Ecological Impact Assessment

Land Adjoining 4 Brookfields, Providence Hill

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Report	Ecological Impact Assessment (EcIA) (Rev D)
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Executive Summary

Ecosupport Ltd was instructed by Colten Care Ltd. to undertake an updated walkover and update Phase II survey work as necessary to inform an EcIA for the 'Land Adjoining 4 Brookfield' at Providence Hill in Bursledon. 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:

- Data request submitted to Hampshire Biodiversity Information Centre (HBIC) (January 2024)
- Updated UK Habs baseline habitat assessment (to feed into BNG report that will accompany this application) (December 2023)
- Updated Preliminary Roost Assessment (Buildings) (January 2024)
- Updated Ground Level Tree Assessment (Trees) (April 2024)
- Updated bat activity surveys (April-June 2024)
- Updated reptile surveys (April-May 2024)
- Updated eDNA survey of Windmill Pond (scheduled for April 2025)
- Breeding bird surveys (March-June 2024)

Various previous survey work has been undertaken on site. The initial PEA was undertaken in 2016 by Aven Ecology Ltd. with an updated walkover in 2021. Based on the initial PEA, subsequent Phase II survey works were undertaken in 2016 and 2017 in support of planning application O/17/80899. Hazel Dormouse surveys were also undertaken in 2018 in support of O/17/81166. An updated walkover was then conducted by ACD Environmental in 2022 in support of a further application F/24/97312 with subsequent Phase II work carried out throughout 2022. The following previous survey work has been included in this assessment:

- Preliminary Roost Assessment (August 2016, June 2022)
- Bat activity surveys (August-September 2016, May 2017, June 2022)
- Bat emergence / re-entry surveys (June 2022)
- Reptile presence/absence surveys (August – September 2016)
- HSI and eDNA of Windmill Pond (August 2016, June 2022)
- Hazel Dormouse survey (April-July 2018)

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:

- Site is of county value for foraging and commuting bats
- Confirmed presence of Slow Worms
- Confirmed presence of nesting Bullfinch, Dunnock and Wren
- Windmill Pond located to the north of site
- Moderate potential for foraging and commuting Badgers
- Moderate potential for Hedgehogs
- Site is situated with the Solent SPAs & New Forest designated sites 'zone of influence'

In the absence of any mitigation measures, the proposed development is anticipated to result in certain adverse effects and the results of the further survey work recommended is provided in accompanying reports. Mitigation measures specific to the impacts upon those species / groups are also provided within these reports (although measures to offset impacts to the notable adjacent habitats / designations and provide ecological enhancements are provided within **Section 7.0** of this report).

1.0 INTRODUCTION

1.1 Brief

Ecosupport Ltd was commissioned by Colten Care Ltd. to conduct updated ecological surveys in support of an EcIA for the 'Land Adjoining 4 Brookfields, Providence Hill, Bursledon' (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.

Various previous survey work has been undertaken on site. The initial PEA was undertaken in 2016 by Aven Ecology Ltd. with an updated walkover in 2021. Based on the initial PEA, subsequent Phase II survey works were undertaken in 2016 and 2017 in support of planning application O/17/80899. Hazel Dormouse surveys were also undertaken in 2018 in support of the neighbouring planning application O/17/81166. An updated walkover was then conducted by ACD Environmental in 2022 in support of F/24/97312 with subsequent Phase II work carried out throughout 2022. This report provides an update to the existing work undertaken in support of a new planning application.

- Data request submitted to Hampshire Biodiversity Information Centre (HBIC) (January 2024)
- Updated UK Habs baseline habitat assessment (to feed into BNG report that will accompany this application) (December 2023)
- Preliminary Roost Assessment (Buildings) (August 2016, June 2022, January 2024)
- Ground Level Tree Assessment (Trees) (April 2024)
- Bat activity surveys (August-September 2016, May 2017, June 2022, April-June 2024)
- Bat emergence / re-entry surveys (June 2022)
- Reptile presence / absence surveys (August – September 2016, April-May 2024)
- HSI and eDNA of Windmill Pond (August 2016, June 2022, April 2025)
- Hazel Dormouse survey (April-July 2018)
- Breeding bird surveys (March-June 2024)

NB. If the works do not take place within 18 months of this report[1] then the findings of this survey will no longer be considered valid and certain aspects may require updating.

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

Following feedback from Lisa Malter dated 22nd May 2025, the below sections have been updated:

- Section 4.12.1
- Section 4.7.4
- Section 4.7.5
- Section 7.11

1.2 Site Description & Location

The site comprises a parcel of land and associated outbuildings to the north of Providence Hill, Bursledon, SO31 8AU (centred on OS grid reference SU 48308 10626) (**Fig 1**). The site is bound by the A27 to the south with residential housing areas lying to the north, east and west. The immediate surrounding environ can be considered largely urban comprising mostly of residential dwellings and their gardens however some small pockets of woodland and grassland are present to the north of the site.

Figure 1. Aerial image of the site with approximate redline boundary (Google Earth, 2024)

1.3 Proposed Development

The proposals entail full planning consent for the erection of a 68-bed care home (Use Class C2) and 3 close-care cottages (Use Class C3 Age Restricted) with associated access, internal access roads, parking, landscaping and infrastructure. (**Fig 2**).

Figure 2. View of the proposed plan drawing No. 6185-WLA-ZZ-XX-DR-A-0010 (provided by WLA, 2025).

2.0 RELEVANT LEGISLATION AND POLICY

2.1 Legislation

2.1.1 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.

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

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.

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

This is the primary piece of legislation by which biodiversity if 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 art II of the Act. This list over 30 plants including Japanese Knotweed (*Fallopia japonica*), Giant Hogweed (*Heracleum mantegazzianum*) and Parrots Feather (*Myriophyllum aquaticum*).

2.1.4 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.

2.1.5 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.*

2.1.6 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 Planning Policy Framework (NPPF) 2024

The National Planning Policy Framework (NPPF) (2024) sets out the Government's planning policies for England and how these should be applied. It provides a framework within which locally-prepared plans for housing and other development can be produced.

Chapter 15 'Conserving and enhancing the natural environment' states that planning policies and decisions should contribute to and enhance the natural and local environment by protecting and enhancing sites of biodiversity, the wider benefits from natural capital and ecosystem services, minimising impacts on and minimising impacts on and providing net gains for biodiversity including by incorporating features which support priority or threatened species such as swifts, bats and hedgehogs.

The NPPF states that plans should distinguish between the hierarchy of international, national and locally designated sites and land should be allocated with the least environmental or amenity value and take a strategic approach to maintaining and enhancing networks of habitats and green infrastructure for the enhancement of natural capital at a catchment or landscape scale.

To protect and enhance biodiversity, plans should identify, map and safeguard components of local wildlife-rich habitats and wider ecological networks, including the hierarchy of international, national and locally designated sites of importance for biodiversity, wildlife corridors and stepping stones that connect them and areas identified by national and local partnerships for habitat management, enhancement, restoration or creation and promote the conservation, restoration and enhancement of priority habitats, ecological networks and the protection and recovery of priority species and identify and pursue opportunities for securing measurable net gains for biodiversity.

The NPPF states determining planning applications, local planning authorities should apply the following principles:

a) if significant harm to biodiversity resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
b) development on land within or outside a SSSI, 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 on the features of the site that make it of special scientific interest, and any broader impacts on the national network of SSSIs;

c) 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;
d) 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.
e) Potential SPAs and possible SACs, listed or proposed Ramsar sites and sites required as compensatory measures for the previous should be given the same protection as habitats sites.

2.2.2 Local – Eastleigh Borough Council

The site falls within the jurisdiction of Eastleigh Borough Council, and therefore the Eastleigh Borough Council Local Plan 2016-2036 (adopted April 2022) is relevant for this site. Relevant strategic policies for the proposed application site have been outlined below:

'Policy DM11 – Nature Conservation

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;

b. assist in achieving national, county and local biodiversity targets as set out in Biodiversity Action Plans (BAPs);

c. 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

d. 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.'

'Policy S9 – Green Infrastructure

"Through new development and other initiatives the Borough Council will seek to achieve the provision, retention and/or enhancement of the following forms of multifunctional green infrastructure, including provision of:

a. landscape scale strategic links across the Borough boundary, to and between the Borough's settlements, the countryside, the coast, and the major areas of open space including the country parks (see strategic policy S12);

b. interlinked publicly accessible open space through new and existing development including for example formal sports facilities and informal amenity spaces and cemeteries (see policies DM32-DM34, Chapter 5 and detailed proposals in Chapter 6);

c. green infrastructure incorporated into all new development with multifunctional spaces connected by primary, secondary and tertiary green links;

d. interconnected urban green infrastructure within the fine grain of existing and new development including green, cycle ways, paths and linkages between community facilities and open spaces to link community facilities; e. green stepping stones such as street trees, green roofs and walls, pocket parks and urban copses (see policy DM1, Chapter 5);

f. connected habitats linking the network of designated sites and existing priority habitats, taking account of the Hampshire ecological network map (see policy DM11, Chapter 5);

g. incorporation of historic buildings and landscapes, including historic parks and gardens within the wider Green Infrastructure to protect their setting (see policy DM12, Chapter 5); and

h. opportunities for local food growing including allotments, community orchards and farms (see policies DM32 to DM34, Chapter 5 and detailed proposals in Chapter 6)'

'Policy S5 - New development in the countryside

'*..a. avoid adverse impacts on the rural, woodland, riparian or coastal character, the intrinsic character of the landscape including the avoidance of adverse landscape impacts on areas adjoining national parks and their settings, the significance of heritage assets and on the biodiversity of the area*

b. secure long-term beneficial management practices that will enhance the landscape and biodiversity of the countryside and coast;*'*

'Policy DM1 – General Criteria for New Development

All new development should (as relevant):

a. not have an unacceptable impact on, and where possible should enhance:

i. residential amenities of both new and existing residents; the character and appearance of urban areas, the countryside and the coast;

ii. biodiversity (avoiding significant adverse impacts); and

iii. the significance of heritage assets;

… d. not involve the loss of or damage to trees, woodlands, hedgerows, ponds, priority habitats or other landscape features of value to the character of the area, for appearance or biodiversity unless they can be replaced with features of equivalent or enhanced value, (recognising that some species and habitats may be irreplaceable)…'

3.0 METHODOLOGY

3.1 Desk Study

3.1.1 Data Request

An updated data request was submitted to the Hampshire Biological Information Centre (HBIC) to ascertain any records held of nature conservation designations and protected species within 2 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

An updated field survey which forms the basis of the findings of this report was carried out by Adam Jessop MSc MCIEEM (Principal Ecologist with Ecosupport) and Louise Davies (Project Ecologist with Ecosupport) on the 21st December 2023. The habitats on site were also re-assessed in tandem with the 2024 survey work which took place between April and June 2024 with the results of this consistent with the initial walkover.

Habitats on site pre-development were identified in accordance with the categories specified for a UK Habitats survey, using Habitat Definitions Version 2.0 (UKHab Ltd., 2023). This was chosen as an appropriate habitat categorisation system as it fits within the Statutory Biodiversity Metric calculation.

UKHab represents a method for classifying habitats which has been produced to provide an up-to-date replacement for the current industry standard phase 1 survey method. One of the main benefits of UKHab is that it supports the evaluation of habitats for EcIA and no net loss/ net gain analysis, providing a more detailed interpretation of habitat types, which is important for assessing the distinctiveness and condition of habitats against which biodiversity net gain is measured.

The standard 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

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

3.2.3.1 PRA (Buildings)

An assessment of all buildings on site was undertaken by Adam Jessop and Louise Davies during the initial walkover survey under class level 2 survey licence number (2015-13366-CLS-CLS). This followed BCT (Collins, J. (ed), 2023) 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, J. (ed) 2023)).

Suitability	Description of Roosting Habitats
Negligible	No obvious habitat features on site likely to be used by roosting bats; however, a small element of uncertainty remains as bats can use small and apparently unsuitable features on occasion.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically at any time of the year. 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 and not a classic cool/stable hibernation site, but could be used by individual hibernating bats).
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, such as maternity and hibernation – the categorisation described in this table is 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. These structures have the potential to support high conservation status roosts, e.g. maternity or classic cool/stable hibernation site.

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

3.2.3.2 Trees

A non-exhaustive Ground Level Tree Assessment (GLTA) assessment of any notable trees on site was undertaken by Louise Davies on the 18th January 2024 with an updated visit carried out by Lewis Lakudzala on 3rd April 2024. Following edition 4 of the BCT guidelines (Collins (d) 2023), features of trees were assessed for their suitability to support roosting bats using a high-powered torch and binoculars, with the results of these observations combined with the data collated during the desk study to classify each tree as either negligible, FAR (Further assessment required), PRF-Is (Potential roost features - individual) or PRF-M's (Potential roost features – maternity) (**Table 2**).

Table 2. Guidelines for assessing the potential suitability of sites for bats (Trees) (adapted from Collins, 2023).

Suitability	**Description**
	Roosting Features
Negligible	Tree does not support any suitable features that could be potentially utilized by roosting bats.
FAR	Further Assessment Required (FAR) to establish if any PRFs are present in the tree.
PRF - I	PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
PRF - M	PRF is suitable for multiple bats and may therefore be used by a maternity colony.

3.2.3.3 Emergence/ Re-entry Surveys

Bat surveys for the structures assessed as holding potential to support roosting within the site were undertaken by Aven Ecology, with ACD undertaking updated surveys in June 2022. The surveys effort comprised of a dusk emergence/ dawn re-entry conducted on the 21st and 22nd June 2022 were undertaken by Ryan Yeates, Katie Crawford, Lily Gilbert and Anouska Laramy (ACD Environmental). Anabat Scout bat detectors were utilised for identifying species calls / analysis of calls via sonogram (where required). The dusk emergence surveys both began approximately 15 minutes prior to sunset and continued until approximately and 2 hours after. The subsequent dawn re-entry surveys commenced approximately 2 hours before sunrise and continued until 15 minutes after sunrise.

Survey sheets were used to record the following information:

- Time of call registration
- Species (if possible to identify using heterodyne detector)
- Location / activity
- Direction of flight (if seen)

3.2.3.4 Walked Transects & Static Monitoring – Previous Survey Work (2016-2017, 2022)

Based on the suitability of the habitat to support foraging and commuting bats, walked transects were undertaken by Aven Ecology in August – September 2016 and May 2017, with updated surveys undertaken by ACD Environmental in June 2022 (**Fig 3** with 16 listening stations). A series of static automated bat detectors were also deployed during this period to

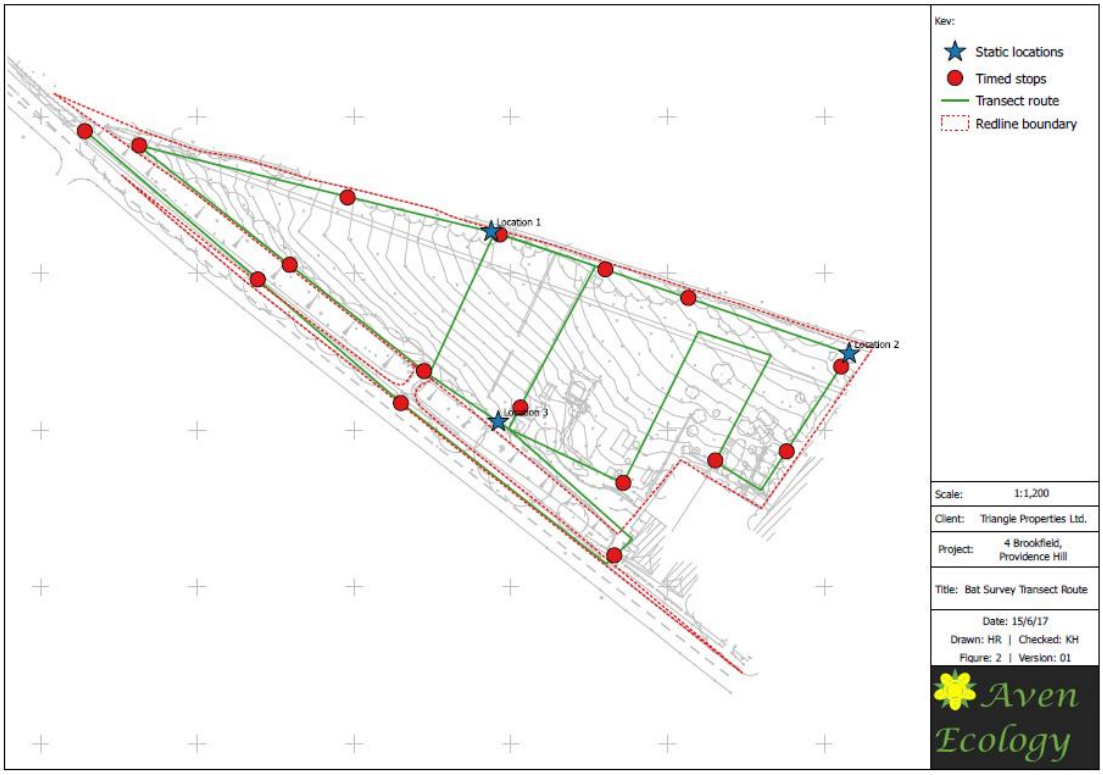
complement the walked transect survey effort. The following methodology was observed during the survey effort for the site:

'A series of three bat activity transect surveys, including deployment of automated static detectors, were undertaken in August and September 2016 and May 2017 (i.e. covering the main spring, summer and autumn survey periods).

Over the course of the surveys, two surveyors completed walked transects of the Site, including a minimum of 12 timed stops of approximately 3-4 minutes. Surveys commenced up to 15 minutes before sunset and continued for up to 2 hours after sunset. A stationary phase (approximately first 20-60 minutes) of each transect focused on features of interest, including two of the buildings B6 and B7 (the preceding Inspection Survey identified these buildings as having the highest potential of the 11 onsite buildings to support roosting bats). The size of the Site was such that the transect was covered at least 2-3 times in the course of each visit. The starting point and direction of travel was varied between transects to capture the variety of bat activity with time across the Site. During the surveys, any passing bats observed were recorded, including the time, location, behaviour, number of bats, species and direction of flight for each bat.

*A static automated detector was deployed at a position along the transect route at the beginning of each transect survey (**Fig 3**). The location of the static detector was varied between monitoring periods and during each activity survey, at least one timed stop was carried out at the static detector location. The static detector was left in place to record from sunset till sunrise for a minimum of five consecutive nights.'* (Aven Ecology, 2017)

Figure 3. Map showing transect route and location of static deployments (Aven Ecology, 2017).



3.2.3.5 Night-Time Bat Walkovers & Static Monitoring – Updated Survey Work (2024)

Ecosupport Ltd. conducted 2 No. night-time bat walkovers in May and June 2024 which followed the latest best practice guidance (Collins, J. (ed), 2023) with the starting point and route indicated in **Fig 4** below. Surveyors remained at the starting point until 30-60 minutes after sunset (dependent on bat activity) before proceeding on the walkover route. They then walked continuously until 2-3 hours after sunset, occasionally stopping / detouring to record bat activity. Both a Bat Box duet / Elekon batscanner heterodyne and Elekon bat logger (for analysis of calls via sonogram) were utilised during the survey. The surveys were carried out by Lyndsey Barratt, Grace Roberts, Joanna King, and Lily Pogson (ecologists with Ecosupport Ltd.).

In accordance with the latest best practice guidance (Collins, J. (ed), 2023), Ecosupport Ltd. also deployed 2 No. static detectors within the key habitat types on site (scrub-grassland mosaic, hedgerows / tree lines) for 5 consecutive nights each month between April and June 2024. The locations of the static bat detectors are shown in **Fig 4** below, with Anabat Express and / or a Song Meter Mini detector deployed. Analysis of sonograms was completed using either Analook or Kaleidoscope.

Figure 4. Night-time walkover route (yellow line) and starting point (blue circle) with static locations indicated in white and black text (Google Satellite, 2025).

3.2.4 Reptiles

3.2.4.1 Previous Reptile Survey (2016)

A suite of reptile surveys was undertaken by Aven Ecology in 2016 in accordance with best practice guidelines as stated in various resources (Froglife 1999) (Gent & Gibson 1998). Artificial refugia comprising of bitumen roofing felt was strategically distributed across the site within areas assessed as holding suitable habitat to support reptiles. Seven visits to the site were subsequently undertaken during suitable weather conditions during which all the refugia were checked for the presence of reptiles in combination with a visual observation transect.

3.2.4.2 Updated Reptile Survey (2024)

Ecosupport Ltd. conducted an updated suite of reptile presence / likely absence surveys across April and May 2024 in accordance with best practice guidelines as stated in various resources (Froglife 1999) (Gent & Gibson 2003). Artificial refugia comprising of 30 pieces of bitumen roofing felt were distributed throughout the suitable reptile habitats on site with the approximate locations shown in **Fig 5.** Seven visits to the site were subsequently undertaken during suitable weather conditions during which all the refugia were checked for the presence of reptiles in combination with a visual observation transect.

This survey was considered sufficient to identify the presence or likely absence of reptiles on the site. It does not provide sufficient information to allow an accurate assessment of population sizes however, it does allow inferences to be made as to population size class in combination with other considerations such as the extent and quality of the habitat.

Figure 5. Location of the artificial refugia distributed on site during the 2024 reptile survey (Google Satellite, 2025).

3.2.5 Great Crested Newts HSI & eDNA Survey

An updated habitat suitability index assessment and subsequent eDNA survey was undertaken by ACD Environmental in June 2022 by Ryan Yeates and Anouska Laramy utilising the following methodology:

HSI Assessment

'An update Habitat Suitability Index Assessment of the closest pond to the Application Site at Bursledon Windmill was carried out in June 2022. This pond was assessed for its suitability to support great crested newt, using the HSI scoring system.

This method seeks to quantify the potential of a pond to support great crested newt by numerically assessing ten indices thought to influence their presence.

The indices considered are:

- *Location*
- *Pond area*
- *Water quality*
- *Percentage shade*
- *Percentage water fowl*
- *Presence of fish*
- *Number of ponds in the wider landscape*
- *Suitability of terrestrial habitat*

- *Percentage macrophyte cover*

The HSI system is not a substitute for presence/absence surveys and is not intended to predict the occurrence of great crested newt. However, a correlation between the presence of great crested newts and a high HSI score is observed in ponds.

eDNA Sampling

'The field sampling was carried by a great crested newt Natural England Class licence holder on 6th July 2022. Laboratory analysis was carried out by Surescreen Scientific.

A total of 20 samples of pond water are collected and during the laboratory analysis, the pond samples are combined to produce one eDNA extract. A total of 12 separate analyses are carried out from this one extract. This results in a score for the number of positive replicates (score out of 12) and if one or more are positive then presence is confirmed.
Results are interpreted as follows:

- *Positive - the results indicate that great crested newt is present within the pond. Full survey methods are required to estimate the population size;*

• *Negative - the result indicates that great crested newt is not within the pond. No further survey work is required; or*

• *Inconclusive - indicates degradation or inhibition of the sample, therefore the lack of detection of great crested newt DNA is not conclusive evidence for determining the absence of the species. Further eDNA sampling or full surveys will be required.'* (ACD Environmental, 2022)

3.2.6 Hazel Dormice

Following the identification of suitable habitat to support dormice, a suite of Hazel Dormouse presence/ absence surveys were undertaken by Aven Ecology in 2016. Methodological guidance for Dormouse surveys is provided in the *Dormouse Conservation Handbook* (Bright *et al* 2006) whereby a minimum of 50 tubes is recommended to be used per site, at a spacing of 20m.

The *Dormouse Conservation Handbook* uses an "index of probability" to assess the likelihood of a survey detecting Dormice. This assigns a score for each month which nest tubes are on a site (see **Table 3**) and recommends that a total of 20 points is necessary.

Table 3. Index of probability of finding Dormice present in nest tubes in any one month. From the Dormouse conservation handbook (Bright et al 2006).

Month	Points	Month	Points
April	1	**August**	5
May	4	**September**	7
June	2	**October**	2
July	2	**November**	2

3.2.7 Breeding Birds

3.2.7.1 Field Survey

The survey methodology was broadly based upon the British Trust of Ornithology (BTO) Breeding Bird Survey (BBS) and Common Bird Census methods, including the BTO Standard Recording Codes (BTO, 2004). Surveys were undertaken monthly between March and June 2024 during favourable weather conditions. Survey visits were carried out at dawn, with each survey visit taking approximately 2 hours each. All surveys were undertaken during suitable weather conditions (with little or no rain, little to no wind and good visibility).

Each survey followed a pre-defined linear transect route, including 10-minute observational points from where the surveyor could observe bird activity and listen for birdcalls to establish territories and presence of breeding/nesting birds. Behaviours such as singing male birds, young, nests, feeding behaviour, territorial disputes and defensive behaviour around possible

active nests were noted. Observations were marked on a site plan. The transect survey carried out was in an anti-clockwise direction and followed the same route as the night-time bat walkovers (**Fig 4**). Surveys were carried out by Dean Swensson, Katalin Anett-Balazs, and Thomas Lane all ecologists on staff with Ecosupport Ltd.

3.2.7.2 Evaluation

The conservation value of the breeding bird communities identified on site were then assessed and evaluated using the most current Birds of Conservation Concern priority status list published by the British Trust for Ornithology (Eaten *et al,* 2015), and the British Trust for Ornithology Bird Facts tool (2023a) which includes published approximate numbers of breeding pairs and species statuses for the UK.

The Birds of Conservation Concern split the UK's birds into three categories, the highest conservation priority being listed as Red, with Amber being the next most critical group followed by Green. Birds of Red and Amber listing are subject to at least one of the relevant factors listed below:

Red List Criteria

- Globally threatened
- Historical population decline in UK during 1800-1995
- Severe (at least 50%) decline in the UK breeding population over last 25 years, or longer-term period (the entire period used for assessments since the first BoCC review, starting in 1969).
- Severe (at least 50%) contraction of UK breeding range over last 25 years, or the longer-term period

Amber List Criteria

- Species with unfavourable conservation status in Europe (SPEC= European Conservation Concern)
- Historical population decline during 1800-1995, but recovering; population size has more than doubled over last 25 years
- Moderate (25-49%) decline in the UK breeding population over the last 25 years, or the longer-term period.
- Moderate (25-49%) contraction of UK breeding range over last 25 years , or the longer-term period.
- Moderate (25-49%) decline in UK non-breeding population over the last 25 years, or the longer-term period
- Rare breeder; 1-300 breeding pairs in UK
- Rare non-breeders; less than 900 individuals
- Localised; at least 50% of UK breeding or non-breeding population in 10 or fewer sites, but not applied to rare breeders or non-breeders
- Internationally important; at least 20% of European breeding or non-breeding population in UK (NW European and East Atlantic Flyway populations used for non-breeding wildfowl and waders respectively)

Green List

- Species that occur regularly in the UK but do not qualify under any or the above criteria

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). This includes establishing the likely Zone of Influence (ZoI) for the project.

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

The updated walkover survey was conducted during December which is outside of the optimum survey period for when vascular plants are flowering. Notwithstanding this, given that previous survey was available to assist in assigning habitat types and given that the habitats were re-assessed in tandem with the 2024 survey work which took place between April and June with the results of this consistent with the initial survey work, it was not considered that this would have affected the overall classification of the habitats on site.

3.4.2 Previous Survey Work

3.4.2.1 Bat Emergence/ Re-entry, Activity Surveys & Static Monitoring

'While demonstrating presence of a given species is relatively straightforward, proving complete absence is impossible (only 'likely absence' can be demonstrated). This difficulty with 'proving a negative' result was managed by undertaking the surveys, where possible, in accordance with recommended guidance.

Any ecological survey represents a snapshot of ecological conditions at the time of survey; ecological conditions may change over time. For example, bat habitats may increase/decrease in extent/suitability; or bats may colonise a previously unoccupied area. The details within this report will therefore remain valid for a period of 24 months from the time of survey; beyond that date it is advised that a review of ecological conditions is undertaken.

The absence of signs of bats within a structure does not confirm absence of bats. Signs may deteriorate over time and/or be located within areas that are not accessible to surveyors (for example, within the space between roofing tiles and the roof lining). The interiors of some of the minor outbuildings were not directly accessible to the surveyor. It is not considered that these limitations would have significantly constrained the assessment of the buildings' suitability to support bat roosts.'

Two of periods of static detector deployment (completed in August and September 2016) were characterised by prolonged periods of acoustic interference originating from cricket song and from wind rustling in the nearby vegetation, both of which produce ultrasound in the frequency range overlapping that of bat calls. This made analysis of the resulting sonograms difficult, as some of the bat calls were obscured by the background noise of crickets and wind/vegetation. While relatively loud calls of bat species such as pipistrelles and noctules (particularly where these were close by and/or prolonged) were still discernible, the quieter calls of species such as brown longeared bats (particularly where these were further away and/or brief) may have been obscured. The third deployment of the static detector (May 2017) was characterised by heavy rainfall; the detector malfunctioned due to water ingress and recorded no sound. The detector was therefore repaired and re-deployed approximately one week later; whilst not a limitation to the survey as such, this explains why there is a gap between the transect survey data and the static detector data, and that the monitoring period extended into June by one night.

The echolocation calls of Myotis bat species overlap to a high degree, such that it is frequently not possible to separate the species out without identifying them in the hand (particularly where calls recorded are brief and/or few in number). Therefore, based on the survey results, it is possible that more than one Myotis species was recorded on Site. However, the mitigation and recommendations made would be suitable for all Myotis species.'

3.4.3 Preliminary Roost Assessment (April 2024)

Two trees proposed to be removed had fallen down prior to the Preliminary Roost Assessment (PRA) undertaken on the 3rd April 2024, (further detailed in **section 4.3.4**). This was considered to be due to the poor condition of the trees. PRAs were carried out on all visible areas of the fallen trees.

Due to scrub overgrowth and the multi-stem trunk of a Yew tree (*Taxus baccata*) on the northern boundary of the site, some areas of the tree were not visible during the PRA. This is however not considered to have affected the conclusions of the assessment as the majority of the tree was visible and PRFs were considered unlikely in this area due to the maturity of the tree.

4.0 ECOLOGICAL BASELINE

4.1 Designated Sites

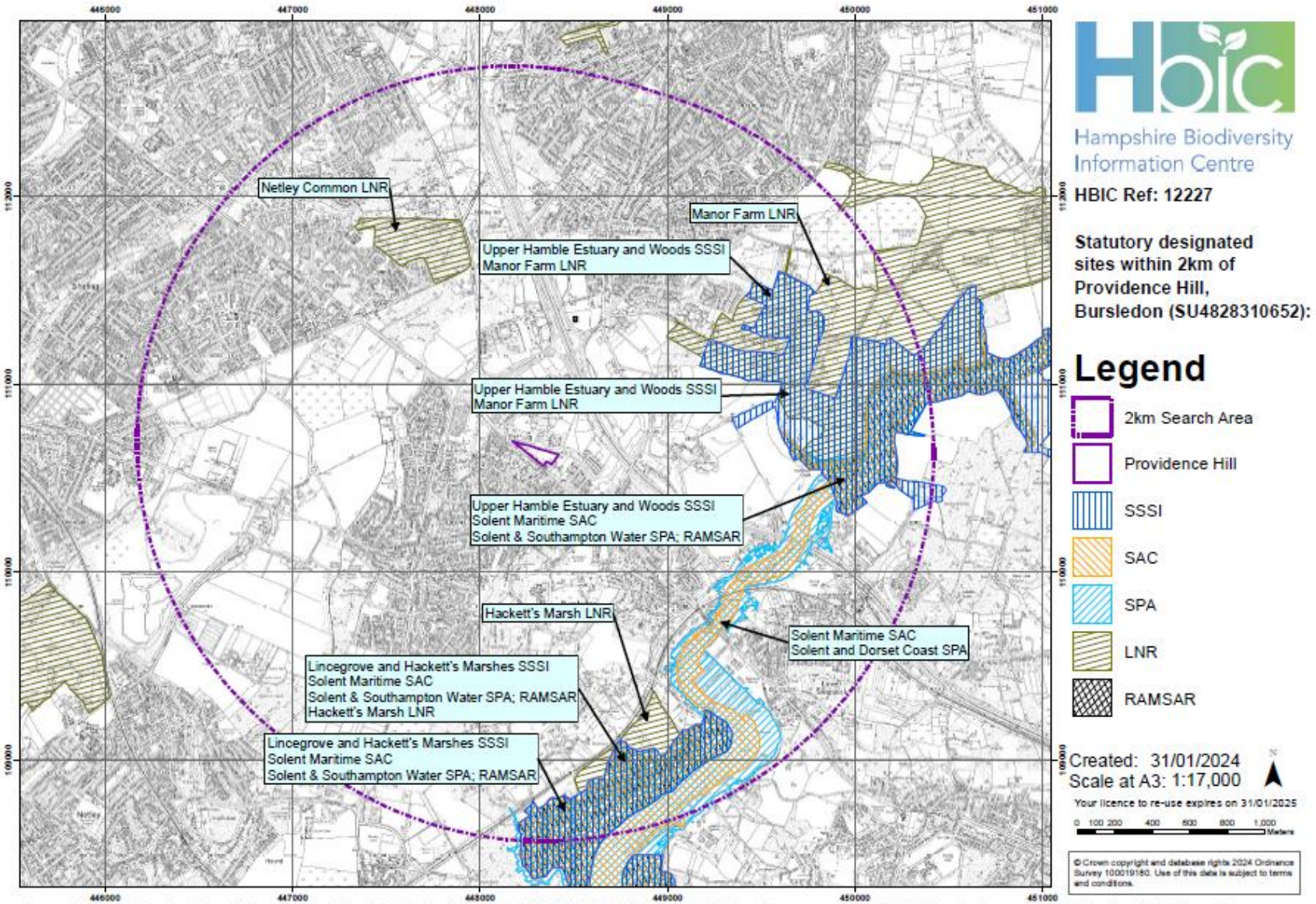
4.1.1 Statutory Designations

The statutory designated sites identified within 2 km of the site by HBIC are shown in **Fig 6**, with a summary of these sites presented in **Table 4.** The site also lies within the nutrient impact area for the Solent Marine European Designated Sites and lies approximately 8.1km from the New Forest SPA.

Table 4. Statutory designated sites located within 2 km of the site as provided by HBIC and indicated in **Fig 6.**

Name	Distance to Site
Netley Common LNR	0.94km
Manor Farm LNR	0.85 km
Upper Hamble Estuary and Woods SSSI	0.90 km
Solent and Southampton Water SPA / RAMSAR	1.17 km
Solent Maritime SAC	1.15 km
Solent and Dorset Coast SPA	1.09 km
Hackett's Marsh LNR	1.34 km
Lincegrove and Hackett's Marshes SSSI	1.53 km

Figure 6. Statutory designated sites located within 2 km of the site as provided by HBIC.



Please note: The boundaries for statutory sites have been provided as digital data from Natural England (NE); this digital data is indicative not definitive. Paper maps produced by NE at the time the sites were designated show the official site boundaries.

4.1.2 Non-Statutory Designations

The non-statutory designated sites identified within 2 km of the site by HBIC are shown in **Fig 7**, with a summary of these sites presented in **Table 5.** HBIC also returned sites within the Solent Waders and Brent Goose Strategy, which are also shown in **Fig 7**, with a summary of these sites presented in **Table 6**.

Table 5. Non-statutory designated sites located within 2 km as provided by HBIC and indicated in **Fig 7**.

Map Label	SINC Name	SINC Criteria Met	Distance to Site
1	Shoreburs Greenway	1B/1Cii/2B/5Biii/6A/7A	1.96 km
2	Weston Greenway	1A/1B/1Cii	1.34 km
3	Netley Farm Closed Landfill Site	6A	1.45 km
4	Burrows Copse (Remnant)	1A/1B	1.78 km
5	Priors Hill Copse/Hound Grove	1A	1.72 km
6	Priors Hill Brickworks	1B/2D*/3Bi	1.15 km
7	Netley Common, Southampton	2B/3A/3Bii/5B	1.19 km
8	Dumbleton's Copse	3Bii	1.45 km
9	Windhover (Netley Common South)	3A/3Bi	0.64 km
10	Netley Common, Hound	2B/3A/3Bii/5B	0.95 km
11	Mallards Moor	1A/1Cii	1.45 km
12	Piland's Wood (Lower)	1A	1.16 km
13	Netley Hill Heath	3A/3Bi	1.20 km
14	Piland's Wood (Upper)	1A/1Cii	0.59 km
15	Peewit Hill	3A/3Bi/6A	0.64 km
16	Badnum Copse	1A/1Cii/4A	1.79 km
17	Windmill Fields Wood	1B	25 m
18	Oakleigh Meadow	2B	0.39 km
19	Bursledon Meadow	2A	1.47 km

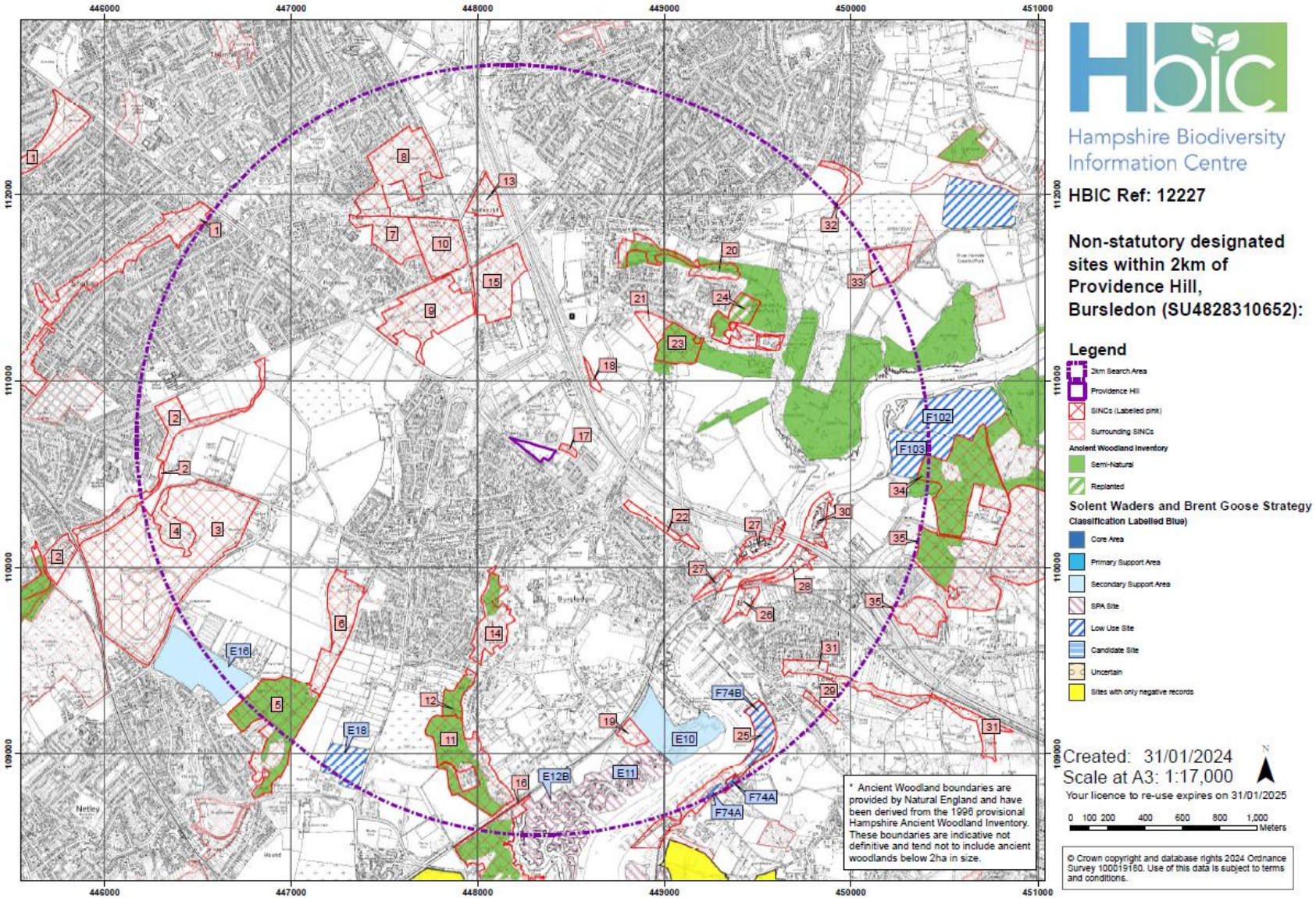
Map Label	SINC Name	SINC Criteria Met	Distance to Site
20	Piland's Copse	1A	1.06 km
21	Durncomb's Copse Meadow	2B	0.85 km
22	Land North of Bridge Road	2B	0.46 km
23	Durncomb's Copse	1B	0.72 km
24	Sandpit Copse	1A/1B	1.07 km
25	River Hamble Mudflats & Saltmarsh - 1	4A	1.71 km
26	River Hamble Mudflats & Saltmarsh - 2	4A	1.26 km
27	Brixedone Saltmarsh & Mudflat	4A/6A	1.10 km
28	River Hamble Mudflats & Saltmarsh - 3	4A	1.24 km
29	Andark Marsh	2D*	1.86 km
30	River Hamble Mudflats & Saltmarsh - 4	4A/6A	1.39 km
31	Lower Swanwick Woodlands	1A/1Cii/5B	1.67 km
32	Tanhouse Meadow	5B	1.99 km
33	Kings Copse Meadow & Pond	2B/5B	1.96 km
34	Swanwick Wood	1A	1.96 km
35	Swanwick Nature Reserve	1A/1B/2A/5A/6A/6C	2.00 km

Table 6. Solent Waders and Brent Goose Strategy sites located within 2km as provided by HBIC and indicated in **Fig 4**.

Map Label	SPA	Classification	Distance to Site
E10	Solent and Southampton Water	Secondary Support Area	1.35 km
E11	Solent and Southampton Water	SPA Site	1.63 km
E12B	Solent and Southampton Water	SPA Site	1.79 km
E16	Solent and Southampton Water	Secondary Support Area	1.90 km

Map Label	SPA	Classification	Distance to Site
E18	Solent and Southampton Water	Low Use Site	1.79 km
F102	Solent and Southampton Water	Low Use Site	1.88 km
F103	Solent and Southampton Water	Low Use Site	1.78 km
F74A	Solent and Southampton Water	Low Use Site	1.99 km
F74B	Solent and Southampton Water	Low Use Site	1.70 km

Figure 7. Non-statutory designated sites located within 2 km of the site as provided by HBIC.



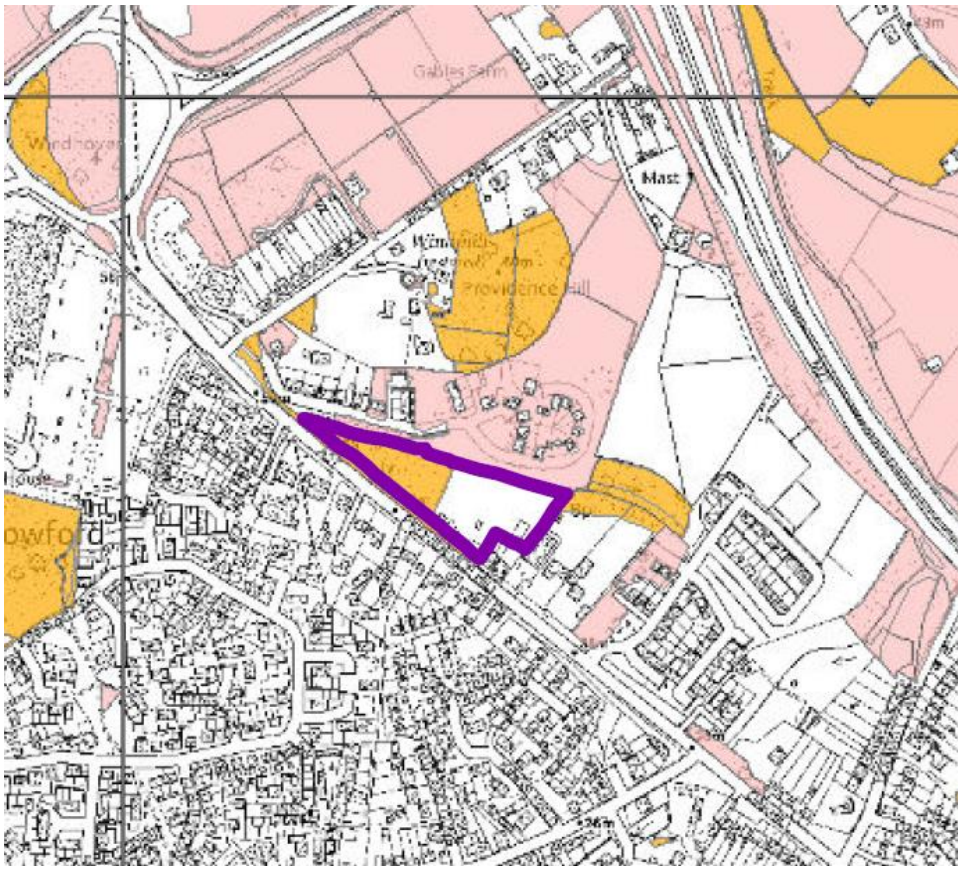
4.1.3 Ecological Network and Priority Habitats

HBIC also provides 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 2020)

The map provided by HBIC (**Fig 8**) indicates that the eastern part of the site is within the 'core non-statutory' designation which is also listed as a priority habitat (and therefore presents a good opportunity for enhancement) with some 'network opportunities' areas adjacent to the northern boundary of the site.

Figure 8. Screenshot of the ecological mapping provided by HBIC which shows the eastern area of the site being covered by the 'core non-statutory' designation.



4.2 Vegetation Survey Results

The vegetation within the site has been described below using classification terminology as described within Habitat Definitions Version 2.0 (UKHab Ltd., 2023). The below species 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 of (with locations identified in the **appended UK Habs Map**):

- Other Woodland; Mixed – Mainly Broadleaved (w1h5) with secondary habitat code 33 (line of trees) and 50 (ditch)
- Modified Grassland (g4) with secondary habitat codes 32 (scattered trees), 108 (frequently mown), 510 (bare ground) and 518 (neglected)
- Mixed Scrub (h3h)
- Bramble scrub (h3d)
- Bracken (g1c)
- Non-Native and Ornamental Hedgerow (h2b)
- Built-Up Areas and Gardens (u1) with secondary habitat code 827 (introduced shrub)
- Artificial Unvegetated; Unsealed Surface (u1c)
- Buildings (u1b5)
- Other rivers and streams (r2b)

4.2.1 Other Woodland; Mixed – Mainly Broadleaved (w1h5) with secondary habitat codes 33 (line of trees) and 50 (ditch)

The northern and southern boundaries of the site are bound by lines of trees (**Fig 9**) comprising a mix of Oak (*Quercus robur*), Leylandii, Silver Birch (*Betula pendula*), Wild Cherry (*Prunus avium*), Hawthorn (*Crataegus monogyna*), Willow (*Salix. Spp.*), Ash (*Fraxinus excelsior*) and Scot's Pine (*Pinus sylvestris*). The understorey of these tree lines was sparse consisting of Ivy (*Hedera helix*), Bramble (*Rubus fruticosus*), Sorrel (*Rumex acetosa*), Bracken (*Pteridium aquilinum*) and similar grasses to those listed within **Section 4.2.2.**

A small ditch / brook (Badnum Creek) ran along the northern boundary of the site in association with the line of trees.

NB. It should be noted that the line of trees along the southern boundary of the site in fact lies outside of the site boundary.

Figure 9. Image showing w1h5 line of trees in the background, with h3d bramble scrub and g4 modified grassland visible in the foreground (Ecosupport, December 2023).

4.2.2 Modified Grassland (g4) with secondary habitat codes 32 (scattered trees), 108 (frequently mown), 510 (bare ground) and 518 (neglected)

Modified grassland was present in patches throughout the site. Those areas in the western portion of the site were neglected (secondary habitat code 518) with a longer sward height (**Fig 9**) than the areas in the eastern portion of the site which were subject to frequent mowing (secondary habitat code 108) (**Fig 10**). The sward was dominated by grasses with occasional forbs noted. Species present included Cock's Foot (*Dactylis glomerata*), Bent species (*Agrostis* spp.), Pampass Grass (*Cortaderia selloana*), Ragwort (*Jacobaea vulgaris*), Sorrel, Goosefoot (*Chenopodium spp.),* Creeping Buttercup (*Ranunculus repens*), Germander Speedwell (*Veronica chamaedrys*) and Daisy (*Bellis perennis*).

Scattered trees (secondary habitat code 32) were also present at the eastern end of the modified grassland with these comprising of Hazel (*Corylus avellana*), *Prunus spp., Malus spp.* and ornamental varieties (including Corkscrew Hazel and *Acer spp.*).

Much of the eastern portion of the grassland comprised of bare ground (secondary habitat code 510) as a result of vehicle access and surface run-off.

Figure 10. Image showing a section of the g4 modified grassland habitat, with patches of bare ground visible in the background (Ecosupport, December 2023).

4.2.3 Mixed Scrub (h3h)

Two discrete patches of mixed scrub were present on site. The more westerly patch was larger and comprised of Bramble (*Rubus fruitcosus*), Willow (*Salix spp.*), Hazel (*Corylus avellana*), *Cotoneaster spp.,* Holm Oak (*Quercus ilex*), Silver Birch (*Betula pendula*), and Buddleia (*Buddleja davidii*) (**Fig 11**). The smaller more easterly patch was limited to Willow, Buddleia and Bramble with an understorey of Nettles (*Urtica dioica*) and Broad-Leaved Dock (*Rumex obtusifolius*).

Figure 11. Image showing a section of h3h mixed scrub habitat (Ecosupport, December 2023).

4.2.4 Bramble Scrub (h3d)

Much of the western portion of the site was dominated by dense bramble scrub. Other species such as Willow, Hazel, Buddleia, Rhododendron (*Rhododendron ponticum*) and Silver Birch were also noted in this area in low densities however bramble remained dominant.

4.2.5 Bracken (g1c)

A dense patch of Bracken was present along the northern boundary of the scrub, adjacent to the northern line of trees (**Fig 12**).

Figure 12. Image showing a section of g1c Bracken habitat with a section of the stream (r2b) also visible (Ecosupport, December 2023).

4.2.6 Non-Native and Ornamental Hedgerow (h2b)

An ornamental hedgerow was present along the southern boundary of the site adjacent to the parking area.

4.2.7 Built-Up Areas and Gardens (u1) with secondary habitat code 827 (introduced shrub)

An area of introduced shrubs and trees was present along the eastern boundary of the site with Bamboo (*Bambusa spp.*) noted in this area along with various Conifers and Palms.

4.2.8 Artificial Unvegetated; Unsealed Surface (u1c)

A gravel parking area was present at the entrance to the site off of Providence Hill.

4.2.9 Buildings (u1b5)

Two buildings were present on site with this described in further detail in **Section 4.3.2** below.

4.2.10 Other Rivers and Streams (r2b)

As described in **Section 4.2.1,** a small ditch / brook (Badnum Creek) ran along the northern boundary of the site in association with the line of trees.

4.3 Bat Survey Results

4.3.1 Pre-existing Data

HBIC have provided the following bat records from within 2km of the site; Western Barbastelle (*Barbastella barbastellus*) (1 record), Bat species (*Chiroptera spp*) (5 records), Serotine (*Eptesicus serotinus*) (25 records), Unidentified *Myotis* Species (*Myotis spp*) (10 records), Daubenton's Bat (*Myotis daubentonii*) (1 records), Whiskered Bat (*Myotis mystacinus*) (6 records), Whiskered/Brandt's Bat (*Myotis mystacinus/brandtii*) (12 records), Natterer's Bat (*Myotis nattereri*) (4 records), Leisler's Bat (*Nyctalus leisleri*) (1 records) Noctule Bat (*Nyctalus noctula*) (34 records), Pipistrelle (*Pipistrellus spp*) (59 records), Nathusius's Pipistrelle (*Pipistrellus nathusii*) (4 records), Common Pipistrelle (*Pipistrellus pipistrellus*) (98 records), Soprano Pipistrelle (*Pipistrellus pygmaeus*) (76 records), Plecotus spp (8 records) and Brown Long-eared Bat (*Plecotus auritus*) (33 records).

4.3.2 Preliminary Roost Assessment (PRA) (Buildings) (2023)

The findings of the updated Preliminary Roost Assessment (PRA) of the buildings on site is outlined in **Table 7** below.

NB. Please note that, following confirmation that the buildings held negligible potential for roosting bats, these buildings have now been demolished.

Table 7. Preliminary Roost Assessment of the buildings on site.

Building	Figure	Description of Construction	PRFs / Evidence of Occupation	Assessed Roost Potential
B5	**Figure 13.** External view of building 'B5	Small shed damaged shed comprising a corrugated asbestos roof and side panels on a metal frame (**Fig 13**).	No PRFs were noted and no evidence of bat presence was found.	***Negligible***

B6	**Figure 14**. External view of building 'B6'	Shed comprising of mixture of corrugated metal/ plastic supported by a timber frame (**Fig 14**).	The building was noted to be in significantly dilapidated condition since the previous survey effort, with previous identified features no longer considered suitable to support roosting bats due to damage/ expose to inclement weather. As such no PRFs were noted and no evidence of bat presence was found.	***Negligible*** ****Previous emergence surveys undertaken in June 2022 by ACD Environmental recorded no evidence of roosting bats.***

4.3.3 Emergence / Re-Entry Surveys (2022)

As noted above, previous emergence/ re-entry surveys for building 'B6' undertaken in June 2022 by ACD Environmental recorded no evidence of roosting bats.

4.3.4 Ground Level Tree Assessment (GLTA) (2024)

Following the latest Tree Protection Plan (ACD Environmental, 2024), trees G1, G11, G8 and T1 are expected to be removed. These trees were subject to a Ground Level Tree Assessment and were all identified as being of ***Negligible potential*** for roosting bats, largely comprising of small and non-native specimens (**Fig 15**).

Figure 15. View of G1 on site (taken April 2024).

4.3.5 Walked Transects and Static Monitoring – Previous Survey Work (2016-2017, 2022)

Bat activity surveys were undertaken by Aven Ecology in August – September 2016 and May 2017, with updated surveys undertaken by ACD Environmental in June 2022. The *Bat Survey Report* produced by Aven Ecology in 2017 summarised the results of walked transects and static deployments as follows:

'At least six species of bats were recorded on Site over the course of the three activity transect surveys and associated static monitoring. The dominant species were common and soprano pipistrelles, which were recorded foraging and commuting relatively consistently in each season. Noctules, Myotis sp. and brown long-eared bats were represented by occasional/intermittent commuting activity, and Nathusius' pipistrelle by only a single commuting pass.

The timing of recorded bat activity was consistent with roosts of common and soprano pipistrelles being located either on Site or very close by. In particular, during the third transect survey evidence indicated a high likelihood of a common pipistrelle roosting within one of the mature trees on the southern boundary. This was supported by the static monitoring at the

same location, which showed common pipistrelle activity very close to sunset and/or sunrise on each of the five nights.'

The updated surveys undertaken by ACD Environmental in June 2022 recorded only '*common species of bat*'.

4.3.6 Updated Survey Work (2024)

As described above, a full suite of bat activity work was undertaken by Aven Ecology across the 2016 and 2017 survey seasons. Updated surveys were also undertaken in 2022 by ACD Environmental. Since more than 18 months have now elapsed since this survey work took place and given that bats are a mobile species, it was considered necessary to carry out some level of updated survey work in line with CIEEM guidance (2019). However, in recognition of the existing level of survey work already conducted to date and given that the 2024 surveys revealed similar species and activity levels, it was considered that a full suite of activity surveys was not appropriate and a reduced suite was instead conducted between April and June 2024.

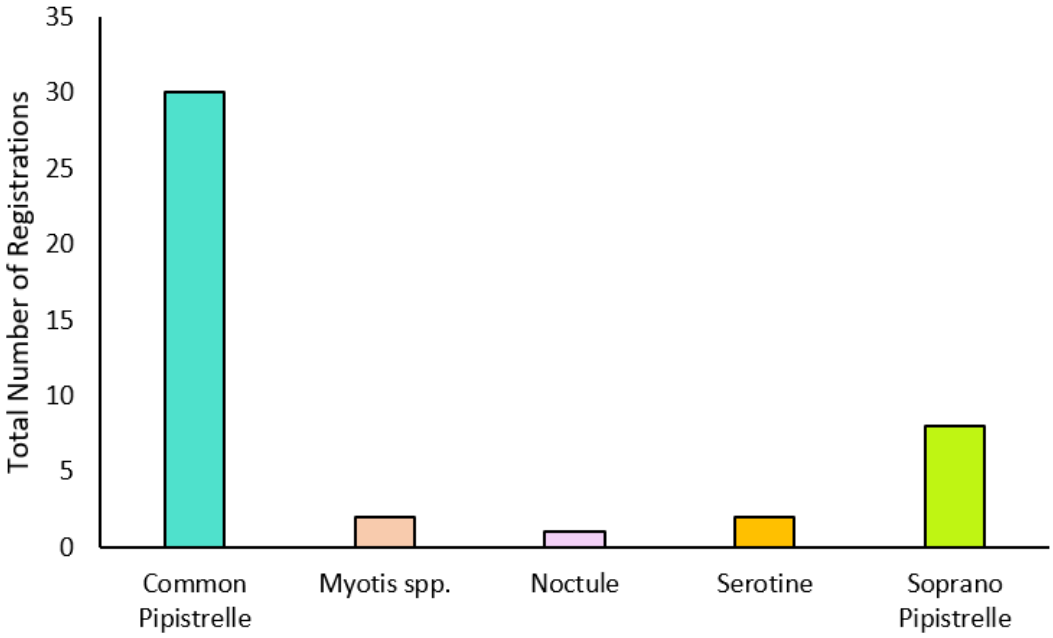
4.3.6.1 Night-Time Bat Walkovers

Table 11 below indicates the dates and other relevant information recorded during the 2024 night-time bat walkover surveys with the results presented in **Fig 16.**

Table 11. Relevant information recorded during the transect surveys. Wind speed is approximated in the Beaufort Scale. (refer to **Fig 4** for route).

Date	Temp (°C)	Cloud Cover (%)	Precipitation	Wind (Beaufort scale)	Start Time	Finish Time
08/05/2024	13	20%	0	1	20:36	23:06
19/06/2024	17	5%	0	0	21:22	23:52

Figure 16. The number and species composition of bat recordings noted during the night-time bat walkovers (May and June 2024).



4.3.6.2 Static Monitoring

The results from the static detector deployments during the 2024 survey work (refer to **Fig 4** for approximate locations) are provided below in **Table 12** with the key areas of importance for foraging and commuting bats (taking the night-time bat walkover data into account as well) indicated in **Fig 17.**

Table 12. Results from the static detector deployments covering April – June 2024 (2 deployed per month and refer to **Fig 4** for approximate locations).

Location	Date	Species	Total passes	Average passes per night	Average passes per hour
A1	19th-23rd April 5 Nights 9.25 hrs p/n	C.pip	46	9.20	0.94
		S.pip	5	1.00	0.10
A2	19th-23rd April 5 Nights 9.25 hrs p/n	C.pip	1683	336.60	38.47
		S.pip	7	1.40	0.16
		N.pip	9	1.80	0.21
		Serotine	22	4.40	0.50
		Leisler's	6	1.20	0.14
		Plecotus spp.	5	1.00	0.11
		Myotis spp.	3	0.60	0.07
B1	8th-12th	C.pip	1683	336.60	38.47

	May 5 Nights 8.75 hrs p/n	S.pip	7	1.40	0.16
		N.pip	9	1.80	0.21
		Serotine	22	4.40	0.50
		Leisler's	6	1.20	0.14
		Plecotus spp.	5	1.00	0.11
		Myotis spp.	3	0.60	0.07
B2	8th-12th May 5 Nights 8.75 hrs p/n	C.pip	10842	2168.40	247.82
		S.pip	4315	863.00	98.63
		N.pip	6	1.20	0.14
		Noctule	70	14.00	1.60
		Serotine	32	6.40	0.73
		Leisler's	1	0.20	0.02
		Plecotus spp.	28	5.60	0.64
		Myotis spp.	10	2.00	0.23
C1	21st - 23rd June 4 Nights 7.5 hrs p/n	C.pip	118	29.50	3.93
		S.pip	6	1.50	0.20
		N.pip	1	0.25	0.03
		Noctule	2	0.50	0.07
		Serotine	3	0.75	0.10
		Leisler's	5	1.25	0.17
		Nyctalus spp.	1	0.25	0.03
		Myotis spp.	7	1.75	0.23
		Plecotus spp.	1	0.25	0.03
C2	21st - 23rd June 4 Nights 7.5 hrs p/n	C.pip	91	22.75	3.03
		S.pip	15	3.75	0.50
		Noctule	3	0.75	0.10
		Serotine	2	0.50	0.07
		Leisler's	2	0.50	0.07
		Plecotus spp.	1	0.25	0.03

4.3.7 Foraging and Commuting Bats – Evaluation

Overall, it was considered there was a moderate level of bat activity across the site with Common Pipistrelle representing the dominant species recorded (considered to be a widespread species within the UK). Soprano Pipistrelle were recorded frequently (considered to be a widespread species within the UK) with occasional registrations of Noctule, Myotis sp., Brown Long-eared bats, Leisler's, Serotine and Nathusius' Pipistrelle (considered to be widespread to rarer within the UK). During the survey period, the highest concentration of recordings was identified along the northern and southern boundary tree lines with occasional observations of bats commuting and foraging over the grassland and scrub.

The Bat Mitigation Guidelines (2023) provides a standard method for assessing importance of bat assemblage. This approach has been developed to reflect geographic variations in species distributions. To determine the maximum possible score any site could achieve, a score is assigned to each species that could be present where (**Table 13**):

- Widespread in (almost) all geographies [score 1]
- Widespread in many geographies, but not as abundant in all [score 2]
- Rarer or restricted distribution [score 3]
- Rarest Annex II species and very rare [score 4]

Table 13. Rarity category and associated score for calculating importance score (for 'Southern England') (Bat Mitigation Guidelines, 2023) – as it was not possible to identify the myotis species present, the local bat records have been used to identify those likely to be present on site.

Rarity Category	Species	Score
Widespread	**Common Pipistrelle** **Soprano Pipistrelle** **Brown Long-eared**	**1** **1** **1**
Widespread in many geographies but not as abundant in all	Whiskered **Brandts** **Daubentons** **Natterers** **Noctule**	2 **2** **2** **2** **2**
Rarer or restricted in distribution	Alcathoe **Serotine** **Leisler's** **Nathusius Pipistrelle**	3 **3** **3** **3**
Rarest Annex II Species and very rare	Greater Horseshoe Lesser Horseshoe Bechstein Barbastelle Grey Long-eared	4 4 4 4 4
	Maximum Score (out of 45)	**10**

Once the score for each category has been calculated (**Table 13** above) and summed to determine the maximum theoretical score, the threshold score needed for any assemblage to meet each geographic level of importance, can be calculated:

- Assemblage score meets or exceeds 45% of the maximum score: County importance
- Assemblage score meets or exceeds 55% of the maximum score: Regional importance
- Assemblage score meets or exceeds 70% of the maximum score: National importance

The threshold for any site in the Southern England achieving a score of –

- 20 would be classed as of at least 'County' importance,
- 25 would be classed as of 'Regional' importance,

- 32 classed as of 'National' importance.

Using this system, the site scores ***20 points*** for commuting and foraging bats (see **Table 13**) and is correspondingly considered to be of '***County***' importance.

Figure 17. Areas identified as being of most importance for foraging and commuting bats on site (yellow shading) with the location of the rarer Nathusius' Pipistrelle registrations also indicated (blue circles) (Google Satellite, 2025).

4.4 Badgers

4.4.1 Pre-existing information

HBIC returned 16 records of Badgers (*Meles meles*) within 2km of the site boundary.

4.4.2 Updated Habitat Assessment

Whilst no evidence of foraging or commuting Badgers was noted on-site during the updated survey in December 2023, evidence of Badger hairs located on the barbed wire fence situated along the northern boundary was identified by Aven Ecology in 2016. No Badger setts or other evidence of associated Badger activity (e.g. deceased animals, snuffle holes, latrines, spoil heaps) were detected within the proposed site during each survey visit. Notwithstanding this, the scrub, grassland and tree lines provide suitable habitat to support potential foraging and commuting activity, and as such the site is considered to hold ***Moderate*** potential for foraging and commuting Badgers.

4.5 Reptiles

4.5.1 Pre-existing Information

HBIC returned records for Slow Worm (*Anguis fragilis*) (18 records), Grass Snake (*Natrix helvitica*) (3 records), Adder (*Vipera berus*) (15 records) and Common Lizard (*Zootoca vivipara*) (8 records) within 2km of the site.

4.5.2 Previous Survey Work (2016)

A suite of reptile surveys was undertaken by Aven Ecology in 2016, with a low population of Slow Worm recorded within the site.

4.5.3 Updated Survey Work (2023 & 2024)

During the updated walkover in 2023, the habitats on site were noted to be largely the same as they were during the 2016 reptile surveys (although there had been some increase in the extent of scrub on site). The areas identified as being most suitable for reptiles included the longer grassland and scrub-grassland interfaces in the west of the site.

Since more than 3 years have now elapsed since this survey work took place and given that there are local records of reptile species not previously identified on site, it was considered necessary to carry out an updated suite of reptile presence / likely absence surveys in line with CIEEM guidance (2019). These surveys were undertaken between April and May 2024 with the results provided in **Table 14** below and locations of where reptiles were found indicated in **Fig 18.**

Table 14. Results of the reptile surveys undertaken on site in April-May 2024. Wind speed is estimated in the Beaufort scale.

Date	Start Time	Weather Conditions	Slow Worm			
			AM	AF	SA	J
29/04/24	11:00	Temp: 13°C, Wind: 3, Cloud: 20%, Precipitation: 0%	1	1	0	0
02/05/24	14:40	Temp: 14°C, Wind: 0-1, Cloud: 100%, Precipitation: 0%	2	0	1	1
07/05/24	09:30	14°C, Wind: 0, Cloud: 5%, Precipitation: 0%	0	2	0	3
10/05/24	09:20	Temp: 16°C, Wind: 1, Cloud: 5%, Precipitation: 0%	3	3	1	0
13/05/24	9:00	Temp: 14°C, Wind: 1-2, Cloud: 100%, Precipitation: 0%	0	2	3	3
21/05/24	10:45	Temp: 14°C, Wind: 1, Cloud: 100%, Precipitation: 0%	3	5	5	9
24/05/24	10:30	Temp: 15°C, Wind: 1, Cloud: 75%, Precipitation: 0%	1	2	2	1

Figure 18. The locations of where reptiles were identified on site during the presence / likely absence surveys undertaken in 2024 (blue = reptiles present) (Google Satellite, 2025).

4.5.4 Evaluation

Given the size of the suitable areas of habitat, the number of refugia deployed and the maximum count of adults (which was 8), a ***'Low'*** population of Slow Worms are present on-site. Slow Worms are however relatively widespread within southern England and as such the site it is considered to be ***Local Value*** for reptiles.

4.6 Hazel Dormouse

4.6.1 Pre-existing Information

HBIC returned 5 records for Hazel Dormice (*Muscardinus avellanarius*) within 2km of the site boundary, with the nearest record located on the north-eastern side of the M27 situated approximately 0.3km away from the site. No granted EPS licences for Hazel Dormouse were noted within 2km of the site boundary (DEFRA, 2024).

4.6.2 Previous Survey Work (2016)

Previous Hazel Dormouse presence / absence surveys undertaken by Aven Ecology in 2016 found no evidence of this species on site (see planning ref O/17/81166). In addition to this, Ecosupport Ltd undertook Dormouse presence / absence surveys in 2018 as part of an adjacent development scheme 'Providence Hill, Bursledon' (O/17/81166) with nest tubes erected around the site boundary of this application. Ecosupport Ltd has also undertaken further Dormouse presence / absence surveys within the wider landscape in support of previous planning application sites known as 'Land North of Bridge Road' and 'West of Blundell Lane, Bursledon (O/13/73701). No evidence of Dormice was recorded during any of the above surveys.

4.6.3 Updated Habitat Assessment

The tree lines situated along the site's boundaries and the dense scrub habitat within the site were considered suitable to support Dormice, with mixed scrub habitat recorded on site in areas previously noted as supporting woodland following management works between 2014 – 2016. Whilst this area would have been subject to significant disturbance, which may have resulted in a temporary reduction in available habitat resources, the mixed scrub habitat that has subsequently developed is considered suitable to support Hazel Dormice. Notwithstanding this, the site is not connected to any areas supporting known populations of this species and is largely isolated from further suitable habitat with the M27 to the north-east, A3024 to the north-west, A27 to the south-west and River Hamble to the south-east (all forming significant barriers to dispersal). Given the relative isolation of the site and the repeated negative results of Dormouse surveys conducted across the local area, it was not considered proportionate to update the Dormouse surveys and it is considered that Hazel Dormice are ***likely absent*** from the site.

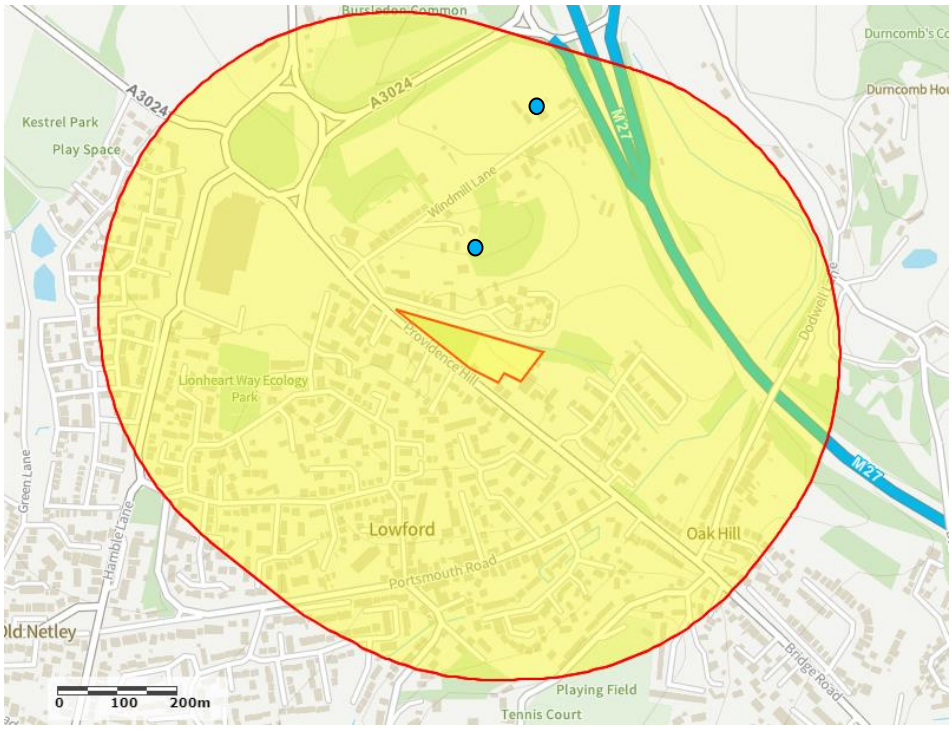
4.7 Great Crested Newt

4.7.1 Waterbodies

Fig 19 below indicates the ponds located within 500m of the site with the closest one located approximately 0.16km to the north of the site, situated within the grounds of Bursledon

Windmill. Previous habitat suitability assessments of this waterbody undertaken in 2016, 2021 and 2022 assessed the pond as holding 'good' suitability for Great Crested Newts.

Figure 19. Map indicating the ponds located within a 500m radius buffer from the site (DEFRA, 2024).



4.7.2 Pre-existing Information

HBIC returned 4 records of Great Crested Newt (*Triturus cristatus*) within 2km of the site, with the nearest record located approximately 0.34km to the east of the site, beyond the M27. With reference to NatureSpace's impact risk zone map for GCN, the site is located within an 'amber' impact risk zone.

4.7.3 Previous Survey Work (2022)

In addition to an updated HSI assessment of the Bursledon Windmill pond, an eDNA sample was also collected in June 2022 by ACD Environmental. The sample subsequently returned a negative result for Great Crested Newt.

4.7.4 Updated Survey Work (2025)

Windmill Pond was subject to an eDNA test on the 17th April 2025 with this conducted by Ecosupport Ltd. During the eDNA test, 20 evenly spaced sample sites were identified around the ponds perimeter and one ladle of pond water was collected from each of the pre-identified sites. The samples were then mixed along with preservative following guidance from SureScreen Scientifics and sent for eDNA analysis.

Windmill Pond returned a negative eDNA result (**Fig 20**) indicating the likely absence of GCN from the pond.

Figure 20. Results of Windmill Pond eDNA analysis as provided by SureScreen Scientific.

Folio No: 462-2025
Purchase Order: WP1
Contact: Ecosupport Ltd
Issue Date: 29.04.2025
Received Date: 22.04.2025

SureScreen Scientifics

GCN eDNA Analysis

Summary

When great crested newts (GCN), *Triturus cristatus* , inhabit a pond, they continuously release small amounts of their DNA into the environment. By collecting and analyzing water samples, we can detect these small traces of environmental DNA (eDNA) to confirm GCN habitation or establish GCN absence.

Results

Lab ID	Site Name	OS Reference	Degradation Check	Inhibition Check	Result	Positive Replicates
R25 0229	Windmill Pond	SU 482108	Pass	Pass	Negative	0/12

Matters affecting result: none

Reported by: Amy Bermudez Approved by: Lauryn Jewkes

SureScreen Scientifics Ltd, Morley Retreat, Church Lane, Morley, Derbyshire, DE7 6DE, UK
+44 (0)1332 292003 | scientifics@surescreen.com | surescreenscientifics.com

4.7.5 Evaluation

Given that Windmill Pond returned a negative eDNA result and considering that there are limited local records for GCN (all of which are considered separated from the site), it is considered unlikely that GCN would be present on site. Therefore, no specific mitigation measures with regard to GCN will be required. Nevertheless, the hibernacula that are due to be created on site for reptiles and the extensive meadow and scrub creation as part of the BNG strategy will benefit any amphibians which may colonise the site in the future.

4.8 Birds of Conservation Concern (BoCC) / Notable Birds

4.8.1 Pre-existing Information

HBIC have provided an extensive list of BOCC, consisting of 983 records across 92 individual species, within 2km of the site with the following considered to be some of the more relevant species listed; Lesser Redpoll (*Acanthis cabaret*) 9 records, Skylark (*Alauda arvensis*) 13 records, Kingfisher (*Alcedo atthis*) 38 records, Water Pipit (*Anthus spinoletta*) 2 records, Tree Pipit (*Anthus trivialis*) 2 records, Grey Heron (*Ardea cinerea*) 20 records, Short-eared Owl (*Asio flammeus*) 1 record, Dark-bellied Brent Goose (*Branta bernicla*) 24 records, Nightjar (*Caprimulgus europaeus*) 2 records, Cetti's Warbler (*Cettia cetti*) 3 records, Little Ringed Plover (*Charadrius dubius*) 1 record, Marsh Harrier (*Circus aeruginosus*) 1 records, Hawfinch (*Coccothraustes coccothraustes*) 3 records, Cuckoo (*Cuculus canorus*) 14 records, Dartford Warbler (*Curruca undata*) 2 records, Lesser Spotted Woodpecker (*Dendrocopos minor*) 9 records, Little Egret (*Egretta garzetta*) 43 records, Yellowhammer (*Emberiza citrinella*) 5 records, Reed Bunting (*Emberiza schoeniclus*) 6 records, Merlin (*Falco columbarius*) 2 records, Peregrine (*Falco peregrinus*) 8 records, Hobby (*Falco subbuteo*) 15 records, Pied Flycatcher (*Ficedula hypoleuca*) 5 records, Brambling (*Fringilla montifringilla*) 8 records, Snipe (*Gallinago gallinago*) 10 records, Linnet (*Linaria cannabina*) 13 records, Grasshopper Warbler (*Locustella naevia*) 1 record, Nightingale (*Luscinia megarhynchos*) 7 records, Red Kite (*Milvus milvus*) 23 records, Yellow Wagtail (*Motacilla flava*) 3 records, Spotted Flycatcher (*Muscicapa striata*) 7 records, Curlew (*Numenius arquata*) 4 records, Wheatear (*Oenanthe oenanthe*) 24 records, Osprey (*Pandion haliaetus*) 10 records, House Sparrow (*Passer domesticus*) 22 records, Black Redstart (*Phoenicurus phoenicurus*) 4 records, Firecrest (*Regulus ignicapilla*) 30 records, Whinchat (*Saxicola rubetra*) 2 records, Siskin (*Spinus spinus*) 12 records, Starling (*Sturnus vulgaris*) 21 records, Redwing (*Turdus iliacus*) 23 records, Song Thrush (*Turdus philomelos*) 29 records, Fieldfare (*Turdus pilaris*) 12 records, Mistle Thrush (*Turdus viscivorus*) 16 records, Barn Owl (*Tyto alba*) 9 records and Lapwing (*Vanellus vanellus*) 22 records.

4.8.2 Site Assessment

The tree lines and scrub habitat within the site offer favourable habitat to support local breeding and nesting birds, in addition to the adjoining grassland habitat which could provide foraging opportunities to local birds of prey such as Barn Owl, Red Kite, Peregrine Falcon and Hobby. As such the site is considered to be of ***High*** potential for nesting and breeding birds.

4.8.3 Breeding Bird Survey (April – June 2024)

A total of 18 bird species were recorded during the Breeding Bird Surveys within or just beyond the site boundaries.

Of the species observed, 7 species appear on the Birds of Conservation Concern (BoCC) as declining (red or amber lists) (Stanbury *et al.,* 2021) and / or are listed as Species of Principle Importance (SoPI) under the NERC Act (2006).

The notable species recorded on site are detailed in **Table 15** while key breeding activity has been detailed in **Fig 21.**

Table 15. Protected bird species, BoCC Red and Amber listed species and Species of Principle Importance (SoPI) recorded on site.

Species	Legal/Conservation Status	Number of Pairs, Nest Locations, Males Holding Territory on Site
Starling (*Sturnus vulgaris*)	BoCC Red / SoPI	Commuting over the site and foraging beneath northern tree line.
Bullfinch (*Pyrrhula pyrrhula*)	BoCC Amber / SoPI	1 pair suspected to be breeding within western scrub.
Moorhen (*Gallinula chloropus*)	BoCC Amber	Observed along edge of unnamed watercourse to north of site.
Song Thrush (*Turdus philomelos*)	BoCC Amber / SoPI	Commuting along northern tree line.
Dunnock (*Prunella modularis*)	BoCC Amber / SoPI	1 pair suspected to be breeding within the northern tree line.
Wren (*Troglodytes troglodytes*)	BoCC Amber	2 pairs suspected to be breeding within southern and easter tree lines.
Wood Pigeon (*Columba palumbus*)	BoCC Amber	Foraging on site.

Figure 21. Results of the breeding bird surveys undertaken on site between April and June 2024.

Legend

Site Boundary

Breeding Bird Territories

Amber Listed Birds

Green Listed Birds

Species List:
B. - Blackbird
BF - Bullfinch
BT - Blue Tit
CC - Chiffchaff
D. - Dunnock
MG - Magpie
WR - Wren

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Map	Breeding Bird Survey Map
Site	Providence Hill, Bursledon
Client	Colten Care
Date	10/03/2025

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4.8.4 Evaluation

A total of 1 Red-listed and 6 Amber-listed Birds of Conservation Concern were recorded as using the site as a resource, or likely using the site. Of these, 3 species were found to be nesting / breeding or likely to be nesting / breeding within the site. Their HOS status description and approximate numerical range in Hampshire (HOS, 2023) are as follows:

Species	HOS Status Description	Approximate Numerical Range (Breeding Pairs)
Bullfinch	Common but declining	1,001-5,000
Dunnock	Abundant	30,000+
Wren	Abundant	30,000+

Due to the considered low number of BoCC Amber listed nesting pairs / territories present on site and the current common and abundant status of these species across the UK, the site is considered to be of ***Low ecological value*** to breeding and nesting birds and it is not considered that the loss of bird populations and the communities present would be significantly detrimental on a County level. On a more local level there will be a reduction in nesting and foraging resources in some areas of the site however.

4.9 Riparian Mammals

4.9.1 Pre-existing Information

HBIC returned 1 record of European Water Voles (*Arvicola amphibious*) within 2 km of the site, with the nearest recorded located approximately 0.53km south of the site boundary. The identified record is not connected to the site, with significant urban infrastructure situated between the location of the record and the site boundary. HBIC also returned 1 record for Eurasian Otters (*Lutra lutra*) within 2 km of the site.

4.9.2 Updated Habitat Assessment

The brook identified along the northern boundary of the site did not support the well layered herbaceous vegetation structure preferred by Water Voles, with the watercourse heavily overgrown with Bramble scrub. No evidence or associated field signs of Water Vole was identified during the updated survey. The small brook was also considered unsuitable to support Otters. As such, the site is considered to hold ***Negligible*** potential to support riparian mammals.

4.10 Hedgehogs

4.10.1 Pre-existing Information

HBIC returned 56 records of West European Hedgehog (*Erinaceus europaeus*) within 2km of the site.

4.10.2 Updated Habitat Assessment

The scrub, tree lines and spoil/ rubble piles provide suitable habitat to support hibernating and sheltering opportunities for Hedgehogs, with the grassland offering suitable foraging habitat. As such, the site is considered to hold ***Moderate*** potential to support Hedgehogs.

4.11 Invertebrates

4.11.1 Pre-existing Information

HBIC returned 2 records for Scarce Blue-Tailed Damselfly (*Ischnura pumilio*) within 2km of the site, located at a Private Nature Reserve in Old Bursledon, approximately 1.31km to the south of the site. Furthermore, HBIC returned 198 records for Stag Beetle (*Lucanus cervus*) within 2km of the site.

4.11.2 Updated Habitat Assessment

The site supports tree lines, hedgerows and deadwood habitat that could potentially support Stag Beetle, with a range of ecological niches and foodplants identified that could support a diverse range of invertebrate species. Notwithstanding this, given that the habitats present within the site are widespread, it is considered unlikely that that the site supports rarer invertebrate species.

4.12 Invasive Species

4.12.1 Updated Habitat Assessment

NB. An updated walkover will be undertaken during Summer 2025 by a suitably qualified invasive species specialist with a full survey report produced.

4.12.1.1 Japanese Knotweed

The previous report (ACD Environmental, 2022) identified a small stand of Japanese knotweed (*Fallopia japonica*) within five meters of the southern Application Site boundary, adjacent to the pavement of Providence Hill (Grid Reference: SU4823410638), covering an area of approximately 1m2. During the walkover conducted in April 2024 (Ecosupport Ltd) no Japanese Knotweed was identified on site, however as stated in **Section 3.4.1** the survey was not conducted at the optimal flowering time for this species.

4.12.1.2 Bamboo

Two patches of Bamboo (*Bambusa vulgaris*) were recorded on the southeast and eastern boundaries of the site (**Fig 22**).

Figure 22. View of the bamboo recorded within the southern boundary tree line on site (taken April 2024).

4.12.1.3 Rhododendron

A large patch of Rhododendron (*Rhododendron* sp.) (**Fig 23**) was recorded adjacent to the Bramble scrub on the north of the site.

Figure 23. View of the Rhododendron recorded adjacent to the bramble scrub on the north of site (taken April 2024).

4.12.1.4 Cotoneaster

Several Cotoneaster shrubs were noted within the western mixed scrub area with the approximate location indicated in the **appended UK Habs Map.** Given the difficulty identifying

Cotoneaster to species level, this will be treated as an invasive species with appropriate measures put in place to eradicate it.

5.0 ZONE OF INFLUENCE

The Zone of Influence is defined by CIEEM as being the areas / resources that may be affected by the biophysical changes caused by activities. The Zone of Influence is based on the sensitivity of the receptor to any biophysical changes which could occur and the extent to which those changes could occur.

5.1 Construction Phase

5.1.1 Change in Land Use

The change of use of the site will result in the physical structure of the present site being altered by the proposed development. Site preparation activities will include some earthworks and earth stripping associated with a phased construction. Therefore, the zone of influence is predicted to extend across the development footprint. Therefore, all protected species and habitats within the development footprint and along the boundary have the potential to be disturbed.

5.1.2 Noise Pollution

Noise disturbance occurs as a result of plant operation, traffic movements, and movements of site personnel associated with the continued extraction, crushing, screening and tipping within the application area.

When ground cover or normal unpacked earth is present between the source and receptor, the ground becomes absorptive to noise energy and is called a soft site. This can reduce in-air noise over distance. As these conditions are present on site is considered that the noise from construction will not travel far past the development boundary. This will be aided by the presence of screening vegetation around the boundary of the site. The retention of perimeter vegetation will reduce noise levels outside of the development footprint. It is therefore considered that the zone of influence for noise will be within the development boundary itself and 50m outside of the boundary.

5.1.3 Air Pollution

Particulates associated with the construction phase of this development will come from three main sources. The vehicles on site, from exhaust emissions, the contact of tyres on the road surface or dust blowing from materials carried via vehicles, stripping of topsoil/vegetation and excavation of footings for the new properties.

The zone of influence for air pollution, particularly dust, will depend on the time of year/weather condition within which works are carried out. For example, in dry conditions there may be dust generated by activities taking place during the construction phase, where as in wet weather less dust will be generated. It is also dependant on the wind speed at the time of the activity as this determines how far the air pollution will be transported and indeed the direction.

Fugitive dust from development sites is typically deposited within 100-200m of the source; the greatest proportion of which comprise larger particles (greater than 30 microns) is

deposited within 100m (Greater London Authority, 2006). Therefore, the zone of influence for air pollution during construction will be the development footprint itself with a 200meter buffer.

5.1.4 Water Pollution

The impact area is related to releases of pollutants to a water body will depend on the type of water body (e.g. stream, river or lake), the volume and flow of that water body, the nature of the pollutant and the chemical characteristics of the water body. As there is a waterbody present on site in the form of the Badnum Creek, which flows into the nearby River Hamble (with a number of overlapping designates covering this river including the Solent Maritime SAC, Solent and Dorset Coast, Solent and Southampton Water SPA/ Ramsar and Hackett's Marsh LNR), there is potential for water pollution impacts upon designated sites of national level of importance. Notwithstanding this, the proposed development will include a 10m buffer from the watercourse feature. Given that the majority of the development within the 20m buffer zone (as recommended within the HRA Screening Proforma for the Solent Complex) will comprise of soft landscaping, with hard-build forming a relatively minor component, it is considered that the development is unlikely to represent a significant impact to the Solent European protected sites given the relatively low significance of the ditch as a headwater.

5.2 Operational Phase

The zone of influence associated with the operational phase is extended beyond the site boundaries due to the nature of the development resulting in an increase in human activity and disturbance in the direct vicinity and further afield.

5.2.1 Human Disturbance

A study found that 38% of walking trips were for personal errands, 28% were for exercise, 21% were for recreation or leisure and 5% for work. The average trip length was 2.1km (National Highway Traffic and Safety Administration and the Bureau of Transportation Statistics, 2002). With this in mind the zone of influence for disturbance in the form of people on foot will be 2.1km.

5.2.2 Light Pollution

This impact of lighting will be confined within the development footprint itself. There is the possibility of light spilling into adjacent land however by retaining and enhancing existing vegetation it is considered this will minimal. Therefore, the zone of influence will encompass the development footprint with a one-meter buffer along the outside of the boundary.

5.2.3 Air

Pollution will arise from the increased level of traffic and vehicles associated with a housing development. It is outside of the expertise of this report to model the spatial patterns of air dispersion and deposition for various chemicals to allow for close delineation of the area of influence. Therefore, a general consideration of the impacts on nearby notable ecological features will be taken into account.

5.2.4 Noise

The majority of the site boundary is currently screened by vegetation, with the retention of these habitats providing screening for wildlife populations. As there are already levels of noise associated with nearby housing development and road networks it is not considered noise generation will be significantly increased. Similarly, as the noise associated with this development will not be continuous and will not reach high levels, it is considered unlikely that the zone of influence for this development in operation will extend 10m from development boundary.

6.0 LIKELY ECOLOGICAL IMPACTS IN ABSENCE OF MITIGATION

6.1 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.

6.2 Site Preparation and Construction

6.2.1 Impacts to Habitats

The majority of the development will take place within areas of modified grassland and Bramble/ Mixed scrub habitat which are only considered to be of value at the site level. The boundary line of trees will be retained as part of the development, however notwithstanding this, the use of heavy machinery during construction works has the potential to lead to root compaction of mature trees situated along the site boundary which are considered to hold value at the local level of significance. As such, it is considered that the proposed development will have an ***adverse impact*** on habitats of ***Site*** value, with an assessed ***potential adverse impact*** to habitats of ***Local*** value.

6.2.2 Impacts to Wildlife

6.2.2.1 Bats

The site has been identified as being of county importance for commuting bats and foraging bats. The works will result in a loss of some extent of the existing foraging resources (grassland & scrub) present within the site and any disruption to commuting routes (from external lighting) would likely have a ***moderate adverse impact*** at the ***County*** level of significance.

6.2.2.2 Reptiles

A 'Low' population of Slow Worms was recorded within the dense grassland/ scrub habitats within the site, with the majority of the identified individuals recorded within the western portion of the site, with the well-managed grassland habitat present within the eastern portion of the site offering negligible suitability to support reptiles in its current condition. Subsequent construction of the development would ensure this loss is permanent in the proposed footprint of the building and hard standing area, with approximately 0.14ha of suitable habitat lost.

A proposed ecological buffer situated along the northern boundary of the site, combined with the retained/enhanced area of scrub habitat within the western portion the site will provide a suitable receptor area to support translocated reptiles (measuring approximately 0.25ha), with elements of existing mixed scrub also retained/enhanced within this area. Notwithstanding this, impacts to areas of suitable reptile habitat could result in their death and/or injury. As all reptile species are protected, this would constitute an offence under the Wildlife & Countryside Act (1981). Given the size of the site, the numbers recorded during the

survey and the status of Slow Worms in the local area, loss of habitat and individual animals of these species is considered to have a ***moderate adverse impact*** at the ***Local*** level of significance.

6.2.2.3 Badgers

The site as a whole was considered to hold moderate potential to support foraging and commuting Badgers. Excavations created during the construction phase could result in the trapping of individual Badgers if left uncovered overnight. Whilst some of the grassland habitat on site will be permanently lost through the development of new buildings and hard standing surfaces, the site will retain a large element of soft landscaping and as such it is considered that the overall impact of the reduced of this resource will be relatively minimal. Therefore, in the absence of mitigation it is considered that an ***adverse impact*** at the ***Site*** level.

6.2.2.4 Breeding and Nesting Birds

The scrub and tree lines within the site have been identified as holding high potential for both breeding and nesting birds. Clearance of these habitats, if undertaken during the nesting season, is likely to result in the disturbance to and/or destruction of bird nests. The works will also result in the permanent loss of nesting opportunities through the removal of scrub habitat. Therefore, it is considered that there will be an ***adverse impact*** at the ***Local*** level of significance.

6.2.2.5 Hedgehogs

The works will involve the removal of scrub habitat and spoil/ rubble piles that could support sheltering Hedgehogs, with the removal of some extent of the grassland habitat present reducing the available foraging resources. Should suitable hibernacula/sheltering features (i.e. loose leaf piles, scrub) be impacted, the proposed works will have the potential to impact Hedgehogs, which could result in injury or death to such animals. As such it is considered that the works will have a ***potential adverse impact*** at the ***Site*** level.

6.2.2.6 Invertebrates

The proposed works may involve impacts to deadwood habitat (with suitable features potentially concealed by dense scrub) that could potentially support Stag Beetle, with vegetation removal resulting in a deficit in potential foodplants across the site. Notwithstanding this, the site will retain an ecological buffer along the northern boundary of the site which will be enhanced to incorporate a mosaic of scrub and grassland habitat, which will provide ecological niches that could potentially support a diverse range of invertebrate species. As such, it is considered that the works will have a ***moderate adverse impact*** at the ***Site*** level of significance.

6.2.2.7 Hazel Dormice

Hazel Dormice are considered likely absent from the site. However, in the unlikely instance that this species is present within the site, vegetation removal could result in the disturbance, injury or death of individuals. Therefore, it is considered that the works will have a ***potential adverse impact*** at the ***Local*** level of significance.

6.2.3 Impacts to Designated Sites

6.2.3.1 Solent Maritime SAC, Solent & Dorset Coast SPA and Solent & Southampton Water SPA/ RAMSAR

Badnum Creek is situated within the catchment of the River Hamble (with a number of overlapping designates covering this river including the Solent Maritime SAC, Solent and Dorset Coast, Solent and Southampton Water SPA/ Ramsar) and was identified running along the northern boundary of the site. As such, run-off from the site has potential to enter the watercourse if not controlled, which could subsequently result in the pollution incidents and damage to ecologically sensitive habitats. Therefore, it is considered that the proposed works will have a ***potential adverse impact*** on habitats of ***International*** value.

6.2.3.2 Windmill Fields Wood SINC

Windmill Fields Woods SINC is situated approximately 0.02km to the north-east of the site boundary. As such, given the close proximity of the site it is considered that an ***adverse impact is possible*** to a site valued at the ***County*** level of significance as a result of factors such as noise, dust, visual and aquatic pollution during construction. A section of Badnum Creek was also noted to flow within this designated site, and as such run-off from the site has potential to enter the watercourse if not controlled, which could subsequently result in the pollution incidents and damage to ecologically sensitive habitats.

6.2.3.3 Core Non-Statutory Ecological Network & Priority Habitats

The western portion of the site is listed as a priority habitat (Lowland Mixed Deciduous Woodland) and noted as a 'core non-statutory' area within the local ecological network. Notwithstanding the above, whilst it is noted that previous vegetation management works have historically been undertaken within the site, during the updated survey, a mixture of Bramble dominated scrub and mixed scrub habitat were recorded within this section of the site which are considered to hold value at the ***Site*** level and do not represent priority habitat types.

6.3 Site Operation

6.3.1 Impacts to Nocturnal Wildlife

The development will result in an increase in lighting within the general area from street lights and external lights on the dwellings/ buildings. This can affect the behaviour, particularly foraging, of nocturnal wildlife. Therefore, an ***adverse impact is possible*** on nocturnal species.

6.3.2 Loss of Breeding and Nesting Bird Habitat

The works will involve the removal of scrub habitat within the site, with removal of grassland habitat resulting in a deficit in the available foraging resources. Notwithstanding this, the site will retain a large element of soft landscaping and as such it is considered that the overall impact of the reduced resource will be relatively minimal. Therefore, it is considered there will be a ***minor adverse impact*** upon local breeding and nesting birds.

6.3.3 Impacts to Reptiles

The development will result in an increased level of human activity within areas surrounding the site, which would also be used by reptiles. This is likely to result in increased disturbance of reptiles remaining within these areas and may reduce their ability to bask and forage. It may also increase their vulnerability to killing by humans and cats. Therefore, it is considered that a ***minor adverse impact is likely***.

6.3.4 Impacts to Designated Sites

6.3.4.1 Solent SPA 'Zone of Influence' for Recreation

The site is located within the 5.6km recreational zone of influence for the Solent SPAs. Due to the net addition of accommodation units on site, it is possible that there will be increased recreational pressure on the designated sites as a result of the development. Notwithstanding this, the proposed development comprises of residential care home and close care living accommodation, and as such the level of recreational pressure generated by this development is anticipated to be lower than typical residential schemes. Therefore, an ***adverse impact is possible*** on sites of ***International*** significance.

6.3.4.2 New Forest SAC & SPA 'Zone of Influence' for Recreation

The site is located within approximately 8.7km of the New Forest designated area and as such falls within the 13.8km zone of influence, from which 75% of all day visits are recorded to originate from (Eastleigh Borough Council, 2022). Due to the net addition of accommodation units on site, it is possible that there will be increased recreational pressure on the designated sites as a result of the development. Notwithstanding this, the proposed development comprises of residential care home and close care living accommodation, and as such the level of recreational pressure generated by this development is anticipated to be lower than typical residential schemes. Therefore, an ***adverse impact is possible*** on sites of ***International*** significance.

6.3.4.3 Nitrogen Mitigation

Due to a net addition of accommodation units on site, the development will result in an increase in nitrogen input into the River Hamble catchment, which is within a watershed 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, an **adverse impact is possible** on the Solent & Southampton Water SPA, Solent & Dorset Coast SPA, and Solent Maritime SAC which area sites of **International** significance.

6.3.4.4 Windmill Fields Wood SINC

Despite the close proximity of the SINC to the site, it is understood that the SINC is not accessible to the public with no provision of available footpaths. Furthermore, the presence of Badnam Creek also presents a further barrier to discourage use of this area. As such, it is considered that operation of the site will have ***potential adverse impact*** on a site valued at the ***Local*** level of significance.

7.0 MITIGATION & RECOMMENDATIONS

7.1 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 appropriate and proportionate. In addition to this, measures are outlined to protect the existing features of value and provide enhancements post development.

7.2 Protection of Hedgerows, Trees and Woodland

All the existing tree lines that will be retained will be protected from damage during the works. All the site boundaries including the buffers outside the area of impact will be fenced using Heras fencing or similar to prevent access by machinery. Where large mature trees are present, they will be protected using standard arboricultural tree protection measures which include protection of the canopy and prevents root compaction. Access will not be permitted behind this fencing by construction personnel.

This will also provide protection for wildlife species that may be using the margins of the site including bats, reptiles, amphibians, invertebrates and other mammals. No vehicles will enter the protective ring fencing and no materials will be stored within their circumference. All protective fencing must be in place prior to any construction machinery arriving on site, before any works on site get underway, and will remain in place until all work is completed. This will minimise the level of disturbance within the boundary habitat / buffer areas during the works and ensure the habitats and any wildlife species that may be using them are protected.

7.3 Construction Environmental Management Plan (CEMP)

A Construction Environmental Management Plan (CEMP) will be created for the proposed development. The CEMP will include details on mitigation methods to address the potential for pollution as well as the materials to be used and reduction of noise, dust and visual impacts on the nearby designated sites and wildlife protection measures. The CEMP will also include appropriate measures to protect the watercourse / Badnam Creek from being negatively impacted from pollution and run-off during the construction phase.

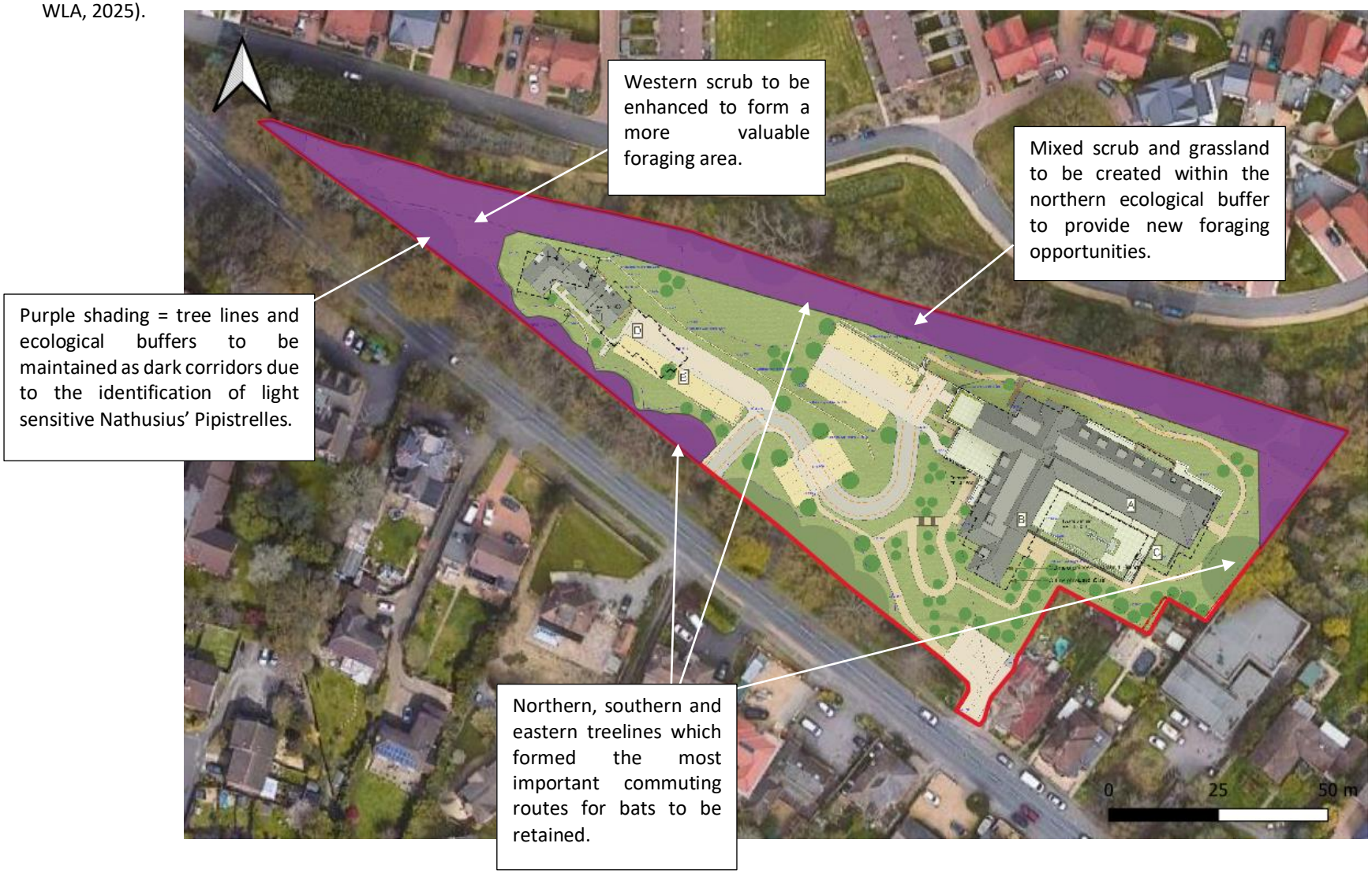
7.4 Bats

7.4.1 Site Design

The site has been designed to retain the areas of most importance to commuting bats with the northern, southern and eastern boundary tree lines all due to be maintained. Furthermore, important foraging areas such as the western scrub are due to be retained and enhanced. This, in combination with the creation of meadow and scrub within the ecological buffer along the northern boundary of the site, will greatly increase foraging resources for bats utilising the site.

Fig 24 below provides an overview of the proposed site design.

Figure 24. Location of proposed dark corridors and measures to enhance the site for foraging and commuting bats (Drawing No. 6185-WLA-ZZ-XX-DR-A-0010 - provided by WLA, 2025).



7.4.2 Sensitive Lighting

Nathusius' pipistrelle were identified along the northern boundary of the site and part of the southern boundary (see **Fig 17**). As these are a light sensitive species, a dark corridor will be provided throughout the northern ecological buffer zone as well as along the retained southern tree line as indicated in **Fig 24** above. Light levels within this dark corridor will be maintained at or below 0.2 Lux in the horizontal plane and 0.4 Lux in the vertical plane.

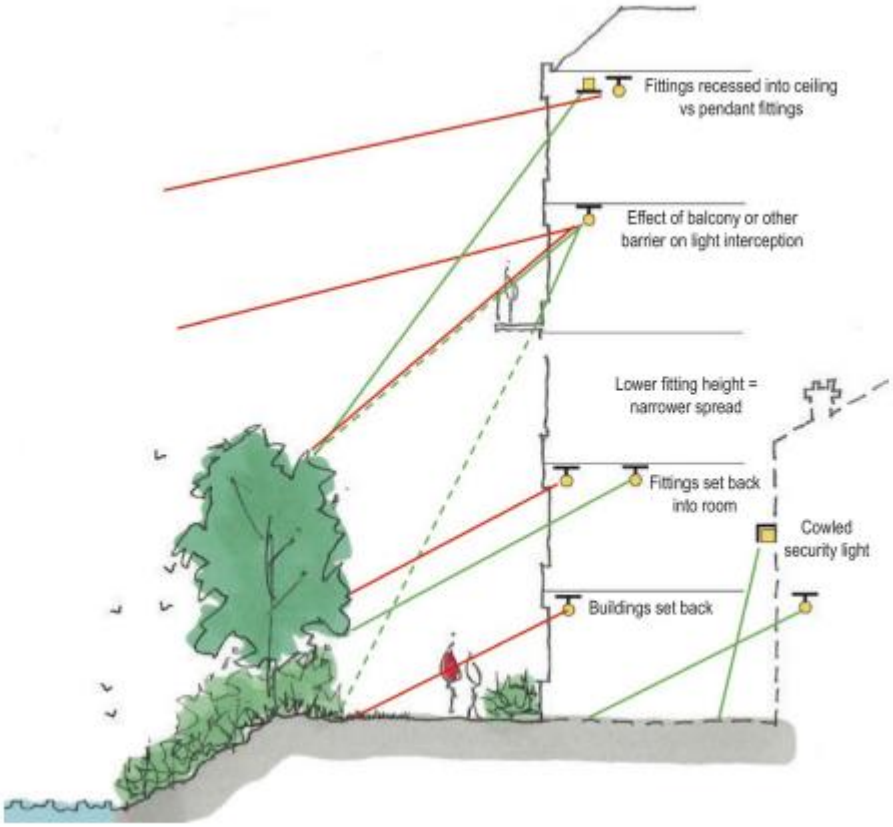
Furthermore, it is recommended that any new lighting across the site complies with the following the newly published *Guidance Note 08/23 Bats and Artificial Lighting at night* (ILP / BCT, 2023) produced via a collaboration between the Institute of Lighting Professionals (ILP) and the Bat Conservation Trust (BCT), which outlines the latest recommendations to minimise the impacts of increased artificial lighting on bats. The broad principles of this guidance will inform the development of the phased lighting strategy for the development scheme. The key recommendations within this document have been outlined below and will be implemented as far as is practicable:

'Light sources, lamps, LEDs and their fittings come in a myriad of different specifications which a lighting professional can help to select. However, the following should be considered when choosing luminaires and their potential impact on Key Habitats and features:

- *All luminaires will lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used*
- *LED luminaires will be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability*
- *A warm white light source (2700Kelvin or lower) will be adopted to reduce blue light component*
- *Light sources will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012)*
- *Internal luminaires can be recessed (as opposed to using a pendant fitting - See **Fig 25**) where installed in proximity to windows to reduce glare and light spill*
- *Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges (see Case Study 1)*
- *Column heights will be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards*
- *Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01*
- *Luminaires will always be mounted horizontally, with no light output above 90° and/or no upward tilt*
- *Where appropriate, external security lighting will be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate*

- *Use of a Central Management System (CMS) with additional web-enabled devices to light on demand Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS*
- *The use of bollard or low-level downward-directional luminaires is strongly discouraged. This is due to a considerable range of issues, such as unacceptable glare, poor illumination efficiency, unacceptable upward light output, increased upward light scatter from surfaces and poor facial recognition which makes them unsuitable for most sites. Therefore, they should only be considered in specific cases where the lighting professional and project manager are able to resolve these issues.*
- *Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely'*

Figure 25. Internal lighting mitigation options (ILP 2023)



7.5 Reptiles

A low population of Slow Worm is present on site. As such, a reptile translocation operation will be carried out in accordance with best practice guidelines as stated in various resources (Froglife 1999) (Gent & Gibson 1998) to provide appropriate protection for this species.

7.5.1 Receptor Preparation

Wherever possible, reptiles should be retained on site, or released immediately adjacent to the site. In-situ relocation schemes, where reptiles are retained in suitable areas of a development site or released into immediately adjacent habitat are preferable (English Nature, 2004). The proposed receptor site will comprise of the ecological buffer situated along the northern boundary of the site which will be combined with the retained/enhanced area of scrub habitat within the western portion the site (where the majority of recorded reptiles were identified) will provide a suitable receptor area to support translocated reptiles measuring approximately 0.25ha (**Fig 26**). These areas will be enhanced through appropriate planting of mixed scrub and a rough / tussocky grassland mix and managed for the benefit of reptiles, with management / enhancement of the existing scrub habitat to improve its suitability to support reptiles (including managing scrub to create scalloped edges to enhance microclimatic opportunities).

Figure 26. Map showing the location of the proposed reptile receptor indicated (blue shaded area).

7.5.2 Site Set-Up

Initial habitat manipulation will be implemented across the site. Any longer grass will be cut to reduce the sward height to 15cm. Vegetation will be cleared in a directional approach (working towards retained boundaries), encouraging reptiles/amphibians away from the area of impact towards suitable habitat out of harms way. This will be undertaken during the active season for reptiles/amphibians (April – September).

One-way exclusion fencing will then be installed around the perimeter of the site (where reptile presence was identified) and around the receptor (**Fig 26**). This will provide a division between the 'working' areas (i.e. those areas where humans and machinery will disturb the

ground) to prevent reptiles passively moving across the site. The fencing will remain in place until all works are completed. The barrier will also illustrate the retained ecology areas.

All fencing will be made from robust HDPE material. In order to remain in line with the best practice guidance (English Nature, 2001) the following points will be addressed in the installation of the one-way exclusion fence and semi permanent drift fence;

- Fencing installation will be carried out under the supervision of an ecologist
- The grass within the proposed fence line will first be strimmed down to 10 – 15 cm then searched and cleared of any amphibians prior to the digger being on site to dig the trench.
- The fencing layout will avoid gaps through which reptiles could pass.
- The fence will be erected to a height of 600 mm above ground level with depth of 250 mmm (to include a lip) to prevent reptiles from passing underneath.
- The backfill will be placed turf downwards in the trench to supress re-growth of grass.
- All fence trenches will be filled on the same day as being dug. Artificial refugia will then be distributed throughout the site. The refugia used will be a mixture of bitumen roofing felt and corrugated metal.

7.5.3 Timing

The optimum period for capture of reptiles is April to June and September, however, it is possible to capture reptiles outside of this period providing weather conditions are suitable. By ensuring that all animals are translocated by the end of September, it will allow sufficient time for reptiles to find suitable hibernation sites within the receptor site.

7.5.4 Catching

Suitably qualified ecologists will carry out the trapping of reptiles during the active season on days where reptiles/amphibians are likely to be found (i.e. between 10°c and 20°C with little or no wind or rain). Reptiles will be captured by hand from beneath the artificial refugia and placed into a suitable container to be transported to the on-site receptor. All captured animals will be released on to the receptor site immediately (**Fig 26**).

7.5.5 Capture Effort

The HGBI guidelines (1998) suggest that for a 'low' population of Slow Worms a minimum of 60 days capture is undertaken (**Table 16**). Artificial refugia will be distributed across the site at an increased minimum density of <50/ha. Despite the recommendation for 60 capture days, it is considered a significantly lower figure than this would be appropriate (30 days), however this can be reviewed during the capture works. Capture visits will continue until 5 consecutive visits have been carried out in ideal weather conditions[3] where no reptiles are captured (or seen), it is considered that the relocation can come to an end. This approach is based on survey guidance (Highways Agency, 2005), which suggests that a minimum of five visits are required to establish whether reptiles are present or likely to be absent from a site, during a

[3] Suitable weather conditions are generally considered to be between 10 and 18°C with intermittent sunshine and little or no wind and rain (see Froglife 1999).

standard survey. Therefore, if no reptiles are recorded after five visits (in optimal survey conditions), it can be concluded that reptiles are likely to be absent from the site.

Table 16. The minimum capture effort for common reptile species based on HGBI (1998). The figures relevant to this scheme are emboldened and italicised.

Species	Population Size (adult density)	Refugia Density / ha	Minimum No of Trapping Days in Good Weather
Slow Worm	High (>100/ha)	100	All suitable days between March & September or a full year (min. 90 suitable days)
	Medium (>50/ha)	100	All suitable days between March & September or a full year (min. 70 suitable days)
	Low (<50/ha)	***50***	***60 suitable days***

7.5.6 Destructive Search

Once the five negative capture days have been achieved the site will be subject to a sensitive destructive search. This will involve a digger, utilising a toothed bucket, removing the grass and top layer of soil. This work will be supervised by an ecologist experienced in reptile mitigation.

In the unlikely event that any reptiles are found these will be caught and placed within the onsite receptor area by the ecologist.

7.5.7 Funding and Safeguard

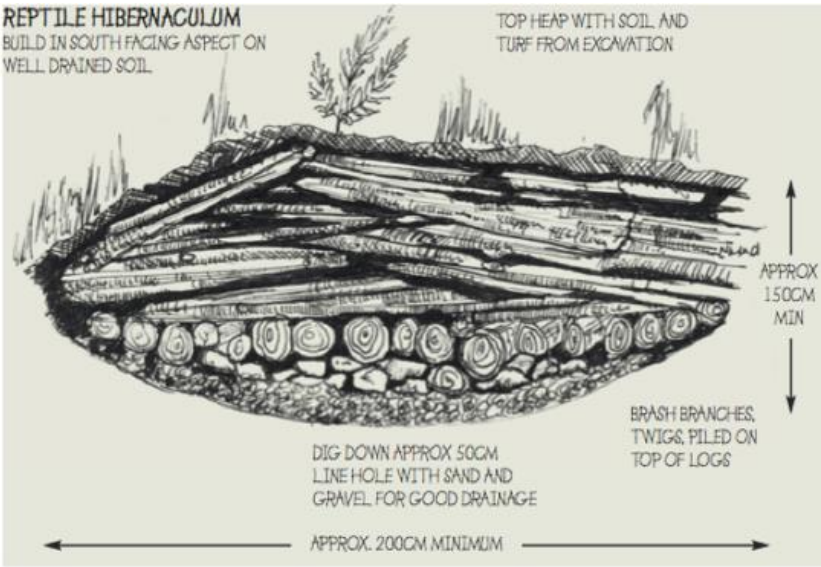
Habitat monitoring and subsequent management at the receptor site must be undertaken as required to maintain its suitability to support reptiles. The management and on-going monitoring of the receptor site will be funded by the developer for a period of no less than 30 years following the completion of the development. The responsibility will eventually be passed onto a responsible landscape management company upon appointment.

To ensure the retained reptile habitat is afforded the appropriate level of protection once the site has been built, it should be listed within the S106 (or similar such as a restrictive covenant) as protected habitat.

7.5.8 Enhancements

Two wood-based hibernacula will also be constructed within the reptile receptor to enhance the carrying capacity of the areas for reptiles. This will provide shelter and hibernation opportunities as well as providing a significant habitat resource for invertebrates (a food resource for reptiles). **Fig 27** illustrates hibernacula design that follows best practice guidelines (HART, 2009). The size of the hibernaculum will be at least $5m^2$.

Figure 27. Reptile hibernaculum design as provided in HART (2009).



7.6 Breeding & Nesting Birds

7.6.1 Avoidance of Disturbance

To avoid disturbance of nesting birds or damage to their nests, clearance of the trees and shrub should be undertaken outside of the bird-nesting season (typically March – August, dependant on weather). If this is not possible, the area to be cleared should be thoroughly checked by an ecologist immediately prior to clearance. If any active nests are found they should be left undisturbed with a suitable buffer of undisturbed vegetation (ca. 5m) until nestlings have fledged.

7.6.2 Compensation

A number of the Red & Amber listed species recorded on site (namely Starling, Song Thrush, Dunnock, Wren and Wood Pigeon) are likely to be adaptive to the proposed care home scheme. The retention of the boundary habitats, creation of new scrub, and provision of new nesting features (see **Section 7.13**) will be sufficient to compensate for the loss of any existing nesting habitat for these species.

Bullfinches typically nest in woodland or dense scrub. They tend to be shy and are less likely to frequent more urban environments or use nest boxes. However, given that the scheme is retaining the boundary tree lines and a large portion of the western scrub as well as providing significant new scrub planting within the ecological buffer, it is considered that any loss of nesting habitat will be compensated for.

Full details of planting can be found within the accompanying Habitat Management and Monitoring Plan (Ecosupport Ltd., 2025).

7.7 Badgers

During the construction phase any open excavations left overnight should either be covered to prevent commuting Badgers (or other mammals) falling in or escape ladders should be used

to prevent them from becoming trapped. Any open pipework should be checked and then capped nightly.

7.8 Hedgehogs

The site has been assessed as suitable to support Hedgehogs, as such it is recommended that all vegetation clearance works adopt precautionary measures. During the day and during winter hibernation, Hedgehogs can nest in a wide range of places including underneath log piles, loose leaves or scrub, and are particularly vulnerable to habitat clearance. Based on the habitats present on-site, it is recommended that all clearance/ strimming work of hedgerows / ornamental shrub are carried out in a two strim cycle with the first cut to 15cm and the second to ground level, with an additional nest check in-between cuts to minimise risk. Furthermore, all ground staff should be briefed prior to commencement of works to make them aware of hedgehogs. Any uncovered animals should be left in-situ and area marked if possible, however notwithstanding this, animals should be carefully moved into areas of suitable habitat beyond the scope of the works.

If impacts to potential hibernation or sheltering features for hedgehogs (deep leaf litter, brash piles) are unavoidable, an inspection by hand will take place in front of the works to check for any hibernating/ sheltering animals. Should any be found, they will be moved quickly and carefully to a nearby area beyond the work area (within the northern ecology buffer) and covered up again with leaf litter/ a light layer of brash.

7.9 Hazel Dormice

Based on the previously undertaken survey effort, Hazel Dormice are considered to be likely absent from the site. Notwithstanding this, there remains a very low possibility that this species could be present. It is therefore recommended that prior to the commencement of works, all operatives are briefed by a suitably qualified ecologist providing 'toolbox talk' including the species ecology, where they may be found and outlining to operatives to maintain vigilance for dormice / associated field signs for the duration of the works. **If a dormouse or associated field signs (nests, gnawed nuts etc) are found during the works, all works must cease and the advice of a suitably qualified dormouse ecologist sought. A license from Natural England may be required before the works can continue.**

7.10 Impacts to Designated Sites

7.10.1 Solent SPA & New Forest 'Zone of Influence' for Recreation

Dependent on the nature of the proposed care home, the level of additional recreational pressure on the nearby Solent SPAs as a result of the development may well be limited. Therefore, the financial contributions required to mitigate recreational pressure from the development may differ from the standardised contributions set out within the Solent Recreation Mitigation Strategy and it is anticipated that this will be decided on a case-by-case basis by the local planning authority and agreed with Natural England as part of the application process (Solent Recreation Mitigation Partnership, 2017).

7.10.2 Nutrient Neutrality

Due to a net addition of accommodation units on site, the development will likely result in an increase in nitrogen input into the River Hamble catchment, which is within a watershed

draining into the Solent. Natural England has laid out guidance for calculating and mitigating any increased nitrogen from new development (Natural England, 2022). A nitrogen budget calculation will be completed to measure the amount of increased nitrogen from the development and mitigation will be required to offset this.

7.10.3 New Forest SAC & SPA 'Zone of Influence' for Recreation

The site is located within approximately 8.7km of the New Forest designated area and as such falls within its 13.8km zone of influence. Residential development projects that result in a net increase in residential units are required to provide strategic SANG contributions and financial contributions towards Strategic Access management and Monitoring (SAMM) measures, to manage the impacts of recreational pressure on the designated site generated by the new development. Notwithstanding this, as noted above, due to the nature of the proposed care home, the level of additional recreational pressure on the nearby New Forest designated area as a result of the development may well be limited. Therefore, the financial contributions required to mitigate recreational pressure from the development may differ from the standardised contributions set out within the New Forest Interim Strategy (Updated December 2022).

7.10.4 Windmill Fields Wood SINC

The proposed development will include a suitable buffer area of approximately 30m (a minimum buffer of 20m is required as per comments from EBC) between the SINC and the proposed footprint of new buildings and hard standing surfaces. The buffer will be enhanced as part of the safeguarding habitat management measures for reptiles, with scrub planting and grassland enhancement prescriptions proposed in this area.

7.11 Invasive Species

The locations of the Rhododendron and Bamboo patches are shown in the **appended UK Habs map** with the location of the previously noted Japanese Knotweed as noted by ACD Environmental (2022) also noted. These will be eradicated from site within 5 years using the following prescriptions:

- **Bamboo** – cut down canes to soil level in late winter and then apply a glyphosate-based weed killer
- **Rhododendron** - cut and mechanically remove stumps between September-February. Any new growth is to be spot treated with a glyphosate weed killer (small plants) or hand pulling (seedlings)
- **Cotoneaster** – mechanically dig out the shrubs and their roots with consideration given to involvement of a specialist contractor should root systems appear more extensive than expected
- Monitor the site at yearly intervals for 5 years and treat any new growth as outlined above
- Any new foliage from either source must be treated with a recommended herbicide before it reaches a height of 1.3 m

Given the specialist nature of Knotweed removal, a suitably accredited contractor (PCA accredited) should be consulted prior to attempting removal of this species from the site.

NB. A specialist invasive species consultant will undertake an updated search for invasive species during Summer 2025. They will produce a full survey report as well as a full eradication and monitoring programme. It is understood that this can be conditioned.

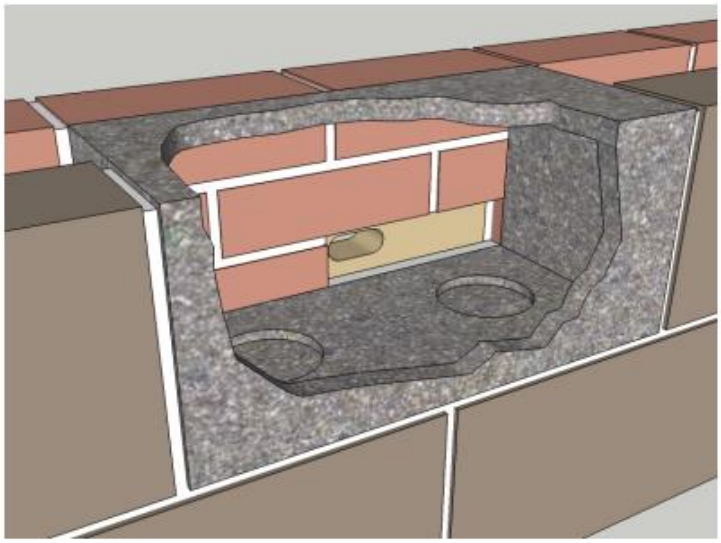
7.12 Design Consideration & Ecological Enhancements

7.12.1 Integrated Bricks

The proposals will include one Swift brick within each new cottage (3 No. in total). The 'CJ Wildlife Swift maxi nesting box' (**Fig 28**) with entrance via a CJ Wildlife 'Cambridge Swift full-face brick' will be used (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.

In addition, the care home itself will support an additional six Swift bricks on an elevation receiving partial sunlight.

Figure 28. 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.



The 3 No. new cottages will each include a bat brick with an additional 3 No. bat bricks erected within the care home building (6 No. in total). The bat bricks used should be the ibstock bat brick B, or similar, as they are available in a variety of different brick colours and requires no maintenance (**Fig 29**). These will also be positioned as close to the eaves as possible, away from windows and in a position that will receive some direct sunlight.

Figure 29. The Ibstock bat brick 'B' that will be incorporated into the new cottages and care home.

7.12.2 Bird & Bat Boxes on Trees

The erection of nest boxes in trees will provide further enhancements. Using nest boxes of varying designs would maximise the species complement attracted to the site, and where possible these could be tailored to provide opportunities for red listed/BAP species known from the local area. The following bird boxes will be erected on suitable trees situated along the northern boundary of the site (**Fig 30**):

- 2 No. Vivara Pro Seville 32mm Woodstone (Tree mounted)
- 2 No. Vivara Pro Seville Barcelona (Tree mounted)

Figure 30. Vivara Pro Seville 32mm bird box (left) and Vivara Pro Barcelona bird box (right) (NHBS, 2023).

In addition to the recommended bird boxes, bat boxes of the following design will also be erected onto suitable trees situated along the northern boundary of the site:

- 2 No Vivara pro harlech woodstone bat box

All are manufactured from long-lasting Woodcrete, which is a blend of wood, concrete and clay which will not rot, leak, crack or warp, and will last for at least 20 - 25 years, making it suitable for long-term mitigation projects. Woodcrete is breathable and maintains a stable temperature inside the box. They are painted black to absorb warmth. These boxes will be erected by or under the supervision of an ecologist to ensure they are erected in an appropriate location.

7.12.3 Native Species Planting

As described in the associated Biodiversity Net Gain report (Ecosupport, 2024), native species planting will be incorporated within the ecological buffer and the retained/ enhanced habitat within the western portion of the site to enhance these areas for wildlife, with undesirable species removed to promote the development of species rich mixed scrub habitat. Species that should be considered within the native planting include:

- Field Maple (*Acer campestre*)
- Hazel (*Corylus avellana*)
- Elder (*Sambucus nigra*)
- Hornbeam (*Carpinus betulus*)
- Holly (*Ilex aquifolium*)
- Hawthorn (*Crataegus monogyna*)
- Dogwood (*Cornus sanguineal*)
- Dog Rose (*Rosa canina*)
- Blackthorn (*Prunus spinosa*)

7.12.4 Log Piles

One vertical log pile will be created within one of the meadow areas on site. This deadwood feature will form suitable habitat for a range of species, with the structure providing favourable habitat for Stag Beetles, with local records of this species identifyied. The log pile will comprise of several logs stood upright and partially buried to approximately 50cm deep to encourage wood to rot in order to provide suitable conditions for Stage Beetle larva (**Fig 31**).

Figure 31. Example of suitable log pile/ pyramid design for Stag Beetles (PTES, 2024).

7.12.5 Hedgehog Homes

As well as the log piles, Hedgehog homes will also be incorporated into the wider landscaping of the development to enhance sheltering opportunities for local Hedgehogs (such as Igloo Hedgehog home or Hogitat Hedgehog house) (**Fig 32**). This will provide a rapidly declining species with a place to shelter/hibernate.

Figure 32. Igloo Hedgehog House (Amazon, 2020).

7.12.6 Hedgehog Highways

Provision will be made to promote site connectivity and extended foraging ranges and opportunities for European Hedgehog. Holes measuring 13cm x 13cm will be made at the base of boundary fences/gravel boards into and between each garden and the surrounding habitats. Small signage should be installed on the fence above either side of these accesspoints 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.

7.12.7 Invertebrates

To increase opportunities for invertebrates within the site, bee bricks will be included within the 3 No. new cottages and 3 will be included within the new care home (6 No. in total) (**Fig 33**). The brick can be used in place of a standard brick and provides cavities for solitary bee

species such as Red Mason bees (*Osmia bicornis*) or Leafcutter bees (*Megachile* sp.), both non-aggressive native species. The bricks should be placed in a sunny location at a minimum height of 1m. It is highly recommended the brick is placed in a location where landscaping will include nearby pollinator-friendly plants.

Figure 33. Bee Bricks (NHBS, 2024).

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Legend

- Site boundary
- Bracken (g1c)
- Modified Grassland (g4)
  - 32 Scattered Trees
  - 108 Frequently Mown
  - 510 Bare Ground
  - 518 Neglected
- Other Woodland; Mixed; Mainly Broadleaved (w1h5)
  - 33 Line of Trees
  - 50 Ditch
- Non-Native and Ornamental Hedgerow (h2b)
- Dense Scrub (h3)
  - Bramble Scrub (h3d)
  - Mixed Scrub (h3h)
- Built-Up Areas and Gardens (u1)
  - 847 Introduced Shrub
- Buildings (u1b5)
- Artificial Unvegetated Sealed Surface (u1c)

Approximate Location of Invasive Species Stands

- Bamboo
- Japanese Knotweed
- Rhododendron
- Cotoneaster

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Map	UK Habs Map
Site	Providence Hill, Bursledon
Client	Colten Care Ltd.
Date	25/07/2024

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