



ecosupport

**Land at 242 Leigh Road,
Chandler's Ford**

Preliminary Ecological Appraisal

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Client:

Jenkins Architecture

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Executive Summary

Ecosupport Ltd was instructed by Jenkins Architecture to undertake a Preliminary Ecological Appraisal (PEA) of the land at 242 Leigh Road, Chandler's Ford. This was required in order to identify any potentially important ecological features that may be affected by the proposed development. As part of this assessment, the following surveys were undertaken:

- Preliminary Ecological Appraisal (September 2022)
- Preliminary Roost Assessment (trees) (September 2022)

Following the conclusion of the above survey work the proposed works may be subject to adverse impacts in the absence of suitable mitigation / compensation:

- Very low - low potential for reptiles
- Potential for foraging and commuting Badgers
- Low - moderate potential for breeding and nesting birds
- Proximity to New Forest SPA/SAC/Ramsar
- Nutrient input into Solent Marine European Designated sites

In the absence of any mitigation measures, the proposed development is anticipated to result in ***possible minor adverse impacts***. Suitable mitigation measures are outlined within this report.

1.0 INTRODUCTION

1.1 Brief

Ecosupport Ltd was instructed by Jenkins Architecture to undertake a Preliminary Ecological Appraisal (PEA) of the land at 242 Leigh Road, Chandler's Ford (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 & Location

The site comprises of the land (excluding the existing dwelling which is covered under a separate planning application ref: H/22/93513) at 242 Leigh Road, Chandler's Ford, Eastleigh, SO53 3AW (centred on OS grid reference SU 43511 19559) (**Fig 1**). The southern boundary of site is marked by Leigh Road, whilst all other boundaries are bound by residential dwellings and associated land. The immediate surrounding environ is largely urban predominantly comprising of residential dwellings and associated land within the town of Chandler's Ford.

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

Figure 1. Aerial view of the application site (redline) and the area covered under a separate planning application (blue line) (Google Satellite, 2023).



1.3 Proposed Development

The proposals entail the erection of a single detached dwelling and separate garage along with associated car parking, bike and bin storage, access roads/driveways and landscaping (**Fig 2**).

NB. All works to the existing dwelling on site are covered under a separate planning application (ref: H/22/93513) and therefore all reference to these works has been omitted from this report.

Figure 2. Proposed development plan (Wildern Architecture Ltd., 2023).

2.0 RELEVANT LEGISLATION AND POLICY

2.1 Legislation

2.1.1 *The Conservation of Habitats and Species Regulations 2017 (as amended)*

The Conservation of Habitats and Species Regulations 2017 transposes the EU Habitats Directive (Council Directive 92/43/EEC) into UK domestic law. It provides protection for sites and species deemed to be of conservation importance across Europe. It is an offence to deliberately capture, kill or injure species listed in Schedule 2 or to damage or destroy their breeding sites or shelter. It is also illegal to deliberately disturb these species in such a way that is likely to significantly impact on the local distribution or abundance or affect their ability to survive, breed and rear or nurture their young.

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

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)

Section 40 of the Natural Environment and Rural Communities (NERC) Act 2006 requires that public bodies must have due regard to the conservation of biodiversity with a particular regard to species and habitats considered to be of greatest conservation importance. This means that Planning authorities must consider biodiversity and the list of species and habitats of importance when planning or undertaking activities.

Section 41 of the Act lists species and habitats found in England which are considered to be priority species and were identified as requiring action under the UK Biodiversity Action Plan. The latest update to the list of Section 41 habitats of principal importance under the *UK Post – 2010 Biodiversity Framework* includes 56 listed habitats including arable field margins, traditional orchards, hedgerows and several specific habitats within the categories of coastal, grassland, freshwater, inland rock, marine, wetland and woodland. The latest update to the list of Section 41 species of principal importance was in May 2014 and now includes a list of 943 species covering a range of species including vertebrates, terrestrial and marine invertebrates, plants and fungi.

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.

2.1.6 The Environment Act (2021)

The Environment Act 2021 is the UK's new legislation for environmental protection in the UK, which includes protection of water quality, clean air, and biodiversity among other key protections. This Act provides the government power to set targets to reach long-term aims relating to the environment, which will be periodically reviewed and updated. This legislation also establishes a new environmental watchdog organisation, the Office for Environmental Protection (OEP), which will hold the government accountable on environmental issues.

Part 6 of The Environment Act relates to nature and biodiversity. This section makes provision for biodiversity net gain to be a condition of planning permission in England and a requirement for nationally significant infrastructure projects. Biodiversity net gain will require maintenance for a period of at least 30 years after the completion of enhancement works to be achieved.

The legislation also includes updates to existing environmental legislation, such as the NERC Act 2006, to strengthen biodiversity enhancement rather than just conservation and includes a requirement for local, or relevant, authorities to publish biodiversity reports. Further, The Environment Act places a requirement on responsible authorities to prepare local nature recovery strategies, which will outline nature conservation sites and priorities and opportunities for recovering or enhancing biodiversity within the local area. Within England, the legislation also provides Natural England with the power to publish 'species conservation strategies' and 'protected site strategies' to identify activities that may affect a species or site's status and outline their opinions on measures that would be appropriate to avoid, mitigate or compensate any adverse impacts.

2.2 Policy

2.2.1 National Planning Policy Framework (NPPF) 2021

Section 15 of the National Planning Policy Framework (NPPF) '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

The Eastleigh Borough Local Plan 2016 – 2036 has a number of policies relating to ecology with the relevant ones listed below;

'General Approach

1. The Council will work with statutory and voluntary agencies and developers, and will determine planning applications, to:

- a. protect, conserve and enhance all:
 - i. international, national and local nature conservation designations and*
 - ii. networks of natural habitats and features, including the Local Ecological Network, Priority Biodiversity Areas and Priority Biodiversity Links, watercourses, wetland complexes, woodland trees, and trees and hedgerows important to biodiversity and local character; and facilitate their adaptation to climate change wherever possible; assist in achieving national, county and local biodiversity targets as set out in Biodiversity Action Plans (BAPs);**
- b. seek a net gain of biodiversity on all development sites (including sites for redevelopment) through the protection, enhancement and connection of existing and provision of new habitats and features of nature conservation interest compatible with the native biodiversity characteristics of the Borough, having regard to local geodiversity and soils; and*
- c. contribute to major elements of the PfSH Green Infrastructure Strategy and other strategies for the provision and enhancement of multifunctional green infrastructure including green routes, ecological networks and biodiversity enhancements (see strategic policy S9).*

International Designations

2. Development which is likely (either individually or in combination with other developments) to adversely affect the integrity of an international or European nature conservation site will not be permitted subject only to imperative reasons of overriding public interest and securing any necessary compensatory measures in the absence of alternative solutions. A 'project level' Habitat Regulations Assessment will be required where there are likely significant effects or uncertainty. Any mitigation measures required to ensure no adverse impact must be implemented at the appropriate time.

3. The Council will work with PfSH, Natural England, the Environment Agency and other wildlife organisations to develop and implement with developers a strategic approach to the protection and enhancement of international and European sites from the direct and indirect effects of development. Within Eastleigh Borough this will include:

- a. *implementing:*
 - i. *the Solent Recreation Mitigation Strategy (requiring contributions from residential developments within 5.6 kilometres of the Solent Special Protection Area to the Strategy);*
and
 - ii. *the interim and any future New Forest Recreation Mitigation Strategy if required; or alternative agreed site specific measures to address recreational disturbance;*
- b. *preserving the water quality and flows within the Itchen and Hamble, Southampton Water and Solent;*
- c. *protecting the River Itchen SAC, in particular the maintenance and where appropriate restoration of habitats and qualifying species to favourable conservation status (as defined by article 1 of the Habitats Directive); and*
- d. *seek contributions towards measures set out in the Southern Damselfly Conservation Strategy (or other strategy) specifically to deliver biodiversity net gain.*

National and Local Designations

4. Development will not be permitted if it is likely (either individually or in combination with other developments) to have a direct or indirect adverse effect on a Site of Special Scientific Interest (SSSI), Site of Importance for Nature Conservation (SINC) or Local Nature Reserve (LNR) as shown on the policies map (or on a more recent plan provided by the Hampshire Biodiversity Information Centre) unless it can be demonstrated that:

- a. *there are no alternative solutions;*
- b. *the adverse effects are unavoidable;*
- c. *measures are taken to mitigate or, as a last resort, compensate for the adverse effects;*
- d. *there is an overall biodiversity net gain; and*
- e. *if there are any residual adverse effects which cannot be avoided, mitigated or compensated, the benefits of the development must clearly outweigh the adverse effects on the nature conservation value of the site and any broader impacts on national and local designations.*

Priority habitats, protected and priority species and the local ecological network

5. Development will not be permitted if it is likely (either individually or in combination with other developments) to have a direct or indirect adverse effect on priority

habitats, protected or priority species, or on the local ecological network unless it

can be demonstrated that:

- a. *there are no alternative solutions;*
- b. *the adverse effects are unavoidable;*
- c. *measures are taken to mitigate or, as a last resort, compensate for the adverse effects;*
- d. *there is an overall biodiversity net gain; and*

- e. *if there are any residual adverse effects, the benefits of the development clearly outweigh the adverse effects on priority habitats, priority and protected species, and the local ecological network.*

Irreplaceable habitats

6. Development will not be permitted if it results in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees), unless there are wholly exceptional reasons and a suitable compensation strategy exists.

Buffers

7. Buffers free from development will be provided to designated sites to avoid/mitigate impacts, including recreational impact and impacts on edge habitats, and to maintain dark skies.

Surveys

- 8. Development will not be permitted unless it can be demonstrated that:*
- a. there have been thorough habitat and species surveys;*
 - b. the great crested newt strategic survey and strategy have been considered in all developments within 500m of a great crested newt pond; and*
 - c. the strategic bat trapping survey has been considered in all developments within the locality of a woodland or connected habitat networks.'*

2.3 Biodiversity Action Plans & UK Post-2010 Biodiversity Framework

The UK Post-2010 Biodiversity Framework (JNCC & DEFRA, 2010) supersedes the UK Biodiversity Action Plan 1992-2012 (UKBAP), setting out goals relating to nature conservation at a UK scale, for example the reduction and reversal in the decline of threatened species and improving the status of biodiversity. The specific habitats and species contained within the UKBAP continue to be regarded as conservation priorities under the UK Post-2010 Biodiversity Framework and are required to be a material consideration in the planning process under the 2021 NPPF.

3.0 METHODOLOGY

3.1 Desk Study

3.1.1 Waterbodies

Any ponds located within 250m of the proposed development were searched for using Ordnance Survey maps and available aerial images.

3.1.2 Designated sites

A search for designated sites within 1km of the site was undertaken using freely available online resources.

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 Amy Johnston BSc (Hons) and Darla Brown BSc (Hons), ecologists with Ecosupport, on the 13th September 2022. Weather conditions during the survey comprised temperatures of 18 °C, heavy cloud cover and wet conditions.

Habitats on site pre-development were identified in accordance with the categories specified for a UK Habitats survey, using Habitat Definitions Version 1.1 (UKHab Ltd., 2020). This was chosen as an appropriate habitat categorisation system as it fits within the Biodiversity Metric 3.1 calculation. Where appropriate primary habitat codes were used although for some habitat types, the use of secondary habitat codes was necessary as well.

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

An assessment was made of the suitability of the trees on site to support roosting bats based on the presence of any Potential Roost Features (PRFs) during September 2022. This involved the use of 8 x 42 close focus binoculars and a high-powered torch (where required) for a more detailed inspection of any features. The survey conformed to current best practice guidance as described in *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins, 2016) and was conducted by Amy Johnston (working under class level 2 licence of Tristanna Boxall 2015-14147-CLS-CLS).

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 Assessment Methodology

3.3.1 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.

3.3.2 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.

3.4 Limitations

3.4.1 Habitats

Given the recent clearance on site, the baseline habitats prior to clearance had to be assessed using aerial imagery. While it was possible to assign broad habitat types it was not possible to ascertain what species were present and this was considered to pose a limitation to the survey results.

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

For the survey of the habitats currently on site, there were not considered to be any significant limitations on the results with all areas of the site accessible and the survey conducted at a suitable time of year for vascular flowering plants however the species list provided is not considered to be exhaustive. Similarly, this survey does not constitute a full site assessment for invasive plant species such as Japanese Knotweed (*Fallopia japonica*).

3.4.2 PRA Limitations

There were not considered to be any significant limitations during the initial preliminary roost assessment (PRA) of the trees on site as it was possible to view the trees from all angles.

4.0 ECOLOGICAL BASELINE

NB. Due to evidence of recent clearance on site, the following ecological baseline is described in accordance with aerial imagery of the site prior to clearance while also noting what was present at the time of the walkover.

4.1. Waterbodies

Following a review of OS Maps and aerial imagery, no waterbodies were identified within 250m of the site.

4.2 Designated Sites

There were no statutory designated sites located within 1 km of the site. However, the site does lie within the nutrient neutrality catchment of the Solent Marine European Sites and it lies approximately 13.0 km from the New Forest SPA/SAC/Ramsar (within the zone of influence for recreational pressure).

4.3 Vegetation Survey Results

The vegetation within the site has been described below using the UK Habs Habitat Definitions Version 1.1 (UKHab Ltd., 2020). The species noted within the below sections 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.

During the walkover survey on site, the following habitats were noted (and are described in more detail in **Section 4.3.1** below):

- Modified grassland (g4) (secondary habitat codes 73 bare ground, 231 vegetated garden and 1171 mature tree)
- Artificial unvegetated, unsealed surface (u1c)
- Other hedgerows (h2b)

However, prior to clearance of the site, aerial imagery (**Fig 3**) indicates that the habitat types on site comprised of:

- Modified grassland (g4) (secondary habitat codes 10 scattered scrub and 11 scattered trees)
- Artificial unvegetated, unsealed surface (u1c)
- Other hedgerows (h2b)

These habitats are described in more detail in **Section 4.3.2** below.

Figure 3. Aerial view of the site in May 2020 (top) and July 2021 (bottom) prior to clearance (Google Earth, 2023).



4.3.1 Walkover (September 2022)

4.3.1.1 Modified Grassland (g4) (secondary habitat codes 73 bare ground, 231 vegetated garden and 1171 mature tree)

Modified grassland was present towards the front of the dwelling with patches of bare ground present throughout (secondary habitat code 73) (**Fig 4**). Species noted included Yorkshire-Fog (*Holcus lanatus*), Dandelion (*Taraxacum* agg.), Ribwort Plantain (*Plantago lanceolata*), White Clover (*Trifolium repens*), Yarrow (*Rumex sanguineus*), Common Agrimony (*Agrimonia eupatoria*) and Bloody Crane's Bill (*Geranium sanguineum*). At the front of the dwelling, a single mature Oak (*Quercus* spp.) tree (secondary habitat code 1171) was present (**Fig 6**) and is to be retained under the development proposals. Further to this, a single Oak sapling was present within the grassland.

Figure 4. View of the modified grassland present at the front of the dwelling, the patches of bare ground are notable in this picture (taken September 2022).



4.3.1.2 Artificial Unvegetated; Unsealed Surface (u1c)

Towards the rear of the site, artificial unvegetated; unsealed surface dominated the site which had been recently cleared. The species in this habitat comprised of a few colonising species, primarily situated around the boundaries of the site. These species included Bramble (*Rubus fruticosus*), Field - Bindweed (*Convolvulus arvensis*), Common Nettle (*Urtica dioica*), Common Nipplewort (*Lapsana communis*), Ground Ivy (*Glechoma hederacea*) and Ivy (*Hedera helix*).

Figure 5. View of the artificial unvegetated, unsealed surface with colonising vegetation to the rear of the dwelling (taken September 2022).



4.3.1.3 Other Hedgerows (h2b)

Along the western boundary of the site, a single Laurel (*Padus laurocerasus*) hedgerow was present and is understood to be retained under current proposals (**Fig 6**).

Figure 6. View of the Laurel hedgerow present along the western boundary, with the mature Oak tree also visible (taken September 2022)



4.3.2 Aerial Imagery (Prior to Clearance)

4.3.2.1 Modified Grassland (g4) (secondary habitat code 10 scattered scrub and 11 scattered trees)

Aerial imagery indicates that the site was dominated by rough modified grassland likely of a long sward height. A substantial amount of scattered scrub was also noted to be present along with a number of small, scattered trees. A mature Oak tree was also present to the south of the site as was noted during the walkover on site in September 2022.

4.3.2.2 Artificial Unvegetated; Unsealed Surface

A driveway was present at the south of the site providing access to the road which appeared to be comprised of gravel or a similar artificial unvegetated; unsealed surface.

4.3.2.3 Other Hedgerows (h2b)

Within aerial imagery, a hedgerow is evident along the western boundary of the site and this can be assumed to be comprised of Laurel as noted during the walkover in September 2022.

4.4 Bat Survey Results

4.4.1 Site Assessment - Prior to Clearance

A number of trees were present on site prior to clearance however from aerial imagery they appear to have been immature and unlikely to support PRFs. The mature Oak tree was still present at the time of the walkover with the results of the PRA included in **Section 4.4.2** below.

4.4.2 Site Assessment - Current Habitats

Two trees were still present on site with one being “an Oak sapling which is small in diameter and lacks the age and size to support roosting bats...The mature Oak (**Fig 6**), which was ivy-covered, but in good condition, did not have any PRFs for bats. Therefore, all trees on site are considered to be of **Negligible Potential** for roosting bats.” (Ecosupport Ltd., 2022).

NB. It is understood that the mature Oak tree is to be retained due to its protection under a Tree Protection Order (TPO).

4.5 Badgers

4.5.1 Site Assessment - Prior to Clearance

It is considered that the vegetation clearance on site would not have obscured evidence of any previous Badger setts and, considering the lack of local records and enclosed nature of the garden, it is therefore considered unlikely that a Badger sett was present prior to clearance. However, the mixed scrub and grassland present on site prior to clearance would have provided **potential** for foraging and commuting Badgers.

4.5.2 Site Assessment - Current Habitats

No evidence of Badgers was noted during the walkover on site however the modified grassland could provide some limited **potential** foraging and commuting Badgers.

4.6 Reptiles

4.6.1 Site Assessment - Prior to Clearance

The majority of the site was previously dominated by rough modified grassland and scattered scrub which appears from aerial imagery to be varied in its structure and could have provided the structure and heterogeneity required by reptiles (Edgar *et al.*, 2010). However, the site is situated within predominantly urban surroundings with limited connectivity to the wider landscape. Therefore, taking into account the above information and the low number of local reptile records, the site would have been of **low potential** for common reptiles.

4.6.2 Site Assessment - Current Habitats

Following the clearance on site, it is now dominated by artificial unvegetated; unsealed surfaces which are of limited value to reptiles. While there is some modified grassland to the south of the site, this contains large patches of bare ground and is of a very short sward height. It therefore lacks the structure and variety of thermal niches typically required by reptiles. However, a number of waste piles were present on site and it is possible that any reptiles remaining on site following habitat clearance could utilise these as shelter. Therefore, the site is now considered to be of **Very low potential** for common reptiles.

NB. Although the suitability of the site for reptiles has been reduced as a result of the prior vegetation clearance on site, precautionary working methods will still be in place (see Section 6.4) and compensation will be provided for the loss of habitat in the form of grassland and scrub creation.

4.7 Great Crested Newts

4.7.1 Site Assessment - Prior to Clearance

The majority of the site was previously dominated by rough modified grassland and scattered scrub which appears from aerial imagery to be varied in its structure and could have provided the structure and heterogeneity required by GCN (Edgar *et al.*, 2010). However, no waterbodies were identified within 250m of the site and the site is situated within predominantly urban surroundings with limited connectivity to the wider landscape. Therefore, taking into account the above information and the lack of local GCN records, the site would have been of **Negligible potential** for GCN.

4.7.2 Site Assessment - Current Habitats

The habitat on site is now dominated by unvegetated surfaces and modified grassland of short sward height which consequently lacks the structure and heterogeneity required by GCN. Given the lack of suitable habitat on site and the absence of waterbodies within 250m of the site, the site is considered to be of **Negligible potential** for GCN.

4.8 Hazel Dormouse

4.8.1 Site Assessment - Prior to Clearance

The scrub and scattered trees previously present on site could have provided the range of native species required to support foraging and nesting Hazel Dormice. Additionally, the Laurel hedgerow along the western boundary of the site could provide some sub-optimal habitat for Hazel Dormice. However, the site is poorly connected to the surrounding landscape with no adjoining hedgerows or treelines. Taking into account the above information and the lack of local records, the site would have been of **Negligible potential** for Hazel Dormice.

4.8.2 Site Assessment - Current Habitats

The Laurel hedgerow present along the western boundary of the site could provide some sub-optimal habitat for Hazel Dormice being comprised of a single species and thus not supporting the variety of species typically required to support nesting and foraging Hazel Dormice. However, the site is poorly connected to the surrounding landscape with no adjoining hedgerows or treelines. Taking into account the above information and the lack of local records, the site is considered to be of **Negligible potential** for Hazel Dormice.

4.9 Breeding and Nesting Birds

4.9.1 Site Assessment - Prior to Clearance

The scrub and scattered trees that were previously present on site would have offered suitable habitat for a range of breeding and nesting bird species, with the mature Oak tree and Laurel hedgerow still present on site providing further suitable habitat. Therefore, the site would have been of **Moderate potential** for breeding and nesting birds.

4.9.2 Site Assessment - Current Habitats

The Laurel hedgerow and mature Oak tree on site can be considered to offer suitable habitat for a range of breeding and nesting bird species. Therefore, the site is considered to be of **Low potential** to support breeding and nesting birds.

NB. Although the suitability of the site for nesting birds has been reduced as a result of the prior vegetation clearance on site, precautionary working methods will still be in place (see Section 6.5) and compensation will be provided for the loss of habitat in the form of scrub creation and tree planting.

4.10 Hedgehogs

4.10.1 Site Assessment - Prior to Clearance

The modified grassland and Laurel hedgerow on site prior to clearance would have provided suitable foraging and commuting habitat for hedgehogs with the scrub providing sheltering opportunities. Therefore, prior to clearance, the site would have provided ***potential*** for foraging, commuting and sheltering hedgehogs.

4.10.2 Site Assessment - Current Habitats

The modified grassland and Laurel hedgerow on site could provide some limited foraging and commuting opportunities for hedgehogs with the waste piles also offering potential sheltering opportunities. Therefore, based on the current habitats on site, the site is considered to hold ***potential*** for foraging, commuting and sheltering 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

5.2.1.1 Prior to Clearance

Based on the habitats present prior to clearance, the proposals would have involved the loss of artificial unvegetated; unsealed surfaces which are only of value at the **site level**. However, the proposals would also have entailed removal of mixed scrub and scattered trees which are considered to be of local value. Additionally, the proposed works would have taken place adjacent to the retained mature Oak tree which is of local value. The loss of these habitats as well as the potential damage to retained habitats by machinery and particularly root zone compaction would have had an **adverse impact** to habitats of **local value**.

5.2.1.2 Current Habitats

Based on the current habitats, the proposals will primarily involve the loss of artificial unvegetated; unsealed surfaces and modified grassland which are only considered to be of value at the **site level**. However, the proposals will take place adjacent to the retained mature Oak tree and hedgerow which are both considered to be of local value. The potential damage to retained habitats by machinery and particularly root zone compaction would have an **adverse impact** to habitats of **local value**.

5.2.2 Impacts to Wildlife

The site has been assessed as holding potential foraging and commuting Badgers, both prior to clearance and based on the current habitats. The proposed works may require the creation of some excavations. This may lead to Badgers and other mammals becoming trapped or injured during the works. Therefore, in the absence of mitigation an **adverse impact is possible** at the **local level**.

Prior to clearance the site was assessed as holding low potential for common reptiles. Based on the current habitats the site was assessed as holding very low potential for common reptiles within the waste piles. As such, removal of suitable habitat could lead to the disturbance of, harm to or death of common reptiles, if present. Therefore, an **adverse impact is possible** at the **local level**.

Prior to clearance the site was assessed as holding moderate potential for nesting and breeding birds. Based on the current habitats the site was assessed as holding low potential for nesting and breeding birds within the mature tree and hedgerow. It is understood that

these habitats are proposed to be retained under current proposals, however works are going to take place directly adjacent to these habitats. As such, this could lead to the disturbance of, harm to or death of individual nesting birds. Therefore, an ***adverse impact is possible*** at the ***local Level***.

The site has been assessed as holding potential foraging, commuting, and sheltering Hedgehogs, both prior to clearance and based on the current habitats. As such, the removal of suitable sheltering habitat could lead to the disturbance of, harm to or death of Hedgehogs, if present. Therefore, in the absence of mitigation an ***adverse impact is possible***.

5.3 Site Operation

5.3.1 Impacts to Designated Sites

5.3.1.1 New Forest SPA/SAC/Ramsar

There will be a net addition of 1 dwelling on site. The site is located approximately 13.0km from the New Forest SPA/SAC/Ramsar and therefore within the 13.6 km zone within which, there is a risk of disturbance from an increase in visitor numbers and recreational disturbance. As such, in the absence of mitigation the operational phase of the development would have a likely ***minor impact*** on habitats of ***international value***.

5.3.1.2 New Forest SPA/SAC/Ramsar

Due to the net addition of 1 dwelling on site, the development will result in an increase in nitrogen input into the WwTW draining into the Solent. Natural England has stated there is uncertainty as to whether new growth will further deteriorate designated sites due to an increase in nutrient inputs from wastewater. Therefore, a ***minor adverse impact is possible*** on the Solent and Southampton Water SPA, a site of ***international significance***.

6.0 RECOMMENDATIONS

6.1 Introduction

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

6.2 Bats

To avoid adverse impacts on bats in the local area, any lighting to be implemented on site will need to be sensitive lighting.

A document (Guidance Note 08/18 Bats and Artificial Lighting in the UK) has been produced via a collaboration between the Institute of Lighting Professionals (ILP) and the Bat Conservation Trust (BCT), which outlines the latest recommendations to minimise the impacts of increased artificial lighting on bats. The key recommendations within this document have been outlined below and will be implemented provided there are no conflicts with any legal limits of illumination (in which case a suitable compromise should be reached).

'Luminaires come in a myriad of different styles, applications and specifications which a lighting professional can help to select. The following should be considered when choosing luminaires:

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used. LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012).
- Internal luminaires can be recessed where installed in proximity to windows to reduce glare and light spill.
- The use of specialist bollard or low-level downward directional luminaires to retain darkness above can be considered. However, this often comes at a cost of unacceptable glare, poor illumination efficiency, a high upward light component and poor facial recognition, and their use should only be as directed by the lighting professional.
- Column heights should be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used – See ILP Guidance for the Reduction of Obtrusive Light.
- Luminaires should always be mounted on the horizontal, i.e. no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.

- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed (**Fig 7**).'

Figure 7. (a) Shield 'barn doors' (b) cowl hood; (c) shield and; (d) external louvre Images from ILP (2011).



6.3 Badgers and Hedgehogs

During the construction phase, any open excavations left overnight will either be covered to prevent commuting Badgers and Hedgehogs falling in or escape ladders will be used to prevent them from becoming trapped. Any open pipework will be checked and then capped nightly.

NB. The precautionary methods employed for reptiles (see Section 6.4 below) are considered to sufficient to avoid adverse impacts to sheltering hedgehogs on site, if present.

6.4 Reptiles

Prior to clearance, the site was considered to be of low potential for reptiles and based on the current habitats the site is considered to be of very low potential for reptiles. Therefore, it is considered that a targeted destructive search of areas of suitable habitat (waste piles) will be sufficient to minimise impacts to any reptiles should they be present. This will entail the sensitive dismantling of the waste piles under the supervision of a suitably qualified ecologist. These works will be completed during the active reptile period (April – September) when temperatures are above 12°C with sunshine.

Additionally, for the duration of the works, the habitats on site will need to be maintained unsuitable for reptiles through continuous management to a sward height of no higher than 15cm. This will discourage any reptiles, if present, from dispersing into the site prior to works commencing.

6.5 Avoidance of Impacts to Breeding and Nesting Birds

In order to avoid disturbance of breeding and nesting birds or damage to their nests, any works impacting the trees on site will take place outside of the bird nesting season (typically March– August, dependent on weather). If this is not possible, the area to be cleared will be thoroughly checked by an ecologist immediately prior to clearance. If any active nests are found, they will be left undisturbed with a suitable buffer (ca. 5m) until nestlings have fledged.

6.6 Protection of Retained Trees / Hedgerows

Prior to construction works commencing, the retained mature Oak tree and the Laurel hedgerow will be protected from damage during the works using standard arboricultural tree protection measures which include protection of the canopy and prevention of root compaction. In particular, a suitable buffer will be maintained around the tree using Heras fencing or similar which will prevent access by machinery.

6.7 Compensation and Enhancements

The following measures have been selected based on the habitats present on site prior to clearance and aim to compensate for the loss of habitat on site and further enhance the site for biodiversity.

6.7.1 Bats

To act as biodiversity enhancement, one bat brick will be included in the new dwelling on site. The bat brick used will be the Istock bat brick B as it is available in a variety of different brick colours and requires no maintenance (**Fig 8**). This will also be positioned as close to the eaves as possible, away from windows and in a position that will receive direct sunlight.

Figure 8. The Istock bat brick 'B' that will be incorporated into the newly built dwellings.



6.7.2 Birds

One Swift brick will be incorporated into each newly built dwelling. The 'CJ Wildlife Swift maxi nesting box' (**Fig 9**) 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.

Swift boxes should be placed 5 meters above ground, as close to the eaves as possible. The entrance should be clear so that swifts can easily access the next boxes.

Figure 9. 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.



6.7.3 Hedgehogs

6.7.3.1 Hedgehog Home

Two hedgehogs home will be included on site (such as the Igloo Hedgehog home or Hogitat Hedgehog house) (**Fig 10**). This will be provided within or adjacent to areas of planted / retained trees / shrubs and will provide a rapidly declining species with a place to shelter / hibernate.

Figure 10. Example of Igloo hedgehog home.



6.7.3.2 Fence Gaps

To ensure permeability for small mammals across the site, at least 2 gaps will be present within the gravel boards / bases of the fence lines 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 11**).

Figure 11. Example of Hedgehog Highway signage to be placed above fence gaps provided to allow movements between gardens.



6.7.4 Planting

To compensate for the previous clearance of habitat on site and to further enhance the site for biodiversity, the following planting recommendations will need to be implemented within the northern and southern greenspaces on site outside of private gardens.

6.7.4.1 Mixed Native Scrub

Reinstatement of mixed scrub within the northern and southern portions of the site, as well as along the eastern boundary will be achieved through planting of native species and appropriate management which will allow a good age range to establish and maintain a mixture of species without a single species dominant.

6.7.4.1.1 Planting

Recommended species planting includes Blackthorn (*Prunus spinosa*), Hazel (*Corylus avellana*), Gorse (*Ulex spp.*) and Hawthorn (*Crataegus monogyna*). These species provide a variety of flowering resources for pollinators as well as a variety of fruits and seeds for birds.

The scrub planting will not be dense to avoid the area becoming overly vegetated, but it will be allowed to establish in spaced out patches. The best time to plant is late autumn and it is recommended to avoid freezing temperatures or heat. The scrub will become denser and more connected as it grows up.

6.7.4.1.2 Management

An appropriate cutting regime following the guidelines set out below will encourage re-growth of the native scrub and create a more diverse stand (Natural England, 2006; RSPB, n.d.).

- Cut areas of scrub on a 7-15 year rotation (e.g. cut 1/15th of the stand each year) using coppicing or selective thinning.
- Aim not to cut adjacent areas in consecutive years.
- Where possible, cut berry-bearing scrub after the end of the December to allow birds and mammals to eat the berries.
- Undertake scrub management outside of the bird nesting season which spans February-August inclusive.
- Cutting can be conducted using manual tools or mechanical clearance may be employed during winter months.
- Edges of scrub can be mown once in late Summer/Autumn to encourage flowering herbs.

6.7.4.2 Wildflower Grassland

6.7.4.2.1 Planting

In combination with the scrub planting, areas of wildflower grassland will be created through the sowing of Emorsgate EM1 – Basic General Purpose Meadow Mixture at a density of 4g/m².

Recommended species planting of grass species for this habitat type may also include Perennial Rye-grass (*Lolium perenne*), Common Bent (*Agrostis capillaris*), False Oat-grass (*Arrhenatherum elatius*), Yorkshire-fog (*Holcus lanatus*), Rough Meadow-grass (*Poa trivialis*) and Cock's-foot (*Dactylis glomerata*). Herb planting may include Yarrow (*Achillea millefolium*), Ribwort Plantain (*Plantago lanceolata*), Red Clover (*Trifolium pratense*), Common Knapweed (*Centaurea nigra*), Bird's-foot Trefoil (*Lotus corniculatus*), Common Mouse-ear (*Cerastium fontanum*), Meadow Buttercup (*Ranunculus acris*), Self-heal (*Prunella vulgaris*) and Creeping Thistle (*Cirsium arvense*).

Planting a mixture of flowering plants will support pollinators and encourages a diversity of insects to sustain bats.

6.7.4.2.2 Management

Wildflower areas do not require any additional watering or fertilizer. Cutting a meadow and removing the clippings retains low nutrient levels in the soil and suppresses coarse grasses which would otherwise out-compete the wildflowers. It is recommended the wildflower grassland undergoes two annual cuts. The growth should be cut back to a height of 50-75mm. The cut grass should be dried on site. Cuttings should be left in situ for approximately one week, after this the arisings are to be removed from site.

First year management: Perennial species take at least a full year to establish. For newly sown areas the first summer will be dominated by annual weeds arising from the soil seed bank and by grass growth. This should be controlled by mowing throughout the first year to minimise competition and weed seed production.

Management Once Established: Once established (from year 2 to 3), wildflower areas can undergo a spring cut in late March/early April however it is recommended that it is instead left to flower and will be cut in mid-summer. This will allow plants to flower and set seed. However, the wildflower area should not be cut in May or early June due to nesting birds. Mowing in mid-June brings a premature end to the flowers and can compromise nesting birds, which do not fledge until late July, insects and other wildlife. If some mowing has to take place at this time, sections should be cut at different dates to prolong the overall flowering season and give wildlife a chance to move. The second annual cut should be undertaken during late Autumn.

Grassland which is consistently cut late in the season, in August and September, year on year reduces species diversity as late cutting gives more time for coarse grasses and other dominant plants to grow unchecked. To maintain maximum diversity and flowering interest the buffer should be managed in sections at different times from late June to the end of August. Varying the mowing times from year to year is the best way to maintain a diverse balanced sward.

6.7.4.3 Trees

6.7.4.3.1 Planting

A number of native trees will also be planted throughout the site. A variety of native species will be used with species that can be considered including:

- Apple (*Malus spp.*)
- Wild Cherry (*Prunus avium*)
- Rowan (*Sorbus aucuparia*)
- Alder (*Alnus glutinosa*)
- Hazel (*Corylus avellana*)
- Holly (*Ilex aquifolium*)
- Silver Birch (*Betula pendula*)
- Small-leaved Lime (*Tilia cordata*)
- Willow (*Salix spp.*)
- Field Maple (*Acer campestre*)
- Oak (*Quercus robur*)
- Ash (*Fraxinus excelsior*)

Planting a mixture of flowering and fruiting trees will provide resources for pollinators and birds as well as encouraging a diversity of invertebrates to sustain bats.

6.7.4.3.2 Management

These trees will require additional management to ensure that they remain in good condition and develop correctly. Weeding will be undertaken around the base of the trees in all years. Wood chips or raked hay can be used to suppress weed growth, if desired, if deposited around

the base of the scattered trees as mulch. Trees that are fruiting will not be cut to ensure the formation of fruiting bodies.

Tree planting: Planting will be carried out in the first year. The best time to plant is late autumn and it is recommended to avoid freezing temperatures or heat. Rootgrow or Bonemeal will be applied to the new plants to encourage healthy root growth.

Years 1-2: The newly planted trees will be inspected annually to assess their condition. These monitoring visits will assess the general health of the trees and determine if any remedial action is required. Any plants that are removed, die or become seriously damaged or defective during the 5-year management plan shall be replaced like for like in the next planting season.

Years 3-5: The trees will be subject to light pruning as required in October to ensure that they are developing healthy growth forms. Dead or diseased trees will be replaced as outlined in Years 1 and 2.

6.8 Designated Sites

6.8.1 New Forest SPA/SAC/Ramsar

Research published by Footprint Ecology (2020) has identified that the majority of visitors to the New Forest designated sites on short visits/day trips originate within a 13.8km radius of the site. Day visitors to the park have been identified with resulting in impacts to sensitive areas through increases in habitat trampling, disturbance of/predation of ground nesting birds, fires, contamination (such as via dog fouling, sunscreen or contamination of water sources from campervans or road runoff), harvesting of sensitive species, visitor expectation of habitat management, and interference of grazing distribution through feeding or livestock or causing livestock worrying. It is predicted by the report there will be an increase of access levels to the National Park of 11% by 2036 as a result of increased housing developments locally.

To offset this increase, Eastleigh Borough Council (2022) has stated that proposed developments should utilise financial contributions to provide SANGs within the Borough and contribute to management and monitoring of visitor pressures on the New Forest National Park. A contribution of **£2,220** per dwelling has been proposed.

6.8.2 Nitrate Neutrality

To ensure the scheme does not adversely affect the Solent Marine European designated sites through an increase in nitrate loading, a nitrogen budget calculation will need to be undertaken with credits purchased to offset this as required.

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