



ecosupport



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Executive Summary

Ecosupport Ltd was instructed by Robert Sadler to undertake a Preliminary Ecological Appraisal (PEA) of Portshole Barn, Sidlesham. This was required in order to identify any potentially important ecological features that may be affected by the proposed development. As part of this assessment, the following surveys were undertaken:

- Preliminary Ecological Appraisal (June, 2022)
- Preliminary roost assessment (buildings) (June, 2022)
- Habitat Suitability Index (HSI) assessment of ponds within 250m of site (July, 2022)

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

- Low potential for roosting bats
- Confirmed presence of breeding and nesting birds
- Potential for foraging and commuting badgers
- Very limited suitable habitat for common reptile species

In the absence of any mitigation measures, the proposed development is anticipated to result in, ***certain adverse impacts*** (significance level to be determined following phase II survey work where considered appropriate).

In addition to this, measures are outlined within **Section 6.0** of this document to mitigate where impacts (which includes further survey work where considered appropriate) been identified as well as provide targeted ecological enhancements.

1.0 INTRODUCTION

1.1 Brief

Ecosupport Ltd was commissioned by Robert Sadler to conduct a Preliminary Ecological Appraisal (PEA) of Portshole Barn, Sidlesham (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 a proposed conversion of the barn to residential development. The objectives of the survey were as follows:

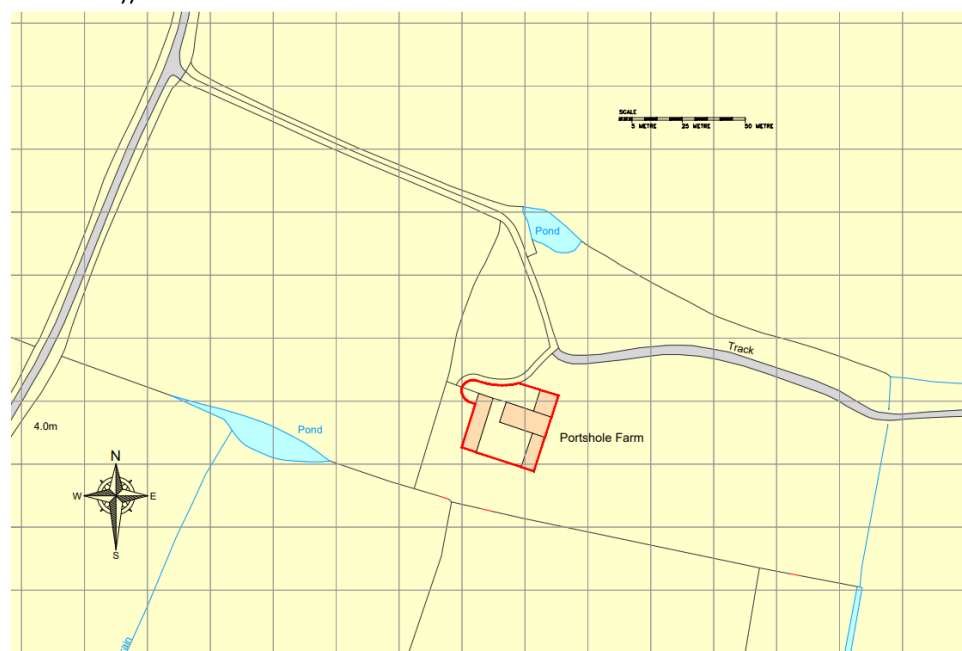
- Identify and classify any priority habitats;
- Assess the ecological value of the site;
- Identify any signs of protected species and potential features that may support them
- Make recommendations for further survey work as necessary;
- Make recommendations for any necessary ecological avoidance and mitigation where possible at PEA stage.

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

1.2 Site Description & Location

The site comprises of Portshole Barn, an outbuilding, unsealed track and areas of grassland located around the outer parts of the site located at Ham Road, Sidlesham, Chichester, West Sussex, PO20 7NY (centred on OS grid reference SZ 84521 95615) (**Fig 1**). The southern and western boundaries of site are bound by arable fields whilst the northern and eastern boundaries of site are bound by a grassland field.

Figure 1. Approximate redline boundary of the site (provided by Architects Design & Management (ref: 1691 02 A))

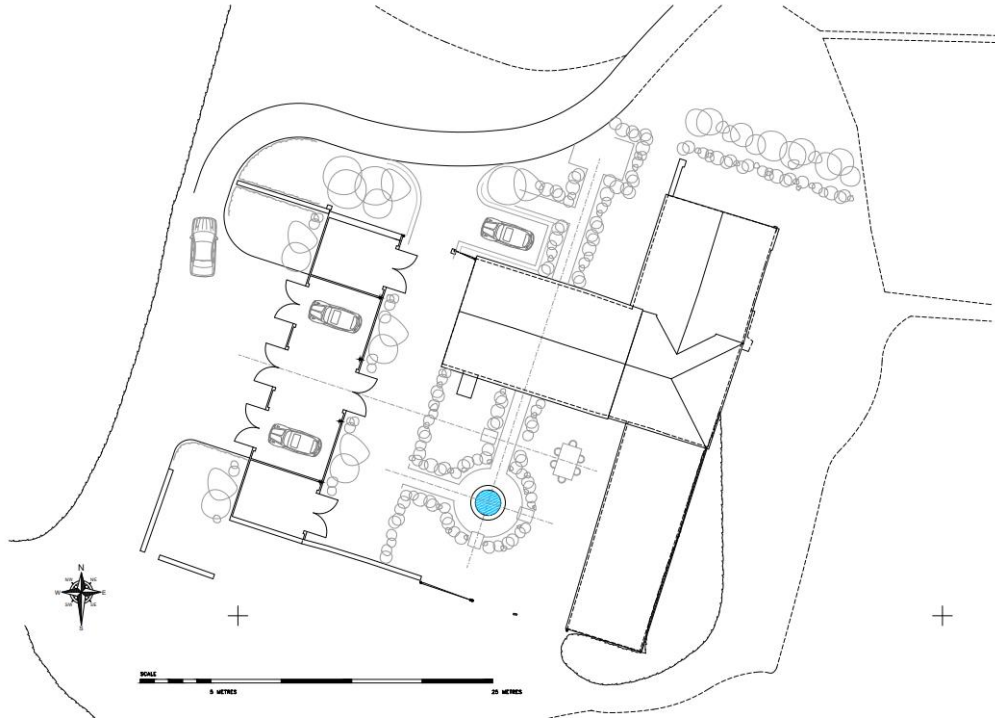


¹ <https://cieem.net/wp-content/uploads/2019/04/Advice-Note.pdf>

1.3 Proposed Development

Conversion of the barn to a residential dwelling and change of use of the outbuilding to be used associated with the residential dwelling (**Fig 2**).

Figure 2. Plan showing the proposed development on site (provided by Architects Design & Management (ref: 1691 21))



2.0 RELEVANT LEGISLATION AND POLICY

2.1 Legislation

2.1.1 *The Environment Act (2021)*

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

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

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

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

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

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

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

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

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

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

2.1.4 The Countryside and Rights of Way Act (2000)

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

2.1.5 Natural Environment and Rural Communities Act (2006)

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

2.1.6 Protection of Badgers Act

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

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

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

2.2 Policy

2.2.1 National

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

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

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

- if significant harm to biodiversity resulting from a development cannot be avoided, adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused;
- development on land within or outside a Site of Special Scientific Interest, and which is likely to have an adverse effect on it (either individually or in combination with other developments), should not normally be permitted. The only exception is where the benefits of the development in the location proposed clearly outweigh both its likely impact;
- development resulting in the loss or deterioration of irreplaceable habitats (such as ancient woodland and ancient or veteran trees) should be refused, unless there are wholly exceptional reasons and a suitable compensation strategy exists; and
- development whose primary objective is to conserve or enhance biodiversity should be supported; while opportunities to improve biodiversity in and around developments should be integrated as part of their design, especially where this can secure measurable net gains for biodiversity or enhance public access to nature where this is appropriate.

2.2.2 Local – Chichester District Council (2014 – 2029)

Chichester's Local Plan recognises that the natural environment is a key factor in terms of attracting residents, investment and tourism to the area and that one of these key environmental assets is biodiversity. The Plan seeks to protect and enhance the environmental assets, whilst allowing development in areas where potential environmental harm is minimal or can be adequately mitigated.

Countryside protection policies and the development of green infrastructure will provide links both for wildlife and for residents and help to protect the separate identity and distinct character of individual settlements.

The Plan emphasises that both Chichester and Pagham Harbour are internationally recognised sites of nature conservation importance, subject to a high level of environmental protection under European Union and UK legislation. Along with the Medmerry Realignment which is subject to the same protection as designated European sites.

All new developments are encouraged to take account of and incorporate biodiversity into their features at the design stage. Policy 49 protects sites of biodiversity importance, which contain wildlife features that are of special interest. Exceptions will only be made where no reasonable alternatives are available and the benefits of development clearly outweigh the negative impacts. Where a development proposal would result in any significant harm to biodiversity and geological interests that cannot be prevented or mitigated, appropriate compensation will be sought.

The Local Plan states that “Conserving biodiversity is not just about protecting rare species and designated nature conservation sites”. It also encompasses the more common and widespread species and habitats. The Council will seek to preserve and enhance the biodiversity diversity of the district.

Policy 49 ‘Biodiversity’ states that planning permission will be granted for development where it can be demonstrated that:

- The biodiversity value of the site is safeguarded;
- Demonstrable harm to habitats or species which are protected or which are of importance to biodiversity is avoided or mitigated;
- The proposal has incorporated features that enhance biodiversity as part of good design and sustainable development;
- The proposal protects, manages and enhances the District’s network of ecology, biodiversity and geological sites, including the international, national and local designated sites (statutory and non-statutory), priority habitats, wildlife corridors and stepping stones that connect them;
- Any individual or cumulative adverse impacts on sites are avoided;
- The benefits of development outweigh any adverse impact on the biodiversity on the site. Exceptions will only be made where no reasonable alternatives are available; and planning conditions and/or planning obligations may be imposed to mitigate or compensate for the harmful effects of the development.

New Strategic Policy S10 ‘Green Infrastructure’ is subject to proposed amendments that are currently out to public consultation. These include re-numbering the Policy to S9 Green Infrastructure which is still to seek the provision of connected habitats, linking the network of designated sites and existing priority sites.

3.0 METHODOLOGY

3.1 Desk Study

3.1.1 Waterbodies

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

3.1.2 Designated Sites

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

3.2 Field Survey

3.2.1 Habitats

The field survey work which forms the basis of the findings of this report was carried out by Madison Errington BSc (Hons) and Ollie Silvester BSc, ecologists with Ecosupport, on the 29th June 2022. Weather conditions during the survey comprised temperatures of 17 °C, light winds and overcast.

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

3.2.2 Badger

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

3.2.3 Bats

An assessment of all buildings on site to be impacted upon was undertaken by Madison Errington of Ecosupport in June 2022 (acting under the license of Tristanna Boxall NE class level 2 bat licence number 2015-14147-CLS-CLS). This followed BCT (Collins (ed) 2016) best practice survey guidelines searching for any PRFs / evidence of bat occupation and assigning a roost potential assessment as outlined in **Table 1** below.

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

Suitability	Description of Roosting Habitats
Negligible	Negligible habitat features on site are likely to be used by roosting bats
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions ² and/or suitable surrounding habitat to be used on a regular basis or by a large number of bats (i.e. unlikely to be suitable for maternity or hibernation).
Moderate	A structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost type only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).
High	A structure with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.

3.3 Assessment of Pond

A Habitat Suitability Index (HSI) was carried out on two ponds located within 250m of site 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

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

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 Assessment Methodology

3.4.1 Introduction

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

3.4.2 Valuation

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

3.5 Limitations

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

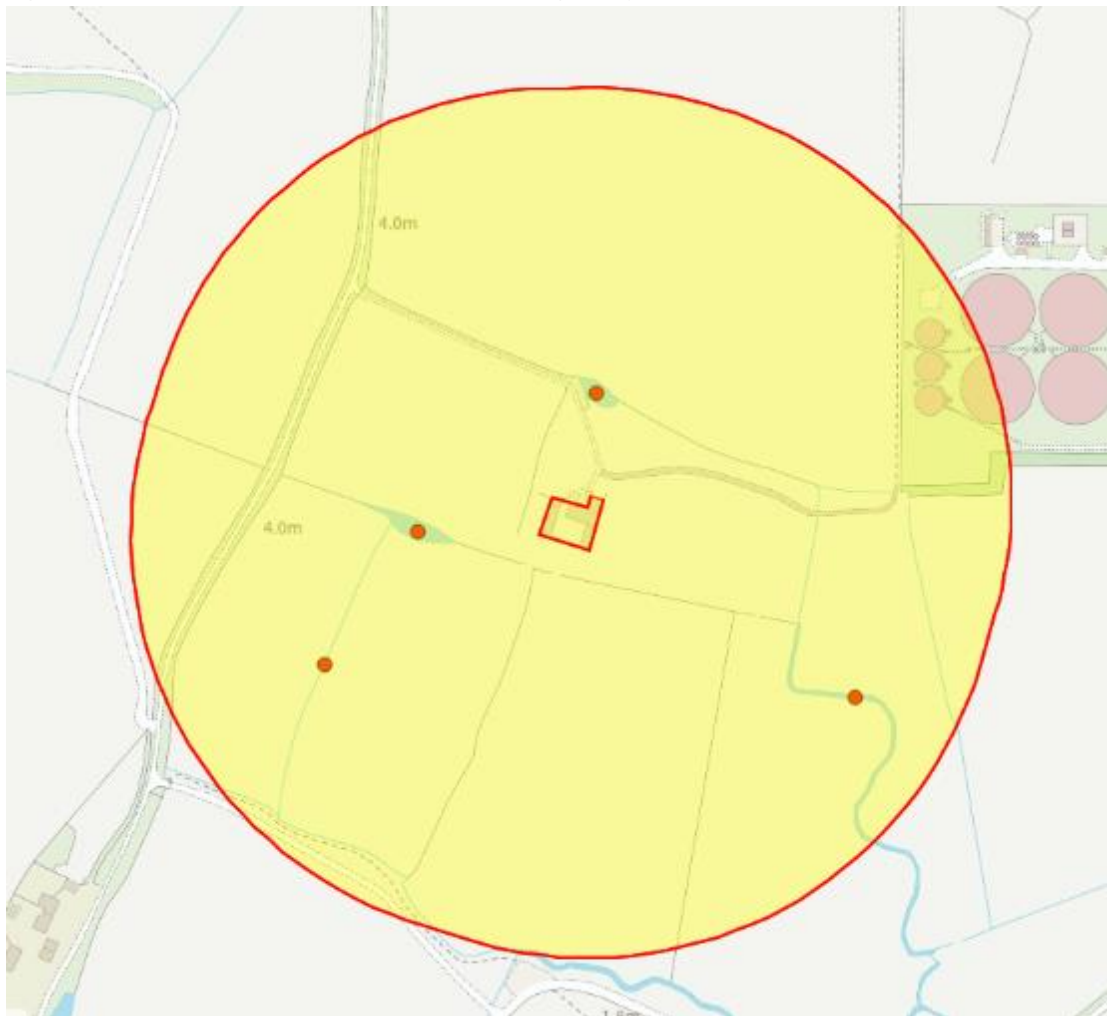
4.0 ECOLOGICAL BASELINE

4.1 Designated Sites

4.1.1 Waterbodies

Using freely available online resources, two waterbodies were noted within 250m of the site (**Fig 3**). The nearest waterbody, Pond 1, is located 52m to the south-west. The second waterbody, Pond 2, is located 56m to the north. Further to this, two drainage ditches were noted, the closest of which is 91m to the southeast at its closest point.

Figure 3. Waterbodies within 250m of the site (Magic Maps, 2022).



4.1.2 Designated Sites

Using freely available online resources, one designated site was identified as located within 1 km of the site, Pagham Harbour SPA/SSSI/Ramsar/LNR (0.68 km NE).

4.2 Vegetation Survey Results

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

- Modified grassland (g4) with bare ground (Secondary code: 73)
- Dense scrub (h3) including Bramble scrub (h3d)
- Buildings (u1b5)

4.2.1 Modified Grassland (g4) with bare ground (73)

This habitat type covered the majority of the site and was recorded surrounding the barn and outbuilding on site (**Fig 4 & 5**). The sward height was short surrounding the barn (**Fig 4**) whilst the sward height was much longer to the north, south and west of the outbuilding due to this area being unmanaged (**Fig 5**). Within the longer sward, species noted included Cock's Foot (*Dactylis glomerata*), False Oat-grass (*Arrhenatherum elatius*), Timothy (*Poa pratense*), Yorkshire Fog (*Holcus lanatus*), Bramble (*Rubus fruticosus* agg.) and Nettle (*Urtica dioica*). Within the rest of the site species noted included Common Bent (*Agrostis capillaris*), Creeping Buttercup (*Ranunculus repens*), Creeping Thistle (*Cirsium arvense*), White Clover (*Trifolium repens*), Common Daisy (*Bellis perennis*), Curled Dock (*Rumex crispus*) and Ivy (*Hedera helix*).

Figure 4. View of the g4 grassland taken from the north-eastern part of the site. The areas of bare ground present forming the unsealed track is notable from this picture (taken June, 2022).



Figure 5. View of the g4 grassland taken from the western part of the site to the rear of the outbuilding (taken June, 2022).



4.2.2 Dense scrub (h3)

Dense scrub was present at the rear of the lean-to adjacent to the barn along the south-eastern elevation (**Fig 6**), whilst Bramble scrub was present at the rear of the outbuilding to the south-west of site (**Fig 7**). Species noted included Bramble, Creeping Thistle, Ivy and Nettle.

Figure 6. View of dense scrub taken from the south-eastern part of the site adjacent to the rear of the lean-to of the barn (taken June, 2022).



Figure 7. View of bramble scrub taken from the south-western part of the site adjacent to the rear of the outbuilding (taken June, 2022).



4.2.3 Buildings (u1b5)

The final habitat type on site is the building that is described in greater detail in the next section.

4.3 Bat Survey Results

4.3.1 Trees

No trees are to be impacted upon by the proposals and therefore no assessment of the surrounding trees within the wider site were undertaken.

4.3.2 Buildings

The findings of the preliminary roost assessment of the buildings on site is outlined in **Table 2** below.

Table 2. Bat roost assessment of the buildings on site.


Building	Fig	Description of Construction	PRFs / Evidence of Occupation	Assessed Roost Potential
Barn	<p data-bbox="371 435 954 496">Figure 8. External view of the northern (front) elevation of the barn (taken June, 2022).</p> 	<p data-bbox="976 435 1386 576">Detached large barn formed of concrete blocks, stone and red bricks (Fig 8 & 9) with a single-skinned asbestos and metal corrugated roof.</p> <p data-bbox="976 624 1386 764">A lean-to was present at the southern elevation which was construction of metal beams and single-skinned metal corrugated roof (Fig 10).</p> <p data-bbox="976 812 1386 1106">The internal spaces of the barn were not underlined, the northern elevation (Fig 8) is open-fronted and exposed to the outer conditions of the environment. Metal ridge beams were throughout for support, while wooden ridge beams were only on half of the internal space (Fig 11).</p>	<p data-bbox="1408 435 1818 687">On the northern and western elevations several gaps were present in the brickwork caused by missing bricks and cracks (Fig 12 & 15). Although this did not lead to a cavity it provided potential access into the internals.</p> <p data-bbox="1408 735 1818 991">Across the barn there were several gaps in the corrugated roof sheets, lifts between sheets and gaps along the ridges (Fig 13 & 14) however the sheets were not underlined and therefore the gaps did not lead to crevice dwelling opportunities.</p> <p data-bbox="1408 1038 1818 1254">On the northern elevation, as well as the rear of the lean-to along the south-eastern elevation there were gaps under the roof overhang (Fig 14). This allowed access into the internals.</p>	Low Potential

Figure 9. External view of the eastern (rear) elevation of the barn (taken June, 2022)



Figure 10. External view of the lean-to at the southern elevation of the barn (taken June, 2022)



The open-fronted section of the barn can be considered largely unsuitable for roosting bats due to it being open-fronted, therefore lacking the thermoregulation required for roosting bats.

It is considered the wooden beams provide crevice dwelling opportunities and the gaps in the construction material and the open front provide access.

No internal evidence of bat presence found.

Figure 11. Internal view of the barn (taken June, 2022).



Figure 12. Gaps in the brickwork and along the hip of the roof along the northern elevation (taken June, 2022).





Figure 13. Gaps in the corrugated metal roofing and along the ridge on the north-western elevation (taken June, 2022)



Figure 14. Slight lift and gap in the corrugated metal and along the hips on the northern elevation (taken June, 2022).



	<p>Figure 15. Gaps in the brickwork on the western elevation (taken June, 2022).</p> 			
<p>Outbuilding</p>	<p>Figure 16. External view of the eastern (front) elevation of the outbuilding (taken June, 2022)</p> 	<p>Detached, open-fronted outbuilding formed of metal frame and posts (Fig 16), formed of concrete blocks, red bricks and a single-skinned corrugated asbestos roof.</p> <p>The internal space of the outbuilding was not underlined and was exposed to the outer conditions of the environment (Fig 17). Metal ridge beams and wooden beams were throughout for support, supported by occasional metal posts.</p>	<p>The internal space of the outbuilding can be considered largely unsuitable for roosting bats due to it being open-fronted, therefore lacking the thermoregulation required for roosting bats.</p> <p>No internal evidence of bat presence found.</p>	<p>Negligible Potential</p>

4.4 Badgers

During the walkover no evidence of badgers was noted on site however given the surrounding habitats, there is considered to be **potential** for foraging and commuting badgers on site.

4.5 Reptiles

The majority of the grassland directly adjacent to site has either undergone regular management or has large patches of bare ground present which has led to a very short sward height surrounding the buildings.

The only areas of suitable reptile habitat are the small areas of scrub which are restricted to adjacent to the south-east of the lean-to of the barn and adjacent to the western elevation of the outbuilding. Furthermore, there is a small area of overgrown grassland located at the northern and western elevation of the outbuilding. These areas are largely dense scrub and overgrown grassland and therefore offer very limited structure and lack the variety of thermal niches typically required by reptiles. They are also small and lack connectivity to additional suitable habitat. Therefore, the potential for reptiles is **very low** and restricted to very small portions of the site.

4.6 Great Crested Newts

4.6.1 Habitat Suitability Index

Pond 1 located within 250m of site (**Fig 17 & 18**) was subject to HSI assessments. This was to assess the suitability for the waterbody to support GCN. Pond 1 was dry at the time of the survey and therefore was not subject to an HSI assessment, whereas the ditches were inaccessible. The results of this are provided below in **Table 3**.

Figure 17. View of Pond 1 located within 250m of site (taken July, 2022).



Figure 18. View of Pond 2 located within 250m of site (taken July, 2022).**Table 3.** The results of the HSI carried out on pond 2.

Suitability Indices	Criteria Selected	Score Awarded	Notes
Location	Zone A	1	
Pond area	225m ²	0.45	Estimated
Pond drying	Dries Annually	0.1	
Water quality	Bad	0.01	
Shade	0-60%	1	
Waterfowl	Absent	1	
Fish	Absent	1	
Ponds within 1km	>12	1	
Terrestrial habitat quality	Good	1	
Macrophytes	35-40%	0.7	
HSI Score '0.4465'			

Pond 2 scored a 0.4465 in the HSI, giving it the suitability level “Poor” for supporting a GCN population (as per ARG, 2010).

4.6.2 On Site Suitability

The habitats to be directly impacted from the proposals include modified grassland, bare ground, small areas of dense scrub and buildings. This habitat, alongside the surrounding habitats identified on site are not considered to provide the suitable structure and heterogeneity required by GCN. No records of GCN using freely available resources were noted within 1km of the site. Additionally, Pond 1 on site has been identified with a HSI of “Poor” habitat suitability score for supporting GCN. No records of GCN using freely available

resources were noted within 1km of the site. Therefore, taking all of the above into consideration, the site is considered to have **Negligible Potential** for GCN.

4.7 Hazel Dormouse

The hedgerow directly adjacent to site (which is to be retained as part of the proposals) and the dense scrub to the rear of the outbuilding holds limited potential for Dormice. The other habitats are suboptimal. In addition, no records of Hazel Dormouse were noted within 1km of the site. The site therefore has **very low potential** to support Dormice.

4.8 Notable and Birds of Conservation Concern (BoCC)

During the site visit a Barn Owl (*Tyto alba*) was seen exiting the barn. Inside the barn extensive evidence of use by Barn Owl was present throughout. Pellets, some very fresh, were recorded beneath the central wooden beam where a Barn Owl box was present. Pellets were also present beneath the rear corner of the barn indicating the Owls are perching in the barn (**Fig 19**). Due to the presence of the Barn Owl box, it is considered Barn Owls could be roosting / nesting within the barn. Other evidence of disused bird nests were noted on several of the wooden and metal beams of the barn.

During the site visit two young Kestrels (*Falco tinnunculus*) were seen perched and flying around the lean-to of the barn, the bird box situated in the outbuilding opposite the lean-to had previously supported the Kestrel nest (**Fig 20**).

The buildings and dense scrub on site provide ideal nesting habitat for a variety of different species. The site is situated within a surrounding environ that provides an ideal mosaic of habitats, including arable land, grassland and hedgerows providing ideal foraging habitat for any nesting or breeding birds using the site. Given all of the above the site has a **confirmed presence** of supporting a variety of species of nesting birds.

Figure 19. The wooden structure beams in the barn evidence of being used by perching Barn Owl with pellets / droppings seen on the floor below (taken June, 2022).



Figure 20. The wooden bird box in the outbuilding that has previously supported a Kestrel nest with 2 young Kestrel seen during the site visit (taken June, 2022).



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

It is considered there are no habitats of significant ecological value that will be lost or impacted upon as a result of the works, with the majority of the site comprising of modified grassland, small areas of dense scrub, hardstanding and buildings (habitats only considered to be of value at the **Site** level of significance). However, works will also take place adjacent to the boundary hedgerows of **local value** and therefore, the trees within the hedgerow could be damaged by machinery and particularly by root zone compaction. The loss of habitat and potential indirect effects would have a **minor adverse impact** to habitats of **local** value.

5.2.2 Impacts to Wildlife

The barn on site has been identified as holding low potential for roosting bats. If Phase II Bat Surveys reveal that bats are utilizing the barn as a roost the works to this building could lead to the disturbance, harm or even death of bats. Therefore, **an adverse impact is possible** (with the level of impact to be determined following the results of the bat surveys).

The proposed works on the barn and outbuilding could result in the disturbance of nesting birds and damage to their nests if conducted during the nesting season. Additionally, due to the confirmed presence of a Barn Owl within the barn, which can nest throughout the year, it is considered in the absence of mitigation an **adverse impact is certain** at the **local level**.

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**.

There are some very small areas of sub-optimal habitat that could be utilised by common reptile species on-site. As such, removal of suitable habitat without adequate mitigation could potentially constitute an offence under the W&CA, 1891 if reptiles are present. If reptiles are present during works it is considered this would result in a **minor adverse impact to a species of local value**.

5.3 Site Operation

5.3.1 Impacts to Wildlife

The development will result in an increase in lighting within the general area from external lights accompanied with the proposed change of use. This can affect the behaviour,

particularly foraging, of nocturnal wildlife. Therefore, an **adverse impact is likely** on Badgers, bats and Barn Owls.

5.3.2 Designated Sites

As site lies within 3.5km of Pagham Harbour SPA it falls within the disturbance zone. The likely increases in recreational pressure have the potential to negatively impact upon the high densities of wintering wildfowl, waders and also for breeding birds for which the area is predominantly protected. Due to the scale of proposals there is a **potential for a minor negative impact at international level**.

6.0 RECOMMENDATIONS

6.1 Introduction

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

6.2 Bats

The barn is considered to be of **Low Potential** for bats. As per best practice guidelines (**Table 4**), it therefore requires 1 survey (one dusk emergence or dawn re-entry) to establish the presence / likely absence of roosting bats and to inform a detailed impact assessment with regards to roosting bats on site as necessary.

Table 4. Recommended minimum number of survey visits (from Table 7.3 (BCT, 2016).

Low Roost Suitability	Moderate Roost Suitability	High Roost Suitability / Confirmed roost
One survey visit. One dusk emergence or dawn re-entry survey.	Two separate survey visits. One dusk emergence and a separate dawn re-entry survey*.	Three separate survey visits. At least one dusk emergence and a separate dawn re-entry survey. The third could be either dusk or dawn.
May – August	May – September with at least one of the surveys between May - August	May – September with at least two surveys between May and August

Should bats be found to be roosting in the building, mitigation measures will be required to reduce potential impacts, and mitigation/compensation features may be required. It may be necessary to apply for a European Protected Species licence for works to proceed if bats are using the barn. Any necessary mitigation/compensation will be determined following the completion of the phase II bat activity surveys.

NB Recommendations for sensitive lighting will be provided within the bat surveys report upon completion of those (when a better understanding of which bat species are using the site will have been obtained).

6.3 Barn Owls

6.3.1 Introduction

The following measures will reduce as far as possible the adverse impact upon the Barn Owl identified within Portshole Barn.

6.3.2 Compensation – Barn Owl Box

To compensate for the loss of the Barn Owl perching sites in the barn, 1 No Barn Owl box will be provided on a pole (as per the design provided by the Barn Owl Trust). The pole will include addition horizontal wooden poles that can be used for perching (with the box providing potential nesting site). The box should ideally be placed at least 5 metres above the ground

with a good viewpoint and be erected at least three months prior to works commencing on site. Indicative location of where this feature will be located is shown below in **Section 6.5.1, Fig 21.**

6.3.3 Timing Constraints

Where possible, works will be undertaken outside of the bird nesting season, which spans March-August inclusive, to avoid any active nests being impacted. This timing largely coincides with restrictions associated with the mitigation for roosting bats. That being said, Barn Owls can nest throughout the year, and therefore works must be preceded by a nesting bird survey by a Suitability Qualified Ecologist (SQE). Should any active nests be identified a 5 metre buffer zone must be implemented around the nest until the chicks have fully fledged and the nest has been deemed inactive by the SQE (Natural England, 2015).

6.3.4 Barn Access Point

During construction works, if at any time all suitable access points for Barn Owls will be blocked by scaffolding, protective sheeting etc., the barn must first be checked by the supervising SQE for the presence of the Barn Owl(s). If present, the access point will be blocked at an appropriate time of day by the supervising SQE, once the Barn Owl has vacated the barn.

6.4 Avoidance of Impacts to further Breeding and Nesting Birds

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

To compensate for the loss of the Kestrel nesting site in the outbuilding, 1 No Kestrel Nest Box will be provided on a pole (as per the design provided by NHBS). The pole will include additional horizontal wooden poles that can be used for perching (with the box providing potential nesting site). The box should ideally be placed at least 5 metres above the ground with a good viewpoint. Indicative location of where this feature will be located is shown below in **Fig 21.**

Figure 21. Approximate redline boundary of the site with the indicative locations of the mounted Barn Owl box (yellow star) and Kestrel nest box (blue star) will be located (Magic Maps, 2022)



6.5 Reptiles

Although the vast majority of the habitat on site is not considered suitable for reptiles, there are some small areas of suboptimal reptile habitat present on site (i.e. bramble scrub). Given the very limited extent of the suitable reptile habitat on site, it is considered the most appropriate form of mitigation would be to adopt a precautionary approach. The following methods will be undertaken to ensure that no reptiles are harmed during the works in the unlikely case that individuals are present on site.

- The habitats on site must be maintained how they currently are (i.e. regularly cut to as short sward height) until the works commence.
- The day prior to ground works commencing, all suitable vegetation on site will be cut to a height of 20cm under the supervision of an ecologist. This must be done directionally towards the boundaries of the site to encourage reptiles to passively

disperse. The ecologist on site will then hand search any denser areas of cover such as leaf litter where these areas are to be directly impacted upon.

- All vegetation on site must be kept managed during the development to ensure that reptiles don't establish whilst works take place.
- Materials must not be stored along the boundary vegetation on site and must be kept raised off of the ground (i.e stored on pallets).

6.6 Badgers

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 Protected Sites

A scheme of Strategic Access Management and Monitoring (SAMMs) has been set up by Chichester and Arun Districts. Mitigation towards the SPA must be provided for all new residential developments within the 3.5km disturbance zone of the SPA. This scheme sets a flat rate contribution of £927 per net additional dwelling (from 1 April 2022).

6.8 Enhancements

6.8.1 Bats

To act as biodiversity enhancement, a bat box will be erected onto the south of the barn. Woodstone or Woodcrete boxes are preferred as they are suitable for long-term use. The Beaumaris Woodstone bat box or the Schwegler 2FE box is recommended as it is suitable as a wall-mounted feature (**Fig 22**). These boxes are suitable for crevice-dwelling species such as Pipistrelle bats.

Figure 22. Beaumaris Woodstone bat box (left) and Schwegler 2FE bat box (right) which will be erected onto the barn.



6.8.2 Birds

The erection of a nest box in a tree within the retained hedgerow to the west of site will provide further enhancements. Where possible this nest box could be tailored to provide opportunities for red listed/BAP species known from the local area. A Vivara Pro Seville 32mm, Seville 28mm or Barcelona Bird Box should be used. This will provide suitable nesting opportunities for a variety of bird species and will increase the nesting opportunities for birds on site.

6.8.3 Planting

As a general enhancement, any new landscape planting will aim for a minimum 70:30 ratio in favour of native species over non-natives and ornamentals (in line with the CIEEM guidance outlined within Smith & Day (2012)). Species that can be considered within any planting include Rowan (*Sorbus aucuparia*), Alder (*Alnus glutinosa*), Hazel (*Corylus avellana*), Holly (*Ilex aquifolium*), Silver Birch (*Betula pendula*), Small-leaved Lime (*Tilia cordata*) and Willow (*Salix* spp.). Non-natives and ornamentals should only be given a bias in formal locations where aesthetics is a priority.

7.0 CONCLUSION

In order to fully assess the value of the site and the impacts in the absence of mitigation Phase II protected species survey(s) (bat) will be required. Once completed a Phase II bat report will be produced, including mitigation and compensation measures if required.

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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