



ecosupport



Preliminary Ecological
Appraisal

Merstone Valley Nursery

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Report	Preliminary Ecological Appraisal & Phase II Reptile Survey
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Executive Summary

Ecosupport Ltd were commissioned to undertake a Preliminary Ecological Appraisal (PEA) of Merstone Valley Nursery in order to identify any potentially important ecological features that may be affected by the proposed development. As part of this PEA, the following surveys have been undertaken:

- Desktop survey utilising online resources (August 2023)
- Phase I Habitat Survey (August 2023)

Following the initial assessments Phase II reptile surveys were carried out, the results of which are included in this report. The site also has low potential to support dormice and commuting/foraging [REDACTED] and potential for nesting birds.

Suitable mitigation measures to ensure the protection of species have been included within **Section 6.0** and general recommendations for ecological enhancement are detailed within the report. With implementation of these, it is considered the proposed development will protect species and habitats and enhancements are recommended to achieve a net gain for biodiversity.

1.0 INTRODUCTION

1.1 Brief

Ecosupport Ltd was instructed to conduct a Preliminary Ecological Appraisal (PEA) at Merstone Valley Nursery (hereafter referred to as 'the site') in August 2023. This was to identify any features of ecological value and potential impacts associated with the proposed development.

Following the PEA survey, Phase II reptile surveys were carried out based on habitat suitability, the results of which are included within this report.

1.2 Aim

A PEA is the first step in assessing the potential ecological effects (or lack of) of a proposed development and determines whether or not (and which) Phase II Protected Species Surveys are required. The objectives of this survey were as follows:

- Identify current land use and distribution of broad habitat types including plant communities of ecological importance,
- Identify and classify any priority habitats,
- Assess the ecological value of the site,
- Identify any signs of protected species and potential features that may support them,
- Identify all relevant legislation and policy,
- Make recommendations for further survey work as appropriate,
- Make recommendations for appropriate enhancements.

NB If the development does not take place within 18 months¹ of this report then the findings will need to be updated.

1.3 Site Description & Location

The site is located at Merstone Valley Nursery, Merstone Ln, Merstone, PO30 3DE (Grid Reference SZ 52847 85073) (**Fig 1**). The site is bound by residential dwellings to the west, a single residential dwelling to the east, and by agricultural land to the north and south. The wider area is of a rural nature dominated by agricultural land and located within the small village of Merstone.

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

Figure 1. Location of the site (GoogleMaps, 2023).



1.4 Proposed Development

It is understood the proposals will entail the demolition of the greenhouses to make way for the development of residential dwellings. As recommended by the arborist report (M Jones Arborist Consultancy, 2023), the northern *Leylandii* tree line is expected to be removed as it is considered the trees do not hold merit for the development and pose a health and safety risk due to overgrowth and collapse.

There are also two plots to the west (which are part of the wider greenhouse property), which are being developed as residential dwellings under a separate planning application.

2.0 RELEVANT LEGISLATION AND POLICY

2.1 Legislation

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

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

The Conservation of Habitats and Species Regulations 2019 (EU Exit) makes changes to the three existing instruments which transpose the Habitats and Wild Birds Directives so that they continue to work (are operable) upon the UK's exit from the European Union (EU). These include The Conservation of Habitats and Species Regulations 2017 and The Conservation of Offshore Marine Habitats and Species Regulations 2017. This instrument also amends section 27 of the Wildlife and Countryside Act 1981 to ensure existing protections continue. The intention is to ensure habitat and species protection and standards as set out under the Nature Directives are implemented in the same way or an equivalent way when the UK exits the EU.

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

2.1.2 *The Wildlife and Countryside Act (1981) (as amended)*

This is the primary piece of legislation by which biodiversity is protected within the UK. Protected fauna and flora are listed under Schedules 1, 5 and 8 of the Act. They include all species of bats, making it an offence to intentionally or recklessly disturb any bat whilst it is occupying a roost or to intentionally or recklessly obstruct access to a bat roost. Similarly, this Act makes it an offence to kill or injure any species of British reptiles and also makes it an offence to intentionally kill, injure or take any wild bird or to take, damage or destroy their eggs and nests (whilst in use or being built).

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

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

2.1.5 Protection of Badgers Act

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

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

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

2.1.6 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 – Isle of Wight Core Strategy (2012)

Policies SP5 and DM12 in the Isle of Wight Core Strategy (2012) sets out the council's strategy for the island relating to the environment and biodiversity.

SP5 Environment:

The Council will support proposals that protect, conserve and/or enhance the Island's natural and historic environments. All development proposals will be expected to take account of the environmental capacity of an area to accommodate new development and, where appropriate and practicable, to contribute to environmental conservation and enhancement.

Development proposals will be expected to protect the integrity of international, national and local designations, enhance their features of interest wherever possible, and respond to the emerging evidence from the Solent Disturbance and Mitigation Project. Habitats important to the biodiversity of the Island will be protected in accordance with the following hierarchy of nature conservation designations:

- i. International – Special Protection Areas (SPA), Special Areas of Conservation (SAC) and Ramsar sites;
- ii. National – Sites of Special Scientific Interest (SSSI) and National Nature Reserves (NNR);
- iii. Local – Sites of Importance for Nature Conservation (SINC), Local Nature Reserves (LNR), other Ancient Woodland not identified in (ii) above.

The Council will identify and manage an accessible network of connected and multifunctional open spaces that covers the Island through the preparation of a Green Infrastructure Strategy Supplementary Planning Document. This will be the way in which the Council will identify appropriate levels of mitigation associated with development proposals as well as provide opportunities to enhance and increase the coverage and connectivity and multifunctionality of the Island's GI network.

Development that has a demonstrable adverse impact on the Island's natural, historic and built environments should be avoided. In order to conserve and enhance the quality of the natural environment, the Council will regularly review existing SINC's. As a result of this process, some boundary changes will be proposed and some new SINC's will be brought forward.

The Council will support proposals that positively conserve and enhance the special character of the Island's historic and built environments. Development that has an adverse impact on the Island's historic and built environments should be avoided. All development proposals will be expected to demonstrate how they have taken into account the historic and built environment.

In order to conserve and enhance the quality of the built and historic environment, the Council will continue to undertake Conservation Area Appraisals to identify the potential for new conservation areas, undertaken reviews of existing conservation areas and develop Conservation Area Management Plans. As a result of this process, some boundary changes will be proposed and some new conservation areas will be brought forward.

As well, Policy DM12 states the local council's strategy for Landscape, Seascape, Biodiversity and Geodiversity:

The Council will support proposals that conserve, enhance and promote the landscape, seascape, biodiversity and geological interest of the Island. Development proposals will be expected to:

1. Protect the integrity of international, national and local designations relating to landscape, seascape, biodiversity and geodiversity and the reasons for these designations and the weight given to them and enhance their features of interest wherever possible.
2. Ensure new development avoids both direct and indirect adverse effects upon the integrity of designated sites and, if necessary, provides appropriate mitigation measures.
3. Promote the maintenance and enhancement of the links between designated sites, especially through the provision of, and/or enhancement to, Green Infrastructure and appropriate local designations.
4. Reflect the aims and objectives of the AONB Management Plan, the Council's Landscape Character Assessment, Historic Landscape Characterisation and any further relevant landscape assessment.
5. Positively contribute to meeting the aims and objectives of the Isle of Wight's Local Biodiversity Action Plan and Local Geodiversity Action Plan.
6. Minimise the threats and promote the opportunities arising from climate change on the Island's landscape, seascape, biodiversity and geodiversity.

In addition to these policies in the Core Strategy, a supplementary Isle of Wight Biodiversity Action Plan was produced. This comprises a series of Habitat Action Plans, which sets out specific actions and objectives to protect important areas of biodiversity. The Biodiversity Action Plan covers: Maritime Cliffs and Slopes, Grazing and Grassland Management, Calcareous Grassland, Heathland and Acid Grassland, Lowland Meadows, Wetlands, Priorities for Woodland Biodiversity, Woodland, Red Squirrels, Farmland, Solent Coastal habitat, Community Biodiversity and Woodland Bat Species. These documents are considered working documents and are regularly reviewed and updated to reflect the most up-to-date strategies and status.

3.0 METHODOLOGY

3.1 Desktop Study

3.1.1 Designated sites and priority habitat

A search utilising Magic Maps was undertaken to establish the presence of statutory designated sites within 1km and priority habitats either on or directly adjacent to the site.

In addition, a search utilising the Isle of Wight Core Strategy Proposal Map for any non-statutory designated sites nearby the site such as Sites of Importance for Nature Conservation (SINCs).

3.1.2 Protected species

A search for protected species records and Natural England EPS licence returns within 1km was undertaken using freely available online resources.

3.1.3 Water bodies

A search was carried out for any potential ponds or other suitable water bodies within 250m of the site.

3.2 Field Survey

The walkover of the site, which forms the basis of the findings of the Phase I habitat survey was carried out by Darla Brown BSc (Hons) (project ecologist with Ecosupport) and Hannah Yates BSc (Hons) (assistant ecologist with Ecosupport) on the 1st August 2023.

Habitats on site pre-development were identified in accordance with the categories specified for a UK Habitats survey, using Habitat Definitions Version 2.0 (UKHab Ltd., 2020). This was chosen as an appropriate habitat categorisation system as it fits within the Biodiversity Metric 4.0 calculation. Where appropriate primary habitat codes were used although for some habitat types, the use of secondary habitat codes may be necessary as well.

3.3 Preliminary Roost Assessment

An assessment was made of the suitability of the buildings within the area of impact, to support roosting bats based on the presence of any Potential Roost Features (PRFs). This involved the use of 8 x 42 close focus binoculars and a high-powered torch (where required) for a more detailed inspection of any features. This assessment was undertaken by Darla Brown during the site walkover (accredited under NE class level 2 bat licence holder 2015-13211-CLS-CLS). This followed BCT (Collins (ed) 2016)* best practice survey guidelines searching for any Potential Roost Features (PRFs) / evidence of bat occupation and assigning a roost potential assessment as outlined in **Table 1** below.

*NB while updated guidance has been released prior to final publication of this report, the field survey was carried out prior to its release and therefore the 2016 guidance is relevant.

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

Suitability	Description of Roosting Habitats
Negligible	Negligible habitat features on site are likely to be used by roosting bats
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or suitable surrounding habitat to be used on a regular basis or by a large number of bats (i.e. unlikely to be suitable for maternity or hibernation).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

3.4 Reptile Surveys

3.4.1 Methodology

The surveys were carried out by surveyors Darla Brown, Grace Marston, Karen Symons and Tristanna Boxall. The surveys were carried out in accordance with best practice guidelines as stated in various resources (Froglife 1999) (Gent & Gibson (eds), 1998) in August to October 2023. Artificial refugia comprising of bitumen roofing felt and corrugated tin were distributed around the edges of the site in suitable habitat. 50 refugia were placed on site in suitable habitat (Fig 2). Seven visits to the site were subsequently carried out during suitable weather conditions during which all the refugia were checked for the presence of reptiles in combination with a visual observation transect.

Figure 2. Map of the locations of reptile refugia within the site

3.4.2 Evaluation

The populations of reptile species present are evaluated based on Froglife (1999) guidance and HGBI (1998) guidance, which considers the population in context of scale. The population is classified as low, good or exceptional using the maximum adult count of each species of reptile.

A Key Reptile Site is identified as a site that meets one of the following criteria:

1. supports three or more reptile species
2. supports two snake species
3. supports an exceptional population of one species
4. supports an assemblage of species scoring at least 4 from the Froglife table
5. does not satisfy previous criteria but is of particular importance due to local rarity (e.g. in the East Midlands of England, adders are very rare so even “low” populations should be designated as Key Sites)

3.5 Limitations

The species list provided is not considered to be exhaustive, instead a record of those identified during the Phase I survey. Similarly, this survey does not constitute a full site assessment for invasive plant species such as Japanese Knotweed (*Fallopia japonica*). During the initial assessment, it was not possible to fully assess the northern treeline for roosting bats, as it is inaccessible due to growing into the greenhouse (and the greenhouse cannot be removed without removal of the trees). However, the species present are not considered highly suitable for bats and precautionary measures for its removal have been recommended as a precaution, so this is not considered a significant limitation.

During the reptile survey, while August and October are considered sub-optimal months for surveys, surveys results were similar between all months including optimal timing in September, with reptiles found during all surveys, so this is not considered to be a significant limitation and is considered unlikely to have affected results.

4.0 RESULTS

4.1 Desktop Survey

4.1.1 Designated sites

No statutory designated sites were identified within 1km of the site.

There are no non-statutory designated sites within the site or the immediate vicinity of the site. However, Arreton Withybed East (C116A) Site of Importance for Nature Conservation (SINC) was identified 470m to the west of the site.

In addition, the site lies within the boundary of the 5.6km recreational buffer of the Solent & Southampton Water Special Protection Area (SPA).

4.1.2 Priority Habitat & Ancient woodland

No priority habitat or ancient woodland was identified within the site or within the immediate surrounding area.

4.1.3 Species

A search was carried out for protected species records within 1km of the site. Records were identified for Hazel Dormouse (*Muscardinus avellanarius*), Noctule (*Nyctalus noctula*), Common Pipistrelle (*Pipistrellus pipistrellus*), Barred Grass Snake (*Natrix helvetica*) and a number of bird and invertebrate species. No amphibians were identified within 1km of the site.

No granted EPSLs or Great Crested Newt (GCN) pond survey data was identified within 1km of the site through a search using Magic Map.

4.1.4 Waterbodies

A search using OS mapping identified a small pond within a private residence, located 150m to the north of the site. From aerial imagery, this appears to be isolated in a patch of trees, surrounded by hard standing (road and driveway) or buildings on all sides (**Fig 3**). No other nearby ponds have been identified. It is therefore considered this pond is highly unlikely to support GCN.

Figure 3. Aerial image of pond (blue circle) located 150m to the north of the site (MagicMap, 2022).



4.2 Field Survey Results

The vegetation within the site has been described below using the UK Habs Habitat Definitions Version 2.0 (UKHab Ltd., 2020). The below species noted should not be considered an exhaustive list and instead refer to dominant, characteristic and other noteworthy species associated with each community within the survey area. The habitat types on site comprise (approximate spatial extent shown in the habitat map appended)

- Built up areas and gardens (u1) with ruderal (81)
- Bramble scrub (h3d)
- Woodland (w) line of trees (33)
- Buildings (u1b5) with scattered scrub (10) and scattered bracken (12)

4.2.1 Built up areas and gardens (u1) with ruderal (81)

The central lane of the site is comprised of gravel and tarmac (Fig 4). It has been colonised by a number of plant species including Herb-robert (*Geranium robertianum*), Lesser Trefoil (*Trifolium dubium*), Bramble (*Rubus fruticosus*), Bristly Oxtounge (*Helminthotheca echioides*), Common Fleabane (*Pulicaria dysenterica*), Black Medick (*Medicago lupulina*), Yarrow (*Achillea millefolium*), Ribwort Plantain (*Plantago lanceolata*), Mugwort (*Artemisia vulgaris*), Creeping Thistle (*Cirsium arvense*), Dandelion (*Taraxacum agg.*), Selfheal (*Prunella vulgaris*), Sedge (*Carex nigra*), Broom (*Cytisus scoparius*), Yorkshire Fog (*Holcus lanatus*), Sow Thistle (*Sonchus spp.*), Lesser Burdock

(*Arctium minus*), Spear Thistle (*Cirsium vulgare*), Bracken (*Pteridium aquilinum*), Forget-me-not (*Myosotis sylvatica*), Daisy (*Bellis perennis*), Hawthorn (*Crataegus monogyna*).

Figure 4. View of the built-up areas and gardens with ruderal (facing west).



4.2.2 Bramble scrub (h3d)

Much of the site has become overgrown with low-lying Bramble (*Rubus fruticosus*) scrub. This is present around the edges of the greenhouses and southern site boundaries as well as within the buildings (**Fig 5**). Other species noted include Buddleia (*Buddleja davidii*), Common Nettle (*Urtica dioica*), Hairy Willowherb (*Epilobium hirsutum*), Ivy (*Hedera helix*) and Bracken.

Figure 5. View of the Bramble scrub within the building



4.2.3 Woodland (w) line of trees (33)

The northern site boundary is comprised of a line of trees of mixed species, including several Leylandii (*Cupressus x leylandii*) present. The line of trees is along the edge of the northern edge of Building 1 but has become overgrown and part of the canopy is now resting of the top of the building roof (Fig 6).

NB As per the update from UKHab Version 1.1 to 2.0 Habitat Definitions (2023) - line of trees must now be classified under the w - woodland and forest primary habitat code. Although it must be noted this habitat type does not fall under the definition of a 'woodland and forest' as is under 25% of the land cover required.

Figure 6. Line of trees (in background behind greenhouse), along northern boundary, partially covering B1 roof



4.2.4 Buildings (u1b5)

Four buildings were present on site which are all described in further detail in **Section 4.3**.

4.3 Bats



4.3.1 Preliminary Roost Assessment of Buildings



The findings of the Preliminary Roost Assessment of all the buildings are outlined in **Table 2** below. A map of the building locations can be seen in **Fig 7**.

Figure 7. Location showing the buildings within the site (Google Maps, 2022)



Table 2. Bat roost assessment of the buildings on site at Merstone Valley Nursery.

Building	Figs (all taken August 2023)	Description of Construction	PRFs / Evidence of Occupation	Assessed Roost Potential
B1	<p>Figure 8. An external view of B1 (facing north).</p> 	A large greenhouse with a defunct roof. Internally it is dominated by bracken and bramble scrub (Fig 8).	The building was deemed unsuitable to be used by roosting bats due to the large amount of illumination during the daytime due to the windows and the lack of PRFs. No evidence of bat presence was found.	Negligible
B2	<p>Figure 9. An external view of B2 (facing south-east).</p> 	A large greenhouse with a defunct roof. Internally it is dominated by bracken and bramble scrub (Fig 9).	The building was deemed unsuitable to be used by roosting bats due to the large amount of illumination during the daytime due to the windows and the lack of PRFs. No evidence of bat presence was found.	Negligible

<p>B3</p>	<p>Figure 10. An external view of B3 (facing west).</p> 	<p>A large greenhouse with a defunct roof. Internally it is dominated by bracken and bramble scrub (Fig 10).</p>	<p>The building was deemed unsuitable to be used by roosting bats due to the large amount of illumination during the daytime due to the windows and the lack of PRFs. No evidence of bat presence was found.</p>	<p>Negligible</p>
<p>B4</p>	<p>Figure 11. An external view of B4 (facing north-west).</p> 	<p>A single-storey brick building with a flat, felt roof (Fig 11).</p>	<p>The building was deemed unsuitable for bats due to a lack of PRFs. No evidence of bat presence was found. There is some vegetation coverage however this was inspected to ensure no features were hidden and given the building construction and size is unlikely to hold any potential.</p>	<p>Negligible</p>

4.3.2 Foraging and commuting bats

The northern treeline and scrub within the site could offer some potential foraging opportunities for bats. However, these are unlikely to support significant numbers of bats. Further, the surrounding habitat is largely comprised of agricultural fields and residential dwellings with limited higher quality habitat. Therefore, the site is considered to be of **low potential** for foraging and commuting bats.

4.3.3 Roosting bats in trees

The northern treeline will be removed, however it was not possible to fully view the trees on the northern boundary as they are overgrown into the greenhouses and it was not possible to access behind the building. No potential roosting features were noted during the survey and further Leylandii trees and the other shrubs present (mainly Goat Willow and Hawthorn) are not highly suitable for roosting bats. This was considered a limitation to the survey, which has been considered in the assessment and recommendations and therefore it was considered there is **low potential** for roosting bats in the treeline.

4.4 Reptiles

4.4.1 Site Assessment & Phase II reptile survey

The bracken and bramble scrub within the greenhouses and structured vegetation within the site provide suitable habitat for reptiles and therefore Phase II reptile surveys were carried out throughout suitable habitat on site.

The weather conditions and dates/times of the surveys can be found in **Table 3**. Maximum counts of 4 adult slow worms (*Anguis fragilis*) (2 adult males and 2 adult females) were identified within the site, all at the west of the site. The locations of the reptiles found are shown in **Fig 12**.

Table 3. Weather conditions and dates/times of reptile surveys

Date	Time	Temp (C°)	Wind (Beaufort scale)	Cloud cover (%)	Other
15/08/23	9:10	18	1	0	Dry
29/08/23	10:00	18	1	0	Dry
01/09/23	9:15	16	1	70	Dry
13/09/23	11:30	18	0	80	Dry
23/09/23	12:15	17	1	40	Dry
26/09/23	10:25	19.5	2	80	Dry
10/10/23	12:00	19	1-2	100	Brief light rain before survey

Fig 12. Locations of slow worms within the site, identified by red circles



4.4.2 Evaluation

Based on both FrogLife (1999) and the HGBI (1998) assessment criteria, the site has a **low population** of Slow Worms. All Slow Worms were identified in a relatively small area at the west of the site, and none were located in the green houses.

4.5 Birds

The trees and bushes within the site provide suitable habitat for nesting birds. In addition, the open nature of the buildings (greenhouses) also allows access to the interiors of the buildings, which could be used by nesting birds. Therefore, it is considered the site has **moderate potential** for nesting birds.

4.6 Mammals

Rabbit holes were identified within the greenhouses (Fig 13). No evidence of [REDACTED] (*Meles meles*) was found; however, it is considered the site has **low potential** for commuting/ foraging [REDACTED], Hedgehogs (*Erinaceus europaeus*) and other mammal species.

Figure 13. Rabbit hole identified within the site within low-lying Bramble



4.7 Hazel Dormice

There is some suitable dormouse habitat on site such as the scattered hawthorn and bramble. While the site does connect to hedgerows to the north, these appear to be highly managed and do not connect well within the wider area. Therefore, it is considered the site has **low potential** for hazel dormice within the northern tree line and any connecting tall scrub but it is considered unlikely dormice will reside within the site.

5.0 LIKELY IMPACTS IN THE 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 normally be at least of local value however this assessment considers features also of site value.

5.2 Site Preparation and Construction

5.2.1 Impacts to Designated Sites

It is not considered that construction of the development will likely have any direct or indirect impacts upon the nearby SINC (i.e. through noise, air or water pollution) as it is above 400m distance and not connected via any pollution pathways.

5.2.2 Impacts to Wildlife

The use of artificial lighting during construction could negatively impact commuting and foraging bats. This would have a **negative impact at site level**.

Open excavations at night pose a threat to commuting and foraging nocturnal wildlife (i.e. Hedgehogs and/or ██████ can become trapped). There is a potential **negative impact at site level**.

The works will involve vegetation removal and the demolition of the buildings on site, and if this were to take place during nesting bird season and an active nest were present this would have a **certain adverse impact at site level**. Similarly, noise generated during on-site activities has the potential to impact upon the nesting birds within the vegetation on site. This would have a **likely negative impact at a site level**.

If reptiles are present during the stripping of vegetation and topsoil, there is risk of reptiles being harmed or killed. This would have a **negative impact at a local level**.

5.2.3 Impacts to Habitats

The majority of habitats that are expected to be lost as a result of development are considered to be of low ecological value, including the buildings, low-lying scrub and hard standing tarmac. While scrub can sometimes provide a valuable ecological habitat, the scrub within this site was largely low to the ground, lacking in diversity and is only considered of value at **site level**. Therefore, works will likely have a **minor adverse impact** to habitats of site value only.

The northern line of trees largely comprising Leylandii is considered to be of **low ecological value** at the **local level** (although the Leylandii trees are of site value only). This tree line will be removed as per the tree report, which will result in an **adverse impact** at the **local level**.

5.3 Operational

5.3.1 Impacts to Wildlife

Increased levels of artificial light can cause disturbance and disruption to bats. Though several bat species can take advantage of artificial lighting systems for foraging, feeding off the insects they attract, other species avoid them. This would result in a **negative impact at site level**.

5.3.2 Impacts to Designated Sites

The site lies within the recreational buffer zone of the Solent and Southampton Water SPA and there is a risk of disturbance from an increase in visitor numbers and recreational disturbance to these designated sites. As such, in the absence of mitigation the operational phase of the development would have a **likely significant effect** on habitats of **International Value**.

6.0 MITIGATION, COMPENSATION & ENHANCEMENTS

6.1 Sensitive Lighting

Sensitive lighting is recommended as good practice for bats and other nocturnal wildlife. It is recommended that any lighting complies with the newly published *Guidance Note 08/23 Bats and Artificial Lighting at Night* (ILP / BCT, 2023) produced via a collaboration between the Institute of Lighting Professionals (ILP) and the Bat Conservation Trust (BCT), which outlines the latest recommendations to minimise the impacts of increased artificial lighting on bats. The key recommendations within this document have been outlined below and will be implemented as far as is practicable:

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

- *All luminaires will lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used*
- *LED luminaires will be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability*
- *A warm white light source (2700Kelvin or lower) will be adopted to reduce blue light component*
- *Light sources will feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats (Stone, 2012)*
- *Waymarking inground markers (low output with cowls or similar to minimise upward light spill) to delineate path edges (see Case Study 1)*
- *Column heights will be carefully considered to minimise light spill and glare visibility. This should be balanced with the potential for increased numbers of columns and upward light reflectance as with bollards*
- *Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01*
- *Luminaires will always be mounted horizontally, with no light output above 90° and/or no upward tilt*
- *Where appropriate, external security lighting will be set on motion sensors and set to as short a possible a timer as the risk assessment will allow. For most general residential purposes, a 1 or 2 minute timer is likely to be appropriate*
- *Use of a Central Management System (CMS) with additional web-enabled devices to light on demand Use of motion sensors for local authority street lighting may not be feasible unless the authority has the potential for smart metering through a CMS*
- *Where bollard or low-level downward-directional luminaires are used, these will require appropriate louvred tops to minimise light spillage to prevent upward lighting.*
- *Only if all other options have been explored, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed. However, due to the lensing and fine cut-off control of the beam inherent in modern LED luminaires, the effect of cowls and baffles is often far less than anticipated and so should not be relied upon solely'*

6.2 Reptile Mitigation

As only a maximum count of four slow worms were identified, all within the western portion of the site, it is considered techniques to passively displace potential reptiles from the proposed works area are a proportionate approach. This will involve small scale habitat manipulation over a number of days within the areas containing reptiles. A map is shown in **Fig 14**, showing the area subject to mitigation and the recommended direction of dispersal. This area encompasses all areas reptiles were found and extends to adjacent habitats, although it is recommended that all suitable habitat on site is removed at this time. The removed norther treeline will open up the north of the site to sunnier conditions to make this area more suitable. As the adjacent site to the west will also be subject to passive dispersal of reptiles, it is recommended that these two sites are completed together with suitable habitat retained along the boundary. The adjacent fields to the north are also suitable for reptiles so they will be able to disperse into further habitat.

Initially the suitable ruderal / grass/ scrub vegetation will be reduced to 15-20cm. Following a period of 24-48 hours, this vegetation will be taken down to ground level. All works will be directional (i.e. towards retained buffers) and offsite suitable habitat. These works will be done immediately before any ground works to prevent the habitats regrowing and will be undertaken during the active reptile period (April – September) when temperatures are above 12^oC with sunshine.

Once the passive dispersal has been completed a destructive search of the site will be carried out. This would entail the sensitive stripping of vegetation on site using a digger with a toothed bucket where habitat was previously most suitable for reptiles / areas that were not possible to passively disperse (such as any waste piles and rubble etc).

If there is a delay in commencement of works, vegetation will be retained at ground level to prevent the site potentially becoming suitable.

Figure 14. Map showing direction of passive dispersal toward retained habitat

6.3 Nesting Birds

In order to avoid disturbance of nesting birds or damage to their nests, demolition of the greenhouses and clearance of any tree or shrub vegetation, if possible, will be undertaken outside of the bird nesting season (typically March – August, dependent on weather). If this is not possible, the area to be cleared must be thoroughly checked by an ecologist immediately prior to clearance. If any active nests are found, they must be left undisturbed with a suitable buffer of undisturbed vegetation (c. 5m) until nestlings have fledged.

6.4. Precautionary Measures for Dormice & Bats

The site is only considered to have low potential for dormice within the boundary tree line and small areas of connecting tall scrub and due to the limitation in conducting an assessment of the trees on site, it is recommended roosting bats are considered in precautionary measures. The northern boundary tree line will be removed, as described in the tree report. However, the majority of this is *Leylandii* which is not considered optimal habitat for dormice or roosting bats and their presence is not highly likely. Currently, a more detailed of the tree line cannot be carried out due to it growing into the greenhouses. Therefore, precautionary measures are considered the most suitable option during the removal of this habitat.

An experienced ecologist will deliver a toolbox talk to the vegetation clearance contractors prior to commencement, detailing the constraints on site. The toolbox talk will include signs or evidence of species and workers will be informed that if any active animals are found all works will immediately cease and the ecologist consulted. Natural England will be consulted if necessary (where an EPS may be required) if protected species are found within the habitat. Vegetation will

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be cleared along the tree line to allow for demolition of the greenhouses. Where possible, denser vegetation such as Hawthorn or Goat Willow will be retained where it does not affect demolition of the greenhouses. Once the greenhouses are removed as a barrier, the ecologist will carry out a second inspection of the tree line to search for any signs of dormice immediately prior to clearance to ground level.

Works will be undertaken in a directional fashion to passively encourage any potential Dormice present to move away from the works area towards retained, suitable habitat. These measures are considered proportionate based on the habitat suitability and conditions on site.

6.5 Mammals

If there are any deep excavations (>1m) within the development, a means of escape (e.g. a ramp) will be left in excavations overnight in case of animals falling in. A member of staff on site should be responsible for ensuring that this is carried out before leaving the site each day.

6.6 Impacts upon Solent & Southampton Water SPA

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 2023, the standard rates were updated to the following:

Number of bedrooms	Amount	5% monitoring fee	Administration fee	Total
1	£443	£22.15	£23	£488.15
2	£639	£31.95	£23	£693.95
3	£834	£41.70	£23	£898.70
4	£980	£49.00	£23	£1,052.00
5+	£1,150	£57.50	£23	£1,230.50

Please note, there are additional fees for monitoring and administration on top of these rates and the rates are subject to change annually.

6.7 Enhancements

Full enhancement recommendations will be made once a full site plan is known however the following general enhancements are recommended to be incorporated into the site plan.

6.7.1 Bat Bricks

To enhance the site for bats and provide new roosting opportunities, 25% of the new dwellings will be fitted with a bat brick. The bat bricks used should be the Ibstock bat brick B, or similar should these be unavailable, as they are available in a variety of different brick colours and require no maintenance (**Fig 15**). These will be positioned as close to the eaves as possible, away from windows and in a position that will receive at least some direct sunlight.

Figure 15. The Ibstock bat brick 'B' that will be incorporated into the newly built dwelling.



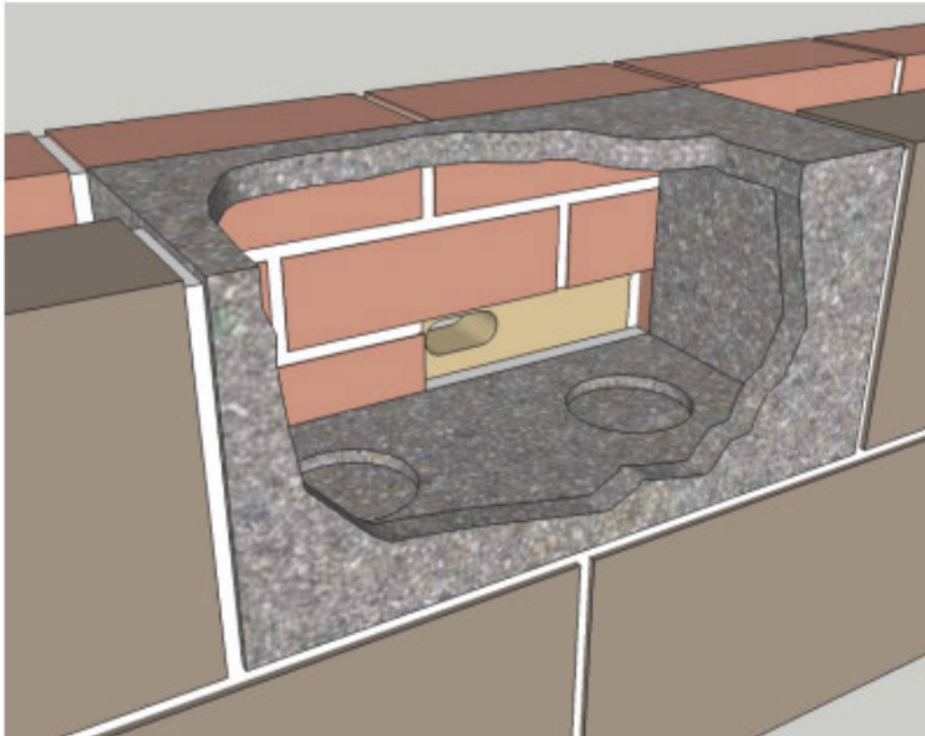
6.7.2 Bird Bricks

To act as biodiversity enhancement, the newly built dwellings will incorporate Swift bricks at a 1:1 ratio. The 'CJ Wildlife Swift maxi nesting box' (**Fig 16**) with entrance via a CJ Wildlife 'Cambridge Swift full-face brick' (The Cambridge System is a concept comprising an entrance piece and a nest box embedded in the cavity and inner leaf. It is particularly suited to gable ends at roof-space level). If this model is not suitable for the building specifications, an alternative swift box with

internal floor space exceeding 400cm squared must be used. A list of swift boxes can be found on the RSPB website via the following link (<https://www.rspb.org.uk/globalassets/downloads/about-swifts/swift-bricks.pdf>) however it is worth noting that some of these do not have an internal floor space exceeding 400cm squared and are therefore not considered appropriate.

Please note, the bricks do not have to be incorporated as 1 per building, but can be clustered if preferred within certain buildings (as swifts are colony nesters).

Figure 16. A schematic of how the Cambridge full face Swift brick leads into a cavity created by the prior installation of the Swift maxi nesting box.



6.7.3 Planting

As a general enhancement, in line with the Chartered Institute of Ecology and Environmental Management CIEEM guidance (2012), any proposed planting should aim for a 70:30 ratio in favour of native species over non-natives and ornamentals. Ideally fruit or nut-bearing trees, providing food sources for birds and small mammals (such as Red Squirrels) during the autumn and winter and nest sites during the spring and summer, should be utilised.

The landscape planting plan includes a number of native trees and species-rich native hedgerows which are proposed along the northern boundary and some native trees mixed into the hedgerow. This will improve the biodiversity along the site boundary compared to the existing Leylandii-dominant tree line. See **Appendix 1** for the planting plan.

Wherever possible wildflowers should be incorporated on site. Planting a mixture of flowering plants, trees (including fruit trees) and shrubs encourages a diversity of insects to sustain bats. It

is beneficial that the flowers vary in colour (although pale flowers that are more easily seen in poor light and so attract insects at dusk), fragrance, shape, amount of nectar and time of flowering. (It is important to provide native flowering plants, shrubs and trees throughout spring, summer and autumn). Flowers with 'landing platforms' for insects (i.e. flowers from the Daisy and Carrot families) increase opportunities for insects and in turn foraging mammals.

6.7.4 Habitat Features

It is recommended that at least two log piles and/or hibernaculum will be constructed within the site using deadwood from the vegetation removal. This will provide suitable habitat for reptiles, invertebrates and mammals and provide foraging opportunities for various species. They should be placed in boundary or ecological buffer habitat.

7.0 CONCLUSION

In general, the site is considered to be of low ecological value with habitats of **site – local value**. A low population of Slow Worm is present within the site and other opportunities for legally protected and/or notable species include potential nesting opportunities within the greenhouses and potential presence of dormice and bats.

General measures have been provided to reduce the impact towards other legally protected and/or notable species. It is considered if the measures are implemented in full it will ensure the associated species are protected during the development and once operational.

8.0 REFERENCES

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Appendix 1. Merstone Valley Planting Plan (Treecare, 2023)

Trees:

A - Red Horse Chestnut -Aesculus x Carnea

B - English Oak -Quercus Robur

C - Silver Birch - Betula Pendula

D - Swedish Whitebeam - Sorbus intermedia

E- Mountain Ash - Sorbus aucuparia

F - Wild Service Tree - Sorbus torminalis

G - Strawberry Tree - Arbutus unado

H-- Crab Apple (ornamental) Malus 'Evereste'

I - Tree Cotoneaster -Cotoneaster cornubia

Hedges:

H1 - Mixed countryside hedgerow - various native species. (Mainly Hawthorn with Blackthorn, Spindleberry, Dogwood and some Dog Rose.)

Planted as 80cm 'Whips'

In addition within the hedgerow planting 'Feathered' 1.2 -1.5m planting of Field Maple -FM, Hazel -HAZ, Hornbeam- HB, English Oak - EO, Crab Apple (native) - CA & Damson - DA.

H2 - Beech - Fagus Sylvatica.

All of the species with the exception of Horse Chestnut and Cotoneaster are native species, the Ornamental Crab and Whitebeam are varieties.

The majority are good for wildlife having flowers and fruits.

The Red Horse Chestnut is chosen as it is a medium sized tree rather than the very large parkland common Horse Chestnut, not that suited to residential layouts and by roads / driveways due to large leaves and seeds blocking drains etc, large limbs over roads that then require often heavy and regular maintenance.

