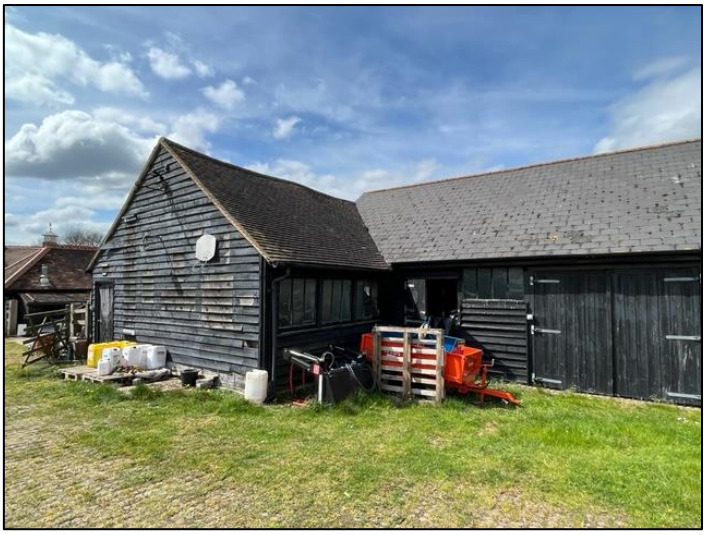
PRELIMINARY ECOLOGICAL ASSESSMENT

BARNS AT PRIMROSE COTTAGE,

HILL END ROAD, HAREFIELD, GREATER LONDON



Commissioned by: **SDH Ltd**

Report Number: ASW/SDH/003/26/2022
April 2022

ASW Ecology Ltd
Office/Mobile: 07710 150590
London Euston Woburn Place, 16 Upper Woburn Place, London WC1H 0BS
E-mail: andrew@aswecology.co.uk Website: www.aswecology.co.uk

CONTENTS

EXECUTIVE SUMMARY

1. The main protected species potential present within this application site at the Barns at Primrose Cottage, as identified during this updated ecological investigation, was for: breeding birds and bats.

2. Former bird nests were present within the barns, and these were swallow, wren and pigeon/dove nests. No active nests were present during this assessment visit and all birds had finished nesting.

3. There is a brown long-eared bat (*Plecotus auritus*) roost present within the barns at the application site, with both bat droppings and discarded insect feeding remains present. There is also a pipistrelle (*Pipistrellus* species) bat roost still within the barns too, since some droppings are present.

4. The bat roosts present within the barns are still active due to the recent bat evidence noted in this new assessment.

5. It is clear that the barns are being used still by brown long-eared bats as both feeding perches and as a night roost, with the same roost present in 2019.

6. The pipistrelle bat species present is using the barns as a daytime roost, with this being proven in the 2019 bat emergence survey.

7. Further investigation will be required on the bats present here, so that this will contribute to the future Bat EPS Mitigation Licence needed from Natural England, before any barn conversion works can commence.

8. There were no other protected species issues present at the application site, other than the above.

9. Various key recommendations are set out later in this report, including a follow-up bat emergence survey and relevant best practice guidance being followed at all times by contractors. By following these recommendations, the impact on wildlife will be minimised and all legal obligations will be adhered to by the client.

1. INTRODUCTION

- A Preliminary Ecological Assessment at the Barns at Primrose Cottage, Hill End Road, Harefield, south of Rickmansworth, LB Hillingdon, Greater London UB9 6LH, was undertaken during April 2022, for the client: SDH Ltd.

- The grid reference for the application site is: TQ045917.

- This new assessment had been requested due to the proposal to convert the barns into separate dwellings and is an updated study to that undertaken by ASW Ecology Ltd in 2019. The stables and office buildings were also assessed during this new investigation.

- The main method used for this ecological assessment, as well as the full results and the final recommendations can be found within this report.

- Both this survey and the report were undertaken and compiled by Mr Andrew S. Waller, Consultant Ecologist, ASW Ecology Ltd, with the help from an assistant with the field work.

- Mr Andrew S. Waller MSc BSc (Hons) MCIEEM, Director of ASW Ecology Ltd - has been a Consultant Ecologist since 1997, and has very extensive experience and knowledge of protected wildlife species including bats, for which he is fully licensed to survey throughout England by Natural England for consultancy purposes (Bat Class 2 Licence Registration Number: 2015-15703-CLS-CLS). He also has Natural England survey licences for great crested newts and barn owls. He has been studying bats for 29 years and wildlife in general for 40 years. He is a Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and meets the requirements of being a Suitably Qualified Ecologist.

2. METHODOLOGY

2.1 Preliminary Ecological Assessment method

- A new daytime based Preliminary Ecological Assessment was undertaken at the application site, on 14/4/2022, by a qualified and experienced Consultant Ecologist, with an assistant with a ladder.

- The method used for assessing habitat types followed that outlined by the Nature Conservancy Council Phase 1 survey methodology (JNCC, 1993). Please see Section 3.9 for the habitats/features listed from the site and the relevant codes given to these.

- A 2km radius online data search was also undertaken to support this assessment, using the NBN Atlas and MAGIC sites, as well as records from the ASW Ecology database.

- Weather conditions were very good eg fairly clear, sunny, dry, calm and warm plus visibility was excellent on the visit. During the visit, the application site was assessed for its suitability for various protected wildlife species and habitats. The focus on habitats and protected species potential included on bats and breeding birds in particular. The key methods used for sites in general are listed below:

- **Bats:** The buildings present were assessed for the presence of bat evidence such as crumbly bat droppings, staining from the bat's fur/urine or discarded insect wings. As well as the building being assessed for bat roosting potential eg the presence of crevices under slates, roof tiles, lead flashing, wooden cladding and behind fascias/guttering boards.

- **Badgers:** The presence of badgers at this site was assessed by finding potential evidence such as setts, latrines, feeding remains, badger paths and for badger hair on any fences

- **Dormice:** The presence of dormice at this site was assessed by finding potential evidence such as old hazelnuts eaten by this species, as well as any obvious nests, plus habitat potential.

- **Breeding birds:** the presence of occupied or defunct bird nests was the key objective to find in the barns as well as recent evidence of breeding. Adults bringing in food for young in the nest was also searched for as were alarm calls by breeding adults.

- **Reptiles/Great Crested Newts:** The presence of both groups was assessed by habitat types present and if suitable for species such as great crested newts in their terrestrial phase and for reptiles such as slow-worm, common lizard, adder and grass snake.

2.2 Constraints

- The only constraint to this daytime based assessment was the timing of this study, where it was only possible to survey during the Spring period, due to the commissioning of this study. However, given the actual assessment results, this is seen as a minor constraint only, since it is not possible to survey any site all year round.

- As always though, without taking into account any further active surveying or monitoring, this study can only provide a "snapshot" of the potential presence of protected wildlife species at the site during the time of the assessment visit.

3. ASSESSMENT RESULTS

3.1 Birds

- There were no active bird nests found at the application site, although former bird nests were present within the barns surveyed. Previous pigeon/dove, wren and swallow nests were present within the barns again, whilst an old swallow nest was also found within the stables during this assessment.

- Bird species seen or heard at the application site or nearby during the visit included red kite, buzzard, green woodpecker, ring-necked parakeet, swallow, robin, wren, chiffchaff, blackbird, magpie, carrion crow, jackdaw, blackbird and goldfinch.

- It is highly unlikely though that any rare or notable breeding species could be nesting within the barns at this site. The red kite and buzzard will be breeding away from the application and within local woodland most likely.

- The application site does have breeding bird potential as would be expected therefore, within the barns. Most barns will have nesting birds though as found throughout our survey work in the UK.

- More information on this can be found in the Recommendations section of this report.

3.2 Bats

3.2.1 Assessment of buildings – 14/4/2022

Building description:	• Barns (Farm Buildings): Wood constructed barns including stables, with a pre-fabricated interior farm building within the western section. Has pitched roof, roofing felt, roof tiles, ridge tiles, hanging tiles and wooden cladding • Stables: Wood constructed stables with a small roof void, with roof and ridge tiles present at this building • Office: Wood constructed office with a very small roof void, with roof and ridge tiles present at this regularly used building
External bat survey	• Barns (Farm Buildings): Numerous crevices present under roof tiles, ridge tiles and also under wooden cladding. Crevices above doors noted and also open windows allowing possible access for bats into the interior • Stables: Occasional crevices only under roof tiles at this building • Office: Occasional crevices only under roof tiles at this building

Internal bat survey	• Barns (Farm Buildings): Much natural daylight entering the majority of the barns complex. Used for storage and as stables. Many spider webs present but there are lots of timbers too with clear areas for roosting bats • Stables: Too illuminated by natural daylight to be of use to bats • Office: Too illuminated by natural daylight to be of use to bats
Bat evidence present	• Barns (Farm Buildings): Brown long-eared bat evidence is present throughout the barns complex, mainly droppings and numerous discarded insect remains on surfaces including moths and butterflies. The evidence is of mixed age but includes from last year. Bats are clearly roosting on timber beams at night above the surfaces as many are free of webs as well as using the barns as feeding perches. Some pipistrelle droppings are also present, which correlates with the roost from 2019, so this species is also roosting here • Stables: None • Office: None
Other wildlife evidence present	• Barns (Farm Buildings): A number of bird nests within the barns complex are present. Bird nests include former swallow, pigeon/dove nests and an old wren nest • Stables: one swallow nest present • Office: None
Overall bat roost grading for the buildings	• Barns (Farm Buildings): **CONFIRMED BAT ROOST** • Stables: **LOW** • Office: **LOW**

3.3 Badger

- There were no badger setts present at the application site, which was not surprising, given that most of the site is composed of barns and hardstanding. There was also no badger evidence such as latrines, footprints or hair, present in the small area of short grassland in the application site.

- The desktop study did not reveal any badger records for the surrounding area, although this could be due to under recording.

- Although badgers may be present in the wider area, they are not expected to be present in the application site, especially given the daily disturbance from humans and dogs too.

3.4 Reptiles

- There is no reptile potential present in this application site, with no tall grassland and no tall herbs present. There is also no bramble scrub present for foraging or sheltering by reptile species such as slow-worm.

- Reptiles are known to be present in the much wider area, as shown from the desktop study but would not be expected to be present here. The small area of short managed grassland at the west end of the barns is not suitable for reptiles and would leave them too exposed to predators.

- Based on these assessment results, reptiles will not be an issue in relation to the development proposal here.

3.5 Great crested newts

- There is also no great crested newt potential present at the application site, with no tall grassland, no bramble scrub and no tall herbs noted.

- There are no ponds or ditches present at the application site so this protected amphibian species cannot breed here.

- Great crested newts are known to be present in the much wider area, as shown in the desktop study but would not be expected at the application site. The short managed grass area at the west side of the barns provides no cover for amphibians so has no potential for newts.

- Therefore, great crested newts will not be an issue in relation to the development proposal.

3.6 Hedgehogs

- Hedgehogs may be present in the wider area, although with no records were found for the desktop study and there were no field signs such as droppings to suggest they have visited the application site.

- Potential foraging habitat and sheltering opportunities are present at the adjacent paddocks and tree lines/hedgerows but these features are outside of the application site.

- Hedgehogs are a Priority Species in England within the UK Biodiversity Action Plan.

- Therefore, it is still vital that hedgehogs are not impacted during the proposed development related works. This should include no uncovered hole left during the works, so there is no risk of hedgehogs becoming trapped especially at night.

3.7 Hazel dormice

- There is no potential for dormice to be present, mainly due to the lack of any suitable vegetation present, as the application site only includes barns and hardstanding.

- There were also no hazel dormouse records present within the desktop study for this report.

- Dormice will therefore not be an issue in regards to the development proposal.

3.8 Invasive plant species

- There were no invasive plant species present at the application site at the time of the assessment visit.

3.9 Habitats present

- The only habitat types present within the overall application site are the following, with the relevant JNCC habitat codes included:

  (a) Buildings – J3.6 – Includes the existing barns, stables, office building, all hardstanding areas present within the application site boundaries and the portion of the menage area.
  (b) Amenity grassland – J1.2 – Includes the small area at the western end of the barns.

3.10 Desktop study

- A 2km radius online ecological desk study was undertaken by us for the application site. This does not replace a full biological records search, which was not selected by the client, but does contain some of the same information to support this report. The NBN Gateway (with strict permission) and the MAGIC website were both used.

- The ASW Ecology database was also used for a data trawl for wildlife records as this has collated records in the UK for 40 years.

- The key summary findings, in no particular order, are listed below in relation to species and habitat records most relevant to the proposed development:

Statutory Sites	• Within SSSI Impact Risk Zones (for Old Park Wood SSSI, detailed below). • 665m due south - Wild Bird General Licence Exclusion Zone (England). **SSSIs**: • 960m SSW - Mid Colne Valley SSSI, 147.73ha. • 115m due south - Old Park Wood SSSI, 17.14ha. • 1.9km NE - Rickmansworth Aquadrome SSSI, 40.96ha. **LNRs**: • 1.3km due north - Stoker's Lake LNR, 37.85ha. • 1.9km NE - Rickmansworth Aquadrome, 40.96ha.
Non-Statutory Sites	• Within Source Protection Zones - Zone II Outer Protection Zone. • 475m due north - Source Protection Zones - Zone III Total Catchment. • 530m due west & 750m NW - Source Protection Zones - Zone I Inner Protection Zone. • Within Drinking Water Safeguard Zones (Groundwater).

Protected Species Records	**Amphibians**: • 1 common toad (Bufo bufo) - 1993. • 1 smooth newt (Lissotriton vulgaris) - 1961. • 5 great-crested newt (Triturus cristatus) - mrr 2016. **Reptiles**: • 1 grass snake (Natrix helvetica) - 1984 (Rickmansworth Aquadrome). **Terrestrial mammals:** • 3 water vole (Arvicola amphibius) - Two records can be cited and date from 1995. **Bats:** • 24 Daubenton's bat (Myotis daubentonii) - mrr 2015 (all these records come from one location at Stoker's Lake to the north). • 1 common pipistrelle (Pipistrellus pipistrellus) - 2016. Also recorded at the application site by us in July 2019. • 1 soprano pipistrelle (*Pipistrellus pygmaeus*) – Recorded by us at the application site in July 2019.

Priority Habitats	**Grassland**:
	
	• Coastal & Floodplain Grazing Marsh - 1 parcel, 1.7km NE alongside Rickmansworth Aquadrome, 7.77ha.
	• Lowland Calcareous grassland - 1 parcel, 1km SW, 5.21ha.
	• Good Quality semi-improved grassland (non-priority) - 3 parcels, due north alongside Rickmansworth Aquadrome:
	  ○ 950m, 0.44ha
	  ○ 1.1km, 1.43ha
	  ○ 1.2km, 2.41ha.

	Woodland:
	
	• Traditional Orchards - 7 parcels:
	  ○ 48m SW - 0.11ha
	  ○ 870m due south - 0.80ha
	  ○ 1.4km SE - 0.49ha
	  ○ 1.4km SW - 0.14ha
	  ○ 1.8km due east - 0.32ha
	  ○ 1.8km SE - 0.12ha
	  ○ 1.8km NE - 0.17ha
	• Ancient & Semi-natural woodland - 3parcels:
	  ○ 100m due south - Old Park Wood, 17.36ha
	  ○ 1.6km ENE - Long Spring, 5.35ha.
	  ○ 1.7km due east - Bishops Wood, 4.47ha.
	• Ancient Replanted woodland - 5 parcels:
	  ○ 185m due south - within Park Wood, 0.10ha
	  ○ 280m due south - 0.19ha.
	  ○ 1.3km ESE - part of Pearsons Wood, 6.08ha
	  ○ 1.8km due east - 8.25ha within part of Bishops Wood
	  ○ 1.8km due east - 8.95ha also within part of Bishops Wood.
	• Deciduous woodland - several parcels all around but mainly to the west and south. The closest being:
	  ○ 100m due south - Park Wood.
	  ○ 165m due west - around One Tree Hill.

4. CONCLUSIONS

4.1 Significance of the assessment results

- In summary, the main protected species potential present within this application site at the Barns at Primrose Cottage, as identified during this updated ecological investigation, was for: breeding birds and bats.

- Former bird nests were again present within the barns, as was found in 2019, and these were swallow, wren and pigeon/dove nests. No active nests were present during this assessment, although birds would be breeding again at the time of the visit.

- Breeding birds will therefore only be an issue if any active nests are present within the barns at the time of the building works being proposed.

- There is still a brown long-eared bat roost present within the barns at the application site, with both bat droppings and discarded insect feeding remains again present. This roost was also noted in 2019.

- There is also a pipistrelle bat roost (species to be confirmed during the follow up bat dusk survey) within the barns, as was the case in 2019, with droppings within the rear barn.

- There is no evidence of any bat maternity roost though, with either daytime (pipistrelle bat species) or feeding/night roosts (brown long-eared bat) known to be present within the barns.

- There was no bat evidence within the stables or office block, surveyed this time, adjacent to the barns.

- Further investigation will be required on the bats present here, so that this will contribute to the future Bat EPS Mitigation Licence needed from Natural England, before any barn conversion works can commence.

- No badger setts were found at the property, nor any other evidence to suggest that badgers have entered the application site.

- There is no reptile potential within the application site, as there are no areas of tall grass, tall herbs or bramble scrub present.

- There is no great crested newt potential present in the survey area at this property due to a lack of tall vegetation and waterbodies at this property.

- There were no rare or unusual habitats present either at the application site, which was not unexpected, given that the property is composed mainly of buildings, hardstanding and short mown grass.

- Recommendations can be found in the next chapter of this report, in regards to the actions that now need to be followed at the application site.

4.2 Impact assessment

In the absence of any mitigation measures, the following potential impact status identified from the proposed development related works at the application site are currently considered to be:

- **Reptiles:** Without any mitigation, there is no risk of reptiles being injured or killed, during the proposed works within the application site. **Potential impact level: Nil**

- **Great crested newts:** Without any mitigation, there is no risk of newts being injured or killed, during the proposed works within the application site. **Potential impact level: Nil**

- **Bats:** Without any mitigation, the existing bat roosts would be significantly impacted by the proposed conversion of the barns. Bats would be at risk of being injured or killed by the works, with bat roosts being destroyed. However, this risk will be removed by the works being done under a Bat EPM Licence and suitable mitigation used at all times. **Potential impact level: High**

- **Badgers:** Without any mitigation, there is no possibility that any badgers could be disturbed by any future development related works at the application site. There is no risk of any badgers tunnels being collapsed or any setts being damaged in any way. **Potential impact level: Nil**

- **Nesting birds:** Without any mitigation, potential nesting bird species could be impacted by the proposed barn conversion works. Bird nests may be present during the works and could be disturbed or accidentally damaged or destroyed. However, this risk will of course be eliminated by mitigation options such as a breeding bird watching brief and the correct timing of the stated works. **Potential impact level: High**

4.3 Summary of the legal protection of relevant wildlife in the UK (Simplified summary only of the legislation – please see other texts for full details)

4.3.1 THE LEGAL PROTECTION OF REPTILES IN ENGLAND AND WALES

In the UK, reptiles are legally protected from intentional killing and injuring, as well as against sale too under the Wildlife and Countryside Act 1981 (as amended). The offences stated may be absolute, intentional, deliberate or reckless (English Nature, 2004).

This means that reasonable steps must always be taken to avoid killing or injuring all reptiles if they are known to be present within the development footprint. A criminal conviction for injuring or killing reptiles could result in large fines being imposed, imprisonment and/or seizure of the equipment involved.

4.3.2 THE LEGAL PROTECTION OF BATS IN ENGLAND AND WALES

Introduction

All species of bats in England and Wales are protected by law. Their legal protection derives from two sources:

- the strict species protection provisions of the EU Habitats Directive as implemented in England and Wales by Part 3 of the Conservation of Habitats and Species Regulations 2017 (the **"2017 Regulations, amended by the 2019 Regulations due to Britain leaving the EU"**); and

- Part 1 of the Wildlife and Countryside Act 1981 (as amended).

Conservation of Habitats and Species Regulations 2017 ("2017 Regulations", as amended by the 2019 Regulations)

The 2017 Regulations came into force on 30th November 2017, amended by the 2019 Regulations. They replace the previously applicable regulations (Conservation (Natural Habitats, &c) Regulations 1994 and the 2010 Regulations) in relation to England and Wales. The 2017 Regulations are the principal means by which the EU Habitats Directive is transposed in England and Wales.

The Regulations contain a number of Parts which set out the protection to be afforded to "European Protected Species" ("EPS"), which includes all species of British bats. The list also includes other species which are rare on a European scale, such as great crested newts, otters and dormice.

Under the 2017 Regulations both bats themselves and their "breeding sites and resting places" (most commonly their roosts) are protected.

It is a criminal offence to do the following (note that this is not an exhaustive list of all offences but rather a list of offences which will be of most relevance to developers):

a. to damage or destroy a breeding site or resting place of a bat (even if bats are not present at the time);

b. to deliberately capture, injure or kill a wild bat;

c. to intentionally or recklessly disturb a bat in its roost or to deliberately disturb a group of bats, in particular:

   i. any disturbance of bats which is likely to impair their ability to survive, to breed or reproduce, or to rear or nurture their young; or

   ii. any disturbance of bats which is likely to impair their ability to hibernate or migrate; or

   iii. any disturbance of bats which is likely to affect significantly the local distribution or abundance of the species to which they belong;

d. to have in one's possession or to control or to transport or to sell or exchange or offer to sell or exchange any live or dead bat or part of a bat which has been taken from the wild; or any part of, or anything derived from, a bat or any part of a bat; and

e. to intentionally or recklessly obstruct access to a bat roost.

The maximum penalty that can be imposed for the above offences is (as at May 2010) a fine of up to £5,000, and/or up to six months imprisonment. The offences can be committed by individuals or by bodies corporate. Where a body corporate has committed the offence, the directors or officers of the company may also be prosecuted if the offence has been committed with their consent or connivance, or is attributable to their neglect.

Wildlife and Countryside Act 1981 ("WCA 1981")

The WCA 1981 protects a wide range of animals, plants and habitats in the UK. All British bat species are afforded protection under Part 1 of the WCA 1981, in addition to the protection they have under the 2019 Regulations.

As regards England and Wales the following offences apply to protect bats under the W&CA 1981:

a. to intentionally or recklessly disturb any bat while it is occupying a structure of place which it uses for shelter or protection (s9(4)(b) WCA 1981);

b. to intentionally or recklessly obstruct access to any structure or place which any bat uses for shelter or protection (s9(4)© WCA 1981);

c. attempting either of the above (s18(1) WCA 1981).

The maximum penalty that can be imposed for the above offences is (as at May 2010) a fine of up to £5,000, and/or up to six months imprisonment. The offences can be committed by individuals or by bodies corporate. Where a body corporate has committed the offence, the directors or officers of that company may also be prosecuted if the offence has been committed with their consent or connivance or is attributable to their neglect (s69(1) WCA 1981).

4.3.3 THE LEGAL PROTECTION OF BIRDS IN ENGLAND AND WALES

All birds have the following legal protection (although there are exceptions for game birds, some waterfowl and designated pest species). This is listed below.

All birds, their eggs and nests are protected by law under the Wildlife and Countryside Act 1981 (as amended). It is an offence to kill, injure or take any wild bird, or to take or destroy their eggs. It is also illegal to take, damage or destroy the nest of any wild bird while it is in use or being built (RSPB, 2001). No provisions can be made for the destruction of occupied bird nests, eggs, or young for development purposes, and no licences are available for this purpose.

Certain rare and/or vulnerable bird species such black redstart, barn owl, red kite, peregrine and hobby are specially protected under Schedule 1, and have the following additional legal protection:

- It is an offence to intentionally (or recklessly, in England and Wales only) disturb any wild bird listed on Schedule 1 whilst it is nest building or is at (or near) a nest with eggs or young; or disturb the dependent young of such a bird.

4.3.4 THE LEGAL PROTECTION OF GREAT CRESTED NEWTS IN ENGLAND AND WALES

Great crested newts have strong legal protection under both British and European legislation. This is briefly summarised below:

Great crested newts are legally protected under provisions within the Wildlife and Countryside Act 1981 (as amended), the Conservation Regulations 2010 and the Countryside and Rights of Way Act 2000. Taken together, it is illegal to:

- **Intentionally or deliberately capture or kill, or intentionally injure great crested newts.**
- **Deliberately disturb great crested newts or intentionally or recklessly disturb them in a place used for shelter or protection.**
- **Damage or destroy a breeding site or resting place.**
- **Intentionally or recklessly damage, destroy or obstruct access to a place used for shelter or protection.**
- **Possess a great crested newt, or any part of it, unless acquired lawfully.**
- **Sell, barter, exchange or transport or offer for sale great crested newts or parts of them.**

The maximum penalty that can be imposed for the above offences is (as at May 2010) a fine of up to £5,000, and/or up to six months imprisonment. The offences can be committed by individuals or by bodies corporate.

4.3.5 THE LEGAL PROTECTION OF BADGERS IN ENGLAND AND WALES

In the UK, the Protection of Badgers Act 1992, is the most relevant to this mammal species. Under this legislation, it is illegal to injure, kill or take any badger or attempt to do so without a special licence. It is also illegal to dig for a badger, and to damage, destroy or obstruct access

to any part of a badger sett, or to allow a dog to enter the sett, or to disturb a badger whilst it is occupying a sett.

Certain offences can be caused by reckless, intentional or wilful behaviour, and the Act should always be read in detail for the exact wording.

Penalties for such offences can be severe, and can include fines of up to £5,000 per offence eg per badger sett or per badger, and/or up to six months imprisonment.

5. RECOMMENDATIONS

5.1 Requirement for a follow-up bat emergence survey

- Due to the continued presence of bat roosts at the existing barns, stables and the office building, it is recommended that a new bat emergence survey is undertaken at the application site, in suitable weather conditions.

- Such a follow-up survey would adhere to current best practice for surveying bats by the Bat Conservation Trust (BCT, 2018) where a site such as this warrants a specialist bat survey of three night based survey visits by experienced bat surveyors with bat detectors.

- This bat survey should be undertaken between early May to late August when bats are most active.

- Such a survey would especially focus on how many bats are still using the barns; the type of bat roosts present; and where the main bat access points are. The survey would also focus on any key bat commuting routes at the site as well as any key foraging areas.

- This bat survey should use ideally a minimum of three to four experienced bat surveyors with bat detectors, and begin before sunset and last for approximately 2 hours. Or any dawn survey visit should start 2 hours before sunrise.

- **The information gathered by this bat survey will be used for the future Bat EPS Mitigation Licence application, that will need to be applied from Natural England, before any barn conversion works can commence. More information will be found on this in the future follow-up Bat Emergence Survey Report.**

5.2 Best practice guidelines – Breeding birds and development

- As per any development related site, the general advice is that no vegetation eg trees, bushes, shrubs, hedges, bramble scrub or dense ivy cover should be removed during the bird nesting season as all bird nests are fully protected by law, and this includes whilst a nest is being built by the adult birds.

- This includes both buildings such as barns and bird boxes, where nesting birds have been shown to be present.

- If any nests are present within the boundaries of the proposed development footprint during the clearance phase, then these must be left alone until the young birds have fully fledged from the nest and no further breeding attempts are to take place.

- The main bird nesting season in the UK, currently runs mainly from mid-January to September, but sometimes birds can start breeding before or after this period eg birds have been found by us nesting in early January at other sites due to milder winters.

- Therefore, September to late December are the best months for such vegetation clearance works.

- Although it is possible for a consultant ecologist to physically search any trees, hedges, bushes and shrubs at a site to ensure no hidden nests are present beforehand.

5.3 Vegetation management at the application site

- It will be important that the small area of short managed grass at the western end of the application site continues to be managed as it is now.

- This would remove any possibility of reptiles using any new unmanaged grassland for shelter or foraging purposes, then possibly entering the future construction site by accident. This is a reasonable step to avoid any possible impact on these species.

- No reptiles are expected at the application site though, given that it is mainly composed of barns and hardstanding. This must remain this way so the only protected species issues are bats and breeding birds.

- This pro-active approach should continue especially up to the end of the development phase.

6. REFERENCES

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(5) English Nature (2004) Reptiles: guidelines for developers. English Nature, Peterborough.

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(7) Mitchell-Jones, A.J. (2004) Bat Mitigation Guidelines. English Nature.

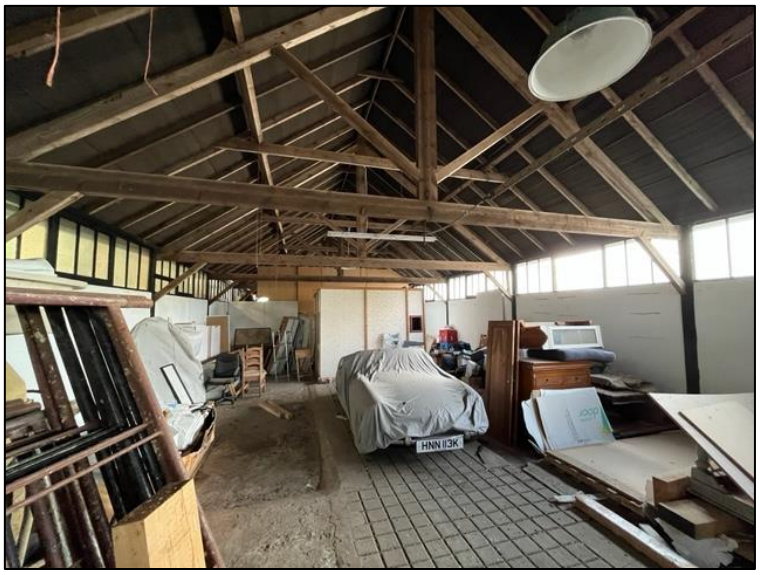
(8) RSPB (2001) Wild Birds and the Law. RSPB, Sandy. UK.

(9) Treweek, J. (1999) Ecological Impact Assessment. Blackwell Science Ltd, UK

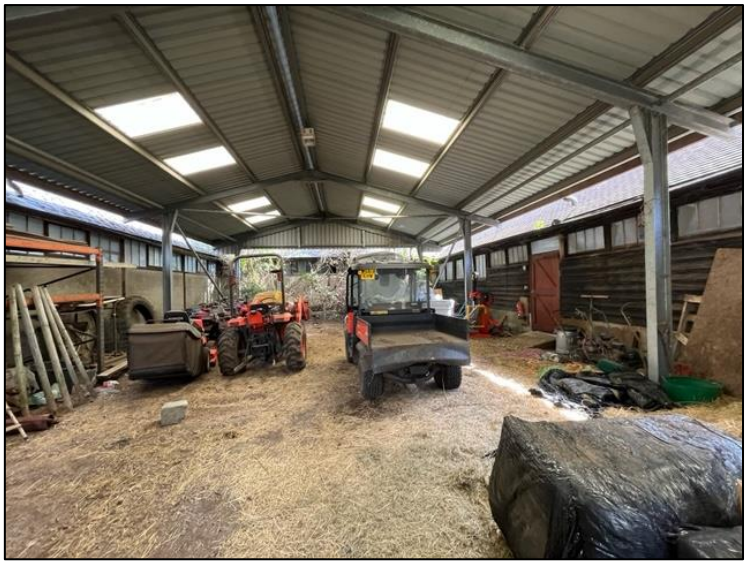
APPENDIX 1:

PHOTOGRAPHS A-M

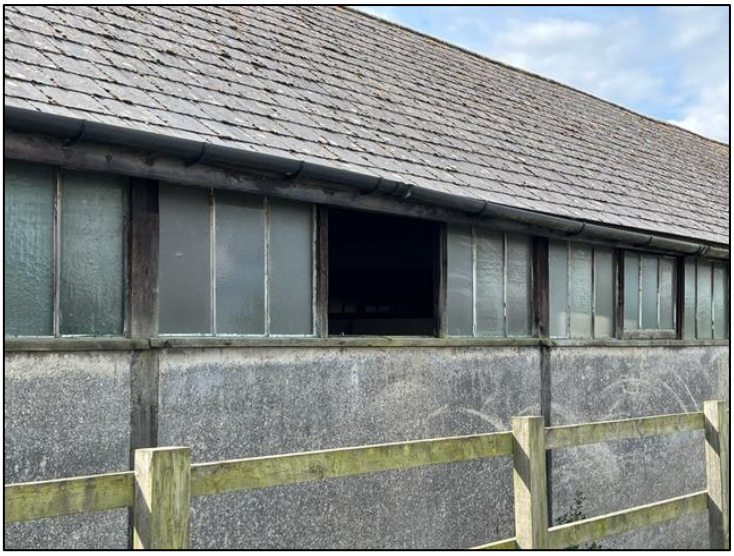
(All photos are dated from 14/4/2022)



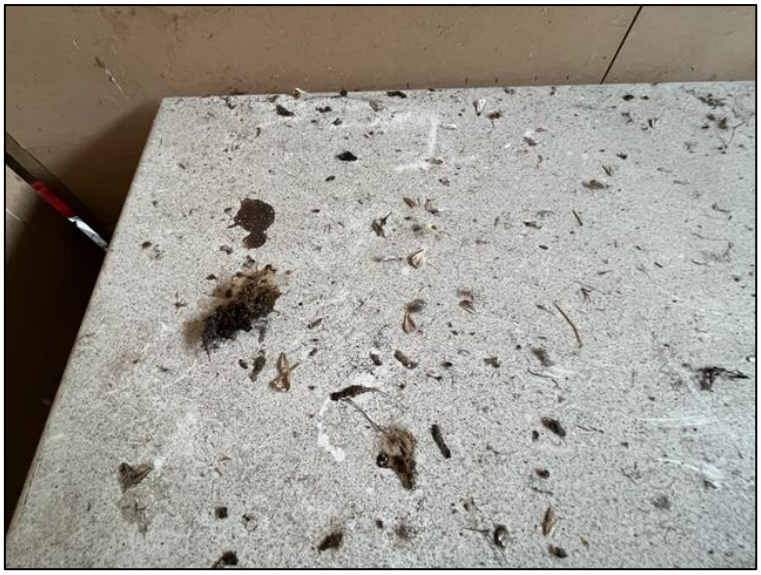
Photograph A
The existing barns have a timber structure internally, which bats are clearly still using for roosting purposes



Photograph B
The central pre-fab and metal barn did not have any bat evidence but did have old pigeon/dove nests within



Photograph C
The rear barn window is still open, which was used as a bat access point during the previous 2019 bat dusk survey

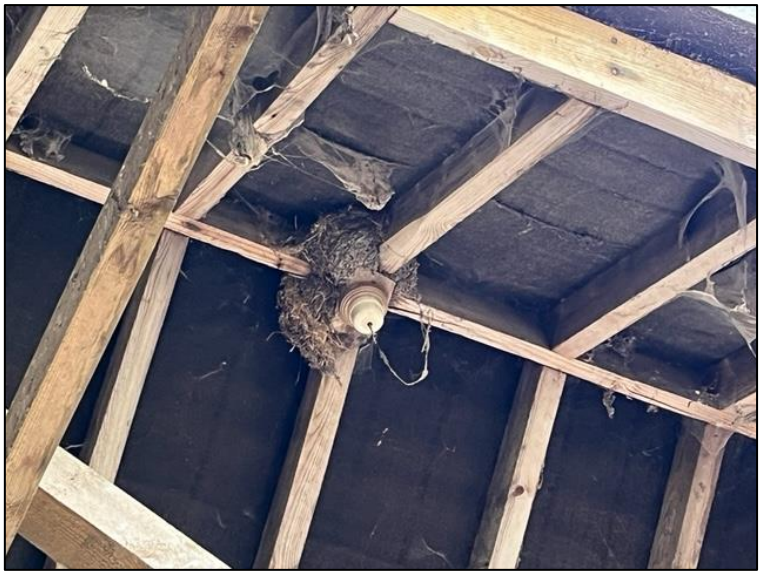


Photograph D
Brown long-eared bat evidence was still present throughout most of the barns including discarded moth wings on a table top

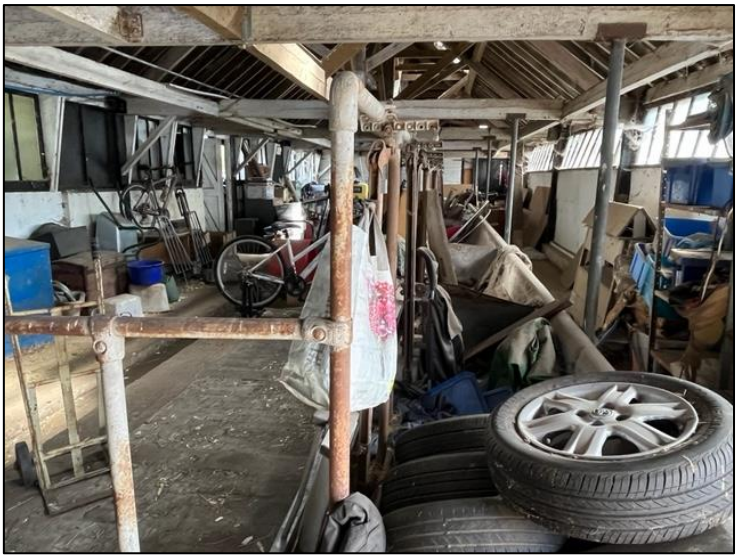
Photograph E
Various moth species had been brought into the barns by bats and fed on, showing that feeding perches are present still

Photograph F
The presence of new brown long-eared bat droppings show that the barns are likely still used as a night roost since bats are spending some time here

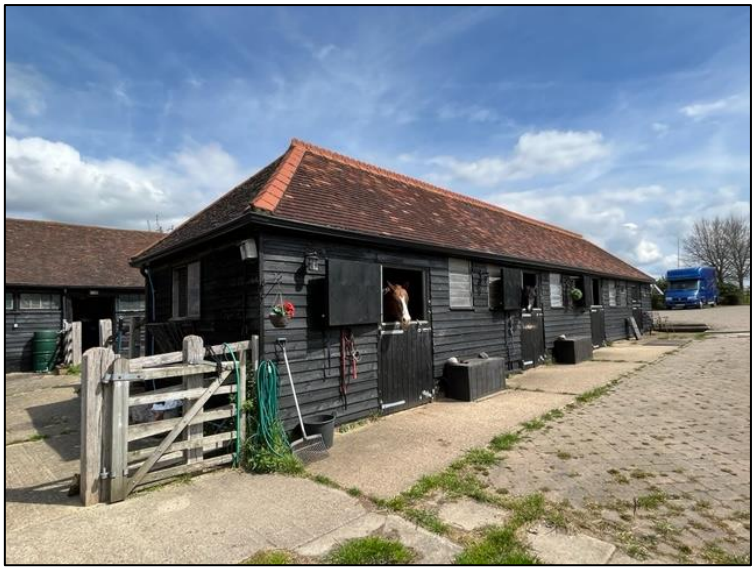
Photograph G
Discarded butterfly wings within the barns are from brown long-eared feeding perches



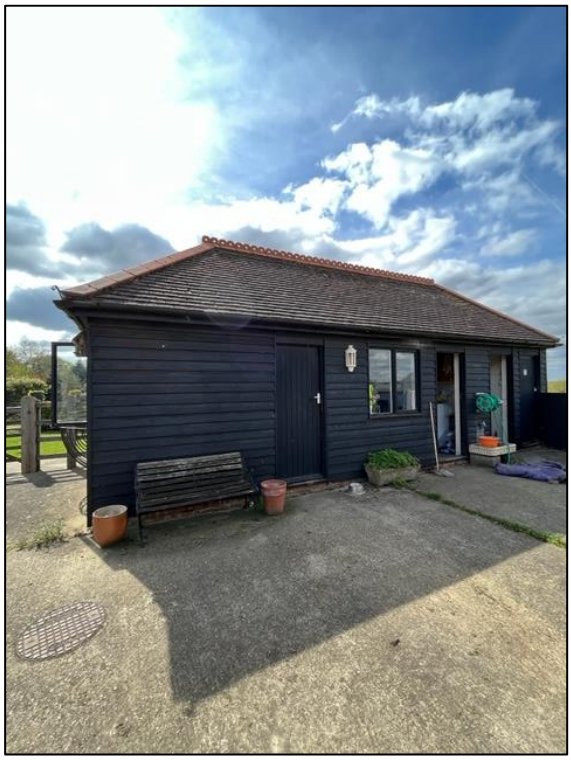
Photograph H
Swallow nests from previous years were present within the barns



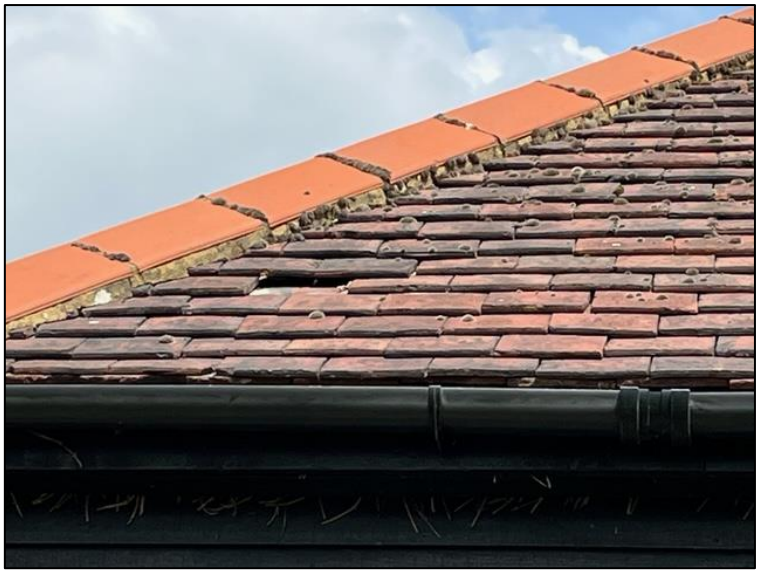
Photograph I
Bats are using the majority of the barns at the application site for roosting, with two bat species clearly still present



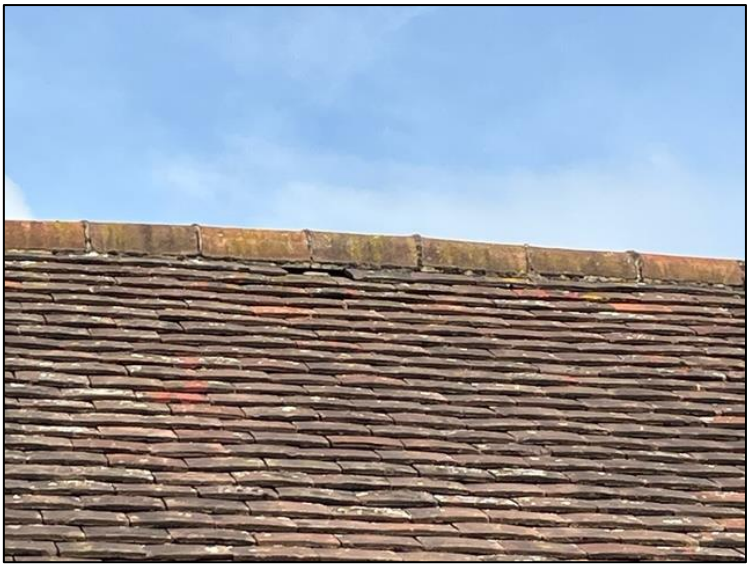
Photograph J
The stables were also assessed, with low bat roost potential present externally



Photograph K
The office building was surveyed and also had low bat roost potential



Photograph L
The office building had the very occasional missing roof tiles, which could be used by roosting bats



Photograph M
The stables building also had the occasional missing roof tiles, with some bat roosting value

APPENDIX 2:

MAP A – ECOLOGICAL TARGET NOTES FOR THE BARNS AT PRIMROSE COTTAGE