



Preliminary Bat & Bird Assessment

Site:

Buildings at Porthmissen Farm, 2 Cuckoo Mill, Padstow, Cornwall

Grid Reference: SW 8941 7616

29th April 2021

Version 1



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Document Control:

Site Name:	Buildings at Porthmissen Farm, 2 Cuckoo Mill, Padstow, Cornwall
OS Grid Reference:	SW 8941 7616
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Client:	Martha and Nicolas Prideaux-Brune
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Declaration:

"The information, evidence and advice, which we have prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology & Environmental Management's (CIEEM) Code of Professional Conduct. We confirm that the opinions expressed are our true and professional bona fide opinions."

Katherine Biggs		
Lucy Wright		

Report Lifespan:

Ecological features can change over time, particularly if site management/ use changes. Typically, Preliminary Bat and Bird Assessments are valid for one year (until April 2022).



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Summary

Bat evidence?	<p>Buildings at Porthmissen Farm were visually inspected for evidence of roosting bats on 6th April 2021. No evidence of bats roosting within the farmhouse was found. However, external features were noted which provide potential for crevice-dwelling bats and which also provide potential bat access into the interior of the building. In addition, the interior of the north eastern roof void could not be accessed and so the presence or absence of roosting bats within this area could not be determined. This building was, therefore, assessed as being of 'moderate suitability' for roosting bats.</p> <p>Within a ground floor room of Barn 1, evidence of roosting bats was found in the form of a single bat dropping (characteristic of a long-eared bat species), along with likely bat feeding remains (butterfly wings). In addition, external features on this building were noted with potential to be used for roosting by crevice-dwelling bats and which could provide potential bat access into the interior. This building was, therefore, assessed as being of 'moderate suitability' for roosting bats.</p> <p>No evidence of bats roosting within Barns 2 or 3 was found. However, some external features were noted with potential for crevice-dwelling bats and which could enable potential bat access into the interiors. Barns 2 and 3 were, therefore, assessed as being of 'low suitability' to support roosting bats.</p>
Bat mitigation recommendations?	<p>A minimum of two bat emergence/ re-entry surveys of the farmhouse and Barn 1 are required. One bat emergence/ re-entry survey is required of each of Barns 2 and 3 to be undertaken between May and August. If a bat is observed to emerge from Barn 2 and/ or 3 during the emergence survey, then at least one additional emergence survey of the building(s) will be required.</p> <p>Bat emergence/ re-entry surveys can only be undertaken between May and September, and at least one of the emergence/ re-entry surveys should be undertaken between May and August. DNA analysis of the bat dropping from within Barn 1 is required to confirm the species present. The results of these surveys will be required to inform the planning application, building works and associated Natural England licence (if required).</p>
Bird evidence?	<p>Evidence of barn owl (<i>Tyto alba</i>) was observed in the form of old likely barn owl nest debris, barn owl pellets (c. 10) and liming within the single-storey room of Barn 1 and at least one barn owl pellet was noted within the first floor room of Barn 1. Although no current or recent evidence of barn owls using Barn 1 for nesting was noted, Barn 1 and Barn 2 were assessed as having moderate suitability to support nesting or breeding barn owls. The other buildings were assessed as being of negligible suitability to support nesting, breeding or resting barn owls.</p> <p>Evidence of nesting barn swallows (<i>Hirundo rustica</i>) was observed within Barns 1 and 2 and an old woven bird's nest was found within Barn 1. Ivy growth on Barn 2 provides further potential habitat for nesting birds.</p>
Bird mitigation recommendations?	<p>As a precaution, works must be preceded by a pre-works check of Barns 1 and 2 for breeding or nesting barn owl, irrespective of time of year. Precautionary recommendations for other nesting bird species are provided.</p> <p>Alternative provision for nesting barn owls and swallows should be made within the converted barn. There is opportunity to enhance the site for other nesting birds post-development by installing bird boxes on the building exterior/ within the fabric of the new dwelling.</p>



1.0 Introduction

1.1 Background

PBWC Architects Ltd, on behalf of the clients Martha and Nicolas Prideaux-Brune, commissioned Plan for Ecology Ltd to undertake a Preliminary Bat and Bird Assessment (sometimes referred to as a Bat and Barn Owl Assessment) of a farmhouse and a number of barns at Porthmissen Farm, 2 Cuckoo Mill, Padstow, Cornwall (OS Grid Ref: SW 8941 7616) in March 2021. It is understood that the clients propose to renovate the farmhouse and convert the barns for residential use.

1.2 Project Administration

Property Address:	Buildings at Porthmissen Farm, 2 Cuckoo Mill, Padstow, Cornwall
OS Grid Reference:	SW 8941 7616
Client:	Martha and Nicolas Prideaux-Brune
Planning Authority:	Central 2
Planning Reference Number:	Unknown
Report Reference Number:	P4E2277
Proposed work:	Renovation of farmhouse and conversion of barns for residential use
Survey Date:	6 th April 2021
Ecologist & Licence Number:	Katherine Biggs BSc (Hons) MSc ACIEEM; Bat licence No. 2016-22188-CLS-CLS; Barn owl licence no. CL29/00552

1.3 Legislation & Planning Policy

Planning: The local planning authority has a statutory obligation to consider impacts upon protected species resulting from development. Planning permission will not be granted with outstanding ecological surveys, and if applicable an appropriate mitigation plan.

Bats: In the UK all bat species are listed on Annex IV(a) of the European Communities Habitats Directive and as such are European Protected Species (EPS). In Britain protection of bats is achieved through their inclusion on Schedule 2 of the Conservation and Habitats Regulations 2010, Schedule 5 of the Wildlife and Countryside Act 1981 (as amended) and Schedule 12 of the Countryside and Rights of Way Act 2000 (HM Government, 1981, 2000 & 2010).

As a result of this statutory legislation it is an offence to:

- Deliberately capture, injure or kill a bat;
- Intentionally or recklessly disturb a bat/s in its roost;
- Intentionally or recklessly damage, destroy or obstruct access to a bat roost (even if bats are not occupying the roost at the time);
- Possess or sell or exchange a bat (dead or alive) or part of a bat.



Works with potential to cause significant disturbance to roosting bats may require a European Protected Species (EPSL) licence or Bat Mitigation Class Licence (CL21) from Natural England before works can legally commence. Works likely to result in less significant disturbance may be carried out under a Bat Mitigation Method Statement. The magnitude of disturbance and therefore the requirement for an EPSL, Bat Mitigation Class Licence or method statement is assessed on a case by case basis by the bat ecologist. The Bat Mitigation Method Statement or EPSL must be prepared and/or applied for by a suitably experienced and licenced bat ecologist. Where planning permission is required, the appropriate licence cannot be obtained until planning permission has been granted.

Birds: In Britain the nests (whilst in use or being built) and eggs of wild birds are protected against taking, damage and destruction under the Wildlife and Countryside Act 1981 (as amended) (HM Government, 1981). The barn owl (*Tyto alba*) is listed on Schedule 1 of the Wildlife and Countryside Act (HM Government, 1981); this legislation makes it an offence to:

- Intentionally capture, injure or kill a barn owl;
- Intentionally or recklessly disturb a barn owl whilst nesting;
- Intentionally or recklessly disturb a dependent young barn owl.



2.0 Methodology

The ecologist (Katherine Biggs) assessed the suitability of the buildings and the surrounding habitat to support bats and birds. A high-power torch was used to illuminate all accessible areas of the buildings with potential to support roosting bats and roosting/ nesting birds. The ecologist searched for signs of bats and birds including droppings, staining, feeding remains, bird nests, barn owl pellets and liming.

The assessment was carried out in accordance with the 'Bat Survey for Professional Ecologists - Good Practice Guidelines' produced by the Bat Conservation Trust (Collins, 2016).

2.1 Ecological Evaluation

Potential bat roosts identified during the visual inspection of the buildings were categorised as to their suitability in accordance with the Bat Conservation Trust's (BCT) Good Practice Guidelines (Collins, 2016) as described below:

Negligible: negligible features with potential to support roosting bats.

Low: one or more features with potential to support individual bats on an occasional basis. Unlikely to support large numbers of bats.

Moderate: one or more features with potential to support roosting bats but unlikely to be of high conservation status.

High: one or more features with potential to support large numbers of bats on a regular basis.

2.2 Limitations

All areas of the buildings were fully accessible, with the exception of part of the interior of the roof void over the farmhouse and the first floors of Barns 1 and 2, which could not be fully accessed on health and safety grounds. In addition, the small roof void over the enclosed single-storey room within Barn 2 could also not be accessed as there was no loft hatch present.

Weather during the survey was in line with seasonal norms i.e. dry with part cloud and a strong wind and a temperature of 5°C. There are no limitations associated with weather conditions. The farmhouse and barns support exterior features that could not be fully inspected and provide potential roosting locations for bats.



3.0 Assessment Results

3.1 Site Description

The property 'Porthmissen Farm' is located in a rural setting c. 2.1 km north west of Padstow, c. 0.5 km north of Trevone and c. 0.3 km east of Trevone Bay on the north coast of Cornwall. The property is immediately surrounded by open mixed farmland bounded by low Cornish hedgebanks. Within the wider countryside are further mixed farmland fields, with Trevone Bay Site of Special Scientific Interest (SSSI) and Trevone Bay to Stepper Point County Wildlife site (CWS) c. 0.2 km to the north west and south west of the site. Buildings in the wider area comprise a mixture of period and modern properties, with agricultural barns and outbuildings. In combination, these features provide potential good quality foraging and roosting habitat for bats, and suitable nest sites, roosts and foraging habitat for birds.

3.2 Bat Assessment

The assessment was undertaken on 6th April 2021.

Porthmissen Farm consists of a Grade II Listed farmhouse with three former agricultural barns adjacent (Figs. 1-23). To the north are two larger agricultural barns and to the south west is a small outbuilding, but these structures were not included in the survey.



Figure 1: Annotated plan showing existing site layout



Farmhouse

The farmhouse consists of a large two-storey structure of brick and stone rubble construction with hanging slates on the southern and western elevations (Figs. 2-4). The roof consists of three steeply pitched rag slate roofs; with a section to the south featuring a gable end on each of its eastern and western elevations, and two sections to the north featuring a double gable end to the north. The roof has clay ridge tiles and three brick chimneys. On the western elevation of the building is a single-storey lean-to with a corrugated cement fibre roof. The building features timber fascia boards, plastic and metal guttering and glazed windows and doors with timber frames. There is a porch on the southern elevation with a pitched slate roof and much of the building is surrounded by scaffolding. There are crevices in the external stonework and gaps behind the fascia boards, behind hanging slates, under ridge tiles and slipped roof slates, all of which provide potential for crevice-dwelling bats. These features also provide potential bat access into the interior of the roof voids.

Internally this building consists of a number of dilapidated rooms on the ground floor and first-floor, with wall paper/ bare plaster/ whitewashed stone walls and concrete, stone or timber floors (Fig. 5). The interior of the lean-to is open to the inside of the farmhouse and the underside of the roof is lined with polystyrene insulation boards. There are two enclosed roof voids within the southern and north eastern roof sections. The ceiling below the roof void within the north western roof section has been removed opening it up to the rest of the property and the underside of the roof is partly unlined and partly lined with bitumen membrane (Fig. 6). There are holes in the roof in places which make the interior draughty and which enable potential bat access into the interior.

Access to the southern roof void is possible through a gap above the height of the ceiling between the first floor rooms below, connecting the interior of the property to the southern roof void above (Figs. 6 & 7). The interior of this roof void is light, due to the gap leading to the open first floor room and due to the presence of a window in the centre of the northern elevation of this roof. There is thick mineral fibre loft insulation on the floor and the underside of the roof is unlined. The gable end walls are part bare stone and part plastered. It was not possible to fully inspect the southern roof void due to the thick loft insulation covering the ceiling joists. There appears to be a small timber enclosed area at the eastern end of this void. It is not known if this void connects internally to the void over the north eastern section and there is no loft hatch present to access this roof void.

No evidence of bats roosting within the building was found. However, external features were noted which provide potential for crevice-dwelling bats and which also provide potential bat access into the interior of the farmhouse. In addition, the interior of the north eastern roof void could not be accessed and so the presence or absence of roosting bats within this area could not be determined through visual survey alone.

The farmhouse was, therefore, assessed as being of '**moderate suitability**' to support roosting bats.



Figure 2: Southern elevation of farmhouse at Porthmissen Farm



Figure 3: Northern elevation of farmhouse at Porthmissen Farm



Figure 4: Western elevation of farmhouse at Porthmissen Farm



Figure 5: Interior of one of the ground floor rooms within the farmhouse at Porthmissen Farm



Figure 6: Interior of open roof void within north western section of farmhouse, showing holes in roof (red arrows) and gap leading to southern void (yellow arrow) (viewed from below towards the south)



Figure 7: Interior of southern roof void (viewed towards the east)

Barn 1

This building is to the north east of the farmhouse and consists of an L-shaped barn which is part two-storey to the west and part single-storey to the east (Figs. 8 & 9). It is constructed from stone, concrete block and brick with a pitched rag slate roof and clay ridge tiles. The roof is part hip and part gable. There are a number of holes in the roof where slates have slipped/ lifted and a number of open door and window apertures, all of which enable potential bat access into the interior. Some doors and windows have been boarded up with timber/ concrete block. The external walls are either bare stone/ brick or cement render and the barn features metal guttering and slate/ concrete windowsills. There are crevices in the stonework in places which provide potential roosting opportunities for crevice-dwelling bats.

Internally this building consists of two rooms on the ground floor of the two-storey section; a small room to the west and a large L-shaped room to the east (Fig. 10). Within the single-storey section is a single room (Fig. 12 & 13). The internal walls are bare stone/ whitewashed, with concrete or earth floors. In the L-shaped room are timber and concrete stalls and timber troughs along the walls. The rooms are light, open and draughty due to the presence of open door and window apertures on the southern elevation. The rooms in the two-storey section are open from the floor to the underside of the timber first floor, which is dilapidated in places. A single bat dropping was found within a timber trough on the eastern wall of the L-shaped room (Fig. 11). The dropping was characteristic of a long-eared bat spp., likely to be brown long-eared bat (*Plecotus auritus*) as the site is outside the known range of grey long-eared bat (*Plecotus austriacus*). NB: species present must be confirmed with DNA analysis of the bat dropping. A number of butterfly wings (indicating bat feeding remains) were also found within this part of the building.



Within the single-storey section there is a timber partition in the centre of the room, with old farm machinery at the western end. Above the farm machinery is a small mezzanine timber floor at the western end (Fig. 13). This room is very light and draughty due to the holes in the roof and open door. It is open from the floor to the underside of the roof, which is unlined.

The first floor of the two-storey section consists of a large L-shaped room at the eastern end, which links internally to a smaller room at the western end (Fig. 14). The first floor is accessed via an external door on the northern elevation of the building where the level of the ground is raised up to first-floor level at the eastern end. The interior is very light and draughty due to the open windows, doors and holes in the roof. The walls are bare stone or plastered and the wall tops appear to be enclosed. The floor is timber and the underside of the roof is unlined. At the western end there are a number of large plastic seed sacks hanging up over the crossing timbers. It was not possible to fully inspect the first floor rooms due to the floor being dilapidated in places.

A single bat dropping was noted within one of the ground floor rooms of Barn 1, together with the presence of likely bat feeding remains (butterfly wings) indicating that bats may use the building for roosting. In addition, external features provide potential for crevice dwelling bats and potential access for bats into the interior of the barn.

Barn 1 was, therefore, assessed as being of '**moderate suitability**' to support roosting bats.



Figure 8: Southern and eastern elevations of Barn 1 at Porthmissen Farm



Figure 9: Northern and eastern elevations of the single-storey section of Barn 1 at Porthmissen Farm



Figure 10: Interior of L-shaped room on ground floor of Barn 1 (viewed towards the north)



Figure 11: Bat dropping (yellow circle) found within timber trough on eastern wall of L-shaped ground floor room in Barn 1



Figure 12: Interior of single-storey section of Barn 1 (viewed towards the north)



Figure 13: Mezzanine floor at western end of single-storey section of Barn 1 (viewed towards the north)

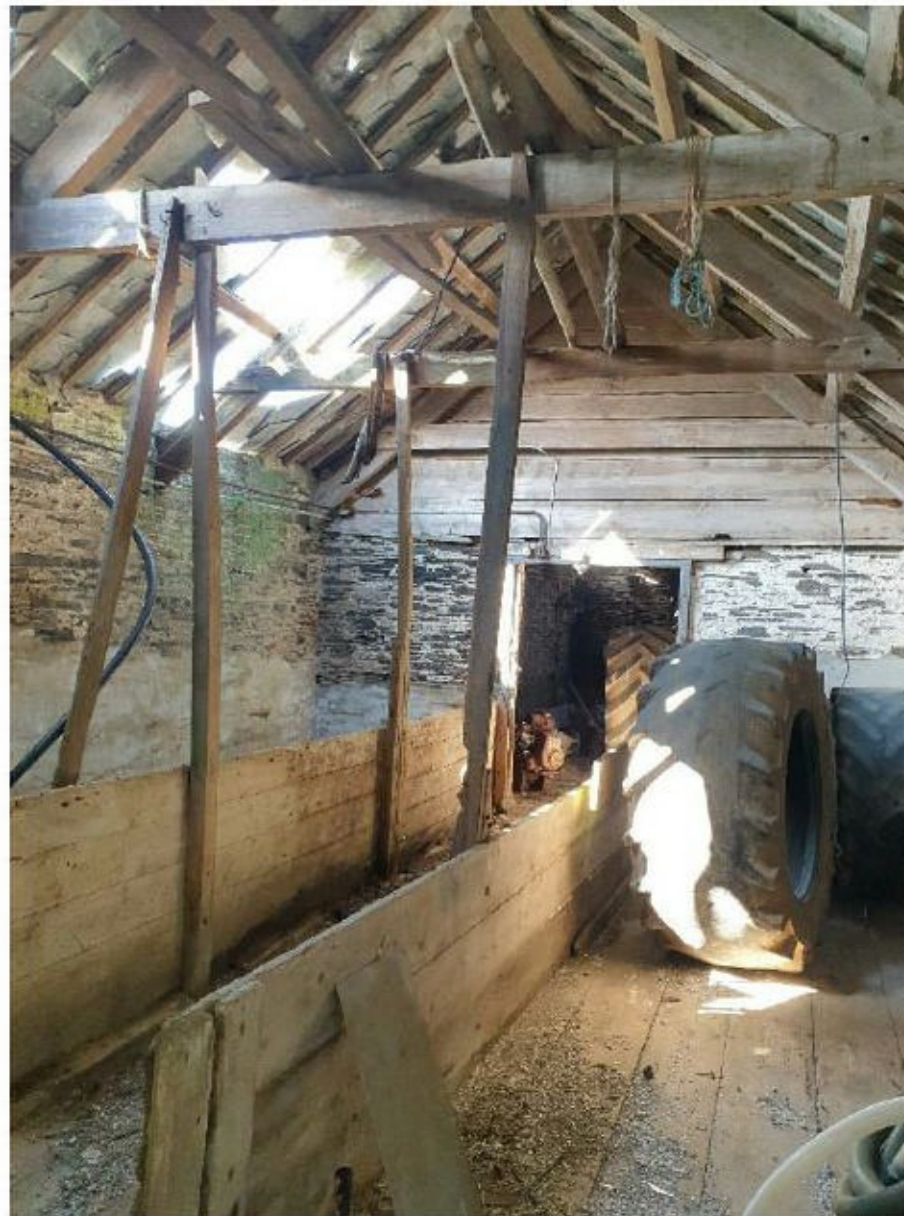


Figure 14: Interior of first-floor of Barn 1 at Porthmissen Farm (viewed towards the south west)

Barn 2

This building is to the south of Barn 1 across a concrete yard and is constructed from stone, brick and concrete block (Figs. 15 & 16). It consists of a part two-storey, part single-storey building with a pitched rag slate roof and clay ridge tiles over each section. There is an external stone staircase at the eastern end leading up to an open doorway, although this part of the building is overgrown with thick vegetation hindering access. There are holes in the roof where slates have lifted, the single-storey section is open-front along its northern elevation and the two-storey section has open window and door apertures, all of which enable potential bat access into the interiors. There are also gaps under lifted slates and ridge tiles which provide potential roost sites for crevice dwelling bats. There are metal gates across some of the northern elevation of the single-storey section. There is ivy growth on the south eastern corner of the barn which could obscure further potential bat roost features (Fig. 16).

Internally the two-storey section consists of a single room on the ground floor, a former cattle shed, with a single room on the first floor (Figs. 17 & 18). Both rooms are light, open and draughty due to the open windows and doors and the walls are plastered. The ground floor has a concrete floor with concrete cattle stalls and the ceiling is timber. There is a large hole in the first-floor linking the ground and first-floors internally and an internal door linking the ground floor room to an adjacent enclosed room within the single-storey section. On the first-floor the underside of the roof is unlined, the walls are bare stone and the wall tops are enclosed. This part of the building was inspected from a ladder through the hole in the floor, although it could not be fully inspected on health and safety grounds due to the floor being dilapidated in places.



The interior of the single-storey section consists of five stalls, which are connected to each other internally separated by low stone walls and open-fronted to the north (Fig. 19). The underside of the roof is unlined and there are a number of holes, the walls are bare stone, the floors are earth and the interiors are very light and draughty. At the western end is an enclosed room, which links internally to the cattle shed within the two-storey section. This room has plastered walls, a concrete floor with a boarded ceiling under the roof (Fig. 20). There was no access to the roof void. A door on the southern elevation has been partially blocked up and on the northern elevation is an open door.

No evidence of bats roosting within Barn 2 was found and, overall the interiors are light, open and draughty which is likely to have reduced the overall value of the building for roosting bats. However, some external features were noted with potential for crevice-dwelling bats and which could enable potential bat access into the interior.

Barn 2 was, therefore, assessed as being of '**low suitability**' to support roosting bats.



Figure 15: Northern elevation of Barn 2 at Porthmissen Farm



Figure 16: Southern and eastern elevations of Barn 2 at Porthmissen Farm, showing ivy growth



Figure 17: Interior of ground floor of two-storey section of Barn 2 at Porthmissen Farm (viewed towards the west)



Figure 18: Interior of first floor of two-storey section of Barn 2 at Porthmissen Farm (viewed towards the east)



Figure 19: Interior of one of the stalls within the single-storey section of Barn 2 at Porthmissen Farm



Figure 20: Interior of enclosed single-storey room within Barn 2 at Porthmissen Farm (viewed towards the south east)

Barn 3

This building is to the north west of the farmhouse and consists of a single-storey stone barn with a pitched rag slate roof and clay ridge tiles (Figs. 21 & 22). The roof has a hip-end to the north and a gable end to the south. There are crevices in the external walls, gaps under hanging slates, where slates have lifted/ slipped and underneath ridge tiles, all of which provide potential roosting opportunities for crevice-dwelling bats and potential bat access into the interior. There are also gaps around the timber doors on the northern elevation, holes in the roof and open door and window apertures which provide further potential bat access.

Internally this building consists of two rooms; a small room to the south accessed via an open door on the eastern elevation (Fig. 23) and a larger room to the north accessed via a set of timber double doors on the northern elevation, which could not be fully accessed but could be inspected through gaps in the doors. The rooms have concrete floors, bare stone walls, the roof is unlined and they are used for storage. The larger room is dark, whilst the smaller room is light and draughty internally.

No evidence of bats roosting within Barn 3 was found. However, the larger room could not be fully inspected and so the presence or absence of roosting bats could not be determined through visual survey alone. In addition, there are some external features present with potential for crevice-dwelling bats and which provide potential bat access into the interior. The building sits higher up in the landscape in relation to the other buildings and is therefore more exposed to the elements, which is likely to have reduced its overall suitability for roosting bats.



Barn 3 was, therefore, assessed as being of '**low suitability**' to support roosting bats.



Figure 21: Eastern elevation of Barn 3 at Porthmissen Farm



Figure 22: Northern and western elevations of Barn 3 at Porthmissen Farm



Figure 23: Interior of smaller room within Barn 3 at Porthmissen Farm (viewed towards the west)

3.3 Bird Assessment

Intact and degraded barn owl (*Tyto alba*) pellets (c. 10) and areas of liming on the floor and on crossing timbers were observed on the floor of the single-storey section of Barn 1 (Fig. 24). An old, likely barn owl nest debris was noted on the mezzanine floor at the western end of this room, with a large number of rodent skeleton fragments and a small number of barn owl flight feathers noted (Fig. 25). At least one barn owl pellet was noted on the first floor of this building, although it was not possible to fully inspect this area due to the dilapidated condition of the floor. No individual barn owls were noted within the buildings and no recent evidence of barn owls nesting within the buildings was noted.

No evidence of barn owls nesting within any of the buildings was found, although there is potential for barn owls to nest within Barn 1 and Barn 2. Barns 1 and 2 were assessed as being of **moderate suitability** to support nesting, breeding or resting barn owls. The other buildings were assessed as being of **negligible suitability** to support nesting, breeding or resting barn owls.

A woven bird's nest and a number of barn swallow's (*Hirundo rustica*) nests were noted within the ground floor rooms of Barn 1 and an old barn swallow's nest was noted under the ceiling of the ground floor room within Barn 2 (Figs. 26 & 27). Ivy growth on the south eastern corner of Barn 2 provides potential nesting habitat for birds (Fig. 16).



Figure 24: Barn owl pellet (yellow circle) and liming (red circle) on floor of the single-storey section of Barn 1 at Porthmissen Farm



Figure 25: Old likely barn owl nest debris on mezzanine floor within single-storey section of Barn 1, showing rodent skeleton fragments (blue arrows), liming (red arrows) and barn owl feather (yellow arrow)



Figure 26: Woven bird's nest within Barn 1



Figure 27: Swallow's nest within Barn 1



4.0 Mitigation Recommendations

4.1 Bat Mitigation

Farmhouse

No evidence of bats roosting within the building was found. However, external features were noted which provide potential for crevice-dwelling bats and which also provide potential bat access into the interior of the farmhouse. In addition, the interior of the north eastern roof void could not be accessed and so the presence or absence of roosting bats within this area could not be determined through visual survey alone.

The farmhouse was, therefore, assessed as being of '**moderate suitability**' to support roosting bats.

Barn 1

The results indicate that the interior of the ground floor of the two-storey section of Barn 1 likely supports a brown long-eared bat roost. NB: species present must be confirmed with DNA analysis of the bat dropping. In addition, likely bat feeding remains (butterfly wings) were found within this part of the building and there are a number of external features on this building with potential to be used for roosting by crevice-dwelling bats and which could provide potential access for bats into the interior.

Barn 1 was, therefore, assessed as being of '**moderate suitability**' to support roosting bats.

Barn 2

No evidence of bats roosting within Barn 2 was found and, overall the interiors are light, open and draughty which is likely to have reduced the overall value of the building for roosting bats. However, some external features were noted with potential for crevice-dwelling bats and which could enable potential bat access into the interior.

Barn 2 was, therefore, assessed as being of '**low suitability**' to support roosting bats.

Barn 3:

No evidence of bats roosting within Barn 3 was found. However, the larger room could not be fully inspected and so the presence or absence of roosting bats could not be determined through visual survey alone. In addition, there are some external features present with potential for crevice-dwelling bats and which provide potential bat access into the interior. The building sits higher up in the landscape in relation to the other buildings and is therefore more exposed to the elements, which is likely to have reduced its overall suitability for roosting bats.

Barn 3 was, therefore, assessed as being of '**low suitability**' to support roosting bats.

Renovation and modification of the farmhouse and Barn 1 must be informed with two bat emergence or re-entry surveys of each building, undertaken between May and September; one of these two emergence surveys should be carried out between May and August (Collins, 2016). The survey information will be required to inform the planning application and subsequent works. These surveys will determine the species, number of individuals, bat access points and timings of usage. **DNA analysis of the collected bat dropping from Barn 1 is required to confirm the species present.**



Renovation and modification of Barns 2 and 3 must be informed with one bat emergence or re-entry survey of each building, undertaken between May and August, to inform the planning application and subsequent building works (Collins, 2016). **If a bat is observed to emerge from either of the buildings during this survey, then at least one additional emergence survey will be required to inform the planning application.** This survey will determine the species, number of individuals, bat access points and timings of usage.

Please note that planning permission is unlikely to be granted with outstanding ecological surveys. This report must be updated with the results of the recommended further surveys or superseded with a standalone bat survey report, following provision of the final site plan and prior to submission of the planning application.

4.2 Bird Mitigation

Barn Owl

Evidence of barn owl was observed within the single-storey section of Barn 1 and within the first floor of this barn, in the form of intact (recent) and degraded barn owl pellets (at least 10) and liming on the floor of the single-storey room, together with an old, likely barn owl nest debris which was noted on the mezzanine floor at the western end of this room. In addition, at least one barn owl pellet was found on the floor within the first-floor room of this barn. It is likely that barn owls roost within Barn 1 and potentially Barn 2, although the buildings do not appear to be in current or recent use for nesting by this species. However, as a precaution, works to Barns 1 and 2 must be preceded with a pre-works inspection for nesting barn owl, irrespective of time of year. NB: Barn owl can breed at any time of year. If nesting barn owls are present, works must be delayed until nesting activity has ceased and/or the dependant young have fledged.

In the absence of mitigation, conversion of Barn 1 will exclude roosting/ potentially nesting barn owl. A permanent provision for barn owl should be incorporated into the design and provided within the converted barn. This can be achieved by installing a minimum 1m² nest chamber inside the roof space. The nest chamber will require an access hole located at least 3m above ground level. The access must measure 130mm x 250mm and feature a grippable ledge beneath the exterior hole. The ledge will provide a landing and exercise platform. On the interior, the depth between the bottom of the nest box and entrance, must not be less than 450mm. The nest box exterior should be moisture insulated and feature an external human access. To comply with Building Regulations the barn owl box should be located out of the U-value envelope.

For images of integrated barn owl boxes see:

<https://www.barnowltrust.org.uk/sitemap/galleries/photoguide-provision-barn-owls-within-buildings/>.

Alternatively, provision for roosting/ nesting barn owl could be made within a nearby building, if a suitable site is available.

Other nesting birds

Evidence of nesting barn swallows was observed within Barns 1 and 2; alternative provision for nesting swallows should be made within the converted buildings or an alternative building within the site. Suitable products include No. 10 Schwegler Swallow Nest. Suitable products are available at <https://www.nhbs.com>, and <https://www.wildcare.co.uk/>.

A precautionary approach should be adopted during works. Works to the buildings, including removal of ivy, should be avoided during the bird nesting season (March to September inclusive)



or preceded with a thorough search for nests, to be undertaken by an ecologist. If, during works, an active bird nest is uncovered, works must stop immediately (as soon as it is safe to do so) and delayed until nesting activity has ceased. Works are most likely to be delayed between April and July.

4.3 Opportunities for Biodiversity Enhancement

Net gain is described as a measurable target(s) for development projects where impacts on biodiversity are outweighed by the mitigation hierarchy approach to first avoid, and then minimise, impact including through restoration and/ or compensation (Baker *et al.*, 2019).

The biodiversity value of the site for nesting birds post-development could be enhanced by installing bird boxes (above and beyond those required as mitigation) within the fabric of the converted buildings, on the building exteriors or within the gardens. The value of the site for invertebrates could be enhanced by installing deadwood piles within garden habitat, or bee bricks within the converted buildings. Plan for Ecology Ltd can provide detailed recommendations upon request.

NB: suitable products are available from www.nhbs.com, www.wildcareshop.com and www.greenandblue.co.uk



5.0 References

Baker, J., Hoskin, R. and Butterworth, T. (2019) Biodiversity Net Gain. Good Practice Principles for Development. A Practical Guide. CIRIA, 2019. ISBN: 978-0-86017-791-3.

British Standard Institution (2013) BS42020: 2013 Biodiversity – A Code of Practice for Planning and Development. BSI Standards Limited 2013. ISBN 978 0 580 77917 6.

Collins (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd Edition, Bat Conservation Trust, London.

Cornwall Council (2018) Cornwall Planning for Biodiversity Guide. Cornwall Council. Truro.

HM Government (2010) The Conservation of Habitats and Species Regulations 2010. HMSO, London.

HM Government (2006) The Natural Environment and Rural Communities Act 2006. HMSO, London.

HM Government (1981) The Wildlife and Countryside Act 1981 (as amended). HMSO, London.

HM Government (2000) The Countryside and Rights of Way Act 2000. HMSO, London.