Key Legal Protection
	makes it an offence to: • Intentionally kill, injure or take water voles; • Possess or control the species; • Damage or destroy any place used by water vole for shelter or protection; • Disturb water vole while they occupy such places of shelter; • Sell, possess or transport water vole for the purpose of sale; and • Advertise the buying or selling of water vole. The species is also protected under the Wild Mammals (Protection) Act 1996 and listed on the UK and Local BAPs.
Birds	The majority of bird species, with the exception of some species listed on Schedule 2, are protected under the WCA 1981 (as amended). This makes it an offence to intentionally or recklessly: • Kill, injure or take any wild bird; • Take, damage or destroy any nest which is in use or being built; and • Take, damage or destroy the eggs of any such bird. Additional protection against disturbance whilst at the nest is also afforded to any bird species, whether an adult bird or their dependant young, which is listed on Schedule 1 of the Act. Certain species are also listed as being of priority conservation importance on the UK and Local BAPs.
Badger	Badger are protected under the Protection of Badgers Act 1992, which makes it an offence to: • Knowingly kill, capture, injure or disturb any individual; • Intentionally damage or destroy a badger sett, or any part thereof; • Obstruct access to an area which is used for breeding, resting or shelter; and • Disturb a badger while it is using any place used for breeding, resting or shelter. The species is also protected by the Wild Mammals (Protection) Act 1996 and is included on LBAPs.

2 The Proposed Development

This section provides a brief summary of the location and the proposed development for which the client is seeking planning permission.

2.1 The Site and Locality

The Proposed Development Site is located on the eastern edge of Cheddleton, adjacent to the existing FIE Cheddleton site, off Bones Lane. The Site can be found at an approximate central OS grid reference of SJ 97300 50422, with the location of the site shown in Figure 1, below.

Figure 1: Location of the Proposed Development Site, Cheddleton, Staffordshire



Map data © 2021 Google

2.2 Scale of the Development

The Site amounts to approximately 2.9 hectares, upon which it is proposed to construct a food processing factory.

The proposed buildings and site layout will comprise the following elements:

- Access from existing access on Bones Lane;
- Office block with a total floorspace, over two floors, of about 830 sqm and parking for 36 cars;
- Main processing building with floorspace as follows:

- Ground floor: 3,479 sqm
 - First floor: 1,249 sqm
 - Second floor: 221 sqm
 - Total: 4,949 sqm
- Biofilter units;
- Water tank;
- External hard-standing to allow access to and around the main processing building;
- Combined surface water and fire retention pond; and
- Landscaped areas.

3 Survey and Assessment Methods

3.1 Consultation

Consultation data was requested from the Staffordshire Ecological Record (SER) in order to obtain further information regarding the presence and distribution of protected species within the Site and a 2km study area.

3.2 Desktop Survey

As a part of the ecological assessment of the Site, a desk study was completed in order to obtain information regarding the presence and distribution of protected species, habitats and sites within the Site and surrounding area. The following resources were used:

- The Government's Multi-Agency Geographic Information for the Countryside or 'MAGIC' website, which provides details of statutory sites designated for their ecological interest;
- The relevant Ordnance Survey maps, in order to gain an overview of the types of habitat likely to be present within the site and surrounding area prior to carrying out the site surveys;
- Google Earth Pro, which provides aerial photographs of varying quality for different parts of the UK, in order to gain further information regarding the types of habitat likely to be present within the site and surrounding area prior to carrying out the site surveys; and
- The *Birdguides* website, which provides a database of scarce and rare bird species recorded throughout the UK since November 2000.

3.3 Site Survey

3.3.1 Habitats

A PEA survey of the Site was undertaken on the 17th September 2021 following the Phase 1 survey methodology outlined in the 2010 edition of the 'Handbook for Phase 1 habitat survey' by the Joint Nature Conservation Committee (JNCC 2010). This allows habitats and boundary features to be mapped by a trained surveyor following a standardised system which can be easily interpreted.

The date, times and weather conditions of the PEA and species-specific surveys are detailed in Table 3 below. Results of the Phase 1 survey are shown in Figure 2, with site photographs included in Appendix 1.

Table 3. Preliminary Ecological Appraisal Survey 2021: Date, times and weather conditions.

Date	Time	Cloud cover	Wind	Precipitation	Temperature	Visibility
17-Sep-21	10.00-12.15 hours	4/8-5/8	SW1-2	None	12-14°C	>3km

3.3.2 Protected Species

As a part of the PEA survey, species-specific surveys for Badger, Otter and Water Vole were undertaken of the Site and adjacent areas. A note was also made of any field signs indicating the presence of other protected species listed in the table in section 2.2.2, and the location of these signs was mapped. A record was also made of any animal species identified within the site or adjacent areas during the survey. An assessment of the suitability of the habitats for protected species was carried out, to identify any potential impacts upon such species or requirements for further survey.

3.3.3 Ornithology Walkover Survey & Risk Assessment

A single-visit bird walkover survey of the Site was carried out on 17th September 2021, within the Proposed Development Site boundary and a 200m buffer zone, as an integral part of the PEA Survey. The times and weather conditions of the survey visit are detailed in Table 4.

Table 4. Ornithological Walkover Survey 2021: Date, times and weather conditions.

Date	Time	Cloud cover	Wind	Precipitation	Temperature	Visibility
17-Sep-21	10.00-12.15 hours	4/8-5/8	SW1-2	None	12-14°C	>3km

An ornithological risk assessment was also undertaken of the Site on the same date as the bird walkover survey. The purpose of the ornithological risk assessment was to provide an assessment of species using the site and ornithological habitats present. As a part of this, an assessment of the ornithological value of the Site has also been undertaken. This type of survey is particularly useful in detecting the presence of protected birds, such as those listed on Annex 1 of the EC Birds Directive, Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) and Red and Amber-listed Birds of Conservation Concern. The survey consisted of walking a route across the Site designed to maximize coverage of the Site and to approach landscape features of particular ornithological importance. This allowed the habitats within the Site to be assessed, thus determining their potential to support different bird species at times throughout the year.

3.3.4 Personnel

All ecological survey and reporting will be undertaken by Paul Massey BSc (Hons) MCIEEM of Sterna Ecology Ltd. Paul is a very experienced ecologist with over 25 years' experience as a professional ecologist and ornithologist with a variety of organisations. Prior to forming Sterna Ecology in January 2016, Paul was Head of Ecology and Ornithology at TNEI Services and an Associate Director at E3 Ecology before that.

4 Results

4.1 Consultation

Staffordshire Ecological Record (SER)

SER was able to provide the following ecological data from a 2km search area around the Cheddleton Site.

Amphibians and Reptiles

SER holds records of four species of reptile and two species of amphibian, within 2km of the Cheddleton Site: Slow-worm, Grass Snake, Adder, Common Lizard, Great Crested Newt and Common Toad.

Mammals

SER was able to supply details of 14 species of terrestrial mammal that have been recorded within 2km of the Cheddleton Site. These are Water Vole, Hedgehog, Brown Hare, Otter, Badger, Harvest Mouse, Polecat and American Mink, plus the following bat species: Daubenton's Bat, Whiskered/Brandt's Bat, Noctule Bat, Common Pipistrelle, Soprano Pipistrelle and Brown Long-eared Bat.

Birds

SER was able to supply details of 63 bird species that have been recorded within 2km of the Cheddleton Site. These were:

- Wildfowl: Whooper Swan, Greylag Goose, Pink-footed Goose, Mallard, Shoveler, Wigeon, Teal;
- Waders: Oystercatcher, Lapwing, Little Ringed Plover, Curlew, Snipe, Woodcock, Redshank and Common Sandpiper;
- Gulls and terns: Black-headed Gull, Lesser Black-backed Gull and Common Tern;
- Other waterbirds: White Stork, Kingfisher;
- Raptors and owls: Goshawk, Red Kite, Merlin, Peregrine, Hobby, Kestrel, Tawny Owl, Barn Owl and Short-eared Owl;
- Gamebirds: Grey Partridge; and
- A range of passerines and near-passerines: Stock Dove, Cuckoo, Lesser Spotted Woodpecker, Swift, Dipper, House Martin, Skylark, Grey Wagtail, Meadow Pipit, Tree Pipit, Redstart, Whinchat, Dunnock, Redwing, Song Thrush, Fieldfare, Mistle Thrush, Grasshopper Warbler, Wood Warbler, Willow Warbler, Pied Flycatcher, Spotted Flycatcher, Willow Tit, Marsh Tit, House Sparrow, Tree Sparrow, Starling, Brambling, Bullfinch, Lesser Redpoll, Common Crossbill, Yellowhammer, Reed Bunting.

Lepidoptera: Butterflies and Moths

SER has records of two species of butterfly and 18 species of moth recorded within 2km of the Cheddleton Site. These are:

- Butterflies: Small Heath and Wall; and

- Moths: Knot Grass, Beaded Chestnut, Ear Moth, Centre-barred Sallow, Haworth's Minor, Small Square-spot, Small Phoenix, Dusky Thorn, Autumnal Rustic, Ghost Moth, Rustic, Rosy Rustic, Dot Moth, White Ermine, Hedge Rustic, Feathered Gothic, Cinnabar and Heath Rustic.

It should be noted that the records provided by SER are not comprehensive and not based on any structured surveys. They simply reflect those records that have been submitted to the records centre. In addition, the records provided originate from a broad search area of 2km, rather than the specific Proposed Development Site. However, they do provide some indication of species that are likely to occur in the local area.

Sites of Biological Importance

There are no Sites of Biological Importance (Local Wildlife Sites) within the FIE Cheddleton Proposed Development Site. However, eight Sites of Biological Importance can be found within 2km of the Proposed Development Site. These eight sites are:

- Wetley Rocks (814m south-west of the PDS): a linear, stretch of rock outcrop supporting a heathland community along the A520 through Wetley Rocks;
- The Rookery (989m west of the PDS): semi-natural, ancient broad-leaved woodland along a stream valley, and its tributaries, with associated ancient woodland indicator species and wet woodland species;
- Caldon Canal (south of Basford Bridge) (1.14km to the east of the PDS): canal side with emergent vegetation;
- Smithy Pool (north of) (1.4km south-east of the PDA): an area of semi-improved acid grassland;
- Basford Green (west of) (1.56km north-east of the PDS): dry heath-acid grassland mosaic;
- Consall Forge (north of), Caldon Canal (1.66km to the south-east): a length of the Caldon Canal, a canalized section of the River Churnet, together with areas of marshy grassland and wet woodland;
- Littlewood Wood & Hall Wood (1.74km west of the PDS): ancient semi-natural woodland, with a stream on its northern boundary where wet woodland ground flora is present; and
- Hills Farm (south-west of) (2km east of the PDS): a gentle sloping field, managed as pasture. The steepest part of the field is a remnant of unimproved grassland.

Biodiversity Alert Sites

There are no Biodiversity Alert Sites within the FIE Cheddleton Proposed Development Site. However, five Biodiversity Alert Sites can be found within 2km of the Proposed Development Site. These five sites are:

- Ashcombe Deer Park (450m to the north-east): flushed stream banks with much soft rush locally;
- Felthouse Wood (452m east of the PDS): a block of woodland containing a compartment of young semi-natural birch woodland and a smaller section of planted oak woodland;
- Big Susan's Wood (1.77km north-west of the PDS): open birch-oak wood with holly, rowan and bramble which has recolonised after the ancient woodland was cleared;

- Platt (north of) (1.79km south-west of the PDS): a small triangular section of semi-improved acidic grassland with marshy areas around the stream side; and
- Hills Farm (north-west of) (2km east of the PDS): a heathland community with a mosaic of acid grassland and an associated acidic flush.

4.2 Desktop Study

The following data was collated from the sources listed in section 3.2.

MAGIC Website

There are no statutory designated nature conservation sites within the FIE Cheddleton Proposed Development Site, or within a 1km radius around the Site. However, the Churnet Valley Site of Special Scientific Interest (SSSI) can be found within 1.59km south-east of the Site.

The Churnet Valley SSSI, lying to the north of Cheadle, includes the steep-sided main valley of the River Churnet and a number of tributary valleys. These valleys retain the largest remaining concentration of semi-natural ancient woodland in Staffordshire, intermixed with scrub, unimproved neutral and acid grassland and large areas of mire, marsh and carr. The area supports an outstanding assemblage of woodland birds.

The main woodland types vary from Alder *Alnus glutinosa* woods in the valley bottoms and flushes, through Ash *Fraxinus excelsior* woods on base rich soils, to a mixture of Sessile Oak *Quercus petraea*, Pedunculate Oak *Quercus robur* and Silver Birch *Betula pendula* woodland on the drier soils. The last two types form the major component of the woodland.

The varied age structure and extensive area of the woodland supports a rich diversity of breeding birds – over 50 species. These include predators such as Goshawk *Accipiter gentilis* and Sparrowhawk *A. nisus*, all 3 British woodpeckers, and an excellent assemblage of finches (8 species), including Common Crossbill *Loxia curvirostra* and Siskin *Carduelis spinus*, tits (6 species) and warblers (7 species). Species such as Pied Flycatcher *Ficedula hypoleuca*, Redstart *Phoenicurus phoenicurus* and Wood Warbler *Phylloscopus sibilatrix* which favour mature woodland are well represented. Reed Bunting *Emberiza schoeniclus* and Sedge Warbler *Acrocephalus schoenobaenus* breed in the mire and willow carr areas.

The invertebrate fauna has been extensively recorded from a section of woodland along the main Churnet Valley. These woods are especially rich in species which are dependent on a continuous presence of dead wood and over-mature trees. In addition to over 30 nationally important beetles, two red data book species, *Gracilia minuta* and *Microscydmus minimus* are found, the latter living in cavities in old hollow trees. Several nationally important species of fly have also been recorded, for example *Xylota florum* and *Neoascia obliqua*. The Churnet Valley supports a diverse butterfly fauna including Grizzled Skipper *Pyrgus malvae*, a county rarity, and Small Pearl-bordered Fritillary *Boloria selene selene* which has a very local distribution.

The Cheddleton Proposed Development Site, although nearly 1.6km from the Churnet Valley SSSI, lies within the SSSI Impact Risk Zone for the Churnet Valley.

Birdguides Website

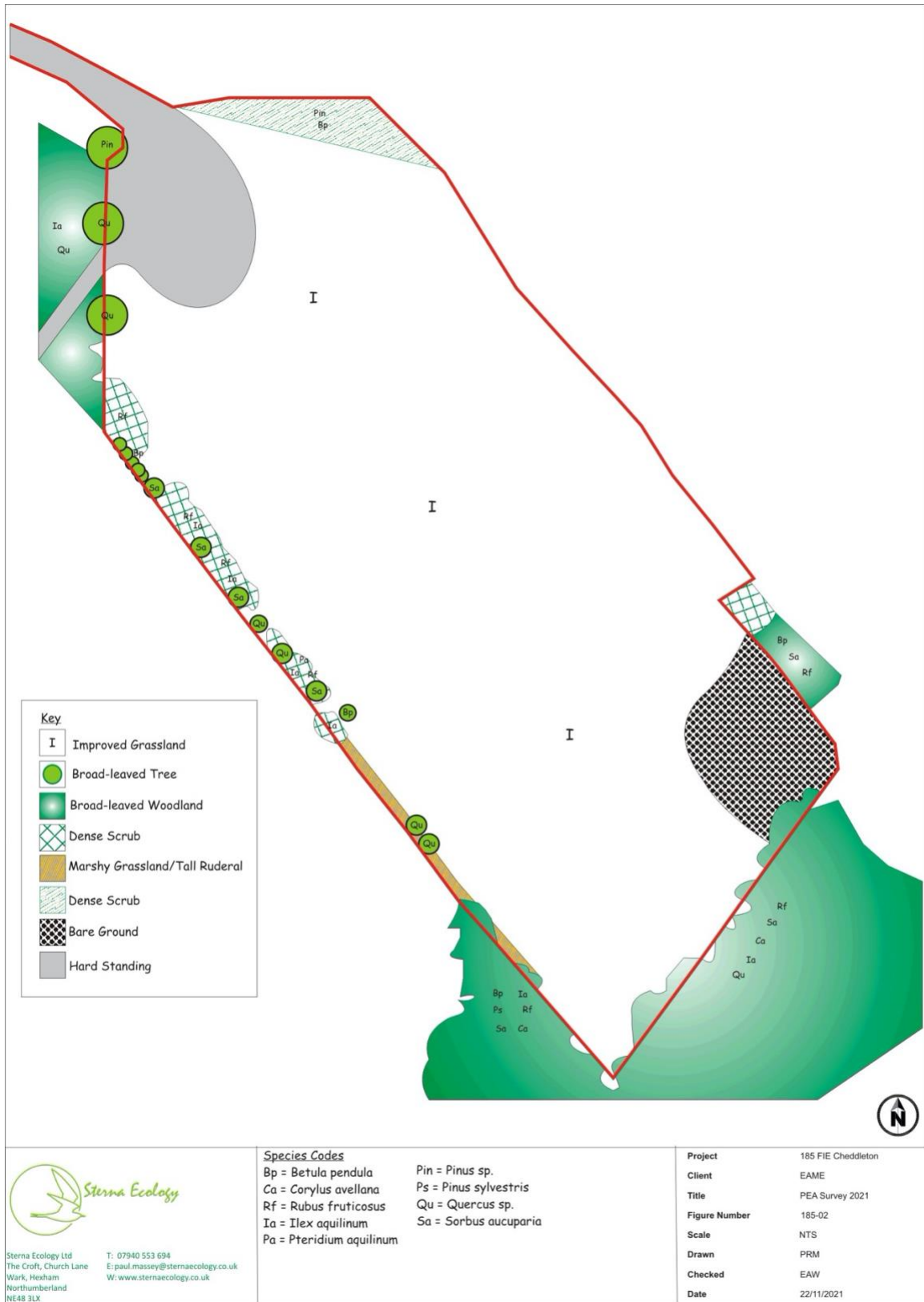
A search of the online Birdguides database produced details of six bird species that had been recorded in the vicinity of the Proposed Development Site since November 2000: Great White Egret (December 2017), Osprey (September 2018), Short-eared Owl (October 2011), Alpine Swift

(August 2015), Waxwing (December 2010 & December 2018) and Common Crossbill (October 2009)

4.3 Field Survey and Assessment of Value

4.3.1 Phase 1 Habitat Survey

The results of the Phase 1 survey are shown in Figure 2 below.



The Proposed Development Site is located on the eastern edge of Cheddleton, occupying a large pasture field adjacent to the operational FIE Cheddleton site. The FIE Cheddleton site runs along the entirety of the eastern boundary of the Proposed Development Site. Mature broad-leaved woodland abuts the southern and south-western boundaries of the Site, with another pasture field beyond the western boundary and gardens/woodland along the north-western boundary.

The Proposed Development Site is largely dominated by a single improved grassland field. The grassland sward is relatively short, with a maximum sward height of 15-20cm, and is species-poor. Grass species within the sward were dominated by Perennial Rye-grass *Lolium perenne*, but also included Red Fescue *Festuca rubra* and Yorkshire Fog *Holcus lanatus*. Despite the improved nature of the grassland, a number of forb species were also identified within the sward. These included White Clover *Trifolium repens*, Red Clover *Trifolium pratense*, Dandelion *Taraxacum officinale* agg., Common Sorrel *Rumex acetosa*, Broad-leaved Dock *Rumex obtusifolius*, Ribwort Plantain *Plantago lanceolata*, Daisy *Bellis perennis*, Creeping Buttercup *Ranunculus repens* and Creeping Thistle *Cirsium arvense*.

Access to the Proposed Development Site is from Bones Lane, through the operational site, into the northern corner of the PDS along a tarmacked track. Where this track enters into the PDS it then broadens out to a roughly circular area of hard-standing (tarmac and gravel), with a second gravel track exiting the Site through the north-western boundary. In the south-eastern corner of the Site there is a fairly large area of bare ground (bare earth) that has been caused by recent earth-moving works.

The north-eastern corner of the Site is dominated by a block of plantation mixed woodland (of approximately 0.23ha in area) on an earth bund. The earth bund and woodland were created/planted approximately 15 years ago to provide partial screening of the eastern boundary of the FIE Cheddleton site. This plantation comprises a mix of native and ornamental species. It is dominated by *Pinus* species, but with Silver Birch *Betula pendula* and various ornamentals mixed in.

Although there is little vegetation and habitat within the centre of the Site, there are various hedges and boundary trees around the boundaries of the Site, particularly the southern boundary.

A linear mosaic of a number of different habitats can be found along the south-western boundary, including a dry-stone wall, sections of mature hedgerow, boundary trees and a dry ditch/marshy grassland/tall ruderal mosaic. The sections of mature hedgerow are mainly dominated by Holly *Ilex aquifolium*, but with frequent Rowan *Sorbus aucuparia* trees and both oak *Quercus* sp. and Silver Birch saplings. The Holly within these sections of hedge range in height from 3m to 3.5m, with the Rowan trees up to 3m in height and the oak saplings up to 2m in height. Dense Bramble *Rubus fruticosus* and Bracken *Pteridium aquilinum* are common at the base of the hedgerows. To the southern end of this boundary there is a dry ditch surrounded by a linear marshy grassland and tall ruderal mosaic, inclusive of rushes *Juncus* spp., Rosebay Willowherb *Chamerion angustifolium*, Creeping Thistle, Cow Parsley *Anthriscus sylvestris* and Ragwort *Senecio jacobaea*.

On the north-western boundary of the Site can be found three mature trees, two oaks and a pine.

Mature semi-natural deciduous woodland can be found immediately adjacent to the southern edge of the south-western boundary and the south-eastern boundary. Species present within this woodland include Silver Birch, Scots Pine *Pinus sylvestris*, Rowan, Hazel *Corylus avellana*, oak, Holly and Bramble. Although the vast majority of this woodland is outwith the redline boundary, the canopy edge encroaches over the boundary in places.

An un-named stream can be found approximately 223m south of the Proposed Development Site. This stream flows through Felthouse Wood and Consall Woods before joining the Caldon Canal and River Churnet.

4.3.2 Protected Species

4.3.2.1 Bats

Habitat Assessment

The majority Site is considered to be of low habitat quality for bats, consisting entirely of a fairly large and open improved grassland field. This area of improved grassland will provide limited foraging opportunities for bats. However, higher quality foraging can be found along the boundaries of the Site, particularly the mature hedgerows along the south-western boundary and the adjacent woodland edges along the south-western and south-eastern boundaries. Better foraging opportunities are also provided by two mature oak trees and broad-leaved woodland on/adjacent to the north-western boundary.

Although the Site is considered to be of low quality for foraging bats, it is fairly well connected to higher quality bat habitats. Woodland along the southern edge of the Site links into scrub and woodland along the stream to the south, which in turn links into Felthouse and Consall Woods.

Overall the Proposed Development Site is considered to be of moderate quality for foraging bats, primarily due to its boundary features, with further links to higher quality foraging habitats further afield.

Roost Survey

There are no buildings or structures within the Proposed Development Site that could support roosting bats. However, there are two mature oak trees on the north-western boundary of the Site which are considered to have a moderate risk of supporting roosting bats. These oak trees, although mature, is in fairly good condition. No evidence could be found, during visual inspections from the ground with binoculars, of any standing dead wood, rot holes from decayed limbs or cracks and fissures. There are also no coverings of Ivy *Hedra helix* on the trees. These oak trees are therefore considered to provide limited opportunities for roosting bats. Furthermore, these trees are outside the footprint of the proposed development and will be retained as a part of the proposal.

4.3.2.2 Great Crested Newt

The improved grassland, which dominates the Site, is considered to provide poor quality terrestrial habitat for amphibians. Higher quality terrestrial habitats can be found within the scrub, marshy grassland/tall ruderal mosaic and dry-stone walls along the south-western boundary of the Site. These higher quality terrestrial habitats are outside the proposed development footprint and will remain unaffected by the proposed development.

There are no waterbodies within the Site and no evidence could be found of any waterbodies suitable for breeding Great Crested Newts, such as ponds or ditches, within 250m of the Site.

The Proposed Development Site is considered to be of low ecological value for Great Crested Newts.

4.3.2.3 Badger

No evidence indicating the presence of Badger was recorded during the PEA survey, from within either the Proposed Development Site or on adjacent land, including the woodland adjacent to the southern boundaries. The Proposed Development Site is considered to only have a low potential of being used by foraging Badger, due to its small size, domination by one habitat of low diversity and lack of Badger setts and field signs from either within the Site or on adjacent land.

The Proposed Development Site is considered to be of low ecological value for Badgers.

4.3.2.4 Otter and Water Vole

Species-specific surveys for Otter and Water Vole recorded no field signs of either species within the Site or along a stream approximately 223m south of the Site.

There are no suitable waterways/waterbodies for Otter or Water Vole within the Proposed Development Site. However, a potentially suitable stream lies approximately 223m to the south of the Proposed Development Site – a tributary of the River Churnet. The River Churnet is known to support populations of both Otter and Water Vole and, although species-specific surveys did not record field signs of either species along the stretch of stream closest to the Site, there remains a risk that Otter, in particular, may use this tributary at times.

Given the unsuitable nature of the habitats within the Site, and the lack of field signs from the nearby stream, it is concluded that both Otter and Water Vole are either completely absent from the Site or very infrequently pass through the site. The lack of field signs identified during a specific survey, of either species, is considered to render habitats within the Proposed Development Site to be of low value to both Otter and Water Vole.

4.3.2.5 Reptiles

The improved grassland, which dominates the Site, is considered to provide poor quality habitat for reptiles. Higher quality habitats can be found within the scrub, marshy grassland/tall ruderal mosaic and dry-stone walls along the south-western boundary of the Site. All of the slightly higher quality habitats within, or immediately adjacent to, the Site are outside the proposed development footprint and will remain unaffected by the proposed development.

The Proposed Development Site is considered to be of low ecological value for reptiles.

4.3.2.6 UK Post-2010 Biodiversity Framework Species

Although no definite evidence indicating the presence of other BFS species was recorded during the survey, species such as Hedgehog are considered to have the potential to be present within the Site and surrounding area at times.

4.3.2.7 Other Species

Both Rabbit and Grey Squirrel were recorded within the Proposed Development Site, and adjacent area, during the PEA survey, along with Mole field signs. Other mammals, such as Roe Deer and Fox may also occasionally be present within the Site, or the adjacent habitats, at times during the year.

4.3.3 Ornithology

4.3.3.1 Ornithology Walkover Survey

Table 5 details 20 species that were recorded within, or over, the Survey Area (the Proposed Development Site plus a 200m buffer around the Site) during the September 2021 Walkover Survey.

Table 5. Birds recorded within/over the Survey Area during the January 2021 Survey.

Species	Number	Status in Survey Area	Conservation Status
Buzzard	1	Single bird over woodland to west of Survey Area – possibly breeding here. No evidence of nesting in Potential Development Site (PDS) or 200m buffer.	
Pheasant	5	Recorded in PDS & 200m buffer. Released gamebirds.	
Red-legged Partridge	3	Recorded in PDS. Released gamebirds.	
Woodpigeon	5	Recorded in both the PDS & the 200m buffer. Likely breeding within woodland/mature hedges within both the PDS & the 200m buffer.	
Great Spotted Woodpecker	1	Seen within woodland within the 200m buffer, where likely to be breeding. Will also forage, and possibly breed, within trees on the north-western edge of the PDS.	
Pied Wagtail	2	Recorded in 200m buffer on buildings in FIE site, where they probably breed. Unlikely to be breeding within the PDS but may forage there.	
Robin	3	Recorded both within the PDS and the 200m buffer. Probably breeding within the buffer and the Site.	
Wren	2	Recorded both within the PDS and the 200m buffer. Probably breeding within the buffer and the Site.	
Blackbird	4	Recorded both within the PDS and the 200m buffer. Probably breeding within the buffer and the Site.	
Willow Warbler	1	Single bird foraging within the PDS. Probably breeding within both the Site and the buffer.	
Goldcrest	2	Recorded within the woodland adjoining the southern boundary of the PDS (within the 200m buffer). Likely to be breeding within the buffer.	

Species	Number	Status in Survey Area	Conservation Status
Blue Tit	4	Recorded both within the PDS and the 200m buffer. Probably breeding within the buffer and the Site.	
Great Tit	2	Recorded both within the PDS and the 200m buffer. Probably breeding within the buffer and the Site.	
Long-tailed Tit	7	Recorded within the woodland adjoining the southern boundary of the PDS (within the 200m buffer). Likely to be breeding within the buffer.	
Raven	1	Flew over the PDS and buffer. Breeding and foraging outside the Survey Area.	
Magpie	2	Recorded in both the Site and the 200m buffer. Probably breeding within the buffer but not the Site	
Carrion Crow	2	Recorded in both the Site and the 200m buffer. Probably breeding within the buffer but not the Site	
Goldfinch	4	Recorded in both the Site and the 200m buffer. Probably breeding within the buffer but not the Site	
Greenfinch	1	Recorded along the north-eastern boundary of the PDS. Probably breeding within the Site and the buffer.	
Chaffinch	2	Recorded both within the PDS and the 200m buffer. Probably breeding within the buffer and the Site.	
A1 or S1 = Species listed on either/both of Annex 1 of the EU Birds Directive and/or Schedule I of the Wildlife & Countryside Act (as amended) 1981; NERC S41 = Species listed in Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006; UK Red = UK Red List Species of Conservation Concern (Eaton <i>et al</i> 2015); UK Amber = UK Amber List Species of Conservation Concern (Eaton <i>et al</i> 2015); and SBAP = Species on the Staffordshire Biodiversity Action Plan.			

4.3.3.2 Ornithological Risk Assessment

In addition to the Proposed Development Site, and the 200m buffer, being used by the species recorded during the Walkover Survey, it is considered that the Site, and/or buffer, may also be used by the following species/groups of birds:

- The buffer may support one or two pairs of several passerines that, although they are common and widespread, are considered to be of conservation concern due to recent declines in their populations. These species are unlikely to breed within the actual Proposed Development Site. Such species could include:
 - Bullfinch: one or two pairs possibly breeding within both the Site and the 200m buffer;
 - Linnet: one or two pairs possibly breeding within the 200m buffer around the Site; and

- Reed Bunting: one or two pairs possibly breeding within the 200m buffer, but not within the Proposed Development Site
- Small numbers of pairs of common summer migrants breeding within the Site and the 200m buffer. Such breeding species could include Whitethroat, Blackcap and Chiffchaff;
- Use of the both the Site, and the 200m buffer, as a very small part of a wider hunting range, by the common and widespread raptors Sparrowhawk and Kestrel; and
- The airspace above the Site and 200m buffer may be used as a foraging resource for local breeding Swifts, Sand Martins, Swallows and House Martins.

The Proposed Development Site is considered to be of low ornithological value, both for breeding and wintering birds.

4.3.4 Schedule 9 Species

Schedule 9 of the Wildlife and Countryside Act 1981 (as amended) lists a number of non-native invasive plants (which out compete many native plants) that it is illegal to release into the wild. This makes it an offence to dump unwanted plants of these species, for instance if removed from a development site, in a non-specialist facility, as the risk of them spreading into the wild from a non-controlled environment is high.

No Schedule 9 species were identified within the Proposed Development Site.

5 Recommendations for Further Survey

It is considered that no further ecological surveys of the Proposed Development Site are required prior to submitting the proposed development into planning

6 Assessment of Impacts

Churnet Valley SSSI

Although the Proposed Development Site lies nearly 1.6km from the SSSI it falls within the SSSI Impact Risk Zone for the Churnet Valley. There is therefore a risk that a major pollution incident, or fire, at the Proposed Development Site could have a significant impact on the Churnet Valley SSSI. Such an incident is most likely to occur through a pollution incident affecting water courses in the vicinity of the Proposed Development Site, such as the stream that runs through Felthouse and Consall Woods. Any such pollution could make its way south into the Felthouse/Consall Woods stream, which then flows directly into the Caldon Canal/River Churnet upstream of where it flows through the Churnet Valley SSSI.

However, it is considered that the risk of this occurring is negligible. As would be expected of a major industrial site, the operational FIE Cheddleton site has in place robust and extensive pollution control and pollution incident policies and procedures. These both reduce the risk of a pollution incident occurring in the first place to very low and, in the unlikely event that such an incident occurred, the quick and efficient response to the incident further reduces the risk of water course pollution to negligible. These pollution control and pollution incident policies and procedures will also be adopted for the new Proposed Development Site.

Consideration of the potential risk of a pollution incident having an impact on the Churnet Valley SSSI has also been included as an integral part of the Site design and layout. The dry ditches along both the south-western and south-eastern boundaries of the Site feed in to the stream that runs through Felthouse and Consall Woods and therefore the most likely route that pollution from an incident might find its way downstream to the Churnet Valley SSSI. In order to mitigate for this, the main factory building has been placed as far north within the Site as possible, thus increasing the distance between the factory and the southern Site boundary as much as possible, and therefore the distance between the factory and the Felthouse Wood stream as great as possible. In addition, the drainage strategy, for the Proposed Development Site, includes the inclusion of a Class 1 full retention oil/water separator and a penstock closure valve that would isolate the Site from the off-site drainage network in the event of an unplanned event. This should be sufficient to break any potential pathway between the Site and the Churnet Valley SSSI

On-site Habitats & Protected Species

The following high-value habitats, both within the Proposed Development Site, and immediately adjacent to the Site will be retained:

- The two mature oak trees along the north-western boundary will be retained;
- The mature hedgerows and boundary trees along the south-western boundary will be retained; and
- The mature semi-natural woodland adjacent to the south-western and south-eastern boundaries will be unaffected by the proposals.

Based on the Preliminary Ecological Appraisal survey, species-specific surveys and ornithological survey undertaken, the following impacts are anticipated as a result of the Proposed Development, if an appropriate mitigation strategy is not implemented:

- The loss of a field of improved grassland considered to be of low botanical and habitat value;
- The loss of approximately 0.23ha of immature mixed plantation woodland, of moderate habitat value;
- The loss and disturbance of a very limited area of habitat considered to be of low importance for foraging bats;
- The loss and disturbance of a limited area of habitat of low importance to badger, should a population be present in the wider area;
- A low risk of disturbing any badger, during construction, which may be present at the time of works; and
- The displacement of several pairs of a few common breeding bird species.

It is anticipated that the Proposed Development will have no adverse impacts on the following ecological receptors:

- Bat roosts;
- Great Crested Newt, or other amphibians;
- Otter;
- Water Vole; and
- Reptiles.

7 Mitigation, Compensation and Monitoring

The client is committed to maintaining and improving the ecological value of Catton, and the surrounding area, and thus the following mitigation and compensation will be implemented as part of the proposed development.

7.1 Construction Period

In order to minimise the risk of protected species being adversely affected, from the implementation of the proposals, the following mitigation measures will be implemented during the construction period of the development:

- As all wild birds, their nests and eggs are protected by law under Part 1 of the Wildlife and Countryside Act 1981 (as amended), then no vegetation clearance works, soil stripping works, fence construction or off-track vehicle movements would be undertaken during the bird breeding season (March to August inclusive), unless a checking survey by a suitably qualified ornithologist has shown active nests to be absent immediately prior to the start of works;
- The two mature oak trees on the north-western boundary of the Site will be retained as an integral part of the final development. During ground clearance and construction works an exclusion buffer, similar in width to the canopy, will be put around the trees to prevent damage to its roots;
- Construction works will not be undertaken at night, to minimise the risk of disturbing nocturnal species such as bats and Badger;
- No high powered lighting will be installed either during the construction or operational phases of the development;
- Any trenches or pits created will be covered overnight, or one side of these features will lie at a 45° angle to allow any animals which may fall in safe access out. Such features will be checked prior to the recommencement of works on site each morning, to ensure protected and notable species are not adversely affected by the proposals;
- No fires will be lit as part of the proposals;
- Any chemicals required will be locked away in appropriately secure containers when not in use; and
- Should works not commence within 12 months of the date of this report, a checking survey will be required prior to their commencement to ensure the assessment remains accurate.

7.2 Operational Period

Woodland Planting

In order to compensate for the loss of approximately 0.23ha of immature mixed plantation woodland, both in terms of biodiversity and carbon storage, approximately 0.6ha of native broad-leaved woodland will be planted along the north-eastern boundary of the field immediately south-west of the Proposed Development Site. This new woodland will abut onto

the mature hedgerows and boundary trees that are already present, and will be retained, along the south-western boundary of the Proposed Development Site.

All trees planted within the new woodland will be native broad-leaved trees of local provenance. Species composition within the woodland will try to reflect other local woodlands, especially those within the Churnet Valley and will thus include the following species: Ash, Sessile Oak, Pedunculate Oak, Silver Birch, Rowan, Hazel, Holly and Small-leaved Lime *Tilia cordata*.

Hedgerow Planting

All of the existing mature hedgerows along the south-western boundary of the Site will be retained. These retained hedgerows will benefit from 'gapping up' using a range of locally appropriate native plant species, such as Holly, Rowan, Hazel and Wych Elm *Ulmus glabra*. As well as increasing the botanical value of such features, the implementation of such measures will help to increase the availability of habitat for a range of species and increase connectivity between habitats of ecological value throughout the area.

This planting will also both strengthen and extend existing wildlife corridors around the boundaries of the Site, through additional native planting, in order to maintain the potential for a range of species to move through the area following development of the Site.

Priority within the planting schemes will be given to the use of native species which are ideally of local provenance. This will include a range of nectar and fruit-bearing species which will help to maximise the ecological value of this planting.

Attenuation Pond

As an integral part of the Site design, an attenuation pond will be constructed in the south-western corner of the Site. Although the attenuation pond's primary purpose is to store water during storm events the pond will also be managed for wildlife. A thin band of emergent vegetation (such as *Phragmites australis*) will be planted around the edges of the pond. Although this band of emergent vegetation will need to be restricted, to allow the attenuation pond to continue to function for its primary purpose, this will provide habitat for a range of invertebrates and birds.

Bird Nest Boxes

A range of bird nest boxes will be included within the mature hedgerow and boundary trees along the south-western and north-western boundaries, as well as within boundary trees around the field immediately south-west of the Proposed Development Site. Provision of such boxes will enhance nesting opportunities for a range of species within the Site and contribute towards local biodiversity targets. The inclusion of nest boxes suitable for use by a variety of species (hole and open boxes) around the Site would help to further increase the availability of breeding habitat for a range of both common and declining (Red and Amber list) bird species. All boxes will be woodcrete and placed at least 4m up in trees. Boxes will be included as follows:

- 8no. Schwegler 1B type nest boxes; and
- 8no. Schwegler 2GR type nest boxes;

Bat Boxes

6no. small woodcrete bat boxes, as designed for *pipistrelle spp.*, will be located within the trees along either the south-western and north-western boundaries or within trees around the boundaries of the field immediately south-west of the Proposed Development Site.

Lighting

Particular care will be given to the lighting design as part of the proposed development. Low level lighting, which minimises spill, will be used, with the use of high intensity lighting being avoided near any existing or new habitat of ecological value.

The client is happy to commit to the implementation of above measures and is aware that these are likely to be made a condition of any planning consent which may be granted.

8 References

JNCC. 2010. *Handbook for Phase 1 Habitat Survey: A technique for environmental audit*. Joint Nature Conservation Committee, Peterborough.

9 Appendix 1 - Site Photographs



Photo 1: Improved grassland: the primary habitat within the Site.



Photo 2: Improved grassland: the primary habitat within the Site.



Photo 3: Looking south across the Site from the northern corner of the Site.



Photo 4: Boundary trees and hedgerow along the south-western boundary.



Photo 5: Stone wall, scrub and hedgerow along the south-western boundary.



Photo 6: Hedgerow along the south-western boundary.



Photo 7: Oak Quercus sp. along north-western boundary of Site.



Photo 8: Oak Quercus sp. along north-western boundary of Site.



Photo 9: Oak Quercus sp. along north-western boundary of Site.



Photo 10: Oak Quercus sp. along north-western boundary of Site.



Photo 11: Plantation mixed woodland in north-eastern corner of the Site.



Photo 12: Plantation mixed woodland in north-eastern corner of the Site.



Photo 13: Plantation mixed woodland in north-eastern corner of the Site.



Photo 14: Plantation mixed woodland in north-eastern corner of the Site.



Photo 15: Plantation mixed woodland in north-eastern corner of the Site.



Photo 16: Broad-leaved woodland along southern boundary.