


Phase 1 & 2 bat and nesting bird survey report

Site: Great Lanhargy Farm,
Callington,
Cornwall,
PL17 8QJ

For: Mr. Gareth Jones

Report
prepared by: Richard Bates, ACIEEM, BSc(Hons).

July 2023

	Name	Date	Signature
Report prepared by:	Richard Bates, BSc ACIEEM	17.07.23	

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PLEASE NOTE: The contents of this report are based on the latest survey data. Should a period of more than 12 months pass between the issuing of this report and work commencing on a project, an update survey of the site may be required.

Devon & Cornwall Ecology,
The Flat,
Holly Bridge House,
Fletchersbridge,
Bodmin,
Cornwall,
PL30 4AN

Mobile: 07811 445569
Email: devonandcornwallecology@gmail.com

Reference Number: DCE1529

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Executive Summary

Survey date: 7th February 2023
Phase 2 emergences: 14th June 2023
Location: Great Lanhargy Farm, Callington, Cornwall, PL17 8QJ
Grid Reference: SX 32321 75108
Surveyor: Richard Bates, ACIEEM BSc, bat licence ref: 2017-30400-CLS-CLS

Devon and Cornwall Ecology was commissioned to undertake a phase 1 bat and nesting bird survey of a modern agricultural building. The survey was undertaken to support a planning application to convert the structure for residential use.

An internal and external inspection of the building was conducted on the 7th February 2023, looking for signs of use by bats and/or nesting birds. The survey was conducted in suitable weather conditions and in line with guidance available in *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (Collins et al, 2016).

The survey found low potential for crevice dwelling bats internally and externally. As suitable roosting opportunities are present, further survey work was recommended and commissioned.

As per the requirements of the Good Practice Guidelines, one dusk emergence survey was undertaken in suitable conditions on 14th June 2023. No bats were recorded emerging from the buildings and only low level bat activity was noted during these surveys.

No further survey work is required for this development, but a simple precautionary approach to the development has been recommended in section 5.

Nearby linear features (hedgerows/walls on site boundaries) were assessed as having moderate potential to support foraging and commuting bats. The proposed development will not impact on these features directly but may result in disturbance through additional artificial lighting. Recommendations have been made in section 5 to minimise this disturbance.

Individual disused small bird nests were noted in the building. As such, recommendations have been included in section 5 for timing of works to minimise the risk of disturbing nesting birds.

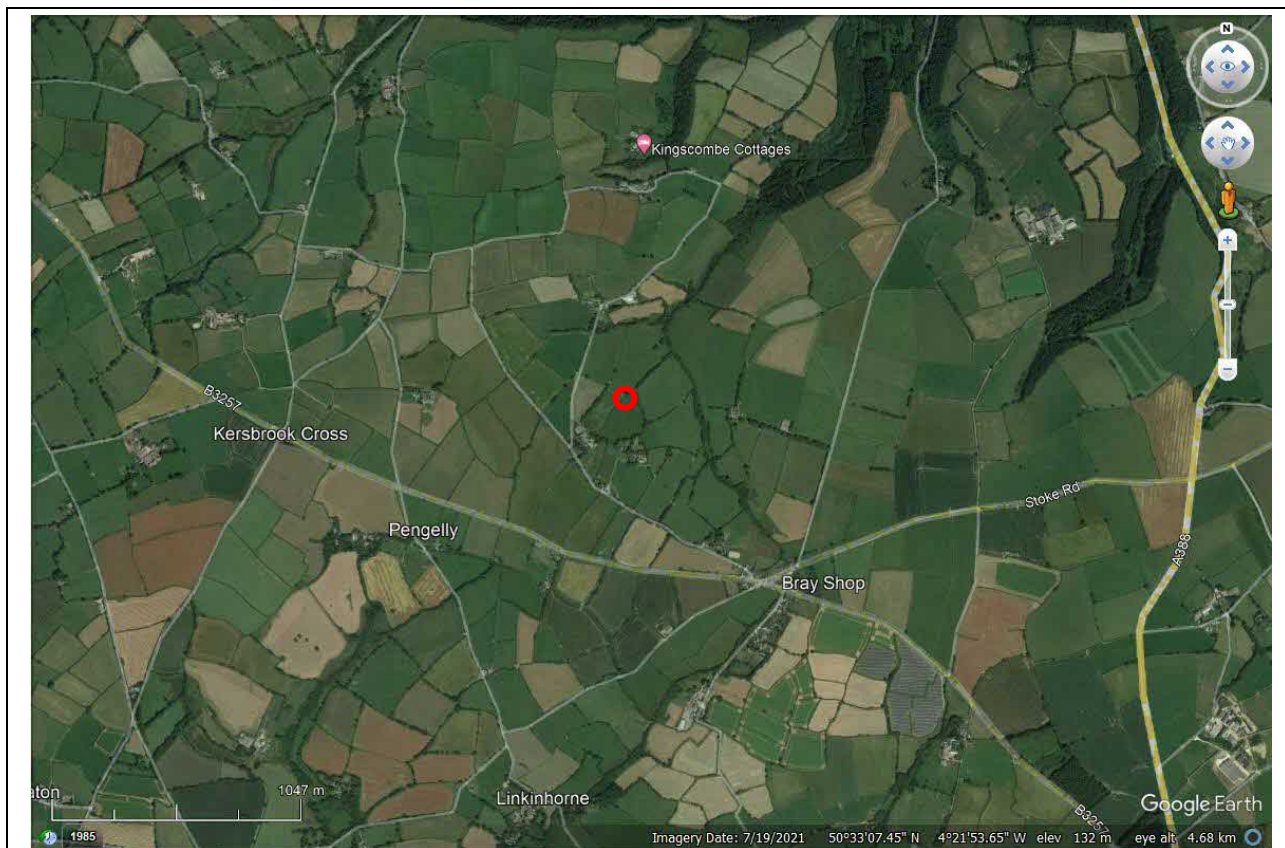
As part of the National Planning Policy Framework (2019), local planning authorities aim to secure enhancements for biodiversity for all developments. To achieve this aim recommendations for simple site enhancements have been included in section 5.

1. Introduction

Devon & Cornwall Ecology were commissioned to undertake a phase 1 bat and nesting bird survey of a modern agricultural building at Great Lanhargy Farm, Callington. The survey was undertaken to support a planning application to convert the building for residential use. The survey was undertaken by Ecologist Richard Bates BSc (Hons) who is an experienced field ecologist and consultant with a licence to survey for bats (2017-30400-CLS-CLS, Level 2). Subject to a Professional Code of Conduct, Richard is an Associate Member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

The site is under the ownership of the client, Mr. Gareth Jones. It is in a rural setting outside of any urban settlements. The proposed development is centred on grid reference SX 32321 75108 and comprises a single outbuilding. In its immediate setting the site is bordered by additional farm buildings and agricultural fields.

In the wider landscape the site is located in a setting that is very favourable for bats; an extensive network of agricultural fields is present for a considerable distance in all directions. Further afield, wooded river valleys are present to the north and southwest. These are likely to provide excellent foraging and commuting opportunities for bats. In addition, no significant transport or urban infrastructure is present within 2km of the site. Overall, the site is considered to have very good connectivity with this wider landscape, primarily through a network of field hedgerows and rural tracks.



Wider landscape view of Great Lanhargy Farm (Google Earth Pro).



Approximate site location



Site layout at Great Lanhargy Farm (Google Earth Pro).

— Approximate site boundary

2. Species records and desktop survey

A data search of records from the local biological records centre has not been undertaken for this site. The phase 1 survey identified potential for roosting bats to be present, but subsequent phase 2 emergence surveys did not record the presence of any roosts. It is considered unlikely that a data search of local records would provide any additional information at this juncture

However, a search of publicly available records returned instances of western barbastelle (*Barbastella barbastellus*), Daubenton’s (*Myotis daubentonii*) Natterer’s (*Myotis nattereri*), Noctule (*Nyctalus noctule*), common pipistrelle (*Pipistrellus pipistrellus*), Soprano pipistrelle (*Pipistrellus pygmaeus*), brown long-eared (*Plecotus auritus*), greater horseshoe (*Rhinolophus ferrumequinum*) and lesser horseshoe (*Rhinolophus hipposideros*) bats within 5km of the site. A search of granted European Protected Species licences (through the Natural England Magic Map website) returned no records of a bat licence being issued within 2km of the site.

3. Methodology

Equipment

Camera
Binoculars
Ladder
Endoscope

The bat survey consisted of a full internal and external inspection of the building due to be affected by the proposed works. The survey method consisted of searching for evidence of bats, including bat droppings, corpses, scratch marks, urine staining, grease marks and clean cobweb free areas. Particular attention was paid around potential access points, attic spaces (where accessible) and crevice roosting features within each structure and on its outside. Binoculars were used to assess potential crevice features. Bats do make audible squeaks and these were listened out for by the surveyor during the survey. The methodology used to search this site is consistent with the guidelines provided in the Bat Conservation Trust's Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins et al, 2016). The building was assessed for their potential to support roosting bats based on the criteria set out in Table 1 below:

Table 1 - Criteria for assessing bat roosting potential of buildings and trees

Confirmed Roost	Evidence of bat occupation found, including live bats, droppings, corpses, grease and/or scratch marks and urine staining.
High Roosting Potential	Buildings or trees with significant roosting potential, either because they contain a large number of suitable features or the features present appear optimal due to their size, shelter, conditions and surrounding habitat.
Moderate Roosting Potential	Buildings or trees with one or more potential roosting features that may be used by bats but are unlikely to support a roost of high conservation status.
Low Roosting Potential	Buildings or trees with few features that may be used opportunistically by bats but are unlikely to be used on a regular basis due to the size, location, conditions and/or suitability of nearby habitat.
Negligible Roosting Potential	Buildings and trees with negligible suitable features and poor quality surroundings.

The site was also assessed for potential to support commuting and foraging bats, based on the criteria set out in Table 2 below, adapted from the Good Practice Guidelines (Collins et al, 2016):

Table 2 - Criteria for assessing bat commuting and foraging habitats

Suitability	Description of habitats
Negligible	Negligible commuting features on site and/or unsuitable foraging features, such as large areas of hard standing.
Low	Habitats that could be used by small numbers of commuting bats, such as gappy hedgerows or sites with limited connectivity to the wider landscape. Suitable but isolated foraging habitat that could be used by small numbers of bats, such as small patches of scrub or lone trees.
Moderate	Continuous commuting habitats connected to the wider landscape, such as a line of trees and scrub or linked residential gardens. Habitat that can be used for foraging and is connected to the wider landscape, such as trees, scrub, grassland and water.
High	Continuous, high quality habitat with good connectivity to the wider landscape. This would include features such as watercourses, river valleys, hedgerows and woodland edges. High quality foraging habitat that well connected to the wider landscape and likely to be used regularly by bats, such as broadleaved woodland, tree lined watercourses, grazed parkland or sites that are close to and/or connected to known roosts.

A summary of legislation relating to bats can be found in Appendix 1 of this report.

4. Results

4.1 Bats and nesting birds – Building B1

The survey noted the following about the building:

Building B1

External



Photograph 1– View of the west aspect.

The building is a modern agricultural barn built on the partial remains of a traditional stone barn. As such it comprises a mix of breezeblock with corrugated asbestos/fibre cement panelled walls and traditional mortared stone walls.

A pitched asbestos/fibre cement panelled roof is present on the main, newer section of barn. A mono-pitched asbestos/fibre cement roof is present on the traditional stone section. The roof is in good condition with no suitable gaps noted. No ridge tiles are present on the roof.

Folded asbestos/fibre cement bargeboards are present on the gable ends of the building and wooden bargeboards are present at the eaves. Gaps were noted beneath all these boards. The boards on the larger main structure are not considered suitable for bats due to the large, exposed nature of the gaps. However, gaps beneath the wooden bargeboards of the traditional stone structure are considered suitable and were assessed as having low potential for bats.

Hanging slate tiles are present on the eaves of the traditional stone area. Gaps with low potential for bats were noted beneath these slates.

uPVC guttering is present on the building. This is in moderate condition with no gaps noted behind the guttering.

Internal



Photograph 2– View of the main internal area of B1.

The barn has two separate sections, divide by a breezeblock wall. However, the wall does not form a complete seal and wall-top access between the areas is possible for bats. This includes potential for bats to roost on the top of the dividing wall.

Both areas of the barn have open fronted sections on the west aspect. The main area also has a series of skylights and an opening in the east area. As such the interiors are well lit and generally exposed.

The modern section has a steel frame and both areas have wooden roof rafters. Gaps are present on the rafters, but are likely to be too large and exposed to be of use to bats.

No ridge beam is present. No other traditional support structures, such as king beams, are present.

No roof lining is present.

Gaps were noted between the roof panels and wall tops of the traditional stone area. These gaps provide low potential for bats to roost on the wall tops.

Potential gaps were noted around a small number of rafters and other timber structures where the two roofs are joined. These also provide low potential for crevice dwelling bats to roost behind the rafters.

Multiple stored items are present in the stone walled area and the main barn is mostly clear and free of detritus. A full inspection of both areas did not record any bat droppings.

4.2 Phase 2 bat emergence surveys

As low potential for bats was identified during the phase 1 bat survey, one phase 2 emergence survey was recommended and commissioned for the building. The full results of the surveys are presented below. The position of surveyors and equipment is illustrated in the figure below.

During the survey surveyors and recording equipment were positioned to watch all potential access points for bat emergence or re-entry. The survey was undertaken by ecologist Richard Bates, licence ref: 2017-30400-CLS-CLS and assisted by Mike Bates. Echo Meter Touch 2 bat detectors and iPad/Android recording equipment was used. The surveyors were positioned to record activity from and around the building. The survey was undertaken in suitable conditions and in line with guidance available in the Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016).

Dusk on 14th June, 2023

Building activity:

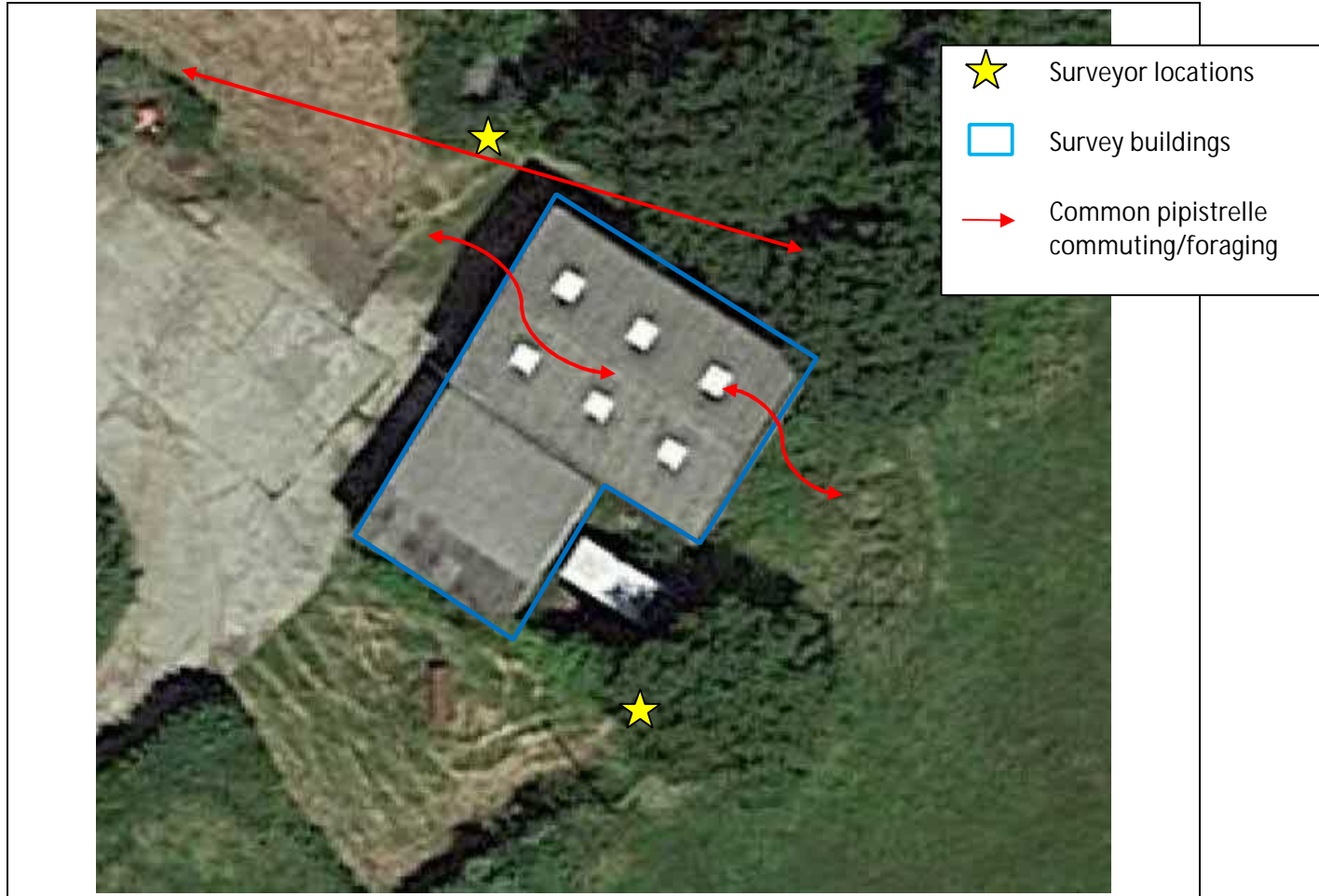
No bats were recorded emerging from the buildings or any nearby structures.

General activity:

Limited bat activity was recorded during the survey. The first common pipistrelle pass was recorded at 9:47pm, 17 minutes after sunset, with occasional foraging activity then recorded in individual passes until approximately 10:50pm. These passes included brief foraging within the barn, passing through openings on both sides of the building, with occasional passes along the north aspect also recorded.

One noctule pass was recorded at 10:15pm. No other passes were recorded.

Figure 1 – Bat activity and surveyor location during the emergence survey on 14th June, 2023



4.3 Bats – Commuting and Foraging

Nearby hedgerows and built structures (fences and walls) along the site boundaries and neighbouring properties were assessed as having moderate foraging and commuting opportunities for bats, based on guidance summarised in Table 2. However, the proposed development is for a small scale redevelopment of the site and will be designed to be complementary to its surroundings. All boundary features will remain intact and fully accessible for foraging bats both during and post-construction.

Recommendations have been included in section 5 to minimise disturbance to foraging and commuting bats. Provided these recommendations are adopted, it is unlikely that the proposed development will have any significant impact on bat foraging or commuting.

Survey Constraints

No significant constraints were noted.

5. Recommendations

5.1 Bats

Phase 1 and phase 2 bat surveys have been undertaken at the site, in line with available guidance. The surveys suggest it is unlikely that bats or bat roosts are present and no further survey work is required.

However, bats do move around and can adopt new roosts. Although it is unlikely that bats will adopt this structure, a simple precautionary approach will be undertaken:

All roof and ridge panels will be removed by lifting them from the batons or ridge. The panels will not be slid from the roof as this can cause accidentally crushing injuries if bats are present. The reverse side of all panels will be inspected to ensure no bats are present. Should bats be encountered during this process, all work will cease immediately and a licensed ecologist will be consulted.

All bargeboards will be carefully dismantled using hand tools. The reverse of each board will be inspected for bats before being lowered to ground level. Should bats be encountered all work will cease immediately and a licensed ecologist will be consulted.

If a bat is discovered during any other works at the site, all works will cease immediately and a licensed ecologist will be consulted. This advice may include leaving the bat to disperse of its own accord or waiting for the licensed handler to arrive and move the bat. Builders and contractors are explicitly forbidden from handling bats.

5.2 Bats – Foraging and commuting

Bats are sensitive to artificial lighting, which can draw insect prey away from potential foraging areas while simultaneously discouraging bats from foraging and disrupting commuting routes. Currently a lighting plan is unavailable for the development. However, in order to preserve commuting and foraging opportunities, all new exterior lighting will incorporate the following (where applicable) to minimise the potential for light disturbance:

Work on site will be limited to daylight hours only. No artificial use of lighting will be used for the proposed development during the hours of darkness.

External lighting used to illuminate any building entrances will use motion sensors. The use of sensors will reduce the amount of time the lights are on to only when needed.

All external lights will be angled downwards and away from the site boundaries. The spread of light from these sources will be minimised by using hoods or cowls to limit light spill to below the horizontal, in line with guidance available in Landscape and urban design for bats and biodiversity (Gunnel, Grant, & Williams, 2012).

Any required footpath lighting will consist of ground level bollard-style lighting or poll mounted lighting where an incorporated hood will direct the light downwards and away from the nearby foliage and commuting features. For either design, lighting will be restricted to providing 3 lux or less at ground level, in line with guidance available in Bats and Lighting in the UK: Bats and the Built Environment Series (Bat Conservation Trust, 2008).

Where available, external lighting will incorporate LED luminaires or narrow spectrum bulbs that emit minimal ultra-violet light, as recommended in guidance from the Bat Conservation Trust & Institute of Lighting Professionals (2018) and the Bat Conservation Trust (2008) respectively. This will avoid attracting insects to lit areas, maintaining the availability of those insects for foraging bats.

5.3 Nesting birds

The phase 1 survey noted the presence of previously nesting birds. Although no evidence of recent nesting activity was recorded, simple precautions will be undertaken to minimise the risk of disturbing nesting birds during demolition.

Where possible, demolition works will commence outside of the bird nesting season (March – August). If works cannot commence in the timeframe detailed above, a search of the building for nesting birds will be undertaken by an ecologist immediately prior to work commencing.

Should nesting birds be recorded, a 3m buffer zone will be established around the nest and work in that area will cease until the fledglings have left the nest.

5.4 Site enhancements

As part of the National Planning Policy Framework (2019), local planning authorities aim to secure enhancements for biodiversity for all developments. To achieve this aim the following will be incorporated into the design proposals for this site. Illustrative examples and suitable locations for these enhancements are available in Appendix 3:

Provision should be made for pollinating insects on site. A number of commercial products are available to 'house' important pollinators such as solitary bee and solitary wasp species. A minimum of one suitable product should be included to provide nesting opportunities. These may be free standing, attached to trees or installed on buildings. The provision of nesting opportunities for pollinators will be of benefit to a range of important insect species, the plants they pollinate and the mammals and birds that prey on them.

A minimum of one Schwegler brick nest boxes, or other suitable tree/building mounted bird box, should be installed at the site. The box will be positioned as high as possible on the wall or tree, a minimum of 3m from ground level. The boxes should also be located on a north facing aspect out of the prevailing wind and strong sunlight. The addition of bird boxes will provide nesting opportunities for common bird species.

One Schwegler 2F or 1FF bat box or, if compatible with the new building, one Schwegler bat tube will be installed at the site. If a bat box is included this will be installed on an external wall or suitable mature tree. The box/tube will be positioned a minimum of 3m from ground level in a sheltered location. The box/tube also requires a clear, uncluttered flight path to the entrance point and will not be illuminated by any artificial light sources.

6. References

Bat Conservation Trust (2008). Bats and Lighting in the UK: Bats and the Built Environment Series. Bat Conservation Trust.

Bat Conservation Trust & Institute of Lighting Professionals (2018). Bats and Artificial Lighting in the UK. <https://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting>

Collins, J., Charleston, P., Davidson-Watts, I., Markham, S. and Kerlake, L. (2016). Bat Surveys for Professional Ecologists Good Practice Guidelines. Bat Conservation Trust, London.

Gunnel, K., Grant, G., and Williams, C., (2012). Landscape and urban design for bats and biodiversity. Bat Conservation Trust.

Natural England (2020). Magic Map. Available at:

<http://www.natureonthemap.naturalengland.org.uk/MagicMap.aspx> [Accessed 02.07.23]

Appendix 1: Legislation (summary)

Wildlife Protection legislation

This appendix details the legislation relevant to the protection of species and habitats. It also details the relevant policies within national, regional, and local planning policy.

National Planning Policy Framework (2018)

The National Planning Policy Framework (NPPF) is the Government's vision for biodiversity in England and is considered by local councils during all planning applications where development is proposed. The NPPF has a broad aim that any construction, development or regeneration proposals should maintain and enhance biodiversity, with the aim of securing biodiversity enhancements for all developments in order to facilitate sustainable development.

Biodiversity Action Plans (BAPs): BAPs set out policy for protecting and restoring priority species and habitats as part of the UK's response as signatories to the Convention on Biological Diversity. BAPs operate at both a national and local level with priority species and habitats identified at a national level and a series of Local BAPs that identify ecological features of particular importance to a particular area of the country. The requirement to consider and contribute towards BAP targets was strengthened through the Countryside and Rights of Way (CRoW) Act 2000. Although now superseded by other legislation, the lists drawn up under the BAPs are still valuable reference sources on local and national wildlife priorities.

Natural Environment & Rural Communities (NERC) Act (2006)

The NERC Act 2006 amends the above mentioned CRoW Act, obliging local authorities to include biodiversity considerations in their duties, including in consideration of planning applications. Under Section 41 of the Act, this consideration is based on lists of organisms and habitat types deemed to be of principal importance to in conserving biodiversity. These lists are primarily based on lists created for the UK and local authority BAPs.

Mammals:

Otters, dormice, water voles, and all bat species are fully protected under section 9 (5) of the Wildlife and Countryside Act 1981 (as amended). According to this act it is an offence to:

- Intentionally capture, kill or injure one of these animals
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used by one of these animals for shelter or protection
- Intentionally or recklessly disturb an animal whilst it is using this place
- sell, offer for sale or advertise for one of these animals live or dead

Designated as European Protected Species' otters, dormice, and all bat species receive additional protection from the Conservation of Habitats and Species Regulations 2010, under Schedule 2 which implements the EC Directive 92/43/EEC in the United Kingdom. In accordance with this act, it is an offence to:

- Deliberately capture or kill a European Protected Species

Deliberately disturb a European Protected Species

Damage or destroy the breeding site or resting place of a European Protected Species

The greater and lesser horseshoe bats, barbastelle and bechstein's bats, are also listed under Schedule 2 of the Conservation of Habitats and Species Regulations. Areas which support populations of these species can therefore be considered for designation as a Special Areas of Conservation (SACs).

Birds:

Please Note: All breeding birds and their nests are protected under the general protection of Section 1 of the Wildlife and Countryside Act, 1981 as amended. This makes it an offence to disturb breeding birds.

Appendix 2: Additional Site Photographs



Photograph 1 – View of south aspect of the traditional stone section.



Photograph 2 – View of the east aspect.



Photograph 3 – View of the north aspect.



Photograph 4 – View of the interior of the traditional stone section.



Photograph 5 – View of gaps along the joins between the roofs.



Photograph 6 – View of gaps along the wall tops.

Appendix 3: Examples of suitable site enhancement measures



Schwegler 2F Schwegler 1FF

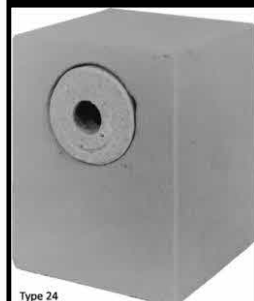
Examples of tree or wall mounted bat boxes. Box should comprise one Schwegler 2F or Schwegler 1FF bat box to provide suitable roosting site for multiple bat species.



Schwegler 2FR

Example of Schwegler 2FR bat tube, designed to be incorporated into wall. To be installed on south or east aspect for protection from prevailing wind. Requires no maintenance and can be painted/rendered.

For either design, box should be located a minimum of 3m from ground level and with a clear, uncluttered flight path to the box entrances. Boxes must not be illuminated from any nearby artificial lighting.



Type 24