



Preliminary Ecological Appraisal

DBN3 Norway Lane, Littlehampton

Presented to Gleave Partnership

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Report Details

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Executive Summary

Scope of Works	Delta-Simons Environmental Consultants Ltd was instructed by Gleave Partnership ('the Client') to undertake a Preliminary Ecological Appraisal (PEA) of land off Norway Lane, Littlehampton in West Sussex (the Site'). The PEA comprised a Phase 1 Habitat Survey and protected species assessment, which were completed on 1 st February 2019. The survey was undertaken to inform a planning application for the Site.
Current Site Status	The Site comprises three distribution warehouses (Buildings 1, 2 and 3) surrounded by hardstanding. Buildings 1 and 2 were bordered by areas of introduced shrubs to the south. In the east and west of the Site were areas of amenity grassland, scattered mixed trees and scattered broadleaved trees. To the north of the Site were scattered mixed trees, beneath which was dense scrub and ruderal vegetation. The Site was surrounded on all aspects by a security fence.
Proposed Development	It is understood that the proposed development will comprise minor alterations to the internal access routes, including the widening of the road within the north of the Site and resurfacing works.
Results: Habitats on-Site	The following habitats are found on the Site: ▲ Dense scrub; ▲ Scattered mixed trees; ▲ Scattered broadleaved trees; ▲ Tall ruderals; ▲ Spoil; ▲ Amenity grassland; ▲ Introduced shrubs; ▲ Hardstanding; ▲ Buildings; and ▲ Bare ground.
Habitats adjoining the Site	The Site is situated within a largely urban setting with surrounding industrial, commercial and residential properties. To the east of the Site was a large pond (Waterbody 1) surrounded by grassland and broadleaved trees, to the south of the Site was a large car park and Chinese style office building. Beyond this to the south was a small area of landscaping comprising grassland, introduced shrubs and trees, and within this area were two smaller ponds (Waterbody 2 and Waterbody 3). To the west of the Site were residential houses. To the north of the Site was a railway line beyond which were large industrial sheds.
Potential for Protected/ Notable Species	The dense scrub, scattered trees and ruderal vegetation to the north of the Site had potential to support reptiles, nesting birds and hedgehogs. In addition, the railway line to the north of the Site may provide a commuting and foraging corridor for bats.

Requirement for Further Surveys	The findings of the initial Site assessment are considered sufficient to inform the anticipated development proposals and no further surveys regarding protected and priority species or habitats are deemed necessary at this time.
Construction and Operational Phase Recommendations and Enhancement Measures	The detailed recommendations set out within the Report are summarised below: Species Protection <u>Nesting Birds</u> ✎ Any clearance or management works to the trees and dense scrub on-Site and those overhanging the Site should be performed either before early March or after late August in order to avoid the main bird nesting 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; and ✎ 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, and works would then need to proceed within the following 24 hours. <u>Bats</u> ✎ The detailed lighting design on Site should be functional and directional and in line with current guidance. It should avoid excessive up-lighting and light spill. The vegetation retained or planted on Site should be unlit. <u>Hedgehogs</u> ✎ Contractors should maintain an awareness for the potential of hedgehog during the clearance of vegetation, particularly along the railway corridor, and should an individual be found it should be moved to an area of suitable habitat away from the works; and ✎ Where possible, all new fencing within the development should allow access and egress for hedgehogs. This requires 13 cm² 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 remain available. <u>Reptiles</u> ✎ As a precaution, vegetation clearance along the northern edge of the Site should be undertaken outside the hibernation period for reptiles and (November – February, inclusive) and should be undertaken under a watching brief by a suitably qualified ecologist. This will enable sensitive habitat features, such as piles of deadwood to be carefully removed and any reptiles present to be caught and moved to a place of safety within surrounding habitat away from the proposed works. <u>Bats</u> ✎ Any alterations to the current lighting at the Site should be functional and directional and in line with current guidance. It should avoid excessive up-lighting and light spill, particularly beyond the northern and eastern Site boundaries which may provide suitable habitat for foraging and commuting bats; <u>Site Protection</u> All works on Site should follow an appropriate working methodology to avoid inadvertent damage to any habitats and associated fauna retained on, or surrounding, the Site. This includes the following:

	⌘ All works should be undertaken in accordance with the UK governments 'Pollution Prevention for Business's' guidance; ⌘ If Site clearance is to occur in the vicinity of the wall cotoneaster in the south-east of the Site, care should be taken during the clearance process to ensure that the cotoneaster is not spread to off-Site habitats; and ⌘ Any trees retained at the Site, or within surrounding land, should be adequately protected during the construction phase in accordance with the Delta-Simons Arboricultural Survey report prepared for the Site. <u>Site Enhancements</u> A list of recommendations to enhance the biodiversity of the Site are found in Section 6.0 of this Report.
This Preliminary Ecological Appraisal 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 Gleave Partnership ('the Client') to undertake a Preliminary Ecological Appraisal (PEA) of land off Norway Lane to the north-east of Littlehampton in West Sussex (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 minor alterations to the Site layout.

The aims of the PEA 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 survey area is shown in Figure 1.

1.2 Site Description

The Site is centred at Ordnance Survey (OS) grid reference TQ 03807 03535 off Norway Lane to the north-east of Littlehampton in West Sussex. The Site covers an area of 5.2 hectares (ha) and comprises three distribution warehouses (Buildings 1, 2 and 3) surrounded by hardstanding. Buildings 1 and 2 were bordered by areas of introduced shrubs to the south. To the east and west of the Site were areas of amenity grassland and scattered trees. To the north of the Site were mixed scattered trees, beneath which was dense scrub and ruderal vegetation. The Site was surrounded on all aspects by a security fence. Topographically the Site was flat, and the Site did not support any standing water at the time of the survey.

The Site is situated within a largely urban setting with surrounding industrial, commercial and residential properties. Residential housing extended to the west and south-west. To the north was a railway line beyond which were large industrial sheds. To the east was a large pond (Waterbody 1) surrounded by grassland and broadleaved trees, with the A259 beyond. To the south of the Site was a large car park and Chinese style office building, and beyond this was a roundabout associated with the A259 and a large cemetery.

The Site layout is shown in Figure 2.

1.3 Proposed Development

It is understood that the proposed development comprises minor alterations to the internal access routes, including the widening of the road within the north of the Site and resurfacing works (Figure 3).

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, 2018);
- ▲ 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; 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 has been undertaken to the following current guidance: CIEEM (2017), Guidelines for Preliminary Ecological Appraisal; 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 2019 available records of protected and notable species were collated from the local record centre, Sussex Biodiversity Record Centre (SxBRC), along with the non-statutory designated sites within a 2 km radius of the Site centre. A search for international statutory designated sites for nature conservation within 6 km of the Site was undertaken, together with a search for national statutory designated sites for nature conservation within 2 km of the Site centre, using the Multi-Agency Geographic Information for the Countryside (MAGIC) website.

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

3.2 Survey

The habitats on the Site and on adjoining land to 100 m, were surveyed on 1st February 2019 by two Delta-Simons ecologists. Where access was not permitted to the surrounding land, it was visually assessed from the Site boundary.

The following was undertaken during the survey:

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

3.2.2 Amphibians

The terrestrial habitats at the Site were assessed for their potential to support amphibian species and a desk search was undertaken (see Section 3.1). Where access allowed, a GCN HSI assessment was carried out to evaluate the suitability of the waterbodies and their adjoining habitats for GCNs (Oldham et al., 2000). The calculated HSI score for a pond scores between 0 and 1 and is derived from an assessment of ten habitat variables known to influence the presence of newts. The HSI is categorised such that the closer to a score of 1 it is then the more suitable a pond is to support GCNs. The HSI is calculated on an individual pond basis but takes into account surrounding terrestrial habitat and local pond density. Table 1 illustrates the categorisation of HSI scores.

Table 1 – Categorisation of HSI Scores

HSI Score	Pond Suitability for GCN
< 0.5	Poor
0.5 - 0.59	Below average
0.6 - 0.69	Average
0.7 - 0.79	Good
>0.8	Excellent

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).

3.2.5 Badgers

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

3.2.6 Other Protected or Notable Species

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

3.2.7 Invasive Species

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

3.2.8 Limitations to the Survey

The survey was undertaken during the sub-optimal time of year for identifying plant species on the Site. However, at this Site the majority of the ground was hardstanding, amenity grassland and ornamental planting and, therefore, potential misidentification of habitats is not considered to be a significant constraint.

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, or conditions on-Site 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 SxBRC data search are available to the Client on request.

Designated Sites

The results of the MAGIC data search and the SxBRC desk search indicate that there are no international statutory designated Sites within 6 km of the Site, and no national statutory designated sites or non-statutory designated sites within 2 km of the Site centre.

The Site falls within an Impact Risk Zone associated with Climping Beech Site of Special Scientific Interest (SSSI) situated approximately 2.5 km to the south-west of the Site, for which the Local Planning Authority (LPA) should consult Natural England for certain types of development. As the development does not fall within any of these criteria, this Impact Risk Zone is not considered further within this Report.

4.2 Survey

4.2.1 Habitats on Site

Figure 2 shows the extent of habitat types and boundary features. Descriptions of the habitat types and dominant plant species found at the Site are provided below. Habitat descriptions 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

A strip of dense scrub (Photograph 1) was present along the northern Site boundary parallel to the adjacent railway line. This comprised dominant bramble *Rubus fruticosus* agg. with occasional elder *Sambucus nigra* and hawthorn *Crataegus monogyna*. Herb species also present included teasel *Dipsacus fullonum*, clematis *clematis* sp. and lords-and-ladies *Arum maculatum*.

Scattered Mixed Trees

Within the dense scrub and ruderal vegetation at the northern extent of the Site were scattered mixed trees (Photograph 2) comprising frequent cherry *Prunus* sp., beech *Fagus sylvatica*, and hazel *Corylus avellana*, occasional Leyland cypress *Cupressus x leylandii*, horse chestnut *Aesculus hippocastanum*, silver birch *Betula pendula* and English oak *Quercus robur*. There was also an area of scattered mixed trees to the west of the Site bordering Building 1 which supported a similar species composition.

Scattered Broadleaved Trees

Throughout the eastern and western areas of the Site within the small areas of amenity grassland were low numbers of scattered broadleaved trees (Photograph 3) comprising cherry, crab apple *Malus sylvestris*, Norway maple *Acer platanoides* and Indian bean tree *Catalpa bignonioides*,

Tall Ruderals

Interspersed within the dense scrub along the northern Site boundary were patches of ruderal vegetation (Photograph 4) comprising frequent thistle *Cirsium vulgare*, nettle *Urtica dioica*, together with the herb common hogweed *Heracleum sphondylium*.

Spoil

A spoil pile comprising bark and earth was found in the north-western corner of the Site.

Amenity Grassland

Amenity grassland (Photograph 3) was present along the fence-line on the eastern Site boundary and within the south-western area of the Site. These were dominated by perennial rye grass *Lolium perenne* with frequent buttercup *Ranunculus acris* and daisy *Bellis perennis*, and occasional thistle and yarrow *Achillea millefolium*.

Introduced Shrubs

Introduced shrubs (Photograph 5) bordered the southern aspects of Building 1 and Building 2 and extended beneath the connecting bridge between these buildings at the southern extent of the Site. Small areas of introduced shrubs were also found on the eastern aspect of Building 2, on the eastern aspect of Building 3, and parallel to the western aspect of Building 1. These comprised frequent Portuguese laurel *Prunus lusitanica*, bramble, and occasional buddleia *Buddleja davidii*.

An area of cotoneaster (Photograph 6, Target Note 1), thought to be wall cotoneaster *Cotoneaster horizontalis*, was present within the introduced shrub border to the west of Building 2.

Hardstanding

The centre of the Site was dominated by a hardstanding lorry and van loading area (Photograph 7). Furthermore, the northern, eastern and western sides of Building 3, and the eastern aspect of Building 2 were bordered by a road and pedestrian footpaths.

Buildings

Five buildings were present on Site. Building 1 and Building 2 (Photograph 9), situated within the southern area of the Site, were metal panelled with glass windows on the southern aspect of the buildings. Both buildings had flat roofs. The eastern extent of Building 1 was connected to the western extent of Building 2 by an enclosed overhead walkway. Building 3 (Photograph 8) dominated the northern area of the Site and comprised a large metal panelled warehouse building with a flat roof. Building 4 (Photograph 10) was a small metal panelled shed located to the north-west of the Site with a slight pitched metal roof, whilst Building 5 (Photograph 10) was a large metal storage cylinder adjacent to Building 4.

Bare Ground

Immediately north of the area of introduced shrubs on the eastern aspect of Building 2 was a small area of bare ground.

4.2.2 Habitats immediately surrounding the Site

To the east of the Site was a large pond (Waterbody 1, photograph 11) surrounded by grassland and broadleaved trees. To the south of this was a greenhouse surrounded by introduced shrubs, grassland and broadleaved trees. To the south of the Site was a large car park and Chinese style office building. Throughout the car park were broadleaved trees and introduced shrubs. Beyond the car park was a small area of landscaping comprising grassland, introduced shrubs trees and two small ornamental ponds (Photographs 12 and 13). To the west of the Site were residential houses. To the north of the Site was a railway line beyond which were large metal agricultural sheds.

4.3 Notable and Protected Species Assessment Relevant to the Site

Birds

The data search provided recent records of 45 bird species listed on Schedule 1 of the WCA (1981, as amended). Of these fieldfare *Turdus pilaris*, redwing *Turdus iliacus*, firecrest *Regulus ignicapilla* and brambling *Fringilla montifringilla* may occur on Site.

The data search provided recent records of 41 BoCC species. Of these linnet *Linaria cannabina*, house sparrow *Passer domesticus*, starling *Sturnus vulgaris*, redwing *Turdus iliacus*, song thrush *Turdus philomelos*, fieldfare *Turdus pilaris* and grasshopper warbler *Locustella naevia* may occur on Site.

The Site lacked suitable habitat for the majority of these species and is not considered to provide significant resources for those species which are associated with trees, shrubs and scrub vegetation.

Habitats featured on the Site suitable for nesting birds include the scattered trees, dense scrub and more mature areas of introduced shrubs. No old bird nesting activity was observed at the time of the inspection. It is understood that laser technology is used to discourage birds from nesting or perching on the buildings at the Site.

The only bird species recorded at the time of the survey was feral pigeon *Columba livia*. No birds listed on Schedule 1 or those listed on the Red List of BoCC were recorded. It should be noted that this is not a comprehensive inventory of the bird species which may be present at the Site.

Great Crested Newts

No records of GCN were included within the data search; however, this does not necessarily indicate an absence of GCN within the local area.

A review of aerial photographs and OS maps revealed that there were no ponds on-Site, however, there were seven ponds within 500 m of the Site, as follows:

- Waterbody 1 comprised a large pond approximately 20 m to the east of the Site. This was used as an attenuation for the on-Site buildings and was previously stocked with fish, which are anticipated to still be present. Mallard *Anas platyrhynchos* were recorded on the pond at the time of the survey. Water quality was assessed to be moderate, although aquatic vegetation was limited. The pond was situated within an area of rough grassland with scattered trees. Small log piles had been placed within the area as biodiversity enhancement measures.

Waterbodies 2 and 3 comprised ornamental ponds set within formal landscaping approximately 90 m to the south of the Site.

- Waterbody 2 supported moderate water quality with water lily *Nymphaeaceae* sp., water milfoil *Myriophyllum* sp and broadleaved pondweed *Potamogeton natans* present. The banksides supported amenity grassland, introduced shrubs and scattered trees. Given the nature and location of the pond, the presence of fish is considered possible.
- Waterbody 3 contained a low water level at the time of the survey and was choked with water milfoil and leaf litter.

Four further ponds were identified beyond the railway to the north of the Site. This included two reservoirs approximately 150 m and 300 m to the north-east of the Site, a third reservoir approximately 450 m north-west of the Site and a pond situated within an area of open space approximately 200 m to the north-west of the Site. From a review of aerial photographs, these ponds appear to be isolated from the Site by a number of minor dispersal barriers to newts, including the railway line, roads, amenity space and/ or expanses of hardstanding. As such it is considered unlikely that any GCN would disperse onto Site should they occur within these ponds.

An HSI Assessment was undertaken of Waterbodies 1, 2 and 3, the results of which are shown in Table 2 below:

Table 2 – Results of HSI Assessment

Variables of Habitat Suitability Index Assessment		Waterbody 1	Waterbody 2	Waterbody 3
SI ¹	Pond location	1	1	1
SI ²	Pond area	N/A too large	0.4	0.1
SI ³	Pond drying	0.9	0.9	0.1

SI ⁴	Water quality	0.67	0.67	0.33
SI ⁵	Shade	1	1	1
SI ⁶	Water fowl	0.01	1	1
SI ⁷	Fish	0.01	0.67	1
SI ⁸	Ponds	0.65	0.65	0.65
SI ⁹	Terrestrial habitat	0.67	0.33	0.33
SI ¹⁰	Macrophytes	0.5	0.7	0.35
Habitat Suitability Index		0.32	0.69	0.44
Habitat assessment - suitability for GCNs		Poor	Average	Poor

Whilst Waterbody 2 was assessed as having an average suitability to support this species, other factors are considered to reduce the likelihood of GCNs occurring. The pond is isolated from other waterbodies by main roads, expanses of hardstanding and amenity grassland. The two waterbodies with connectivity to it (Waterbodies 1 and 3) have been assessed as poor suitability to support GCNs.

The majority of the Site comprised hardstanding and amenity grassland which are considered sub-optimal to support GCNs. Whilst areas such as the dense scrub to the north of the Site may be suitable for amphibians, there is limited connectivity between this habitat and suitable aquatic habitat. Therefore, GCN are not considered to be a constraint at this Site and are not considered further within this Report.

Reptiles

There were 28 recent records of slow worm Identified within the data search, the most recent from 2015 and 1.4 km east of the Site centre. The closest record was 900 m south-west of the Site centre and from 2011. There was one recent record of grass snake, this was from 2015 and 1.4 km west of the Site. There was one recent record of common lizard *Zootoca vivipara*, this was from 2009 and 800 m west of the Site.

The majority of the Site comprised hardstanding and isolated areas of ornamental planting which are considered unsuitable to support reptile species. Furthermore, the Site is subject to regular disturbance from vehicle movements and anthropogenic activity, further discouraging reptiles. However, the scrub and ruderal vegetation along the northern Site boundary may provide opportunities for reptile species, with the adjacent railway corridor and the pond and surrounding vegetation to the east providing further opportunities and connectivity to suitable habitat. In the north-west corner of the Site was a spoil pile of chipped bark which could provide hibernation opportunities for reptiles, particularly with the surrounding scrub vegetation.

Bats

The data search returned the following records of bats within 2 km of the Site centre:

- ✎ Three recent records of serotine *Eptesicus serotinus*. The most recent record was from 2014 and 1.8 km north-west of the Site. The closest record was from 2010 and 830 m west of the Site centre.
- ✎ Two recent records of unspecified myotis *Myotis* sp. The closest record was 240 m north-east of the Site and from 2013.
- ✎ One recent record each of Alcahloe bat *Myotis alcathoe*, Daubenton's bat *Myotis daubentonii*, whiskered/Brandts bat *Myotis mystacinus/brandtii*, Natterers bat *Myotis nattereri*, Nathusius pipistrelle *Pipistrellus nathusii*, and noctule *Nyctalus noctula*. These records were all from 2014 and 1.8 km north-west of the Site.

- ▲ Two recent record of unspecified pipistrelle *Pipistrellus* sp. The most recent and closest record was from 2015 and 1.8 km north-east of the Site centre; and
- ▲ Ten recent records of common pipistrelle *Pipistrellus pipistrellus* and five recent records of soprano pipistrelle *Pipistrellus pygmaeus*. The most recent records of both species were from 2014 and 1.8 km north-west of the Site centre. The closest records were from 2013 and 250 m east of the Site

None of the buildings at the Site were considered to provide the structural or climatic conditions suitable to support roosting bats. All appeared to be well sealed with no potential roost features identified. As such the buildings at the Site were assessed as having negligible BRP. Furthermore, floodlights were located on the walls of many of the buildings on Site, indicating that at night it is well lit, which would further discourage both roosting and foraging bats.

No potential roost features were observed on any of the trees on Site and they were assessed as having negligible BRP. However, a willow adjacent to the eastern Site boundary featured a hazard beam which was considered as having low BRP.

The majority of the Site was of poor suitability for foraging and commuting bats, however, the railway corridor to the north of the Site and the pond and surrounding vegetation to the east may provide opportunities for bats.

Badgers

The local records centre does not provide any records of badger.

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. The majority of the Site comprised hardstanding and offered few opportunities for foraging or set digging. Furthermore, the boundary fences are considered to restrict the dispersal of this species. Badgers are not considered to be a constraint at this Site and are not considered further within this Report.

Other Protected Species

There were 31 recent records of hedgehog *Erinaceus europaeus* within 2 km of the Site centre. The most recent record was from 2018 and 1.3 km south-west of the Site centre. The closest record was from 2016 and 800 m south-east of the Site centre. Although the majority of the Site offered limited resources for this species, the vegetation, particularly along the northern boundary of the Site may offer opportunities for hedgehog.. Hedgehogs may pass through the Site and disperse into the neighbouring habitats such as the railway line to the north of the Site and grassland surrounding the lake to the east.

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

Invasive Species

Wall cotoneaster which is listed on the WCA as a Schedule 9 species covered an area of approximately 4 m² to the west of Building 2..

5.0 Evaluation

Designated sites-statutory sites/ non-statutory sites

The results of the desk search indicated that there are no international statutory designated Sites within 6 km of the Site, and no national statutory designated sites or non-statutory designated sites within 2 km of the Site centre. As such the proposed development will not have any adverse impact on any designated sites.

Habitats

The Site was characterised by three warehouse buildings surrounded by hardstanding and areas of landscaping comprising introduced shrubs and amenity grassland to east and west of the Site. Therefore, the majority of the Site was considered to be of low ecological value. The habitat at the northern Site boundary, which is to be removed in order to facilitate the widening of the access road, comprised dense scrub, mixed scattered trees and ruderal vegetation. This may provide limited opportunities for nesting birds, reptiles and hedgehogs; however, this type of habitat is widespread in the local area. Where possible, additional planting should be incorporated into the remaining areas of landscaping in order to compensate for the loss of these habitats and to enhance the biodiversity value of the Site.

Species

The Site lies within a landscape assessed as having a good habitat suitability for foraging bats. To the east lies a large pond which has several records of bats associated with it, and it is surrounded by trees and grassland habitat likely to encourage a diverse invertebrate population providing foraging opportunities for bats. Furthermore, the residential properties to the west and south-west may provide roosting opportunities for bats within the local area, and the railway line to north is a linear habitat feature and may provide a commuting pathway for such bats. However, the Site itself provides limited suitability for bats. None of the buildings or trees at the Site were considered to be suitable for roosting bats, and all were assessed as having negligible BRP, although a willow tree adjacent to the eastern Site boundary supported a hazard beam and was assessed as having low BRP. This tree is not anticipated to be directly impacted by the works. The Site was well lit, further reducing its suitability for bats. However, without appropriate mitigation in place, any change to the existing lighting has the potential to impact on the behaviour of bats which may use the boundary vegetation and adjacent land for foraging and commuting.

The scattered trees, dense scrub and more mature areas of introduced shrubs at the Site have the potential to support nesting birds. It is understood that the vegetation within the northern area of the Site is to be lost or disturbed to facilitate the widening of the road, which without appropriate mitigation, has the potential to disturb nesting birds and to reduce the availability of suitable nesting sites.

The removal of this habitat also has the potential to impact any reptiles which may venture onto Site from the adjacent railway corridor and be present within the spoil pile, dense scrub and ruderal vegetation to the north of the Site. It is anticipated that any reptiles present within the thin strip of suitable habitat that would be disturbed by the work would disperse into the surrounding suitable habitat along the railway line and to the east of the Site. However, there is the risk of harming any reptiles present during initial clearance activities and as such a precautionary approach is required.

There is the potential for hedgehogs to be present within vegetated areas of the Site and as such an awareness of this species is required to ensure no individuals are harmed during initial vegetation clearance activities.

6.0 Recommendations

6.1 Further Survey Requirement

The findings of the initial Site assessment are considered sufficient to inform the anticipated development proposals and no further surveys regarding protected and priority species or habitats are deemed necessary at this time.

6.2 Construction and Operational Phase Protection/Enhancement Measures

Species Protection

Nesting Birds

- ✦ Any clearance or management works to the trees and dense scrub on-Site and those overhanging the Site should be performed either before early March or after late August in order to avoid the main bird nesting 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; and
- ✦ 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, and works would then need to proceed within the following 24 hours.

Bats

- ✦ Any alterations to the current lighting at the Site should be functional and directional and in line with current guidance (BCT and ILP, 2018; 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.

Hedgehogs

- ✦ Contractors should maintain an awareness for the potential of hedgehog during the clearance of vegetation, particularly along the railway corridor, and should an individual be found it should be moved to an area of suitable habitat away from the works; and
- ✦ Where possible, all fencing within the development should allow access and egress for hedgehogs. This requires 13 cm² 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.

Reptiles

- ✦ As a precaution, vegetation clearance along the northern edge of the Site should be undertaken outside the hibernation period for reptiles (November – February, inclusive) and should be undertaken under a watching brief by a suitably qualified ecologist. This will enable sensitive habitat features, such as piles of deadwood to be carefully removed and any reptiles to be caught and moved to a place of safety within surrounding habitat away from the proposed works.

Site Protection

All works on Site should follow an appropriate working methodology to avoid inadvertent damage to any habitats and associated fauna retained on, or surrounding, the Site. This includes the following:

- ✦ All works should be undertaken in accordance with the UK governments 'Pollution Prevention for Business's' guidance (www.gov.uk);
- ✦ If Site clearance is to occur in the vicinity of the wall cotoneaster to the south-east of the Site care should be taken during the clearance process to ensure that the cotoneaster is not spread to off-Site habitats; and
- ✦ Any trees retained at the Site, or within surrounding land, should be adequately protected during the construction phase in accordance with the Delta-Simons Arboricultural Survey report prepared for the Site.

General Site Enhancement

Following the issue of the NPPF (2018), by the Ministry of Housing, Communities and Local Government, *“Planning policies and decisions should contribute to and enhance the local environment by (d) minimising impacts on and providing net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures...”*; and, therefore, we recommend the following principles of design should be followed:

- ⌘ Planting should aim to enhance retained or adjacent vegetation and be of native species of local provenance, or those of known value to wildlife, to enhance foraging opportunities for local birds and bats, by increasing the invertebrate diversity on-Site. This could include planting of shrubs and/or species rich grassland along the northern Site boundary. A species list of recommended trees and shrubs is provided in Appendix F;
- ⌘ Installation of bird nest boxes and / or bat boxes at suitable locations 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 landscaping and lighting plans are known; and
- ⌘ If permission can be granted, any material resulting from the felling of trees could be used to enhance the existing biodiversity measures within the adjacent land to the east of the Site.

7.0 Disclaimer

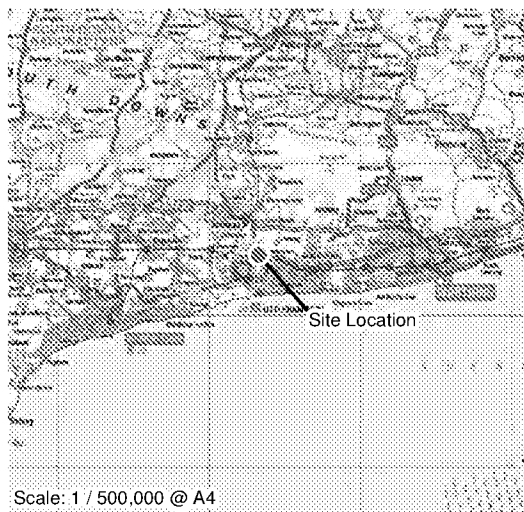
The recommendations contained in this Report represent Delta-Simons' professional opinions, based upon the information referred to in Section 1.0 of this Report, exercising the duty of care required of an experienced Ecology Consultant. Delta-Simons does not warrant or guarantee that the Site is free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

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

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

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

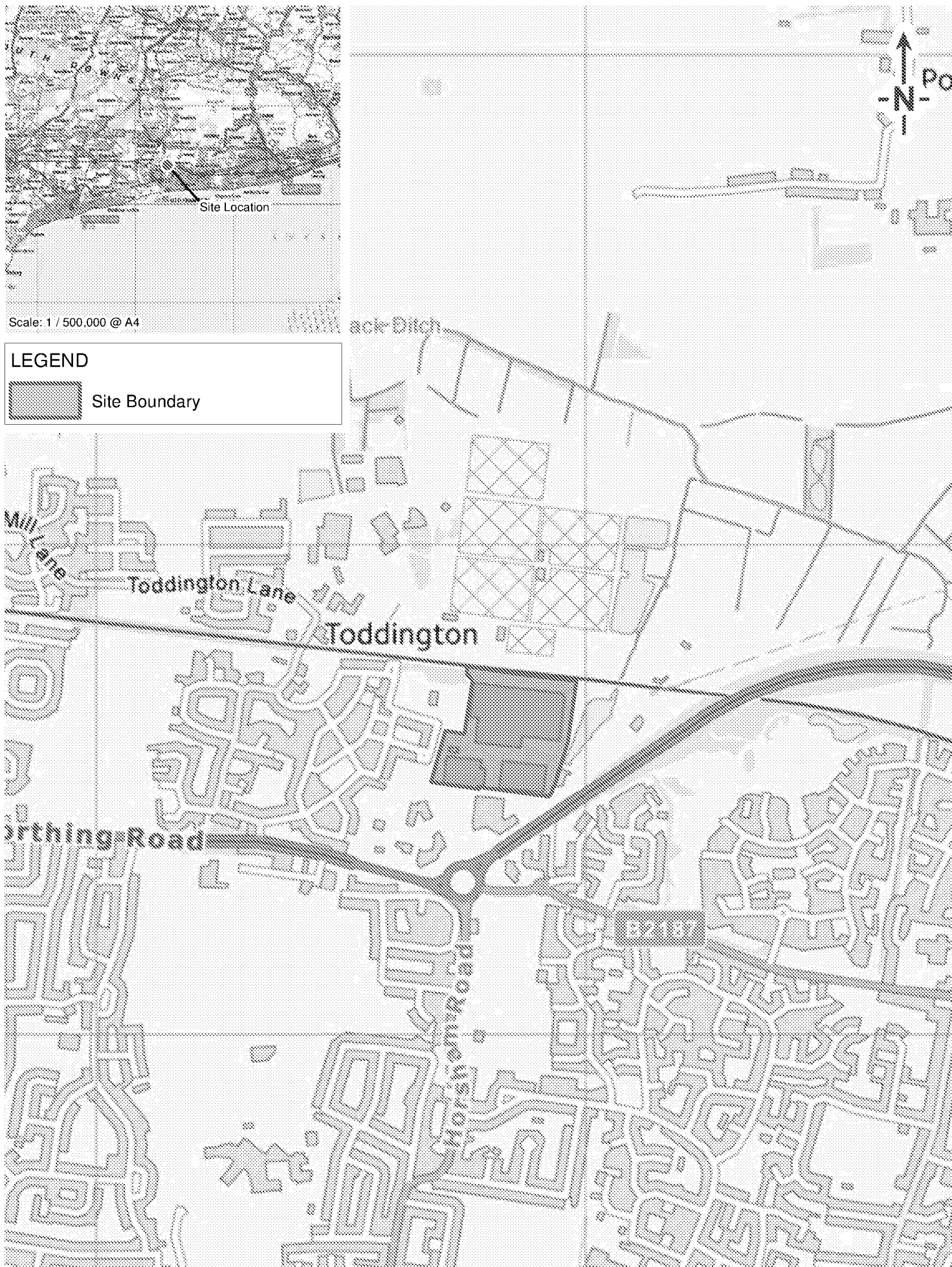
Figure 1 - Site Location Map



Scale: 1 / 500,000 @ A4

LEGEND

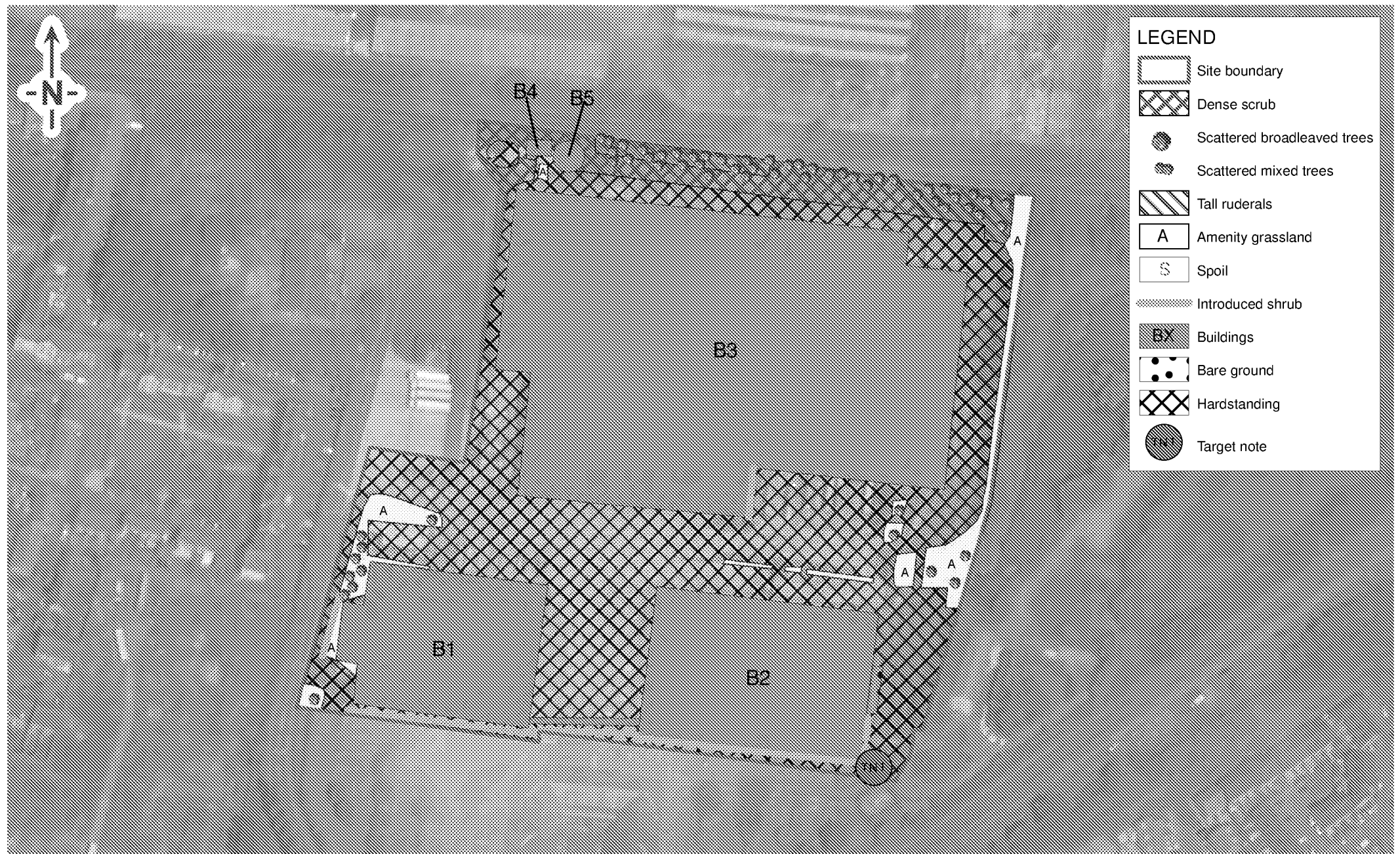
 Site Boundary



Scale: 1 / 10,000 @ A4

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Figure 2 - Phase 1 Habitat Survey Plan



Service Layer Credits: Source: Esri, DigitalGlobe, GeoEye, Earthstar Geographics, CNES/Airbus DS, USDA, USGS, AeroGRID, IGN, and the GIS User Community

Figure 3 - Proposed Development Plan

Appendix A – Relevant Legislation

Relevant Legislation

National Planning Policy Framework

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

"Minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity..."

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:*

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

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

- ✦ *"If significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;*
- ✦ *Development 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 reasons¹ and a suitable compensation strategy exists;*
- ✦ *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; and*
- ✦ *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."*

It is also worth noting that where there are potential impacts upon internationally designated sites (Special Areas of Conservation (SACs), Special Protection Areas (SPAs) and Ramsar sites) as a result of a proposed development, *"The presumption in favour of sustainable development does not apply where development requiring appropriate assessment because of its potential impact on a habitats site is being planned or determined."*

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

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.

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

The 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 an 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.

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.

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

Appendix B – References

References

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

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

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

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

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

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

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

English Nature (2001). Great Crested Newt Mitigation Guidelines. English Nature (now Natural England). Peterborough

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

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

Ministry of Housing, Communities & Local Government (2018). National Planning Policy Framework

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

Oldham, R.S., Keeble, J., Swan, M.J.S. & Jeffcote, M. (2000). Evaluating the suitability of habitat for the great crested newt (*Triturus cristatus*). Herpetological Journal. 10: 143-155

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

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

The Conservation of Habitats and Species Regulations 2017. HMSO

The Countryside and Rights of Way Act 2000. HMSO

The Natural Environment and Rural Communities Act 2006. 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 – Wall cotoneaster

Appendix E – Site Photographs

Site Photographs



Photograph 1 – Dense scrub in the north of the Site



Photograph 2 – Scattered mixed trees in the north of the Site.



Photograph 3 – Broadleaved trees and amenity grassland on Site.



Photograph 4 – Ruderal vegetation in the north of the Site



Photograph 5 – Introduced shrubs adjacent to Building 2



Photograph 6 – Coloneaster in the south-east of the Site.



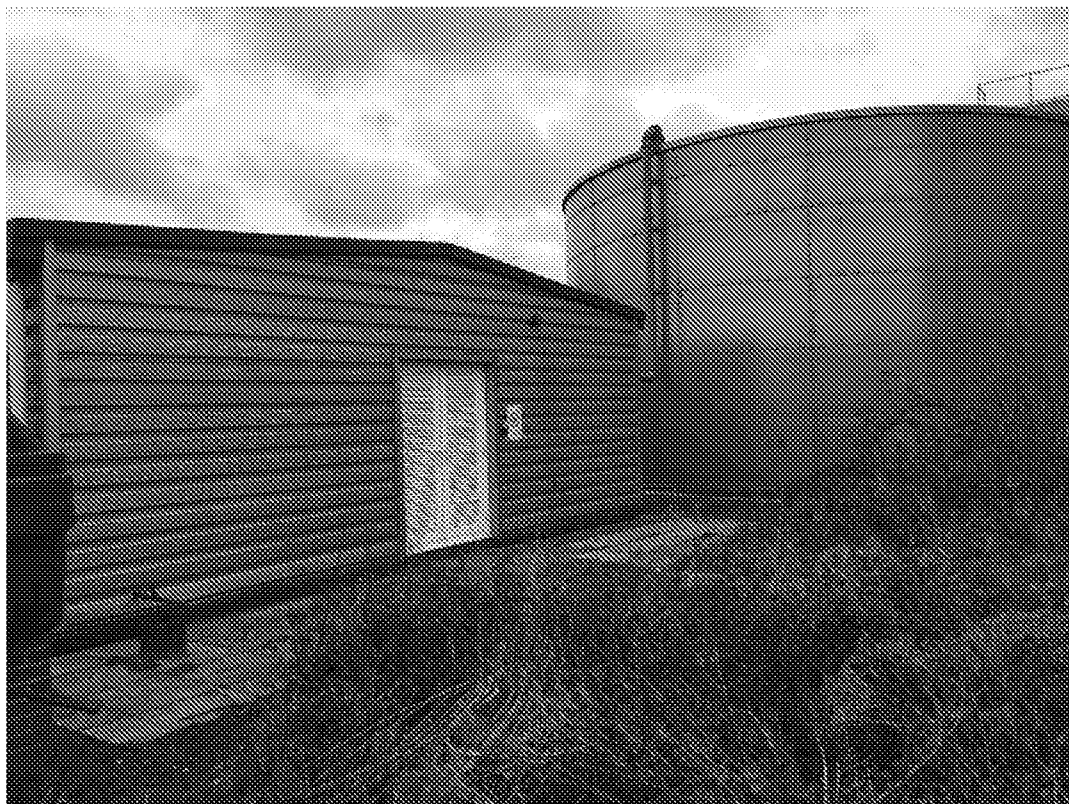
Photograph 7 – Hardstanding in the centre of the Site



Photograph 8 – Eastern aspect of Building 3



Photograph 9 – Southern aspect of Buildings 1 and 2



Photograph 10 – Buildings 4 and 5



Photograph 11 – Waterbody 1



Photograph 12 - Waterbody 2



Photograph 13 - Waterbody 3

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-seeds known to be free of the fungus are available then these should be incorporated. Additionally, trees not showing signs of being affected should be retained where possible.

Trees and Shrubs

Large trees

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

Medium/ Small Trees

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

Plants for hedgerows and woodland understoreys

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

Trees and shrubs suitable for hedges and understorey planting

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

Climber and scramblers suitable for hedgerows and understorey planting

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

Understorey flowering plants providing ground cover for shady areas

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

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