Ecological Impact Assessment

Land at Oak & Apple Tree Cottages, Boorley Green

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Executive Summary

Ecosupport Ltd was instructed by McCarthy and Stone to undertake survey work to inform an EcIA at the land at Oak and Apple Tree Cottages, Boorley Green. This was required in order to identify any potentially important ecological features that may be affected by the proposed development.

A Preliminary Ecological Appraisal (PEA) was previously carried out by First Ecology (2024), which has been incorporated into the results and recommendations of this report.

Following the PEA assessment, the following surveys have been or will be undertaken by Ecosupport:

- Bat activity surveys (May - October 2024) – including 3no. night-time walkover surveys covering each season and monthly static detector monitoring
- Bat emergence surveys on seven buildings
- HSI of nearby ponds (May 2024)
- Reptile survey (planned for September 2024)

In the absence of any mitigation measures, the proposed development is anticipated to result in ***certain adverse impacts.*** The following table outlines the important ecological features and mitigation / compensation measures to be implemented. In addition, ecological enhancements including bird and bat features have been recommended and shown on an enhancement plan.

Ecological Importance	Details	Mitigation
Bats	Site of county significance for foraging and commuting bats with high foraging activity by Common Pipistrelles & single pass by Barbastelle along northern boundary	Site design retains or compensates features of importance 5m dark corridor on northern boundary with light limited to 0.5 lux above 4m height (lowest level of bat passes)
Reptiles	A low population of Slow Worms (max count 2) and Grass Snake (max count 1) identified	A precautionary passive dispersal and destructive search with installation of 1 hibernaculum
Badgers	Confirmed presence of commuting and foraging Badgers (no evidence of setts)	Updating walkover survey prior to commencement of works Precautions to prevent entrapment during construction
Birds	Potential for breeding and nesting birds	Vegetation removal to avoid bird nesting season or have a pre-commencement nesting survey
Dormice	Hedgerows offer potential for dormice	Precautionary method statement for minimal removal of hedgerow

Priority habitat	Traditional orchards & native hedgerows present	Hedgerows to be protected during works Traditional orchards to be compensated with replacement orchard habitat
Designated sites	Site located in nutrient impact area and recreational buffer zone for the Solent designated sites	Nutrient neutrality calculation Financial contribution provided as per Solent Recreation Mitigation Strategy

1.0 INTRODUCTION

1.1 Brief

Ecosupport Ltd was commissioned by McCarthy and Stone Ltd to undertake survey work to inform an EcIA at the land at Oak and Apple Tree Cottages, Boorley Green (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 Preliminary Ecological Appraisal (PEA) was carried out by First Ecology (2024), which should be read in conjunction with this report. Following the PEA, Ecosupport Ltd was commissioned to carry out the recommended Phase II survey work to inform the EcIA.

In addition, previous ecological work was carried out in 2020-2022 by Ecosupport Ltd to inform a previous application by Foreman Homes, the results of which have been outlined in this report.

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.

1.2 Site Description & Location

The site comprises of land adjacent Oak Cottage, Winchester Road, Boorley Green, SO32 2UA (centred on grid reference SU 50469 14827) (**Fig 1**). The site is bound by Winchester Road and Oak and Apple Tree Cottages to the east, recently constructed residential development to the north and west and residential dwellings to the south. The wider environ is largely suburban, surrounded by residential development (including large newly-constructed or in-progress developments) and MacDonald Botley Park Hotel & Spa is opposite the site across Winchester Road to the east.

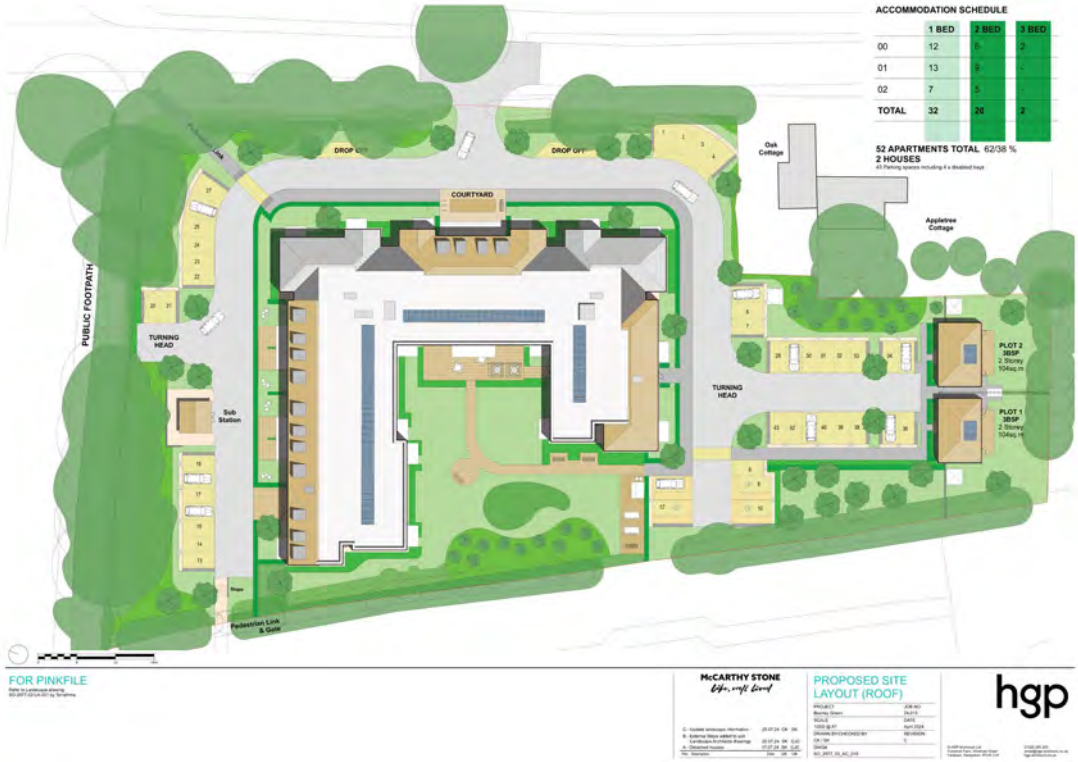
[1] https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf

Figure 1. Approximate redline boundary of the site (Google Earth, 2024)

1.3 Proposed Development

It is understood that the proposals are for a retirement facility comprising 52 retirement living apartments with communal facilities, landscaping and car parking and two dwellings (**Fig 2**).

Figure 2. Proposed site layout (McCarthy & Stone, 2024)



2.0 RELEVANT LEGISLATION AND POLICY

2.1 Legislation

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

2.1.2 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*).

2.1.3 The Countryside and Rights of Way Act (2000)
This Act strengthens the Wildlife & Countryside Act by the addition of "reckless" offences in certain circumstances, such as where there is the likelihood of protected species being present. The Act places a duty on Government Ministers and Departments to conserve biological diversity and provides police with stronger powers relating to wildlife crimes.

2.1.4 Natural Environment and Rural Communities Act (2006)

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

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

2.1.5 Protection of Badgers Act

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

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

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

2.1.6 The Environment Act (2021)

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

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

The legislation also includes updates to existing environmental legislation, such as the NERC Act 2006, to strengthen biodiversity enhancement rather than just conservation and

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

2.2 Policy

2.2.1 National

The National Planning Policy Framework (NPPF) (2023) 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 providing net gains for biodiversity.

The NPPF states that plans should distinguish between the hierarchy of international, national and locally designated sites and that the scale and extent of development within all these designated areas should be limited, while development within their setting should be sensitively located and designed to avoid or minimise adverse impacts on the designated areas.

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 SSSI;

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.

2.2.2 Local – Eastleigh Borough Council

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

'General Approach

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

a. protect, conserve and enhance all:

i. international, national and local nature conservation designations;

and

ii. networks of natural habitats and features, including the Local Ecological Network, Priority Biodiversity Areas and Priority Biodiversity Links, watercourses, wetland complexes, woodland trees, and trees and hedgerows important to biodiversity and local character; and facilitate their adaptation to climate change wherever possible;

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 clearlyoutweigh the adverse effects on priority habitats, priority and protectedspecies, 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.'

3.0 METHODOLOGY

3.1 Desk Study

3.1.1 GCN Risk Zones

A search was carried out for GCN Risk Zones under the District Licensing Scheme (Naturespace Partnership, 2023) to determine if the site falls within a risk area for GCN.

3.2 Bat Surveys

3.2.1 Bat emergence surveys

Seven buildings on site were classified as having potential to support roosting bats and bat emergence surveys were undertaken as per BCT best practice guidelines (Collins (ed), 2023). Buildings 1, 2, 3 and 8 were classified as moderate potential and Buildings 4, 5, and 7 were classified as low potential (First Ecology, 2024).

Two surveys were carried out. The first survey was carried out on 25th June 2024, led by Katalin Annet Balazs, with assistance from Louise Davies, Ashley James, Fizz McBay, Tomasz Ekiert, Michelle Tebbs, Karen Symons, Julia Scott, and Nikki Windlebank, all experienced bat surveyors with Ecosupport Ltd. The approximate locations of the surveyors are indicated in **Fig 3**. The second survey was carried out on 22nd July 2024, led by Shannon Davies, with assistance from Joanna King, Ben Wightman, Karen Symons and Joanna Pinfield, all experienced bat surveyors with Ecosupport Ltd. The locations of the surveyors are indicated in **Fig 3** by the blue circles. Due to being grouped in one location, Buildings 1-4 were surveyed together by one team.

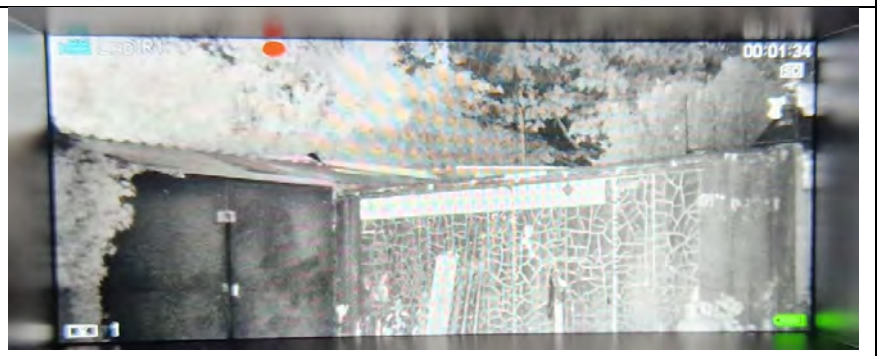
Both heterodyne (Bat Box Duet, Peterson D230 and Elekon Batscanner) and time expansion (Elekon Batlogger) detectors were used for identifying species calls / analysis of calls via sonogram (where required). In addition to this, Night Vision Aid's (NVAs) were set up with each surveyor. The NVAs used were the Nightfox Whisker which were checked periodically in 20 – 30 minute intervals to ensure appropriate Infrared (IR) levels were set for the conditions on site. The NVA footage was reviewed the next day for any emergences that were not observed during the survey. The images showing the NVA field of view at the end of the survey shown in **Table 1**.

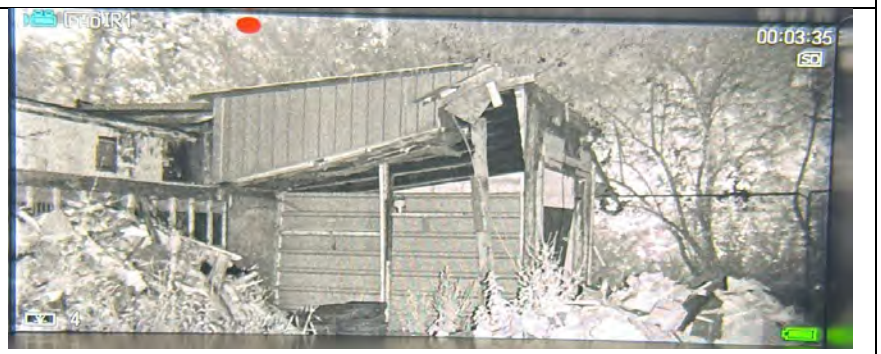
The dusk emergence surveys began approximately 15 minutes prior to sunset and continued until approximately 1 hour and 30 minutes after sunset. The survey was carried out in suitable weather conditions. Survey sheets were used to record the following information:

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

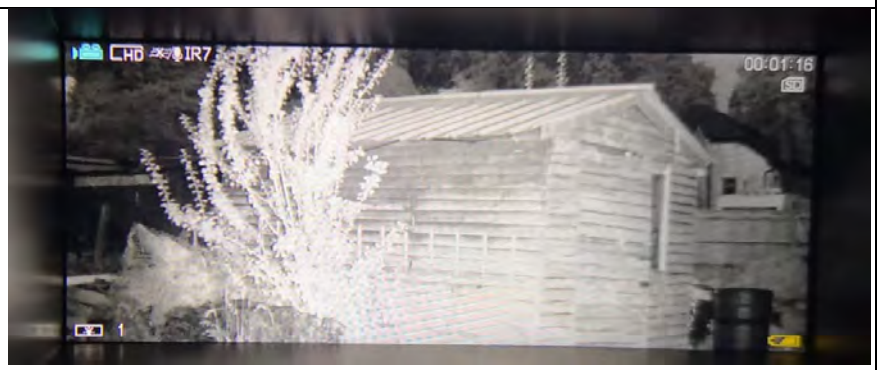
Figure 3. Approximate locations of the surveyors and NVAs (red circles = Survey 1 only, blue circles = Surveys 1 & 2) around the buildings surveyed (with an NVA located with each surveyor) (Google, 2024).

Table 1. Field of views of the NVAs during surveys, relating to the locations shown in **Fig 3.**

NVA	Field of view (start)	Field of view of NVA (end of survey) with final infrared setting
1		
2		

3		
4		

5		
6		

7		
8		

9		

3.2.2 Bat Activity Surveys

3.2.2.1 Night-time bat walkover surveys

Three night-time bat walkover surveys were carried out on the site covering all seasons. The surveys began at sunset at a location along the north vegetated boundary of site considered to be a likely flightline. The surveyors remained in position for a minimum of 30 minutes after sunset and until a time when bats were observed (until a maximum of 60 minutes after sunset), after which they began slowly walking the site along the predetermined route (seen in **Fig 4**).

Elekon Batlogger full spectrum detectors were utilised, which records calls for analysis via sonogram and GPS locations to plot the route of calls around the site. The surveys were led by Katalin Annet Balazs, Grace Roberts and Lily Pogson, with assistance from Joanna Pinfield, Jack Bonnett and Joanna King, all experienced surveyors of Ecosupport Ltd. The surveys recorded a time-stamped narrative of bat observations including:

- Number of bats
- Flight direction
- Flight height
- Type of flight
- Behaviour

All habitats on site were sampled. All echolocation calls were recorded and were subsequently analysed to confirm species. An activity map was produced based on the results on the surveys.

Figure 4. Start location (yellow circle) and pre-determined walkover route (dotted line). Route was walked in a clockwise direction

3.2.2.2 Static Monitoring

In addition to manual surveys, monthly static monitoring was carried out from May to October. One detector was placed each month at the locations shown in **Fig 5** below. These were placed at different locations across the site during the season to provide a wider scope of data. The detectors used were Song Meter Minibat. Data collected from the static detectors was sent to the British Trust for Ornithology's Acoustic Pipeline for initial analysis. The returned results were used to provide an indication of the number of recordings of common species (such as Common Pipistrelle, Soprano Pipistrelle and Brown Long-Eared). Where any rarer bat species were flagged, at least 50% of these recordings were manually checked by trained staff in bat acoustic analysis. Analysis of sonograms was completed using Kaleidoscope.

Figure 5. Locations of static detectors (A – May, August, October; B – June, September; C - July)

3.2.2.3 Evaluation of bat activity

The Bat Mitigation Guidelines (Collins (ed) 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:

- 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 2. Rarity category and associated score for calculating importance score (for 'Southern England').

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 Daubenton Natterers Noctule	2 2 2 2 2
Rarer or restricted in distribution	Alcathoe Serotine Leislers 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	**45**

Once the score for each has been calculated (**Table 2** 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.

3.3 Great Crested Newts

3.3.1 Habitat Suitability Indices

Three ponds within 500m of the site were subject to a HSI assessment. A Habitat Suitability Index (HSI) was carried out on the 23rd May 2024, following the guidance provided with ARG (2010). This considers the following factors when calculating the ponds suitability to support GCN:

- Location of Pond,
- Surface Area,
- Permanence,
- Water Quality,
- Shade,
- Presence of Waterfowl and Fish,
- Number of Ponds within 1km,
- Quality of Terrestrial Habitat,

- Macrophyte Cover.

These criteria are used to calculate a score according to ARC Guidelines (ARC 2010) using the Oldham (2000) calculation formulae. This gives a score between 0 and 1 of the suitability of the pond for GCN with:

0.40 – 0.50: Poor suitability for GCN
0.51 – 0.59: Below average suitability for GCN
0.60 – 0.69: Average suitability for GCN
0.70 – 0.79: Good suitability for GCN
0.80 – 1.00: Excellent suitability for GCN

3.4 Reptiles

During September 2024 a presence/likely absence survey was undertaken. The reptile surveys undertaken by Ecosupport were carried out in accordance with best practice guidelines as stated in various resources (Froglife 1999) (Gent & Gibson 1998) in September 2024. Artificial refugia comprising of bitumen roofing felt were distributed throughout the suitable reptile habitats on site (as per **Fig 6**). 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 is 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 6. Location of the artificial refugia.

3.5 Invasive species

A walkover survey was carried out on site to search for Japanese Knotweed (*Fallopia japonica*). This was carried out following pre-application advice as this species had previously been identified along the boundary of this site and the adjacent development. The walkover survey was carried out on 25th June 2024, with a second survey on 4th July, 2024, comprising a visual search of the site, particularly on the north and western boundaries.

3.6 Assessment Methodology

3.6.1 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).

3.6.2 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.

3.7 Limitations

3.7.1 Bat Surveys

One minor limitation of the bat surveys was that the static surveys began too late for a survey in April. However, the surveys will cover all other months and therefore, this is not considered a significant limitation.

For the emergence surveys, the eastern aspect of Buildings 1, 3 and 4 had limited views by the NVAs due to the buildings being located adjacent dense vegetation and along a main road. However, all other aspects of the buildings could be seen with the aid of NVAs and the surveyors had a wider field of view. Further, the vegetation on the east blocked many flight lines and as the bat activity was low during the surveys, each individual bat could be viewed with no bats appearing suddenly near the buildings. Therefore, it is considered this is only a minor limitation and very unlikely any roosting bats were missed during the surveys.

3.7.2 Invasive species

While a search on-site was carried out for Japanese Knotweed, it should be noted this is a non-exhaustive search. This was carried out by experienced ecologists, who have experience in identification of invasive species including Japanese Knotweed, but are not invasive species specialists. However, the survey was carried out in a suitable time of year when Japanese Knotweed is easy to identify and all areas of the site were accessible. Further, one of the experienced ecologists who carried out the search was aware of the previous location of Knotweed and able to more thoroughly check this section of site, with none identified. Therefore, it is considered unlikely plants would have been missed and this species is likely absent from the site.

4.0 ECOLOGICAL BASELINE

4.1 Desktop Survey

The following information is summarised from the PEA previously carried out by First Ecology (2024). Maps associated with the below information can be found in the PEA report.

4.1.1 Statutory

The desktop study carried out by First Ecology (2024) identified two statutory designated sites within 2km comprising Moorgreen Meadows SSSI (1.75km W) and Wildern LNR (1.9km SW). In addition, the site was identified as within a nutrient impact area, which affects the Solent designated sites.

A further search also identified the site is located within the 5.6km zone of impact for potential recreational impacts on the Solent SPAs.

4.1.2 Non-statutory

29 non-statutory designated sites are located within a 2km radius of the site but none were identified within or adjoining the site.

4.1.3 Habitats of importance

No habitats of principal importance were identified within or adjoining the site but the following were identified within 2km: Coastal and floodplain grazing marsh, Deciduous woodland, Lowland fens, Lowland meadows, Purple moor grass and rush pasture, and Traditional orchards.

In addition, no ancient woodland was identified within or adjoining the site, although five ancient woodlands were identified within a 2km radius.

4.2 Habitats

The following habitats were identified within the site, as described by First Ecology (2024), with updated photos taken by Ecosupport Ltd in June 2024. For full details and original photos of all habitats identified during the PEA survey, please see the PEA report (First Ecology, 2024). The habitat map produced by First Ecology can be found appended to this report.

The native hedgerows / native hedgerows with trees and the traditional orchards are considered to be priority habitats.

4.2.1 Modified grassland

Modified grassland is present across the site (**Fig 7**). Species comprised (A-abundant, O-occasional, R-rare):

- Quadrat 1: perennial rye grass (*Lolium perenne*) A, meadow buttercup (*Ranunculus acris*) O, creeping buttercup (*Ranunculus repens*) R, white clover (*Trifolium repens*) R, hairy bitter-cress (*Cardamine hirsuta*) R.
- Quadrat 2: perennial rye grass A, Yorkshire fog (*Holcus lanatus*) O, marsh thistle (*Cirsium palustre*) R, common sorrel (*Rumex acetosa*) R, common mouse-ear (*Cerastium fontanum*) R, white clover R, round-leaved crane's-bill (*Geranium rotundifolium*) R.

- Quadrat 3: perennial rye grass A, ribwort plantain (*Plantago lanceolata*) R, dandelion (*Taraxacum officinale*) R, white clover R, common sorrel R, creeping buttercup R.

The modified grassland had an average of 8 species/m^2 and was mown with a sward height of 50-300mm.

Figure 7. Photo of the modified grassland (Taken June 2024)

4.2.2 Traditional orchards

Traditional orchard is present in the centre of the site (**Fig 8**), with a variety of apple, cherry and pear fruit trees (*Rosaceae* spp.). The grassland below the trees was mown with a sward height of 50-300mm.

Figure 8. Photos of the traditional orchard (Taken in June 2024)

4.2.3 Native hedgerow

The western and southern boundaries of the site comprise native hedgerow (**Fig 9**). Dominant species include: Hazel (*Corylus avellana*), honeysuckle (*Lonicera periclymenum*), hawthorn (*Crataegus monogyna*), English oak (*Quercus robur*), holly (*Ilex aquifolium*) and bramble (*Rubus fruticosus*). The hedgerows were flailed.

Figure 9. Photo of the native hedgerow west boundary at the south of site (Taken June 2024)

4.2.4 Native hedgerow with trees

The hedgerows along the northern and eastern boundaries of the site encompassed trees (**Fig 10**). Dominant species of this habitat included: Hazel, English oak, common ivy (*Hedera helix*), holly, bramble, blackthorn (*Prunus spinosa*), honeysuckle. These boundaries were not managed.

Figure 10. Photo of the east boundary hedgerow with trees (Taken June 2024)

4.2.5 Artificial unvegetated, unsealed surface

This habitat comprises an access track and is present in the centre of site (**Fig 11**).

Figure 11. Photo of the access track (Taken June 2024)

4.2.6 Vacant or derelict land

This habitat comprises an area previously used as a vegetable garden that is now used for storing materials in the centre of site (**Fig 12**).

Figure 12. Photo of the vacant or derelict land (Taken June 2024)

4.2.7 Rural trees

Individual Hazel, English Oak and *Rosaceae* spp. Trees were present in the northwestern and central section of the site (**Fig 13**). The Hazel had been recently coppiced at the time of the PEA survey and the Oak trees and *Rosaceae* were young and unmanaged

Figure 13. Photo of the individual rural trees located in the northwestern section of site and the northern boundary hedgerow with trees (Taken June 2024)

4.2.8 Buildings

Eight buildings were identified on site, which are summarised in **Table 3** based on the PEA descriptions (First Ecology, 2024).

Table 3. Descriptions and photos of the buildings within the site

Building No.	**Description** (Summarised from First Ecology, 2024 descriptions)	**Photos** (Taken June 2024 by Ecosupport Ltd)
1 Workshop	A single-storey, single-room workshop with a mono-pitched roof (no roof void) with corrugated metal and translucent sheets. Wall construction of single skinned timber cladding, plasterboard and corrugated sheet walls.	**Figure 14.** Building 1
2 Shipping Container	A prefabricated metal shipping container with double skinned (insulated) walls and a flat roof. Internally the container was split into two rooms by a stud plywood wall.	**Figure 15.** Building 2
3 Garage	A two-storey garage of a single-skinned brick wall construction with a double pitched roof of interlocking cement tiles. A single	**Figure 16.** Building 3

	roof void was present used for stored belongings.	
4 Derelict Workshop	A single-storey derelict workshop with corrugated metal walls and timber frame and a mono-pitched roof (no roof void) covered in corrugated metal sheets.	**Figure 17.** Building 4
5 Shed	A single skinned overlap timber cladding shed with a double pitched roof covered in bitumen felt. The roof was lined with insulation board with an exposed timber truss system.	**Figure 18.** Building 5
6 Shipping Container	A prefabricated metal storage container with a flat roof.	**Figure 19.** Building 6
7 Storage Barn	A single-storey building with walls constructed of timber decking boards with patch repairs of plywood and a mono-pitched roof covered in corrugated metal sheets. The roof was unlined with an exposed timber frame and truss system	**Figure 20.** Building 7
8 Summerhouse	The summerhouse was constructed of a combination of	**Figure 21.** Building 8

	double-skinned tongue and groove decking board timber walls with a cavity wall insulation. One section had a double-pitched roof and the other had a flat roof, both covered in bitumen felt. There was one roof void present in the pitched roof section with an exposed timber rafter system and lined with OSB.	

4.3 Bats

4.3.1 Pre-existing Data

The desktop search conducted by First Ecology (2024) identified records of the following bat species:

- Barbastelle (*Barbastella barbastellus*)
- Bat species (*Chiroptera* spp)
- Brown Long-eared bat (*Plecotus auritus*)
- Common Pipistrelle (*Pipistrellus pipistrellus*)
- Daubenton's bat (*Myotis daubentonii*)
- Leisler's bat (*Nyctalus leisleri*)
- Long-eared species (*Plecotus* spp)
- Mouse-eared species (*Myotis* spp.)
- Nathusius' Pipistrelle (*Pipistrellus nathusii*)
- Natterer's bat (*Myotis nattereri*)
- Noctule (*Nyctalus noctula*)
- Pipistrelle species (*Pipistrellus* spp)
- Serotine (*Eptesicus serotinus*)
- Soprano Pipistrelle (*Pipistrellus pygmaeus*)
- Whiskered bat (*Myotis mystacinus*)

Previous survey work on site carried out by Ecosupport Ltd. in 2021 did not identify any roosting bats in the buildings, but confirmed presence of commuting and foraging Common Pipistrelle, Soprano Pipistrelle, Noctule and Serotine.

4.3.2 Assessment of roosting bats

The PEA identified roosting potential in seven of the eight buildings on site. A map showing the locations of the buildings with their bat roost potential is shown in **Figure 22. Table 4** describes the PRFs and potential classification, as reproduced from the PEA (First Ecology, 2024). Building 6 was considered to have negligible roost suitability.

All trees within the survey area were assessed by First Ecology (2024) as offering no roost suitability.

Figure 22. Buildings with bat potential (red outline – moderate potential, orange outline – low potential) (as assessed by First Ecology, 2024)

Table 4. Potential roost features identified within the buildings and roost suitability assessment (reproduced from First Ecology, 2024)

Building reference	Structure	Location (elevation)	Potential roost feature	Roost suitability
Building 1 - workshop	Roof	SW	Gaps under translucent roof panels	Moderate
		N/A	Gaps beneath corrugated metal roof panels and plasterboard	
	Fascia	NE	Gaps between fascia and corrugated metal wall	
	Internal	N/A	Perch features on internal fixtures, fittings and possessions	
Building 2 - shipping container	Wall	SW	Gaps between metal wall and insulation accessed via holes in external wall	Moderate
Building 3 - garage	Wall	SE, NW	Gaps beneath uPVC cladding on gable ends	Moderate
		NE, SW	Gaps beneath uPVC fascia	
	Roof	All	Gaps beneath cement tiles	
Building 4 - derelict workshop	Roof	SE, SW	Gaps in exposed timber truss from partial demolition	Low
		N/A	Perch features from the exposed timber frame	
Building 5 - shed	Roof	E, W	Gaps behind wooden barge boards	Low
	Internal	N/A	Perch feature from the exposed timber frame	
Building 7 - storage barn	Roof	N/A	Perch feature from exposed timber truss system	Low
	Wall	NE, SW	Gaps behind wooden fascia	
Building 8 - summerhouse	Wall	N, S	Gaps between wood panels	Moderate
	Roof	All	Gaps in bitumen felt roof	
		N/A	Perch features from the exposed timber truss system and OSB lining.	
	Internal	N/A	Perch features from the fixtures and fittings	

4.3.2 Emergence surveys

Emergence surveys were carried out on the buildings on site. Relevant survey conditions are provided in **Table 5** below. The tables below detail the results of the surveys on Buildings 1-4 (**Table 6**), Building 5 (**Table 7**), Building 7 (**Table 8**) and Building 8 (**Table 9**). No roosting bats were identified during the surveys in any of the buildings.

Table 5. Relevant information on survey conditions recorded.

Date	Temp (°C)	Cloud Cover (%)	Wind (Beaufort scale)	Sunset Time	Start Time	Finish Time	Additional Info
25/06/24	21	20	0	21:23	21:05	22:53	
22/07/24	18	100	1-2	21:05	20:50	22:35	

Table 6. Results from the emergence surveys on Buildings 1-4. HNS = Heard Not Seen.

Survey Date	Recorded Bat Roost(s)	Bat Activity on Site		
25th June 2024	No emergences	**Species**	**First Pass**	**Last Pass**
		Common Pipistrelle	21:59	22:36
		Myotis spp	22:17	22:17
		Summary: Activity during this survey was considered to be low with only rare commuting activity and no foraging activity around these buildings (compared to greater activity elsewhere on site). Species diversity was considered low with only two species recorded. The first registration was from a Common Pipistrelle (*Pipistrellus pipistrellus*) HNS at 21:59. Following this, further HNS registrations were recorded at 22:01, 22:10 and 22:20 with three further registrations of commuting activity towards the east of site. The only other species recorded was a *Myotis* bat, recorded as HNS once at 22:17. The NVAs were reviewed on the 26th June 2024, no emergences or additional bats were identified.		
22nd July 2024	No emergences	**Species**	**First Pass**	**Last Pass**
		Common Pipistrelle	21:25	22:33
		Soprano Pipistrelle	21:29	22:25
		Noctule	21:34	21:34
		Myotis spp.	22:19	22:19
		Summary: Activity during this survey was considered to be low to moderate with occasional foraging and commuting activity. Species diversity was considered moderate with four species recorded. The first registration was from a Common Pipistrelle HNS at 21:25. A further 13 registrations were recorded, with some consistent foraging noted to the north of the buildings at 21:27 and 21:56 for several minutes by an individual. The second species recorded was Soprano Pipistrelle (*Pipistrellus pygmaeus*), commuting south to north at 21:29. Two further		

		registrations by this species were recorded at 21:35 and 22:25 as HNS. The third species recorded was Noctule (*Nyctalus noctula*), commuting overhead very high up from southeast to northwest at 21:34. The fourth and final species was a *Myotis* species (considered likely to be Daubenton's bat, *Myotis daubentonii*) HNS to the southwest of the buildings at 22:19. The NVAs were reviewed the following day with no emergences or additional bats were identified.

Table 7. Results from the emergence survey on Building 5. HNS = Heard Not Seen.

Survey Date	Recorded Bat Roost(s)	Bat Activity on Site		
25th June 2024	No emergences	**Species**	**First Pass**	**Last Pass**
		Soprano Pipistrelle	21:57	21:57
		Common Pipistrelle	21:59	22:23
		Summary: Activity during this survey was considered to be low with occasional commuting and foraging activity. Species diversity was considered low with only two species recorded. The first registration was from a Soprano Pipistrelle (*Pipistrellus pygmaeus*) HNS at 21:57. No further registrations were recorded from this species. Common Pipistrelle was first recorded at 21:59, after which there was approximately 7 individual passes and from 22:05 until 22:20 there were four individual bats of this species foraging continuously in the field, with a further final registration at 22:23. The NVAs were reviewed on the 26th June 2024, no emergences or additional bats were identified.		

Table 8. Results from the emergence survey on Building 7. HNS = Heard Not Seen.

Survey Date	Recorded Bat Roost(s)	Bat Activity on Site		
25th June 2024	No emergences	**Species**	**First Pass**	**Last Pass**

		Common Pipistrelle	21:45	22:25
		Soprano Pipistrelle	21:57	21:57
		Myotis spp	22:19	22:19
		Summary: Activity during this survey was considered to be low to moderate with occasional commuting and foraging activity. Species diversity was considered low with three species recorded. The first registration was from a Common Pipistrelle HNS at 21:45. Following this, there were a further eight registrations, including foraging activity noted from 22:03 onward. The final registration was recorded as HNS at 22:25. Two other species were also noted once on site including a Soprano Pipistrelle, recorded commuting from northeast to west at 21:57, and a Myotis bat HNS at 21:19. The NVAs were reviewed on the 26th June 2024, no emergences or additional bats were identified.		

Table 9. Results from the emergence survey on Building 8. HNS = Heard Not Seen.

Survey Date	**Recorded Bat Roost(s)**	**Bat Activity on Site**		
		Species	**First Pass**	**Last Pass**
		Common Pipistrelle	21:49	22:35
		Soprano Pipistrelle	21:57	21:57
25th June 2024	No emergences	Summary: Activity during this survey was considered to be moderate with frequent foraging activity from individuals in the field near the building. Species diversity was considered low with only two species recorded. The first registration was from a Common Pipistrelle foraging continuously to the southeast of the building from 21:49 until 21:56. Two individuals returned to forage over the field from 21:58, with recordings every 15-45 seconds until the end of survey. The only other species recorded was a Soprano Pipistrelle, recorded commuting from northeast to southwest at 21:57. During this survey, it was also noted a Badger was seen commuting along the western vegetated boundary of the site.		

<table>
<tr><td></td><td></td><td colspan="3">The NVAs were reviewed on the 26th June 2024, no emergences or additional bats were identified.</td></tr>
<tr><td rowspan="5">22nd July 2024</td><td rowspan="5">No emergences</td><td>Species</td><td>First Pass</td><td>Last Pass</td></tr>
<tr><td>Common Pipistrelle</td><td>21:30</td><td>22:16</td></tr>
<tr><td>Noctule</td><td>21:34</td><td>21:34</td></tr>
<tr><td>Soprano Pipistrelle</td><td>21:39</td><td>21:44</td></tr>
<tr><td colspan="3"><u>Summary:</u>

Activity during this survey was considered to be low with occasional foraging and commuting activity. Species diversity was considered low with three species recorded.

The first registration was from a Common Pipistrelle HNS at 21:30. A further 6 registrations were recorded, all as HNS.

The second species recorded was Noctule, commuting overhead very high up from southeast to northwest at 21:34.

The third and final species was Soprano Pipistrelle, HNS only once at 21:44 to the northwest of the building.

The NVAs were reviewed the following day with no emergences or additional bats were identified.</td></tr>
</table>

4.3.3 Walked Transects

Table 10 below indicates the dates and other relevant information from the transect surveys with the results presented below in **Fig 23** and described further below**.**

Table 10. Relevant information recorded during the transect surveys.

Date	Temp (°C)	Cloud Cover (%)	Precipitation	Wind (Beaufort scale)	Start Time	Walkover Start	Finish Time
29/05/2024	18	60	0	1	21:10	21:40	23:21
23/07/2024	21	90	0	1	20:50	21:30	23:30
23/09/2024	15	100	Rain until 19:00	2	18:55	19:25	21:25

Overall, bat activity was moderate with the majority of activity along the northern and northwestern vegetated boundaries, which was used as a foraging corridor dominated by Common Pipistrelle. A total of seven species were recorded comprising Common and Soprano

Pipistrelle, Long-eared bat (*Plecotus* spp), Noctule, Leisler's bat (*Nyctalus leisleri*), Daubenton's bat (*Myotis daubentonii*) and Serotine (*Eptesicus serotinus*), with the non-widespread species generally only recorded once.

In addition to the northern boundaries used for foraging, several bats were noted along the line of fruit trees in the south of site as part of the traditional orchard habitat, with a Leisler's bat noted to commute across this area and some foraging by Common Pipistrelle was noted around Building 8 during the July survey.

Overall, the height of activity within the site was approximately four to eight metres above the ground.

Figure 23. Plan showing results of the night-time walkover bat activity surveys including areas of higher activity and points of specific species activity

4.3.4 Static Detectors

The results of the static detector monitoring carried out are provided in **Table 11** below.

Table 11. Analysis from static deployment from May and June (see **Fig 5** for approximate locations).

Location	Date	Species	Total passes	Average passes per night	Average passes per hour
A (North boundary)	23 - 27 May 2024 5 Nights 8hrs p/n	C.pip	5349	1069.80	133.73
		S.pip	17	3.40	0.43
		Noctule	3	0.60	0.08
		Brown Long-eared	6	1.20	0.15
		Daubenton	3	0.60	0.08
		Whiskered	4	0.80	0.10
B (West boundary)	14 - 17 June 2024 May 4 Nights 7.5 hrs p/n	C.pip	100	25.00	3.33
		S.pip	1	0.25	0.03
		Noctule	41	10.25	1.37
		Serotine	2	0.25	0.03
		Natterer's	1	1.00	0.13
		Daubenton's	4	1.00	0.13
C (South boundary)	18 - 22 July 2024 4 Nights 8 hrs p/n	C.pip	1619	323.80	40.48
		S.pip	8	1.60	0.20
		Noctule	6	1.20	0.15
		Serotine	2	0.40	0.05
		Plecotus spp.	4	0.80	0.10
		Daubenton's	6	1.20	0.15
D (North boundary)	9 - 13 August 2024 5 Nights 9.25 hrs p/n	C.pip	4384	876.80	94.79
		S.pip	43	8.60	0.93
		Noctule	12	2.40	0.26
		Serotine	11	2.20	0.24
		Plecotus spp.	15	3.00	0.32
		Natterer's	2	0.40	0.04
		Daubenton's	68	13.60	1.47
		Barbastelle	1	0.20	0.02
E (West boundary)	18 - 22 September 5 Nights 11.50 hrs p/n	C.pip	1365	273.00	23.74
		S.pip	13	2.60	0.23
		Noctule	2	0.40	0.03
		Plecotus spp.	67	13.40	1.17
		Natterer's	42	8.40	0.73
		Daubenton's	10	2.00	0.17
		Whiskered	1	0.20	0.02
		N. Pip	2	0.40	0.03
F1	12 - 16 October	C.pip	467	93.40	7.05
		S.pip	6	1.20	0.09

(North Boundary)	5 Nights 13.25 hrs p/n	Natterer's	2	0.40	0.03
		Whiskered	5	1.00	0.08
		Plecotus spp.	12	2.40	0.18

4.3.5 Evaluation

During the activity surveys and static detector deployments, calls were very dominated by Common Pipistrelle, with particularly high activity by this species along the northern boundary. The northern boundary appears to be a well-used foraging feature for this species. Additionally, occasional calls by Soprano Pipistrelle (*Pipistrellus pygmaeus*) and Noctule (*Nyctalus noctula*) were identified with rare passes by Brown Long-eared (*Plecotus auritus*), Daubenton's bat (*Myotis daubentonii*), Whiskered bat (*Myotis mystacinus*), Natterer's bat (*Myotis nattereri*), Serotine (*Eptesicus serotinus*), Barbastelle (*Barbastella barbastellus*) (**Fig 24**), Nathusius' Pipistrelle (*Pipistrellus nathusii*) (**Fig 25**) and Leisler's bat (*Nyctalus leisleri*).

Figure 24. Sonogram of Barbastelle call

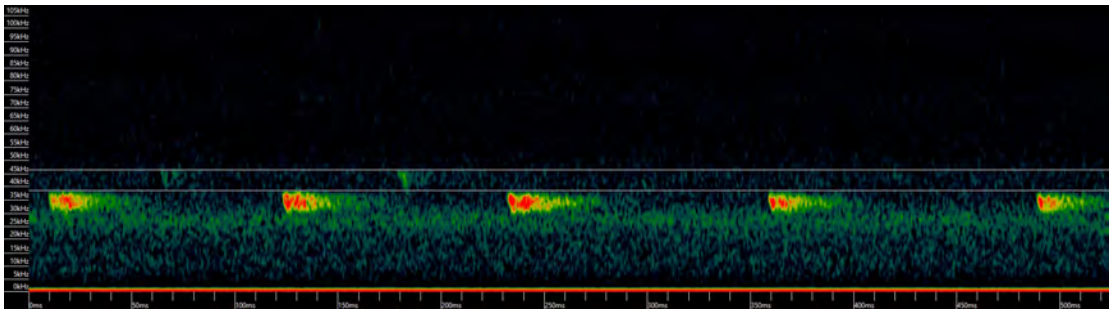
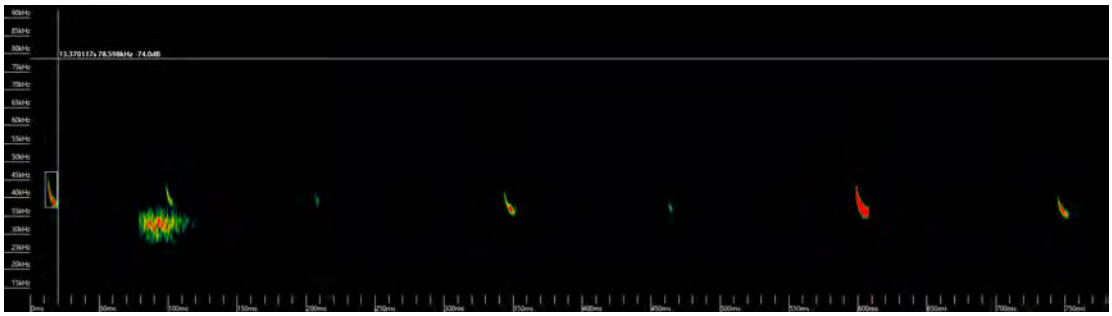


Figure 25. Sonogram of Nathusius' Pipistrelle call



Based on the standard method of assessing importance of bat assemblage using the Bat Mitigation Guidelines (2023), the results of the bat assemblage for this site can be seen in **Table 12.** Using this system, the site scores ***24 points*** for commuting and foraging bats and based on the thresholds provided in the guidelines (see **Section 3.2.2.3**), this site is correspondingly considered to be of ***county importance.***

That being said, while there were a number of species identified across the season, 96.9% of calls on statics belonged to a single species, Common Pipistrelle, with the remaining species having relatively low activity. While Barbastelle was also identified on site, only a single registration was identified and therefore the site is unlikely of importance to this species with no likely foraging activity (based on a single distant registration). However, the northern

boundary was found to have very high Common Pipistrelle activity with almost constant activity recorded including foraging and is thus considered to be a feature of importance for bats. This was also the location the single Barbastelle was noted.

Table 12. Rarity category and associated score for calculating importance score (for 'Southern England') (Bat Mitigation Guidelines, 2023).

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)	**24**

4.4 Badgers

4.4.1 Pre-existing Information

Records of Badger were identified within 2km of the site.

4.4.2 On-site assessment

The habitats within the site are considered suitable for foraging and commuting badgers. Further, during the first bat emergence survey in June 2024, a Badger was seen commuting along the western boundary of the site. In addition, during a site visit on 4th July, 2024, snuffle holes were identified on site along the western boundary. However, no evidence of Badger setts has been identified within the site or adjacent the site. Therefore, it is considered there is ***confirmed presence*** of commuting and foraging Badgers within the site with setts present.

4.5 Reptiles

4.5.1 Pre-existing Information

The desktop survey (First Ecology, 2024) identified records of Adder (*Viper berus*), Common Lizard (*Zootoca vivipara*), Grass Snake (*Natrix helvetica*) and Slow-worm (*Anguis fragilis*) within 2km of the site.

Further, in 2021 reptile surveys carried out by Ecosupport, a single Slow-worm was identified on site.

4.5.2 On site Habitat Assessment

The habitats within the site were considered suitable for reptiles. While the grassland is managed, it has longer sections and can provide dispersal routes, foraging and basking opportunities. The traditional orchard and hedgerows can provide opportunities for shelter as well. Therefore, the site was considered to have potential for reptiles.

4.5.3 Presence/Absence Surveys

As the habitats on site were identified as suitable for reptiles, a suite of presence/likely absence surveys were undertaken in September 2024. Dates and weather conditions can be seen in **Table 13** with the results in **Table 14** and **Fig 26.** A low population of Slow Worm and Grass Snake were recorded on site with a maximum count of 2 adult Slow Worms and 1 Grass Snake. During the survey all reptiles were identified in the same location along the northeastern boundary and in addition, during collection of the refugia in October a Grass Snake was also identified along the southwestern boundary.

No juveniles or subadults were on site, however a single male and female were each found so there is potential for breeding although it does not appear reproduction occurred on site this season. Within the area where the small number of reptiles were identified, there is a shipping container and the storage barn, with piles of materials within and around these buildings as well as a small number of individual logs. These may offer sheltering potential to reptiles.

Table 13. Dates and weather conditions of the reptile surveys.

Survey	Date	Temp (°C)	Cloud Cover (%)	Precipitation	Wind (Beaufort scale)	Start Time	Finish Time
1	01/09/2024	17	70	0	1	10:30	11:00
2	04/09/2024	17	70	0	0	10:30	11:00
3	10/09/2024	16	90	0	1	11:00	11:30
4	12/09/2024	14	0	0	0	11:30	12:00
5	16/09/2024	16	20	0	0	11:45	12:10
6	19/09/2024	16	20	0	1	11:00	11:30
7	24/09/2024	16	80	0	1	14:00	14:30

Table 14. Results of reptile surveys

Survey	Grass Snake	Slow Worm			
		Adult Male	Adult Female	Sub-adult	Juvenile
1	0	0	0	0	0

2	**1**	**1**	**1**	0	0
3	0	0	0	0	0
4	0	0	0	0	0
5	0	0	0	0	0
6	0	**1**	0	0	0
7	0	0	0	0	0
Collection 11th Oct 2024	**1**	0	0	0	0

Figure 26. Locations of reptile presence

Legend

- Grass Snake
- Slow Worm
- Refugia with negative presence

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Map	Reptile Results
Site	Land at Oak Tree Cottage, Botley
Client	McCarthy Stone
Date	25/10/2024

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4.6 Great Crested Newt

4.6.1 Pre-existing Information

Records of GCN were identified within 2km of the site. Upon a more detailed look, the closest record identified was nearly at the 2km buffer boundary with no closer records found. No granted EPSLs for GCN have been identified within 2km of the site boundary.

Further, previous surveys have been carried out on Pond 1 to the east of the site, which was previously within a golf course prior to residential development. Full GCN surveys carried out in 2012 identified likely absence (WYG Environment, 2012). While this is well out of date, since then, the pond has become surrounded by residential development including new roads on nearly all sides, which reduces the likelihood of being colonised.

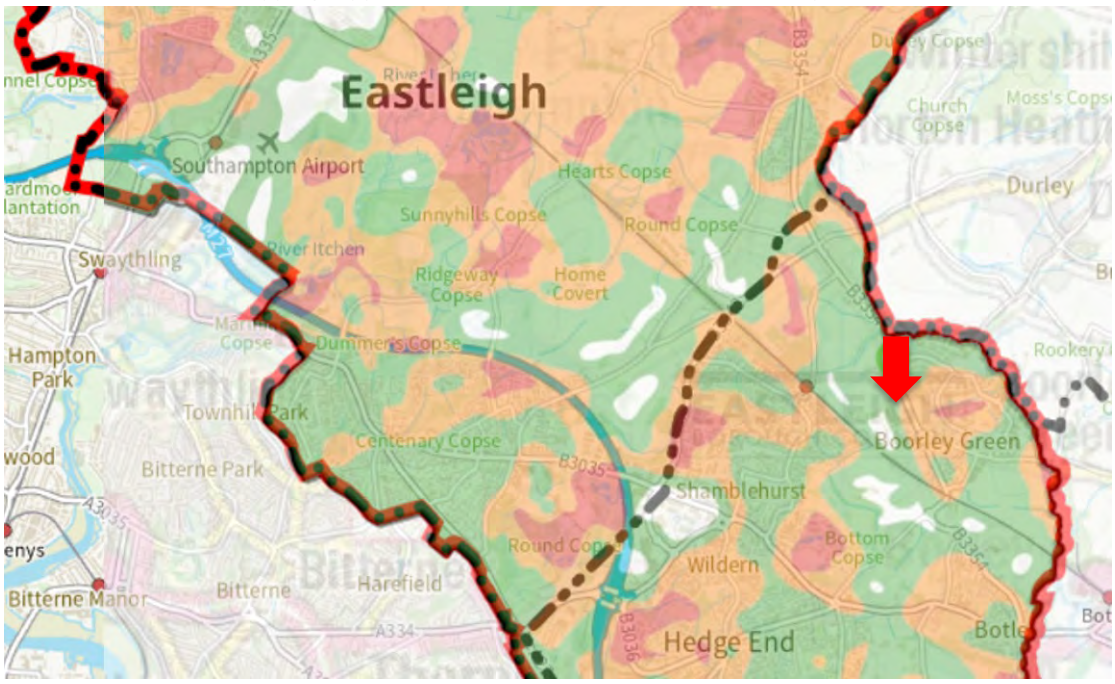
4.6.2 Desktop study

Three waterbodies were identified within 500m of the site:

- Waterbody 1 – located 310m to the east of the site
- Waterbody 2 – located 300m to the southwest of the site
- Waterbody 3 – located 420m to the west of the site

The site also falls largely within a green zone, although it is at the edge of an amber impact zone for GCN (**Fig 27**) under the District Licensing scheme and part of the site may fall within this (this cannot be confirmed in detail at this time as detailed risk zone mapping is not currently available for this area).

Figure 27. Eastleigh Borough Council Impact Risk Zones for GCN (NatureSpace Partnership, 2023) overlaid on detailed mapping. Approximate location of the site indicated by the red arrow



4.6.3 Habitat Suitability Index (HSI)

All three ponds were further inspected, with the locations shown in **Fig 28**. Ecosupport Ltd is currently monitoring Waterbodies 2 & 3 as part of ongoing works for another site and they

were only constructed within the previous two years. These ponds were created as part of the adjacent development. Waterbody 2 was found to be dried at the time of the inspection (and has regularly been found dry) and was therefore not subject to further assessment. Ponds 1 and 3 were subjected to HSI assessments. The results are provided below (**Table 15**) with images of the ponds (**Figure 29-31**).

Table 15. Results of the HSI carried out on four ponds within 500m of the site

Suitability Indices	Waterbody 1	Waterbody 3
Location	Zone A (1.0)	Zone A (1.0)
Pond Area	Omitted (Pond area >2000m^2)	Omitted (Pond area >2000m^2)
Pond Drying	Never Dries (0.9)	Sometimes dries (0.5)
Water Quality	Moderate (0.67)	Poor (0.33)
Shade	20% (1.0)	0% (1.0)
Waterfowl	Absent (1.0)	Minor (0.67)
Fish	Absent (1.0)	Minor (0.33)
Ponds within 1km	1 (0.65)	1 (0.65)
Terrestrial Habitat Quality	Moderate (0.67)	Poor (0.33)
Macrophytes	15% (0.45)	5% (0.35)
HSI Score	**0.69**	**0.64**
HSI Suitability	**Average**	**Average**

Figure 28. Plan of ponds within 500m of the site, showing which have been surveyed

Figure 29. View of Waterbody 1 (taken May 2024).

Figure 30. View of Waterbody 2, dried up at time of inspection (taken May 2024).

Figure 31. View of Waterbody 3 (taken May 2024).

4.6.4 Site assessment

While unmanaged areas of the grassland and the vegetated boundaries may provide some terrestrial opportunities for GCN (should they be present nearby), the site is not well-connected to the wider area, isolated on all sides by residential development or road.

4.6.5 Evaluation

Only two of the nearby ponds were found to be present, one of which is newly created and unlikely to have been colonised by surrounding populations of GCN so quickly, given the limited surrounding ponds and distance of the closest records. Further, the two ponds assessed resulted in only Average suitability for GCN, with no previous populations identified within the area. Pond 1 is also isolated from the site by two main roads (Winchester Road and Wallace Avenue) and the MacDonald Botley Park Hotel, which regularly maintains its grass. Taking all of the above into consideration, there is ***negligible potential*** for GCN to be present within the site.

4.7 Hazel Dormouse

4.7.1 Pre-existing Information

Records of Hazel Dormouse (*Muscardinus avellanarius*) were identified from within 2km of the site and further a EPSL for dormice was identified 0.4km to the east of the site (First Ecology, 2024).

4.7.2 Site Assessment

The hedgerow / hedgerow with tree boundaries are considered suitable habitat for dormice. They are well-established and have some connectivity within the wider landscape (although this has been significantly reduced with the construction of new access roads for the adjacent development). There is also a good diversity of species that would provide foraging opportunities for dormice. However, it is understood no dormice have been identified on adjacent developments during surveys. Overall, it is considered there is ***low potential*** for Dormice within the site.

4.8 Notable and Birds of Conservation Concern (BoCC)

4.8.1 Pre-existing Information

A number of bird species were identified in data records within 2km of the site (**Table 16**) (First Ecology, 2024).

Table 16. Records of notable bird species within 2km of the site, as reproduced from First Ecology, 2024

Barn owl	*Tyto alba*
Black-headed gull	*Chroicocephalus ridibundus*
Brambling	*Fringilla montifringilla*
Bullfinch	*Pyrrhula pyrrhula*
Crossbill	*Loxia curvirostra*
Cuckoo	*Cuculus canorus*
Fieldfare	*Turdus pilaris*
Firecrest	*Regulus ignicapilla*
Golden plover	*Pluvialis apricaria*
Great black-backed gull	*Larus marinus*
Green sandpiper	*Tringa ochropus*
Grey heron	*Ardea cinerea*
Grey wagtail	*Motacilla cinerea*
Hawfinch	*Coccothraustes coccothraustes*
Herring gull	*Larus argentatus*
Hobby	*Falco subbuteo*
House sparrow	*Passer domesticus*
Kingfisher	*Alcedo atthis*
Lapwing	*Vanellus vanellus*
Lesser black-backed gull	*Larus fuscus*
Lesser redpoll	*Acanthis cabaret*
Linnet	*Linaria cannabina*
Little egret	*Egretta garzetta*
Marsh harrier	*Circus aeruginosus*
Marsh tit	*Poecile palustris*
Mediterranean gull	*Ichthyaetus melanocephalus*
Merlin	*Falco columbarius*
Mistle thrush	*Turdus viscivorus*
Nightingale	*Luscinia megarhynchos*
Osprey	*Pandion haliaetus*
Peregrine	*Falco peregrinus*
Pied flycatcher	*Ficedula hypoleuca*
Red kite	*Milvus milvus*
Redstart	*Phoenicurus phoenicurus*
Redwing	*Turdus iliacus*
Reed bunting	*Emberiza schoeniclus*
Ring ouzel	*Turdus torquatus*
Siskin	*Spinus spinus*
Skylark	*Alauda arvensis*
Snipe	*Gallinago gallinago*
Song thrush	*Turdus philomelos*
Spotted flycatcher	*Muscicapa striata*
Starling	*Sturnus vulgaris*
Tree pipit	*Anthus trivialis*
Turtle dove	*Streptopelia turtur*
Water rail	*Rallus aquaticus*
Wheatear	*Oenanthe oenanthe*
Whimbrel	*Numenius phaeopus*
Whinchat	*Saxicola rubetra*
White stork	*Ciconia ciconia*
Willow tit	*Poecile montanus*
Woodcock	*Scolopax rusticola*
Yellow wagtail	*Motacilla flava*
Yellowhammer	*Emberiza citrinella*

4.8.2 Site Assessment

As noted in the PEA, Blackbird, Blue Tit, Great Tit, Robin and Wood Pigeon were observed on site during the walkover survey. The modified grassland, traditional orchard, native hedgerows and rural trees provide suitable foraging habitat and materials for nest creation while the buildings, refuse piles, traditional orchard, native hedgerows and rural trees provide suitable locations for nest creation and roosting. As such the site is considered to be of ***moderate potential*** for nesting and breeding birds.

4.9 Invertebrates

4.9.1 Pre-existing information

A number of invertebrate records were identified within 2km of the site (**Table 17**).

4.9.2 Site assessment

The habitats on site comprise relatively common plant species and did not have high diversity in any of the habitats. The fruit trees in the traditional orchards likely provide a good foraging opportunity for invertebrates as well (which in turn would provide good foraging opportunities for other species such as bats and birds). Overall, while all habitats within the site are likely to provide opportunities for common invertebrate species, they are not highly likely to support rare species populations.

Table 17. Records of notable invertebrate species within 2km of the site, as reproduced from First Ecology, 2024

Invertebrates	
August thorn	*Ennomos quercinaria*
Beaded chestnut	*Agrochola lychnidis*
Blood-vein	*Timandra comae*
Brindled beauty	*Lycia hirtaria*
Buff Ermine	*Spilosoma lutea*
Centre-barred sallow	*Atethmia centrago*
Cinnabar	*Tyria jacobaeae*
Currant-shoot borer	*Lampronia capitella*
Dark-barred twin-spot carpet	*Xanthorhoe ferrugata*
Deep-brown dart	*Aporophyla lutulenta*
Dot moth	*Melanchra persicariae*
Dusky brocade	*Apamea remissa*
Dusky thorn	*Ennomos fuscantaria*
Ear moth	*Amphipoea oculea*
Feathered gothic	*Tholera decimalis*
Figure of eight	*Diloba caeruleocephala*
Galium carpet	*Epirrhoe galiata*
Garden tiger	*Arctia caja*
Ghost moth	*Hepialus humuli*
Goat moth	*Cossus cossus*
Green-brindled crescent	*Allophyes oxyacanthae*
Grey dagger	*Acronicta psi*
Heath rustic	*Xestia agathina*
Jersey tiger moth	*Euplagia quadripunctaria*
Knot grass	*Acronicta rumicis*
Large nutmeg	*Apamea anceps*
Large wainscot	*Rhizedra lutosa*
Minor shoulder-knot	*Brachylomia viminalis*
Mottled rustic	*Caradrina morpheus*
Mouse moth	*Amphipyra tragopoginis*
Mullein wave	*Scopula marginepunctata*
Oak hook-tip	*Watsonalla binaria*
Powdered quaker	*Orthosia gracilis*
Pretty chalk carpet	*Melanthia procellata*
Rosy Minor	*Litoligia literosa*
Rosy rustic	*Hydraecia micacea*
Sallow	*Cirrhia icteritia*
September thorn	*Ennomos erosaria*
Shaded broad-bar	*Scotopteryx chenopodiata*
Shoulder-striped wainscot	*Leucania comma*
Small emerald	*Hemistola chrysoprasaria*
Small heath	*Coenonympha pamphilus*
Small phoenix	*Ecliptopera silaceata*
Small square-spot	*Diarsia rubi*
Stag beetle	*Lucanus cervus*
The lackey	*Malacosoma neustria*
The rustic	*Hoplodrina blanda*
The spinach	*Eulithis mellinata*
The sprawler	*Asteroscopus sphinx*
The streak	*Chesias legatella*
White admiral	*Limenitis camilla*
White ermine	*Spilosoma lubricipeda*
White letter hairstreak	*Satyrium w-album*

5.0 LIKELY ECOLOGICAL IMPACTS IN ABSENCE OF MITIGATION

5.1 Introduction

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

5.2 Site Preparation and Construction

5.2.1 Impacts to Habitats

Part of the traditional orchard habitat will be removed for the development. As a priority habitat, this will have a ***significant adverse impact*** at the ***local level***.

The remainder of the habitats to be impacted by the development comprising modified grassland, developed land; sealed surface, artificial unvegetated unsealed surface, vacant or derelict land are considered to be of value only at the ***site level.***

In addition, the hedgerows and hedgerows with trees are considered to be of value at the ***local level.*** These are expected to be largely retained but could be damaged by works on site. In particular, the trees could be damaged by machinery and especially by root zone compaction. Therefore, in the absence of mitigation, a ***minor adverse impact*** is possible to habitats of ***local value***.

5.2.2 Impacts to Wildlife

5.2.2.1 Bats

The site has been identified as having county importance for commuting and foraging bats, with notable foraging activity along the northern boundary, although this boundary vegetation will be retained. The works will result in a loss of some foraging resources (grassland / orchard), which would likely have a ***minor adverse impact*** at the ***County*** level of significance.

5.2.2.2 Reptiles

Low populations of Slow Worms and Grass Snake have been identified on site and therefore construction works could result in the disturbance, injury or death of reptiles and there is a ***certain significant adverse impact*** at the ***local level*** in the absence of mitigation.

5.2.2.3 Breeding & Nesting Birds

Whilst the hedgerows situated around the site boundaries will largely be retained, the trees within the traditional orchard and rural trees will require removal, and this has the potential to directly impact nests and/or create disturbance. Further, the open buildings are considered to have potential for nesting birds. Therefore, it is considered the development could result in a ***significant adverse impact*** at the ***site to local*** level of significance.

5.2.2.4 Badgers

The proposed works may require the creation of some excavations. This may lead to Badgers and other mammals becoming trapped or injured during the works. Therefore, in the absence of mitigation an ***adverse impact is possible*** at the ***local level.***

5.3 Site Operation

5.3.1 Impacts to Wildlife

The development will result in an increase in lighting within the general area external lighting. This can affect the behaviour, particularly foraging, of nocturnal wildlife such as Badgers and bats. Therefore, an ***adverse impact is likely*** on nocturnal species at the ***county level***.

5.3.2 Impacts to Designated Sites

The site is located within a nutrient impact area for the Solent. As such the net increase in overnight accommodation will result in a ***certain adverse impact*** on sites of ***International importance***.

Further, the site is located within the 5.6km recreational buffer zone of Solent SPAs. While the impact from retirement living is likely minimal due to reduced mobility, the two dwellings within the development will result in a ***certain adverse impact*** on sites of ***International importance.***

6.0 MITIGATION, COMPENSATION & ENHANCEMENTS

6.1 Introduction

The below sections proposed mitigation and compensation as appropriate and proportionate. In addition to this, measures are outlined to protect the existing features of value and provide enhancements post development.

6.2 Habitats

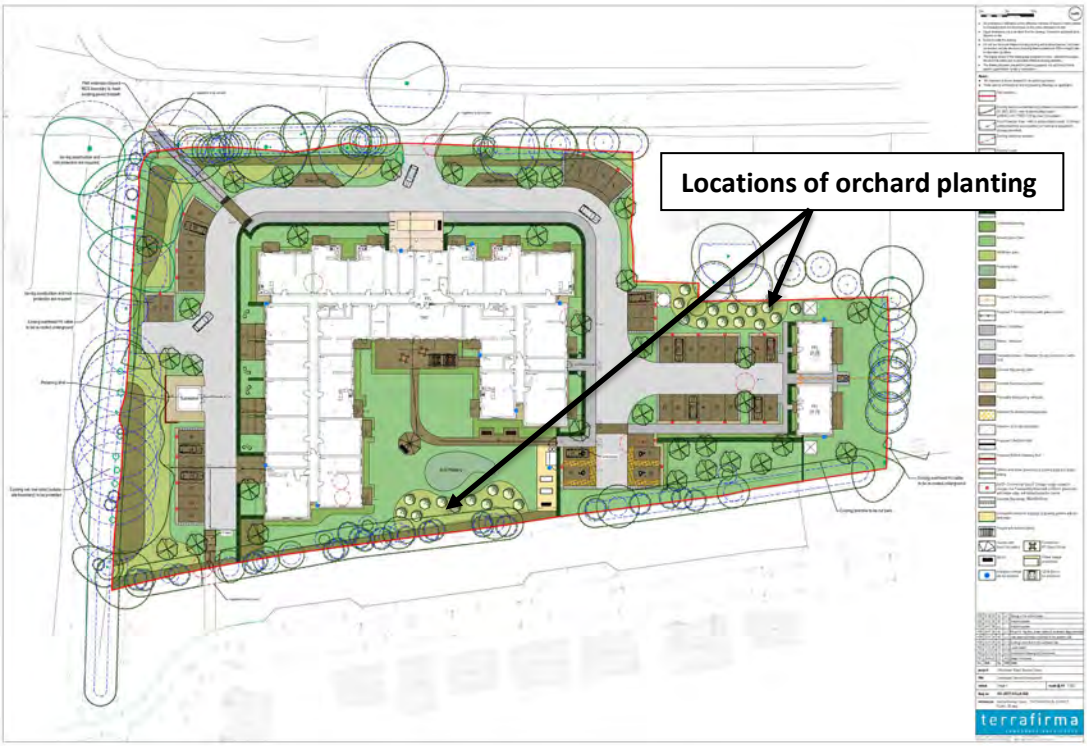
6.2.1 Protection of Hedgerows and Trees

Prior to construction works commencing the retained hedgerow and trees 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 the large mature tree is present, this 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. The proposed location of protective fencing can be found in the Tree Constraints Plan produced by Keen Consultants (2024). The protective fencing will be extended to include the reptile receptor, as described in **Sec 6.4** below.

6.2.2 Traditional orchard

Traditional orchard habitat will be removed as part of the proposed development. However, this will be compensated with supplemental planting. Details on this will be included within the BNG Assessment report by First Ecology, however the location of the compensatory planting can be identified in the landscape plan at the southeast of site and along the western boundary (**Fig 32**).

Figure 32. Location of the compensation traditional orchard planting



6.3 Bats

6.3.1 Site Design

The site has been designed to retain all buffers around the site, including the northern boundary where the highest bat activity was identified. In addition, compensation planting for the traditional orchard species is being implemented in the southeast of site and the west boundary, with further landscape planting provided. Therefore, it is expected the most important features of the site will be mitigated or compensated. Further enhancements are also being made such as wildflower grassland along several boundaries which will support invertebrates that can provide further foraging opportunities.

6.3.2 Sensitive Lighting

In order to avoid any disturbance to bats (and other potential nocturnal wildlife) construction works will be limited to daylight hours and should not be undertaken 30 minutes prior to dusk through to dawn (particularly in the active bat season).

A lighting strategy and assessment has been produced by Stantec with consideration for light-sensitive species including bats. Sensitive lighting during both construction (Section 7.2 of Stantec, 2024) and operation (Section 7.3 of Stantec, 2024) have been recommended, which will be incorporated into the lighting plan. It is expected that sensitive lighting will be used, particularly along the northern boundary, which is considered the most sensitive of the site for bats. A dark corridor of at least 5m from the northern treeline should be implemented into the lighting plan with a maximum of 0.5 lux at 4m height above the ground (the lowest level bats were noted at this location during the activity surveys).

It is also recommended that lighting is sensitive along the western boundary which has been identified as being used by both bats and Badgers (two light-sensitive species). A document (*Guidance Note 08/23 Bats and Artificial Lighting in the UK*) produced via a collaboration between the Institute of Lighting Professionals (ILP) and the Bat Conservation Trust (BCT), outlines the latest recommendations to minimise the impacts of increased artificial lighting on bats, which should be incorporated into the lighting plan in sensitive locations.

6.4 Reptiles

6.4.1 Precautionary Working Method Statement

As a maximum of 2 Slow Worms and 1 Grass Snake were identified and overall the site has limited suitability for reptiles, a precautionary working method statement is the most appropriate method of mitigation, with measures to be carried out as below. These works will be carried out in the active reptile season (April to September) in suitable weather with temperatures of at least 10°C.

6.4.1.1 Enhancement of Receptor

Retained habitat will be established and protected as a reptile receptor and this will be enhanced with construction of a reptile hibernaculum. The hibernaculum will be constructed based on the HART (2009) design (**Fig 33**). The designated reptile receptor is shown in **Figure 34** and in addition most of the buffers around the boundary will be retained and enhanced with wildflower planting, including around the areas reptiles were identified and therefore further offer opportunities to any reptiles present. These will be protected with tree protective fencing as they are within the root protection areas of the retained trees and thus are additional area to the receptor. The reptile receptor is considered a suitable size for a small population, is connected to the adjacent site and will be retained post-development as green space. The grassland within the receptor will be allowed to grow longer prior to the commencement of works to offer better suitability for reptiles.

6.4.1.2 Passive Dispersal

Habitat manipulation will be used to 'disperse' any reptiles in the area of impact into the retained receptors or buffers. A staged cut will be undertaken to reduce suitability. Initially, all grass within the works area will be cut no lower than 10cm, followed by a second cut the following day to ground level. All cutting will be directional, starting from the furthest point from the receptor / retained buffers and working towards these sections. Following the completion of these works, all habitat in the works area will be retained at ground level for the duration of the works, being cut regularly as necessary.

Figure 33. Reptile hibernaculum design as provided in HART (2009).

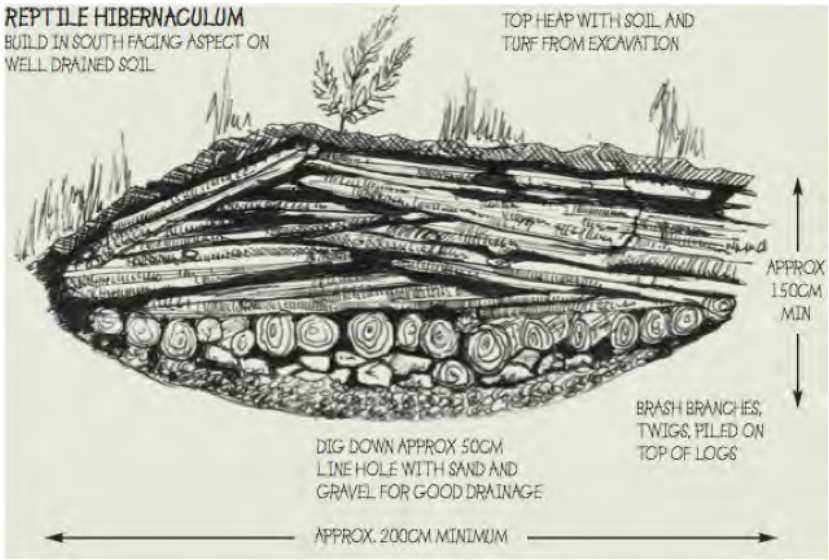


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Figure 34. Proposed reptile receptor area (yellow polygon) and location of a hibernaculum (blue circle)

6.4.1.3 Sensitive removal of refugia / piles

In addition to the passive dispersal, there were piles of rubbish and materials within the site, including surrounding the area the few reptiles were identified. These may offer potential sheltering opportunities. All rubbish / material piles will be dismantled by hand and immediately placed into skips or removed from site. This will be carried out under supervision by an ecologist and any reptiles identified will be moved into the receptor.

6.4.1.4 Destructive search

If deemed necessary by the supervising ecologist, a destructive search will be carried out following the completion of the above works at the area where reptiles were identified within the site. This would involve an excavator with a toothed bucket to gently remove the vegetated layer. This will be supervised by an ecologist and any reptiles found will be captured and moved into the receptor.

6.5 Hazel Dormice

6.5.1 Site design

The hedgerows are planned to be largely retained with suitable buffers from buildings and sensitive lighting at these areas and therefore further surveys for Dormice are not recommended. Limited removal may be required for visibility along the entrance and the council has requested footpath access to the adjacent development through the western boundary in pre-application advice.

6.5.2 Precautionary Method Statement

Based on the low potential for dormice, a precautionary method statement will be followed for the minimal vegetation removal.

Prior to clearance commencing, 2no. Dormouse nest boxes will be installed in the retained hedgerow on the western or northern boundary, to increase the carrying capacity of the retained habitats for Dormice. These will also act as receptors for any Dormice found during the sensitive clearance works (outlined below).

All habitat clearance will adopt the following methodology:

- Fingertip search of all vegetation to be cleared, by the licenced ecologist, immediately prior to clearance commencing (on the same day and every day clearance occurs). ***If any Dormice are found, works will cease and Natural England consulted.***
- The licenced ecologist will deliver a toolbox talk to the vegetation clearance contractors, detailing the sensitive measures required. The ecologist will then supervise all vegetation clearance. No clearance will be undertaken without the supervision of the ecologist.
- Hand tools will be utilised to sensitively cut vegetation down to ground level in **a single stage**. This will be undertaken in a directional fashion to passively encourage Dormice to move away from the works area towards retained, suitable habitats (i.e western boundary hedgerow) All arisings will be moved away from the cleared areas immediately to an area of within the central part of the site, and will then be chipped and immediately removed from site.
- In the unlikely event of any Dormice being discovered (within areas where they cannot be left in situ), they will be moved (along with their nest) into one of the nest boxes.

6.6 Badgers

6.6.1 Updating site walkover

Badgers are a transient species. Given their presence within the site, it is recommended that an updating walkover survey for Badgers is carried out within 30 days prior to the commencement of construction works on site. This is to ensure that no setts have been established on site prior to works being undertaken. If potential mammal holes are identified, further survey work may be required.

6.6.2 Precautionary measures to prevent entrapment

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

6.7 Breeding and Nesting Birds

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

6.8 Impacts to the Solent Designated Sites

6.8.1 Nutrient impacts

A nutrient neutrality calculation is being undertaken to be submitted with the application. Mitigation will be provided if necessary (such as through the purchase of credits) to ensure there will be no net increase in nitrogen on the designated sites.

6.8.2 Recreational impacts

The site lies within the vicinity of the Solent and Southampton Water SPA. In order to mitigate for the likely increases in residential pressure upon this SPA, due to the high densities of wildfowl and waders for which the area is predominantly protected, the Solent Recreation Mitigation Strategy (SRMS) has been introduced in collaboration with Natural England, comprising a partnership of all local councils. Mitigation towards the SPA must be provided for all new recreational developments within the 5.6km disturbance zone of the SPA.

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

In April 2024, the standard rates were updated to the following:

- 1 bedroom property £465
- 2 bedroom property £671
- 3 bedroom property £875
- 4 bedroom property £1029
- 5 bedroom property or more £1207
- Flat Rate £740

The two dwellings on site will pay contributions based on the rates above. For the retirement living, the mitigation strategy advises this will be considered on a case-by-case basis (as if there is limited mobility, no pets, etc. impacts may be less) and thus the council will determine if any additional rates are required.

6.9 Enhancements

6.9.1 Introduction & Biodiversity Net Gain

A separate Biodiversity Net Gain (BNG) assessment is being carried out by First Ecology. This assessment and associated habitat management and monitoring plan will ensure a net gain for habitats within the site is secured long-term. Therefore, habitat enhancements have not been included within the scope of this report and can be found in the BNG report.

However, species features to be implemented within the scheme have been included below to provide further enhancements. A plan is appended (**Appendix II**) with recommended locations for the features to be installed. The features will largely be installed on the western and northern portions of the site, which was highest used by species and will retain natural area around these sections in the site layout.

6.9.2 Bat Bricks / Boxes

8no. bat bricks will be integrated into the new buildings to enhance the site for roosting bats. They will have the Ibstock bat bricks (**Fig 35**), or similar integrated within the external brick work. These features are entirely self-contained and available in a variety of different colours to match different construction materials. They should ideally be placed on an elevation which will benefit from some degree of sunlight exposure and be located away from windows.

Figure 35. Ibstock bat brick 'B' which will be integrated into the gable walls of half of the new dwellings on site.

In addition, 6no. bat boxes (**Fig 36**) will be erected on suitably retained trees on site along the northern boundary. These will comprise the following:

- 4 No wooden Kent-style bat box
- 2 No Vivara Pro Large Multi Chamber WoodStone bat box

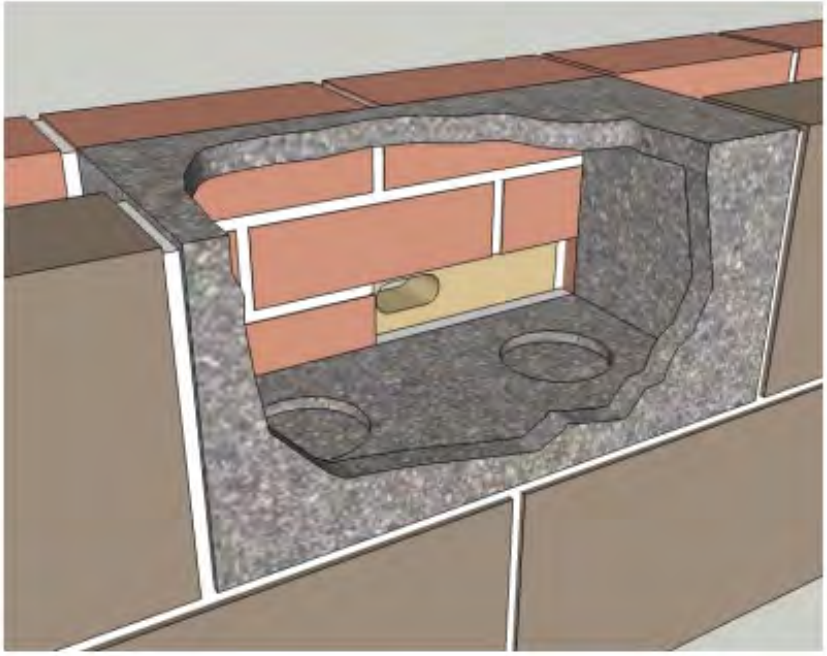
If these models are not considered suitable or unavailable, alternatives will be recommended by an experienced ecologist.

Figure 36. Recommended bat boxes – Kent style bat box (left) and Vivara Pro large multi chamber woodstone bat box (right)

6.9.3 Swift Bricks

To act as biodiversity enhancement, 10no. Swift bricks will also be incorporated into the retirement building. The 'CJ Wildlife Swift maxi nesting box' (**Fig 37**) with entrance via a CJ Wildlife 'Cambridge Swift full-face brick' is recommended (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.

Figure 37. A schematic of how the Cambridge full face Swift brick leads into a cavity created by the prior installation of the Swift maxi nesting box.

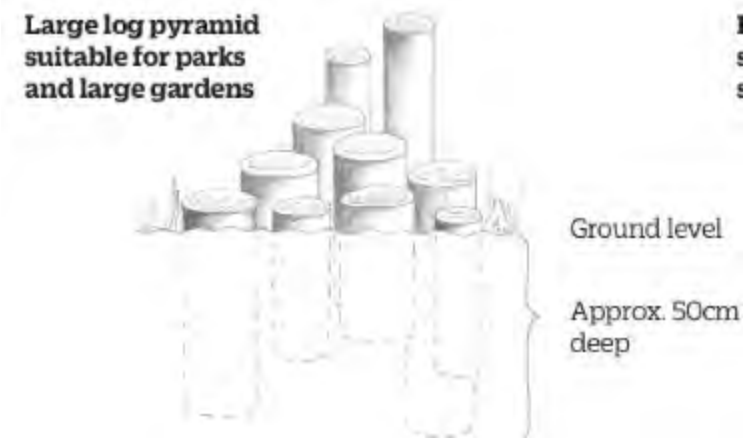


6.9.4 Log piles & hibernaculum

As noted in Section 6.4 above a reptile hibernaculum will be constructed. In addition, two no. log piles will be incorporated into the boundary of the site to enhance the site for invertebrates (such as stag beetles), reptiles, amphibians and mammals. These should be located in an area along the hedgerow boundary. These features will be created from logs from removal of trees on site. If none available, these may be locally sourced. These can be constructed in a horizontal wood pile style (**Fig 38**) or as a log pyramid (**Fig 39**).

Figure 38. Example of a horizontal log pile for biodiversity

Figure 39. Log pyramid design (PTES, 2020)



6.9.5 Dormouse boxes

As noted in Section 6.5 above, two dormouse boxes will be incorporated into the boundary of the site, which will provide long-term enhancement.

6.9.6 Trapped gully escapes

All trapped gullies within the site will be provided with small animal ramps to allow amphibians and other small animals to escape if they fall in. For example, amphibian gully pot ladders are available from the British Herpetological Society (**Fig 40**).

Figure 40. Gully pot amphibian ladder (BHS, 2024)

7.0 REFERENCES

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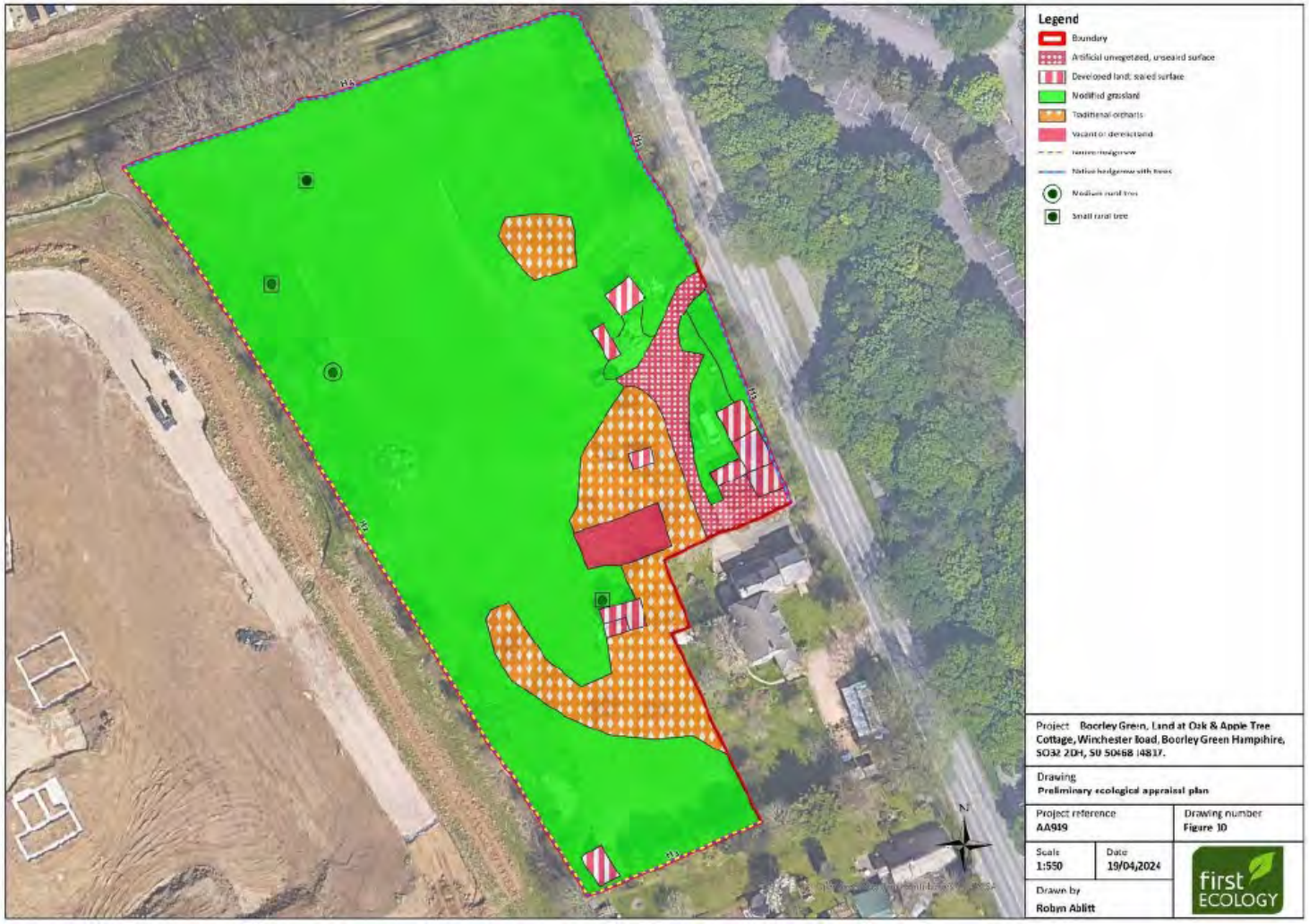
APPENDIX I – PEA Plan (Produced by First Ecology, 2024)



APPENDIX II – Habitat enhancement plan

Key

- Integrated bat bricks (8no.)
- Bat boxes on trees (4no. Kent-style and 2no. large multi -chamber box
- Integrated swift bricks (shown as groups of 2, totalling 10no.)
- Log piles (2no.) & hibernaculum (1no.)
- Dormouse boxes (2no.)