



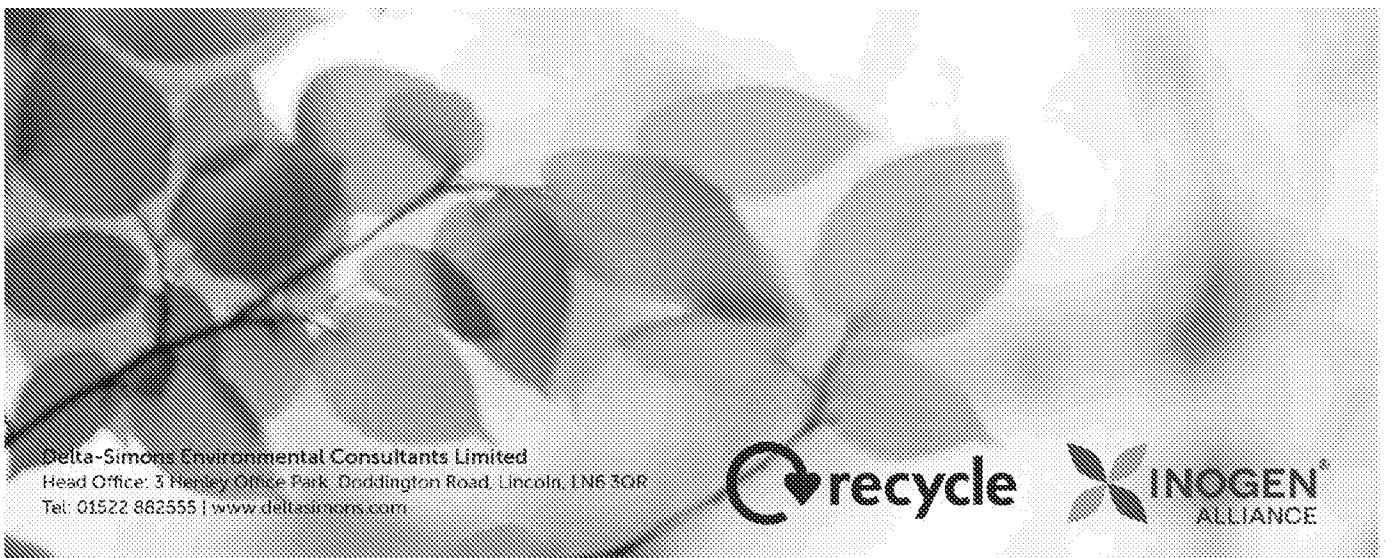
Ecological Appraisal

Oldlands Farm, Newlands Road, Bognor Regis PO22 6NN

Presented to Lysander Associates

Issued: September 2021

Delta-Simons Project No. 20-1543.09



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Report Details

Client	Lysander Associates
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Project No.	20-1543.09
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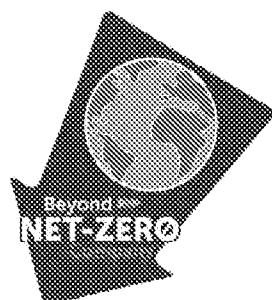
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Executive Summary

Scope of Works	Delta-Simons Environmental Consultants Ltd was instructed by Lysander Associates ('the Client') to undertake a Preliminary Ecological Appraisal (PEA) on 17 th March 2021. This was followed by phase 2 protected species surveys: breeding bird surveys, reptile surveys, nocturnal bat surveys, and water vole surveys of an area of land at Oatlands Farm off Newlands Road, to the north of Bognor Regis, in West Sussex ('the Site'). The survey works were required to inform a planning application for the development of a ground level car park inside a new warehouse at the Site.
Current Site Status	The southern parcel of the Site is characterised by predominantly poor semi-improved grassland bisected and / or bounded by lengths of drainage ditches, fencing and hedgerow. In the northern extent of the Site was an area of bare ground, whilst scattered trees were found in the western area of the central field. At the south-western extent of the Site was an area of standing water, whilst scattered scrub ran inside the eastern boundary fence. A large expanse of land set to arable comprised the majority of the parcel of land to the north of the A259. In the western extent of this parcel, a poor semi-improved grassland field margin ran inside the boundary.
Proposed Development	It is understood that the proposed development will comprise the erection of a warehouse (Use Class B8) with ancillary office, associated vehicle parking, van storage, plant, ancillary structures, lighting, landscaping, and infrastructure works, including earthworks to facilitate a flood compensation area.
Results: Habitats on-Site	The following habitats are found on the Site: ▲ Scattered broadleaved trees; ▲ Scattered scrub; ▲ Poor semi-improved grassland; ▲ Arable; ▲ Wet ditch; ▲ Dry ditch; ▲ Standing water; ▲ Spoil; ▲ Ephemeral/ short perennial; and ▲ Bare ground.
Habitats Adjoining the Site	Further arable can be found directly north of the Site; to the east by the Bognor Regis to Barnham railway line; and to the south by industrial units associated with the Rolls Royce Warehouse 1. Further to the north, east and west, the landscape is largely rural, supporting predominantly agricultural fields, with a golf course, and the Lidsey Rife watercourse; whilst further to the south the landscape becomes more urban, with a business retail park on the outskirts of the main town.
Potential for Protected/Notable Species	The scattered broadleaved trees and limited scrub provide nesting opportunities for birds, although no evidence of recent nesting activity was recorded at the time of the survey. Ground nesting bird species were recorded at the time of the survey, such that the arable, grassland and ditches may be utilised by them for breeding. Overall, the southern parcel provides low to moderate habitat for birds, with the reeds and D3 providing the more suitable habitat. The northern parcel is currently a homogenous crop which is generally of low value for breeding birds, however, it did support several (presumed) pairs of skylark. The hedges off-Site to the east of this area

	are of greater value to breeding birds. All species recorded on-Site were common or widespread within the county of West Sussex and across the United Kingdom. No significant numbers of, or flocks of notable species, were recorded during the surveys and the breeding bird assemblage on Site is recognised as being of no more than Local value. The southern parcel of land at the Site provides suitable habitat for reptile species with a mosaic of habitat formed from the grassland, ephemeral and scrub, with the dry river basin and off-Site railway offering dispersal opportunities to the Site. Furthermore, a small population of slow worm has previously been recorded at the Site. Land along the dry ditch adjacent to the northern parcel of land offers limited opportunities for reptiles. Slow worm were recorded during every survey visit apart from survey visit 2 which was void due to human disturbance. A peak count of four individuals was recorded on survey visit 3, 5, and 6. Two common lizards were recorded on survey visit 3, 4, 5, and one individual common lizard on survey visit 6. Single barred grass snakes were recorded on survey visits 4, 5 and 6. All five trees in the southern parcel of land at the Site were assessed as having Bat Roost Potential (BRP), two of high potential, two moderate and one low. The row of trees adjacent to the northern parcel were assessed as offering low BRP. The scattered trees, scrub, drains, and hedgerows on the boundaries in the southern parcel provide ideal foraging and commuting habitat and also connect the Site to the wider area. To the north, the parcel is more exposed and foraging opportunities are limited due to the large expanse of arable, apart from the treeline along the dry ditch and the grassland field margin. Overall, the Site was assessed as having low potential for foraging and commuting bats. No bats emerged from the trees during the dusk emergence survey. However, the first bat recorded on-Site was at 25 minutes after sunset, indicating the likely presence of a bat roost in proximity to the Site. Low numbers of three bat species were recorded: brown long-eared bat, common pipistrelle and soprano pipistrelle. These bats were recorded to be foraging and commuting around the trees and over the surrounding vegetation. The Site did not support any evidence to indicate badgers were actively using or inhabiting it, however, evidence of badgers was recorded immediately off-Site in the south and during previous surveys at the Site, and there is a suitable habitat for the species on-Site for foraging and sett building. Whilst no evidence was recorded at the Site, otter may be present within the local area and they may use the on-Site drains for commuting or foraging as part of a wider network of waterways. The wet drains were considered to be sub-optimal for water vole, known to occur locally to the Site, during the initial checks carried out on the drains. The April 2021 survey visits found no evidence confirming the presence of water voles, and the habitat at the time of surveys was considered largely sub-optimal, with five of the ditches being completely/near completely dry by the time of the 20th April visit. The Site has potential to support brown hare and hedgehog and the latter have been recorded on-Site.
Requirement for Further Surveys	The survey works undertaken to inform this Report are sufficient to inform the anticipated planning application, and no further survey work regarding protected and priority species and habitats is deemed necessary at this time.

Construction and Operational Phase Recommendations and Enhancement Measures	The detailed recommendations set out within the Report are summarised below: <u>Nesting Birds</u> If clearance works are to be undertaken of the scrub, scattered broadleaved trees, arable and grassland, these 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 bird nesting habitat outside of the breeding period in advance of any proposed works. If, however, Site clearance works are deemed necessary during the nesting period an experienced ecologist will be required to check the Site habitats immediately prior to works commencing to confirm that no nesting birds will be affected by the proposed works. <u>Breeding Birds</u> The area of reeds provides good quality habitat for breeding birds and if possible, should be retained. Should this not be possible it is recommended that compensatory wetland habitat is created as part of development proposals. Low numbers of breeding skylark were recorded predominantly within the northern parcel and opportunities for this species should be incorporated into the development within the flood alleviation area. <u>Reptiles</u> Given the presence of reptiles within land to be developed, it is recommended that a translocation programme is undertaken in order to move the reptiles to a receptor site, which will ensure that reptiles are not harmed by the proposals. Prior to commencement of the translocation, it may be necessary to undertake vegetation management works to enhance the sourced receptor site for reptiles. The translocation must be completed between April –October, inclusive, during suitable weather conditions, outside of the hibernation period. This would involve the check of artificial refugia for a minimum period of 45 working days, and until five clear days have passed with no reptiles captured during checks completed under suitable weather conditions. Any reptiles found will be captured and then released into the translocation area. The proposed development area will then be destructively searched by a suitably qualified ecologist, and clearance of all suitable areas of reptile habitat undertaken under their supervision. <u>Bats</u> <i>Trees with BRP</i> ✎ Any proposed felling or management works to Tree (T)1 and Tree Group (TG)6 should be completed under a method statement which could include a single dawn survey completed during the active bat season (April-October, inclusive) on the morning prior to the works being undertaken; or alternatively ✎ A licenced bat ecologist trained to use specialist tree climbing equipment could undertake a thorough inspection of the potential roost features immediately prior to works commencing. <u>Lighting</u> The detailed lighting design for the Site should be functional and directional and in line with current guidance, full details of which can be found in Section 6.2 of this Report. <u>Badger</u> A pre-commencement survey should be undertaken for badger to check for sett entrances.
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	<u>Badger, Otter & Hedgehogs</u> As is general good practice for Sites where these species may occur, it is recommended that no excavations or trenches are left uncovered overnight during the development works in order to prevent any badgers from becoming trapped. Alternatively, ramps can be provided to enable them to climb out of trenches or excavations. Site Enhancements A list of recommendations to enhance the biodiversity of the Site and the Biodiversity Net Gain (BNG) calculations are found in Section 6.3 of this Report.
This 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 Lysander Associates ('the Client') to undertake a Preliminary Ecological Appraisal (PEA), which was conducted on 17th March 2021. This was followed by phase 2 protected species surveys comprising breeding bird surveys, reptile surveys, nocturnal bat surveys, and water vole surveys of an area of land at Oatlands Farm off Newlands Road, to the north of Bognor Regis, in West Sussex (hereafter referred to as the "Site"). The protected species surveys were completed during the appropriate survey window in summer 2021. The survey works were required to inform a planning application for the development of a ground level car park inside a new warehouse at the Site.

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

1.2 Site Description

The Site is centred at Ordnance Survey (OS) grid reference SU 94547 01837, to the north of Bognor Regis in West Sussex. The wider Site covers an area of 18.87 hectares (ha), of which the southern parcel comprises 7ha, and is characterised by predominantly poor semi-improved grassland bisected and / or bounded by lengths of drainage ditches and fencing. In the northern extent of the Site was an area of bare ground, whilst scattered trees were found in the western area of the central field. At the south-western extent of the Site was an area of standing water, whilst scattered scrub ran inside the eastern boundary fence. A large expanse of land set to arable comprised the majority of the parcel of land to the north of the A259. In the western extent of this parcel, a poor semi-improved grassland field margin ran inside the boundary. This parcel covers an area of 11.87 ha.

Further arable land can be found to the north; to the east by the Bognor Regis to Barnham railway line; and to the south by industrial units associated with the Rolls Royce Warehouse 1. Further to the north, east and west, the landscape is largely rural, predominantly agricultural fields, with a golf course, and the Lidsey Rife watercourse; whilst further to the south, the landscape becomes more urban, with a business retail park on the outskirts of the main town.

The Site layout is shown in Figure 2.

1.3 Proposed Development

It is understood from the drawing provided by the Client that the proposed development comprises the erection of a warehouse (Use Class B8) with ancillary office, associated vehicle parking, van storage, plant, ancillary structures, lighting, landscaping, and infrastructure works, including earthworks to facilitate a flood compensation area.

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

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

3.0 Methodology

The 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

3.1.1 Data Search

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

In March 2021, available records of protected and notable species were collated from the local record centre, Sussex Biodiversity Record Centre (SxBRC). In addition, 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.

3.1.2 Review of Previous Surveys

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

- Ecology Appraisal –Land at Oldlands Farm Phase 2, Bognor Regis, September 2015, Aluco Ecology Ltd.

3.2 Survey

The habitats on the Site, were surveyed on 17th March 2021 by two Delta-Simons ecologists. Since access was not permitted to the surrounding land, it was visually assessed from the Site boundary.

The following was undertaken during the survey:

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

Breeding Bird Survey

The breeding bird walked transect survey methodology employed was broadly based on that of territory mapping (Bibby *et al* 1992) as used for the British Trust for Ornithology (BTO) Common Bird Census (CBC), detailed in Gilbert *et al.* (1998) and updated in Bibby *et al* (2000). CBC territory mapping is considered the most practical method to accurately determine the numbers and distribution of breeding birds present within this survey area, however, the methodology used differed from a full CBC by the following:

- ✦ Three visits were made to the Site. This is considered acceptable as an industry standard for breeding bird surveys where between three and five visits are normally conducted; and
- ✦ The area covered and length of the survey was adapted to the habitats present on-Site, considering likely bird densities and detectability.

The reduced number of surveys compared to that given in the CBC methodology was considered sufficient to gather a baseline of bird assemblage rather than a thorough assessment of spatial distribution of all bird territories.

Three visits were made to the Site during the breeding season – on 14th April 21st May and 16th June 2021 to record and map all birds seen or heard on, or immediately adjacent to the Site, using standard BTO species codes and symbols for bird activities in order to identify bird species and denote activity, sex, and maturity, where appropriate (Marchant, 1983). Birds were located by walking, listening, and scanning with the naked eye, and with the aid of binoculars. The survey route and direction were, where possible, varied between visits to attempt to eliminate any observational bias. Care was taken not to trample any growing crops. An assessment was made for the potential of the habitats on-Site to support breeding birds listed on Schedule 1 of the WCA (1981, as amended).

The criteria used in the assessment of breeding birds has been adapted from the standard criteria proposed by the European Ornithological Atlas Committee (EOAC, 1979) and is grouped into three categories: Possible breeder (e.g. birds observed in suitable habitat or singing male recorded), probable breeder (e.g. pair in suitable habitat; territory defended; agitated behaviour or nest building), and confirmed breeder (e.g.: recently fledged young observed; adult birds carrying food for young). Birds that were considered to be not using the Site for breeding were categorised as 'non-breeders' (e.g., flying over the Site; migrant; in unsuitable habitat).

Pairs were considered separate from each other if greater than 1 km apart for waterfowl and raptors, 500 m for pigeons, gamebirds and crows, and 200 m for all other species, with this distance reflecting the relative distance that birds might move between survey visits. A record in potentially suitable breeding habitat on a single visit was considered sufficient to indicate a potential breeding attempt.

All surveys were carried out between 06.20 and 10.30 hours, avoiding weather conditions including strong winds, heavy rain, fog and low cloud which may have adversely affected the quality of the count and/or detection rate of birds.

Mapping

All birds recorded (either seen or heard) were mapped onto field-sheets and then digitised into QGIS (an open-source Geographical Information System program). The boundaries of the two areas (northern and southern parcels) were marked on the digitised maps and a 10 m buffer area added to each of these areas. Birds that were recorded in these buffer areas were considered likely to be regularly using the Site (e.g. for foraging) and so have been included in the analyses.

Value of the Site to Breeding Birds

The conservation value of bird populations has been measured using two separate approaches, nature conservation value and conservation status. The Chartered Institute of Ecology and Environmental Management (CIEEM) guidance on ecological impact assessment (CIEEM, 2016) assesses nature conservation value within a geographical context. To attain each level of value, an ornithological resource or one of the features (species population or assemblage of species) should meet the criteria set out in Table 1 below. In some cases, professional judgement may be required to increase or decrease the allocation of specific

value, based upon local knowledge. The examples contained in the table below are only for general guidance and other considerations may apply, e.g. features of low value in isolation but which are subject to cumulative national decline may be afforded higher values in certain circumstances. These examples have been tailored to be specific to birds.

The criteria adopted by Natural England in Guidelines for Selection of Biological Sites of Special Scientific Interest (SSSIs) (Drewitt *et al*, 2015), using 1% of the resource to define national and regional importance, were considered. The national and regional breeding populations were estimated from Musgrove *et al* (2013). A further category of 'local importance' was used for species that did not reach regional importance but were still of ecological value. For bird species' this included all species on the Red or Amber lists of BoCC that did not reach national or regional importance at the Site. In addition, a listing on Annex 1 of the EU Birds Directive, Schedule 1 of the WCA 1981 (as amended), and the EBP priority species were all considered in the evaluation process.

Table 1: Breeding Bird Evaluation Criteria

Level of Ecological Importance	Examples of Criteria
International	⚡ An internationally designated site or candidate site (Special Protection Area (SPA), potential Special Protection Area (pSPA), Ramsar site) ⚡ A sustainable population of an internationally important species ⚡ Sites supporting a breeding population of internationally important species or supplying a critical element of their habitat requirements
National	⚡ A nationally designated site (SSSI, Area of Special Scientific Interest (ASSI), National Nature Reserve (NNR), Ministry of Natural Recourses (MNR)) or a discrete area that meets the selection criteria for national designation (e.g. SSSI selection guidelines) ⚡ A sustainable population of a nationally important species or a site supporting such a species, i.e. a species listed on Schedules 1 of the WCA (as amended), which is a UK Red-listed BoCC that is not listed as being of unfavourable conservation status in Europe, of uncertain conservation status or of global concern in the UK BAP
Regional	⚡ A sustainable population of a species listed as being nationally scarce, or in a Regional BAP or relevant Natural Area on account of its regional rarity or localisation. Sites supporting a breeding population of such a species or supplying a critical element of their habitat requirements ⚡ Sites, which exceed the County-level designations but fall short of national selection guidelines, where these occur
County/Metropolitan	⚡ County/Metropolitan sites and other sites which meet the ecological selection criteria for designation ⚡ A sustainable population of a species that is listed in a county/metropolitan 'red data book' or Local Biodiversity Action Plan (LBAP) on account of its regional rarity or localisation. Also sites supplying a critical element of their habitat requirements
District	⚡ A population of a species that is listed in a district/borough BAP because of its rarity in the locality or in the relevant Natural Area profile because of its regional rarity or localisation. Also sites supporting a breeding population of such a species or supplying a critical element of their requirements

Local	▲ A good assemblage of species, which may include low numbers of Amber or Red-listed BoCC
Site Negligible	▲ Low numbers of common species of Green-listed BoCC ▲ Low numbers or infrequent use by Amber or Red-listed BoCC ▲ Individual sighting of common species of Green-listed BoCC

The weather conditions and dates of the survey visits are shown in Table 2, below. The surveys ran from April – June 2021 inclusive, with one survey visit per month. The weather for all of the survey visits was suitable for recording bird activity. Weather conditions were assessed using the Beaufort wind force scale and the Okta scale of cloud cover.

Table 2: Weather Conditions of Breeding Bird Surveys

Visit No.	Date	Weather						Additional Weather and Survey Notes
			Cloud (oktars)	Wind (Direction and Beaufort No.)	Precip ⁿ	Temp. (°C)	Visibility	
1	14/04/2021	Start	4/8	NNW 1	0	-0.5	Good	
		Finish	2/8	SE 1	0	6	Excellent	
2	21/05/2021	Start	7/8	SW 5	0	11	Good	Windy with very strong gusts
		Finish	7/8	SW 5 (7)	0	11	Good	
3	16/06/2021	Start	0/8	NNE 1	0	11	Good	Slight early morning mist, soon clearing; Travellers on Site
		Finish	0/8	NNE 1	0	17	Excellent	

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 3 illustrates the categorisation of HSI scores.

Table 3: 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

Refugia Survey

Survey methodologies followed recommendations in the Herpetofauna Workers' Manual (Gent and Gibson (JNCC), 2003) and comprised the placement of, and seven checks of, artificial refugia within areas of suitable reptile habitat across the Site.

A total of 90 artificial refugia were placed across the Site in order to ensure a minimum density of 10 refugia per hectare as recommended by Froglife (1999). These comprised a mixture of corrugated bitumen roofing sheets and roofing felt tiles, each measuring 0.5 m x 0.5 m. After allowing ten days for the artificial refugia to settle into the sward they were all checked, above and below, on seven separate occasions for reptile presence. In addition to checking artificial refugia, a cold search of natural refugia and on-Site debris was also undertaken during each check. This involved any rocks or debris being overturned to check for reptiles. Any reptiles found were identified to species, and where possible, an approximate age category and sex was determined. Refugia locations are shown in Figure 3 and habitat details are given in Table 4 below.

Table 4: Number and Associated Micro-Habitats Supporting Artificial Refugia

Group	Micro-Habitat	Number of Refugia
A	Associated with the drains and semi-improved grassland of the southern parcel	61
B	Surrounding the spoil pile within the southern parcel of the Site	10
C	Along the western and eastern Site boundary of the northern parcel, adjacent to the arable land	10
D	Along the south-western boundary of the grassland field adjacent to the northern parcel and with the grassy verge either side of Felpham Relief Road	15
Total		96

The survey was undertaken by a suitably qualified ecologist during appropriate weather conditions between April and May 2021. A viable survey was considered to be within a temperature range of between 10 – 20 °C (Edgar *et al.*, 2010) with no heavy rain or considerable overnight frost. The dates the survey checks were undertaken, and weather conditions are given in Table 5, below.

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

Table 5: Reptile Survey Timings and Weather

Reptile Check	Date	Start Time	Weather Conditions	Cloud Cover	Temperature	Wind
No. 1	26 th April 2021	12:51	Dry	1/8	14 °C	F3
No. 2	7 th May 2021	12:05	Dry	3/8	13 °C	F3
No. 3	11 th May 2021	10:48	Dry	4/8	14°C	F4
No. 4	17 th May 2021	10:22	Dry	7/8	13°C	F2

No. 5	21 st May 2021	12:27	Dry	7/8	13°C	F6
No. 6	24 th May 2021	16:43	Dry	5/8	12°C	F3
No. 7	The seventh survey could not be undertaken due to trespassers on-Site					

3.2.4 Bats

An assessment of the habitats on-Site and beyond the Site boundary was undertaken on 17th March 2021 to identify potential commuting and foraging corridors, and suitable foraging sites. This enabled the suitability of the Site for bats to be determined (see Appendix C).

Trees

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

Any trees that had features suitable to support a bat roost were also checked for signs of bats, such as droppings, scratch marks and staining around possible entrance holes. All tree inspections were undertaken by visual observation, aided by binoculars, from ground level.

Roost Presence/Absence Survey

Emergence/re-entry surveys, focussing on any 'Moderate' and 'High' potential trees identified during the initial Site survey, were carried out in May/June 2021 by two surveyors equipped with Batlogger bat detectors. The size and position of the four trees were such that to adequately cover all elevations on a given dusk or dawn survey event would require deployment of surveyors at four locations (see Figure 5 and Table 6 below). The survey was designed to achieve full coverage by deploying the two surveyors at a total of four strategic locations around the tree group (two locations at dusk and two at dawn), to ensure complete coverage of all potential roosting features, with the aim of identifying bats leaving and/or returning to roost. Each elevation of the tree group was to receive a minimum of two separate dusk emergence or dawn re-entry surveys.

The dusk emergence survey visits commenced approximately 15 minutes before sunset and continued for at least 1.5 hours after sunset. The dawn survey visits commenced at least 1.5 hours before sunrise and continued until sunrise.

Table 6: Survey Dates, Surveyor Location and Weather Conditions of the Bat Surveys

Survey Type	Date	Timing	Weather	
			Start	End
Dusk Emergence, Surveyor Locations 1 and 2	10 th May 2021	20:28 – 22:13 (sunset 20:43)	11.7 °C, dry, F2, 1/8	11.1°C, dry, F2, 1/8
Dawn Return, Surveyor Locations 3 and 4	11 th May 2021	03:49 – 05:19 (sunrise 05:19)	8.3 °C, dry, F1, 1/8	7.3 °C, dry, F1, 1/8
Dusk Emergence, Surveyor Locations 2 and 4	24 th May 2021	20:44 – 22:28 (sunset 20:58)	9.0 °C, rain prior to survey, F2, 1/8	8.0 °C, dry, F2, 2/8

Dawn Return, Surveyor Locations 1 and 3	25 th May 2021	03:32 – 05:02 (sunrise 05:02)	8.0 °C, dry, F2, 3/8	7.0 °C, dry, F1, 1/8
Dusk Emergence, Surveyor Locations 1 and 2	7 th June 2021	20:57 – 22:00 (sunset 21:12)	15.1 °C, dry, F1, 0/8	13.0 °C, dry, F1, 1/8

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

Bat Activity Surveys

Transect Surveys

A dusk transect survey was carried out in April 2021 to assess bat activity associated with the different habitats at the Site. The dusk surveys commenced approximately fifteen minutes prior to sunset and ceased 2 hours following sunset.

Table 7: Timings and Weather Conditions of April Bat Transect

Survey Type	Date	Timing	Weather	
			Start	End
Dusk Activity Transect	20 th April 2021	20:05 – 22:00 (sunset 20:06)	9.6 °C, dry, F3, 1/8	7.7 °C, dry, F2, 2/8

Two surveyors each walked the predetermined route shown in Figure 5. The bat transects were walked at a steady pace with each transect route including nine spot counts, where the surveyors remained stationary for three minutes. The location of each stop was chosen to incorporate different areas of the Site and different habitat types. The locations of the spot counts are shown in Figure 5. The surveyors were equipped with Batlogger bat detectors. Recordings were made of any bats seen and/ or heard and the species, the timing, activity, location and direction of flight. Table 7 above details timings and weather conditions at the time of surveys.

Bat Activity Automated Surveys

An automated static bat detector (Anabat Express) was installed prior to the activity transect survey and left to record for a minimum of 5 nights; the recorder activated at 30 minutes before sunset, and continued recording until 30 minutes after sunrise. The location of the static detector is shown in Figure 5.

Data Recording and Analysis

During the roost and activity transect surveys, the surveyors made a note of any bats observed, noting the time, location, number of bats, species and direction of flight for each bat on standardised recording forms. Weather conditions, as well as any other factors potentially affecting bat behaviour and/or surveyor observation, were also recorded.

Following the survey, sound-files recorded by the Batloggers were reviewed using BatExplorer software to identify bat calls; similarly, AnaLookW software was used to analyse the sound-files recorded by the Anabat Express. Typical emergence/return times for bat species relative to the times of sunset/sunrise are used to provide a proxy measure of the likely proximity of roosts to the survey locations (based on Collins (2016), as well as surveyor experience).

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 Otters

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

3.2.7 Water Voles

Suitable habitats for water vole on-Site and immediately off-Site were identified and assessed on 17th March 2021.

Water Vole Survey

The water vole survey focused on the drains D1 – D8, see Figure 2a.

With reference to Dean et al. (2016), both banks of each of the onsite watercourses were walked and examined for suitability and evidence of water voles. Water vole habitat factors noted included bank profile, bank substrate (suitability for burrowing), water depth, likely frequency/extent of water depth fluctuations, amount of shading from trees/shrubs, bankside vegetation type(s), bankside vegetation density, in-channel herbaceous vegetation type, in-channel herbaceous vegetation width, in-channel herbaceous vegetation density, percentage of channel with in-channel herbaceous vegetation, and evidence of current/recent management and likely effects. Water vole evidence included burrows, latrines, feeding stations, and runs.

Visits were completed on the following dates:

- ▲ 17th March (D1-D6);
- ▲ 31st March (D7 south-D8); and
- ▲ 20th April (D1-D6; D7 south & north; D8).

3.2.8 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.

3.2.9 Invasive Species

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

3.2.10 Hedgerows

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

3.2.11 Limitations to the Surveys

Preliminary Ecological Assessment

The survey was completed in March, when plant species identification was limited due to winter die-back. Invasive plant species, such as Himalayan balsam, as well as very small/new stands of Japanese Knotweed/Giant Hogweed, may not have been apparent at this time of year.

Ground level assessments of trees may identify apparent potential roosting features (PRFs) at height, which closer inspection may reveal to be only superficial in extent or otherwise unsuitable for bats; conversely, cryptic PRFs at height may only be visible during an up-close inspection and may therefore be missed by a ground-based assessment. Categorisation of a given tree as having Low/Moderate/High potential to support a bat roost may be revised up or down following an at-height/climbed inspection.

Breeding Bird Surveys

This report details birds recorded during the survey and anecdotal evidence of sightings. It does not detail any bird species that may appear at other times of the year and were, therefore, not evident at the time of survey visits. Some species that might use the Site on occasion, or be apparent at other times of year, or only in certain years, would not have been detected.

The surveys covered the main breeding bird season, and the number of surveys was in-line with standard methods, and, therefore, this level of survey was considered sufficient given the level of activity found, species recorded on-Site and the survey objectives.

The following were factors requiring documenting relating to the each of the visits:

- ✦ Visit 1: The area of the Site requiring survey was slightly smaller than during Visits 2 & 3 with its northern edge ending ca. 85m south of the area surveyed on Visits 2 & 3. However, birds in this area were still recorded.
- ✦ Visit 1: The actual area of northern parcel needing survey had not been finalised at the time of Visit 1. Therefore, the whole of the field area including the existing flood compensation area was surveyed (see Figure 1).
- ✦ Visit 2: The weather was dry but windy with wind strength increasing throughout the survey period. It was not thought that the detection rates were affected, and the expected species were recorded. and numbers of birds were considered comparable to the other two visits.
- ✦ Visit 3: There was a travellers' camp on the Site during this visit. It was situated away from any bird 'hotspots' of the Site and is considered to have had a negligible effect on the birds present.

Bat Surveys

While demonstrating presence of a given species is relatively straightforward, proving complete absence is impossible (only 'likely absence' can be reasonably demonstrated).

The timing of commission and project timescale pressures were such that the surveys had to be scheduled relatively early in the season. The April/May 2021 period was characterised by some persistent spells of colder weather. Weather conditions during the surveys in April/May were sub-optimal for observing bat activity, with temperatures dropping to ca. 7°C (particularly affecting the dawn surveys); however, these conditions – although sub-optimal – would not typically preclude observation of bat activity completely.

Weather conditions during the subsequent June survey were perfect for observing bat activity; however, issues with trespass/disturbance on the Site meant that the dusk survey was short (finishing after one hour), and the following dawn transect was cancelled. It is anticipated that the species assemblages and site usage by the bats would not differ from the previous transect and nocturnal bat survey results.

Any ecological survey represents a snapshot of ecological conditions at the time of survey; ecological conditions may change over time. For example, habitats may increase/decrease in extent/suitability. Bats are a particularly mobile species group, which are known to regularly change their roosting location on a seasonal and even daily basis (occasionally only roosting at a given location for a day or two per year); bats may therefore roost in a previously unoccupied area. The details within this report will therefore remain valid for planning/demolition purposes for a period of 12 months, beyond which it is advised that a review of ecological conditions is undertaken.

Reptile Surveys

Episodes of trespass and equipment interference on the Site resulted in disturbance to the Site/refugia just prior to the seventh monitoring visit. However, it is felt that enough data was collected in the previous six visits to inform a suitable mitigation strategy.

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.

4.1.1 Designated Sites

The results of the MAGIC data search indicate that there are no international statutory designated sites within 6 km of the Site. There is one statutory designated site within 2 km of the Site centre, the Brooks (Bersted Brooks) Local Nature Reserve (LNR), located 520 m south-west of the Site boundary, across the A29. The LNR is designated for areas of meadow, narrow reedbeds and ditches, permanent and temporary ponds, and an extensive newly planted floodplain woodland. The Brooks floods every winter, making it a good place for wetland wildlife. The site is thought to be of local interest for birds, but no information about bird species or diversity was available on the Natural England citation.

There were no non-statutory designated sites within 2 km of the Site centre, however, part of the Site is designated as coastal and floodplain grazing marsh, which is listed as a Section 41 Habitat of Principal Importance, under the NERC Act.

4.1.2 SSSI Impact Risk Zone

The Site falls within the Site of Special Scientific Interest (SSSI) Impact Risk Zone (IRZ) for Bognor Reef SSSI, located 3.14 km south of the Site boundary, for which the Local Planning Authority (LPA) is required to consult Natural England (NE) on the likely risks from the following development proposals:

- ▲ Airports, helipads, and other aviation proposals;
- ▲ Livestock & poultry units with floorspace > 500 m², slurry lagoons > 750 m² & manure stores > 3500 t; or
- ▲ General combustion processes > 50 MW energy input. Incl: energy from waste incineration, other incineration, landfill gas generation plant, pyrolysis/gasification, anaerobic digestion, sewage treatment works, other incineration/ combustion.

The criteria listed are not relevant to the development proposals, such that impacts on the IRZ are not considered further in this Report.

4.1.3 Review of Previous Surveys

The ecological appraisal conducted by Aluco Ecology in 2015 covered the southern parcel of land and recorded arable on-Site, with drains and lengths of hedgerow and dense thicket were present. The Report assessed the Site as being suitable for nesting birds, roosting, and commuting bats, badgers, reptiles, otters, and brown hare. Water vole was not recorded on-Site during survey works; however, reference is made to the minor watercourse on the south-western boundary where they were recorded in 2014 by another consultancy. A badger latrine was recorded on-Site during the surveys. Reptiles were recorded to be on-Site, with a small population of slow worm present.

4.2 Survey

4.2.1 Habitats on Site

The Site is characterised by predominantly arable to the north with a row of trees along a dry drain and poor semi-improved grassland to the south, bisected and / or bounded by lengths of drainage ditches, fencing and hedgerow. In the northern extent of the Site was an area of bare ground, whilst scattered trees were found in the western area of the central field. At the south-western extent of the Site was a pond, whilst scattered scrub ran inside the eastern boundary fence.

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). Photographs of the Site survey are located in Appendix D.

Habitats recorded on Site were:

Scattered Broadleaved Trees

Four mature oak *Quercus robur* trees and a large willow *Salix* sp. coppice-stool were located near the western boundary of the southern parcel of the Site, in association with ditches (Photograph 1).

Scattered Scrub

A line of low/scattered scrub, comprising mainly bramble *Rubus fruticosus* agg., as well as hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*, was located outside and adjacent to the eastern Site boundary of the southern parcel of land with the railway line.

There was evidence of scattered scrub previously growing along the banks of the ditches (TN1) however, this had been recently felled/ trimmed to ground level (Photograph 2).

Poor Semi-Improved Grassland

Most of the southern parcel of the Site and the western field margins of the arable field to the north were poor semi-improved grassland (Photograph 3a) with a short sward. Species included perennial ryegrass *Lolium perenne*, Yorkshire fog *Holcus lanatus*, cocksfoot *Dactylis glomerata*, with ruderals comprising broadleaved dock *Rumex obtusifolia*, and spear thistle *Cirsium vulgare*.

The boundaries of the fields had a more complex collection of forb species, with cleavers *Galium aparine*, cut-leaved cranesbill *Geranium dissectum*, harts tongue fern *Asplenium scolopendrium*, lord and ladies *Asplenium scolopendrium*, Birdseye speedwell *Veronica persica*, red dead nettle *Lamium purpureum*, and sun spurge *Euphorbia helioscopia*, and the ruderal common nettle *Urtica dioica*. Bramble was also encroaching into the grassland from the boundaries.

The grassland in the south-western extent of the Site was more rank than the other fields on-Site (Photograph 3b), with a broadly similar species diversity, with the addition of teasel *Dipsacus fullonum*, as well as rushes *Juncus* sp., and reeds *Phragmites* sp. The area was noticeably wetter than the rest of the Site.

Arable

A large area of arable sown with wheat *Triticum* sp. formed the majority of the northern parcel of the Site.

Ditches

At the time of the survey, five of the drainage ditches in the southern parcel held water and one was largely dry, with the exception of dampness/pooling at the northern and southern ends (Photograph 1).

Standing Water

There was a shallow area of standing water in the southern extent of the southern parcel, which was fed by a continuation of ditches, connected to D2.

Spoil

A large spoil mound was located in the southern parcel, which had extensive bramble scrub.

Ephemeral Vegetation

The northern extent of the southern parcel of the Site was almost exclusively dominated by a low cover of bristly ox-tongue *Helminthotheca echioides*, with common ragwort *Senecio vulgaris*, and mallow *Malva sylvestris* also recorded (Photograph 4).

Bare Ground

The northern area of the southern parcel appeared to have formerly been arable and semi-improved grassland, that had experienced extensive die-back, possibly due to a flooding episode. The ground in this part of the Site

was sodden at the time of the survey, and the remains of dead grasses had the appearance of it having been subject to prolonged flooding (Photograph 5).

4.2.2 Habitats Immediately Surrounding the Site

The Site is bounded to the north by further arable; to the east by the Bognor Regis to Barnham railway line; and to the south by industrial units associated with the Rolls Royce Warehouse 1. Further to the north, east and west, the landscape is largely rural, dominated by agricultural fields, with a golf course, and the Lidsey Rife watercourse; further to the south, the landscape becomes more urban, with a business retail park on the outskirts of the main town.

4.3 Notable and Protected Species Assessment Relevant to the Site

4.3.1 Birds

The data search identified 20 species of birds currently listed on Schedule 1 of the WCA (1981) as amended, within 2 km of the Site centre in the past ten years which included several waders and waterfowl, kingfisher *Alcedo atthis*, and little ringed plover *Charadrius dubius* potentially utilising the Site for foraging or nesting, whilst hobby *Falco subbuteo*, merlin *Falco columbarius*, and barn owl *Tyto alba* may utilise the Site for hunting, with the potential to nest in the scattered trees. A further 24 species of birds currently listed on the Red List of BoCC (Eaton et al., 2015), were recorded within 2 km of the Site centre in the past ten years, of which those most likely to utilise the habitats on-Site included skylark *Alauda arvensis*, whinchat *Saxicola rubetra*, yellow wagtail *Motacilla flava*, starling *Sturnus vulgaris*, song thrush *Turdus philomelos*, mistle thrush *Turdus viscivorus*, house sparrow *Passer domesticus*, grey partridge *Perdix perdix*, corn bunting *Emberiza calandra*, and common ringed plover *Charadrius hiaticula*.

Habitats featured on the Site suitable for nesting birds include scattered broadleaved trees, limited areas of scrub and ephemerals, in addition to the expanse of arable in the northern parcel and grassland in the south for ground nesting birds and the vegetated ditches for waterfowl. No bird nesting activity was observed at the time of the inspection. Moorhen *Gallinula chloropus* footprints were evident in the mud associated with the banksides.

A pair of skylarks were recorded on-Site during the initial walkover Survey (TN2), which are listed on the Red List of BoCC. No birds listed on Schedule 1 were recorded on-Site at the time of the survey. It should be noted that this is not a comprehensive inventory of the bird species which may be present at the Site.

Breeding Bird Survey

Due to the differences in the areas that were surveyed over the three visits (see section 3.3), the below only includes the areas that were finalised by the beginning of Visit 2.

A total of 25 bird species were recorded during the breeding bird surveys (excluding 'over-flying only' species); seventeen on the southern parcel and sixteen on the northern parcel.

Of the 17 species observed on the Site, eight either appear on the BoCC as declining (Red or Amber lists) and/or are identified as EBP species. There were no WCA schedule 1 species recorded on the Site. Of the 18 species observed on the northern parcel, six either appear on the BoCC as declining (Red or Amber lists) and/or are identified as EBP species. There were no WCA Schedule 1 species present on the northern parcel.

Of the 17 species recorded on the southern parcel, four were confirmed as breeding: species. A further three species were considered probable breeders, whilst the remaining fourteen species were considered possible breeders or non-breeders.

Of the eighteen species recorded on the northern parcel, three were confirmed as breeding: species, with house sparrow also observed carrying food to a nest site in the houses to the north. A further three species were considered probable breeders, whilst the remaining eleven species were considered possible breeders or non-breeders.

Species and conservation status of breeding birds identified are detailed in Table 8, below, Figure 6a shows the distribution of breeding Red List birds, and Figure 6b shows the distribution of breeding Amber List bird species.

A full list of results for the Site can be found in Appendix C.

Table 8: WCA, EBP and BoCC Bird Species Recorded during Breeding Bird Surveys in 2021

Species	Conservation Status	Breeding Status	Estimated Number of Territories On-Site
Southern Parcel			
Mallard <i>Anas platyrhynchos</i>	Amber (BoCC)	Possible (H)	0-1
Black-headed Gull <i>Chroicocephalus ridibundus</i>	Amber (BoCC)	Non-breeding (U)	0
Skylark	Red (BoCC) EBP	Probable (T)	1-2
House sparrow	Red (BoCC) EBP	Non-breeding (but breeds in houses to the north of the northern parcel)	0
Dunnock <i>Prunella modularis</i>	Amber (BoCC) EBP	Possible (S / H)	1-2
Linnet <i>Carduelis cannabina</i>	Red (BoCC) EBP	Probable (P)	1
Yellowhammer <i>Emberiza citrinella</i>	Red (BoCC) EBP	Probable (P)	0
Reed bunting <i>Emberiza schoeniclus</i>	Amber (BoCC) EBP	Confirmed (FF)	1
Northern Parcel			
Skylark	Red (BoCC) EBP	Confirmed (FF)	4+
Starling	Red (BoCC) EBP	Non-breeding (but probably breeds in the houses to the north of the northern parcel)	0
House Sparrow	Red (BoCC) EBP	Non-breeding (but breeds in the houses to the north of the northern parcel)	0
Dunnock	Amber (BoCC) EBP	Possible (S)	1

Linnet	Red (BoCC) EBP	Probable (P)	1
Yellowhammer	Red (BoCC) EBP	Possible (S)	1
Reed Bunting	Amber (BoCC) EBP	Probable (A)	1

The codes given under 'Breeding Status' indicate which criteria have been used to assess breeding. The Codes are defined in Appendix G.

The main habitats on Site of value to breeding birds included areas of reed at the south of the southern parcel of land and the tree-lined ditch (D3). The hedgerow off-Site from the eastern boundary provides some breeding opportunities for birds, but most registrations were from the eastern side of the railway to the east of the Site. Few birds were found within the poor semi-improved grassland which extended across the southern parcel of land.

In the northern parcel the current cereal crop provided cover for ground nesting birds and the row of bushes on the eastern boundary provided suitable habitat for breeding passerine species.

The following provides a summary of the breeding bird assemblage recorded within the different habitat types:

Southern Parcel:

- Reeds; Reed warbler, reed bunting
- Tree and scrub lined ditch; Whitethroat *Sylvia communis*, robin *Erithacus rubecula*, wren *Troglodytes troglodytes*, dunnock, chaffinch *Fringilla coelebs*, yellowhammer, linnet.
- Poor semi-improved grassland: Skylark

Northern Parcel:

- Cereal crop; Skylark
- Scattered scrub; Robin, blackcap *Sylvia atricapilla*, wren, dunnock, yellowhammer, linnet.

Value of the Site to Breeding Birds

The southern parcel supported low numbers of breeding birds and low species diversity. Despite there being several notable species present the breeding bird assemblage has been assessed as being of Site level importance only.

The northern parcel, also supported low numbers of breeding birds and species diversity, however, given the density of skylark present within the arable habitat the Site has been assessed as having ecological value at a local scale.

When considering the Site as a whole the ecological value of the Site has been assessed as Local.

4.3.2 Great Crested Newts

There was a single record of GCN from 2016, approximately 1.39 km east of the Site boundary, with records of smooth and palmate newts from the same pond. The Site is fragmented from the records by the A259, and Bognor Regis Golf Club.

A review of aerial photographs and OS maps revealed that there is an area of standing water on-Site (Pond 1), but no further ponds within 500 m of the Site to support breeding amphibians. There are several interconnecting drains in the wider area. The grassland, scattered scrub and banks of the ditches provided suitable terrestrial habitat for GCN and are well connected to further habitat in the wider area. The railway line to the east of the

Site is not considered to be a major distribution barrier for the species. Given that the majority of the northern parcel of land comprises arable and bare ground, this is not considered ideal to support GCNs.

Pond 1 was located in the southern extent of the Site and has been dug out since the previous ecological survey works were completed in 2015. The pond held approximately 100 m² of water, with a depth of < 1 m, at the time of the survey, and was vegetated with reeds *Phragmites* sp., with minimal submerged aquatic vegetation.

Table 9: Results of HSI Assessment

Variables of Habitat Suitability Index Assessment		Pond 1
SI ¹	Pond location	1
SI ²	Pond area	0.2
SI ³	Pond drying	0.5
SI ⁴	Water quality	0.33
SI ⁵	Shade	1
SI ⁶	Waterfowl	1
SI ⁷	Fish	1
SI ⁸	Ponds	0.2
SI ⁹	Terrestrial habitat	0.67
SI ¹⁰	Macrophytes	0.5
Habitat Suitability Index		0.54
Habitat assessment - suitability for GCNs		Below Average
Need to undertake further GCN survey		No

The on-Site waterbodies were considered suitable as breeding habitat potentially for common amphibians (common frog and common toad). Given the lack of recent records, and the distance of the nearest records to the Site, coupled with the fact that the on-Site pond has been built recently and its HSI score being 'below average', GCNs are not considered further in this Report.

4.3.3 Reptiles

There were thirteen records of reptiles within 2 km of the Site centre in the past ten years, including common lizard, slow worm and barred grass snake, with the closest and most recent records for all three species located 310 m north-east of the Site boundary, in fields on the opposite side of the railway line to the Site. In 2015, Alauda Ecology recorded a small population of slow worm on-Site.

There was no evidence of reptiles on-Site at the time of the Preliminary survey; however, this survey was constrained by the time of year and the lack of existing/natural refugia that could be feasibly searched. Natural existing refugia that were checked included small/medium-sized logs, as well as debris, including discarded plastic fencing panels and concrete slabs, along the eastern boundary, as well as discarded roofing felt tiles outside the northern boundary. Most of these were too bedded in to be suitable for use by reptiles.

The southern parcel of the Site and its immediate surroundings were considered to offer good potential habitat for a variety of reptiles and amphibians. The boundary/internal boundary habitats, including the northern, eastern, and southern boundaries, as well as the rubble/ spoil/ brash piles (TN3, Photograph 7) offer foraging, shelter, basking and hibernation opportunities. The on-Site and nearby off-Site drains also offer foraging opportunities for barred grass snakes.

Refugia Survey

The dates the survey checks were undertaken, and weather conditions are given in Table 5, and the numbers of reptiles found within each micro-habitat group are presented in Table 10 and shown in Figure 3. Weather conditions were assessed using the Beaufort wind force scale and the Okta scale of cloud cover.

Table 10: Reptile Survey Results

Survey Visit	Reptiles	Peak Count (Adults only)
	Refugia Group A	
1	1 F SW	1 SW
2	X	X
3	4 SW (1 M, 3 F), 2 A CL	4 SW, 2 CL
4	2 SW (1 F, 1 J), 1 M CL, 1 J GS	1 SW, 1 CL
5	2 SW (1 M, 1 F), 1 A CL, 2 J GS	2 SW, 1 CL
6	2 SW (1 M, 1 F), 1 J CL, 1 J GS	2 SW
	Refugia Group B	
1	X	X
2	X	X
3	X	X
4	X	X
5	X	X
6	X	X
	Refugia Group C	
1	X	X
2	X	X
3	X	X
4	X	X
5	1 J SW	X

6	X	X
Refugia Group D		
1	X	X
2	X	X
3	X	X
4	1 M CL	1 CL
5	X	X
6	1 F SW	1 SW

NB: SW = Slow Worm, CL = Common Lizard, GS = Grass Snake; M = Male, F = Female, A = Unidentified gender, J = Juvenile, X = No reptiles found

The reptile survey confirmed the presence of three species of reptile (slow worm; common lizard; and barred grass snake) within the Site. Survey visit 2 found no evidence of reptiles due to human disturbance of the refugia with many of the felts being moved. Slow worm were recorded during all other survey visit, with a peak count of four individuals on survey visit 3, with two individuals recorded on survey visits 5, and 6. Two common lizard were recorded on survey visit 3, and individual common lizard on survey visits 4,5 and 6. Individual barred grass snake were recorded on survey visits 4, 5 and 6.

4.3.4 Bats

There were six species of bats recorded within 2 km of the Site centre in the past ten years, with further records of unidentified species of bats, which were as follows.

- ▲ Seven records of common pipistrelle *Pipistrellus pipistrellus*, between 2011 and 2016, the closest of which was 220 m south of the Site boundary in 2014, whilst the most recent of which was 610 m north of the Site boundary;
- ▲ Two records of soprano pipistrelle *Pipistrellus pygmaeus*, in 2014 and 2016, the closest of which was 620 m south-west of the Site boundary in 2014, whilst the most recent record was 720 m north-west of the Site boundary;
- ▲ Eight records of western Barbastelle *Barbastella barbastellus*, all from 2015, the closest of which was 900 m east of the Site boundary;
- ▲ Two records of noctule *Nyctalus noctula*, in 2014 and 2016, the closest of which was 220 m south of the Site boundary in 2014, whilst the most recent record was 720 m north-west of the Site boundary;
- ▲ One record of serotine *Eptesicus serotinus*, from 2015, 220 m south of the Site boundary; and
- ▲ One record of brown long-eared bat *Plecotus auritus*, from 2015, 220 m south of the Site boundary.

There were three records of roosts within 2 km of the Site centre, all of which were common pipistrelle roosts located within private properties, the largest of which, located 790 m north-west of the Site boundary recorded 14 individuals.

The Site was lacking in substantial tall/woody vegetation cover / shelter overall; however, the ditch network within and around the Site, as well as the vegetated railway corridor adjacent to the eastern boundary, was considered to offer good foraging/commuting potential for bats, whilst the expanse of arable in the northern parcel are of limited suitability. Overall, therefore, the Site was assessed as offering low habitat suitability for bats.

There were five trees within the southern parcel and a row of trees in the northern parcel that were assessed for their potential to support roosting bats, details of which were as follows:

- ✎ Tree 1 (T1, Photograph 8) was a mature oak with minor ivy coverage, callus rolls, lifted bark and hollows. There was a partially healed tear on the northern aspect and a split limb on the eastern aspect. It was assessed as having **Low BRP**.
- ✎ Tree 2 (T2, Photograph 9) was a mature oak tree with a large split on the southern aspect of the main trunk, with a horizontal split in a limb and a minor callus also noted. It was assessed as having **High BRP**.
- ✎ Tree 3 (T3, Photograph 10) was a mature oak tree with rot, calluses, and tears on both the northern and southern aspects. The trunk was possibly hollow based on the condition, resulting in it being assessed as having **High BRP**.
- ✎ Tree 4 (T4, Photograph 11) was mature oak tree with tears and calluses on the southern and northern aspects, with lifting bark also noted. It was assessed as having **Moderate BRP**.
- ✎ Tree 5 (T5, Photograph 12) was a mature coppiced willow, with extensive hollows and splits throughout the main trunk. It was assessed as having **Moderate BRP**.
- ✎ Tree Group 6 (TG6), a row of semi mature willow adjacent to the eastern boundary of the northern parcel of land, with several trees assessed to support a low number of suitable bat roosting features such that they were assessed as having **Low BRP**.

Roost Presence/Absence Survey – Trees (Figure 4)

Dusk Emergence Surveys 10th May 2021 – surveyors north of T1 and T2, south of T3, T4, T5

- ✎ Two bat species were recorded (none seen) during the survey: brown long-eared bat and common pipistrelle.
- ✎ Three brief passes of a brown long-eared bat were recorded at 77 minutes after sunset. A short bout (ca. 7 minutes) of common pipistrelle foraging was recorded from 81 minutes after sunset.
- ✎ No bats were recorded to emerge from the trees.

Dawn Return Surveys 11th May 2021- surveyors south of T1 and T2, north of T3, T4, T5:

- ✎ No bats were recorded.

Dusk Emergence Surveys 24th May 2021– surveyors south and north of T3, T4, T5

- ✎ One bat species was recorded during the survey: common pipistrelle.
- ✎ A short bout (ca. 2 minutes) of common pipistrelle foraging was recorded from 48-50 minutes after sunset. The bat was observed engaging in looping foraging flight over the grassland to the east of tree T4.
- ✎ No bats were recorded to emerge from the trees.

Dawn Return Surveys 25th May 2021- surveyors south and north of T1 and T2:

- ✎ No bats were recorded.

Dusk emergence surveys 7th June 2021– surveyors north of T1 and T2, south of T3, T4, T5

- ✎ Two bat species were recorded during the survey: common pipistrelle and soprano pipistrelle.
- ✎ A short bout (ca. 10 minutes) of intermittent common pipistrelle foraging was recorded from 37-47 minutes after sunset (1-2 bats), with a single soprano pipistrelle pass recorded 39 minutes after sunset. The bats were observed to arrive from the direction of the flyover road to the northeast of the Site, and to engage in looping flight around the tree canopy and over the adjacent grassland.
- ✎ No bats were recorded to emerge from the trees.

Bat Transect Survey

Dusk Activity Transect Surveys - 20th April 2021 (Figure 5)

- ✎ Three bat species were recorded: common pipistrelle; brown long-eared bat, and Myotis bat *Myotis* sp.

- ▲ Nine foraging/commuting passes of common pipistrelle were recorded in the south/southwest of the Site between 25 and 32 minutes after sunset, within the typical emergence period for this species. A single Myotis bat pass was recorded in the northeast of the Site 91 minutes after sunset. A single brown long-eared bat pass was recorded in the east of the Site 103 minutes after sunset.

Static Monitoring Survey - 20th – 25th April 2021

- ▲ Four bat species were recorded: common pipistrelle; soprano pipistrelle, brown long-eared bat, and a Myotis.
- ▲ Bat activity was recorded on three of the five monitoring nights, mostly in the first 1-3 hours after sunset.
- ▲ Nine common pipistrelle passes were recorded from approximately 45 minutes to 2 hours after sunset, and three soprano pipistrelle passes were recorded from approximately 30 minutes to one hour after sunset. A single Myotis bat pass was recorded just over three hours after sunset, and a single brown long-eared bat pass was recorded just over one hour after sunset.

4.3.5 Badgers

Records of badgers are sensitive and are held by the local badger group, therefore they were not provided within the data search.

The Site did not support any evidence to indicate that badgers were using or inhabiting it. A partially submerged large burrow was recorded on northern bank of Ditch 4 (TN4). There were no latrines, snuffle holes, mammal runs, or badger dung found within the survey area. There was a latrine recorded outside of the boundary fencing (TN5, Photograph 13a). The habitats found on-Site are suitable for the species and the Site is connected to suitable off-Site habitat to the north and east, with the railway line and drains providing corridors for distribution. It is possible the Site forms part of a larger badger territory.

The spoil mound in the southern extent of the southern parcel had a covering of bramble scrub with a large burrow identified beneath it that could not be closely inspected. It was anticipated to be fox *Vulpes vulpes* (Photographs 13b & 13c). There was no clear mammal run to it.

4.3.6 Otters

Records of otters are sensitive within Sussex, as they are a recovering species, and as such were not provided within the data search.

No evidence of otter was recorded on-Site at the time of the survey. The drains providing low suitability for otter, which are a rare but recovering species in Sussex. The drains on-Site could act as commuting corridors for the species and are functionally connected to the nearby Lidsey Rife and Aldingbourne Rife.

4.3.7 Water Voles

There were 30 records of water vole within 2 km of the Site centre between 2012 and 2015, with the closest and most recent record approximately 225 m south of the Site boundary, which was recorded during survey work for the A29 extension. There were further records from the Lidsey Rife, approximately 265 m east of the Site boundary, which are functionally connected to the on-Site drains, which are culverted under the adjacent railway line.

Ditch 1 (D1, Photograph 14) was located off-Site adjacent to the southern boundary of the southern parcel, running for approximately 210 m, and was heavily shaded from a nearby warehouse. The banks were approximately 2 m wide, with the substrate consisting of soil and rubble. The water was approximately 30 cm deep, and the bankside vegetation had been recently trimmed, and consisted of bramble and nettle *Urtica dioica*, with grasses. Starwort *Callitriche* sp. and watercress *Nasturtium officinale* were recorded within the channel, which was approximately 50% vegetated. Small mammal burrows and rabbit *Oryctolagus cuniculus* warrens were recorded.

Ditch 2 (D2, Photograph 15) was located on a small section of eastern boundary in the southern extent of the southern parcel, running for approximately 80 m. The banks were between 1 – 2 m wide, with the substrate consisting of soil. The water was approximately 50 cm deep, and the bankside vegetation had been recently trimmed, and consisted of bramble and nettle, with grasses. Starwort and watercress were recorded within the

channel, which was approximately completely covered by vegetation. No evidence of water vole was recorded in the drain.

Ditch 3 (D3, Photograph 16) was located in the western extent of the southern parcel, running for approximately 180 m. The ditch was mostly dry at the time of the survey, with bankside vegetation consisting of bramble, nettle and grasses which had been recently flailed. There was a large area of pooled water at the northern end of ditch D3, located under the road bridge (TN6). Algal scum was the only aquatic vegetation recorded. Small and medium mammal burrows were recorded along the ditch.

Ditch 4 (D4, Photograph 17) was located in the centre of the southern parcel, running for approximately 150 m. The banks were between 50 cm wide, with the substrate consisting of soil, there was an area of ephemeral water associated with the south-eastern extent of the drain (TN6). The water was approximately 30 cm deep, and the bankside vegetation had been recently strimmed, and consisted of bramble and nettle, with grasses and reeds. Algal scum was the only aquatic vegetation recorded. Small and medium mammal burrows were recorded along the ditch.

Ditch 5 (D5, Photograph 18) was located in the northern extent of the southern parcel, running for approximately 90 m. The banks were between 30 cm wide, with the substrate consisting of soil. The water was approximately 30 cm deep, and the bankside vegetation had been recently strimmed, and consisted of bramble and nettle, with grasses. Algal scum was the only aquatic vegetation recorded. Small mammal burrows and rabbit warrens were recorded.

Ditch 6 (D6, Photograph 19) was located in the northern extent of the southern parcel, running for approximately 30 m. The banks were between 30 cm wide, with the substrate consisting of soil. The water was approximately 20 cm deep, and the bankside vegetation had been recently strimmed, and consisted of bramble and nettle, with grasses and reeds. Algal scum was the only aquatic vegetation recorded. No evidence of water vole was recorded in the drain.

Ditch 7 (D7, Photograph 20) was a continuation of D2, located off-Site to the south of the Site, running for approximately 135 m. The banks were between 1 – 2 m wide, with the substrate consisting of soil. The water was approximately 50 cm deep, and the bankside vegetation had been recently strimmed, and consisted of bramble and nettle, with grasses. Starwort and watercress were recorded within the channel, which was approximately completely covered by vegetation.

Ditch 8 (D8, Photograph 21) was located off-Site to the south-west, running for approximately 160 m, it was largely dry but held water at the northern extent. The ditch was scrubbed up with willow *Salix* sp. saplings and teasel.

Ditch 9 (D9, Photograph 22) was located off-Site to the west of the southern parcel, and ran for approximately 120 m. It appeared to be part of a Sustainable Urban Drainage System (SuDS), with sloped grassy banks. It held water at the southern extent but was dry to the north.

A short length of Ditch 10 (D10) was located on the eastern boundary of the northern parcel. The ditch did not support any water at the time of the survey. A row of willow trees, with bramble scrub below, was present on the banks, with nettle and broadleaved dock also present.

No evidence confirming the presence of water voles was found, and the habitat at the time of survey was considered largely sub-optimal.

Water Vole Survey

The Site had changed somewhat since the first survey; the following ditches were completely dry during the water vole surveys: D3, D4, D5, and D8 (See Figures 2a and 2b). No signs of water vole were found in D1, D2, or D7.

An area of D7 extends through a square culvert, across the road off-Site to the west, and forms the western boundary of the northern area of the southern parcel. This area of the ditch was anticipated to be suitable for water vole in the preliminary surveys but was partially concealed by bramble, limiting access and visibility. Mammal runs were recorded near this area, but no signs confirming water vole.

The survey visits found no evidence confirming the presence of water voles, and the habitat at the time of surveys was considered largely sub-optimal. Five of the ditches were completely/near completely dry by the time of the 20th April visit. It is anticipated that water voles are not a constraint and are not considered further in this report.

4.3.8 Other Protected Species

The habitats on-Site, both in the north and south, were considered suitable for brown hare *Lepus europaeus*, which have been recorded 1.35 km west of the Site boundary in 2018, whilst habitats within the southern parcel were considered suitable for west European hedgehog *Erinaceus europaeus*, recorded five times within 2 km of the Site between 2015 and 2019.

4.3.9 Invasive Species

There was a single record of giant hogweed from 2015, approximately 1.5 km south-west of the Site boundary but there was no evidence of invasive species found on-Site at the time of the survey.

5.0 Evaluation

5.1 Designated sites-statutory sites/non-statutory sites

The only statutory designated site within the search area is the Brooks (Bersted Brooks) LNR. This is 520 m to the west of the Site and is fragmented from it by the A29, with no terrestrial connectivity. Given its distance from the Site, and the lack of terrestrial connectivity, there is not considered to be any significant impact as a result of the proposed development.

5.2 Habitats

The Site comprises predominantly arable to the north and to the south unmanaged poor semi-improved grassland with scattered scrub and trees and a series of drainage ditches. The northern extent of the grassland is designated as coastal and floodplain grazing marsh, which is listed as a Section 41 Habitat of Principal Importance, under the NERC Act. However, given that the Site was previously long-term arable, and now comprises grassland of low floral diversity, it is no longer considered to represent this habitat.

5.3 Species

5.3.1 Birds

Nesting Birds

The scattered broadleaved trees, limited scrub, arable, grassland and ditches may be utilised by a range of bird species for breeding, with skylark recorded at the time of the survey. Breeding bird surveys are currently ongoing to establish the species of birds that are utilising the Site for nesting, and their distribution. Mitigation should be put in place to ensure that no nesting birds are disturbed as a result of vegetation clearance to facilitate the proposals. Furthermore, compensatory nesting habitat should be included through the installation of bird boxes on retained trees together with new tree and hedgerow planting to offer shelter and foraging opportunities as part of any future development at the Site.

Breeding Birds

Ecological Consideration

Overall, the southern parcel provides low to moderate habitat for birds, with the reeds and D3 providing the more suitable habitat. The northern parcel is currently a homogenous crop which is generally of low value for breeding birds, however, it did support several (presumed) pairs of skylark. The hedges off-Site to the east of this area are of greater value to breeding birds. All species recorded on-Site were common or widespread within the county of West Sussex and across the United Kingdom. No significant numbers of, or flocks of notable species, were recorded during the surveys and the breeding bird assemblage on Site is recognised as being of no more than Local value.

Impact Assessment

The potential impact of the loss or change of habitats on-Site upon breeding bird species arising from the development is based upon an understanding of each species' ecological requirements, the type of development, number of birds recorded on Site, their nature conservation status based on legislation and current guidance, and professional judgement. The species recorded on Site which are arguably the most vulnerable to impacts from habitat loss/change are the four notable species which appear on the BoCC Red list and/or are listed as a EBP Species that potentially breed on Site.

Construction operations have the potential to disturb birds using the Site for roosting, foraging, and breeding. Operations which could disturb breeding birds include noise and vibration from vegetation clearance works, initial ground preparation works and some construction activities such as piling, which are of low frequency but of high amplitude. Active, high level, infrequent disturbance causes most birds to be displaced for short periods. During the breeding season, disturbance may lead to nest desertion or the avoidance of the area, and reduce the suitability of retained nesting areas such as the hedgerows.

5.3.2 Reptiles

The grassland provides suitable habitat for reptile species with a mosaic of habitat formed from the grassland, ephemerals, and scrub, with the dry river basin and off-Site railway offering dispersal opportunities to the Site. A small population of slow worm was recorded with a peak count of four adults. A small population of common lizard was recorded with a peak count of 2 and individual grass snake were also recorded. The proposals, which include clearance of the southern extent of the Site, have the potential to harm reptiles present at the Site if appropriate mitigation measures are not put in place. A translocation will be required to remove them from this area of the Site.

5.3.3 Bats

Whilst no bats were recorded to roost at the Site during the survey, and bat activity was recorded to be particularly low and limited to widespread and commonly occurring species; however, the trees continue to provide limited suitable roosting features for bats. As such, a precautionary approach should be put in place if any trees are to be lost or impacted on.

The overall bat species diversity at the Site was low, as was overall activity, with four widespread and common bat species recorded, common and soprano pipistrelle, a Myotis and brown long eared bat. Common pipistrelle were the most frequently recorded species during the survey, and the majority of bat activity was recorded in the unlit northern area of the Site.

The scattered trees, scrub, drains, and hedgerows on the boundaries provide ideal foraging and commuting habitat and also connect the Site to the wider area, and the Site was assessed as having low potential for foraging and commuting bats. As such, the proposed development has the potential to increase light levels at, and beyond, the development footprint at the Site and thereby reducing the suitability of the Site for bat species. A sensitive lighting plan will be required as part of the development proposals to minimise the impact upon bats using the Site and the surrounding habitats.

5.3.4 Badgers

The Site did not support any evidence to indicate badgers were actively using or inhabiting it, however, evidence of badgers was recorded immediately off-Site and during previous surveys at the Site, and there is a suitable habitat for the species on-Site and in the wider area. If this species does occur locally, it is a possibility that badgers may disperse across the Site. The surveys indicate that it is possible the Site forms part of a larger badger territory. Therefore, precautionary measures will need to be in place during the construction phase of works to ensure that they do not become trapped in any trenches or pits.

5.3.5 Otter

Otter may be present within the local area, and they may use the on-Site drains for commuting or foraging as part of a wider network of waterways, and although the Site offers no suitable shelter, otter may venture within the Site boundary and protection measures should be in place.

5.3.6 Other Fauna

The Site has potential to support brown hare, hedgehog, and roe deer, with records of the former two species, and roe deer has been recorded on-Site during the survey. Whilst brown hare and roe deer will disperse away from any disturbance, mitigation should be put in place to ensure that hedgehogs are not harmed by the proposals.

6.0 Recommendations

6.1 Further Survey Requirement

The survey works undertaken to inform this report are sufficient to inform the development proposals, and no further survey work regarding protected and priority species and habitats is deemed necessary at this time.

6.2 Construction and Operational Phase Protection/Enhancement Measures

6.2.1 Species Protection

Nesting Birds

- ▲ If clearance works are to be undertaken of the scrub, scattered broadleaved trees, arable and grassland, these should be performed either before early March or after late August in order to avoid the main bird nesting season; and
- ▲ Conflict with the development can be avoided by clearing the Site of any suitable bird nesting habitat outside of the breeding period in advance of any proposed works. If, however, Site clearance works are deemed necessary during the nesting period an experienced ecologist will be required to check the Site habitats immediately prior to works commencing to confirm that no nesting birds will be affected by the proposed works.

Breeding Birds

- ▲ The area of reeds provides good quality habitat for breeding birds and if possible, should be retained. Should this not be possible it is recommended that compensatory wetland habitat is created as part of development proposals; and
- ▲ Low numbers of breeding skylark were recorded predominantly within the northern parcel and opportunities for this species should be incorporated into the development within the flood alleviation area.

Bats

Trees with low BRP

- ▲ Any proposed felling or management works to T1 and TG6 should be completed under a method statement which could include a single dawn survey completed during the active bat season (April-October, inclusive) on the morning prior to the works being undertaken; or alternatively
- ▲ A licenced bat ecologist trained to use specialist tree climbing equipment could undertake a thorough inspection of the potential roost features immediately prior to works commencing.

Lighting

The detailed lighting design on Site has been designed to be functional and directional and in line with current guidance (BCT and ILP, 2018); BCT, 2014; Stone, E.L. (2013) through:

- ▲ The use of lights utilising light emitting diodes (LED) without UV elements, therefore reducing the attraction of invertebrates to the lights;
- ▲ Only luminaires with 0 % upward light ratio will be used and fitted on the horizontal to avoid excessive up-lighting, back lighting and light spill onto the western boundary trees;
- ▲ Where possible luminaires will feature peak wavelengths higher than 550 nm to avoid the component of light most disturbing to bats; and
- ▲ The lux level will be between 0 and 2 at sensitive ecological features as this is within the range of natural moonlight.

Reptiles

- ▲ Given the presence of reptiles within land to be developed, it is recommended that a translocation programme is undertaken in order to move the reptiles to a receptor site, which will ensure that reptiles are not harmed by the proposals.

- ⚡ Prior to commencement of the translocation, it may be necessary to undertake vegetation management works to enhance the sourced receptor site for reptiles.
- ⚡ The translocation must be completed between April –October, inclusive, during suitable weather conditions, outside of the hibernation period. This would involve the check of artificial refugia for a minimum period of 45 working days, and until five clear days have passed with no reptiles captured during checks completed under suitable weather conditions. Any reptiles found will be captured and then released into the translocation area.
- ⚡ The proposed development area will then be destructively searched by a suitably qualified ecologist, and clearance of all suitable areas of reptile habitat undertaken under their supervision.

Badgers

- ⚡ A pre-commencement survey should be undertaken for badger to check for sett entrances.

Badger, Otter & Hedgehogs

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

Site Protection

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

- ⚡ All works should be undertaken in accordance with the UK governments 'Pollution Prevention for Business's' guidance (www.gov.uk); and
- ⚡ Where works will impact protected and notable species of flora and fauna a suitable method statement should be incorporated into the Site Construction Environmental Management Plan (CEMP).

6.3 Site Enhancement

6.3.1 General Site Enhancement

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

- ⚡ Planting has been designed to enhance retained vegetation and be of native species, or those of known value to wildlife, sourced from local nurseries to enhance foraging opportunities for local birds, reptiles, badgers and bats, by increasing the invertebrate diversity on-Site. Also, where trees are proposed to be planted, a functional understorey has been included.

6.3.2 Biodiversity Net Gain

A Biodiversity Net Gain (BNG) assessment has been undertaken of the Site (a copy of the calculator accompanies this report, and is reproduced at Appendix H). This will be a requirement of the emerging Environment Bill (predicted to receive royal assent in late 2021), and will be required for all planning applications in the near future. Currently, net gain is delivered through the NPPF (as amended) with the level of net gain required set by individual LPAs. It is assumed that Arun District Council currently require an uplift of 10% BNG for all planning applications.

Baseline

The wider Site covers an area of 18.87 ha, of which the southern parcel comprises 7 ha, and is characterised by predominantly poor semi-improved grassland bisected and / or bounded by lengths of drainage ditches and fencing. In the northern extent of the Site was an area of bare ground, whilst scattered trees were found in the

western area of the central field. At the south-western extent of the Site was an area of standing water, whilst scattered scrub ran inside the eastern boundary fence. A large expanse of land set to arable comprised the majority of the parcel of land to the north of the A259. In the western extent of this parcel, a poor semi-improved grassland field margin ran inside the boundary. This parcel covers an area of 11.87 ha, see Figures 2a and b. Table 11, below, gives the baseline biodiversity units for the Site.

Table 11: Baseline Score

Existing Habitats	Type of Unit	Biodiversity Units
Arable land with cereal crops (11.88 ha), poor semi-improved grassland (5.14 ha), standing water (0.17 ha), bare ground (1.2 ha), spoil (0.19 ha), short ephemeral vegetation (0.29 ha), with an additional 0.09 ha of street trees.	Habitat Unit	38.92

Proposed Enhancements to Achieve Net Gain

An assessment has been made of the realistic potential for environmental improvements of the Site as a consequence of its proposed development. This is summarised below, and it is confirmed that the development can deliver material positive environmental and ecological enhancements.

The potential post-development score (see Table 12) has been calculated using the following information taken from the landscaping plan for the southern extent of the Site (Drawing 1), in addition to agreed landscape design for the northern parcel, as follows:

The plan indicates that the southern extent of the Site will include a series of buildings surrounded by hardstanding, with carparks, footpaths, and service roads (circa 4.3 ha). An area of amenity grassland is proposed for soft landscaping areas surrounding the buildings (2 ha), which will enhance areas of retained grassland in the southern extent of the Site (0.3 ha).

The northern parcel of lands primary function will be as a flood relief area, and will be planted with a general meadow grass seed mixture and managed accordingly to create a wildflower meadow (6.97 ha). In addition to an area of standard grassland on the edges of the flood alleviation area (4.5 ha).

Mixed scrub planting is proposed around the southern parcel of the Site (0.44 ha), which will enhance the retained street trees (0.09 ha) and off-Site boundary features. The scrub and retained trees will create a structured and sheltered wildlife area in the southern extent of the Site, which includes the retained drains.

A Sustainable Drainage System (SuDS) will be created within the western extent of the southern parcel. The primary function will be to manage groundwater on-Site, however, the area will also be enhanced for biodiversity and will be sown with a meadow mix for clay soils grass seed mix (0.1 ha). This will feed into a newly built pond located in the northern extent of the southern parcel (0.17 ha). A green wall will also be installed on the northern and western elevations of the van deck.

Table 12: Post-Development Score with Additional Enhancements

Planted, Retained and Enhanced Habitats	Type of Unit	Biodiversity Units	Percentage + / -
4.3 ha of developed land (0.13 of this includes the proposed green walls on the van deck), with 2 ha of amenity grassland and 0.3 ha of retained modified grassland. 6.97 ha of wildflower meadow with an additional 4.5 ha of modified grassland in the northern extent. 0.44 ha of mixed scrub planting, 0.09 ha of retained street trees. New pond 0.17 ha and 0.1 ha of SuDS features.	Habitat Unit	43.23 (+4.31)	+ 11%

(See Appendix H: Biodiversity Net Gain with Enhancements included for the detailed results).

The Defra Metric used to generate the above scores is appended to this Report (Appendix G), with the existing habitats shown in Figures 2a and b, and the post development measures to achieve a net gain for the southern parcel illustrated in Drawing 1. This initial assessment illustrates how the development can achieve a net gain in biodiversity. Detailed landscape plans for the northern parcel should consider the principles set out in this assessment.

6.3.3 Further Ecological Enhancements

To further enhance the Site, it is recommended that bat and bird boxes are installed at the Site.

Birds

To further enhance the ecological value of the Site, and to provide additional nesting opportunities for birds, a variety of bird boxes will be placed at suitable locations around the Site. These will be suitable to accommodate a range of species known to occur in the local area, and particularly those most likely to be attracted to the Site following the proposed development. Bird boxes, therefore, will include:

- ▲ Two hole-fronted boxes; and
- ▲ Two open fronted boxes.

Indicative locations are shown on Figure 7

Bats

To enhance the ecological value of the Site for bats through increased roosting opportunities at the Site following the proposed development, two bat boxes will be incorporated at suitable locations at the Site. These will be suitable to accommodate a range of species known to occur in the local area and will, therefore, include:

- ▲ One Schwegler 1FF bat box (similar); and
- ▲ One Schwegler 2FN bat boxes (or similar).
- ▲ The bat boxes are to be installed on a pole within the northern area of the Site (flood compensation area), on that are not in direct light. These should be placed to avoid a northerly aspect, at a height of at least 3 m in order to avoid disturbance from humans or predators, in an area least likely to be affected by noise and light spill, and close to trees for cover. Indicative locations are shown on Figure 7

7.0 Disclaimer

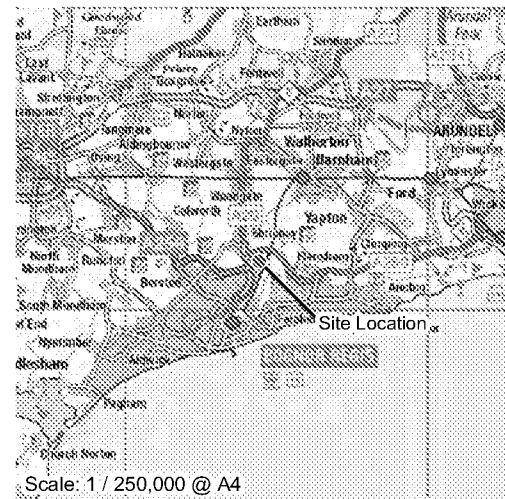
The recommendations contained in this Report represent Delta-Simons' professional opinions, based upon the information referred to in Section 1.0 of this Report, exercising the duty of care required of an experienced Ecology Consultant. Delta-Simons does not warrant or guarantee that the Site is free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

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

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

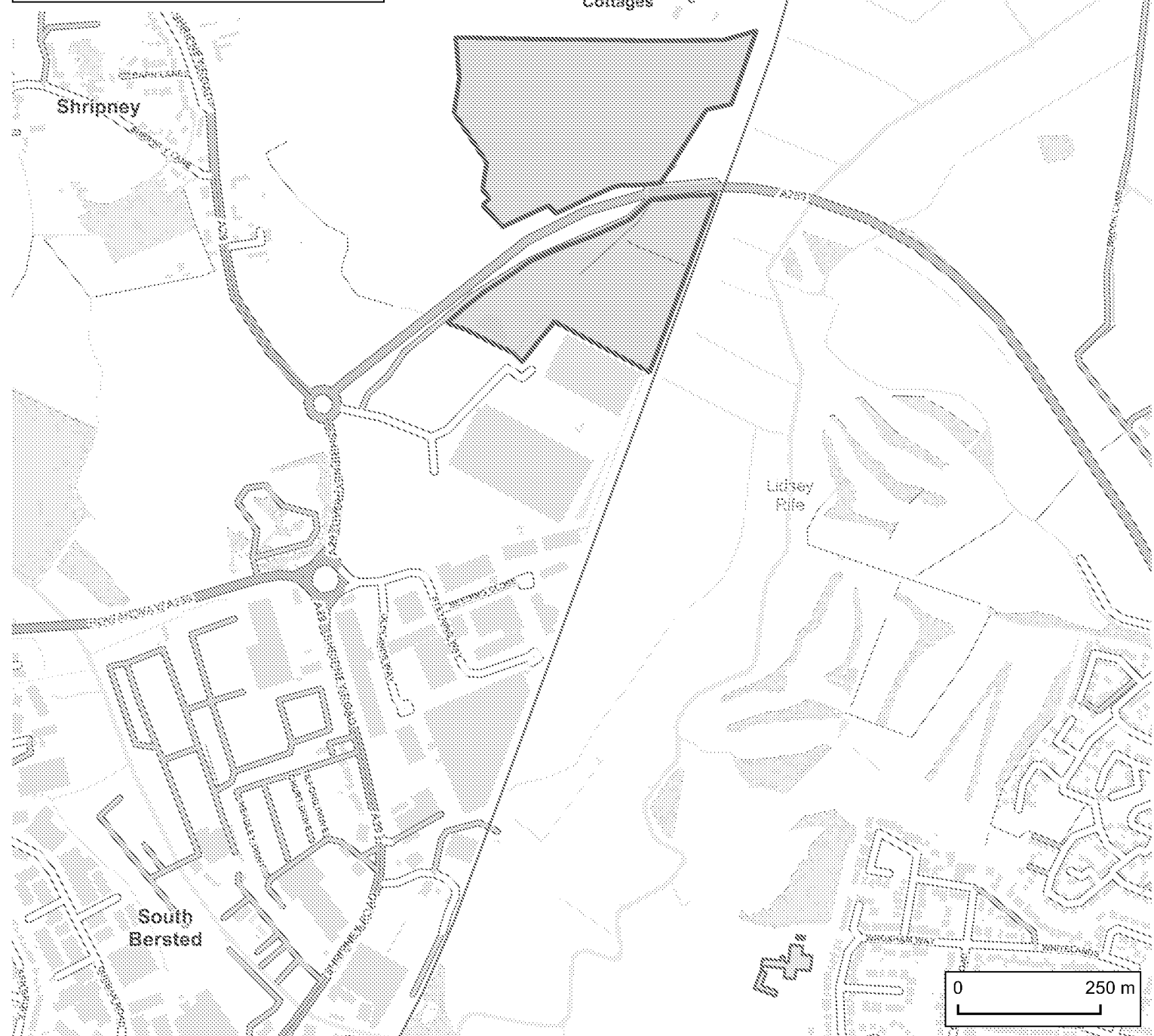
This Report was prepared by Delta-Simons for the sole and exclusive use of the Client and for the specific purpose for which Delta-Simons was instructed as defined in Section 1.0 of this Report. Nothing contained in this Report shall be construed to give any rights or benefits to anyone other than the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

Figure 1 – Site Location Map



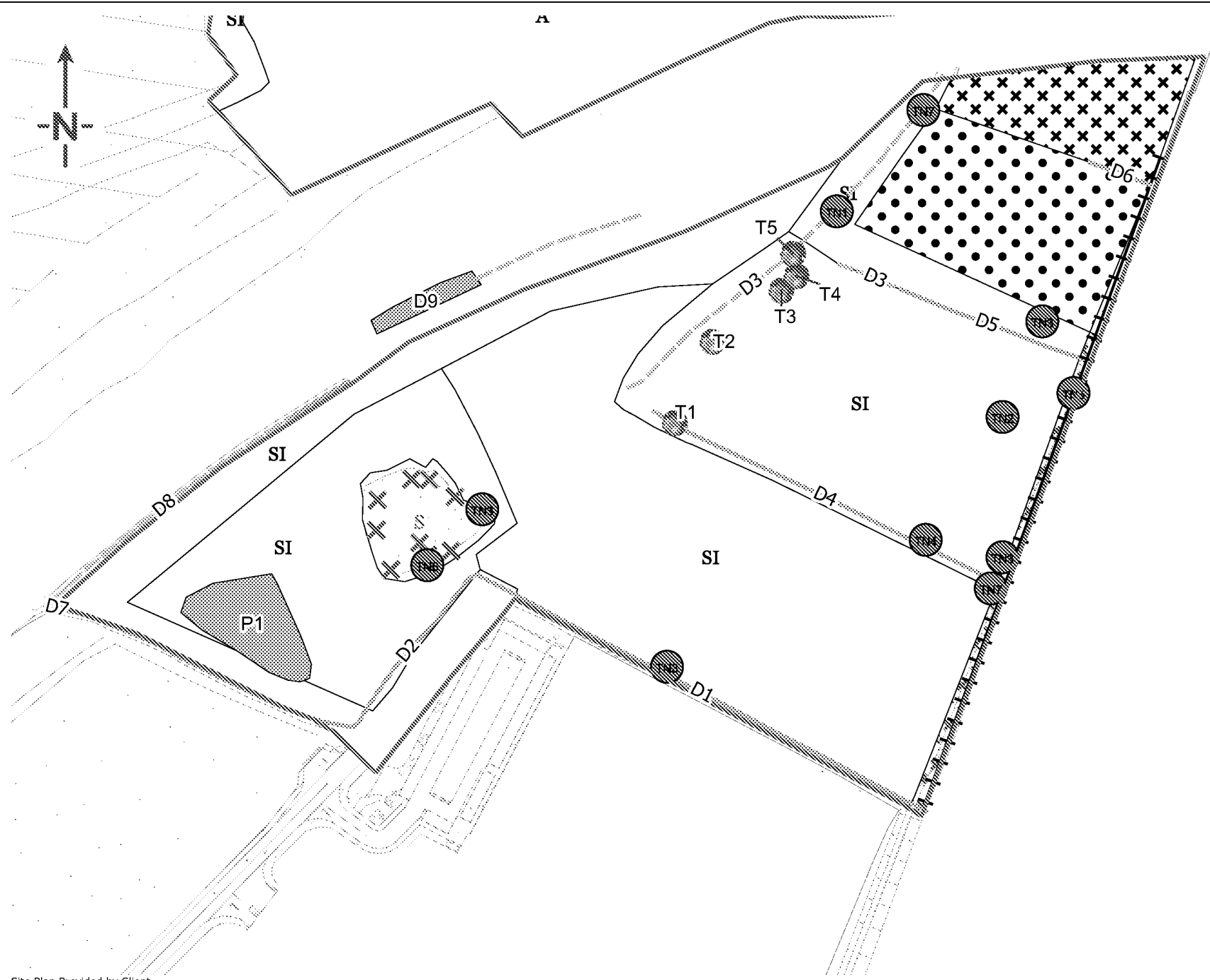
LEGEND

 Site Boundary



Service Layer Credits: Contains OS data @ Crown Copyright and Database Right 2019

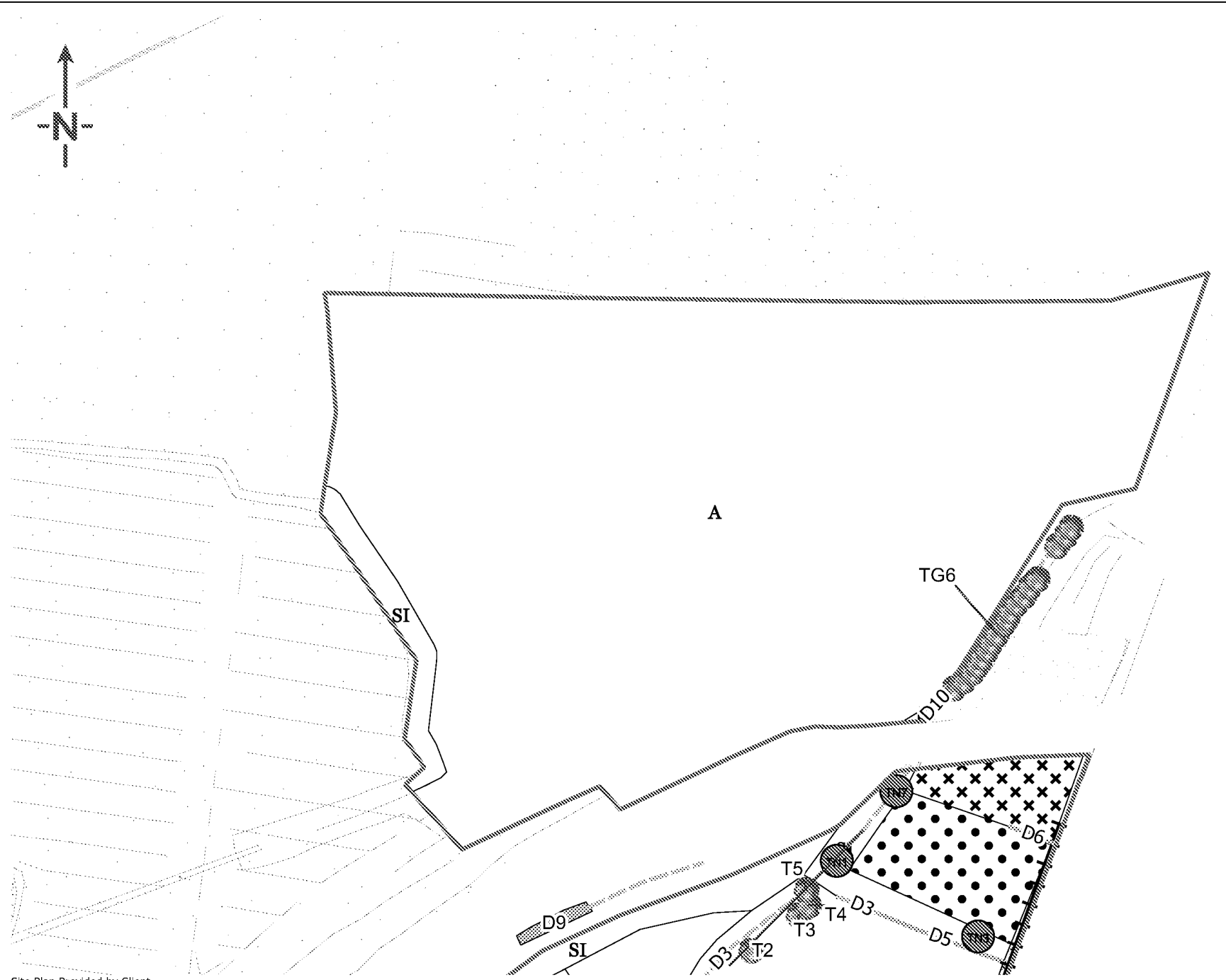
Figures 2a-b – Phase 1 Habitat Survey Plan



Site Plan Provided by Client

LEGEND

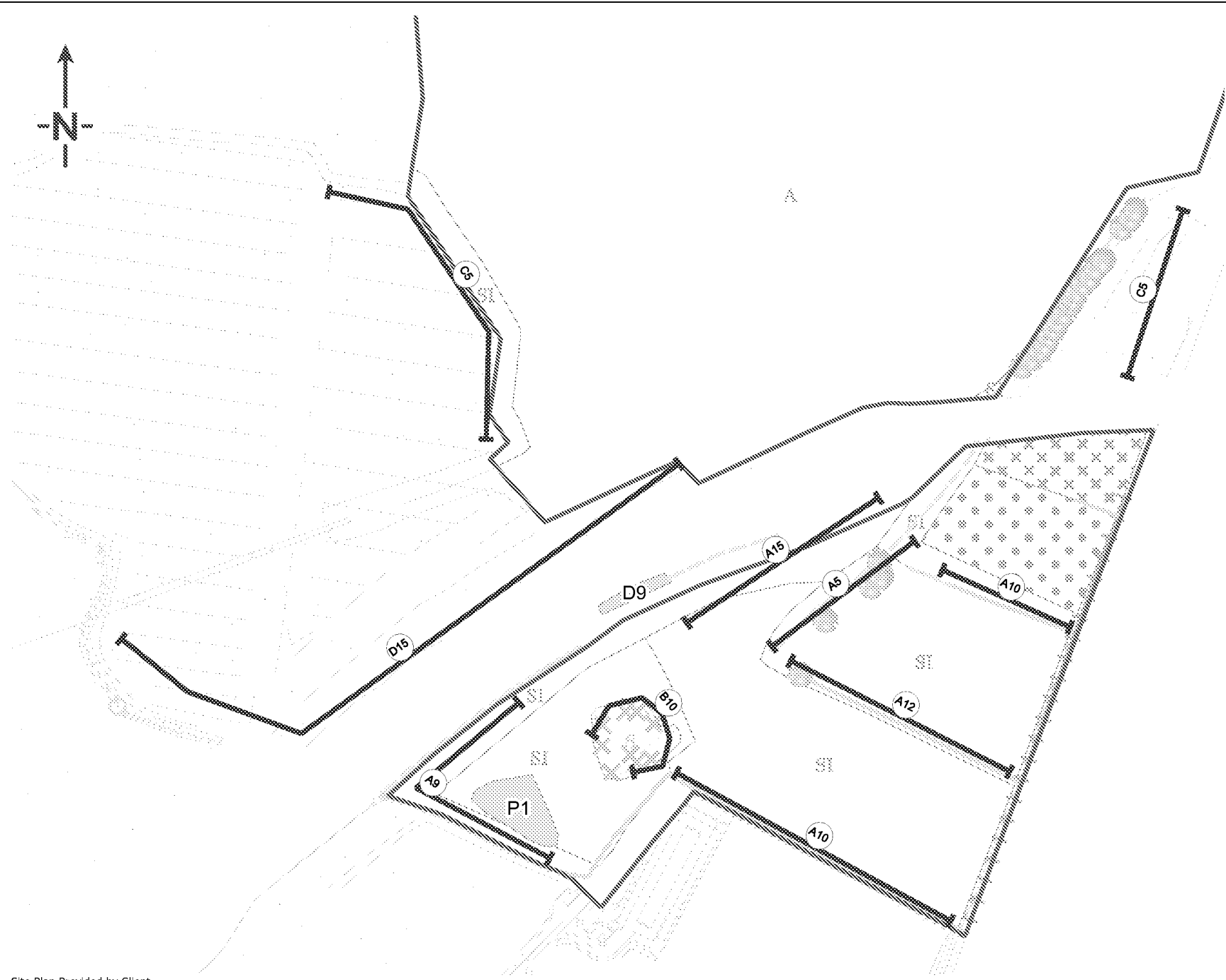
- Site Boundary
- Scattered broadleaved trees
- Target note
- Wet Ditch
- Fence
- Dry ditch
- Scattered scrub
- SI Poor semi-improved grassland
- Standing water
- Spoil
- A Arable
- Ephemeral/short perennial
- Bare ground



Site Plan Provided by Client

LEGEND	
	Site Boundary
	Scattered broadleaved trees
	Target note
	Wet Ditch
	Fence
	Dry ditch
	Scattered scrub
	Poor semi-improved grassland
	Standing water
	Arable
	Ephemeral/short perennial
	Bare ground

Figure 3 – Location of Artificial Refugia



LEGEND

 Site Boundary

 Location and Number of Artificial Refugia

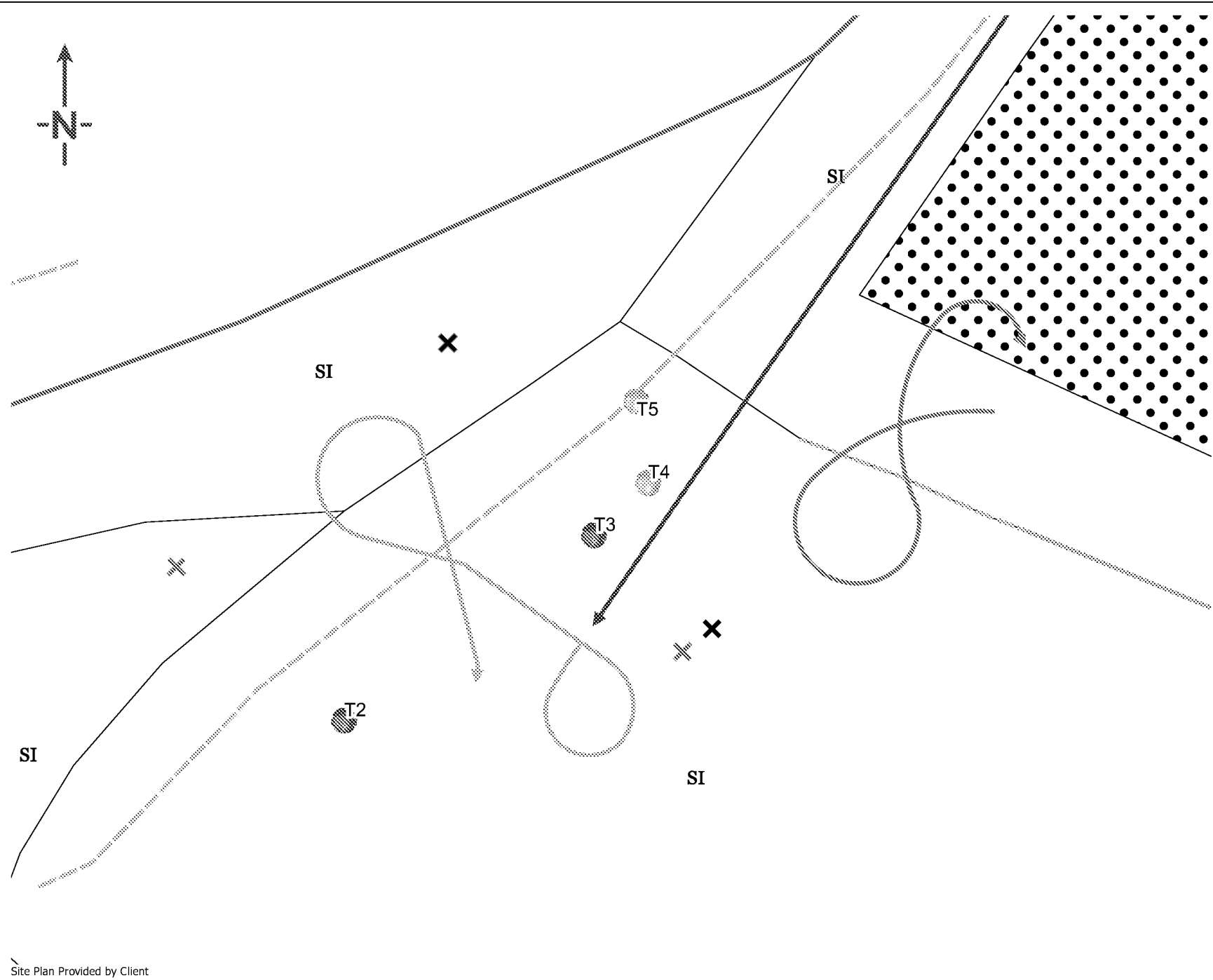
Site Plan Provided by Client



TITLE:
 Location of Artificial Refugia
 Bognor Regis, Oldlands Farm
 West Sussex

DRAWN BY: CD	SCALE (@A4): 1:3,300	PROJECT NO: 20-1543.09
CHECKED BY: JS	REVISION: -	FIGURE NO:
DATE: 21 July 2021	3	

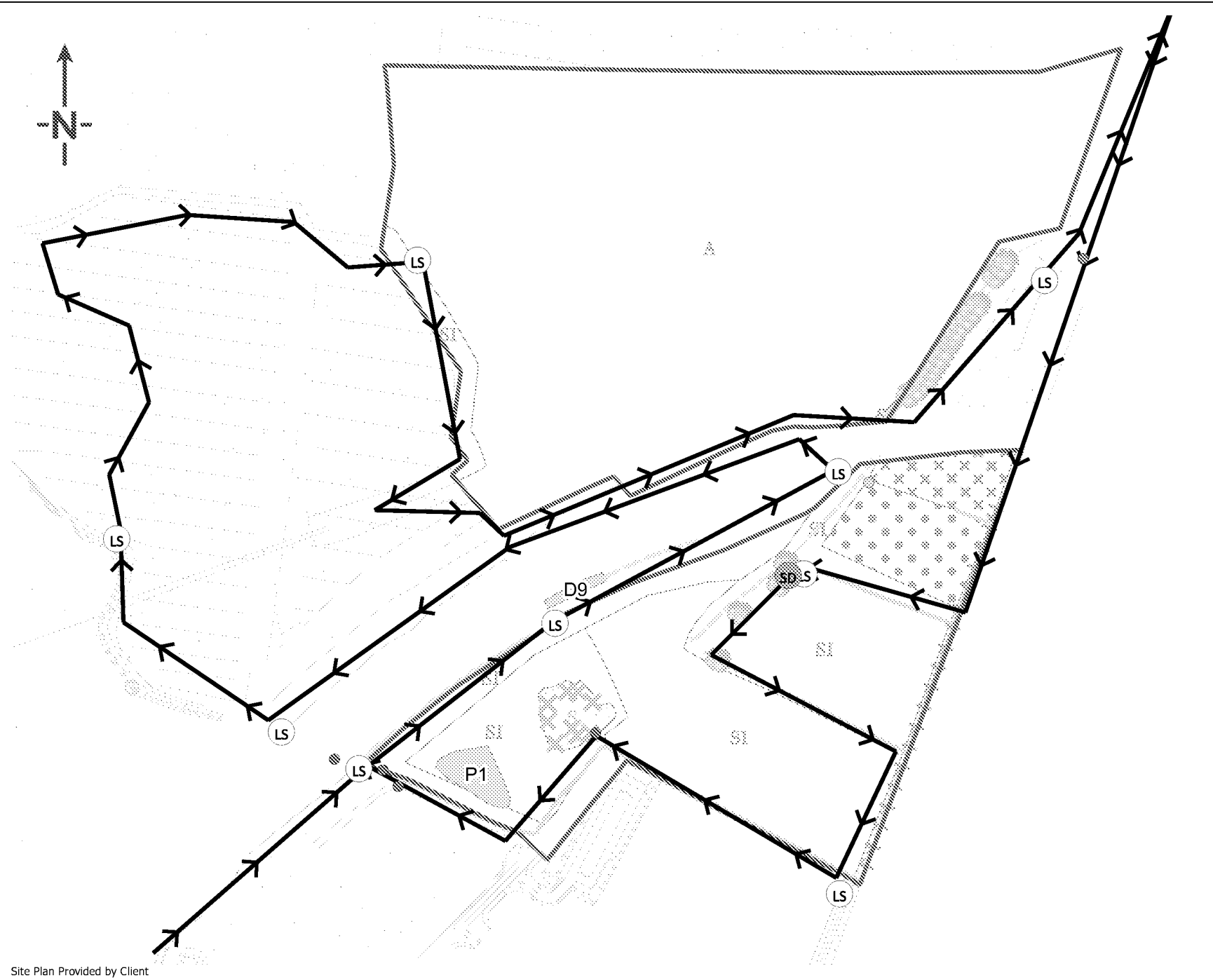
Figure 4 – Locations of Surveyors and Results of Dusk Emergence Surveys



- ### LEGEND
- Site Boundary
 - Tree with High Bat Roost Potential
 - Tree with Moderate Bat Roost Potential
 - Bat Commuting Activity (7th June 2021)
 - Bat Foraging Activity (7th June 2021)
 - Bat Foraging Activity (24th May 2021)
 - Location of Surveyor (24th May 2021)
 - Location of Surveyor (7th June 2021)

Site Plan Provided by Client

Figure 5 – Bat Activity Transect Survey



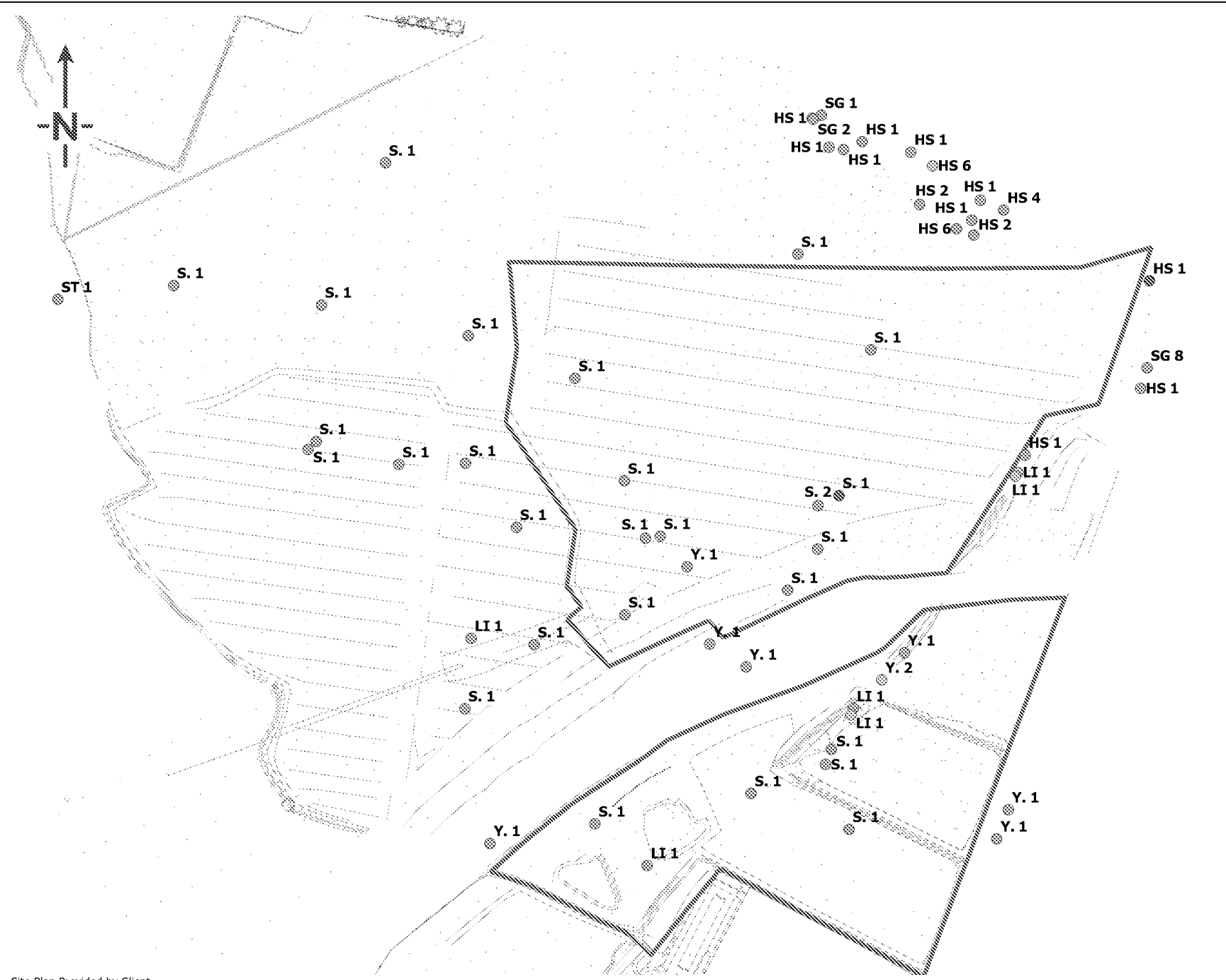
Site Plan Provided by Client

LEGEND

- Site Boundary
- Transect Route
- Static Bat Detector Location
- Listening Stop
- Brown Long-eared bat
- Common pipistrelle
- Myotis sp.

DRAWN BY: CD	SCALE (@A4): 1:3,800	PROJECT NO: 20-1543.09
CHECKED BY: JS	REVISION: -	FIGURE NO: 5
DATE: 21 July 2021		

Figure 6a – Distribution of Breeding Red List BoCC



LEGEND



Site Boundary



Confirmed Breeder



Possible Breeder



Probable Breeder

HS - House Sparrow

LI - Linnet

S. - Skylark

SG - Starling

ST - Song Thrush

Y. - Yellowhammer

Site Plan Provided by Client

TITLE:

Distribution of Breeding Red List BoCC
Bognor Regis, Oldlands Farm
West Sussex

DRAWN BY:

CD

SCALE (@A4):

1:4,400

PROJECT NO:

20-1543.09

CHECKED BY:

JS

REVISION:

3

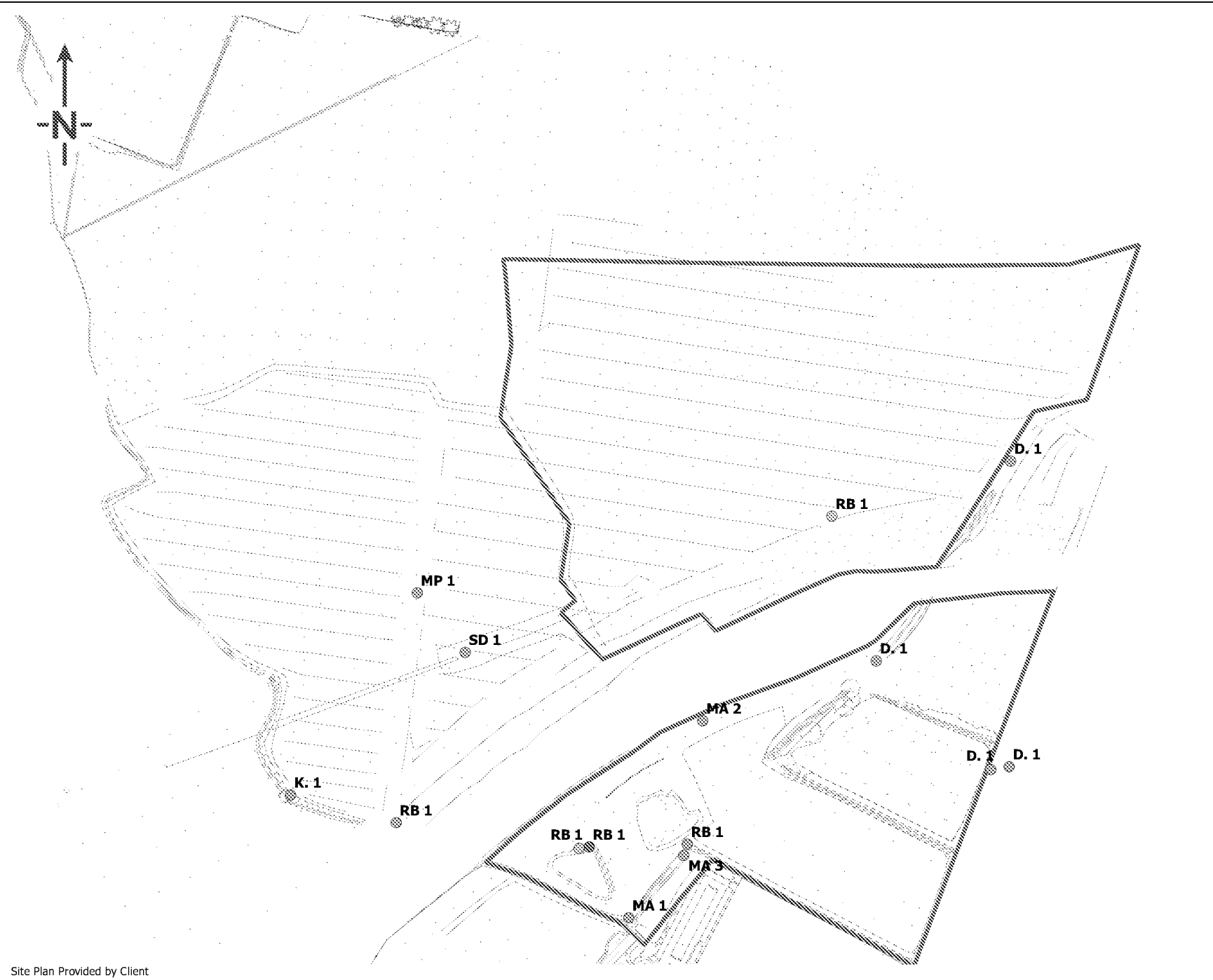
FIGURE NO:

6a

DATE:

21 July 2021

Figure 6b – Distribution of Breeding Amber List BoCC



Site Plan Provided by Client

LEGEND

Site Boundary

Confirmed Breeder

Possible Breeder

Probable Breeder

D. - Dunnock

K. - Kestrel

MP - Meadow Pipit

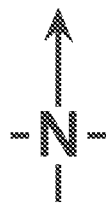
RB - Reed Bunting

MA - Mallard

SD - Stock Dove

DRAWN BY: CD	SCALE (@A4): 1:4,400	PROJECT NO: 20-1543.09
CHECKED BY: JS	REVISION: 3	FIGURE NO:
DATE: 21 July 2021		6b

Figure 7 – Indicative Locations of Bat and Bird Boxes

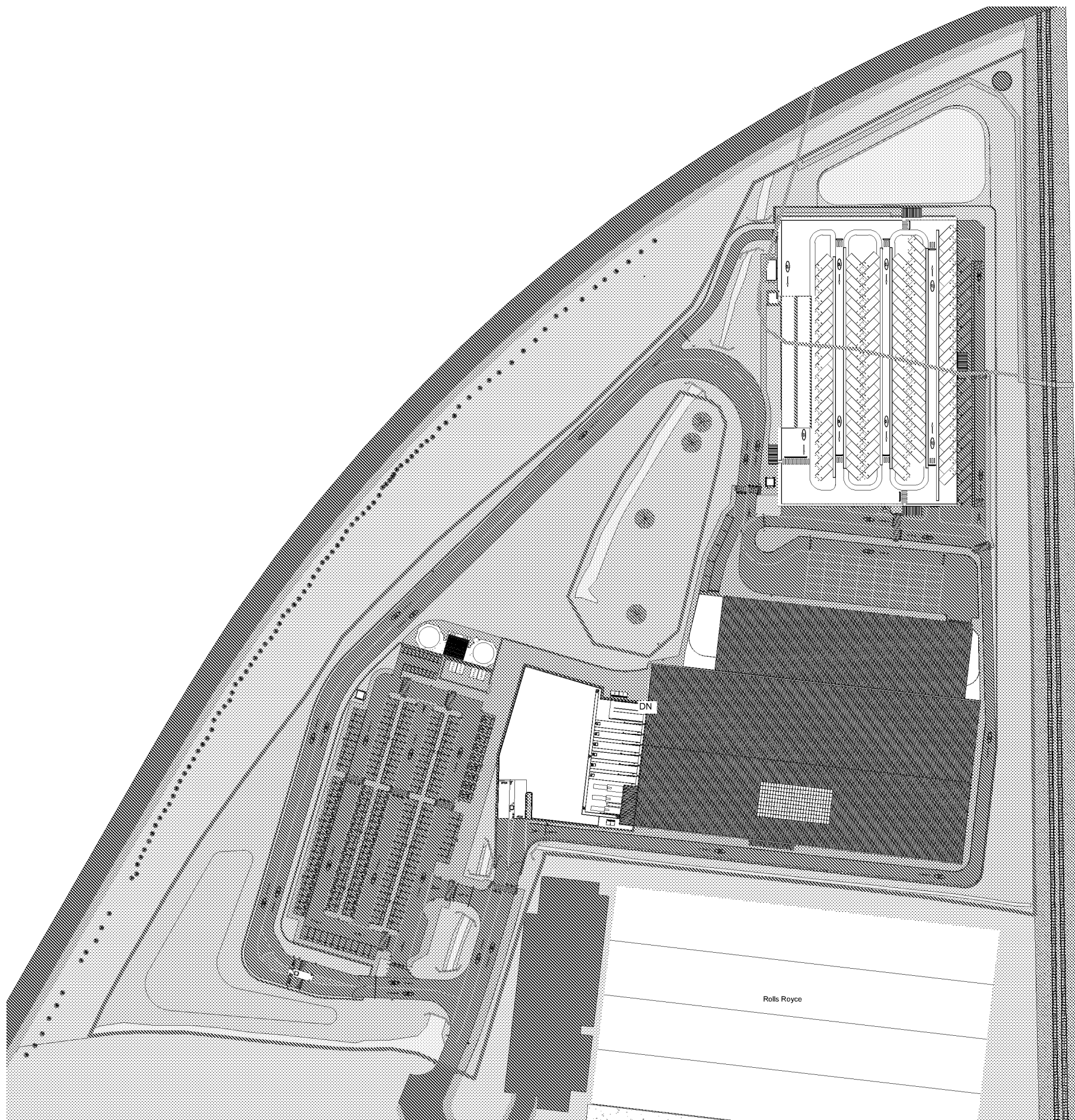


LEGEND

Site Boundary

Indicative Location of Bat Boxes on Poles

Indicative Location of Bird Boxes

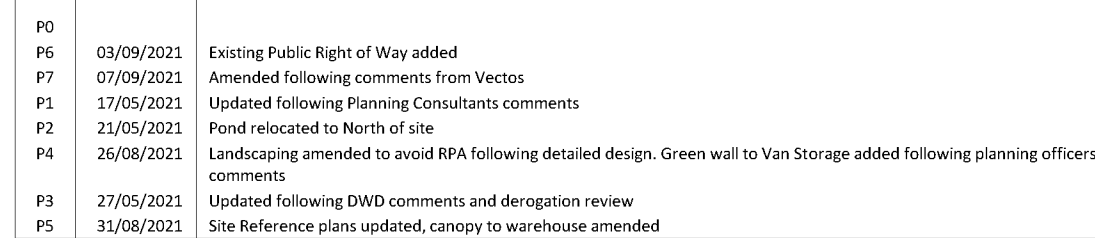


Site Plan Provided by Client

Drawing 1 – 21023 - ASA - V0 - XX - DR - A - PL03 -
(S2 - P7)



NOTES:



REV	DATE	DESCRIPTION
REVISIONS		

PROJECT TITLE				
Bognor Regis				
DRAWING TITLE				
Proposed Site Plan				
RIBA STAGE		STATUS	DRAWN BY	CHECKED BY
PLANNING			DE	GC
SHEET	SCALE	DATE	SUITABILITY	REVISION
A1	1 : 1000	30/04/2021	S2	P7
DRAWING NO:				
21023 - ASA - V0 - XX - DR - A - PL03 - (S2 - P7)				

CLIENT



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Appendix A – Relevant Legislation

Relevant Legislation

National Planning Policy Framework

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

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

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

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

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

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

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

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

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

The Conservation of Habitats and Species Regulations 2017, as amended

The Conservation of Habitats and Species Regulations 2017, as amended, are the British response to the Habitats & Species Directive 1992, and consolidate all the various amendments made to the Conservation (Natural Habitats, &c.) Regulations 1994 in respect of England and Wales. The 1994 Regulations transposed

Council Directive 92/43/EEC on the conservation of natural habitats and of wild fauna and flora (EC Habitats Directive) into national law.

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

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

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

The Countryside and Rights of Way (CRoW) Act 2000

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

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

The Natural Environment and Rural Communities (NERC) Act 2006

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

The Hedgerow Regulations 1997

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

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

Species

Birds

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

Amphibians

All native amphibians are protected under the WCA 1981 (as amended), with some species also protected under the European Habitats Directive (92/43/EC), transposed in England and Wales through the Conservation

of Habitats and Species Regulations 2017. All amphibians are protected from keeping, transporting, selling or exchanging. This means that in practice reasonable measures must be taken to avoid their incidental mortality.

The Great Crested Newt (GCN) is protected under the Conservation of Habitats and Species Regulations 2017 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.

Otters

Otter *Lutra lutra* is afforded strict protection under Section 9 of the WCA 1981 (as amended) on Schedule 5 of the WCA 1981 (as amended) and Annex IV of the Conservation of Habitats and Species Regulations (2017). They also receive protection through their inclusion in Schedule 5 of the WCA 1981 (as amended).

Under the legislation, it is an offence to intentionally capture; injure or kill an otter; intentionally or recklessly damage or destroy a breeding site or resting place of an otter; intentionally or recklessly disturb an otter while it is occupying a structure or place which it uses for shelter or protection; obstruct access to any structure or place which it uses for that purpose; possess or control a live or dead animal, or part of; sell, offer for sale, possess or transport for the purpose of sale, a live or dead animal or part of one.

Water Voles

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

Legal protection makes it an offence to:

- ▲ Intentionally kill, injure or take (capture) a water vole;
- ▲ Possess or control a live or dead water vole, or any part of a water vole;

- ⌘ Intentionally or recklessly damage, destroy or obstruct access to any structure or place which water voles use for shelter or protection; or intentionally or recklessly disturb water voles while they are using such a place; and
- ⌘ Sell, offer for sale or advertise for live or dead water voles.

Invasive Species

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

The most widespread of these are Japanese knotweed *Fallopia japonica* and giant hogweed *Heracleum mantegazzianum* which are also 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

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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 – Recently cleared scrub vegetation on drain

Target Note 2 – Pair of skylarks within field

Target Note 3 – Rubble, spoil, and brash piles

Target Note 4 – Possible sett entrance, partially submerged.

Target Note 5 – Badger latrine outside of Site boundary

Target Note 6 – Possible badger sett entrance

Target Note 7 – Areas of ephemeral pooled water associated with drains

Appendix E – Site Photographs

Site Photographs



Photograph 1 – Scattered trees along ditches



Photograph 2 – Scattered scrub



Photograph 3a – Poor semi-improved grassland



Photograph 3b – Southern grassland



Photograph 4 – Ephemeral vegetation



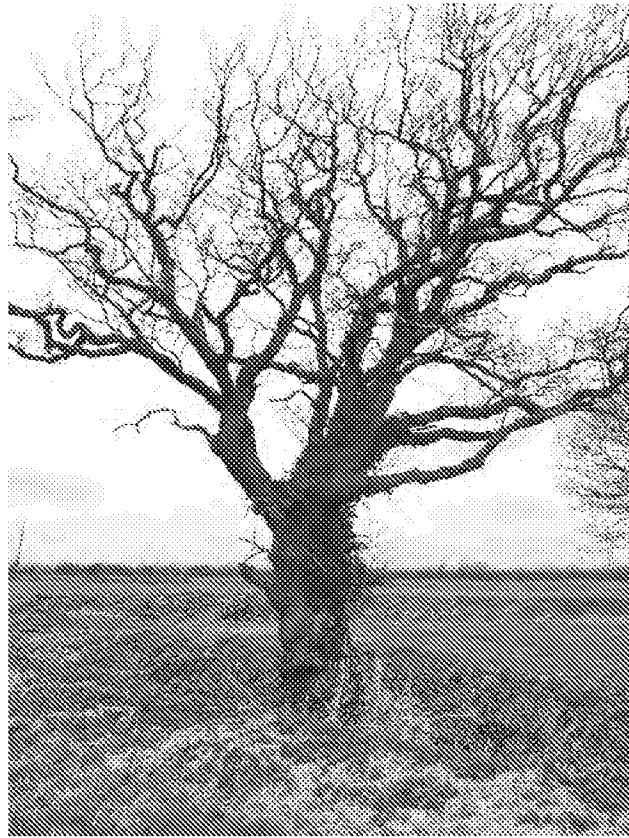
Photograph 5 – Bare ground, flooded



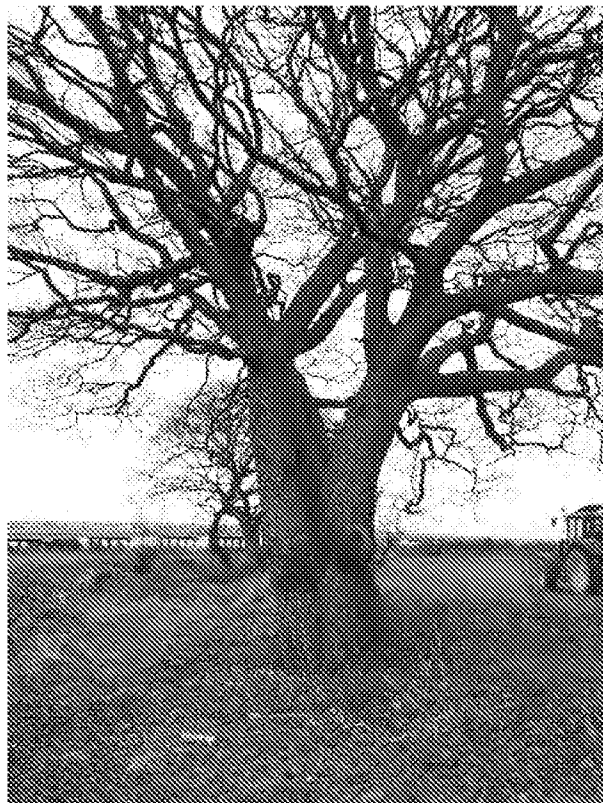
Photograph 6 – Pond 1



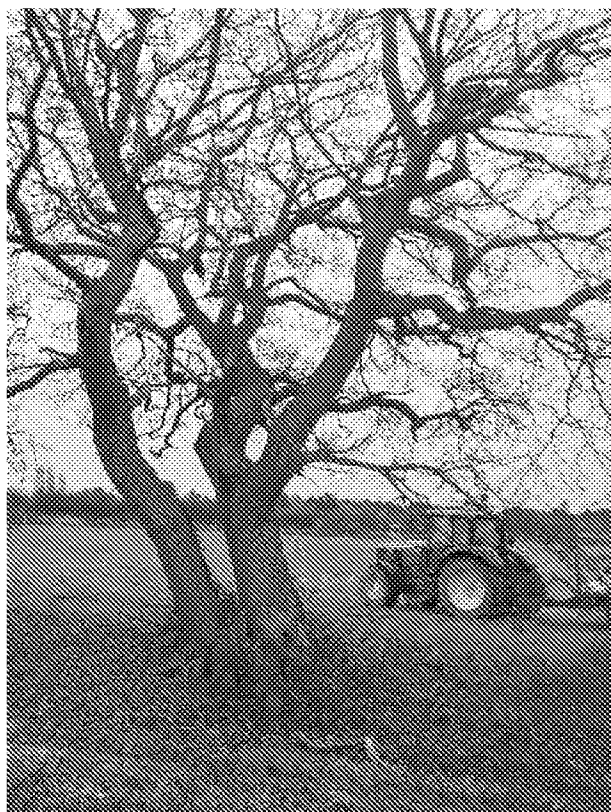
Photograph 7 – Brash piles



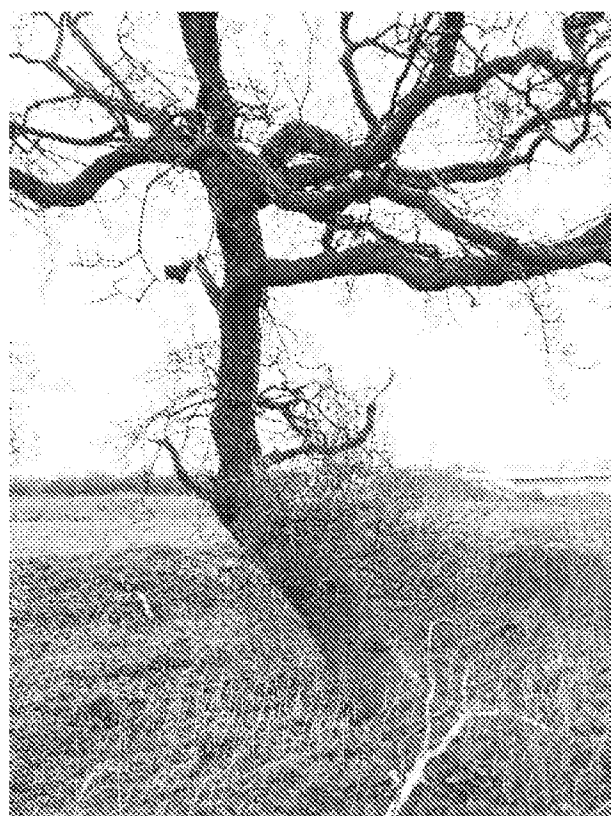
Photograph 8 – Tree 1



Photograph 9 – Tree 2



Photograph 10 – Tree 3



Photograph 11 – Tree 4



Photograph 12 – Tree 5



Photograph 13a – Badger latrine



Photograph 13b – Spoil with bramble scrub and possible sett entrance



Photograph 13c – Possible sett entrance



Photograph 14 – Ditch 1



Photograph 15 – Ditch 2



Photograph 16 – Ditch 3



Photograph 17 – Ditch 4



Photograph 18 – Ditch 5



Photograph 19 – Ditch 6



Photograph 20 – Ditch 7



Photograph 21 – Ditch 8



Photograph 22 – Ditch 9

Appendix F – Bird Species List

BTO Code	English (vernacular) Name	Scientific Name	Location			
			S	A	O	F
MA	Mallard	Anas platyrhynchos	X			
PH	Pheasant	Phasianus colchicus			X	
H.	Grey Heron	Ardea cinerea				X
BZ	Common Buzzard	Buteo buteo			X	
OC	Oystercatcher	Haematopus ostralegus			X	
JS	Jack Snipe	Lymnocyptes minimus			X	
SN	Snipe	Gallinago gallinago			X	
BH	Black-headed Gull	Chroicocephalus ridibundus	X		X	
MU	Mediterranean Gull	Ichthyaetus melanocephalus			X	
HG	Herring Gull	Larus argentatus			X	X
LB	Lesser Black-backed Gull	Larus fuscus			X	
SD	Stock Dove	Columba oenas			X	
WP	Woodpigeon	Columba palumbus	X	X	X	X
CD	Collared Dove	Streptopelia decaocto		X		
SI	Swift	Apus apus			X	
K.	Kestrel	Falco tinnunculus			X	
J.	Jay	Garrulus glandarius		X		
MG	Magpie	Pica pica	X		X	
JD	Jackdaw	Coloeus monedula				X
RO	Rook	Corvus frugilegus			X	
C.	Carrion Crow	Corvus corone	X		X	X
BT	Blue Tit	Cyanistes caeruleus		X	X	
GT	Great Tit	Parus major		X		
S *	Skylark	Alauda arvensis	X	X	X	X
CW	Cetti's Warbler	Cettia cetti			X	
LT	Long-tailed Tit	Aegithalos caudatus			X	
CC	Chiffchaff	Phylloscopus collybita			X	
RW	Reed Warbler	Acrocephalus scirpaceus	X		X	
BC	Blackcap	Sylvia atricapilla		X	X	
WH	Whitethroat	Sylvia communis	X	X	X	
WR	Wren	Troglodytes troglodytes	X	X	X	X
SG *	Starling	Sturnus vulgaris		X	X	X
B.	Blackbird	Turdus merula	X	X	X	
ST *	Song Thrush	Turdus philomelos			X	
R.	Robin	Erithacus rubecula	X	X	X	
HS *	House Sparrow	Passer domesticus		X	X	
D. *	Dunnock	Prunella modularis	X	X	X	
PW	Pied Wagtail	Motacilla alba			X	
MP	Meadow Pipit	Anthus pratensis			X	
CH	Chaffinch	Fringilla coelebs	X		X	
GR	Greenfinch	Chloris chloris		X	X	

LI *	Linnet	<i>Linaria cannabina</i>	X	X		X
GO	Goldfinch	<i>Carduelis carduelis</i>	X		X	X
Y. *	Yellowhammer	<i>Emberiza citrinella</i>	X	X	X	
RB *	Reed Bunting	<i>Emberiza schoeniclus</i>	X	X	X	
No. Species			17	18	38	10

KEY:

Emboldened - WCA Schedule 1 species

Red-listed (BoCC,4)

Amber-listed (BoCC,4)

* - EBP species

All other species are green-listed (BoCC,4) or unclassified

S -

Southern
Parcel

A - Northern Parcel

O - Outside Site / Both Parcels

F - Overflying Site only

Appendix G – Results of the Breeding Bird Survey - Bird Species Recorded and Abundance

Results of The Breeding Bird Survey – Bird Species Recorded and Abundance

Site

English Vernacular Name	Scientific Name	Survey			Conservation Status	Breeding status
		1	2	3		
Mallard	<i>Anas platyrhynchos</i>	5	1		Amber	P
Black-headed Gull	<i>Chroicocephalus ridibundus</i>			1	Amber	N
Wood Pigeon	<i>Columba palumbus</i>	1	1	1	Green	P
Magpie	<i>Pica pica</i>			1	Green	P
Carrion Crow	<i>Corvus corone</i>		2	3	Green	P
Skylark	<i>Alauda arvensis</i>	3	1	1	Red; EBP	R
Reed Warbler	<i>Acrocephalus scirpaceus</i>		2	1	Green	R
Whitethroat	<i>Sylvia communis</i>			5	Green	C
Wren	<i>Troglodytes troglodytes</i>	5	2	2	Green	P
Blackbird	<i>Turdus merula</i>	2	1	1	Green	C
Robin	<i>Erithacus rubecula</i>			1	Green	C
Dunnock	<i>Prunella modularis</i>			2	Amber	P
Chaffinch	<i>Fringilla coelebs</i>		1	1	Green	P
Linnet	<i>Linaria cannabina</i>		1	2	Red; EBP	R
Goldfinch	<i>Carduelis carduelis</i>	1			Green	P
Yellowhammer	<i>Emberiza citrinella</i>	2		1	Red; EBP	R
Reed Bunting	<i>Emberiza schoeniclus</i>	1		2	Amber; EBP	C
Totals		20	12	25		
No. Species		10	9	15		

Northern Parcel

English Vernacular Name	Scientific Name	Survey			Conservation Status	Breeding status
		1	2	3		
Wood Pigeon	<i>Columba palumbus</i>	2	1	3	Green	R
Collared Dove	<i>Streptopelia decaocto</i>			2	Green	R
Jay	<i>Garrulus glandarius</i>	1			Green	P
Blue Tit	<i>Cyanistes caeruleus</i>			3	Green	P
Great Tit	<i>Parus major</i>	1			Green	P
Skylark	<i>Alauda arvensis</i>	4	3	6	Red; EBP	C
Blackcap	<i>Sylvia atricapilla</i>			1	Green	R
Whitethroat	<i>Sylvia communis</i>			2	Green	P
Wren	<i>Troglodytes troglodytes</i>	1	2	2	Green	P
Starling	<i>Sturnus vulgaris</i>		8		Red; EBP	P
Blackbird	<i>Turdus merula</i>	1			Green	P
Robin	<i>Erithacus rubecula</i>	2	2	3	Green	C
House Sparrow	<i>Passer domesticus</i>		1	2	Red; EBP	N
Dunnoek	<i>Prunella modularis</i>			1	Amber; EBP	P
Greenfinch	<i>Chloris chloris</i>			3	Green	P
Linnet	<i>Linaria cannabina</i>		2		Red; EBP	R
Yellowhammer	<i>Emberiza citrinella</i>			1	Red; EBP	R
Reed Bunting	<i>Emberiza schoeniclus</i>			1	Amber; EBP	R
Totals		12	19	30		
No. Species		7	7	13		

Breeding Status evidence can be broken down into four sections, each with their own codes:

(C) - Confirmed breeder

DD – distraction display or injury feigning
UN – used nest or eggshells found from this season
FL – recently fledged young or downy young
ON – adults entering or leaving nest-site in circumstances indicating occupied nest
FF – adult carrying faecal sac or food for young
NE – nest containing eggs
NY – nest with young seen or heard

(R) - Probable breeder - Evidence accumulated during the survey indicates that the bird species is breeding on site.

P – pair in suitable nesting habitat
T – permanent territory (defended over at least 2 survey occasions)
D – courtship and display
N – visiting probable nest site
A – agitated behaviour
I – brood patch of incubating bird (from bird in hand)
B – nest building or excavating nest-hole

(P) - Possible breeder - Evidence accumulated during the survey indicates that the bird species could be breeding on site, but the evidence is less conclusive than that obtained for probable breeders.

H – observed in suitable nesting habitat
S – singing male

(N) - Non-breeder

F – flying over
M – migrant
U – summering non-breeder
UH – observed in unsuitable nesting habitat

Appendix H – Biodiversity Net Gain Calculator (issued separately)