

ecological support,
management and solutions



**Osier Dell
Manor Farm
Hayling Island**

Phase II Bat Surveys

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1.0 INTRODUCTION

1.1 Brief

Ecosupport Ltd was commissioned by Andrea Walter to conduct a Phase I Survey of the stable block associated with Osier Dell, Manor Farm. This survey was required to identify any ecological impacts that may arise from its conversion into residential accommodation. The Phase I Survey identified potential for roosting bats, as a result further Phase II survey were recommended and subsequently carried out.

This document has been prepared in order to ensure the proposed development fully complies with nature conservation legislation and policy where applicable. It should be read in conjunction with the original Phase I Report (January 2017) as this takes into account further legally protected species as opposed to this document which deals solely with bats.

This survey takes no account of seasonal variation and fluctuations in the presence of any species noted that might take up residence following this report. Lack of signs of a particular species does not confirm its absence, merely that there was no indication of its presence during the time of survey.

Data contained within this report will be valid for 24 months, after which the advice of a Suitably Qualified Ecologist must be sought as surveys may require updating if the proposed works have not been undertaken.

1.2 Aim

Based on the potential for roosting bats to be present. Phase II survey work was conducted to confirm presence/likely absence and if present, ascertain the following information:

- The size of the roost(s)
- Assess the status of roost(s) e.g. maternity, hibernation, transitional summer, mating
- An assessment of the relative value of the roost

1.3 Site Location

The site is located at Osier Dell, Manor Farm, Manor Road, Hayling Island, Hants, PO11 0QW (**Figure 1**) (Grid Reference SU 72135 00811). The site is surrounded by agricultural land with housing south of the A3023. The surrounding landscape is highly rural, dominated by agricultural land and infrastructure and patches of woodland.

Figure 1. Location of the site (Google Maps, 2017).



2.0 LEGISLATION & POLICY

One of the aims of this report is to demonstrate that the proposed development complies with relevant Planning Policy and nature conservation legislation. This section details the policy and legislation with which the development would need to comply.

2.1 Legislation

2.1.1 The Conservation of Habitats and Species Regulations (2010)

The Conservation of Habitats and Species Regulations (2010) 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.

2.1.2 The Wildlife and Countryside Act (1991 as amended)

The Wildlife and Countryside Act (1991 as amended) 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 to intentionally or recklessly obstruct access to a bat roost.

2.1.3 The Countryside and Rights of Way Act (2000)

This Act places a duty on Government Ministers and Departments to conserve biological diversity and provides policy with stronger powers relating to wildlife crimes.

2.1.4 Natural Environment and Rural Communities Act (2006)

This places a duty on authorities to have due regard for biodiversity and nature conservation during the course of a development.

2.2 Policy

The development would seek to comply with relevant Planning Policy at a local, regional and national level.

2.2.1 National Planning Policy and Framework (2012)

This sets out the Government's vision for biodiversity in England. It states that the planning system should maintain, enhance, restore or add to biodiversity and geological conservation interests. Key principles of the framework include the creation, protection, enhancement and management of networks of biodiversity, the

preservation, restoration and recreation of priority habitats and ecological networks and the recovery of priority species populations, including sections on legally protected species.

2.2.2 Havant Borough Core Strategy (2011)

Part of the 'Vision for Havant Borough in 2026' is to protect and enhance biodiversity. Similarly policy 'CS11: Protecting and Enhancing the Special Environment and Heritage of Havant Borough' states that planning permission will only be granted when development protects habitats and features of biological interest and prevents the fragmentation of existing habitats.

3.0 METHODOLOGY

The Phase II surveys were carried out by Ecologists Tristanna Cornwell BSc (Hons) Natural England Class Level 2 License holder for bats, Sophie Hughes BSc (Hons) MSc (Natural England Class Level 1 License Holder), Kathryn Steele BSc (Hons), Carlos Milburn BSc (Hons) MSc and Darrelle Moffet from ecosupport. Surveyors were positioned so that all potential features were visible. Frequency division (Anabat SD1/2) and Bat Scanner detectors were used during the survey. Dusk surveys began approximately 15 minutes prior to sunset and continued until approximately an hour and 30 minutes after sunset and the dawn survey began an hour and a half before sunrise and finished ten minutes after sunrise. Survey sheets were used to record the following information:

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

The surveys were carried out in accordance with *Bat Surveys for Professional Ecologists; Good Practice Guidelines* 3rd edition published by the Bat Conservation Trust (Collins, 2016).

4.0 RESULTS

A maximum of seven bats were recorded roosting within the barn. Four Long-eared (*Plecotus Sp.*) bats, two Common Pipistrelle (*Pipistrellus pipistrellus*) and one Soprano Pipistrelle (*Pipistrellus pygmaeus*) were recorded. Both foraging and commuting behaviour was exhibited from all three bats recorded roosting on site. The dates and information on survey conditions are provided in **Table 1**.

Table 1. Survey conditions.

Date	Temp (°C)	Cloud Cover (%)	Wind (Beaufort)	Time of Sunset/Sunrise	Start time	Finish time	General information
11/05/17	14	100	0	20:41	20:25	22:11	Light rain
25/05/17	20	20	0	21:00	20:45	22:30	Mild
07/06/17	12	20	2-3	04:53	03:23	05:03	Gusts of wind

11th May 2017

The first registration occurred at 20:38. This was a commuting Soprano Pipistrelle flying in a southwesterly direction. The following three recordings were that of emerging bats. At 20:45 a Soprano Pipistrelle was seen emerging from the bottom row of tiles above one of the windows on the southern elevation (**Figure 2**). The first Common Pipistrelle was then seen emerging from the open window (20:51), with the second from beneath a roofing tile (20:58), again on the southern aspect of the barn. At 21:02 the first of the four Long-eared bats were recorded emerging from the open eastern gable end. This was followed by three further emergences (21:19, 21:23 and 21:26). A Long-eared was also recorded re-entering at 21:29 (likely owing to the light but persistent rain). For the remainder of the survey, intermittent recordings from all three species were recorded both foraging and commuting.

Figure 2. Locations of emerging bats.



- ✖ Common Pipistrelle
- ✖ Soprano Pipistrelle
- ➔ Long-eared

25th May 2017

Despite farer weather conditions activity levels were lower than those recorded during the first survey. Although no Long-eared bats were recorded emerging two Common Pipistrelles were noted emerging at 21:21 and 21:22 from the open window and beneath a roofing tile respectively. Both access points that had been recorded previously (**Figure 2**). Foraging and commuting activity was more sporadic and intermittent on this occasion but continued until the end of the survey.

7th June 2017

The first registration was that of a commuting Long-eared bat as it flew across the site in a northerly direction. This was followed by a number of registrations from Soprano Pipistrelle commuting within the southern area of the site. Only two Common Pipistrelle bats were recorded (03:48 and 04:03). The final registration was that of a Soprano Pipistrelle at 04:15. No bats were seen to return to roost during the survey.

The resident Barn Owl was recorded on a number of occasions gaining access into and out of the stable via the open windows.

5.0 EVALUATION

Due to the intermittent use of the stables by Long-eared bats it is considered likely this is an example of a transitional or day roost. BCT Guidelines describe transitional roosts as *“On waking from hibernation or in a period prior to hibernation, bats search for roosts in which they stay for only a few days or on some occasions several weeks. These transitional roosts can be occupied by a few individuals or occasionally small groups”*. BCT Guidelines describe day roosts as *“used during the day to rest in. Males of most British species spend the summer roosting alone or in small groups with other males in such roosts. Bats may regularly use a number of day roosts, switching between them on a daily basis, though conversely they may occupy the same roosting site for several weeks”*.

It is considered highly likely that these are Brown Long-eared bats (*Plecotus auritus*) due to the limited distribution of Grey Long-eared (*Plecotus austriacus*).

Phase II Surveys identified two Common Pipistrelle roosts and one Soprano Pipistrelle roost. The usage of these roosts suggests they are also examples of transitional day roosts.

5.3 Site Status Assessment

Common and Soprano Pipistrelle and Brown Long-eared bats are relatively common throughout the UK (Richardson, 2001) though have been subject to declines over the last decade. In accordance with the *Bat Mitigation Guidelines* (Mitchell – Jones, 2004), the roosts with the stables would be considered to be of **LOW CONSERVATION VALUE** and therefore of **LOCAL SIGNIFICANCE** using the CIEEM valuation criteria for bat roosts (Wray et al., 2010).

5.4 Implications

Due to the presence of bat roosts any works to the building that will result in damage or disturbance to the roost could constitute an offence under the Conservation of Habitats & Species Regulations (2010). In order for works that may result in such an offence (including demolition of the building) to legally take place, a European Protected Species License (EPSL) would be required.

6.0 POTENTIAL IMPACTS IN ABSENCE OF MITIGATION

6.1 Introduction

This chapter details the potential impacts of the proposal, in the absence of mitigation. The potential impacts are identified in reference to the activities associated with the scheme. In many cases, whilst a potential negative impact is identified at this stage, mitigation measures can be undertaken to ensure that no actual negative impacts on bats occur. Mitigation to ensure that no significant impacts occur and to deliver positive impacts is detailed in **Section 7.0**.

6.1.1 Initial Impacts

Unsupervised contractors carrying out removal of roofing tiles could result in direct harm to bats with the risk of them being crushed or injured. This would result in a significant negative impact at a site level, however due to the relative common occurrence of Common and Soprano Pipistrelle and Brown Long-eared bats it would not have a highly significant impact on the population at the regional or national level.

An increase in traffic, people, noise and light will occur on site during the works, however, these will mainly occur during the daytime, so the impact on foraging and commuting bats is expected to be negligible.

6.1.2 Roost Loss

Works will involve replacing the roof. Without mitigation, there is potential for all roosts to be inadvertently lost (i.e. tiles reinstated without gaps for Pipistrelles). In addition there will no longer be access for Long-eared bats to enter into the loft space. Therefore this roost will also be lost.

This would have a significant impact on the favourable conservation status of this species at a local level (based on the CIEEM assessment of roost significance, Wray et al., 2010).

6.1.3 Roost Modification

Although the stable is being retained the roof will be replaced. Although the same construction materials will be used without mitigation the location access points could be moved and therefore less viable for bats.

6.1.4 Fragmentation and Isolation

The development will not result in any habitat manipulation or loss therefore there will be no resulting implications.

6.1.5 Post Development Impacts

There will be a slight increase in disturbances associated with human presence, such as

noise and light levels, as the site will become occupied once converted.

6.1.6 Residual Impacts

It is considered that provided the mitigation and compensation measures outlined within this document are implemented in full, there should be no residual impacts to bats resulting from the proposed development. In order to comply with relevant legislation, an EPSL will be required which this mitigation strategy will form the basis of.

7.0 MITIGATION AND COMPENSATION

7.1 Introduction

In order to fully comply with applicable legislation and planning policy, it is necessary to mitigate or compensate for any significant ecological impacts. The NPPF and Section 41 of the NERC (2006) places an onus on development to provide ecological enhancements. This chapter recommends appropriate measures that can be undertaken to ensure compliance with legislation and policy and provide ecological enhancements.

The chapter is divided into three sections, dealing with mitigation, compensation and enhancement. Mitigation refers to measures that can be undertaken to avoid or reduce ecological impacts, for example by timing works to avoid periods when bats are roosting. Compensation refers to measures taken in order to offset potential significant impacts, for example by providing alternative roost sites to replace roost sites lost as a result of the works. Finally enhancements result in a net gain for bats compared to the baseline. Details are provided in **Plan 1**.

7.2 Mitigation

7.2.1 European Protected Species License

All works that will be carried out on the stable block would take place under an EPSL obtained from Natural England and under the supervision of a Suitably Qualified Ecologist (SQE). Destruction of the roosts and capture of bats (if required) will need to be carried out under the supervision of a licenced SQE. All works would be detailed within the EPSL Method Statement required as part of the licence application.

7.2.2 Timing

For summer roosts, such as those identified, this optimum time frame is September until the mid-May. Therefore it is recommended the removal of the roof takes place within these months. However to ensure works take place in suitable weather conditions as defined by best practice guidance (Mitchell-Jones et al. 2004) works should avoid December, January and February.

7.2.3 Supervision

Prior to any works getting underway the licensed bat worker will give a Tool Box talk which will detail best practice methods of sensitive stripping/removal of roofing tiles/materials and identifying signs of bats. Personnel will be educated on signs of bats and that in the unlikely event a bat is found whilst the licensed ecologist is not on site, that all works should stop immediately until the licensee returns to site.

The licensed bat worker will then assist contractors with the removal of roofing tiles and the timber structure.

7.2.4 Capture (if required)

If during the sensitive removal of roofing tiles and dismantling of the roof bats are discovered the licensee will place the individuals into a holding bag (a soft cloth bag with closure-strings and with seams on the outside (Mitchell-Jones and McLeish, 2004) to ensure the bat keeps calm and will not take flight during daylight hours. They will then immediately transport the bat to one of the mitigating bat boxes where the bat will be released and left undisturbed. During this time, the licenced bat worker will be wearing appropriate bat handling gloves to ensure the bat does not come to any harm. The licenced bat worker will have ample experience in handling a variety of bats and is confident in doing so.

7.2.5 Sensitive Stripping Method

Roofing tiles will be removed via sensitive methods by the SQE with help from the contractors. The roof structure itself will then be dismantled. Any creviced will be inspected with the aid of an endoscope.

7.2.6 Bat Boxes

Prior to any works getting underway two bat boxes will be erected on site. A Schwegler 2F bat box (Height 33cm x diameter 16cm) has a second inner wooden panel fitted to it to create a cavity wall. This provides ideal quarters for bats that inhabit crevices, such as Common Pipistrelles. It has been designed as a summer roosting space for bats, such as those identified on site. The bat box maintains a stable temperature inside the box and is painted black to absorb warmth.

In addition a 1FD bat box (Height 36cm x diameter 16cm) will be installed. This has a domed roof results in an increased interior height for Long-eared bats whilst the two grooved internal wooden front panels provide a crevice for crevice dwelling species. Both the cooler woodcrete surface or the warmer wooden panel means bats have a choice of different temperatures in different parts of the box which has been highlighted as a key requirement of Brown Long-eared bats (Entwistle et al. 1997). The box is constructed from woodcrete which is breathable and maintains a stable temperature, therefore sustaining the thermal characteristics preferred by Brown Long-eared bats (Entwistle et al., 1997).

The bat boxes are manufactured from long-lasting Woodcrete which will not rot, leak, crack or warp, and will last for at least 20 - 25 years, making it suitable for long-term mitigation projects. It also provides a rough surface for bats to cling on to and climb. This is a proportionate approach to mitigating for the loss of four low level roosts.

English Nature (2004) state that 'where roosts of low conservation significance are to be lost to development, bat boxes provide an appropriate form of mitigation, either alone or, preferably, in combination with the provision of roosts in buildings'.

7.2.7 Use of Roofing Felt

Inline with Natural England guidance (2015) roofing felt should be utilised as apposed to Breathable Roof Membrane (BRM) as there is considerable evidence to suggest that BRM poses a threat to bats occupying loft voids due to entanglement of bats in the fibres (Natural England, 2015).

7.2.8 Lighting on Site

Any new lighting should be sensor activated to minimise light pollution and therefore impacts upon foraging and commuting bats.

7.3 Compensation

Gaps between new roofing tiles will be created as close to the recorded emergences as possible. The licensed ecologist will advise as such when conducted the toolbox talk. Purpose built bat access tiles can achieve this.

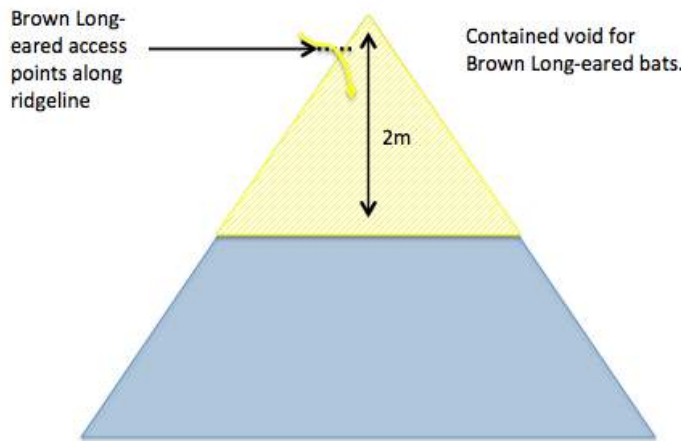
Permanent provision for Barn Owls will be introduced within the retained section of the barn (the western extent of the building). Full details are provided within original Phase I Report. This nesting space will include an entrance hole into the roof (130mm wide by 250mm high) at a height >3m. It will be boarded out and insulated against condensation and noise (**Figure 3**).

Figure 3. Example of Barn Owl loft.



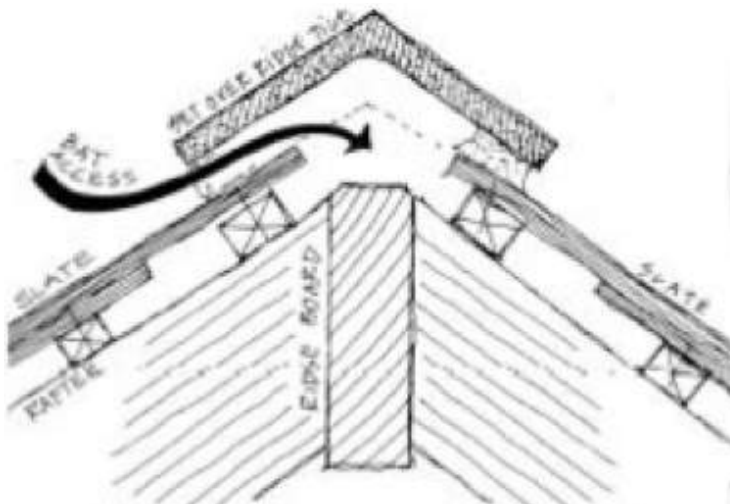
In addition a section of the barn will be set aside for Brown Long-eared bats (**Figure 4**). Due to part of the roof already being occupied for Barn Owl mitigation, and given the small numbers of bats, the size of the bat loft will be minimal (two meters in length) but maintaining the required 2m height.

Figure 4. Cross section of the barn showing contained bat void.



Access will be achieved along the ridge. A number of the ridge tiles will be lifted to create gaps. The gaps will be 15mm to 20mm wide and 50mm to 70mm long. This can be achieved by setting a ridge tile on mortar to raise it from the adjacent tiles (**Figure 5**).

Figure 5. Example of raised ridge tile.



7.4 Enhancement

The following information is taken from the guidance produced by the Bat Conservation Trust (Gunnell et al. 2012). The publication is a useful resource for landscape architects when designing habitats for bats and the insects they feed off.

7.4.1 Landscape Connectivity

Many bat species are reluctant to leave the cover of features such as tree lines and hedges as they move between their roost and foraging grounds. Fragmentation of the landscape can therefore be a serious issue for bats. Therefore boundary vegetation should be planted.

7.4.2 Attracting Nocturnal Flying Insects

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

7.4.3 Trees

Native trees are important to foraging bats. Key species are Willow, Birch and Oak as they can support high numbers of insects. In addition once matured they can eventually provide roosting opportunities (see **Table 1** below).

Table 1. Tree species for foraging and roosting potential (Gunnel et al. 2012).

Native Tree species	Roosting potential	Supporting foraging
Oak	Very good	Very good
Willow	Minimal	Very good
Beech	Very good	Good
Ash	Good	Good
Elm	Good	Good
Birch	Minimal	Very good

7.5 Monitoring & Maintenance

The *Bat Mitigation Guidelines* do not recommend further conditions in relation to the post development monitoring of bat roost of low conservation significance. However, a compliance check will be carried out to ensure all agreed mitigation and compensation techniques have been implemented.

8.0 CONCLUSION

The Phase II survey work has confirmed the presence of two Common Pipistrelle, one Soprano Pipistrelle and one Brown Long-eared bat roosts. Therefore in order for works to take place legally an EPSL will be required. This license, along with the information detailed within this report, will ensure that there are no lasting negative impacts towards bats and that works keep in line with the law.

9.0 REFERENCES

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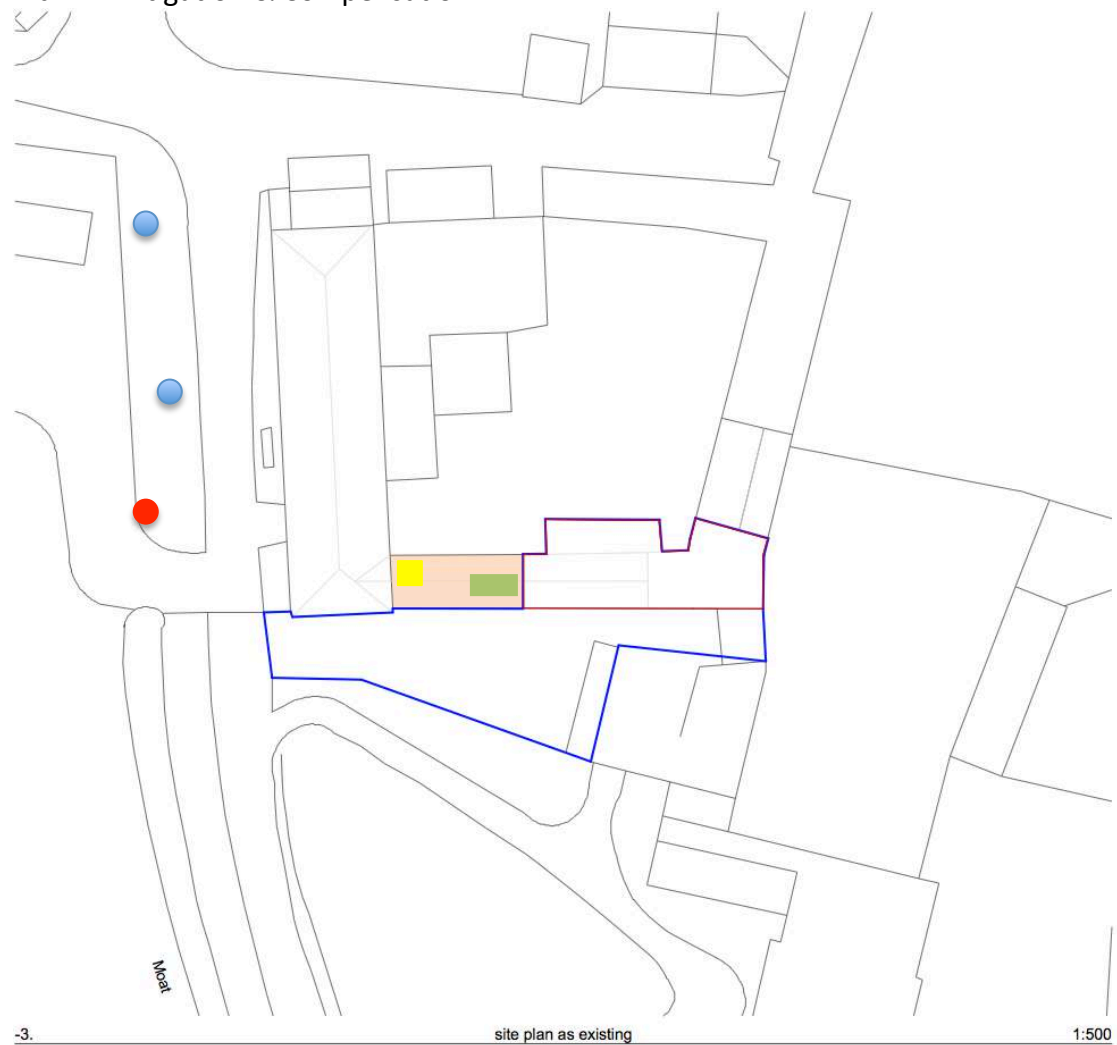
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Plan 1. Mitigation & Compensation.



- Site curtilage
- Proposed development area
- Western barn to be retained
- Barn Owl compensation
- Brown Long-eared compensation
- Bat boxes
- Owl Box