

ecological support,
management and solutions



46 Warblington Road

Emsworth

Phase I Ecological Survey

Report prepared by: Tristanna Boxall BSc (Hons)

Report Updated 21st April 2020

Table of Contents

1.0 INTRODUCTION	3
1.1 Brief.....	3
1.2 Aim	3
1.3 Site Location	3
1.4 Proposals	4
2.0 LEGISLATION & POLICY	5
2.1 Legislation.....	5
2.1.1 The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019	5
2.1.2 The Wildlife and Countryside Act (1981) (as amended).....	6
2.1.3 The Countryside and Rights of Way Act (2000)	6
2.1.4 Natural Environment and Rural Communities Act (2006).....	6
2.2 Policy.....	6
2.2.1 National Planning Policy Framework (2019)	6
2.2.2 Havant Borough Core Strategy (2011)	6
3.0 METHODOLOGY	8
3.1 Desk Based Search.....	8
3.2 Phase I Habitat Survey	8
3.3 Assessment of the Building to Support Roosting Bats.....	8
4.0 RESULTS	9
4.1 Desk Based Search.....	9
4.1.1 Designated Sites	9
4.1.2 Species	12
4.2 Phase I Habitat Survey	12
4.3 Assessment of the Building to Support Roosting Bats.....	15
4.4 Limitations	15
5.0 EVALUATION	17
5.1 Desk Based Search.....	17
5.1.1 Designated Sites	17
5.1.2 Protected Species.....	17
5.2 Phase I Survey.....	17
5.3 Assessment of Building to Support Roosting Bats	18
6.0 REQUIREMENTS, RECOMMENDATIONS AND ENHANCEMENTS	19
6.1 Further Surveys	19
6.1.1 Wintering Birds	19
6.1.2 Bat Emergence	19
6.2 Design Considerations	19
6.2.1 Bats	19
6.2.2 Nesting Birds	20
6.2.3 Lighting.....	21
6.2.4 Native Planting.....	21
6.2.5 Hedgehogs	21
6.2.6 Designated Sites.....	22
6.3 Construction Phase	22
6.3.1 Tree Protection	22
6.3.2 Clearance.....	23
6.3.3 Designated Sites.....	23
6.3.5 Dead Wood	23
7.0 CONCLUSION	24
8.0 REFERENCES	25

1.0 INTRODUCTION

1.1 Brief

ECOSA undertook an initial ecological assessment of 46 Warblington Road, here after known as 'the site', in 2015. Given that proposals had altered and that significant time had passed, Ecosupport Ltd was commissioned to conduct an updating Phase I Habitat Survey of the garden space associated with the site. This survey was required to identify any ecological impacts that may arise from the proposed construction of 19 new residential units.

This document has been prepared in order to ensure the proposed development fully complies with nature conservation legislation and policy where applicable.

This survey takes no account of seasonal variation and fluctuations in the presence of any species noted that might take up residence following this report. Lack of signs of a particular species does not confirm its absence, merely that there was no indication of its presence during the time of survey.

Data contained within this report will be valid for 24 months, after which the advice of a suitably experienced ecologist must be sought as surveys may require updating if the proposed works have not been undertaken.

1.2 Aim

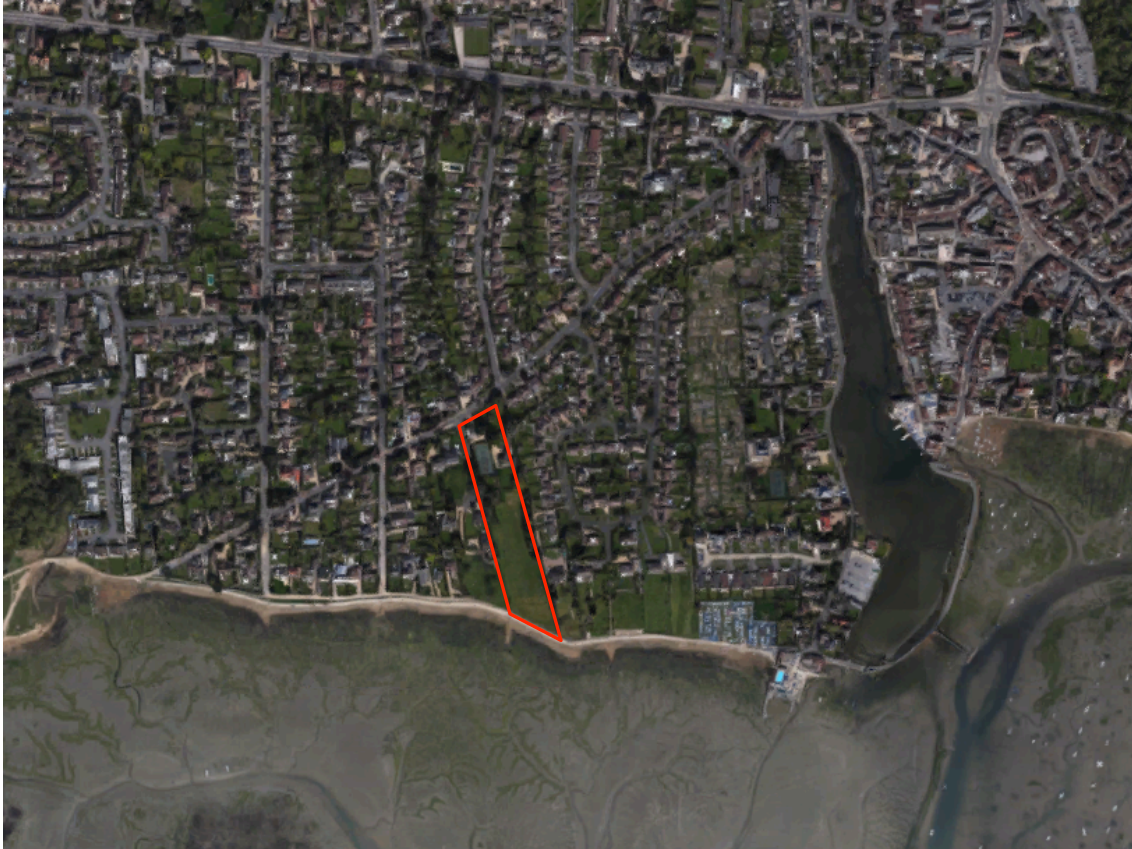
A Phase I Habitat Survey is the first step in assessing the potential ecological effects (or lack of) of a proposed development, and determines whether or not (and which) Phase II Protected Species Surveys are required. The objectives of this survey were as follows:

- Identify current land use and distribution of broad habitat types including plant communities of ecological importance
- Identify and classify any priority habitats
- Assess the ecological value of the site
- Identify any signs of protected species and potential features that may support them
- Identify all relevant legislation and policy
- Make recommendations for further survey work as appropriate
- Make recommendations for appropriate enhancements.

1.3 Site Location

The site is located along Warblington Road in Emsworth, PO10 7HH (Grid Reference SU 74407 05450). The site is bound by neighbouring properties to the east and west with Warblington Road along the northern boundary and Chichester Harbour to the south. The wider area is dominated by residential development (**Figure 1**).

Figure 1. Location of the site (Google Maps, 2019).



1.4 Proposals

Proposals will see the introduction of 19 new residential dwellings, associated access and garden space within the garden of 46 Warblington Road. Please see **Plan 1** for details.

2.0 LEGISLATION & POLICY

One of the aims of this report is to demonstrate that the proposed development complies with relevant Planning Policy and nature conservation legislation. This section details the policy and legislation with which the development would need to comply.

2.1 Legislation

2.1.1 The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019

This transposes the EU Habitats Directive (Council Directive 92/43/EEC) into UK domestic law. It provides protection for sites and species deemed to be of conservation importance across Europe. It is an offence to deliberately capture, kill or injure species listed in Schedule 2 or to damage or destroy their breeding sites or shelter. It is also illegal to deliberately disturb these species in such a way that is likely to significantly impact on the local distribution or abundance or affect their ability to survive, breed and rear or nurture their young.

The EU Exit instrument makes changes to the three existing instruments which transpose the Habitats and Wild Birds Directives so that they continue to work (are operable) upon the UK's exit from the European Union (EU). These include The Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017. This instrument also amends section 27 of the Wildlife and Countryside Act 1981 to ensure existing protections continue.

The intention is to ensure habitat and species protection and standards as set out under the Nature Directives are implemented in the same way or an equivalent way when the UK exits the EU. There is no change to policy.

Sites designated under the Nature Directives previously contributed to the EU's Natura 2000 network. A national site network is created to retain the concept of a UK network of sites. The 'national site network' is defined as including Natura 2000 sites designated prior to EU exit and those Special Areas of Conservation (SACs) and Special Protection Areas (SPAs) designated post EU Exit.

Current references to "European site", "European Marine Site", "Special Area of Conservation" and "Special Protection Area" are retained as there is no operability reason for these to change.

Management objectives are established for the national site network. Appropriate authorities are required to manage, and where necessary, adapt the national site network in cooperation with each other to meet the network's management objectives. The management objectives are to:

i. maintain or restore habitats and species listed in the Habitats Directive to a favourable conservation status; and

ii. contribute, in their area of distribution, to ensuring the survival and reproduction of wild birds and securing compliance with the overarching aims of the Wild Birds Directive.

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

This is the primary piece of legislation by which biodiversity is protected within the UK. Protected fauna and flora are listed under Schedules 1, 5 and 8 of the Act. They include all species of bats, making it an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost or to intentionally or recklessly obstruct access to a bat roost. Similarly, this Act makes it an offence to kill or injure any species of British reptiles and also makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy their eggs and nests (whilst in use or being built).

2.1.3 The Countryside and Rights of Way Act (2000)

This Act places a duty on Government Ministers and Departments to conserve biological diversity and provides police with stronger powers relating to wildlife crimes.

2.1.4 Natural Environment and Rural Communities Act (2006)

This places a duty on authorities to have due regard for biodiversity and nature conservation during the course of a development.

2.2 Policy

The development would seek to comply with relevant Planning Policy at a local and national level.

2.2.1 National Planning Policy Framework (2019)

The development seeks to comply with relevant Planning Policy. The National Planning Policy Framework (NPPF) 2019 supersedes the previous national policy and sets out the Government's vision for biodiversity in England in line with the country's 25 Year Environment Plan. Chapter 15 of this policy outlines key principles related to the natural environment and states that plans should take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure and should provide net gains for biodiversity. Plans should promote the conservation, restoration and enhancement of priority habitats and ecological networks and the protection and recovery of priority species.

2.2.2 Havant Borough Core Strategy (2011)

Part of the 'Vision for Havant Borough in 2026' is to protect and enhance biodiversity. Similarly, policy 'CS11: Protecting and Enhancing the Special Environment and Heritage

of Havant Borough' states that planning permission will only be granted when development protects and where possible enhances the borough's statutory and non-statutory designated habitats and features of biological interest. and features of biological interest and prevents the fragmentation of existing habitats.

The strategy states that protection and enhancement will be achieved by appropriate adaptation and mitigation measures. It also has particular regard for nature conservation designations with international designations given the highest regard and supports an ongoing programme of surveys of habitats and species and designations of SINC.

'Policy DM9: Development in the Coastal Zone' protects of the coastal zone as defined on the Proposals Map. Permission will only be granted in the coastal zone where the following criteria are met:

- Has no harmful effects on nature conservation within the Chichester and Langstone Harbour SSSIs and SPA, Solent Maritime SAC and Ramsar site, or any SINC and Local Nature Reserves;
- Maintains and enhances the appearance and distinctiveness of existing settlements and landmarks along the coast;
- Contributes positively to the landscape and has regard to best practice on the design of new buildings in coastal locations;
- Upgrades existing footpaths and ensures that public access is retained and provided to connect existing paths along the waterfront where appropriate;
- Would result in improvements to or redistribution of moorings, marine berths or launch on demand facilities (dry berths) in the harbours;
- Would not be detrimental to infrastructure or, and quality of, water- based recreation, or be detrimental to the safety of navigation; and
- Provides recreational opportunities that do not adversely affect the character and appearance of the coast.

3.0 METHODOLOGY

3.1 Desk Based Search

Hampshire Biodiversity Information Centre (HBIC) were consulted in August 2015 for information on non-statutory designated sites and protected and notable species within a 1km radius of the site. The search included results from the Brent Goose and Waders Strategy. Bat records were provided within a 2km radius of the site.

At this stage an updating search utilising online resources was undertaken to establish the presence of nearby designated sites.

An online search for nearby ponds was also undertaken. Guidelines state that ponds within 500m of a development site, must be surveyed as to their potential to support Great Crested Newts (*Triturus cristatus*) (Natural England, 2013). As no ponds were identified within this radius, no further survey effort was undertaken.

3.2 Phase I Habitat Survey

The initial survey was carried out by Tristanna Boxall BSc (Hons) (Class Level 1 GCN license holder and Class Level 2 Bat license holder) an experienced ecologist of Ecosupport Ltd on the 21st May 2019. This incorporated a visual assessment of the site, loosely following the methodology outlined within the Joint Nature Conservation Committees (JNCC) *Phase I habitat survey handbook* (2003). The habitats present were noted, focusing particularly on their potential to support protected species. A thorough search for evidence of protected species was undertaken.

3.3 Assessment of the Building to Support Roosting Bats

An assessment of the garage was undertaken to determine its potential to support roosting bats. This involved using close-focus Avian Trekker binoculars and a high-powered torch to inspect the building externally, looking for any suitable features, which bats may use to enter the internals or an external roost and also to search for signs of (i.e. droppings, feeding remains) and/or bats themselves.

The survey was carried out in accordance with *Bat Surveys for Professional Ecologists; Good Practice Guidelines* 3rd edition published by the Bat Conservation Trust (Collins, 2016).

4.0 RESULTS

4.1 Desk Based Search

4.1.1 Designated Sites

The site lies within close proximity to the water's edge (**Figure 2**).

Figure 2. Nearby designated sites.



Solent Maritime Special Area of Conservation (SAC) is designated due to it encompassing a major estuarine system on the south coast of England. Sediment habitats within the estuaries include extensive estuarine flats, often with intertidal areas supporting Eelgrass (*Zostera* spp.) and Green Algae, sand and shingle spits, and natural shoreline transitions. The mudflats range from low and variable salinity in the upper reaches of the estuaries to very sheltered almost fully marine muds in Chichester and Langstone Harbours. Unusual features include the presence of very rare sponges in the Yar estuary and a sandy 'reef' of the polychaete *Sabellaria spinulosa* on the steep eastern side of the entrance to Chichester Harbour. In addition,

the site is notified for being the only site for Cord-grass (*Spartina spp.*). The Solent contains the second-largest aggregation of Atlantic salt meadows in south and south-west England. This habitat supports species such as Sea-purslane (*Atriplex portulacoides*), Common Sea-lavender (*Limonium vulgare*) and Thrift (*Armeria maritime*).

Chichester and Langstone Harbours is afforded a number of designations:

Special Protection Area (SPA):

The site is designated for supporting populations of the following Annex I bird species:

Little tern (*Sterna albifrons*), Sandwich tern (*Sterna sandvicensis*) during the breeding season, Little Egret (*Egretta garzetta*) and Ringed plover (*Charadrius hiaticula*) during migration and Bar-tailed godwit (*Limosa lapponica*) and Little egret (*Egretta garzetta*) over winter.

The site also qualified for supporting population of European importance of the following migratory species:

Black-tailed godwit (*Limosa limosa islandica*), Dark-bellied Brent Goose (*Branta bernicla bernicla*), Dunlin (*Calidris alpina alpina*), Grey plover (*Pluvialis squatarola*), Redshank (*Tringa tetanus*) and Ringed plover over winter.

The site is also designated for regularly supporting at least 20,000 waterfowl. Over winter, the area regularly supports over 93,000 individual waterfowl.

Ramsar:

For supporting wetland of international importance including large, sheltered estuarine basins comprising extensive sand and mud-flats exposed at low tide. The two harbours are joined by a stretch of water that separates Hayling Island from the mainland. Tidal channels drain the basin and penetrate far inland. The mud-flats are rich in invertebrates and also support extensive beds of algae, especially *Enteromorpha* species, and Eelgrasses. The basin contains a wide range of coastal habitats supporting important plant and animal communities. The site is of particular significance for birds, reflecting the species listed within the SPA designation.

Sites of Special Scientific Interest (SSSI):

The extensive intertidal mudflats are the feeding grounds for internationally important numbers of Ringed Plover, Grey Plover, Redshank, Black-tailed Godwit, Dunlin, Sanderling (*Calidris alba*), Curlew (*Numenius arquata*) and Greenshank (*Tringa nebularia*). Bar-tailed Godwit numbers are of European importance. Unimproved permanent pasture provides alternative feeding sites for the geese and major high tide

wader roosts. Some of this pasture is floristically rich being a Red Fescue (*Festuca rubra*) sward with scarce species such as Green-winged Orchid (*Orchis morio*) and Adder's Tongue Fern (*Ophioglossum vulgatum*).

Brook Meadow Local Nature Reserve (LNR) is located 700m northwest of the site. It is formed of 2ha of grassland, surrounded by woodlands and flanked by two streams. Brook Meadow supports an assemblage of birds, insects and wild flowers and Water Vole (*Arvicola amphibius*).

In addition, a number of non-statutory designated Sites of Importance for Nature Conservation (SINC) are located within a 1km radius of the site (**Table 1**).

Table 1. SINC within 1km.

SINC	Distance from site	Description
Warblington Castle Farm East E	950m west	The site regularly supports a significant population of Brent Goose.
Warblington Castle Farm East D	950m west	The site regularly supports a significant population of Brent Goose.
Conigar Point Meadows	900m west	The site is designated for its semi-improved grasslands which retain a significant element of unimproved grassland and semi-natural coastal and estuarine habitats, including saltmarsh, intertidal mudflats, sand dunes, shingle, brackish ponds, grazing marsh and maritime grasslands. The site supports the following notable species Wild Celery (<i>Apium graveolens</i>), Field Brome (<i>Bromus arvensis</i>), Slender Hare's-ear (<i>Bupleurum tenuissimum</i>), Divided Sedge (<i>Carex divisa</i>), Long-bracted Sedge (<i>Carex extensa</i>) and Golden Samphire (<i>Inula crithmoides</i>).
Brook Farm B	550m west	The site regularly supports notable arable weeds Weasel's Snout (<i>Misopates orontium</i>) and Corn Spurrey (<i>Spergula arvensis</i>), and a significant population of Brent Goose.
Nore Grassland & Saltmarsh	500m west	The site is designated for habitats within the semi-natural coastal and estuarine habitats category, including saltmarsh, intertidal mudflats, sand dunes, shingle, brackish ponds, grazing marsh and maritime grasslands. It also supports notable species slender hare's-ear and Sea Wormwood (<i>Seriphidium maritimum</i>).
Emsworth Millpond	400m east	The site is designated for habitats

		within the semi- natural coastal and estuarine habitats category, including saltmarsh, intertidal mudflats, sand dunes, shingle, brackish ponds, grazing marsh and maritime grasslands.
Lumley Meadow	820m north-east	Lumley Meadow supports agriculturally unimproved grasslands and notable species comprising Meadow Brome (<i>Bromus commutatus</i>), Distant Sedge (<i>Carex distans</i>) and divided sedge.
Westbrook Stream, Bridge Road	600m north-east	The site supports notable species Narrow-Leaved Water-plantain (<i>Alisma lanceolatum</i>).

4.1.2 Species

The HBIC data search returned records of Serotine (*Eptesicus serotinus*), Brandt's bat (*Myotis brandtii*), Daubenton's bat (*Myotis daubentonii*), Natterer's bat (*Myotis nattereri*), Noctule bat (*Nyctalus noctula*), Common and Soprano Pipistrelle (*Pipistrellus pipistrellus* and *pygmaeus*) and Brown long-eared (*Plecotus auritus*).

It was returned numerous records of protected and notable bird species from within 1km of the site, the majority of which are associated with the neighbouring coastline to the south, which is covered by a number of statutory designations.

Finally, the HBIC data search returned records of Stag Beetle (*Lucanus cervus*) within 1km of the site.

4.2 Phase I Habitat Survey

The following dominant habitats were present on site:

Improved Grassland: The majority of the area of impact consists of managed improved grassland (**Figure 3**). This was dominated by Perennial Ryegrass (*Lolium perenne*) and other common lawn species, with frequent Creeping Buttercup (*Ranunculus repens*), Dandelion (*Taraxacum officinale*), Daisy (*Bellis perennis*) and Clover (*Trifolium Sp.*), occasional Ribwort Plantain (*Plantago lanceolata*), Sorrel (*Rumex acetosa*) and Dock (*Rumex obtusifolius*) and rare Meadow Buttercup (*Ranunculus acris*), Prickly Sow Thistle (*Sonchus asper*), Mallow (*Malva sylvestris*), Yarrow (*Achillea millefolium*) and Creeping Cinquefoil (*Potentilla reptans*).

Figure 3. Rear garden of 46 Warblington Road laid to lawn.



Scrub: Areas of Bramble (*Rubus fruticosus*) scrub were recorded across the site including a linear Bramble feature along the eastern boundary (**Figure 4**).

Figure 4. Scrub within rear garden of 46 Warblington Road.



Scattered Trees: Numerous scattered trees were recorded across the site. Species included fruit trees, Pine (*Pinus Sp.*), Willow (*Salix Sp.*), Beech (*Fagus sylvatica*), Horse Chestnut (*Aesculus hippocastanum*), Oak (*Quercus Sp.*), Ash (*Fraxinus excelsior*), Leylandii (*Cupressus × leylandii*), Holly (*Ilex aquifolium*), Hazel (*Corylus avellana*), Elm

(*Ulmus minor*) and Silver Birch (*Betula pendula*). The majority of these trees are to be retained. However, it is understood to the rear of the existing property a Leylandii, Holly, Elm and Apple (*Malus Sp.*) tree are to be removed associated with Unit 3 and to the front four fruit trees, three Hazel, an Ash and a Holly will be removed along with an area of ornamental shrubs.

Dead Wood Pile: A pile of arisings and dead wood was recorded to the rear of the property (**Figure 5**).

Figure 5. Dead wood within rear garden of 46 Warblington Road.



Building: Only one building falls within the area of impact (**Figure 6**). This is a single storey garage of red brick and render construction with machine cut clay tiles on the roof. A timber framed lean to was present at the rear with a transparent, corrugated plastic roof.

Figure 6. Garage set for demolition.



Hardstanding: A gravel driveway is present on site (evident in **Figure 6**).

4.3 Assessment of the Building to Support Roosting Bats

A number of potential roost features were identified on the externals of the garage including lifted tiles, gaps between tiles and missing mortar along the ridge line.

4.4 Limitations

The species list provided is not considered to be exhaustive, instead a record of those identified during the Phase I survey. This survey does not constitute a full site assessment for invasive species, such as Japanese Knotweed (*Fallopia japonica*), but no such species were found during the time on site.

Access was not gained into the internals of the garage to search for evidence of bats and/or nesting birds. It is therefore recommended that prior to the Phase II bat survey taking place, the ecologist inspects the internals of the structure to identify any such evidence.

Finally, due to patches of dense scrub coverage, not all areas of the site were accessible. Although it is considered unlikely, given a lack of evidence of mammal

activity on site, there is potential this could have obstructed mammal holes. This will be accounted for via an updating walkover post scrub clearance (outside of nesting bird season).

5.0 EVALUATION

5.1 Desk Based Search

5.1.1 Designated Sites

The southern boundary adjoins Chichester Harbour, an ecologically sensitive area which has a number of associated national and international statutory nature conservation designations (**Section 4.1.1**). As a result, there is the potential for both direct and indirect impacts on Chichester and Langstone Harbour SPA/Ramsar site and Solent Maritime SAC during the construction phase and once operational.

5.1.2 Protected Species

It is considered the site has potential to support the species identified within the data search (i.e. Birds, Bats and potentially Stag Beetle). Please see below for further details.

5.2 Phase I Survey

Improved Grassland: It is considered that the continual management of the grassland, to a short sward height, reduces its suitability to support reptiles as they require a deep and diverse vegetation structure (Edgar et al., 2010). Therefore, it is considered unlikely reptiles would utilise the grassland onsite and therefore be impacted by proposals.

It is considered that bats would likely utilise the grassland on site for foraging. It is also considered that there is potential for Brent Geese to utilise the site, during the winter months, given the close proximity of Chichester Harbour.

Scrub: This habitat provides opportunities for nesting birds. The linear feature may also be utilised by commuting bats. As a result, this is considered to be of value at site level.

Scattered Trees: The trees on site also provide optimum habitat for nesting birds. Similarly, due to the origin (native) and/or age (mature) of the trees on site they are considered to be of local ecological value.

Dead Wood: This provides a valuable resource for invertebrates, including potentially Stag Beetle, and also possible hibernacula for species such as Hedgehog (*Erinaceus europaeus*). As a result, this is considered to be of value at site level.

Building: As well as having potential to support roosting bats (**Section 5.3**) the dense Ivy (*Hedera helix*) growth also presents opportunities for nesting birds.

Hardstanding: This element of the site is considered to be of negligible ecological value.

5.3 Assessment of Building to Support Roosting Bats

The garage is considered to have moderate potential to support roosting bats. As a result, two Phase II Surveys will be required in line with guidelines (**Table 2**).

Table 2. Recommended minimum number of survey visits (from Table 7.3 (BCT, 2016)).

Low Roost Suitability	Moderate Roost Suitability	High Roost Suitability / Confirmed roost
One survey visit. One dusk emergence or dawn re-entry survey.	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey*.	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third could be either dusk or dawn*.

6.0 REQUIREMENTS, RECOMMENDATIONS AND ENHANCEMENTS

The following section details the required Phase II work and some general recommendations to inform the design of the site going forward. Once the Phase II survey effort has been completed, any required Mitigation and Compensation will be provided along with species specific enhancement recommendations.

6.1 Further Surveys

6.1.1 Wintering Birds

Communication with Hampshire County Council's Ecology team has confirmed that they do not require further assessment in relation to wintering birds (July, 2019).

6.1.2 Bat Emergence

At least two Phase II Surveys will be undertaken to determine the presence / likely absence of bats within the garage. If bats are recorded roosting a third and final survey will be undertaken. These surveys must take place between May – September.

Please note if bats are recorded roosting a Mitigation Strategy will be produced. This will inform a License application to Natural England which be required to legally demolish the garage.

6.1.3 Bat Activity

It is recommended that activity transects also be undertaken to establish how the site is utilised and by which species. Given that the site is considered to provide low quality habitat, three surveys are recommended.

6.2 Design Considerations

6.2.1 Bats

In-line with Natural England (2015) guidance bitumen roofing felt should be utilised as opposed to Breathable Roof Membrane (BRM) for all roofing works as there is considerable evidence to suggest that BRM poses a threat to bats occupying a structure due to entanglement in the fibres (Natural England, 2015).

To enhance the site for bats, a bat roost feature will be integrated within the fabric of each of the new builds. The 1FR Bat Tube is designed to be installed on the external walls of buildings, either flush or beneath a rendered surface. It has been specifically designed to meet the requirements of the species of bats that inhabit buildings. It has an integrated wooden panel onto which bats can cling and a ridged entrance slope which makes it easy for them to enter and leave the box safely. The design maintains stable climatic conditions providing bats with a safe and stable environment in which to roost. This style of bat box requires no maintenance as droppings fall out of the entrance ramp.

Alternatively, the Enclosed Bat Box 'C' from Ibstock can also be integrated directly into the brickwork of new builds. The inside of the box is designed to create several roosting zones which are ideal for crevice dwelling bats. The bottom entrance means that no maintenance is required as dropping simply fall out the bottom.

In addition, at least five bat boxes should be erected within trees on site. It is recommended that two Schwegler 2F bat boxes are put in place. The front panel has a second inner wooden panel fitted to it to create a cavity wall. This provides ideal quarters for bats that inhabit crevices.

Two Schwegler 1FF bat boxes will also be introduced on site. These are spacious enough for bats to use as a summer roost or nursery site. The inner dimensions of the 1FF have a reducing width making it ideal for bat species which inhabit crevices such as Pipistrelle bats but also larger bats such as Noctule (*Nyctalus noctula*).

Finally, a Schwegler 1FD bat box will be erected on site. The domed roof results in an increased interior height whilst the two grooved internal wooden front panels provide a crevice. Both the cooler woodcrete surface and the warmer wooden panel means bats have a choice of different temperatures in different parts of the box.

Bat boxes to be sited on trees will be done so using the galvanised steel hanger and aluminium nail provided. They should be positioned at a height of between three to six metres from ground level. Bat boxes should ideally be sited in open sunny positions. The arrangement of the bat boxes has them facing different directions to provide a variety of micro-habitats. To increase the chances of bats roosting in the new features, the bat boxes will be placed adjacent to vegetation features as bats will be more likely to discover the artificial roosts if it is placed close to an existing flight path.

6.2.2 Nesting Birds

Wherever possible boundary vegetation will be retained and gaps infilled with native planting (**Section 6.2.4**). Bird boxes will be erected within retained trees. Ensuring there is a mixture of open and circle fronted will attract an array of species. Also, those constructed of woodcrete are favourable as they will last longer as opposed to wooden boxes.

In addition, a variety of entrance holes sizes will be installed to suit a variety of species i.e.:

- **32mm entrance hole** will attract Great, Blue, Marsh, Coal and Crested Tit, Redstart, Nuthatch, Collared and Pied Flycatcher, Wryneck, Tree and House Sparrow and bats.

- **26mm entrance hole** suits Blue, Marsh, Coal and Crested Tit and possibly Wren. All other species are prevented from using the nest box due to the smaller entrance hole.

6.2.3 Lighting

Due to the potential for bats to utilise the site for foraging, any new lighting should be designed to minimise light spill so not to affect any potential commuting and foraging bats (i.e. controlled by sensors). Similarly, no lighting will impact upon the neighbouring waterfront.

6.2.4 Native Planting

As a general enhancement any proposed new planting should aim for a 70:30 ratio in favour of native species over non-natives and ornamentals. Ideally fruit bearing trees, providing food sources for birds and small mammals, during the autumn and winter, and nest sites during the spring and summer, should be utilised. Species that should be considered include:

- Hawthorn (*Crataegus monogyna*),
- Alder Buckthorn (*Frangula alnus*),
- Blackthorn (*Prunus spinosa*),
- Wild Cherry (*Prunus avium*),
- Crab Apple (*Malus sylvestris*),
- Elder (*Sambucus nigra*),
- Rowan (*Sorbus aucuparia*).

Shrubs to be considered within the landscape planting include:

- Holly,
- Dogwood (*Cornus sanguinea*),
- Privet (*Ligustrum vulgare*),
- Dog Rose (*Rosa canina*),
- Guelder Rose (*Viburnum opulus*).

6.2.5 Hedgehogs

Provision will be made to promote site connectivity and extended foraging ranges and opportunities for the European Hedgehog, as per best practice. Holes measuring 10cm x 10cm will be made at the base of boundary fences/gravel boards into and between each garden and the surrounding habitats. Small signage will be installed on the fence above both sides of these access points to ensure they remain open upon completion of the development. The People's Trust for Endangered Species provide such signage, the purchase of which also supports conservation efforts: <https://ptes.org/shop/hedgehog-highways-signs/hedgehog-highway-labels/>

6.2.6 Designated Sites

In order to mitigate for the likely increases in residential pressure upon this SPA, due to the high densities of wildfowl and waders for which the area is predominantly protected, the Solent Recreation Mitigation Strategy (SRMS) has been introduced. This is a collaboration with Natural England and all local councils. Mitigation towards the SPA must be provided for all new residential developments within the 5.6km disturbance zone of the SPA. The simplest method of providing a necessary suitable and appropriate level of mitigation is via financial contributions, which, from 1st April 2019, are calculated on a sliding scale as follows (for any net increase in residential dwellings):

- £346 for each 1 bedroom dwelling
- £500 for each 2 bedroom dwelling
- £653 for each 3 bedroom dwelling
- £768 for each 4 bedroom dwelling
- £902 for each 5 bedroom (or more) dwelling

These contributions are used to enable the continued use of the coastline in a way that reduces the risks to the bird species of international importance that use the area, for example funding a team of rangers and implementing initiatives to encourage responsible dog walking (Solent Recreation Mitigation Partnership, 2014). It is considered that the contribution, in compliance with the recommendations presented within the associated documentation, provides a suitable level of mitigation for the potential adverse impacts associated with the proposed scheme upon the Solent SPA.

The contribution can be made as follows:

- 1) Prior to planning permission being granted or by completing the SDMP Agreement and sending the completed form along with mitigation contribution to the Planning Agreements Officer at the Local Planning Authority; or
- 2) By completing a Unilateral Undertaking before planning permission is granted with an undertaking that the payment will be made before the development is implemented. Please note, this option incurs an administration fee payable to the LPA.

6.3 Construction Phase

6.3.1 Tree Protection

Tree protective fencing will protect boundary vegetation from direct impact and from

severance or asphyxiation of the roots. Fences must be installed at the distance of the branch spread away from the tree trunk (British Standard 5837:2012 Trees in relation to construction) at a distance half the height of the tree and be of chestnut paling or of another similarly robust style of fencing. No vehicles should enter the protective ring fencing and no materials should be stored within their circumference. All protective fencing must be in place prior to any construction machinery arriving on site, before any works on site get underway, and will remain in place until all work is completed.

6.3.2 Clearance

Any vegetation clearance will need to take place outside of bird nesting season (March – October). If this isn't possible any removal will need to be supervised by a suitably experienced ecologist.

6.3.3 Designated Sites

Significant works (i.e. those that generate the highest levels of noise for example foundation works) will avoid the winter months (November – March). Other operations, such as brick laying, which do not utilise heavy machinery can take place at this time. Similarly, internal works can take place at any time of year.

A Construction Environmental Management Plan (CEMP) will be followed during construction. This will detail measures of avoiding pollution incidents and/or reducing the magnitude of their impacts and thus the potential impacts upon Harbour and any associated species utilising the feature.

6.3.4 Badgers

An updating Badger survey will be undertaken prior to any works taking place to ensure no setts have been established that require appropriate mitigation. Any open excavations will be fitted with an escape ramp overnight in case a Badger becomes trapped.

6.3.5 Dead Wood

The pile on site will be dismantled by hand outside of winter (i.e. prior to November or after March) to avoid disturbing any wildlife that may be utilising the structure for hibernation. If possible, the wood should be retained and utilised to create piles within the site to compensate any lost Stag Beetle habitat.

7.0 CONCLUSION

The Phase I survey has identified the potential for protected species on site. As a result, Phase II work has been recommended. This will inform any required mitigation and compensation along with appropriate enhancements. Some general recommendations have been made to inform the design going forward until the completion of the survey work, upon which time an updated report will be released containing all findings and any additional recommendations.

8.0 REFERENCES

Bat Conservation Trust BCT (2009) 'BATS AND LIGHTING IN THE UK'

Bat Conservation Trust (BCT) (2012). *Bat surveys: Good practice guidelines*. 2nd edition. Bat Conservation Trust, London.

CIEEM (2018). *Guidelines for Ecological Impact Assessment in the United Kingdom*. Institute of Ecology and Environmental Management, Winchester.

Collins, J. (ed.) (2016) 'Bat Surveys for Professional Ecologists; Good Practice Guidelines' (3rd edn). The Bat Conservation Trust, London.

English Nature (2004). *Bat Mitigation Guidelines*. A. J. Mitchell-Jones, English Nature.

Havant Borough Council (2011) 'Havant Borough Core Strategy' Available online at: <http://www.havant.gov.uk/sites/default/files/documents/ADOPTED%20CORE%20STRATEGY%20.pdf>

HMSO (1981). The Wildlife & Countryside Act 1981. HMSO, London.

HMSO (2000) *The Countryside and Rights of Way Act*. HMSO, London.

HMSO (2006) *Natural Environment and Rural Communities Act*. HMSO, London.

HMSO (2017) *The Conservation of Habitats and Species Regulations*. Statutory Instrument 2010 No. 490. HMSO, London.

JNCC (2003). *Handbook for Phase 1 Habitat Survey*. Joint Nature Conservation Committee, Peterborough.

Plan 1. Proposed Layout.

