



ecosupport



Cockpit Barn, Fair Oak

Preliminary Ecological Appraisal
(PEA)

Author(s):



Client:

Alderbury Homes

8th February 2023

Report	Preliminary Ecological Appraisal
Site Name	Cockpit Barn, Knowle Lane, Fair Oak
Author(s)	Ashley James BSc (Hons) ACIEEM & Adam Jessop MSc ACIEEM
Client	Alderbury Homes Ltd
Date of Issue	8 th February, 2023
Status	Final for submission

Table of Contents

EXECUTIVE SUMMARY	4
1.0 INTRODUCTION	5
1.1 BRIEF	5
1.2 SITE DESCRIPTION & LOCATION.....	5
1.3 PROPOSED DEVELOPMENT	6
2.0 RELEVANT LEGISLATION AND POLICY.....	7
2.1 LEGISLATION	7
2.1.2 <i>The Wildlife and Countryside Act (1981) (as amended)</i>	7
2.1.3 <i>The Countryside and Rights of Way Act (2000)</i>	7
2.1.4 <i>Natural Environment and Rural Communities Act (2006)</i>	8
2.1.5 <i>Protection of Badgers Act</i>	8
2.2 POLICY	8
2.2.1 <i>National</i>	8
2.2.2 <i>Local Eastleigh Borough Council Local Plan Review (2001 – 2011)</i>	9
3.0 METHODOLOGY	11
3.1 DESK STUDY	11
3.1.1 <i>Data Request</i>	11
3.1.2 <i>Waterbodies</i>	11
3.2 FIELD SURVEY	11
3.2.1 <i>Habitats</i>	11
3.2.2 <i>Badger</i>	11
3.2.3 <i>Bats</i>	12
3.3 Biodiversity Net Gain (BNG) Assessment	12
3.4 ASSESSMENT METHODOLOGY	14
3.4.1 <i>Introduction</i>	14
3.4.2 <i>Valuation</i>	14
3.5 LIMITATIONS.....	14
3.5.1 <i>Habitats</i>	14
4.0 ECOLOGICAL BASELINE.....	15
4.1 DESIGNATED SITES	15
4.1.1 <i>Nationally Designated sites</i>	15
4.1.3 <i>Ecological Network</i>	16
4.2 VEGETATION SURVEY RESULTS	17
4.2.1 <i>Bare Ground (u1b) secondary code (73)</i>	18
4.2.2 <i>Broadleaved woodland (w1g) and Ruderal (secondary code 17)</i>	18
4.2.3 <i>Sparsely Vegetated Land (S) and Scattered Trees (secondary code 11)</i>	19
4.2.4 <i>Line of Trees (w1g6)</i>	20
4.2.5 <i>Hard Standing (u1b)</i>	21
4.2.6 <i>Buildings (u1b)</i>	21
4.3 BAT SURVEY RESULTS.....	21
4.3.1 <i>Pre-existing Data</i>	21
4.3.2 <i>Buildings</i>	22
4.4.3 <i>Trees</i>	25

4.4 BADGERS	25
4.4.1 Pre-existing Information	25
4.4.2 Site Survey.....	25
4.5 REPTILES.....	25
4.5.1 Pre-existing Information	25
4.5.2 On site Habitat Assessment	25
4.6 GREAT CRESTED NEWTS.....	25
4.6.1 Pre-existing Information	25
4.6.2 Water Bodies Within 500 m.....	26
4.6.3 On site Habitat Assessment	27
4.7 HAZEL DORMOUSE	27
4.7.1 Pre-existing Information	27
4.7.2 Site Assessment	28
4.8 NOTABLE AND BIRDS OF CONSERVATION CONCERN (BOCC)	28
4.8.1 Pre-existing Information	28
4.8.2 Site Assessment.....	29
4.9 HEDGEHOGS	30
4.9.1 Pre-existing Information	30
4.9.2 Site Assessment	30
5.0 LIKELY ECOLOGICAL IMPACTS IN ABSENCE OF MITIGATION	31
5.1 INTRODUCTION	31
5.2 SITE PREPARATION AND CONSTRUCTION	31
5.2.1 Impacts to Habitats	31
5.2.2 Impacts to Wildlife	31
5.3 SITE OPERATION	31
5.3.1 Impacts to Wildlife	31
6.0 RECOMMENDATIONS	32
6.1 INTRODUCTION	32
6.2 BATS.....	32
6.2.1 Emergence / Re-entry Surveys	32
6.3 DORMICE.....	32
6.4 BIODIVERSITY NET GAIN CALCULATIONS.....	32
6.5 NITROGEN / PHOSPHORUS BUDGET	33
6.6 ENHANCEMENTS.....	33
6.6.1 Birds.....	33
6.6.2 Bats.....	34
6.6.3 Hedgehogs	35
7.0 REFERENCES	36

Executive Summary

Ecosupport Ltd was commissioned by Alderbury Homes Ltd to conduct a Preliminary Ecological Appraisal (PEA) of land associated with Cockpit Barn, Knowle Lane, Fair Oak (here after referred to as 'the site'). The purpose of this survey was to assess any ecological impacts that may arise as a result of the proposed development. As part of this assessment, the following surveys were undertaken:

- Data request submitted to the Hampshire Biodiversity information centre (HBIC)
Extended phase I habitat survey
- Preliminary roost assessment
- Biodiversity Net Gain (BNG) Assessment

The following important ecological features were identified on site following the conclusion of the above survey work and may be subject to adverse impacts in the absence of suitable mitigation / compensation:

- High potential for breeding and nesting birds
- Moderate potential for Hedgehogs
- Low potential for foraging and commuting Badgers
- Low potential for roosting bats within the chicken barn

In the absence of any mitigation measures, the proposed development is anticipated to result in, **certain adverse impacts** (significance level to be determined following updated phase II survey work where considered appropriate. In addition to this, measures are outlined within section 6.0 of this document to mitigate where impacts have been identified.

1.0 INTRODUCTION

1.1 Brief

Ecosupport Ltd was commissioned by Alderbury Homes Ltd to conduct a Preliminary Ecological Appraisal (PEA) of land associated with Cockpit Barn, Knowle Lane, Fair Oak (here after referred to as 'the site'). The purpose of this survey was to assess any ecological impacts that may arise as a result of the proposed development. The objectives of the survey were as follows:

- 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
- Make recommendations for further survey work as necessary;
- Make recommendations for any necessary ecological avoidance and mitigation where possible at PEA stage.

NB: If the works do not take place within 18 months of this report¹ then the findings of this survey will no longer be considered valid and may require updating.

1.2 Site Description and Location

The site comprises of Cockpit Barn (a former chicken shed) and associated land located off Knowle Lane, Fair Oak, SO50 7PH (centered on OS grid reference SU4989617638) (**Fig 1**). The site is bound by Knowle Lane to the east, woodland directly adjacent to the site to the west and fields to the north and south of the site. The wider landscape consists of a network of fields and interconnecting hedgerows.

¹ <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

Figure 1. Aerial image of the site with approximate redline boundary.



1.3 Proposed Development

It is understood that the current development plans will involve the demolition of the chicken shed and the construction of 6 dwellings with associated gardens.

2.0 RELEVANT LEGISLATION AND POLICY

2.1 Legislation

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

This 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.

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.

In order for activities that would be likely to result in a breach of species protection under the regulations to legally take place, a European Protected Species (EPS) licence must first be obtained from Natural England.

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).

The Wildlife & Countryside Act (1981) states that it is an offence to 'plant or otherwise cause to grow in the wild' any plant listed in Schedule 9 part II of the Act. This list over 30 plants including Japanese Knotweed (*Fallopia japonica*), Giant Hogweed (*Heracleum mantegazzianum*) and Parrot's Feather (*Myriophyllum aquaticum*).

2.1.3 *The Countryside and Rights of Way Act (2000)*

This Act strengthens the Wildlife & Countryside Act by the addition of "reckless" offences in certain circumstances, such as where there is the likelihood of protected species being present. The 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)

The Natural Environment and Rural Communities (NERC) Act 2006 requires that public bodies have due regard to the conservation of biodiversity. This means that Planning authorities must consider biodiversity when planning or undertaking activities. Section 41 of the Act lists species found in England which were identified as requiring action under the UK Biodiversity Action Plan and which continue to be regarded as conservation priorities under the *UK Post – 2010 Biodiversity Framework*.

2.1.5 Protection of Badgers Act

The Protection of Badgers Act (1992) relates to the welfare of Badgers (*Meles meles*) as opposed to nature conservation considerations. The Act prevents:

- The wilful killing, injury, ill treatment or taking of Badgers and / or
- Interference with a Badger sett
- Damaging or destroying all or part of a sett
- Causing a dog to enter a set and
- Disturbing a Badger while it is occupying a sett

Provisions are included within the Act to allow for the lawful licensing of certain activities that would otherwise constitute an offence under the Act.

2.2 Policy

2.2.1 National

Section 15 of the National Planning Policy Framework (NPPF, 2021) 'Conserving and enhancing the natural environment' states that planning policies and decisions should contribute to and enhance the natural environment. They should do this by protecting and enhancing sites of biodiversity and minimising impacts on and providing net gains for biodiversity, including establishing coherent ecological networks.

The plan states to protect and enhance biodiversity plans should identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks. This includes the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them. Plans should identify the protection and recovery of priority species and opportunities for securing measurable net gains for biodiversity.

When determining planning applications, local planning authorities should apply the following principles:

- if significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the

benefits of the development in the location proposed clearly outweigh both its likely impact;

- development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

2.2.2 Local Eastleigh Borough Council Local Plan Review (2001 – 2011)

The draft Eastleigh Borough Local Plan 2011-2029 is currently being developed and will form part of the Development Plan when adopted. However, the Local Plan Review (2001 – 2011) remains relevant to this report.

The borough of Eastleigh contains areas of international, European, national and local conservation interest. Development in the borough could have effects on these and other sites beyond its boundaries as recognised in the Local Plan's Habitats Regulations Assessment. Areas of particular sensitivity outside but within reach of the borough include other parts of the Solent coastline and the New Forest.

The Borough Council has produced a Biodiversity Supplementary Planning Document which explains the nature conservation interest and site designations in the borough and the ways in which the Council will protect and enhance them. The Council has also produced a Biodiversity Action Plan (BAP) (2012) which defines Priority Biodiversity Areas and Priority Biodiversity Links.

The saved policies of Chapter 1: The Countryside (CO) and Chapter 2: Nature Conservation (NC) state that the retention and where appropriate enhancement of the Borough's ecological diversity is an important objective, therefore the Council aims to identify, protect and enhance areas of nature conservation importance and promote and enhance biodiversity as an important component of sustainable development. Protection of species and habitats covered by law and those recognised as important within the Borough will be upheld, particularly when considering Planning Applications. Development which is likely to have a direct or indirect adverse impact upon any such habitats or species will not be permitted unless it can be demonstrated that the reasons for the development clearly outweigh the harm, and stringent mitigation measures are implemented. Further, the enhancement of the wildlife network within the Borough is desirable and should be achieved by the inclusion of sympathetic measures and features in the layouts of development proposals.

Strategic Policy S11 'Nature conservation' states that the Borough Council will work with developers to:

- Protect, conserve and enhance areas subject to international, European, national and local nature conservation designations and
- Assist in achieving national, county and local biodiversity targets as set out in Biodiversity Action Plans (BAPs);
- Protect, conserve and enhance networks of natural habitats and features, including the Priority Biodiversity Areas, Priority Biodiversity Links, watercourses, trees and hedgerows important to biodiversity and local character;
- On new development sites seek enhancement of biodiversity through the provision of new habitats and features compatible with the native biodiversity characteristics of the borough; and
- Encourage and develop public understanding of biodiversity, enabling access where this does not harm nature conservation interests.

Policy DM9 'Nature conservation' states eventualities in which nature conservation would prevent development. For example development which is likely to adversely affect the integrity of sites of international or European nature conservation, Sites of Special Scientific Interest (SSSI), Site of Importance for Nature Conservation (SINC) or Local Nature Reserve will not be permitted.

In determining planning applications, the Borough Council seeks opportunities to create or enhance habitats and features of nature conservation interest, to protect and enhance the Priority Biodiversity Areas and the Priority Biodiversity Links and finally requires mitigation measures in connection with new residential development as identified by the Solent Disturbance and Mitigation Project unless it can be demonstrated to the satisfaction of the Borough Council that the development is not likely to have significant adverse impacts on the integrity of the Solent European marine sites.

Where mitigatory or compensatory provision are needed, the over-riding principle is that as a minimum, no net loss should occur to biodiversity and a net gain should be secured where possible.

3.0 METHODOLOGY

3.1 Desk Study

3.1.1 Data Request

A data request was submitted to the Hampshire Biodiversity Information Centre (HBIC) to ascertain any records held of nature conservation designations and protected species within 1 km of the boundary of the site.

The data search covered:

- Statutory designated sites
- Non-statutory designations such as SINCs
- Records of protected and notable species.

3.1.2 Waterbodies

Any ponds located within 500 m of the proposed development were searched for using Ordnance Survey maps and available aerial images.

3.2 Field Survey

3.2.1 Habitats

The field survey work which forms the basis of the findings of this report was carried out by Ashley James BSc (Hons) ACIEEM (principal ecologist with Ecosupport) on the 6th May 2022. Weather conditions during the survey comprised temperatures of 16 °C, light winds and sunny spells.

The Phase 1 Habitat survey (JNCC, 2010) methodology was adopted which is a method of classifying and mapping wildlife habitats in Great Britain. It was originally intended to provide “...*relatively rapidly, a record of semi-natural vegetation and wildlife habitat over large areas of the countryside*”. The standard Phase 1 Habitat survey methodology has been ‘extended’ in this report to include the following:

- Floral species lists for each identified habitat;
- Descriptions of habitat structure, the evidence of management and a broad assessment of habitat condition;
- Mapping of additional habitat types (e.g. hardstanding);
- Identification of Priority Habitats under Section 41 of the NERC Act;
- Evidence of, or potential for, the presence of certain species/groups

In addition to the phase 1 habitats types, the corresponding UK Habs habitat type was also noted using Habitat Definitions Version 1.1 (UKHab Ltd., 2020).

3.2.2 Badger

The site was thoroughly searched for evidence of use by Badgers (*Meles meles*), with the specific aim of identifying the presence and location of any setts. In accordance with the *Badgers and Development: A Guide to Best Practice and Licensing* (Natural England, 2011) guidance, the survey accounted for a 30m from the site's boundary (observed where possible i.e. does not conflict with private dwellings). Evidence of Badgers could include latrines, dung pits, feeding remains and foraging evidence, trails and setts.

3.2.3 Bats

The assessment of the buildings / trees noted on site was undertaken by Ashley James during the initial walkover survey under class level 1 survey licence number (2021-10059-CL17-BAT). This followed BCT (Collins (ed) 2016) best practice survey guidelines searching for any PRFs / evidence of bat occupation and assigning a roost potential assessment as outlined in Table 1 below.

Table 1. Guidelines for assessing the potential suitability of a built structure for roosting bats (reproduced from BCT (Collins (ed) 2016).

Suitability	Description of Roosting Habitats
Negligible	Negligible habitat features on site are likely to be used by roosting 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 ² and/or suitable surrounding habitat to be used on a regular basis or by a large number of bats (i.e. unlikely to be suitable for maternity or hibernation).
Moderate	A structure 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).
High	A structure 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.

3.3 Biodiversity Net Gain

Biodiversity net gain (BNG) can be defined as “an approach to development that aims to leave the natural environment in a measurably better state than beforehand” (Defra 2019). The revised National Planning Policy Framework (NPPF) states that “planning policies and decisions should ... identify and pursue opportunities for securing measurable net gains for biodiversity” (MHCLG, 2018), however it anticipated following an announcement by the government in March 2019, that biodiversity net gain will be made mandatory for all new developments in England through the implementation of the Environment Bill which is currently under consideration by parliament before it can be given royal assent. Whilst there will be a two year transition period following the assent of the bill, an increasing number of Local Planning Authorities (LPA's) are already requiring

new developments to consider BNG through the planning process. Current proposals state that developments should achieve at least 10% net gain, encouraging developers to provide an increase in both appropriate natural habitat and ecological features, and reduce the developments impact on biodiversity and associated ecological networks.

3.3.1 Establishing Pre-intervention Biodiversity Units

For the purposes of this report the Defra 3.1 metric has been utilized for the establishment of pre-intervention and post intervention biodiversity units for the site. The most up to date version of the metric was utilized (April 2022)¹

3.3.2 Establishing Pre-intervention Biodiversity Units

The Defra metric in effect achieves a pre - intervention (i.e. prior to any works having been undertaken) biodiversity unit score for a given site through the multiplication of the following factors:

Area of habitat x distinctiveness x condition x strategic significance x ecological connectivity = No of biodiversity units

The calculations of pre-intervention units are based on the habitat types and associated conditions identified during the onsite phase 1 habitat assessment. In the absence of the provision of exact areas/measurements, the areas of pre-intervention habitats were estimated using a combination of the phase 1 survey/ habitat assessment and satellite imagery, and therefore some margin of error is anticipated within the enclosed calculations. Notwithstanding this, every effort has been made to ensure the calculations are as accurate as possible, and it is considered that this document provides a good indication of the potential net change following the proposed development, and therefore it is not considered to have a significant impact on the findings of this report.

NB the information on how the scores / multipliers are applied for distinctiveness, condition, strategic significance and ecological connectivity are outlined within the User Guide (Crosher et al., 2021) associated with the metric and are not re-produced here.

3.3.3 Establishing Post Intervention Biodiversity Units

Once the pre-intervention (before impact) number of Biodiversity Units (BUs) has been calculated following the steps outlined in the previous section, a new set of multipliers / scores are added to those used for the pre-intervention calculation to establish the post intervention unit score based on the nature of the works being conducted. The formula used is as follows:

Area of habitat x distinctiveness x condition x strategic significance x connectivity x difficulty to create x time to target condition x off site risk (this multiplier is only required when enhancements / compensation is being proposed off site) = No of BUs

NB the full workings as calculated within the Defra 3.1 metric tool can be provided if required

¹ (<http://publications.naturalengland.org.uk/publication/6049804846366720>)

3.4 Assessment Methodology

3.4.1 Introduction

The methodology for the assessment of the likely ecological effects of the proposed development is based on CIEEM's *Guidelines for Ecological Assessment in the UK* (CIEEM 2018). Although this assessment does not constitute a formal Ecological/ Environmental Impact Assessment, the CIEEM guidelines provide a useful framework for assessing ecological impacts at any level.

3.4.2 Valuation

Features of ecological interest are valued on a geographic scale. Value is assigned on the basis of legal protection, national and local biodiversity policy and cultural and/or social significance.

3.5 Limitations

3.5.1 Habitats

Based on aerial images of the site, the majority of the habitat present around the chicken shed appears to have previously been scrub / secondary woodland. This had almost all been cleared prior to the walkover survey being conducted (indicated this happened in December 2021) and as such, the habitat types present now are not fully reflective of what's was on site until relatively recently and any BNG assessment will need to take this into consideration).

² For example, in terms of temperature, humidity, height above ground level, light levels or levels of disturbance.

4.0 ECOLOGICAL BASELINE

4.1 Designated Sites

4.1.1 Nationally Designated sites

No nationally designated sites were identified by HBIC using the 1 km search radius.

4.1.2 Locally Designated

The locally designated sites identified by HBIC are shown in **Fig 2** with a summary of these sites presented in **Table 2**.

Figure 2. Map of Non-Statutory sites located within 2 km as provided by HBIC.

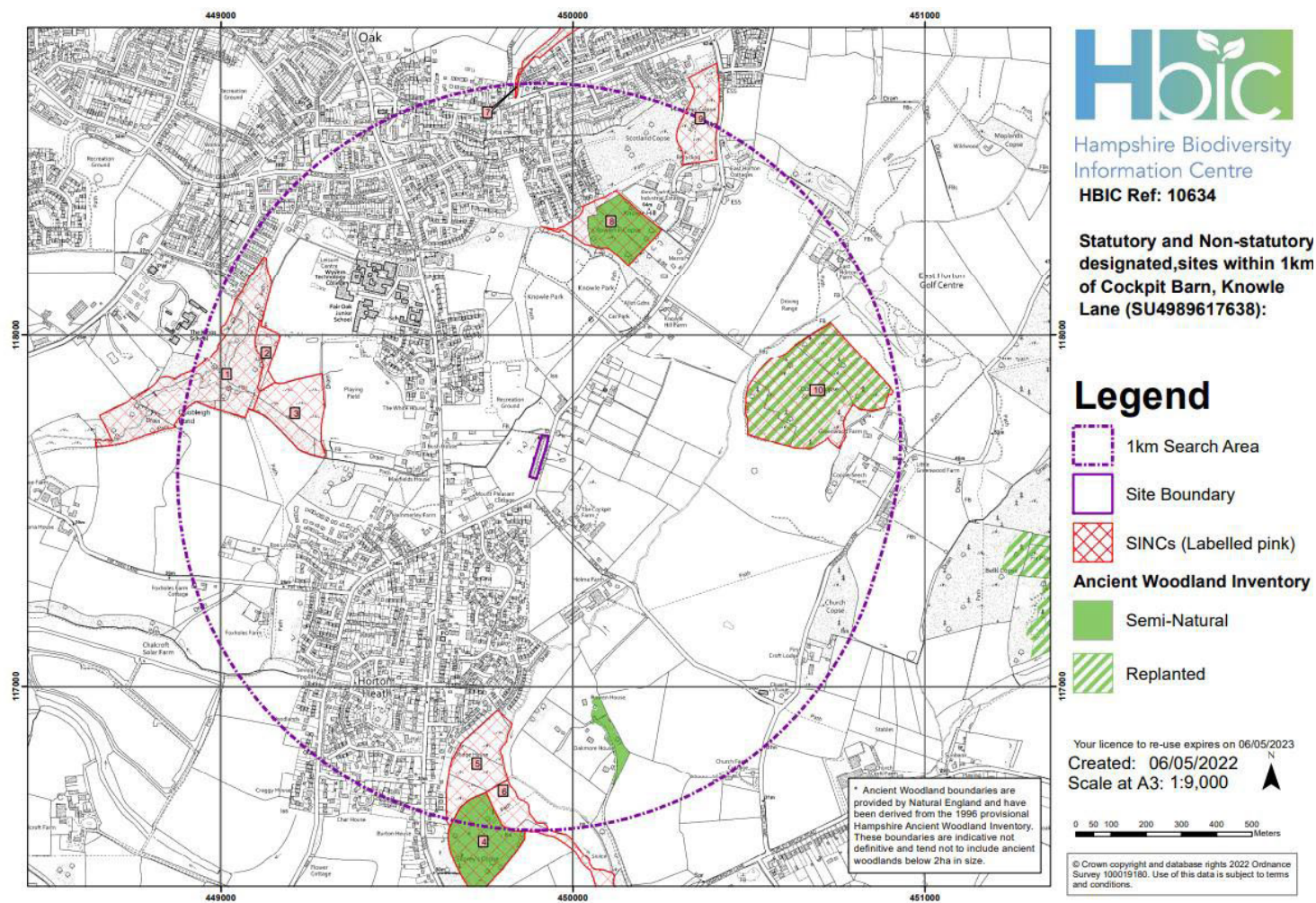


Table 2. Summary of locally designated sites within 2 km of the site as provided by HBIC and shown in Fig 2 above.

Status	SINC Ref	SINC Name	SINC Criteria
SINC	EA0096	Quobleigh Pond & Woods	1A/1Cii
SINC	EA0099	Ponds & Meadow adjacent to Wyvern Technology College	6A
SINC	EA0101	Wyvern Technology College Meadow	2A
SINC	EA0105	Scorey's Copse	1A
SINC	EA0106	Scoreys Copse Meadow	2D
SINC	EA0107	Scorey's Copse Rush Pasture	2B/5B
SINC	EA0110	Gore Copse	1A
SINC	EA0114	Knowlehill Copse	1A
SINC	EA0116	Knowle Lane Open Space	7A
SINC	WC0133	Durley Copse	1B

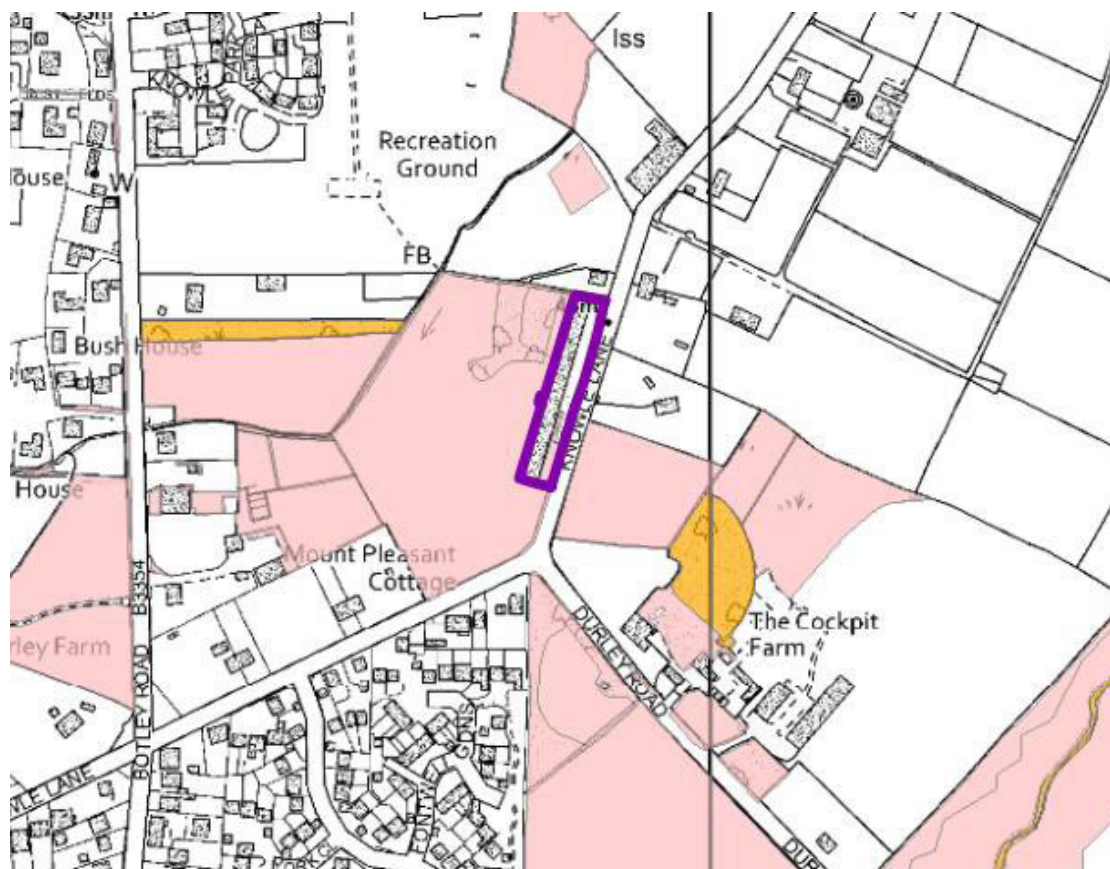
4.1.3 Ecological Network

The data received from HBIC also includes the provision of information about the local Ecological Network designations, the aim of which is to:

- Improve the quality of current wildlife sites by better habitat management;
- Increase the size of existing wildlife sites
- Enhance connections between sites, either through physical corridors or through 'stepping stones'
- Create new sites; and
- Reduce pressure on wildlife by improving the wider environment (Court & Ritter, 2016)

As per Fig 3 below, all of the habitats (excluding the building) are within the 'network opportunities' classification.

Figure 3. Screenshot from the ecological network map as provided by HBIC highlighting the areas on site that are within the 'network opportunities' classification (pink shading).



4.2 Vegetation Survey Results

The vegetation within the site has been described below using the broad Phase I habitat classification terminology as described with JNCC (2010) (with the corresponding UK Habs habitat type also provided using Habitat Definitions Version 1.1 (UKHab Ltd., 2020). The below species noted should not be considered an exhaustive list and instead refer to dominant, characteristic and other noteworthy species associated with each community within the survey area. The habitat types on site comprise (approximate spatial extent shown in the Phase 1 habitat map appended):

- Bare ground (u1b) + Secondary code (73)
- Broadleaved woodland (w1g) + Ruderal secondary code (17))
- Sparsely vegetated land (S) + Scattered trees secondary code (11)
- Line of trees (w1g6)
- Hard standing (u1b)
- Buildings (u1b)

4.2.1 Bare Ground (u1b) secondary code (73)

The majority of the site in its current form is dominated by bare ground that has been recently cleared of vegetation (**Fig 4**) (would be classified as u1b developed land; sealed surface with secondary code 73 'bare ground' using UK Habs vernacular). From aerial images and further investigation of the site it appears the site prior to the visit consisted of a parcel of broadleaved woodland / scrub.

Figure 4. View of the bare ground (formally woodland / scrub that had been cut down) (taken May, 2022).



4.2.2 Broadleaved woodland (w1g) and Ruderal (secondary code 17)

A small section of remnant broadleaved woodland is present to the rear of the chicken barn (**Fig 5**) (would be classified as w1g 'Broadleaved woodland with ruderal vegetation secondary code 17). The species in the woodland consisted of the following, Hawthorn (*Crataegus monogyna*), Oak (*Quercus robur*), Goats Willow (*Salix caprea*), Silver birch (*Betula pendula*), Hazel (*Corylus avellana*), Downy birch (*Betula pubescens*) and Ash (*Fraxinus excelsior*). The ground flora was not characteristic of the woodland, due to the understory being recently cleared so early establishing ruderal vegetation has started to take hold including the following species; Germander Speedwell (*Veronica chamaedrys*), Nettle (*Urtica. Dioica*), Shepard's purse (*Capsella bursa-pastoris*), Groundsel (*Senecio vulgaris*), Red Dead Nettle (*Lamium purpureum*), Cows Parsley (*Anthriscus sylvestris*), Cleavers (*Galium aparine*) and Green Alkanet (*Pentaglottis sempervirens*). However, evidence of a more characteristic woodland flora was noted in areas that were not cleared with Lesser Celandine (*Ficaria verna*) and Lords and Ladies (*Arum alpinum*) noted.

Figure 5. View of the remnant section of broadleaved woodland (taken May, 2022).



4.2.3 Sparsely Vegetated Land (S) and Scattered Trees (secondary code 11)

A number of mature trees are present along the southern boundary, most likely remnants of the wider woodland that would have been present (would be classified as S 'Sparsely vegetated land with secondary code 11 scattered trees'). The species of tree present consisted of Mature Ash, Oak and Hornbeam (*Carpinus*) (**Fig 6**). The ground flora is sparse with early establishing ruderal vegetation growing from the recent clearance works.

Figure 6. View of the mature trees along the southern boundary (taken May, 2022).



4.2.4 Line of Trees (w1g6)

A line of trees was present along the eastern boundary to Knowle Lane (**Fig 6**) (would be classified as w1g6). The trees present along the boundary consisted of the following; Sycamore (*Acer pseudoplatanus*), Hawthorn (*Crataegus monogyna*), Elder (*Sambucus nigra*) Oak and Holly (*Ilex aquifolium*).

Figure 6. View of the line of trees along the eastern boundary (taken May, 2022).



4.2.5 Hard Standing (u1b)

This covers the areas of concrete hard standing used by the entrance as a parking and was largely devoid of any significant vegetation communities (and would be classed as u1b, developed land; sealed surface using UK Habs)

4.2.6 Buildings (u1b)

The final habitat type present covered the chicken barn (and would be classed as u1b, developed land; sealed surface using UK Habs) and further information on this is provided in section 4.3.

4.3 Bat Survey Results

4.3.1 Pre-existing Data

The data request from HBIC returned the following records within 1 km of the site (Table 3).

Table 3. List of Bat records within 1 km of the site provided by HBIC.

Taxon Name	Species Name	Number of Records	Further Information
<i>Eptesicus serotinus</i>	Serotine	3	-
<i>Myotis spp</i>	Myotis bat	3	Unidentified <i>Myotis</i> spp bat records (all from aural bat detectors)
<i>Myotis daubentonii</i>	Daubenton's Bat	1	-
<i>Myotis mystacinus</i>	Whiskered Bat	6	-
<i>Nyctalus noctula</i>	Noctule	9	Both from aural bat detectors
<i>Pipistrellus spp</i>	Pipistrelle Bat species	9	
<i>Pipistrellus pipistrellus</i>	Common Pipistrelle	59	Majority of records provided for roosts in buildings
<i>Pipistrellus pygmaeus</i>	Soprano Pipistrelle	16	-
<i>Plecotus auritus</i>	Brown Long-eared Bat	18	Majority of records for roosts in building with at least one potential maternity roost.
<i>Plecotus spp</i>	Long-eared bat species	3	5 of the records were for roosts

4.3.2 Buildings

The findings of the updated preliminary roost assessment of all buildings on site is outlined in **Table 4** below.

Table 4. Results of the preliminary roost assessment undertaken of all built structures proposed for demolition under the current scheme.

Building	Figure	Description of Construction	PRFs / Evidence of Occupation	Assessed Roost Potential
Chicken Barn	Figure 7. Front elevation of the chicken barn.  Figure 8. View of the internals of the chicken barns. 	The sole dwelling onsite consisted of an old commercial chicken barn which has been left derelict for the last 2 years. The barn is constructed of a breezeblock construction with a single skinned corrugated metal roof. Five small chutes are present across the roof of the dwelling. The internals consisted of one long room, which was supported by a network of wooden rafters. No loft void was present during the checks due to the nature of the building.	Due to the nature of the roofing materials, PRFs somewhat limited to small gaps where the metal ridge meets the corrugated roof (Fig 9). No physical evidence of bats was present externally or internally, in the form of droppings and feeding remains.	Low potential

Figure 9. View of gaps underneath metal ridge.



4.3.3 Trees

A number of trees were present on-site however none were noted as supporting PRF'S suitable for bats.

4.4 Badgers

4.4.1 Pre-existing Information

HBIC provided 6 records of Badger presence from within 1 km of the site all recorded over 900m away from site.

4.4.2 Site Survey

No evidence of Badger foraging was identified however the site could provide suitable commuting route for foraging and commuting badgers with a significant amount of varying grassland located directly adjacent to site. Given the records from HBIC and potential commuting routes through site, the site is considered to be of **Low potential** for foraging and commuting badgers.

4.5 Reptiles

4.5.1 Pre-existing Information

HBIC have provided the following records for reptiles within 1 km of the site; 4 records of Grass Snake (*Natrix helvetica*), 6 records of Slow Worms (*Anguis fragilis*) and 3 records of Common lizard (*Zootoca vivipara*)

4.5.2 On site Habitat Assessment

The current habitats on-site can be considered to offer no potential for reptiles in its current state (after any potentially suitable habitat had been cleared), as the site primarily consists of bare ground and cleared understory within the remnant pocket of woodland. Subsequently, the habitat in its current form is considered to be of **negligible potential** for reptiles.

4.6 Great Crested Newts

4.6.1 Pre-existing Information

HBIC returned 2 records of GCN record from within 1 km of the site with these associated with Quobleigh pond and a pond within Wyvern Technology College (see **Fig 10** below). The nearest record is 0.7 km from the site.

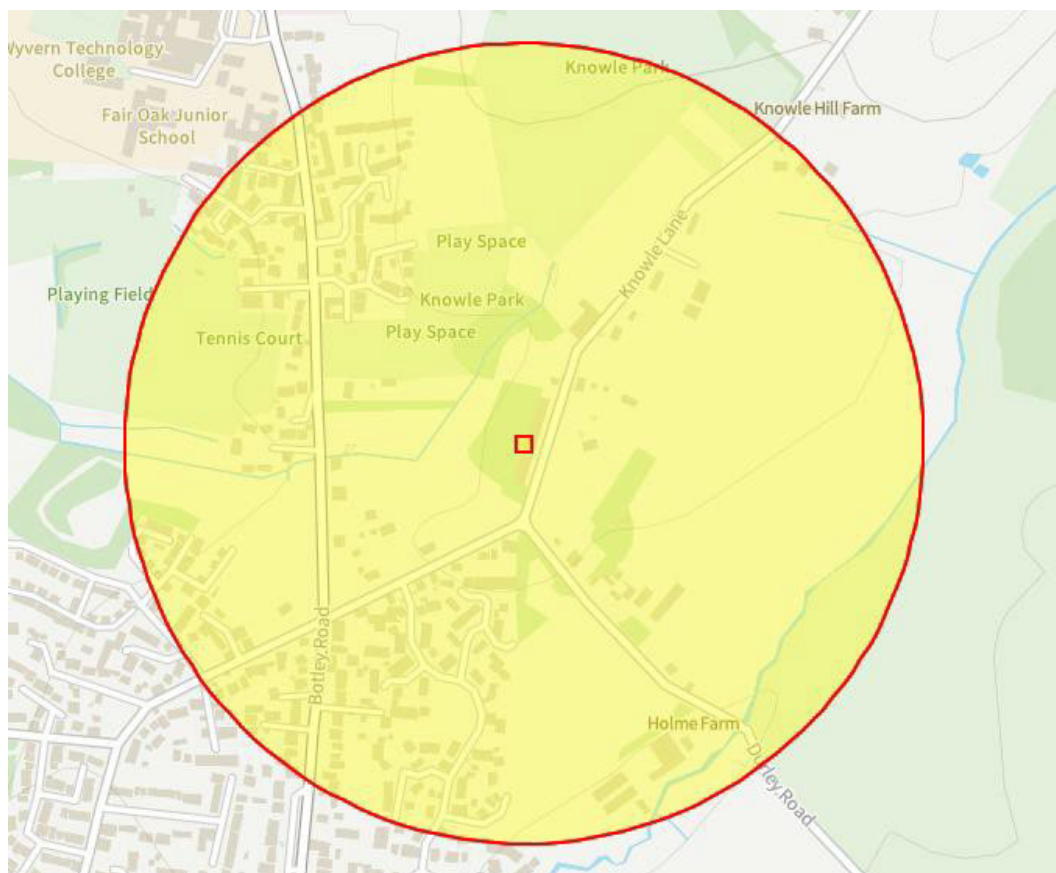
Figure 10. The location of the 2 GCN records approximately 0.7 km to the west of the site (approximate redline boundary given).



4.6.2 Water Bodies Within 500 m

As per **Fig 11** below, no ponds are present within a 500m search radius from a central point of the site.

Figure 11. Map produced in Magicmaps using a 500m buffer radius from a central point of the site which did not identify any ponds within 500m.



4.6.3 On site Habitat Assessment

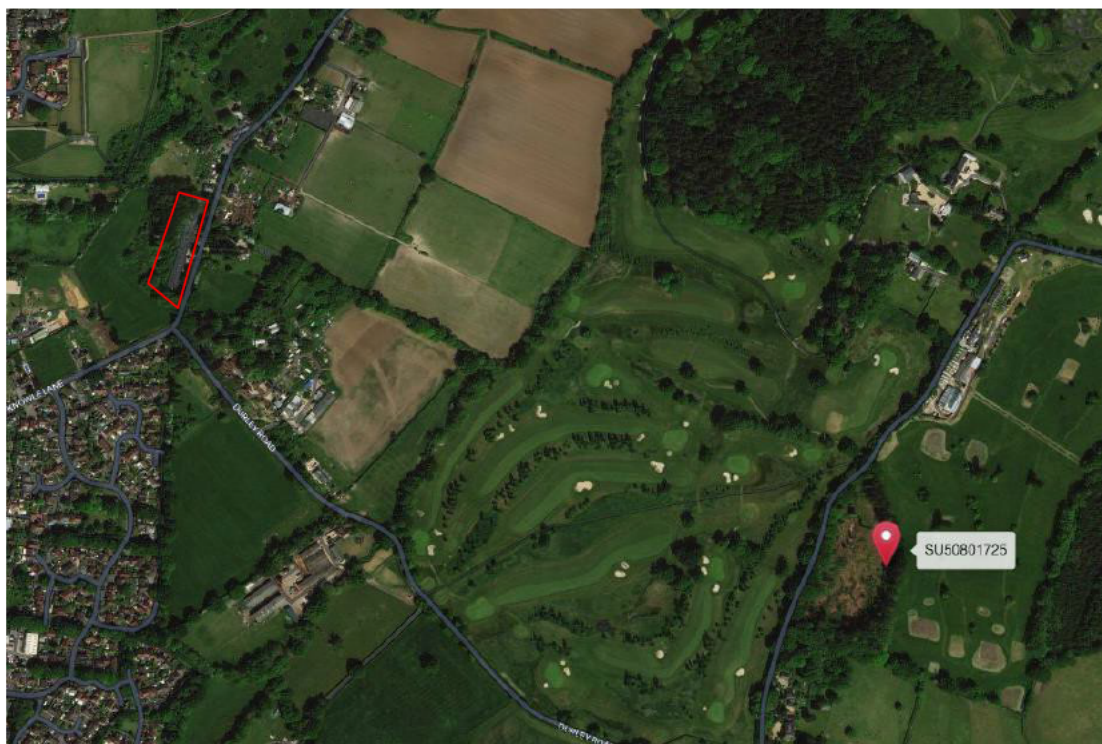
The terrestrial habitat on-site comprises of bare ground and early establishing ruderal vegetation all unsuitable habitats for terrestrial GCN. Taking this into consideration along with the nearest records being 0.7 km away, the terrestrial habitat on-site is considered to be of **negligible potential** for GCN.

4.7 Hazel Dormouse

4.7.1 Pre-existing Information

HBIC returned a single record of Dormouse (*Muscardinus avellanarius*) presence within 1km of the site with this located 0.9 km to the east associated with Church Copse (**Fig 12**).

Figure 12. The single Dormouse record returned by HBIC approximately 0.9 km to the east of the site (approximate redline boundary given).



4.7.2 Site Assessment

The majority of the site's current habitats can be considered to offer *Negligible* potential for Dormice in its current state (*i.e. after clearance works had taken place*), as the site primarily consists of bare ground and cleared understory within the remnant pocket of woodland. The line of trees however on the eastern boundary and the northern boundary have potential to support Dormice, as it supports a number of fruiting tree species suitable for Dormice and could be used as an important dispersal route for Dormice in the wider landscape. The site is therefore considered to be of *Low potential* for Dormice (restricted to the northern and the eastern boundary habitats on-site).

4.8 Notable and Birds of Conservation Concern (BoCC)

4.8.1 Pre-existing Information

HBIC returned a high number of records of birds of conservation concern for within 1km of the site for species such as (Table 5).

Table 5. List of notable bird records within 1 km of the site provided by HBIC.

Taxon Name	Species Name	Number of Records
<i>Acanthis cabaret</i>	Lesser Redpoll	1
<i>Cuculus canorus</i>	Cuckoo	2
<i>Emberiza citrinella</i>	Yellowhammer	2
<i>Falco peregrinus</i>	Peregrine	2
<i>Falco subbuteo</i>	Hobby	5
<i>Linaria cannabina</i>	Linnet	1
<i>Milvus milvus</i>	Red Kite	24
<i>Motacilla cinerea</i>	Grey Wagtail	2
<i>Muscicapa striata</i>	Spotted Flycatcher	3
<i>Passer domesticus</i>	House Sparrow	12
<i>Spinus spinus</i>	Siskin	1
<i>Sturnus vulgaris</i>	Starling	12
<i>Turdus iliacus</i>	Redwing	4
<i>Turdus philomelos</i>	Song Thrush	11
<i>Turdus pilaris</i>	Fieldfare	1
<i>Turdus viscivorus</i>	Mistle Thrush	8
<i>Tyto alba</i>	Barn Owl	3

4.8.2 Site Assessment

The majority of the sites current habitats can be considered to offer negligible potential for breeding and nesting birds in its current state (*i.e. after clearance works had taken place*), as the site primarily consists of bare ground and cleared understory within the remnant pocket of woodland. However, the canopy of the trees within the pocket of woodland does hold potential for nesting birds and the tree lines on the eastern and northern boundary also provide ideal nesting habitat for nesting and foraging birds such as those listed above. The site is situated within a surrounding environ that provides an ideal mosaic of habitats, including grassland, woodland and connecting hedgerows (in the wider area) providing ideal foraging habitat for any nesting or breeding birds using the site. Due to the large quantity of notable bird records and the ideal breeding and nesting bird habitat within and surrounding the site, the site is considered to be of **High** potential for nesting and breeding birds.

4.9 Hedgehogs

4.9.1 Pre-existing Information

HBIC returned 19 records for Western European Hedgehog (*Erinaceus europaeus*) presence within 1 km of the site.

4.9.2 Site Assessment

The site provides suitable foraging and potentially nesting features within the tree lines along the eastern and northern boundaries and on-site, it is therefore considered the site to be of **Moderate** potential for Hedgehogs.

5.0 LIKELY ECOLOGICAL IMPACTS IN ABSENCE OF MITIGATION

5.1 Introduction

The CIEEM guidelines (CIEEM 2018) require that the potential impacts of the proposals should be considered in absence of mitigation. In order for a significant adverse effect to occur, the feature being affected must be at least of local value. However, in some cases, features of less than local value may be protected by legislation and/or policy and these are also considered within the assessment. Although significant effects may be identified at this stage of the assessment, it is often possible to provide appropriate mitigation.

5.2 Site Preparation and Construction

5.2.1 Impacts to Habitats

The development will result in the demolition of the old chicken shed on-site which is considered to be of value at the **Site** level of significance. The likely development works will also however take place adjacent to the retained boundary tree lines and scattered trees of **Local** value and therefore the trees within the tree lines / scattered trees could be damaged by machinery and particularly by root zone compaction. The loss of habitat and potential indirect effects would have a **moderate adverse impact** to habitats of **Local** value.

5.2.2 Impacts to Wildlife

There were a range of suitable habitats present on site noted which could be used by breeding and nesting birds. Therefore, an **adverse impact is possible** if any clearance works are required and undertaken without adequate mitigation.

There are areas of habitat along the northern and eastern boundaries that could be used by Dormice. As such, removal of suitable habitat without adequate mitigation would constitute an offence under relevant legislation. However, under the current proposals all the suitable foraging and commuting habitat for Dormice will be retained as part of the development. Taking this into account (although considering there may be an increase in disturbance through building works and an increase in lighting during construction), the development is considered likely to have a **minor negative impact** upon dormice.

5.3 Site Operation

5.3.1 Impacts to Wildlife

The development will result in an increase in lighting within the general area from street lights and external lights on the new houses. This can affect the behaviour, particularly foraging, of nocturnal wildlife. Therefore, an **adverse impact is likely** on Badgers, Bats and Dormice (should they be present on site).

6.0 RECOMMENDATIONS

6.1 Introduction

The below sections outline recommendations for further survey work required to fully assess the potential ecological impacts of the development and ensure and proposed mitigation and compensation appropriate and proportionate. In addition to this, measures are outlined to protect the existing features of value as well as providing targeted enhancements.

NB. These recommendations are based on the current plans and if the plans are to change and the development footprint is to increase then, the survey effort required will need to be re-assessed.

6.2 Bats

6.2.1 Emergence / Re-entry Surveys

The chicken barn on site was assessed as being of 'Low' roost potential and will therefore require 1 dusk emergence or dawn re-entry survey (as per the survey effort requirements from BCT 2016 Table 6).

Table 6. Recommended minimum number of survey visits (from Table 7.3 (BCT, 2016).

Low Roost Suitability	Moderate Roost Suitability	High Roost Suitability
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.
May – August	May – September with at least one of the surveys between May - August	May – September with at least two surveys between May and August

NB If bats are seen to emerge from the barn then a further two surveys will need to be completed to classify the roost present.

6.3 Dormice

Based on the current proposals, it is not anticipated there will be any work undertaken along the eastern and northern boundary. However, to ensure no one encroaches into these sensitive areas heras fencing will be erected around these areas prior to any construction work commencing and a precautionary method statement may be required to cover any clearance works (should this be necessary).

6.4 Biodiversity Net Gain

Steps are being taken to ensure a minimal loss to biodiversity on site as possible. This includes the provision of a species-rich grassland area and 2 ponds.

As a result of these measures there will be a net gain of 2.40 units (43.58% increase) to the habitats units on site, with an increase of hedgerow units by 0.66 units (65.21%) (**Fig 13**).

Figure 13. Biodiversity net gain results from the 3.1 metric calculator.

On-site baseline	Habitat units	5.50
	Hedgerow units	1.01
	River units	0.00
On-site post-intervention (including habitat retention, creation & enhancement)	Habitat units	7.90
	Hedgerow units	1.67
	River units	0.00
On-site net % change (including habitat retention, creation & enhancement)	Habitat units	43.58%
	Hedgerow units	65.21%
	River units	0.00%
Off-site baseline	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Off-site post-intervention (including habitat retention, creation & enhancement)	Habitat units	0.00
	Hedgerow units	0.00
	River units	0.00
Total net unit change (including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	2.40
	Hedgerow units	0.66
	River units	0.00
Total on-site net % change plus off-site surplus (including all on-site & off-site habitat retention, creation & enhancement)	Habitat units	43.58%
	Hedgerow units	65.21%
	River units	0.00%

6.5 Nitrogen / Phosphorus Budget

It is necessary to ensure that there is no net increase of nitrogen / phosphorus on site to ensure that the water quality of the Solent SPAs is not negatively impacted upon. A nitrogen / phosphorus budget will be required with the application for the development to calculate whether the site will result in a net increase in nitrogen. If it will result in an increase, mitigation will be required to offset this.

6.6 Enhancements

6.6.1 Birds

To act as biodiversity enhancement, 50 % (so at least 4 No) of the newly built dwellings will incorporate one Swift brick. The 'CJ Wildlife Swift maxi nesting box' (**Fig 15**) with entrance via a CJ Wildlife 'Cambridge Swift full-face brick' (The Cambridge System is a concept comprising an entrance piece and a nest box embedded in the cavity and inner leaf. It is particularly suited to gable ends at roof-space level). If this model is not suitable for the building specifications, an alternative swift box with internal floor space exceeding 400cm squared must be used. A list of swift boxes can be found on the RSPB website via the following link (<https://www.rspb.org.uk/globalassets/downloads/about-swifts/swift-bricks.pdf>) however it is worth noting that some of these do not have an internal floor space exceeding 400cm squared and are therefore not considered appropriate.

Figure 15. A schematic of how the Cambridge full face Swift brick leads into a cavity created by the prior installation of the Swift maxi nesting box.



6.6.2 Bats

Half of the newly built dwellings (so 4 No minimum) will also have Ibstock bat bricks (**Fig 16**) integrated within the external brick work. These features are entirely self-contained and

available in a variety of different colours to match different construction materials. They should ideally be placed on an elevation which will benefit from some degree of sunlight exposure and be located away from windows.

Figure 16. Ibstock bat brick 'B' which will be integrated into the gable walls of 4 No (minimum) of the new dwellings on site.



In addition to the integrated bat boxes, the following woodcrete models will also be erected on suitable retained trees around the site's boundary (including the woodland area on the southern boundary):

- 1 No Vivara Pro Miramare Large WoodStone bat box
- 2 No Vivara Pro Harlech WoodStone bat box
- 2 No Vivara Pro Large Multi Chamber WoodStone bat box

The woodcrete bat boxes will be erected by or under the supervision of an ecologists to ensure they are placed in the most appropriate / effective locations.

6.6.3 Hedgehogs

To ensure permeability for small mammals across the site, the garden fences of the properties will ensure at least 2 gaps are present within the gravel boards / bases of each fence line to allow for movement of Hedgehogs between gardens and into the wider area. The gaps should be at least 15 cm high by 15 cm wide with permeability for small mammals.

Small signage could be installed at these 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 (**Fig 17**).

Figure 17. Example of Hedgehog Highway signage to be placed above fence gaps provided to allow movements between gardens.



7.0 REFERENCES

CIEEM (2018) Guidelines for Ecological Impact Assessment in the UK & Ireland

Collins (ed) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd Edition

Eastleigh Borough Council (2009) 'Eastleigh Borough Local Plan: Review (2001-2011): Saved Policies (2009)' Eastleigh Borough Council, Eastleigh.

HMSO (2000). *The Countryside and Rights of Way Act 2000*. HMSO, London. HMSO (1981). *The Wildlife & Countryside Act 1981*. HMSO, London.

JNCC (2010) Handbook for Phase 1 Habitat Survey

Natural England & Forestry Commission England (2014) Standing Advice for Ancient Woodland and Veteran Trees.

Natural England, 2011 *Badgers and Development: A Guide to Best Practice and Licensing*

UKHab Ltd. (2020). *UK Habitat Classification – Habitat Definitions Version 1.1* (September 2020).



Legend

-  Site boundary
-  Broadleaved woodland
-  Scattered trees
-  Bare ground and ruderal vegetation
-  Treeline
-  Buildings



K4 Keppel, Daedalus Park
Daedalus Drive
Lee on the Solent, PO13 9FX
E: info@ecosupport.co.uk
T: 01329 832 841

Map	Phase I Habitat Survey
Site	Cockpit Barn, Knowle
Client	Alderbury Homes
Date	16/05/2022

© This map is the copyright of Ecosupport Ltd
Any unauthorised reproduction or usage by any person is prohibited