

The Ageas Bowl: 5th Hole Motorway Acoustic Bund

Preliminary Ecological Appraisal Report

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1 INTRODUCTION

1.1 BACKGROUND

Johns Associates Ltd was commissioned by Hampshire Cricket Club Ltd in February 2023 to undertake an ecological appraisal and Biodiversity Net Gain (BNG) Assessment of proposals to modify an existing artificial boundary bund associated with the 5th hole at Boundary Lakes Golf Club, SO30 3XH. The proposed works area is located towards the south of the wider Ageas Bowl site, to the north-west of the M27 Hedge End Interchange roundabout (hereafter referred to as the 'Site').

The Site has a central grid reference of SU48021341 and an indicative location plan is shown in Figure 1.

1.2 SUMMARY OF PROPOSALS

Recent highways work resulted in the removal of all screening vegetation between Junction 7 and the boundary of Boundary Lakes Golf Club's 5th hole. This has resulted in a notable increase in vehicle noise, a visual impact and change in woodland character at this part of the course, and the removal of any safety benefits the previous mature vegetation provided. In addition, this vegetation removal creates a new gap in the perimeter vegetation which provides potential connectivity for dormouse.

Hampshire Stadiums Ltd are applying for planning permission to increase the size of an existing boundary bund, which will involve shaping and the importation of soils. The purpose of these proposals is to create a visual/noise screen for the adjacent Hedge End Interchange roundabout. The proposals will involve the loss of other-neutral grassland and several broadleaved trees; however, most of the existing trees will be retained. Access will be provided by a temporary bridge structure to avoid construction within tree root protection areas and to avoid damage to the underground fuel pipe.

1.3 PURPOSE OF THIS REPORT

A Preliminary Ecological Appraisal is required to support the planning application for the proposed changes to the existing bund to ensure compliance with national and local policy along with nature conservation legislation. It also feeds into and informs the adopted measures required to avoid/mitigate potential effects on ecological receptors and enhance the natural environment.

Figure 1: Site Location Plan



2 METHODOLOGY

2.1 DESK STUDY

A desk study was undertaken to collate all relevant existing information relating to the Site and its surrounding area. The data was used to inform the scope of the subsequent site survey and to enable a full assessment of the likely effects of the proposed activities on any sites, habitats or species of conservation interest to be carried out.

The following sources were used as appropriate:

- Multi Agency Geographic Information for the Countryside (MAGIC) Records and citations for designated sites¹
- NBN Atlas² Records of legally protected and notable species for the Site and the wider local area
- Google Maps³
- Ordnance Survey maps⁴ to identify any ponds within 500m of the Site, along with the presence of any significant barriers to the migration of great crested newt from these ponds to the Site itself.
- Historic data obtained from the Hampshire Biodiversity Information Centre (HBIC) from late 2017 including the site and a wider 2km area considered to still be of relevance.

Please refer to Appendix A for a full desk study baseline.

2.2 FIELD SURVEY

2.2.1 Extended UK Habitat Classification Survey

The on-Site habitats were classified following UK Habitat Classification (UKHab) (2020) guidelines, which provides a more detailed interpretation of baseline habitat survey data than previous habitat classifications systems, such as Phase 1 Habitat Assessments.

The professional edition of UKHab “UK Habitat Classification – Professional Edition” (UKHab-P) was used which includes Priority Habitat Types, all Annex 1 Habitats and the habitats listed in EUNIS. The classification of primary habitats is hierarchical with five levels, which include terrestrial/freshwater/marine, ecosystem types, broad habitats, priority habitats and Annex 1 habitats.

Habitat types were assigned a primary code to a hierarchical level of at least three, and secondary codes were used to further clarify the habitat and record additional information linked to the primary habitat such as habitat management. The full range of secondary codes following UKHab-P were used, which are grouped under the following headings of which the first three listed are considered mandatory sections:

- Habitat Mosaics (10 - 18)
- Habitat Complexes (19 – 32)
- Origin (33 – 49)
- Management (51 – 85)
- Land Use (86 – 116)
- Environmental Qualifier (117 – 138)
- Species Feature (139 – 166)

¹ www.gov.uk , www.designatedsites.naturalengland.org.uk

² www.nbnatlas.org.uk

³ www.maps.google.com

⁴ www.ordnancesurvey.co.uk

- Hydrological Regime (167 – 199)

Green Infrastructure (200 – 1232) - The Green Infrastructure section is numbered from 200 upwards. As this section is hierarchical, the first level of the GI hierarchy goes up in hundreds (200, 300 etc.), the second in tens (210, 220 etc.) and the third in ones (211, 212 etc.).

Where appropriate, maps are supplemented with target notes which provide specific information on habitats present that are too limited in extent to map at the scale at which data is presented, or the presence of species and habitats of ecological interest.

An annotated habitat map together with descriptions of the recorded habitat types was produced, which was subsequently digitized using a geographical information system (QGIS). The survey also included identification of any non-native invasive plant species. Flora taxonomy follows the nomenclature detailed in New Flora of the British Isles (4th Edition) (Stace C., 2019). Flora, where appropriate, are given a descriptive score of abundance using the DAFOR scale, as follows:

- D – Dominant
- A – Abundant
- F – Frequent
- – Occasional
- R – Rare
- L – Locally (to be used as a prefix for any of the above)
- V – Very (to be used as a prefix for any of the above)

2.2.2 Bats

Bat activity survey data exists for the wider Ageas Bowl and Boundary Lakes Golf Course Site from automated bat detector surveys in 2020 and previous years (see Appendix C).

Habitat Suitability Assessment

The habitat suitability for bats was assessed as part of the extended UKHab survey. The habitats on Site were assessed for their suitability for foraging and commuting bats. The assessment was also contextualized through examination of suitable habitat and features in the wider landscape and possible flight-lines across the proposed Site following natural linear features such as hedgerows.

A preliminary ground-level roost assessment of the trees within the Site was also undertaken, looking for features that could support roosting bats, known as Potential Roost Features (PRFs), and evidence of bats such as droppings, scratch marks and urine staining.

The assessment followed the criteria described in Table 1.

Table 1: Guidelines for assessing the potential suitability of proposed development sites for bats based on presence of habitat features within the landscape, to be applied using professional judgement (Bat Conservation Trust, 2016)

Suitability	Roosting Habitats	Commuting and Foraging Habitats
Negligible	Negligible habitat features on Site likely to be used by roosting bats.	Negligible habitat features on Site likely to be used by commuting or foraging bats.

Suitability	Roosting Habitats	Commuting and Foraging Habitats
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions (a) and/or suitable surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PRFs but with none seen from the ground or features seen with only very limited roosting potential (b).	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or un-vegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitats. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions (a) and surrounding habitat but unlikely to support a roost of high importance/ value for the local bat population (c).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging eg trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions (a) and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.

2.2.3 Dormouse

Dormouse are known to be present within a single localised part of the wider Ageas Bowl site following tube surveys undertaken in 2007/08 by Entec, in 2011 by Johns Associates and again in 2016-17 and 2019 (together with inspection of nest boxes). These historic surveys informed the planning application and construction delivery for the initial development of the Ageas Bowl golf course. Particular areas of habitat have since been managed to minimise impacts to dormouse and to provide optimum habitat for this species. Such habitat does not exist within the proposed site for the modification of the bund – and has been removed from the off site but adjacent highways land.

2.2.4 Great Crested Newt and Other Amphibians

There are no suitable water bodies that could be used by great crested newt (or other amphibians) within 500m of the Site, and those within Boundary Lakes and Telegraph woods were shown to not include GCN eDNA. As such it is considered reasonable to conclude there is a negligible risk of encountering this species and that no further surveys are required.

2.3 LIMITATIONS CONSTRAINTS AND ASSUMPTIONS

The findings of this report are valid at the time of writing (April 2023). Should there be delays to the project timetable and/or implementation of the proposed development, updated desk study and/or survey work may be required. In this instance, advice should be sought to ensure the data, recommendations and conclusions set out in this report remain valid.

It has been assumed that the development proposals are as described in this document and that all proposed mitigation, enhancement and management measures will be implemented in full.

No other limitations or constraints with regard to the field survey or desk study were encountered and therefore the therefore the conclusions and recommendations within this Preliminary Ecological Appraisal are considered valid.

3 RESULTS

3.1 DESK STUDY

3.1.1 Statutory Designated Sites

There are seven statutory designated site within 5 km of the Site boundary. Details are provided in Table 2.**Error! Reference source not found.**

Table 2: Statutory Designated Sites

Site	Designation	Distance	Feature	Potential Impact
River Itchen	SAC, SSSI	3.3km North-west	The Site and comprises classic chalk stream and river, fen meadow, flood pasture and swamp habitats. Significant populations of the nationally-rare southern damselfly <i>Coenagrion mercuriale</i> and assemblages of nationally-rare and scarce freshwater and riparian invertebrates, mammals, freshwater fish and breeding birds.	None – works will have no impact on the statutory designated site.
Moorgreen Meadows	SSSI	1.6km North-east	The site is notified for neutral meadows and alder <i>Alnus</i> wood along a small tributary of the River Hamble. The sward comprises at least 17 co-dominant herbs and grasses and is of exceptional scientific importance for the populations of marsh orchids.	None – works will have no impact on the statutory designated site.
Upper Hamble Estuary and Woods	SSSI	4.2km South-east	Located approximately 2.6km south east of the Site, this SSSI comprises the uppermost section of the estuary of the River Hamble and its flanking zones of saltmarsh, reedswamp and ancient semi-natural woodland. Twelve types of ancient broad-leaved woodland occur in the SSSI and collectively comprise one of the most ecologically diverse woodland areas in central southern England comprising flora, invertebrates and birds.	None – works will have no impact on the statutory designated site.
Solent & Southampton Water	SSSI, SPA, Ramsar	2.9km South-east	This site is notified for saltmarsh, reedswamp, ancient semi-natural woodland and mudflat habitats. A variety of water bird assemblage during breeding and over-winter. It also supports an important assemblage of rare plants and invertebrates. At least 33 British Red Data Book invertebrates and at least eight British Red Data Book plants are represented on site.	None – works will have no impact on the statutory designated site.

Solent Maritime	SAC	2.9km South-east	The Natura 2000 Standard Data Form for the Solent Maritime SAC gives the qualifying features of interest as: Annex I Habitats that are a Primary Reason for Site Selection; Estuaries, Spartina swards (<i>Spartinion maritimae</i>), Atlantic salt meadows (<i>Glauco-Puccinellietalia maritimae</i>).	None – works will have no impact on the statutory designated site.
Lincegrove and Hackett's Marshes	SSSI	4.4km South-east	This site is located approximately 4.4km south of the Site and comprises mature saltmarsh on the west bank of the River Hamble estuary. The marshes are elevated to about HWMST and dissected by complex patterns of drainage creeks. The saltmarsh vegetation is dominated by sea purslane <i>Halimione portulacoides</i> and common cord-grass <i>Spartina anglica</i> .	None – works will have no impact on the statutory designated site.
Lee-on-the-Solent to Itchen Estuary	SSSI	4.6km South-west	The Site and comprises extensive intertidal muds with a littoral fringe of vegetated shingle, saltmarsh, reedbed, marshy grasslands and deciduous woodland. The site is an integral part of Southampton Water which is of international importance for over-wintering dark-bellied geese, and of national importance for three species of wildfowl (great-crested grebe, teal and wigeon) and five species of wader (black-tailed godwit, dunlin, grey plover, ringed plover, redshank). The site also supports an outstanding assemblage of nationally scarce coastal plants and high densities of benthic invertebrates.	None – works will have no impact on the statutory designated site.

Eight statutory Local Nature Reserves (LNRs) are also present within 5km of the Site. Details of these are shown in Table 3.

Table 3: Local Nature Reserves (LNRs) within 5km of the Site

Site Name	Reason for Designation	Distance and Direction from Site
Wildern LNR	This urban fringe site features a mosaic of wetland habitats linked by streams, including ponds, flooded meadows, woodlands and a valley mire, providing important habitats for birds and invertebrate species.	0.3km south-east
Chessel Bay LNR	Only remaining long stretch of undeveloped, natural shoreline in the lower Itchen river; composed of a narrow strip of woodland, a parallel strip of shingle and salt-marsh (containing iris, sea club rush, reeds and sea asters), and mudflats, which at low tide provide feeding grounds for wading birds and wildfowl.	3.8km west
Hackett's Marsh LNR	The meadows are species-rich and support large hybrid heath spotted orchid populations, meadow thistle, corky fruited water dropwort, devils-bit scabious and sneezewort. The saltmarsh vegetation is dominated by cord grass and saltmarsh grass with sea purslane, glasswort, sea lavender, thrift, sea aster, sea rush and sea club-rush. Supports nationally rare invertebrates and is an important feeding area for wading birds.	4.1km south
Peartree Green LNR	Diverse range of habitats supporting notable plants, including pyramidal orchid, and invertebrate species such as marbled white and white letter hairstreak butterflies.	4.1km west
Manor Farm LNR	A park with woodland, grassland and river habitats. Wildlife present such as roe deer, curlews, skylarks, wildflowers, insects and reptiles.	2.2km south east
Westwood Woodland Park LNR	Ancient woodland and grassland covering 150acres.	4.1km south west
Netley Common LNR	Open heathland including grassland with islands of scrub and gorse, surrounded by a mixed woodland fringe.	1.5km south
Miller's Pond LNR	Acid grassland, semi-natural woodland and pond.	3.5km south west

3.1.2 Non-Statutory Sites

There 19 are non-statutory designated sites within 2km of the Site, all of which are Sites of Importance for Nature Conservation (SINC). Further information is provided in Table 4 below.

Table 4: Non-Statutory Sites located within 2km of the Site

Site Name	Reason for Designation	Grid Reference	Distance from Site
Shoreburs Greenway	Woodland with significant element of ancient semi-natural woodland surviving and comprising important community types of restricted distribution in the County. Semi-improved grasslands which retain a significant element of unimproved grassland. Site supports one or more notable species. Sites occurs in area otherwise deficient in conservation interest, and/or are known to be of particularly high value to local communities. SINC qualifying Species supported: <i>Bembecia ichneumoniformis</i> (Six-Belted Clearwing) [NS] <i>Glyceria fluitans x notata</i> (Hybrid Sweet-Grass) [CS] <i>Misopates orontium</i> (Weasel's Snout) [RDB] <i>Satyrion w-album</i> (White-letter Hairstreak) [s41] <i>Spergula arvensis</i> (Corn Spurrey) [RDB]	SU45641153	1.8km south west
West End Copse	Ancient semi-natural woodland. Other woodland where there is a significant element of ancient semi-natural woodland surviving.	SU45801450	1.8km north west

Sholing Common	Semi-improved grassland which retains a significant element of unimproved grassland. Site occurs occur in area otherwise deficient in conservation interest, and/or are known to be of particularly high value to the local community.	SU46141242	1.5km south west
Hatch Grange Meadows	Semi-natural woodland comprising important community types of restricted distribution in the County. Semi-improved grassland which retains a significant element of unimproved grassland.	SU46601490	1.8km north west
Thornhill Park Plantation	Semi-improved grassland which retains a significant element of unimproved grassland. Site occurs occur in area otherwise deficient in conservation interest, and/or are known to be of particularly high value to the local community.	SU46671285	0.8km south west
Harefield Copse	Woodland with significant element of ancient semi-natural woodland surviving.	SU46701320	0.8km west
West End Covered Reservoir	Grassland impoverished through inappropriate management but retains sufficient elements of relic unimproved grassland to enable recovery. Site supports one or more notable species. SINC qualifying Species supported: <i>Orchis morio</i> (Green-Winged Orchid) [NI]	SU47101362	0.5km north west
Telegraph Woods	Pasture woodland and wooded common. Areas of wooded/afforested heathland which retains significant remnants of heathland vegetation which would enable recovery.	SU47301380	0.2 km north
Netley Common, Southampton	Semi-improved grassland which retains a significant element of unimproved grassland. Area of heathland vegetation; including matrices of dwarf shrub, acid grassland, valley mires and scrub. Area of wooded/afforested heathland which are contiguous with, or form an integral part of an open area of heathland. Fens, flushes, seepages, springs, inundation grassland etc. supports a flora and fauna characteristic of unimproved and waterlogged (seasonal or permanent) conditions.	SU47551178	1.5km south
Dumbleton's Copse	Area of wooded/afforested heathland which are contiguous with, or form an integral part of an open area of heathland.	SU47601210	1km south
Windhover (Netley Common South)	Area of heathland vegetation; including matrices of dwarf shrub, acid grassland, valley mires and scrub. Areas of wooded/afforested heathland which retains significant remnants of heathland vegetation which would enable recovery.	SU47801140	1.8km south
Netley Common, Hound	Semi-improved grassland which retains a significant element of unimproved grassland. Area of heathland vegetation; including matrices of dwarf shrub, acid grassland, valley mires and scrub. Area of wooded/afforested heathland which are contiguous with, or form an integral part of an open area of heathland. Fens, flushes, seepages, springs, inundation grasslands etc. that support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permanent) conditions.	SU47801180	1.5km south
Netley Hill Heath	Areas of heathland vegetation; including matrices of dwarf shrub, acid grassland, valley mires and scrub. Areas of wooded/afforested heathland which retains significant remnants of heathland vegetation which would enable recovery.	SU48001190	1.5km south
Peewit Hill	Area of heathland vegetation; including matrices of dwarf shrub, acid grassland, valley mires and scrub. Areas of	SU48101150	1.8km south

	wooded/afforested heathland which retains significant remnants of heathland vegetation which would enable recovery. Sites which support one or more notable species. SINC qualifying Species supported: <i>Schoenus nigricans</i> (Black Bog-Rush) [CR]		
Hogsty Corner	Ancient semi-natural woodland and other semi-natural woodland which comprise important community types of restricted distribution in the County. Areas of wooded/afforested heathland which retains significant remnants of heathland vegetation which would enable recovery. Fens, flushes, seepages, springs, inundation grasslands etc. that support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permanent) conditions.	SU48401320	0.3km east
Bridget Mary Garden	Other semi-natural woodland which comprise important community types of restricted distribution in the County. Semi-improved grassland which retains a significant element of unimproved grassland.	SU48601280	0.8km east
Moorgreen Woodlands	Ancient semi-natural woodland.	SU48601451	1km north east
Piland's Copse	Ancient semi-natural woodland.	SU48801170	2km south east
Wildern Nature Park	Woodland with significant element of ancient semi-natural woodland surviving and comprising important community types of restricted distribution in the County. Agriculturally unimproved grasslands. Assemblages of floating/submerged/ emergent plant species, invertebrates, birds or amphibians. Fens, flushes, seepages, springs, inundation grasslands etc. that support a flora and fauna characteristic of unimproved and waterlogged (seasonal or permanent) conditions.	SU48901330	1km west

3.1.3 European Protected Species (EPS) Licences

There are five Natural England European Protected Species (EPS) licences within 2km of the Site. One of these licences is for dormice and was granted for the golf course refurbishment works within the wider Ageas Bowl site.

Table 5: EPS Licences issued within 2km of the Site

Reference Number	Species Affected	Licence Type	Licence Dates	Location from Site
EPSM2012-4209	Dormouse	Destruction of a breeding site; and Destruction of a resting place.	19/11/2013 – 31/10/2017	<100m north
EPSM2013-5805	Common pipistrelle <i>Pipistrellus pipistrellus</i>	Destruction of a resting place	24/04/2013 - 01/04/2015	0.5km south-east
2016-22944-EPS-MIT	Brown long-eared <i>Plecotus auritus</i> ; and Common pipistrelle	Damage of a resting place; and Destruction of a resting place	17/05/2016 – 17/05/2026	1.2km north
2015-9288-EPS-MIT	Common pipistrelle	Destruction of a resting place	29/04/2015 – 22/04/2020	1.8km south
2019-42509-EPS-MIT	Common pipistrelle; and Serotine <i>Epstesicus serotinus</i>	Destruction of a resting place	05/09/2019 – 04/09/2029	1.9km, north-west

Thirteen ponds within a 5km radius have been identified as having great crested newts present through licence return data of these; eight are over 3.5km north, three are 4.5km south-east and one is 2.3km to the south-west.

3.1.4 Local Species Records

Amphibians and Reptiles

Table 6 shows all HBIC records of amphibians and reptiles from the last 10 years for the area extending 2km from the Site.

Table 6: Records of Amphibians and Reptiles

Latin Name	Common Name	Status				Location
		WCA ⁵	Habs Regs ⁶	SoPI	Hampshire BAP BAP ⁷	
<i>Triturus cristatus</i>	Great crested newt	✓	✓	✓	✓	No records
<i>Anguis fragilis</i>	Slow worm	✓		✓		48 recordings. Closest record 140m west of Site.
<i>Bufo bufo</i>	Common toad	✓		✓		1 record, 140m west of site.
<i>Natrix natrix</i>	Grass snake	✓		✓		1 record, 600m north-east of the Site.
<i>Zootoca vivipara</i>	Common lizard	✓		✓		2 records within the past 10 years, located 1-2km from the Site.

Badger

Badgers *Meles meles* and their setts are protected under the Protection of Badgers Act, 1992. The desk study data provided by HBIC included 16 records of badgers within 2km of the Site from the last ten years. Most records occur within 1km - 2km of the Site. One of the records is from within the wider Ageas Bowl and Boundary Lakes Golf Course.

Bats

All bat records supplied by HBIC are marked as sensitive and no additional information is given as to whether the record is a field record or refers to a roost. Records from the last 10 years only are shown in Table 7 below.

Table 7: Bat records from the last 10 years

Latin Name	Common Name	Status				Location
		WCA	Habs Regs	Hampshire BAP	SoPI	
<i>Eptesicus serotinus</i>	Serotine	✓	✓	✓		7 field records, located within 1-2km of the Site.
<i>Myotis spec.</i>	Myotis species	✓	✓			8 recordings.
<i>Myotis nattereri</i>	Natterer's	✓	✓			1 record.
<i>Nyctalus noctula</i>	Noctule	✓	✓		✓	12 recordings.
<i>Pipistrellus nathusii</i>	Nathusius' pipistrelle	✓	✓			1 record, 1km north-west of Site.
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	✓	✓	✓		32 records.
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	✓	✓	✓	✓	20 records located between 1 and 2km

⁵ WCA: Listed on Schedule 1, 5 or 8 of the Wildlife and Countryside Act (1981) (as amended)

⁶ Habs Regs: Listed on Schedule 2 of the Conservation of Habitats and Species (Amendment) Regulations 2011

⁷ Hampshire BAP: Denotes if the species is listed as a local priority species in the Hampshire Biodiversity Action Plan

Latin Name	Common Name	Status				Location
		WCA	Habs Regs	Hampshire BAP	SoPI	
<i>Plecotus auritus</i>	Brown Long-eared	✓	✓		✓	3 recordings.
<i>Plecotus spec,</i>	Grey Long-eared	✓	✓			8 recordings, including one within the wider Ageas Bowl site.

Hazel Dormouse

Dormouse *Muscardinus avellanarius* is a European protected species. HBIC hold four records for dormouse within the 2km search area from the last 10 years. Of these,

Historic records within the landholding of the Ageas Bowl have also been obtained from surveys carried out by Entec in 2007 and by Johns Associates in 2011, 2016-17 and 2019.

Other Notable Mammal Species

Table 8 gives details of other notable mammals recorded from the study area over the last 10 years.

Table 8: Records of Notable Mammal Species located within 2km of the Site.

Latin Name	Common Name	Status				Location
		WCA	Habs Regs	Hampshire BAP	SoPI	
<i>Erinaceus europaeus</i>	European hedgehog				✓	28 records occurring within 0.5-2km from the Site, some of which occur within 200m of Site.

3.2 FIELD SURVEY

3.2.1 Overview

The Site is situated in the south-eastern corner of the Ageas Bowl Golf club, adjacent to the M27 and Hedge End Interchange roundabout.

A list of secondary codes used across the Site are described in Table 9.

Table 9: Secondary UKHab codes

Secondary Code Number	Description
10	Scattered scrub
11	Scattered trees
17	Ruderal
66	Frequently mown

3.2.2 Habitats

Please refer to Figure 2 for the UKHab Survey map.

g3c – Other Neutral Grassland – 10,17

Other neutral grassland was the main habitat on Site, dominating the existing artificial embankment (see Plate 1). The grassland has been seeded and supported a mixture of grass species, including abundant Yorkshire fog *Holcus lanatus* and occasional perennial rye-grass *Lolium perenne*. Docks *Rumex spec.* were frequent throughout the sward. A species list for this habitat is provided in Table 10.

Scattered bramble *Rubus fruticosus* scrub and gorse *Ulex spec.* have colonised parts of the embankment and were dominant along the boundary fence line. Ruderal vegetation was also present, including locally abundant thistles *Carex spec.* and frequent wild teasel *Dipsacus fullonum* (see Plate 2). Tussocks of pendulous sedge *Carex pendula* and rushes were also occasionally present upon the embankment.

Plate 1: Other neutral grassland and bramble scrub



Plate 2: Ruderal vegetation



Table 10: Other Neutral Grassland Species List

Common name	Scientific name	DAFOR
Yorkshire fog	<i>Holcus lanatus</i>	A
Sweet vernal grass	<i>Anthoxanthum odoratum</i>	F
Creeping bent	<i>Agrostis stolonifera</i>	F
Cock's-foot	<i>Dactylis glomerata</i>	F
Red fescue	<i>Festuca rubra</i>	F
Perennial rye grass	<i>Lolium perenne</i>	O
Red clover	<i>Trifolium pratense</i>	O
White clover	<i>Trifolium repens</i>	O
Oxeye daisy	<i>Leucanthemum vulgare</i>	F
Common vetch	<i>Vicia sativa</i>	O
Ribwort plantain	<i>Plantago lanceolata</i>	F
Lesser stitchwort	<i>Stellaria graminea</i>	O
Cut-leaved Crane's-bill	<i>Geranium dissectum</i>	F
Creeping thistle	<i>Cirsium arvense</i>	LA
Grass vetchling	<i>Lathyrus nissolia</i>	O
Common chickweed	<i>Stellaria media</i>	O
Daisy	<i>Bellis perennis</i>	O

g4 - Modified Grassland - 66

The grassland to the west of the Site was species-poor modified grassland, associated with the wider golf course (see Plate 3). The sward has been maintained at a short even height by frequent mowing and was dominated by finer leaved grass species such as red fescue *Festuca rubra*, annual meadow grass *Poa annua* and perennial rye-grass.

Plate 3: Modified grassland



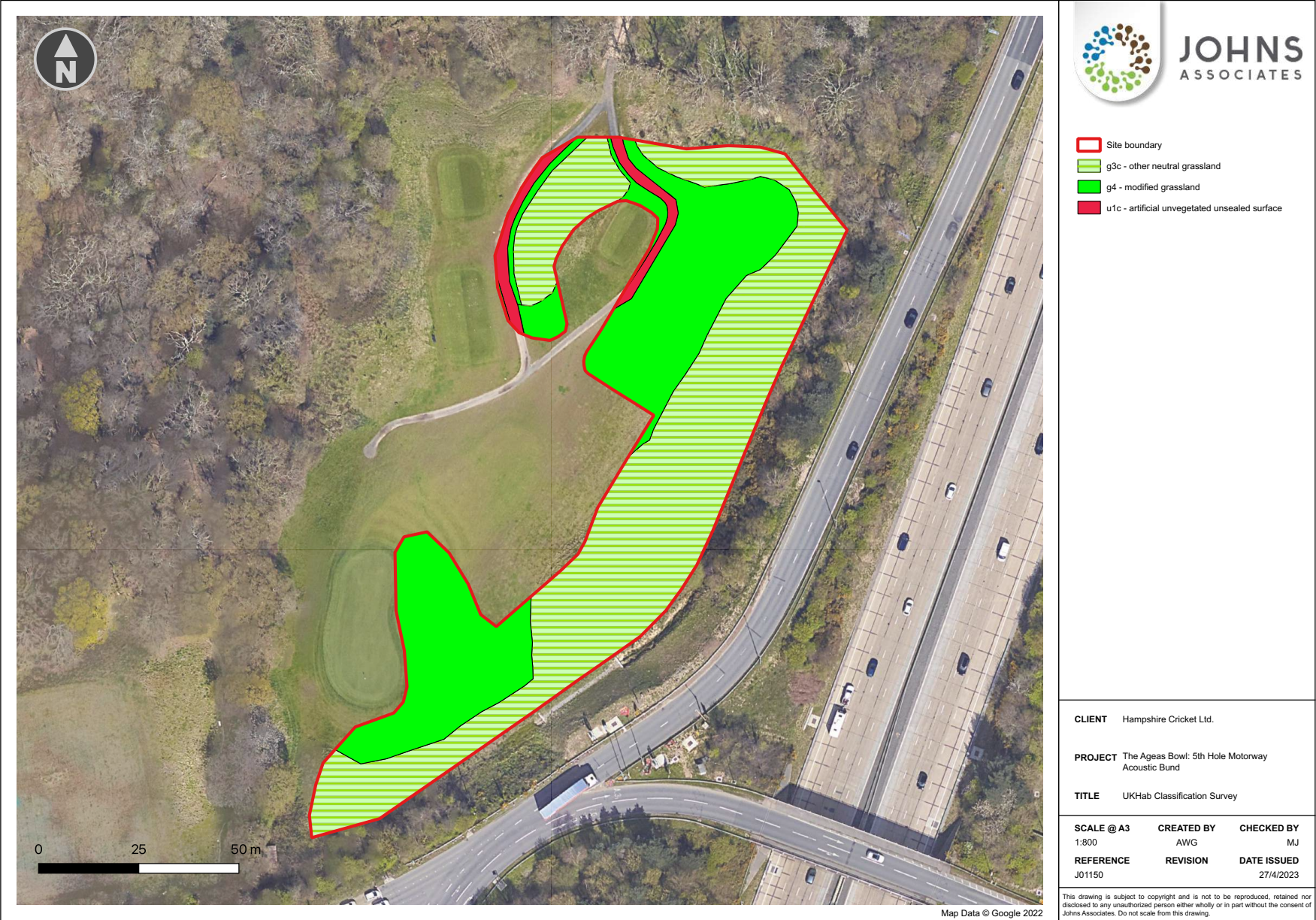
11 - Scattered Trees

A limited number of scattered broadleaved trees were present within parts of the Site (three trees adjacent to the existing green and a line of trees on one boundary) (see Plate 4). The trees are mature and included several mature oak *Quercus spec.* trees, cherry *Prunus spec.* and silver birch *Betula pendula*. The ground layer beneath the line of trees was dominated by oak leaf debris, cut bramble, ivy *Hedera helix* and coppiced hazel *Corylus avellana*. The ground under the 3 trees on the edge of the green was highly managed improved grassland.

Plate 4: Scattered broadleaved trees



Figure 2: UKHab Survey Map



3.2.3 Bats

All of the trees within the Site boundary were assessed for their suitability for roosting bats. None of the trees exhibited signs of decay or supported PRFs. They were therefore assessed as having negligible suitability for roosting bats.

The rough grassland and scrub on the embankment provide some value for foraging bats, however the woodland belts within the wider land ownership provide greater value for both foraging and commuting bats. Previous transect and automated detector surveys by Johns Associates have recorded common pipistrelle, soprano pipistrelle, noctule, serotine, Myotis species, long-eared species and Barbastelle bats commuting and foraging across the wider Ageas Bowl and Boundary Lakes Golf Course site.

On this basis no further bat surveys are required.

3.2.4 Birds

The scattered trees and scrub habitats provide ecological value for birds, offering nesting and foraging opportunities, however these habitats are common and widespread in the surrounding landscape.

3.2.5 Dormice

The habitats within the Site boundary are not suitable for dormice and no signs of dormice were identified during the field survey. Historic surveys have recorded dormice within the adjacent copse of woodland to the north-west, within the wider Ageas Bowl and Boundary Lakes Golf Course site. However, this woodland will be unaffected by the proposals. It is therefore reasonable to conclude that dormice are not currently present within the proposed Site and no adverse impacts are anticipated. The proposed works in fact have potential to reconnect dormouse habitat opportunities and provide enhanced ecological value for this species. On this basis no further dormouse surveys are required.

3.2.6 Reptiles

No evidence of reptiles was recorded on Site, however the field survey was undertaken in Winter at a time when reptiles are less likely to be active. The Site provides a mosaic of optimal and sub-optimal habitats for reptiles and small number of slow worm and grass snake have been recorded in historic survey, so they are assumed to be present here. The short sward modified grassland is unsuitable due to the lack of structural variation in vegetation. However, the habitats on and surrounding the embankment, including rough grassland, ruderal vegetation and scrub, provide a range of important habitat interfaces for reptiles and offer opportunities for foraging, shelter and basking. On this basis, no further reptile surveys are required.

3.2.7 Badger

The construction footprint of the Site does not support habitats suitable for badger to create setts and no badger signs or setts have been recorded from this part of the Ageas Bowl and Boundary Lakes Golf Club. The adjacent woodland and golf course areas does support an active main sett and foraging habitat.

It is considered reasonable to conclude that no further badger surveys at the Site are required.

3.2.8 Other Mammals

No signs of other mammals were recorded during the field survey. Considering the range of habitats present within the wider Ageas Bowl and Boundary Lakes Golf Course site, it is likely that a range of common small mammals including hedgehogs may utilise the Site for commuting, foraging and potentially nesting, including within the

4 ECOLOGICAL ASSESSMENT, CONSTRAINTS AND OPPORTUNITIES

4.1 DESIGNATED SITES

The Site is not associated with a statutory or non-statutory nature conservation designation. The nearest designated site is Wildern LNR, which is located at a distance of 0.3km to the south-east. No effects from the proposed works on the designated features of SAC/ SPA/ SSSI are considered likely, owing to the small-scale nature of the works and distance from the Site. No mitigation required.

4.2 HABITATS

The habitats present across the Site are common and ubiquitous across the county and the overall ecological value of the habitats are of site (low) value.

Based on the baseline survey results, the scattered trees and grassland habitats have potential to support several legally protected or conservation notable species, as shown in Table 11.

Table 11: Summary table of identified habitats and receptors within the habitats on Site

Habitat	Potential receptor
Scattered trees	Nesting birds
Modified grassland	Hedgehog and birds – foraging only
Other neutral grassland	Common reptiles, hedgehogs and foraging birds

4.2.1 Scattered Broadleaved Trees

Tree root protection fencing will be erected around the perimeter of the root protection area (RPA) of retained trees within the working area/access route to prevent damage to the trees during construction. Any works proposed within the RPAs will be strictly 'no dig' construction or change in levels, as appropriate, within the root protection zones to ensure the protection of important retained trees.

The three trees associated with the green will need to be removed and the deadwood retained along the site boundary to provide a resource for invertebrates (including stag beetles), small mammals and common reptiles and amphibians.

4.2.2 Other Neutral Grassland

The grassland and associated ruderal vegetation and scrub habitats have potential to support common reptiles and small mammals including hedgehogs. The two-stage clearance method described in Section 4.4.1 below will avoid the potential for adverse impacts to these species.

The golf course facing parts of the bund will be seeded with an ecological rough and wildflower meadow seed mix (Emorsgate EM3 Special General Purpose Meadow Mix) to be mown once a year in September. Species to be planted will include the following: common bent *Agrostis capillaris*, crested dogstail *Cynosaurus cristatus*, slender creeping red-fescue *Festuca rubra*, smaller cat's-tail *Phleum bertolonii* and smooth-stalked meadow grass *Poa pratensis*.

4.3 PROTECTED SPECIES

4.3.1 Amphibians and Reptiles

The proposed works will result in the temporary loss of potential amphibian and reptile habitat due to the clearance of rough grassland, ruderal vegetation and scrub. To avoid adverse impacts to amphibians and reptiles, a non-licencable Method Statement should be implemented, to include the following:

To reduce the risk of encountering and potentially harming any hibernating reptiles/amphibians, the vegetation to be cleared on Site should not be subject to disturbance during the herptile hibernation period, which runs approximately from October to February. Instead, clearance should be undertaken from March to September within the active period for these species.

A two-stage and directional vegetation clearance approach should be adopted to encourage any reptiles or amphibians that may be present within the Site to move out of the works area. Under ecological supervision the area will first be cut using trimmers/brush cutter with arisings removed, in a directional manner towards the site margins and to approximately 150mm in order to encourage any reptiles present to move out of the area. This will be followed by an inspection from the supervising ecologist to ensure no potential refugia have been revealed during the first cut. Refugia will be dismantled by hand and destructively searched. In the unlikely event that amphibians or reptiles are observed attempts will be made to catch the animal and relocate to a suitable adjacent habitat.

The area will then be subsequently cut to 0-10mm and allowed to rest overnight to allow any animals remaining in the area to move into retained adjacent habitats. A further inspection of the area will follow to further ensure no amphibians or reptiles (or other small mammals) are present within the area and that no possible refugia for amphibians or reptiles (such as small mammal burrows) have been uncovered. The topsoil will then be removed using mechanical excavation under ecological supervision where required.

A refugia/hibernacula will be constructed along the boundary using the retained wood from the three trees to be removed on the edge of the green.

4.3.2 Bats

No adverse impacts to bats are anticipated as a result of the proposed works. The trees proposed to be felled do not provide any PRFs that could be utilised by roosting bats.

The new bund and planted habitats will restore linear connectivity and provide new foraging opportunities, enhancing the Site for foraging and commuting bats.

4.3.3 Birds

The proposed works may result in the direct loss of, or disturbance, to nesting birds. Felling of trees and clearance of scrub will result in the loss of foraging and potential nesting sites that could be utilised during the breeding season.

It is an offence under UK legislation to willfully destroy or damage the nest of a wild bird while it is being built or is in use in any location (Wildlife and Countryside Act 1981 (as amended) and the CROW Act 2000).

To avoid direct impacts, tree felling will be undertaken outside of the bird breeding season which runs from March to August inclusive. Alternatively, if clearance is undertaken during the nesting period, checks for evidence of nesting birds by a suitably qualified ecologist will be required immediately prior to commencement of works. If any active nests are found these will be protected by an appropriate buffer zone until nesting is complete and all the chicks have fledged.

The new bund and planted habitats will restore linear connectivity and new foraging and nesting opportunities over time.

4.3.4 Badger

Badger are likely to be in the wider landscape which may be injured should they enter deep excavations that are left open overnight. Therefore, any open excavations (if required) will be graded at one end or include a ramp to allow badgers (and/or other mammal species) to escape.

4.3.5 Hedgehogs

Hedgehogs could use the rough grassland and scrub habitats within the Site for foraging, shelter, nesting and hibernation. Hedgehogs are of national importance and a species of Principal Importance under the NERC Act 2006.

To reduce the risk of encountering and potentially harming hibernating hedgehogs, any clearance of scrub should be undertaken outside of the hibernation period. The two-stage clearance approach described above in Section 4.3.1 will make the development area unsuitable for hedgehogs and avoid the potential for adverse impacts to these species.

4.4 FURTHER SURVEYS REQUIRED

No further surveys are required. It is considered that sufficient information has been obtained to fully assess the potential effects and recommend mitigation and enhancements.

4.5 OPPORTUNITIES FOR ENHANCEMENT

The landscape proposals include a strip of heathland scrub planting with species including field rose, holly, gorse, common broom, silver birch and hazel. The new bund and planted habitat will provide enhanced ecological value for nesting birds, foraging and commuting bats and dormice by restoring linear habitat connectivity.

The following enhancements will also be incorporated into the development:

- Two pairs of Schwegler 1b hole nest boxes will be installed on trees in the adjacent woodland;
- Reptile hibernacula constructed along the boundary (see Section 4.3.1).

5 CONCLUSIONS

On the basis of the desk and field survey and the integrated mitigation and enhancement opportunities being implemented, it is reasonable to conclude that this proposal meets all national and local policy and legislative requirements.

APPENDIX A - LEGISLATION AND PLANNING POLICY

LEGISLATION

Many species of animal and plant receive some degree of legal protection. For the purposes of this report, legal protection refers to: species included on Annex II of the Habitats Directive 1992 (Council of European Communities, 22/07/1992) , Schedules 2 and 5 of the Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and Schedules 1, 5 and 8 of the Wildlife and Countryside Act 1981 (as amended) , excluding species that are only protected in relation to their sale (see Section 9[5] and 13[2]) reflecting the fact that the proposed development does not include any proposals relating to the sale of species.

Legal offences associated with species listed on Schedule 2 of the Conservation of Habitats and Species Regulations and Schedule 5 of the Wildlife and Countryside Act in England and Wales include inter alia:

- Deliberate capture, injury or killing of animals or taking or destroying their eggs;
- Deliberately disturb animals in a way that would significantly affect their local distribution or abundance, or affect their ability to survive, breed or rear young;
- Intentional or reckless disturbance of an animal in its place of shelter or protection;
- Damaging or destroying a resting place or breeding site;
- Intentionally or recklessly obstructing access to a place of shelter or protection; and
- Possess, control, transport, sell, exchange or offer for sale/exchange any live or dead animal or any part of an animal.

Relevant species listed on these Schedules that are potentially associated with this Site include bats and reptile species (e.g. slow worm). All species of bat receive full protection from all legal offences listed above. Common reptile species receive partial protection under the Wildlife and Countryside Act in that they are protected from killing and injury only.

All species of wild bird are protected under the Wildlife and Countryside Act (1981) (as amended) from killing or injury. In addition, it is an offence to take or damage/ destroy their eggs and to damage or destroy a nest whilst it is in use. Species listed on Schedule 1 (such as barn owl) receive additional protection in that it is illegal to disturb birds or their young whilst occupying, or near to, an active nest.

A number of wild plants, habitats and animals (including reptiles, hedgehog and most species of bat) are also included within Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006 which lists flora, fauna and habitats considered by the Secretary of State to be of principal importance for conserving biodiversity. The publication of the "England Biodiversity List" satisfies the requirements of Section 41 of the NERC Act 2006 for the conservation of biodiversity. Section 40 of the NERC Act 2006 requires public bodies, including local planning authorities, to have regard for the conservation of biodiversity in England, when carrying out their normal functions.

Badgers are protected under the Protection of Badgers Act 1992 (UK Government, 1992) which makes it an offence to willfully kill, injure or take (or attempt to kill, injure or take) a badger; or to disturb badgers whilst occupying their setts.

NATIONAL PLANNING POLICY

There are numerous national and local planning policies associated with flora and fauna (also referred to as biodiversity) that need to be addressed as part of the planning process. The Government has issued its National Planning Policy Framework (NPPF) 2021, which requires impacts to biodiversity to be minimised. Paragraph 181 of the NPPF applies the same protection to Ramsar sites as that conferred by the Habitats Regulations to SACs and SPAs. The NPPF requires development to apply the following principles (Paragraphs 179-180):

- Minimise impacts on and provide net gains for biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressure;
- Identify and pursue opportunities for securing measurable net gains for biodiversity;
- Ensure that there will be no adverse impacts to SSSIs (such development would not normally be permitted);
- Ensure that there will be no loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees), unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- Where significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts) adequate mitigation, or as a last resort compensation, must be provided.
- The NPPF and associated Planning Practice Guidance also emphasise the requirement for ecological networks and wildlife corridors to be created throughout the wider landscape (paragraph 179).

Planning authorities should follow key principles to ensure that the potential impacts of planning decisions on biodiversity conservation are considered. Circular 06/05: Biodiversity and Geological Conservation provides guidance on the application of the law relating to planning and nature conservation and complements the NPPF.

The Natural Environment Paper

“The Natural Choice: Securing the Value of Nature” outlines the Government’s approach and vision for nature in the UK including protecting and improving our natural environment, growing a green economy and reconnecting people and nature.

Biodiversity 2020

A strategy for England’s wildlife and ecosystem services, are the country level strategies for England and builds on the natural Environment White Paper. It sets out the strategic direction for biodiversity policy for the next decade on land (including rivers and lakes) and at sea. The priorities for action include a more integrated large-scale approach to conservation, putting people at the heart of biodiversity policy, reducing environmental pressure and improving knowledge.

LOCAL PLANNING POLICY

As well as national policy, there is relevant biodiversity policy contained within Eastleigh Borough Council’s local planning documents.

Current adopted policy for Eastleigh comprises the Eastleigh Borough Local Plan Review (2001 – 2011) (adopted in May 2006) (Council, 2006). Saved policies 22.NC, 23.NC, 25.NC and 26.NC provide protection for SSSIs, locally designated sites and the overall wildlife network; and promote biodiversity conservation overall. In particular, Policy 23.NC states that:

‘Development which is likely to have a direct or indirect adverse affect on a Site of Importance for Nature Conservation (SINC) will not be permitted, unless it can be demonstrated to the satisfaction of the Borough Council that the benefits of the development clearly outweigh the need to safeguard the nature conservation value of the site. If development is to be permitted, the Council will require appropriate measures to be taken to mitigate for the adverse effects on the SINC.’

Emerging policy is set out in the Eastleigh Borough Local Plan 2016 – 2036 (Proposed Submission Local Plan (Eastleigh Borough Council, 2018). This emerging policy should be taken into account as a material planning consideration. Policy DM11 requires development to achieve the following:

- Protect, conserve and enhance areas subject to international, national and local nature conservation designations;
- Assist in achieving national, county and local biodiversity targets as set out in Biodiversity Action Plans (BAPs);
- Protect, conserve and enhance networks of natural habitats and features, including the Priority Biodiversity Areas and Priority Biodiversity Links identified in the Eastleigh Borough Biodiversity Action Plan 2012-2022, and watercourses and wetland complexes, woodland trees and hedgerows important to biodiversity and local character
- On new development sites seek enhancement of biodiversity through the protection and connection of existing and provision of new habitats and features compatible with the native biodiversity characteristics of the Borough.

Policy DM11 provides strong protection for locally-designated sites and biodiversity and states that:

'Development will not be permitted if it is likely to have a direct or indirect adverse effect on a Site of Importance for Nature Conservation (SINC) or Local Nature Reserve as shown on the policies map (or on a more recent plan provided by the Hampshire Biodiversity Information Centre), unless it can be demonstrated to the satisfaction of the Borough Council that:

- i. the benefits of the development clearly outweigh the adverse effects on the nature conservation value of the site;
- ii. the adverse impacts are unavoidable;
- iii. measures are taken to mitigate or, if this is not possible, compensate for the adverse effects, such that the development will result in at least no net loss of biodiversity; and
- iv. buffers free from development are provided to Locally designated sites within or adjacent to developments to alleviate recreational impact and impacts on edge habitats and to maintain dark skies.

Impacts on priority habitats and protected and priority species will not be permitted unless the applicant can evidence that:

- There has been thorough habitat and species surveys;
- There is an overall biodiversity gain;
- Protected species impacts have been avoided or mitigated and their needs taken into consideration within the development design;
- The great crested newt strategic survey and strategy have been considered in all developments within 500m of a great crested newt pond; and
- The strategic bat trapping survey has been considered in all developments within the locality of a woodland surveyed or connected habitat networks.'

Emerging policy is set out in the Eastleigh Borough Local Plan 2016 – 2036 (Proposed Submission Local Plan) . This emerging policy should be taken into account as a material planning consideration. Policy DM11 requires development to achieve the following:

- Protect, conserve and enhance areas subject to international, national and local nature conservation designations;
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- On new development sites seek enhancement of biodiversity through the protection and connection of existing and provision of new habitats and features compatible with the native biodiversity characteristics of the Borough.

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