

Barratt David Wilson

**Land at Forty Acre Farm,
Havant Road, Havant**

Extended Phase 1 Habitat Survey

April 2018

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Document Control

Project: Land at Forty Acre Farm, Havant Road, Havant
Client: Barratt David Wilson
Job Number: A095024
File Origin: I:\Projects\Projects A095000 on\A095024 Westways Havant\REPORTS

Issue 2	April 2018	FINAL
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Executive Summary

Contents	Summary
Site Location and Proposals	Land at Forty Acre Farm, located to the south west of Havant in Hampshire. The central OS grid reference for Land at Westways, Havant is SU692057. The site mainly consists of large arable fields with dense scrub and planted trees field boundaries. An industrial area with building structures and hardstanding present along the southern extent of the site and improved grassland with clover leys present; c. 22.9 hectares in extent. Directly south of the site is a railway line and beyond this is the A27 and Chichester and Langstone Harbour, a designated RAMSAR Site, Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI). Solent and Isle of Wight Lagoons a Special Area of Conservation (SAC) lies 280m south. Solent Maritime (SAC) lies 180m south of the site. South west of the site lies Farlington Marshes, a designated Local Nature Reserve (LNR). Directly west of the site lies Farlington residential dwellings and East Lodge Farm, East Lodge Playing Field. To the north of the site lies the A2030 Havant Road and further north lies the residential area of Farlington along with an arable field. North east of the site is a major junction of the A3 with the A3 slip road extending south along the eastern boundary of the site. The western extent of the site has been designated as a Sites of Importance for Nature Conservation (SINC), known as Forty Acre Farm B, due to the historical presence of dark-bellied brent goose (<i>Branta bernicla bernicla</i>). The proposed development is for 320 dwellings (including a 30% provision of affordable homes), 66 bed care home, provision of public open space, habitat mitigation zone, allotments, community building and associated infrastructure.
This Survey	Land at Forty Acre Farm, Havant Road, Havant, Extended Phase 1 Habitat Survey.
Results	Habitat suitable for: - Over wintering birds; - Nesting birds within buildings and trees; - Reptiles around grassland and scrub peripheries; - Foraging and commuting bats; - Roosting bats.
Recommendations	<i>Following surveys are recommended to inform any future planning application:</i> - A suite of wintering bird surveys (completed winter 2015/16) - Presence/likely absence reptile surveys of suitable scrub habitat between April and September. - Bat activity surveys, once per season between April and September. - A dusk emergence bat survey of Building 04. - A pre-commencement check for bird nests within buildings. - A pre-commencement badger check around peripheries of site. <i>Recommendations for Avoidance:</i> - Nesting Birds: Vegetation clearance and building demolition undertaken outside of nesting bird season (March to September inclusive) where possible. If this is not possible, it is recommended that a nesting bird check is carried out by an ecologist immediately prior to the removal of buildings and vegetation. - Commuting and foraging bats/birds: Trees bordering the site should be retained where possible. Work appropriately to prevent damage to the roots of trees/hedgerows. Lighting on site should be directed away any retained or planted vegetation and light levels should not exceed 1 lux along any vegetated boundaries in order to provide dark areas for foraging and commuting bats. Sensitive lighting strategy should be designed following completion of bat activity surveys detailed above. Works should be completed during daytime hours. It is recommended that construction of new buildings consider best practice, and the use of Breathable Roof Membranes (BRM) is avoided to prevent impacts to bats that may roost within these buildings. - Trees to be retained on site where possible. <i>Recommendations for Mitigation:</i> - An 'open recreational space' designated area along the southern boundary of the site for residents of the development, visitors and dog walkers enhanced for wildlife including over wintering birds found on site. Enhancements should include infilling of hedgerow and planting of scattered trees with native species as well as wildflower and species rich grassland creation and standing water bodies/scrapes. - An open space for overwintering birds, in particular brent geese will be screened off from the development, sown with a grazing grass mixture which contains a high proportion of perennial rye grass and maintained short through two silage cuts a year. <i>Recommendations for Enhancement</i>

Land at Forty Acre Farm, Havant Road, Havant: Extended Phase 1 Habitat Survey



	• Native bat friendly (berry producing) trees and shrubs incorporated into the proposed development. • Incorporation of nesting bird boxes; bat boxes/tubes and invertebrate boxes • Dead wood to be retained on site to provide an enhancement for invertebrates, including stag beetles. The details of this report will remain valid for a period of two years (until June 2019). Beyond this period, if works have not yet been started, it is recommended a new review of the ecological conditions is undertaken.
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1.0 Introduction

1.1 Background

WYG was commissioned by Barratt David Wilson in October 2015 to undertake an extended Phase 1 habitat survey at Land at Forty Acre Farm, Havant Road, Havant (referred to as the "site") to support a planning application for the site. The site location is shown in Figure 1.

The site survey was completed on the 4th February 2016 by Sarah Cruickshank, Assistant Ecologist. This report was prepared by Sarah Cruickshank and is informed by data collected during the site survey as well as data gathered through an extensive desk study using aerial imagery, the Multi-Agency Geographic Information for the Countryside (MAGIC) service and consultation with the biodiversity records centre local to the site (Hampshire Biodiversity Information Centre).

1.2 Site Location

The site covers approximately 22.9 hectares, located to the south west of Havant in Hampshire, centred on Ordnance Survey grid reference SU692057. Directly south of the site is a railway line and beyond this is the A27 and Chichester and Langstone Harbour, a designated RAMSAR Site, Special Protection Area (SPA) and Site of Special Scientific Interest (SSSI). A component of the Solent and Isle of Wight Lagoons Special Area of Conservation (SAC) lies 280m south of the site and the Solent Maritime SAC lies 180m south of the site. South west of the site lies Farlington Marshes, a designated Local Nature Reserve (LNR). Directly west of the site lies the residential area of Farlington along with East Lodge Farm and East Lodge Playing Field. To the north of the site lies the A2030 Havant Road beyond which lie further residential areas along with arable fields. North east of the site is a major junction of the A3 with the A3 slip road extending south along the eastern boundary of the site. The western extent of the site has been designated as a Site of Importance for Nature Conservation (SINC), known as Forty Acre Farm B, due to the historic presence of dark-bellied brent geese (*Branta bernicla bernicla*).

1.3 Development Proposals

The proposed development is for 320 dwellings (including a 30% provision of affordable homes), 66 bed care home, provision of public open space, habitat mitigation zone, allotments, community building and associated infrastructure.



1.4 Survey & Reporting Objectives

The ecological investigations undertaken by WYG included the following objectives:

- A desk study to obtain existing information on statutory and non-statutory sites of nature conservation interest, and records of protected/notable species within the site and its surroundings;
- An extended Phase 1 habitat survey involving a walkover of the site to record habitat types and dominant vegetation, invasive species and a reconnaissance survey for evidence of protected and or notable fauna or habitats;
- An external bat roost assessment of buildings and trees;
- An assessment of the potential ecological constraints to the proposed works and recommendations for further survey, avoidance, mitigation and enhancement, where appropriate.



2.0 Planning Policy & Legislation

2.1 National Planning Policy

Following the publication of the National Planning Policy Framework (NPPF) in March 2012, *Planning Policy Statement 9 (PPS9): Biodiversity and Geological Conservation* (2005) has been withdrawn. However, *ODPM 06/2005: Biodiversity and Geological Conservation – Statutory Obligations and their impact within the Planning System* (the guidance document that accompanied PPS9) has not been withdrawn and, where more detailed guidance is required than is given within the NPPF, local planning authorities will continue to rely on *ODPM 06/2005*.

This guidance requires local planning authorities to take account of the conservation of protected species when determining planning applications and makes the presence of a protected species a material consideration when assessing a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.

In the case of European Protected Species such as bats, planning policy emphasises that strict statutory provisions apply (including the *Conservation of Habitats and Species Regulations 2010* (as amended)), to which a planning authority must have due regard.

Where developments requiring planning permission are likely to impact upon protected species it is necessary that protected species surveys are undertaken and submitted to meet the requirements of paragraph 98 of *ODPM Circular 06/2005* which states that:

'The presence of a protected species is a material consideration when a planning authority is considering a development proposal that, if carried out, would be likely to result in harm to the species or its habitat.'

General guidance within the body of the NPPF which are also potentially relevant to the possible presence of bats at the site includes the following statements:

"The planning system should contribute to and enhance the natural and local environment by:

- protecting and enhancing valued landscapes, geological conservation interests and soils;*
- recognising the wider benefits of ecosystem services;*
- minimising impacts on biodiversity and providing net gains in biodiversity where possible, contributing to the Government's commitment to halt the overall decline in biodiversity, including by establishing coherent ecological networks that are more resilient to current and future pressures."*



"Local planning authorities should set criteria based policies against which proposals for any development on or affecting protected wildlife or geodiversity sites or landscape areas will be judged."

"When determining planning applications, local planning authorities should aim to conserve and enhance biodiversity by applying the following principles:

- If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused."*

2.1.1 Biodiversity 2020

Biodiversity 2020: A strategy for England's wildlife and ecosystem services replaces the previous *UK Biodiversity action Plan* and sets national targets to be achieved. The intent of *Biodiversity 2020*, however, is much broader than the protection and enhancement of less common species, and is meant to embrace the wider countryside as a whole.

The priority species and habitats considered under Biodiversity 2020 are those detailed under Section 41 of the NERC Act (as detailed below).

Local Biodiversity Action Plans (LBAP) identify habitat and species conservation priorities at a local level (typically at the County level), and are usually drawn up by a consortium of local Government organisations and conservation charities. Although no-longer accountable at a national level many are still managed and implemented at a local level.

2.2 Local Planning Policy

The Havant Borough Local Plan (Core Strategy) includes Policy CS11 Protecting and Enhancing the Special Environment and Heritage of Havant Borough

Planning permission will be granted for development that:

- Has particular regard to the following hierarchy of nature conservation designations within the borough (i) Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar (ii) Sites of Special Scientific Interest (SSSI) and National Nature Reserves. (iii) Sites of Importance for Nature Conservation (SINC), Local Nature Reserves (LNR) and other Ancient Woodland.
- Protects and where appropriate enhances the borough's statutory and non-statutory heritage designations by appropriately managing development in or adjacent to conservation areas,



listed buildings, scheduled ancient monuments, historic parks and gardens, archaeological sites, buildings of local historic or architectural interest.

- Protects wildlife habitats and wildlife corridors to prevent the fragmentation of existing habitats and to allow species, for example Brent Geese, to respond to the impacts of climate change by making provision for habitat adaptation e.g. coastal managed realignment and species migration.

2.3 Legislation

2.3.1 Wildlife and Countryside Act 1981 (as amended)

This is the principal mechanism for the legislative protection of wildlife in the UK. This legislation is the chief means by which the *Bern Convention* (1982) and the *Birds Directive* (1979) are implemented in the UK. Since it was first introduced, the Act has been amended several times and includes the requirement to designate Special Protection Areas (SPAs) of particular importance to birds.

The Act makes it an offence to (with exception to species listed in Schedule 2) intentionally:

- kill, injure, or take any wild bird;
- take, damage or destroy the nest of any wild bird while that nest is in use; and/or
- take or destroy an egg of any wild bird.

In addition, the Act makes it an offence (subject to exceptions) to:

- intentionally or recklessly kill, injure or take any wild animal listed on Schedule 5; and/or
- interfere with places used for shelter or protection, or intentionally disturbing animals occupying such places.

The Act also prohibits certain methods of killing, injuring, or taking wild animals.

Finally, the Act also makes it an offence (subject to exceptions) to:

- intentionally pick, uproot or destroy any wild plant listed in Schedule 8, or any seed or spore attached to any such wild plant;
- unless an authorised person, intentionally uproot any wild plant not included in Schedule 8; and/or



- sell, offer or expose for sale, or possess (for the purposes of trade), any live or dead wild plant included in Schedule 8, or any part of, or anything derived from, such a plant.

Following all amendments to the Act, a total of 154 species of animal, including several mammals, reptiles, amphibians, fish and invertebrates are protected under Schedule 5. Schedule 8 contains 185 protected species of flora, including higher plants, bryophytes and fungi and lichens. A comprehensive and up-to-date list of these species can be obtained from the JNCC website.

Part 14 of the Act makes unlawful to plant or otherwise to grow in the wild any plant which is listed in Part II of Schedule 9.

Table 1 provides a comprehensive list of plant species listed in this schedule (Refer to Appendix D, Table 1). It is recommended that plant material of these species is disposed of as bio-hazardous waste, and these plants should not be used in planting schemes.

2.3.2 The Conservation of Habitats and Species Regulations 2017

The *Conservation of Habitats and Species Regulations 2017* are predominately aimed at the conservation of habitats and species other than birds and complement the Wildlife and Countryside Act.

Regulations place a duty on the Secretary of State to propose a list of sites which are important for either habitats or species (listed in Annexes I or II of the *Habitats Directive* respectively) to the European Commission. These sites, if ratified by the European Commission, are then designated as Special Areas of Conservation (SACs). The 2012 amendments include that public bodies help preserve, maintain and re-establish habitats for wild birds.

The Regulations also make it an offence to deliberately capture, kill, disturb or trade in the animals listed in Schedule 2, or pick, uproot, destroy, or trade in the plants listed in Schedule 5 (Refer to Appendix D, Table 2).

2.3.3 Natural Environment and Rural Communities Act 2006

Section 41 (S41) of this Act requires the Secretary of State to publish a list (in consultation with Natural England) of habitats and species which are of principal importance for the conservation of biodiversity in England. The S41 list is used to guide decision-makers such as public bodies including local and regional authorities, in implementing their duty under Section 40 of the *Natural Environment and rural Communities (NERC) Act 2006*, to have regard to the conservation of biodiversity in England, when carrying out their normal (e.g. planning) functions. The S41 list includes 65 habitats of principal importance and 1,150 species of principal importance.



2.3.4 Hedgerow Regulations 1997

The *Hedgerow Regulations* were made under Section 97 of the *Environment Act 1995* and came into force in 1997. They introduced new arrangements for local planning authorities in England and Wales to protect important hedgerows in the countryside, by controlling their removal through a system of notification. Important hedgerows are defined by complex assessment criteria, which draw on biodiversity features, historical context and the landscape value of the hedgerow.

2.3.5 Protection of Badgers Act 1992

The main legislation protecting badgers in England and Wales is the *Protection of Badgers Act 1992* (the 1992 Act). Under the 1992 Act it is an offence to: wilfully kill, injure, take or attempt to kill, injure or take a badger; dig for a badger; interfere with a badger sett by, damaging a sett or any part thereof, destroying a sett, obstructing access to a sett, causing a dog to enter a sett or disturbing a badger while occupying a sett. The 1992 Act defines a badger sett as: "any structure or place which displays signs indicating current use by a badger".



3.0 Methodology

3.1 Desk Study

3.1.1 Local Records Centre

Information was gathered from Hampshire Biodiversity Information Centre (HBIC) regarding the presence of nature conservation designations and protected and notable species within 2km of the proposed development site. In addition, a search for designations was made of Natural England's interactive, web-based MAGIC (Multi Agency Geographic Information for the Countryside) database.

The data search covers:

- Statutory nature conservation designations including Special Protection Areas (SPAs), Special Areas of Conservation (SACs) and Sites of Special Scientific Interest (SSSIs) and Ramsar Sites;
- Non-statutory nature conservation designations, such as Sites of Importance for Nature Conservation (SINC);
- Records of protected species, such as badgers, great crested newts and bats; and
- Records of notable species, such as those listed under Section 41 of the NERC Act 2006.

The data search does not cover Tree Protection Orders or Conservation Areas.

3.1.2 Online Resources

The Multi-Agency Geographic Information for the Countryside database (MAGIC) was utilised to gather details of statutory designated sites within 2km of the site.

3.2 Field Surveys

An extended Phase 1 habitat survey was conducted at the site on the 4th February 2016 by WYG Assistant Ecologist, Sarah Cruickshank. All areas of the site were investigated, including those parts that are not expected to be affected directly by the works but may be indirectly impacted upon.

3.2.1 Habitats

The habitat types within the site were noted during the walkover survey in accordance with the categories specified for a Phase 1 habitat survey (Joint Nature Conservation Committee, 2010). Dominant plant species were recorded for each habitat present.



3.2.2 Protected and Notable Species

The site was inspected for evidence of and its potential to support protected or notable species, especially those listed under the *Conservation of Habitats and Species Regulations 2017*, the *Wildlife & Countryside Act 1981* (as amended), including those given extra protection under the *Natural Environment and Rural Communities (NERC) Act 2006* and *Countryside & Rights of Way (CROW) Act 2000*, and listed on the UK and local Biodiversity Action Plans.

The following species were considered:

Great Crested Newt

The site was appraised for its suitability to support great crested newts (*Triturus cristatus*). The assessment was based on guidance outlined in the *Herpetofauna Workers' Manual* (Joint Nature Conservation Committee, 2003) and the *Great Crested Newt Conservation Handbook* (Langton, Beckett & Foster, 2001).

Reptiles

The site was appraised for its suitability to support reptiles. The assessment was based on guidance outlined in the *Herpetofauna Workers' Manual* (Joint Nature Conservation Committee, 2003).

Bats

All trees and buildings within the boundary of the site were appraised by an experienced ecologist from WYG for their suitability to support breeding, resting and hibernating bats using survey methods based on those outlined in the Bat Conservation Trust's *Bat Surveys: Good Practice Guidelines* (2016). Trees and buildings were surveyed externally from the ground only, using binoculars. Where possible, observations were made internally of the structures surveyed.

Bat roost potential of trees is determined by a variety of factors including physical attributes of the tree, and proximity to good feeding sites and safe commuting routes. A brief summary of the known factors which influence a trees potential to support bats is provided in **Table 1** below.

Table 1. Features of trees used by bats and signs indicating possible use by bats (taken from Bat Conservation Trust, 2016)

Features of trees used by bats	Signs indicating possible use by bats
- Natural holes - Woodpecker holes - Cracks/splits in major limbs - Loose bark - Behind dense, thick-stemmed ivy - Hollows/cavities - Within dense epicormic growth - Bird and bat boxes	- Tiny scratches around entry point - Staining around entry point - Bat droppings in/around/below entrance - Audible squeaking at dusk or in warm weather - Flies around entry point - Distinctive smell of bats - Smoothing of surfaces around cavity

All trees within the site boundary were visually inspected from the ground only for their bat roosting potential, including potential access points into the trees and connectivity to the wider environment. These were categorised in accordance with **Table 2.**, and the categorisation determined by a visual assessment of the trees to record the presence of features such as crevices, holes, fissures, split bark and arboreal ivy.

Table 2: Categories of trees, based on their potential to support bat roosts (taken from Bat Conservation Trust, 2016)

Suitability	Description -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.
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 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.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e. not very well connected to the surrounding landscape by other habitat. 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 and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	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 such as 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 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.

Hazel Dormouse

The site was appraised for its suitability to support hazel dormice (*Muscardinus avellanarius*). The assessment was based on guidance outlined in the *Dormouse Conservation Handbook* (Bright *et al.*, 2006).

Badger

The site was surveyed for evidence of badger (*Meles meles*) setts or other badger activity such as paths, latrines or signs of foraging. Methodologies used and any setts recorded were classified according to published criteria (Harris, Cresswell & Jefferies, 1989). It is recommended in *Badgers and Development* (English Nature, 2011) that a 50m buffer around the site is investigated for evidence of badger activity where possible. This was however not possible as the site is surrounded by residential dwellings on the northern and western extent of the site as well as major junctions and A3 and A27 major roads bordering the eastern and southern boundary of the site.



Otters

Any water courses on site or immediately adjacent to the site were assessed for their suitability to support otters (*Lutra lutra*). This assessment was based on guidance outlined in *Monitoring the Otter* (Chanin, 2003).

Water Vole

Following methods set out in the *Water Vole Conservation Handbook* (Strachan & Moorhouse, 2011), an assessment of waterbodies within and adjacent to the site was undertaken to determine their suitability to support water voles (*Arvicola amphibious*). A search for evidence of activity was conducted, including droppings, latrines, burrows, footprints and feeding lawns, of any areas considered suitable.

Other Notable Species

The site was also appraised for its suitability to support other protected or notable fauna including mammals, birds and invertebrates in accordance with the Chartered Institute for Ecology and Environmental Management's *Guidelines for Preliminary Ecological Appraisal* (CIEEM, 2013). Evidence of any current or historical presence of such species was recorded.

3.2.2 Invasive Species

The site was searched for evidence of invasive plant species, such as Japanese knotweed (*Fallopia japonica*), Himalayan balsam (*Impatiens glandulifera*), giant hogweed (*Heracleum mantegazzianum*), horizontal cotoneaster (*Cotoneaster horizontalis*), pontic rhododendron (*Rhododendron ponticum*).

3.2.3 Limitations

The comprehensiveness of any ecological assessment will be limited by the season in which surveys are completed. This survey was completed in February which prior to the optimal time for completing extended Phase 1 habitat surveys; therefore it may be possible that some species were not present at the time of the survey. Overall the classification of habitats is not likely to have been limited by this factor.

A badger survey was not possible in some areas beyond the site boundary as this comprised private land in the form of residential areas and road infrastructure. However given the high disturbed nature of these areas it is unlikely that badgers are present and therefore this is not considered to be a significant limitation.



To determine likely presence or absence of protected species usually requires multiple visits at suitable times of the year. As a result, this survey focuses on assessing the *potential* of the site to support species of note, which are considered to be of principal importance for the conservation of biodiversity with reference to the *National Planning Policy Framework (NPPF)*, especially those given protection under UK or European wildlife legislation.

This report cannot therefore be considered a comprehensive assessment of the ecological interest of the site. However, it does provide an assessment of the ecological interest present on the day of the visit and highlights areas where further survey work may be recommended.

The findings of a Phase 1 survey will typically remain valid for a period of two years. An updated assessment of the site was completed in June 2017 by Associate Ecologist David West CEnv MCIEEM. This updated assessment confirmed that there had been no change in the site conditions and that the findings of this report remained valid. The details of this report will remain valid for a period of two years (until June 2019). Beyond this period, if works have not yet been undertaken, it is recommended that a new review of the ecological conditions is undertaken.



4.0 Baseline Conditions

4.1 Designated Sites

4.1.1 Statutory Sites

According to MAGIC there are four statutory designated sites within 2km of the site comprising. Details of these sites are provided in **Table 3**.

Table 3. Details of statutory sites within 2 km

Designation	Site Name	Distance & Direction	Summary of features
Local Nature Reserve (LNR) and SSSI	Farlington Marshes	19 m south of the site	Farlington Marsh is a 125 ha coastal grazing marsh and lagoon which has several pools, both freshwater and brackish and a broad stream which provide feeding and roosting sites for waders and wildfowl. It is located on the northern shore of Langstone Harbour between Portsmouth and Havant. It is internationally important for the bird population that it supports, such as bearded tit, sedge and reed warbler. Many flowering plants have also been recorded here, including sea barley and corky fruited water dropwort.
Ramsar Site, Special Protection Area (SPA) and Sites of Special Scientific Interest	Chichester and Langstone Harbours	180m south of the site	Chichester and Langstone Harbours are located on the south coast of England in Hampshire and West Sussex. They are 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



Designation	Site Name	Distance & Direction	Summary of features
			rich in invertebrates and also support extensive beds of algae, especially <i>Enteromorpha</i> species, and eelgrasses <i>Zostera</i> spp. The basin contains a wide range of coastal habitats supporting important plant and animal communities. The site supports important overwintering populations of migratory waterfowl. It also supports important colonies of breeding terns.
Special Area of Conservation (SAC)	Solent Maritime	180m south of the site	The Solent encompasses a major estuarine system on the south coast of England with four coastal plain estuaries Yar, Medina, King's Quay Shore, Hamble and four bar-built estuaries Newtown Harbour, Beaulieu, Langstone Harbour, Chichester Harbour. The site is the only one in the series to contain more than one physiographic sub-type of estuary and is the only cluster site. The Solent and its inlets are unique in Britain and Europe for their hydrographic regime of four tides each day, and for the complexity of the marine and estuarine habitats present within the area. Sediment habitats within the estuaries include extensive estuarine flats, often with intertidal areas supporting eelgrass <i>Zostera</i> 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'



Designation	Site Name	Distance & Direction	Summary of features
			of the polychaete (<i>Sabellaria spinulosa</i>) on the steep eastern side of the entrance to Chichester Harbour.
Special Area of Conservation (SAC)	Solent & Isle Of Wight Lagoons	280m south	The site includes a number of lagoons in the marshes in the Keyhaven – Pennington area, at Farlington Marshes in Chichester Harbour, behind the sea-wall at Bembridge Harbour and at Gilkicker, near Gosport. The lagoons show a range of salinities and substrates, ranging from soft mud to muddy sand with a high proportion of shingle, which support a diverse fauna including large populations of three notable species: foxtail stonewort (<i>Lamprothamnium papulosum</i>), lagoon sand shrimp (<i>Gammarus insensibilis</i>), starlet sea anemone (<i>Nematostella vectensis</i>).

4.1.2 Non-Statutory Sites

Sites of Importance for Nature Conservation (SINC)

According to HBIC data search there are 30 non-statutory designated sites within 2km of the site (refer to Table 4 for details). The western extent of the site has been designated as a Site of Importance for Nature Conservation (SINC), known as Forty Acres Farm B, due to the presence of dark-bellied brent goose.

Table 4: Non-statutory designated sites within 2km

Map Label	SINC Name	SINC Criteria
1	Meadow west of Farlington Avenue	P1.3
2	Farlington Avenue	P1.2
3	Portsmouth Golf Course West	2B/ 2D



4	Fort Purbrook	21/6A- designated for supporting Autumn Lady's Tresses (<i>Spiranthes spiralis</i>) and Sainfoin (<i>Onobrychis viciifolia</i>).
5	Purbrook Park Wood	1A
6	Land to the north of Portsdown Hill Road	P1.2/ P1.3/ P4.1
7	Sandy Dell	1A
8	Field to West of Gillman Road	P1.2
9	Fort Purbrook Paddock 1 (Havant)	2B/6A – designated for supporting small blue (<i>Cupido minimus</i>); Autumn Lady's Tresses (<i>Spiranthes spiralis</i>)
10	Adjacent to Farlington Playing Fields	P1.3/ P2.1/ P4.1
11	Fort Purbrook Paddock 2 (Havant)	2B/6A- designated for supporting Autumn Lady's Tresses (<i>Spiranthes spiralis</i>)
12	East and West of Gillman Road	P1.2/ P4.1
13	Fort Purbrook Paddock 3 (Havant)	2B
14	Farlington Marshes	P1.2/ P4.1/ P4.2
15	Fort Purbrook Paddock 4 (Havant)	2B
16	Portsmouth Golf Course East	2B/ 2D
17	Field East of Farlington Redoubt (North)	2D
18	Gundymoor Wood (West)	1A
19	Portsmouth City Golf Course Copse	1B/ 6A- designated for supporting Fly orchid (<i>Ophrys insectifera</i>)
20	Camp Down Grassland Remnants	2D
21	Gundymoor Wood (Main)	1A
22	Forty Acres Farm B	6B designated for supporting Dark bellied brent goose (<i>Branta bermicla bermicla</i>)
23	Johnston's Coppice	1A/ 6A – designated for supporting dormouse (<i>Muscardinus avellanarius</i>)
24	Fields off Havant Road	6A/ 6B- designated for supporting Dark bellied brent goose (<i>Branta bermicla bermicla</i>)

25	Farlington Marshes Grassland (North-East)	2A/ 4A
26	Littlepark Wood (West)	1A/1Cii
27	Littlepark Wood (East)	1A/1Cii
28	Manor Farm A	6B
29	Broadmarsh Playing Field	6B
30	Southmoor- Big Field (south edge)	4A

(See Figure 3. for full list of definitions of SINC criteria reasons for designations.)

4.2 Habitats

The site is located south west of Havant in Hampshire and predominantly comprises arable fields with semi-improved and improved grassland, dense scrub, bare ground and buildings.

4.2.1 Arable

The majority of the site comprises four arable fields (Photograph 1) consisting of over wintered stubble at the time of the survey, prior to spring sown crops being planted. The fields have been intensively farmed and there was little evidence of arable weeds or other plants being present.

Photograph 1: Arable crops covering the majority of the site.



4.2.2 Dense Scrub

Lengths of dense scrub (Photograph 2) were found along the northern boundary adjacent to the road. In addition dense scrub is present along the southern boundary and along the tree lines separating the

arable fields. Species included bramble (*Rubus fruticosus*), creeping buttercup (*Ranunculus repens*), ivy (*Hedera helix*), common nettle (*Urtica dioica*), common ragwort (*Jacobaea vulgaris*), cleavers (*Galium aparine*), common hogweed (*Heracleum sphondylium*), old man's beard (*Clematis vitalba*), buddleia (*Buddleja* sp.), common buckthorn (*Rhamnus cathartica*) and common broom (*Cytisus scoparius*).

Photograph 2: Dense scrub around the peripheries of the arable fields and northern and southern boundary.



4.2.3 Improved Grassland

The fields to the west, east and south of Forty Acre Farm are farmed as improved grassland (Photograph 3) with white clover leys (*Trifolium repens*) present, managed to a height of up to 10cm. In addition improved grassland is present along the south eastern extent of the site comprising perennial rye grass (*Lolium perenne*) and Yorkshire fog (*Holcus lanatus*).

Photograph 3: Improved grassland running directly east of the track to Forty Acre Farm.



4.2.4 Tall ruderal

Tall ruderal vegetation (Photograph 4) is present along the northern and eastern extent of the site. Species present include rosebay willowherb (*Chamerion angustifolium*), clover (*Trifolium* sp.), common burdock (*Arctium minus*), ragwort, teasel (*Dipsacus fullonum*), creeping buttercup, lesser celandine (*Ranunculus ficaria*), Yorkshire fog, scarlet pimpernel (*Anagallis arvensis*), fat-hen (*Chenopodium album*), Canadian fleabane (*Conyza canadensis*), hairy bittercress (*Cardamine hirsuta*).

Photograph 4: Ruderal vegetation present along northern bank of site.



4.2.5 Plantation Broadleaved Woodland

A linear belt of ash trees (*Fraxinus excelsior*) (Photograph 5) is planted along the northern extent of the site as well as the eastern boundary. In addition, a linear belt of alder trees (*Alnus glutinosa*) (Photograph 6) is planted running north to south to separate arable fields at the eastern and western extents of the site. Understory comprises predominantly bramble and nettle with teasel (*Dipsacus* sp.), ground elder (*Aegopodium podagraria*), cranesbill (*Geranium* sp.), dog rose (*Rosa canina*), hawkbit (*Leontodon* sp.), cat's ear (*Hypochaeris radicata*), herb-robert (*Geranium robertianum*), bird cherry (*Prunus padus*), common daisy (*Bellis perennis*), ribwort plantain (*Plantago lanceolata*), bentgrass (*Agrostis* sp.) and mallow (*Malva* sp.).

Photograph 5: Linear belt of ash trees running along the northern boundary of the site.



Photograph 6: Linear belt of planted alder trees separating the arable fields of Forty Acre Farm.



4.2.6 Scattered Trees

A moderate number of broadleaved scattered trees (Photograph 7) are present throughout the site. These are predominantly planted alder (Photograph 8) ash and hawthorn (*Crataegus monogyna*) (adjacent to industrial area) and are immature to semi-mature in age, with some moss and ivy (*Hedera helix*) growth present on the trunks of some individuals. Also present are elder trees along the northern bank. Immature English elm (*Ulmus minor*) are situated along the northern bank of the site adjacent to the metal entrance gate into the site. Deadwood is present (Photograph 9) (TN1) in the form of a fallen alder tree located along a field boundary along the eastern extent of the site.

Photograph 7: Scattered elder trees present along the northern boundary of the site.



Photograph 8: Scattered alder trees along the eastern extent of the site.



Photograph 9: Deadwood is located along the eastern extent of the site.



4.2.7 Standing water

A small rectangular pond (Photograph 10) (TN2) lies in the industrial area of the site with 0.5m of standing water present during the time of the survey. This pond is described in more detail in Section 4.3.2.

A wet ditch with 2cm of standing water is present along the southern boundary of the site (TN4) during the time of the survey. In addition, there are pools of standing water (Photograph 11) where the southern boundary of the site has become waterlogged. Rough sedge (*Carex muricata*) is also present.

Photograph 10: Small rectangular pond in industrial area of site (Pond 1).



Photograph 11: Standing water located along the southern boundary of the site.



Photograph 12: Ditch with standing water located along the southern boundary of the site.



4.2.8 Bare ground

Bare ground (Photograph 13) is located along the northern boundary of the site as well as hardstanding present adjacent to the industrial area (Photograph 14) and along the track leading to Forty Acre Farm. There are also bare ground pathways along the periphery of the site attributed to human usage.

Photograph 13: Bare ground located along the northern boundary



Photograph 14: Bare ground located directly east of the industrial area.



4.2.9 Buildings

A part of the site comprises of an industrial area dominated by buildings of corrugated metal construction. In addition, there is one building of brick construction present with the roof and sections of brickwork missing and with ivy growing along guttering. To the west of the industrial area lies an external fuel storage tank. To the east of the industrial area lie pre fabricated and timber storage buildings. Current proposals include the removal of these Buildings. All of the buildings are discussed in more detail in relation to bats in Section 4.3.4 below.

4.2.10 Dense scrub

Dense scrub (Photograph 15) is present along all boundaries of the site and it also forms the understory of the field boundaries of the arable fields of the site. Species present include bramble, old man's beard, common nettle, elder, hawthorn and cleavers.

Photograph 15: Dense scrub present along the northern boundary of the site



4.2.11 Species-poor Hedgerow

Species-poor hedgerow (Photograph 16) is present along the western boundary of the site adjacent to the residential properties of Farlington with scattered trees present. The hedgerow is managed and intact, measuring up to 2m high. In addition a further hedgerow is present west of the industrial area. The hedgerow has been left unmanaged with some gaps present, measuring approximately 3-

4m high. Species present include hawthorn, Leyland cypress (*Cupressus × leylandii*), laurel (*Prunus laurocerasus*.) ivy and bramble.

Photograph 16: Hedgerow is located directly west of the industrial area.



Photograph 17: Managed hedgerow located along the western boundary adjacent to residential dwellings.





4.3 Protected & Notable Species

4.3.1 Birds

Desk Study

HBIC returned 147 records for notable bird species within 2km of the site. Species listed on Schedule 1 of the Wildlife and Countryside Act (WCA) and recorded within the area include fieldfare and bar-tailed godwit. Red listed species have also been recorded from within the search area; including starling, skylark, house sparrow, herring gull, black-tailed godwit, curlew, whimbrel, song thrush and lapwing. Amber listed species records were returned with species listed including dark-bellied brent goose, black headed gull, oystercatcher, lesser black-backed gull, great black-backed gull and Mediterranean gull.

Field Surveys

Nesting birds – vegetation

Habitats were identified within the site which offer **high potential** to support nesting birds such as scrub, hedgerows with trees, plantation broadleaved woodland and arable fields. No birds were recorded nesting on the site at the time of extended Phase 1 habitat survey; however, the survey was carried out during February which is outside of the active nesting bird season (March to September inclusive) when nesting activity is not generally taking place and is therefore less likely to be observed. Off-site vegetation close to the site boundary also offers high potential to support nesting birds.

Nesting birds – buildings

There are eight buildings present on site. The buildings on site within the industrial area appear to offer **low potential** to support common nesting birds such as song thrush, pied wagtail and robin which may nest within timber buildings on site. The main building (Building 07) was noted to hold **negligible potential** for nesting birds. The buildings themselves exhibited no external signs of previous nesting activity and no nesting material was observed in the guttering or within the structures where assessment was available. Building 04 is comprised of brick and has some cracks and crevices present in the brickwork as well as dense ivy growth on the roof that may potentially provide suitable opportunities for nesting birds. Building 04 is assessed as offering **low potential** to support nesting birds.

Therefore the site is considered to provide **high potential** to support breeding birds due to available suitable habitats and the opportunity for birds to enter the interior of the buildings as well as utilising the trees around the site to nest.

Wintering Birds

Wintering bird surveys were carried out at the site between October 2015 and March 2016. Notable bird species recorded on site included dark-bellied brent goose, curlew, oystercatcher, house sparrow, song thrush, starling, herring gull, skylark, meadow pipit, lesser black backed gull and black headed gull. For further details please refer to the accompanying WYG Wintering Bird Survey Report.

4.3.2 Great Crested Newts

Desk Study

HBIC returned no records of great crested newts (GCN) within 2km of the site. Using OS Maps, it was noted there are no ponds within 500m of the site. Two ponds are located within the industrial area on site.

Field Survey

There are two ponds adjacent to each other situated in the industrial area (TN2). Pond 1 measures 14m² and Pond 2 measures 10m². Species present include blanket weed heavily covering the surface of the pond and in addition rosebay willowherb, white nettle (*Lamium album*), hogweed (*Heracleum sphondylium*), sun spurge (*Euphorbia helioscopia*) are present. A habitat suitability assessment (HSI) was carried out for both ponds following methodology by Oldham *et al.*, (2000). Pond 1 had an HSI score of 0.44 and Pond 2 had an HSI score of 0.45, therefore were noted to be of 'Poor' suitability for Great Crested Newt. See Table 5. for results of the HSI assessment on Ponds 1 and 2.

Table 5. HSI assessment score of Ponds 1 and 2

	Pond 1	Pond 2
Field location	1.00	1.00
Pond area	0.05	0.05
Pond drying	0.10	0.10



Water quality	0.33	0.33
Shade	1.00	1.00
Fowl	1.00	1.00
Fish	1.00	1.00
Ponds	0.60	0.60
Terrestrial habitat	0.33	0.33
Macrophytes	0.90	1.00
HSI score	0.44	0.45
Pond suitability	Poor	Poor

Both of the ponds found on site are isolated from any other suitable habitats, it is therefore considered extremely unlikely that any GCN are likely to be present within these ponds and it is considered unlikely that proposed developments would impact upon GCN. The site therefore provides **negligible potential** to support GCN.

4.3.3 Reptiles and Amphibians

Desk Study

HBIC returned 23 records of slow worm (*Anguis fragilis*). The majority of records were made in Hamble-le-rice, on a small strip of grassland adjacent to the A27 approximately 0.2km south of the nearest site boundary. HBIC also returned six records of common lizard (*Zootoca vivipara*), the closest of which was recorded in Farlington Marshes, and located 0.88km south-west of the nearest site boundary.

Field Surveys

Limited reptile habitat was noted in the form of longer grassland and scrub on unmanaged field margins of arable fields. In addition dense scrub potentially suitable for reptiles forms parts of the boundaries north and south of site. Deadwood (TN1) is also present along the eastern extent of the site that may provide favourable refuge areas for reptile species. Given the small area of potential habitat and its composition, the site is considered to offer **low potential** to support reptiles.

4.3.4 Bats

Desk Study

HBIC returned five records of serotine (*Eptesicus serotinus*); two records of Daubenton's bat (*Myotis daubentonii*); one record of whiskered bat (*Myotis mystacinus*); one record of Natterer's bat (*Myotis nattereri*); eight records of noctule (*Nyctalus noctula*); fifteen records of common pipistrelle (*Pipistrellus pipistrellus*); ten records of soprano pipistrelle (*Pipistrellus pygmaeus*) and; two records of brown long-eared bat (*Plecotus auritus*) within 2 km of the site. Due to the potential for persecution of bat species', the specific locations of these records are sensitive and were not released by HBIC.

Field Survey

Roosting bats- Buildings

Building 01

No evidence of bats was found during the inspection of this building. Building 01 is an external water tank made from corrugated metal sheets (Photograph 18). No cracks or crevices are present in the beams of the roof to provide potential roosting locations for bats. The apparent lack of crevices and the likely fluctuations in temperature due to its metal construction gives this building **negligible suitability** for roosting bats. No evidence of bats were identified during the inspection.

Photograph 18: A water tank made from corrugated metal located east of the Industrial area.



Building 02

A 2m x 1m pump house (Photograph 19) made from concrete blocks with roof comprised of metal sheeting. Some crevices are present and small amounts of ivy are present inside and outside the building. No evidence of bats was identified during the inspection; the Building provides ***negligible suitability*** for roosting bats.

Photograph 19: Building located east of the industrial area.



Building 03

A cylindrical roofed storage building (Photograph 20) comprising metal corrugated sheeting. Some holes and cracks are present in the building; however the metal construction of the building provides ***negligible suitability*** for bats. No evidence of bats was identified during the inspection.

Photograph 20: A cylindrical roofed storage building located in the industrial area.



Building 04

Building 04 (Photograph 21) is a brick/flint and mortar building with parts of the roof missing and portions of brickwork missing which may provide access and egress points for roosting bats. A small extension with a metal corrugated roof is located on the southern elevation. Dense ivy is present along the walls which may provide further roosting features. No evidence of bats was identified during the inspection; however the building is noted to have **low suitability** for roosting bats.

Photograph 21: Brick building located within the industrial area



Building 05

A small mobile shelter of timber construction was present on the eastern side of the industrial area (Photograph 22). Some small cracks and crevices are present but these were regarded as being unsuitable for bats due to their exposed nature. No evidence of bats was identified during the inspection. The Building provides ***negligible suitability*** for roosting bats.

Photograph 22: Small mobile carriage located east of the industrial area.



Building 06

Two mobile timber carriages (Photograph 23) which are very open. No evidence of bats was identified during the inspection; and these provide ***negligible suitability*** for roosting bats.

Photograph 23: Two mobile carriages located west of the industrial area at Forty Acre Farm.



Building 07

The Main building (Photograph 24) of the industrial area is used for commercial purposes. The building consists of a metal frame clad with corrugated metal sheeting. No cracks or crevices were noted in the building and no evidence of bats was identified during the inspection. The Main Building provides ***negligible suitability*** for roosting bats.

Photograph 24: Main commercial building (07) located in the industrial area.



Building 08

There are two Buildings to the east of the industrial area (Photograph 25). These are portacabin style timber clad storage buildings with roofing intact. Both are considered to hold ***negligible suitability*** for bats. No evidence of bats were identified during the inspection.

Photograph 25: Buildings situated directly east of the industrial area



Roosting bats – Trees

No trees on site were mature and none were observed to support features suitable for roosting bats. Ivy was present on planted ash trees on the northern boundary, however this was insufficiently dense to provide roosting habitat. The trees on site are considered to have ***negligible suitability*** for roosting bats.

Foraging and commuting bats

Linear features on site include trees with dense scrub which could provide commuting and foraging habitat for bats. Standing water on site and suitable habitat just off site also provides potential foraging features for bats. However the site comprises mainly habitats of low suitability such as arable, improved grassland and semi-improved grassland. Also present are a moderate number of scattered broadleaved trees which could provide suitable features for foraging and bats.



When foraging, pipistrelle bats favour woodland edge and hedgerow habitat and noctule bats are known to circle over woodland and pasture. Brown long-eared bats are a gleaning species that pick insects off twigs, trees, bushes and even the ground. The presence of tree lines and hedgerows within the site is favourable for foraging and commuting bats; however the site is relatively isolated and located within a residential area, surrounded by roads, which are lit by street lamps. Overall the site has been assessed as comprising low habitat quality and offering **low suitability** to support foraging and commuting bats.

4.3.5 Badgers

Desk Study

HBIC returned one record of Eurasian badger (*Meles meles*) within 2km of the site. Due to the potential for persecution of the species, the specific location of the record is sensitive and was not released by HBIC.

Field Survey

No badger setts or signs of badger activity, such as snuffle holes, latrines or hairs were identified on or within 50m of the proposed development site, where access allowed. There is suitable foraging habitat on site for badger; however **low potential** for sett creation with the majority of suitable habitat present along the eastern and southern boundary.

Due to the limited suitable habitat on site, the habitats on site are considered to offer **low potential** for foraging, commuting badgers, or for forming setts. The site is surrounded by boundary fencing, roads, and residential development, which may reduce the potential for badgers to be present on site.

4.3.6 Otter

Desk Study

HBIC did not return any records of European otter (*Lutra lutra*) within 2km of the proposed development site.

Field Survey

There are no streams or rivers onsite for otters to use. The site offers **negligible potential** for this species. No further action regarding this species is needed.



4.3.7 Water Vole

Desk Study

HBIC returned 62 records of European water-vole (*Arvicola amphibious*) within 2km of the site. The majority of records were made in and around St John's College playing fields located approximately 1.1km south-west of the nearest site boundary. The closest record was made in Farlington Marshes approximately 0.88km south-west of the nearest site boundary.

Field Survey

There are no streams or ditches onsite for water voles to use. A wet ditch runs along the southern boundary of the site together with pools of standing water where site has become waterlogged in south western corner of site. This is not thought to be a permanent water feature and holds negligible potential to support water vole. No water vole burrows were identified at the time of the survey and no suitable locations were identified for burrow formation. The site offers **negligible potential** for this species and no further action regarding this species is needed.

4.3.8 Hazel Dormouse

Desk Study

HBIC returned six records of hazel dormouse (*Muscardinus avellanarius*) within 2km of the site. These records are classified as sensitive, and the locations from where the recordings were made were not released by HBIC.

Field Survey

Hazel dormice are an arboreal species often found in woodlands, hedgerows and scrub. Hedgerows within the site are predominantly scrub and defunct in nature and species-poor in composition. Vegetation within the site is highly limited in connectivity to habitat off-site to allow a viable dormouse population to survive. In particular the diversity of tree and hedgerow species was assessed as low, limiting the food resource for dormice. The site is predominantly disconnected from the wider area which would appear to limit the possibilities of dormice periodically visiting the area for foraging resources. It is considered highly unlikely that this species is present within the site, which is also isolated from the potentially suitable habitats within the wider surrounding area. Therefore, the



site is considered to offer **negligible potential** to support dormice. No further surveys are recommended.

4.3.9 Botanical

Desk Study

HBIC returned 93 records of plant species including notable arable weeds; cornflower (*Centaurea cyanus*), dwarf spurge (*Euphorbia exigua*), field scabious (*Knautia arvensis*), weasel's snout (*Misopates orontium*), sainfoin (*Onobrychis* sp.) and corn spurrey (*Spergula arvensis*).

Field Survey

The site comprises arable fields and grazed neutral improved and semi-improved grassland lightly grazed semi-improved grassland, woodland, bare ground, buildings, scattered trees, small areas of native scrub and species-poor scrub hedgerows with trees.

Of these, the grassland and arable habitat is considered to be species poor as it is significantly 'agriculturally improved'. Due to the low intrinsic value of the other (i.e. non-grassland) habitats present, and the species recorded in these habitats, these are considered unlikely to support notable plant species. None of the hedgerows are considered at all likely to qualify as "important" under The Hedgerows Regulations (1997) due to species-poor assemblages. No further botanical surveys are recommended.

4.3.10 Invertebrates

Desk Study

HBIC returned records of the following invertebrate species listed under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006): stag beetle (*Lucanus cervus*); brown-banded carder-bee (*Bombus humilis*); grey dagger (*Acronicta psi*); knot grass (*Acronicta rumicis*); dusky brocade (*Apamea remissa*); small heath (*Coenonympha pamphilus*); small blue (*Cupido minimus*); small square-spot (*Diarsia rubi*); small phoenix (*Ecliptopera silaceata*); dingy skipper (*Erynnis tages*); spinach (*Eulithis mellinata*); small emerald (*Hemistola chrysoprasaria*); grayling (*Hipparchia semele*); rustic (*Hoplodrina blanda*); white admiral (*Limenitis Camilla*); lackey (*Malacosoma Neustria*); dot moth (*Melanchra persicariae*); white ermine (*Spilosoma lubricipeda*); buff ermine (*Spilosoma luteum*); blood-vein (*Timandra comae*) and; cinnabar (*Tyria jacobaeae*). Due to the current use of the site as arable fields and associated farmland, it is considered possible that arable field margins and



hedgerows may support some number of the notable (particularly Lepidoptera) pollinator species listed above.

Field Surveys

No notable invertebrates were noted during the survey, although the surveys were carried out outside of the optimal surveying period of May to September inclusive. The majority of species listed in the desk study however are unlikely to be found on site due to the lack of suitable habitat and botanical diversity noted on site.

4.3.11 Invasive Species

Field Survey

No invasive species were noted within or adjacent to the proposed development site during the extended Phase 1 habitat survey. No invasive species records were returned through the data search and the habitats within the site do not appear to be particularly vulnerable to dumping of garden waste or other fly-tipping. The site backs onto residential gardens so the presence of invasive species cannot be ruled out.



5.0 Constraints & Opportunities

5.1 Designated Sites

Chichester and Langstone Harbour (Ramsar, SPA and SSSI) and Farlington Marshes (LNR) are located 19m south of the proposed development site. Farlington Marshes is a species rich grazing marsh of international importance for the waders and wildfowl that it supports. Chichester and Langstone Harbour (Ramsar, SPA and SSSI) is designated for supporting populations of European importance including little tern and sandwich tern during the breeding season, little egret on passage. In addition, Chichester and Langstone Harbour provides a wetland of international importance supporting waterfowl.

Any noise/visual disturbance impacts occurring on the designated sites as a result of construction or occupation are likely to be reduced by the A27 and the railway line. Both of these are located between the development site and the designated sites and will mask both sound and visual disturbance from the development. There are no direct hydrological connections or pollution pathways between the site and the designated sites.

The Solent Way footpath is located along the foreshore of the harbour and there are several car parks for visitors including one located 472m to the south east of the site. There is therefore potential for the statutory designated sites to be impacted as a result of increased recreational pressure in the absence of mitigation. This is likely to be in the form of increased numbers of visitors and dog walkers to the Solent Way, although a large area of recreational open space is proposed on site.

This has the potential to increase disturbance events involving waders and waterfowl along the foreshore. However any direct impacts due to increased recreational pressure will be avoided by the creation of areas of open green space along the southern extent of the site. This will provide an alternative dog walking area and recreational space to the designated sites south of the site which will be more easily accessible from the proposed development.

The development will result in a partial loss of a SINC, Forty Acres Farm B, which is designated for the presence of brent geese. As compensation for this loss, a brent geese mitigation area will be created at the eastern extent of the site and screened off from the development. For more information on the proposed wintering bird mitigation measures see the WYG Wintering Bird Report.

In addition to direct impacts upon these sites, any in-combination effects of adding 320 dwellings to the area will be mitigated as part of the Solent Recreation Mitigation Strategy, which states that all developments within 5.6km of the SPA will require a per dwelling financial contribution. Assuming



that these measures are implemented, there are not predicted to be any adverse impacts on the internationally designated sites, or their qualifying species.

5.2 Habitats

The habitats identified on site were common/widespread and of limited floral value. Further botanical surveys of the site are not considered necessary. In addition, no priority habitats were identified on site. The proposed development has an opportunity to enhance retained vegetated areas through increasing species diversity and biodiversity value. It is recommended as part of the proposed masterplan to include an 'open space' area which will be designated for visitors and residents of the development. This area will be designed for dog walkers and recreational use but will also be enhanced for wildlife with the creation of ponds and scrapes. In addition, hedgerows and areas of scrub and scattered trees should be in-filled with native species and planting of native scattered trees, whilst maintaining the open nature of the site. The grass should be sown with a wildflower seed mixture, ideally in the autumn to maximise establishment. The grass will be mown once a year in September with the arisings removed off site and managed for silage. These enhancements will increase the suitability for wading birds such as curlew and oystercatcher found on site, nesting birds and other species such as bats and invertebrates; as well as providing an aesthetic wildlife area for residents, dog walkers and visitors to the site. It is recommended that sympathetic, species rich planting is implemented as a part of a wider landscaping scheme in order to increase the suitable post-construction habitat for wildlife. A list of recommended species can be provided on request; locally native species would be preferred although, in this instance, cultivars of native species and other non-native but wildlife friendly trees and shrubs would provide value for wildlife without impacting on the character of the area. The loss of Pond 1 and Pond 2 (TN2) located in the industrial area will be mitigated by the creation of new ponds and scrapes in the landscaping proposals.

In addition, on the eastern extent of the site an area should be managed for wintering brent geese. For more information see WYG 2016 Wintering Bird Report, Westways, Havant.

5.3 Protected & Notable Species

5.3.1 Great Crested Newts

The great crested newt and its habitat are protected under the *Wildlife and Countryside Act 1981* (as amended) and the *Conservation of Habitats and Species Regulations 2017*.



Two ponds, noted as 'Poor' suitability were noted on site, surrounded by an industrial area with hardstanding present. The site provides **negligible potential** for great crested newt and no further surveys are considered.

5.3.2 Reptiles

All species of native reptiles are under the Wildlife and Countryside Act 1981 (as amended).

The site is considered to have **low potential** to support reptiles. If present and in the absence of suitable mitigation, there is the potential for the development to result in the loss of reptile habitat, and cause the killing or injury of individual reptiles. It is recommended that reptile presence absence surveys are carried out along the scrub habitats of the site, including the site boundaries and arable field boundaries. These will comprise of seven surveys in suitable weather conditions between April and September to assess the presence or likely absence of reptiles on site.

5.3.3 Bats

All species of British bats and their roosts are fully protected under the *Wildlife & Countryside Act 1981* (as amended) and the *Conservation of Habitats and Species Regulations 2017*.

Roosting Bats

Building 04 is considered to have **low potential** to support roosting bats. If present and in the absence of suitable mitigation, there is the potential for the development to result in the loss of a bat roost, and cause the killing or injury of individual bats. It is recommended that a single dusk emergence survey is carried out to assess the use of the building in line with BCT (2016) guidelines. The results will be used to inform mitigation for the relevant species if required. In line with Policy CS11 of the Havant Borough Local Plan: Core Strategies 2011-2026, it is recommended that bat boxes are installed in suitable trees in order to enhance the roosting potential of the site for bats (see Appendix C).

Foraging and Commuting Bats

The site is considered to have **low potential** for foraging and commuting bats. If present and in the absence of suitable mitigation, there is the potential for the development to result in the loss or fragmentation of bat foraging and commuting habitat. It is recommended that one dusk bat activity survey is conducted per season in line with BCT (2016) guidelines. In addition one automated bat detector will be left on site, within the linear belt of scattered trees and dense scrub east of the industrial area, for a minimum of five days each season to record bat activity utilising the site.



It is recommended that landscaping proposals seek to improve the linear features onsite, such as using infill planting on the gappy hedgerow along the western boundary as well as the northern and southern boundaries with native species. By incorporating a sensitive landscaping scheme utilising a species-rich mix of native planting, the overall foraging potential for bats around the site edges will be improved in line with the aims of Policy CS11 of the Havant Borough Local Plan: Core Strategies 2011-2026. A sensitive lighting strategy is recommended for the site to ensure the trees remain within darkened corridors.

Current proposals include the creation of open space at the southern extent of the site as well as hedgerow creation bordering the eastern extent and retention of features such as tree lines that are utilised by bats for foraging and commuting. There are semi-mature and immature trees bordering the field boundaries within the site which are proposed to be retained within the development.

Construction lighting will be directed away from buffer areas, and light spill into the buffer zone will not exceed 0.33 lux (0.1 average). This should ensure that the bats which may use the site for roosting or foraging will not be significantly disturbed during the construction phase. Adequate consideration should be given to the type and position of lights to minimise the impact on bats that may be roosting, foraging or commuting in the area. Light spillage should be controlled through the use of hoods and appropriate angling of the light itself and low or high pressure sodium lamps should be used instead of mercury or metal halide lamps. For further technical detail see the Institute of Lighting Engineers (ILE) *Guidance Notes For The Reduction Of Obtrusive Light (2005)*.

It is recommended that construction activity ceases at sunset, if not before, to avoid delaying the emergence of locally roosting bats as it is unknown if any bats are roosting within the trees and buildings within the site.

It is recommended that the lighting across the development footprint for the operational phase of the development is **sensitively designed** with bats in mind, so that valuable foraging and commuting areas are retained and existing/new roost sites are not impacted by ambient light. Operational phase lighting will be positioned to avoid directly illuminating areas along the site boundary to prevent disturbance to foraging bats and nesting birds. **Light levels should not exceed 1 lux** along any vegetated boundaries in order to provide dark areas for foraging and commuting bats and to prevent disturbance to bats that may be roosting.



5.3.4 Badgers

Badger and their setts are protected under the *Protection of Badgers Act 1992* and the NPPF (see Appendix B) stipulates that considering their welfare and mitigating for damage to their habitat are material considerations when considering planning applications.

No evidence of badger was found during the extended phase 1 habitat survey and due to the **negligible potential** of the site. As a pre-cautionary approach, a pre commencement check is recommended for badger up to one month prior to development commencing.

5.3.5 Birds

Nesting Birds

All nesting birds are protected from disturbance whilst nesting by the *Wildlife and Countryside Act 1981* (as amended) (see Appendix B).

The site is considered to have **high potential** for breeding birds due to available suitable habitats, and the opportunity for birds to enter the interior of the buildings as well as utilising the trees around the site to nest. In addition, the arable fields provide nesting habitat for breeding farmland birds such as skylark and meadow pipit, both found on site in song flight. However these birds would be subject to regular disturbance from the car boot sale occurring weekly during the summer as well as disturbance events from walkers. It is recommended any vegetation clearance and building demolition works that is required is done so between October and February inclusive (i.e. outside the bird nesting season) and managed over winter in order to reduce the suitability of the site for nesting birds.

If this is not possible a thorough check for nesting birds should be made no more than 24 hours prior to site clearance. If any active nests are found, they must remain *in-situ* and protected with an appropriate buffer zone until all young have fledged and cease to return to the nest in order to avoid an offence under Section 1 of the Wildlife and Countryside Act (1981, as amended). It is recommended that communal sparrow boxes and bird boxes with entrance holes are installed on a minimum of 10% of new dwellings in order to provide enhanced nesting opportunities for birds, fulfilling the aim of enhancing the site under Policy CS11 of the Havant Borough Local Plan: Core Strategies 2011-2026.



Wintering Birds

Due to the designation of part of the site as a SINC for wintering brent geese as well as the close proximity of the site to Chichester and Langstone Harbour RAMSAR, SPA and SSSI, designated for supporting wintering bird surveys were recommended which involved two visits per month between October and March inclusive following the method laid out in the Solent Waders and Brent Goose Strategy. One survey each month took place at high tide and one at low tide. Surveys were completed by experienced ornithologists John Simper, WYG Senior Ecologist and Sarah Cruickshank, WYG Assistant Ecologist, who conducted vantage point surveys from specific points at the site mapping the presence of birds, in particular sightings of brent geese and waders on site.

As a result of these surveys, an area managed for brent geese is recommended east of the development. This area will be screened off by native hedgerow and will be seeded with perennial rye grass to enhance the site for brent geese and other wintering birds. The grass will be maintained short through two short cuts per year, one cut in July followed by a cut in late September. This will encourage a fresh flush of growth before the winter.

In addition an area of public open space will be located along the southern boundary of the site. This area will remain open in nature and will be a designated walking area for the public including dog walkers. The area should be further enhanced for over wintering birds as well as other notable birds and species found on site by the creation of water bodies and scrapes, planting of scattered trees and infilling of hedgerow with native species. The grass will be maintained short and will be cut once per year in September. For more information on results and recommendations for wintering birds see WYG Wintering Bird Report.

5.3.6 Invertebrates

Although there is ***low potential*** for the site to support notable invertebrates, there are opportunities for biodiversity enhancement through sympathetic, species rich planting as a part of a wider landscaping scheme in order to increase the suitable post-construction habitat for wildlife. This will increase the overall suitability of the site for such invertebrate species in line with Policy CS11 of the Havant Borough Local Plan: Core Strategies 2011-2026.

5.3.7 Notable Plants

The site appears unsuitable for notable plant species to occur; as such, no further botanical surveys are considered necessary. Enhancement of the site through sympathetic, species rich planting is implemented as a part of a wider landscaping scheme including cultivars of such species, will increase



the overall floral diversity and richness of the site, increasing its value for wildlife in line with the aims of Policy CS11 of the Havant Borough Local Plan: Core Strategies 2011-2026.

5.4 Biodiversity Gain

The proposed development seeks to achieve a quantitative net gain in biodiversity. Landscape proposals incorporating the above measures are detailed within the Combine Landscape/Townscape and Visual Impact Assessment and Landscape Design Statement (Fabrik, 2018). Using the DEFRA Biodiversity Offsetting Metric (DEFRA, 2012) pre and post-development calculations of biodiversity units have been completed. For pre-development habitat areas, the Phase 1 habitat areas mapped as part of this assessment have been used. For post-development areas, the landscape areas set out in the Fabrik 2018 report have been used.

Pre-development Biodiversity Units				
Habitat	Area (ha)	Distinctiveness	Condition	Biodiversity Units
Plantation woodland	1.87	4	1	7.48
Scrub	0.85	2	2	3.4
Tall ruderal	0.22	2	2	0.88
Improved grassland	7.69	2	2	30.76
Arable	13.72	2	2	54.88
Total				97.4

Post-development Biodiversity Units							
Habitat	Area (ha)	Distinctiveness	Condition	Spatial Risk	Delivery Risk	Temporal Risk	Biodiversity Units
Natural and semi-natural greenspace	9.37	4	3	1	1	0.84	94.45



(species-rich grassland, scrub)							
SuDS Basins	0.59	4	2	1	1	0.84	3.96
Mudflats/scrapes	0.09	6	3	1	1	0.84	1.36
Green corridors (incorporating retained plantation woodland)	1.21	4	2	1	1	0.84	8.13
Northern green frontage (grassland, scrub and hedgerow)	0.42	2	2	1	1	0.84	1.41
Brent goose mitigation land (improved grassland)	3.47	2	2	1	1	0.84	11.66
Total							120.98

Based on this assessment, it is anticipated that there will be an increase from 97.4 biodiversity units to 120.98, an increase of 23.58 or approximately 20%. Provided that these areas are implemented as proposed, the target condition is achieved and the implementation timescales (5 years) to reach that condition are met, this represents a significant net gain for biodiversity as a result of the proposed development.



6.0 Conclusions

6.1 Recommendations for Avoidance

- It is recommended that boundary features are retained on site where possible, including all hedgerows and reinforced with native species of local provenance.
- It is recommended that any removal of vegetation and demolition of buildings with nesting potential are undertaken outside nesting bird season, which runs from March to September inclusive. If this is not possible, then a thorough check for nesting birds should be made prior to clearance. If any active nests are found they must remain *in situ* until all young have fledged, with an appropriate buffer zone (usually 5m buffer) according to the species involved.
- It is recommended that a bat sensitive lighting scheme is designed to direct lighting away from areas of retained habitat to provide dark corridors for commuting bats within and around the final development.
- It is recommended that the use of Breathable Roof Membranes is avoided within new buildings to prevent impacts to bats.

6.2 Recommendations for Further Survey

- **Wintering birds:** These were completed between October 2015 and March 2016.
- **Reptiles:** It is recommended reptile presence/likely absence surveys are completed on the scrub peripheries of the site including the site boundaries and the dense scrub of the field boundaries.
- **Bat activity:** Bat activity surveys are recommended once per season from April to September. It is recommended that remote bat detectors are also at the same location per season (April to September).
- **Roosting bats:** It is recommended that one dusk emergence survey is conducted on Building 04 between April - August.

6.3 Recommendations for Mitigation/Enhancement

- It is recommended an open recreational space is implemented into the masterplan along the southern extent of the site south of the development. This will remain open in nature and enhanced through infilling of hedgerows with native species, with the addition of water bodies and scattered trees. Species rich grass mix will be seeded and cut once per year in



September. This will enhance the site for wintering birds as well as other notable species found on site (see WYG 2016 Wintering bird report, Westways, Havant for more information).

- The eastern extent of the site should be managed for wintering brent geese. A hedgerow screen will be planted running north to south directly east of the development following removal of existing tree line and perennial rye grass will be seeded and maintained short through two cuttings per year in May and later in September (see WYG 2016 Wintering bird report for more information).
- It is recommended that native planting of local provenance is incorporated into the landscaping as part of the development proposals. This includes enhancement of retained hedgerows through infill planting of native hedgerow species and planting new hedgerows at the site where possible. This should aim to provide a network of green corridors allowing movement of wildlife through the site to adjacent off site habitats.
- Recommendations are made to provide additional nesting/roosting and feeding opportunities for birds, bats and invertebrates within the final design. Further details of enhancements can be seen in Appendix A and will be provided within protected species survey reports.
- It is also recommended that dead wood and log piles are retained on site, which would benefit reptiles and invertebrate species such as stag beetles (*Lucanus cervus*).



7.0 References

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