



BAT SCOPING SURVEY FROGGATS ANCILLIARY BUILDINGS

The Gym, Annex, Garage & Workshop

Froggats Cottage

Rosemary Lane

Alfold

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1. SUMMARY

- 1.1 In May 2023 Drummond Ecology were commissioned by Ms C F Riley to carry out a detailed Bat Scoping Survey of the ancillary buildings serving Froggats Cottage, namely the Gym, Annex, Garage & Workshop.
- 1.2 A potential roost survey was carried out of these ancillary buildings by Drummond Ecology in 2021 along with the survey of the main house. A further current survey was carried out on the 17th May 2023. It involved carrying out a systematic inspection of the buildings to assess the likelihood and potential of the buildings in supporting roosting bats. A series of evening emergence surveys were scheduled to cover both buildings to identify any bats which may emerge from subsequent identified roosting locations from the initial roost survey.
- 1.3 Due to the construction and location of the buildings within the rural landscape a series of evening emergence surveys were carried out throughout May, June and August to confirm the presence or absence of bats and consequently whether any part of the buildings are currently being used by bats as a roost. The timings would cover the possible use of the buildings as a maternity and summer roost.
- 1.4 The initial roost assessment and the subsequent evening emergence surveys revealed that no bats were using the building as a roost. At present any development would not impact on any bats in the locality, for roosting, foraging or commuting. An EPS licence is not needed in this instance for any development works to commence. Please see the Potential Roost Survey results **4.6.7** and the Potential Impacts of Development **5.1.3**

2. INTRODUCTION

2.1 MAIN OBJECTIVES.

The initial bat assessment and subsequent emergence surveys were designed to:

- Make a scientifically sound judgment on the actual or potential bat usage of the Gym, Annex, Garage and Workshop.
- Establish whether there is any evidence to support the presence/likely absence of bats within the buildings.
- Estimate the size and status of any existing bat roost within the buildings.
- Determine the potential impacts on any bat roost from the proposed development schedule.
- Should the development go ahead, what impact it may have on bats within the vicinity,
- Determine the need for further surveys, compensation or mitigation measures.
- Identify any legislative or planning policy constraints relevant to the site.

2.1.1 The initial bat assessment, emergence surveys and report writing were carried out in accordance with Bat Surveys: Good Practice Guidelines (Bat Conservation Trust, 2012).

The survey involved carrying out a detailed building inspection to assess the likelihood and potential of the building supporting bat species and two evening emergence surveys to identify any bats which may emerge, from roosting locations within the buildings, to feed. This report details the results of these surveys.

2.2 GRID REFERENCE.

The Grid Reference for the centre of the site is TQ 03161 33418

The position of the site is shown within Figure 1 & 2 overleaf.

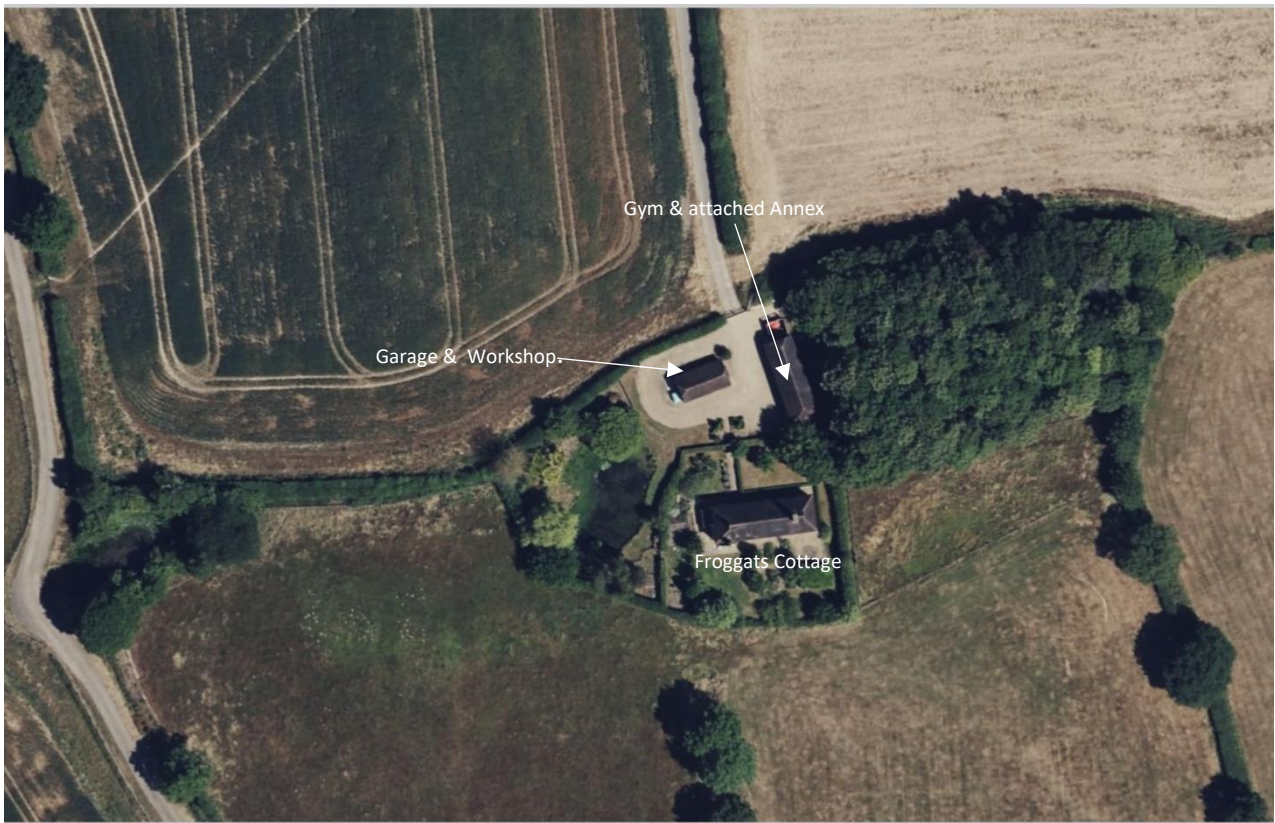


Figure 1. The position of the ancillary buildings in relation to Froggats Cottage.

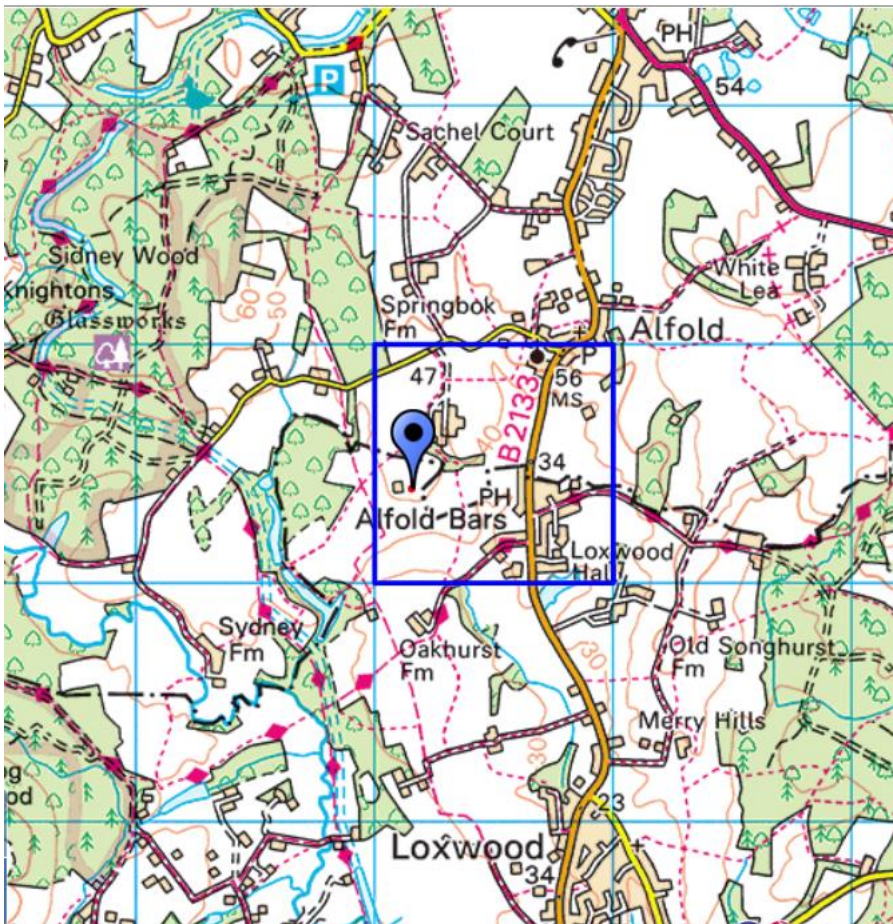


Figure 2. Situation of the site within the wider landscape depicted by the blue marker in the 1km blue square.

2.3 SITE DESCRIPTION

- 2.3.1 The ancillary buildings that serve Froggats Cottage namely the Gym, Annex, Garage & Workshop are timber framed and were built along with Froggats at around 2002
- 2.3.2 The site is in a rural area and located within a patchwork of arable fields, inter-connected to the adjacent woodland by a series of hedgerows and field boundaries.
- 2.3.3 The site is situated approximately 1km SW of the village of Alfold and 450m off of Rosemary Lane down its own private track.
- 2.3.4 The property is surrounded by a mixed broadleaved hedge overlooking arable and grass pasture. There is a small area of chestnut coppice due east of the Gym and Annex.

2.4 PROPOSED WORKS

The proposed application would involve extending the gym and attached annex and development of the Garage and workshop.

3. METHODOLOGY

3.1 SURVEY METHODS

A preliminary assessment was carried out to determine the actual or likely presence of bats, using desk top data, visual survey and emergence surveys.

3.2 PRE-SURVEY DATA SEARCH

- 3.2.1 The National Biodiversity Network Gateway was checked for bat records or anything of ecological importance for the site and adjacent area.
- 3.2.2 The Multi-Agency Geographical Information for the Countryside (MAGIC) website (<http://magic.defra.gov.uk/> accessed 15/09/20) was reviewed for information on designated sites for which bats are a qualifying feature within 2km radius of the property.
- 3.2.3 National Planning Policy has been reviewed for policies that relate to nature conservation relevant to the site.

3.3 FIELD SURVEY

On 17th May 2023 a field survey was carried out on the site to determine its importance to commuting and foraging bats.

The buildings suitability for roosting bats was also assessed by examining the surrounding habitat. Important habitat features surrounding the structure which may influence roost potential include whether the structure is in a semi-rural or parkland location, its proximity to significant linear habitat features such as a watercourse, mature hedgerow, wooded lane or an area of woodland.

- 3.3.1 Using both OS map and online aerial imagery, an estimation of suitable commuting and foraging habitat within 500m of the site is made.

3.4 POTENTIAL ROOST SURVEY

A detailed bat, building inspection was undertaken by Philip Overton on 17/05/2023

The survey was carried out on the site to determine the potential of the building to support roosting bats. The methods used in the survey are consistent with those described in the BCT Good Practise Guide Lines.

- 3.4.1 An external inspection around the perimeter of the buildings was conducted and all external aspects of the building were inspected. Throughout the external search any possible access points i.e. gaps and crevices were noted and surveyed with a high powered torch and ladder and binoculars as required. All accessible parts of the building were surveyed during this survey.
- 3.4.2 Externally evidence looked for included: bat droppings on external surfaces, window sills, walls, and any hard standing around the curtilage of the buildings. Also scratch marks and grease marks around possible access and ingress points of the roof and walls. The characteristic chittering noise was also listened for around the eaves along with any echolocation calls using bat detectors also evidence of feeding activity such as discarded insect wings and cases.
- 3.4.3 Internally a systematic search was undertaken using a high-powered torch to illuminate all areas thought to be suitable for roosting bats. All surfaces were also surveyed for signs of bat presence. Features of potential value to bats were surveyed not only for the presence of bats but also for signs that could indicate the use by bats, such as:
- bat droppings and urine splashes.
 - Scratches and smear marks
 - feeding remains such as moth and insect wings and cases.
- 3.4.4 As evidence of bats can be limited, inconspicuous or not present at the time of the survey, the potential of the building to support roosting bats was also assessed by examining structural features. Structural features that may influence the suitability of a building to support roosting bats include the presence of a roof void, the presence of access points into the building (including gaps beneath barge boards, weatherboarding, soffits and fascias, gaps under lead flashing, gaps within masonry, hip and ridge tiles, gaps between tenon and mortise joints, gaps at eaves level including broken or slipped tiles, and other such ingress points and possible harbourages. Internally, the suitability of the roof for bats is assessed, this included looking for suitable access points and potential roost locations. The surrounding habitat is also taken into account along with its suitability to support commuting and foraging bats.
- 3.4.5 The number of locations and aspect of potential access points is taken into consideration along with the number of potential roost locations, any history of use by bats of the site and results of the pre survey data search; together with the surrounding commuting and foraging habitat and connectivity to woodland and water to give the overall potential for the building to support roosting bats.
- 3.4.6 Taking account of these architectural and habitat features, the building was then assigned a level of roost suitability based the criteria given in the Bat Conservation Trust's Bat Surveys: Good Practice Guidelines (Hundt, 2012) and professional judgement. The primary objective of this exercise was to identify the need for further detailed bat survey later in the year, or alternatively to obtain sufficient information that would dismiss the need for further assessment.

3.5 DUSK EMERGENCE SURVEYS

Due to the location of the Buildings within the local landscape and the presence of a number of potential access points to the roof space a series of evening emergence and return to roost surveys were carried out during May, June and August 2023 to inform current use of the buildings by bats. Froggats Cottage was also surveyed in June and August due to its close proximity to the ancillary buildings and to give a current indication as to whether it is being used by roosting bats.

3.5.1 Conditions were good for all bat surveys and any bats present were likely to be active. The emergence surveys began approximately 30 minutes before sunset and finished at least an hour and a half after sunset on each survey.

3.5.2 Bat detectors used in the surveys included a Pettersson D-240X Bat Detector which uses both Time expansion and Heterodyne detection and an Echo Meter Touch Detectors which uses the interface of an ipod to accurately and efficiently detect, record and analyse bat echolocation calls in frequency division and time expansion.

4. RESULTS

4.1 PRE-SURVEY DATA SEARCH

In May 2023 the National Biodiversity Network Gateway was searched for bat records for the site as was the Government MAGIC web site but nothing was supplied which may have influenced the manner in which the surveys were conducted.

4.2 FIELD SURVEY

4.2.1 The site is in a rural area and is located 1.5km SE of Alfold and a further 500m from Rosemary lane. And is surrounded by a patchwork of fields of permanent pasture inter connected to the adjacent woodland by a series of hedgerows which can be seen in both **Figures 5 & 6** below.

4.2.2 Position of site is shown circled in red shown in relation to adjacent SSSI and deciduous ancient woodland.

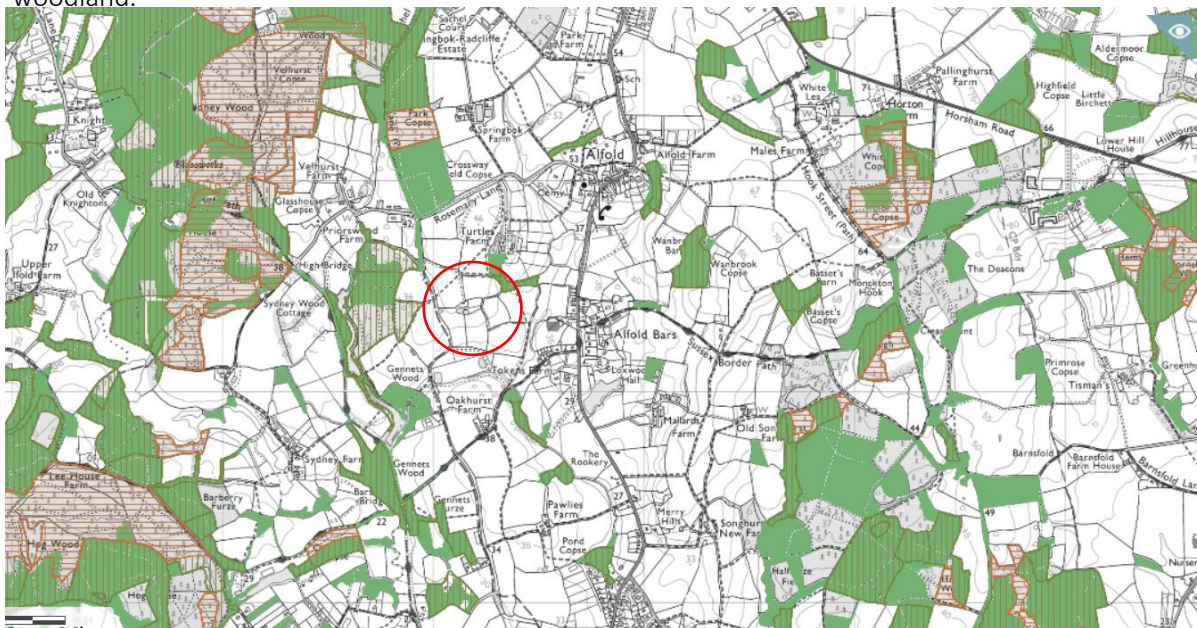


Fig 3. Deciduous woodland marked in green and Ancient Woodland marked and hatched in brown. The position of the site is circled in red.

4.2.3 There several areas of ancient deciduous woodland surrounding the site. The closest areas of deciduous wood land is High Beech Hangar which is 400m north of the site, with Griggs Bottom 800m south, Sparkes Copse 800m west and Botany Bay 1400m east of the site, all of which are shown in **Fig 3**.

4.2.4 DESIGNATED SITES

The closest designated site to the property is the Chiddingfold Forest SSSI which consists of 21 units, units 14, 15, & 16 are located 1400m NE of the site which is circled in red.

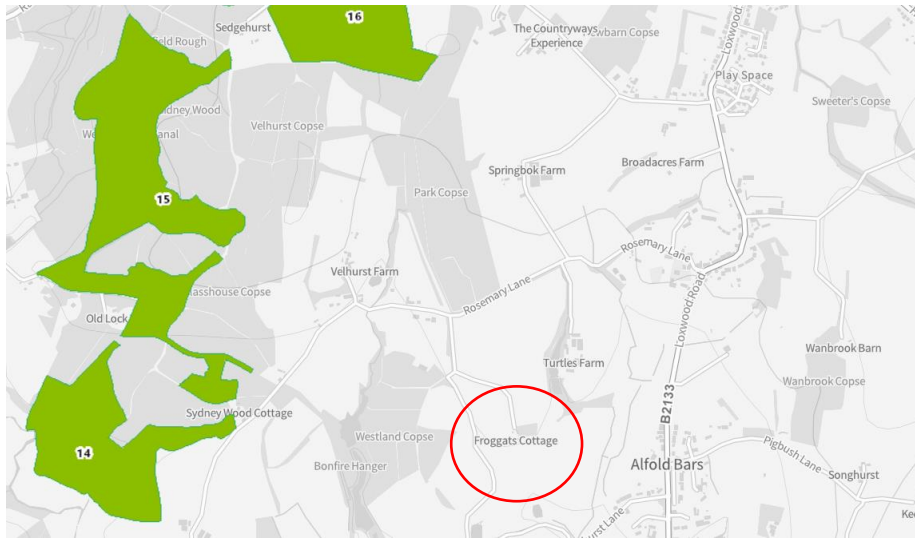


Fig 4. Showing the location of Froggats Cottage in relation to the closest Designated Site, Chiddingfold Forest.

4.2.5 The surrounding arable land and pasture in the wider landscape provides ideal foraging and commuting habitat for bats with many of the small fields bordered by hedgerows providing a host of linear features linking the available woodland to the site and surrounding landscape, is shown in the satellite image below, **Figure 5**.



Figure 5. *Satellite image of the surrounding landscape, site is shown circled in red.*

4.2.6 There is a small pond on site with other water bodies on neighbouring Turtles Farm NE of the site , Loxwood Hall SE of the site and the ponds in Westland Copse and Gennets Wood SW of the site along with the Wey and Arun Canal system that runs within 500m of the site this can be seen on the annotated map **Figure 6** below.



Figure 6. The location of the closest water body in relation to the site which is circled in red.

4.3 POTENTIAL ROOST SURVEY

- 4.3.1 The buildings and any adjacent trees that may contain potential roost features were surveyed to determine the presence or absence of roosting bats.
- 4.3.2 All the trees present on the site were surveyed for potential roost features but no PRF of any significance were found.
- 4.3.3 The ancillary buildings consist of an open fronted garage with a locked tool store and a building containing a gym and a self contained annex. **Photographs 1 & 13**
- 4.3.4 The buildings are timber framed with a hand made clay tile roof. They are clad externally in oak weather boarding.

- 4.3.5 The gym, garage and workshop are single skinned and as such do not possess any internal cladding. **Photograph 20**
- 4.3.6 The gym has a roller shutter door on both bays which would effectively prevent bats from entering. No droppings or urine splashes were found on any of the equipment within the building, internally it showed no evidence that it had been used previously by roosting bats **Photograph 1**
- 4.3.7 A roofing membrane is present under the roof tiles and is in good order. **Photograph 6.**
- 4.3.8 The Annex which is attached to the gym is double skinned and has Celotex insulation between the oak weather boarding and the internal skin.
- 4.3.9 It has a vaulted ceiling on the 1st floor with no loft void as such. **Photograph 7.**
- 4.3.10 The roof is modern in construction with Celotex insulation. The roof is well sealed at the eaves with timber inserts between each joist, **Photograph 14.** A roofing membrane covers the underside of the tiles.
- 4.3.11 The ridge and hip tiles were subject to a ground survey, but they appeared in good order with no missing mortar and were not considered to be of roosting value. **Photograph 10 & 16**
- 4.3.12 The Garage and workshop are of a similar construction but felt is used under the tiles in this instance as opposed to the roofing membrane used on the other building. **Photograph 19 & 20**
- 4.3.13 The workshop has a double oak door but the garage is open fronted but no evidence in the way of droppings, staining, spent wing cases from insect prey etc could be found within this internal space.
- 4.3.14 Both the roof on the Gym /Annex and the Garage/Workshop consist of clay hand made tiles and as such they could present a number of roosting opportunities where the tiles overlap and natural openings appear throughout roof. **Photograph 17.**
- 4.3.15 Due to the recent construction of the roof and the use of insulation, roofing membranes etc any void by which bats could access would be limited however these spaces could be utilised by crevasse dwelling bats.
- 4.3.16 The weatherboarding on both buildings was in good order and tight fitting with little opportunity to allow access to roosting bats. **Photograph 12**
- 4.3.17 Both buildings are sealed at the eaves between the roof joists. **Photograph 11 & 18**

4.4 BUILDING CATEGORISATION

The buildings were assessed as to their potential to support roosting bats and the summary is explained below in **Table 1**.

BUILDINGS ARE CATEGORISED AS FOLLOWS:

Potential	Description
Confirmed	Building with confirmed roost presence either in the form of droppings, bats present, audio proof or other definite signs.
High	Building that has numerous suitable access points and potential roost locations, with good connectivity to high quality foraging habitat.
Medium	Building has some features suitable for use by roosting bats. Surrounding habitat and connectivity may be of lower quality
Low	Where the building has features that could be used by roosting bats and the use of the building cannot be ruled out without further surveys. Surrounding habitat may be low quality commuting and foraging habitat with poor connectivity to the surrounding area. No evidence found.
Negligible	No features suitable for use by roosting bats or features where the potential of use by roosting bats is so low as to be negligible.

Table 1.

4.4. The ancillary buildings have medium potential for supporting roosting bats but due to its construction with modern materials with only the gaps between the hand made tiles providing any obvious access points, but internally no evidence could be found to suggest that the buildings have supported roosting bats. However, these buildings do have good connectivity to the surrounding habitat and further landscape.

4.4.1 Initial observations consider the local area and wider landscape ideal for bats. The proximity of the site to woodland, riparian habitat and water bodies increases the likelihood that the site may support roosting bats.

4.4.2 The immediate surrounding habitat is classed as high quality foraging and commuting habitat. Although no evidence could be found of roosting bats within the buildings the excellent connectivity to the surrounding landscape meant the use of the building cannot be ruled out for roosting bats without further surveys. It was therefore decided to carry out a series of dusk emergence surveys to cover the buildings to ascertain the presence or likely absence of bat roosts within the site.

4.5 DUSK EMERGENCE SURVEY

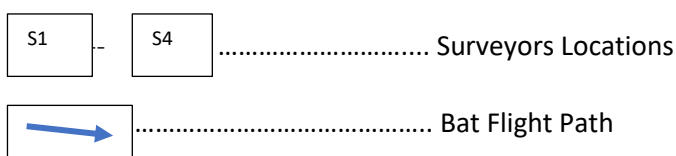
4.5.1 The Dusk emergence surveys that took place in 2023 were on the 17th May, 14th June with a return to roost survey on the 9th August. The timings of the surveys meant that the use of the roof as a maternity roost could be ruled out. Froggats Cottage was subject to an emergence survey on the 15th June and the 8th August. On each occasion the surveys were carried out by four surveyors experienced in conducting

bat emergence surveys and were positioned either side of the buildings to best cover the potential access points as outlined in the initial potential roost survey.

- 4.5.2 The dusk surveys commenced approximately 30 mins prior to sunset and the surveyors remained in position until light levels were such that viewing emerging bats was impossible, the surveys were brought to conclusion 2 hours after sunset whereby a short transect survey of the site was carried out to build a picture of local foraging and commuting bats that may be present in the surrounding landscape
- 4.5.3 Any passes by bats were recorded on a Pettersson D-240X Bat Detector which uses both Time expansion and Heterodyne detection and Echo Meter Touch Detectors which use the interface of an ipod to accurately and efficiently detect, record and analyse bat echolocation calls in frequency division and time expansion.
- 4.5.4 Position of surveyors on emergence surveys are shown below by S1, S2, S3 & S4. The white arrows show the flight paths used by foraging and commuting bats on the surveys. **See Figure 7** below.



Figure 7. Site plan showing positioning of the surveyors throughout the emergence surveys and recorded flight paths of foraging and commuting bats during the surveys.



4.6 EMERGENCE SURVEY RESULTS

A summary of the findings from the emergence and return to roost surveys is shown below.

4.6.1

Surveyors :	Philip Overton, James Mc Bride, Steve D'Oust & Zsuzsi Overton
Site Name:	Froggats Gym, Annex, Garage & Workshop
Survey Date:	17 th May 2023
Timing of Survey:	8:20 pm – 10:30 pm
Sun Set:	8:47pm
Notes:	<p>Weather conditions were good for the survey, clear with a light breeze and any bats present were likely to be active.</p> <p>No bats were recorded emerging from the buildings during the survey but during the short transect survey of the site that took place a while after dark when conditions were too dark to see any emerging bats, several passes by 3 common pipistrelles were seen and recorded at 9:45pm along the edge of the chestnut plantation in the field north of the chestnut plantation. The field is planted with a wild bird/wildlife mix and is east of the lane and hedgerow that leads up to the house.</p>
Conditions:	Clear light breeze
Precipitation:	Nil
Start - End Temp	14°C - 12°C

4.6.2

Surveyors :	Philip Overton, James Mc Bride, Amelia Lear & Zsuzsi Overton
Site Name:	Froggats Gym, Annex, Garage & Workshop
Survey Date:	14 th June 2023
Timing of Survey:	8:50 pm – 10:45pm
Sun Set:	9:18 pm
Notes:	<p>Weather conditions were good for the survey, clear with a light breeze and little cloud cover and any bats present were likely to be active</p> <p>No bats were recorded emerging from the buildings during the survey.</p> <p>Several passes of both Soprano and Common pipistrelles were recorded in the field north of the chestnut plantation after the survey had finished at around 10:30. The field has a wild bird/wildlife mix planted in it and is east of the lane and hedgerow that leads up to the house. Bats were also recorded at the far end of the lane where the lane meets the woodland whereby a Serotine was recorded and several passes by Soprano Pips</p>
Conditions:	Clear light breeze.
Precipitation:	Nil
Start - End Temp	21°C - 18°C

4.6.3

Surveyors :	Philip Overton, James Mc Bride, Amelia Lear & Zsuzsi Overton
Site Name:	Froggats Cottage
Survey Date:	15th June 2023
Timing of Survey:	8:31pm – 10:30pm
Sun Set:	8:56 pm
Notes:	Weather conditions were good for the survey, clear with a light breeze . Any bats should they be present were likely to be active. No bats were seen to emerge from the building during this survey. No bats were seen or recorded on the site during this survey.
Conditions:	Clear light breeze
Precipitation:	Nil
Start - End Temp	21°C - 17°C

4.6.4

Surveyors :	Philip Overton, James Mc Bride, Steve D'Oust & Zsuzsi Overton
Site Name:	Froggats Cottage
Survey Date:	8 th August 2023
Timing of Survey:	8:00 pm – 10:00 pm
Sun Set:	8:38 pm
Notes:	Weather conditions were good for the survey, although cloudy, with a light wind, and any bats present were likely to be active. But no bats were seen to emerge from the building on this survey.
Conditions:	Cloudy light wind
Precipitation:	Nil
Start - End Temp	17°C - 16°C

4.6.5	Surveyors :	Philip Overton, James Mc Bride, Steve D'Oust & Zsuzsi Overton
	Site Name:	Froggats Gym, Annex, Garage & Workshop
	Survey Date:	9 th August 2023 (Return to Roost)
	Timing of Survey:	4:15am – 5:30 am
	Sun Rise:	5:30 am
	Notes:	Weather conditions were good for the survey, although cloudy it was still with no breeze and any bats present on site were likely to be active. No bats were seen to return to roost to any of the buildings on this survey. No bats were seen or recorded on site on this occasion.
	Conditions:	Partially cloudy still with no breeze
	Precipitation:	Nil
	Start - End Temp	12°C - 12°C

4.6.6 Internally the buildings showed no evidence of bats. A number access points were observed during the potential roost survey, namely the gaps between the overlapping hand made tiles roof tiles and 2 broken tiles **Photograph 8**. allowing potential access to the area behind and between the tiles and the roofing membrane. Constant vigilance was paid to all the roof areas during the dusk emergence surveys. However, throughout all the dusk emergence and return to roost surveys no bats were seen to emerge from any part of the building.

4.6.7 The bat roost assessment and subsequent evening emergence surveys that took place during May June and August of 2023 and revealed no bats were roosting or had used the buildings as a roost in the past. With regards to the Gym and Annex the proposed development would involve extending the west elevation but retaining the existing weatherboarding and matching this on the proposed extension. The southern elevation would be extended with a proposed new build. The Workshop and Garage would involve a change of use. It is concluded that although bats were indeed seen and recorded on the edge of the site, along its eastern boundary and the surrounding arable land, this proposed development would not impact on any roosting bats or indeed commuting and foraging bats within the surrounding area.

5. CONSTRAINTS & LIMITATIONS

5.1 CONSTRAINTS ON SURVEY INFORMATION

No constraints on the information gathered during the surveys due to weather, health and safety, access or equipment used.

5.1.2 Bats are difficult to locate in large structures, with so many potential roosting areas, particularly in inaccessible areas such as large building, finding the exact roosting site can be difficult, especially male/single bat roosting sites.

5.1.3 Bats can have seasonal use of building and being so mobile may arrive and start using a site after it has been surveyed, or roost somewhere else during the period it was surveyed. For this reason bats may potentially be present but remain undetected, particularly during day time assessment.

However, the spacings of the dusk emergence surveys through out the surveying season when bats are most active have given a snap shot as to the presence or absence of bats within the building and a confident conclusion that bats are not using either the Gym & Annex or the Workshop & Garage as a roost.

5.2 POTENTIAL IMPACTS OF DEVELOPMENT

It is understood that current development proposals will involve the alteration and extension of the Gym and Annex and change of use of the Garage and Workshop. It is understood from the Bat survey that the building is not being used by roosting bats. It is also understood that hedgerows, tree lines and mature trees adjacent to the site will be left undisturbed post development. These habitats are most significant for bats providing foraging and commuting habitat as well as potential roosting features within mature trees.

- 5.2.1 Considering the above, the small-scale nature of the development proposals and the potential for ecological enhancement to be provided within the development it is considered that no further survey work for bats would be required. Furthermore, it is considered that the development would not impact upon the ecological functionality of the local landscape and will not severe or fragment landscape links or green corridors. It is therefore considered that the proposals will not impact upon the favourable conservation status of bats in the local area.

6. CONCLUSION, RECOMMENDATIONS, MITIGATION & BIODIVERSITY

6.1 CONCLUSION

Internally the building showed no evidence of bats but the building could have the potential to support roosting bat due to the observation of a number of potential access points to areas of the roof often used by crevasse dwelling bats coupled with its positioning within the rural landscape however in the subsequent emergence surveys that followed no bats were seen to emerge from the selected buildings.

- 6.1.2 The initial bat assessment and subsequent evening emergence surveys revealed no bats were roosting or had used the building as a roost in the past. Within the proposed development It is understood that there will be alteration of the southern elevation and corresponding roof. The north facing elevation of the site would remain intact as would the adjacent ancillary buildings and they would be largely unaffected by the development. It is concluded that this proposed development would not impact on any roosting bats or foraging and commuting bats in the surrounding area.

6.2 RECOMENDATIONS

- 6.2.1 The recommendations in the paragraphs below should be followed to help ensure that wildlife and important ecological features are protected during the course of works. Recommendations also set out mitigation measures to minimise harm where this cannot be avoided and provide compensation measures to allow the proposals to meet current legislative and planning policy objectives.

- 6.2.2 However, any proposed lighting scheme as part of the development will have to take into account bats present in the surrounding area. All bat species are nocturnal, resting in dark conditions in the day and emerging at night to feed. Bats are known to be affected by light levels which can affect both their roosting behaviour as well as their foraging behaviour. This needs to be taken into account, with a sympathetic lighting scheme for the development. Recommendations include:

- Lighting should only be installed if there is a significant need;

- Light levels should be kept low, the use of low pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics;
- Lighting should be avoided near woodland, tree lines or hedgerows, with light angled away from these areas, bats use linear features such as treelines to commute across the landscape to forage; and
- Lights should have focussed luminance on their target area, preventing light spill and pollution into other areas of the site and local area.

6.2.3 Bats are protected under the Wildlife and Countryside Act 1981 (as amended) and the Conservation (Natural Habitats &c.) Regulations 2010, (which make it illegal to intentionally kill, injure or otherwise disturb bats, or to damage, destroy or obstruct access to a bat roost, whether bats are present or not).

6.3 MITIGATION

No mitigation is needed in this instance as this proposed development would not impact on bats in the surrounding area or wider landscape but the new build could be made more attractive to bats by way sympathetic planting of native shrubs within the landscaping of the project to increase the available invertebrates on which bats might feed and by the application of suitable bat boxes to certain trees on the site and by the inclusion of access tiles etc as seen in **Photographs 21-25**. These could be implemented within the new build or on the retained proportion of the buildings.

6.4 BIODIVERSITY

The National Planning Policy Framework (NPPF) (paragraph 109), requires the planning system to aim to conserve and enhance the natural and local environment by minimising impacts on biodiversity. Paragraph 118 of the NPPF also states that opportunities to incorporate biodiversity in and around developments should be encouraged.

The Natural Environment and Rural Communities (NERC) Act (2006)(Section 40) states, *“Every public authority must, in exercising its functions, have regard, so far as is consistent with the proper exercise of those functions, to the purpose of conserving biodiversity”*. Section 40(3) also states that, *“conserving biodiversity includes, in relation to a living organism, or type of habitat, restoring or enhancing a population or habitat”*.

This development may offer some opportunities to restore or enhance biodiversity and such measures will assist the Local Authority in meeting the above obligation and also help offset any localised harm to biodiversity caused by the development process.

Various measures can be implemented by:

- Providing bird nesting boxes erected on the new building or on suitable trees on site; these should be selected for species likely to use this site.
- Providing roosting opportunities for bats with the inclusion of various means such as special bat bricks and tiles which allow bats to utilise various parts of the roof space and walls for roosting and bat boxes on suitable trees on site examples of which can be found in **Photographs 21-25**.
- (The applicant should consult a suitably experienced ecologist to determine the most appropriate provision of bird and bat boxes for this site.)
- Normally one would use native species when planting new trees and shrubs, will increase the amount of available invertebrates on which bats feed.
- Plantings of foreign species of invasive habit should be avoided adjacent to natural habitat.

7. LIMITATIONS

- 7.1 This report records wildlife found during the survey and anecdotal evidence of sightings. It does not record any wildlife that may appear at other times of the year and were therefore not evident at the time of visits.
- 7.2 This report represents a preliminary assessment only. Recommendations and conclusions are subject to change should further findings significantly differ from those collected from the survey efforts to date.
- 7.3 The advice contained in this report relate primarily to factual survey results and should be used for general guidance only.

8. REFERENCES

- Bat Conservation Trust** (Hundt, 2012). *Bat surveys Good Practice Guidelines (2nd Edition)*
- Natural England Bat Mitigation Guidelines** (Mitchell Jones, 2004)
- Bats of Britain, Europe and North West Africa** (Christian Dietz, Ottoman von Herlverson & Dietmar Nill (2009)
- Multi-Agency Geographical Information for the Countryside (MAGIC) Website** at www.magic.gov.uk
- Mitchell-Jones, A.J , & McLeish A.P. (2012)** The Bat Worker's Manual (4th Edition)
- HMSO (1981)** Wildlife and Countryside Act 1981 (and subsequent amendments). HMSO
- TSO (2012)** National Planning Policy Framework. TSO

APPENDIX I

Bats of Britain

Introduction A summary of the biology of British bats and the legislation that protects them.

There are seventeen British bat species which belong to two families, the horseshoe bats (Rhinolophidae) and vesper bats (Vespertilionidae). In Britain, there are two species of horseshoe bat, and fifteen species of vesper bats belonging to six genus (Myotis, Eptesicus, Nyctalus, Pipistrellus, Plecotus and Barbastella).

Barbastelle Bats *Barbastella barbastellus*, Bechstein's Bat *Myotis bechsteinii*, Noctule *Nyctalus noctula*, Soprano Pipistrelle *Pipistrellus pygmaeus*, Brown Long-eared Bat *Plecotus auritus*, Greater Horseshoe Bat *Rhinolophus ferrumequinum* and Lesser Horseshoe Bat *Rhinolophus hipposideros* are also listed as being species of principle importance to the conservation of biodiversity in England under Section 41 of the Natural Environment and Rural Communities Act 2006

They all share certain characteristics and these are described below.

Roosting

Bats use different roost sites at different times of the year and for different purposes. They are generally faithful to their roosts and a colony of bats may use the same roost site year after year. The different roosts used by a colony throughout the year may be either within the same tree or structure or even several kilometres apart.

In winter the roost site is often used communally for hibernation and bats generally remain within the roost from autumn to spring. Winter roost sites typically have a constant low temperature and high humidity and include caves, mines, building and hollow trees.

In spring, the bats may move to alternative roost sites which they use during the day. By June the females have congregated at a maternity roost which they use to give birth and suckle their dependent young. Male bats may also use the nursery roost occasionally but during this period they mostly roost alone. Maternity roost sites include holes and cavities in trees, building and bridges. Male bats may use similar sites but also in cracks and crevices and amongst dense ivy growth in trees or under loose tiles on roofs or cladding of building. Similar sites may be used by bats for brief periods during the night when they are resting or eating recently caught prey.

APPENDIX II

Bats of Britain

In autumn, male bats establish mating roosts and are visited by females and then a variety of roost sites may be used until the bats return to their winter roosts.

Roost choice varies greatly between different species with pipistrelle and Brown longeared bats being the most commonly found species in houses while noctules show a marked preference for tree roosts. Daubenton bats use bank side trees along water courses and bridges as well as caves, tunnels, mines and cellars which are close to water.

Foraging

All British bat species feed on a variety of invertebrates. Areas rich in insects are therefore favoured foraging sites for bats, with woodlands scrub, wetlands, riversides and flower-rich grasslands being favoured foraging habitats. Intensively farmed arable land supports many fewer insects and is therefore unfavourable foraging habitat for bats.

Commuting

When roost sites and favoured foraging sites do not occur in the immediate vicinity, bats must commute nightly from the roost site to their foraging areas. Commuting routes tend to follow linear features in the landscape such as hedgerows, woodland edges, rivers and other water courses.

APPENDIX III

Bats and the Law

All species of bat in the UK are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), and Schedule 2 of the Conservation (Natural Habitats, &c.) Regulations 2010. The Regulations implements the European Habitats and Species Directive (EC Directive 92/43/EEC). Bats are therefore European protected species.

The Act and Regulations give full protection to bats, it is therefore an offence to:

- Deliberately capture, injure or kill a bat.
- Deliberately disturb a bat or intentionally or recklessly disturb them in a place used for rest or shelter.
- Damage or destroy a breeding site or resting place of a bat.
- Intentionally or recklessly damage, destroy or obstruct access to any structure or place used by bats.

A roost is defined as 'any structure or place which a bat uses for shelter or protection'. As bats tend to reuse the same roosts, legal opinion is that a roost is protected whether or not bats are present at the time of survey.

APPENDIX IV

Site Photographs



PHOTOGRAPH 1:

The front west facing elevation of the Gym and Annex showing the timber frame construction of the building and the roller shutter door to the Gym.



PHOTOGRAPH 2:

The rear, southern elevation shows the weather boarding, to the Annex.



PHOTOGRAPH 3:
The eastern elevation of the Gym and Annex with weather boarding.



PHOTOGRAPH 4:
View of the east and south elevation of the Gym and Annex.



PHOTOGRAPH 5:
North facing elevation of the Gym.



PHOTOGRAPH 6:
Internally the Gym is single skinned and has a roofing membrane beneath the tiles.



PHOTOGRAPH 7:

First floor of the Annex showing the vaulted ceiling.



PHOTOGRAPH 8:

The west facing roof of the gym above the roller shutter door showing two broken tiles circled in red and also a number of potential access points to the void between the tiles and the roofing membrane via the gaps where the handmade tiles overlap.



PHOTOGRAPH 9:

The east facing roof is in good order.



PHOTOGRAPH 10:

The ridge tiles of the annex and Gym are also in good order.



PHOTOGRAPH 11:
The eaves of the Annex and Gym are sealed.



PHOTOGRAPH 12:
A close up photo of the weather boarding of the Annex and Gym.



PHOTOGRAPH 13:

The front south facing elevation of the Garage and Workshop showing its timber construction. With an open front to the Garage and a Locked double door to the Workshop.



PHOTOGRAPH 14:

Rear north facing elevation of the Garage and Workshop.



PHOTOGRAPH 15:
East facing elevation of the Garage showing the weather boarding.



PHOTOGRAPH 16:
The east facing gable of the Garage showing the weatherboarding and the sealing of the tiles.



PHOTOGRAPH 17:

The north facing roof of the Garage and Workshop is in good order but the hand made tiles do provide the occasional access point to crevasse dwelling bats.



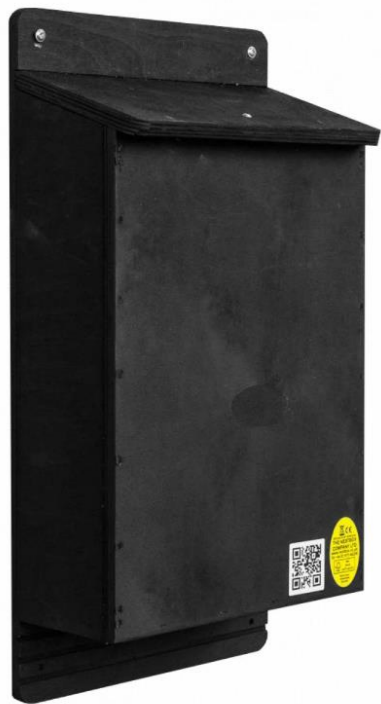
PHOTOGRAPH 18:
The eaves are sealed throughout the Garage and Workshop.



PHOTOGRAPH 19:
The underside of the Garage roof showing the traditional black under felt.



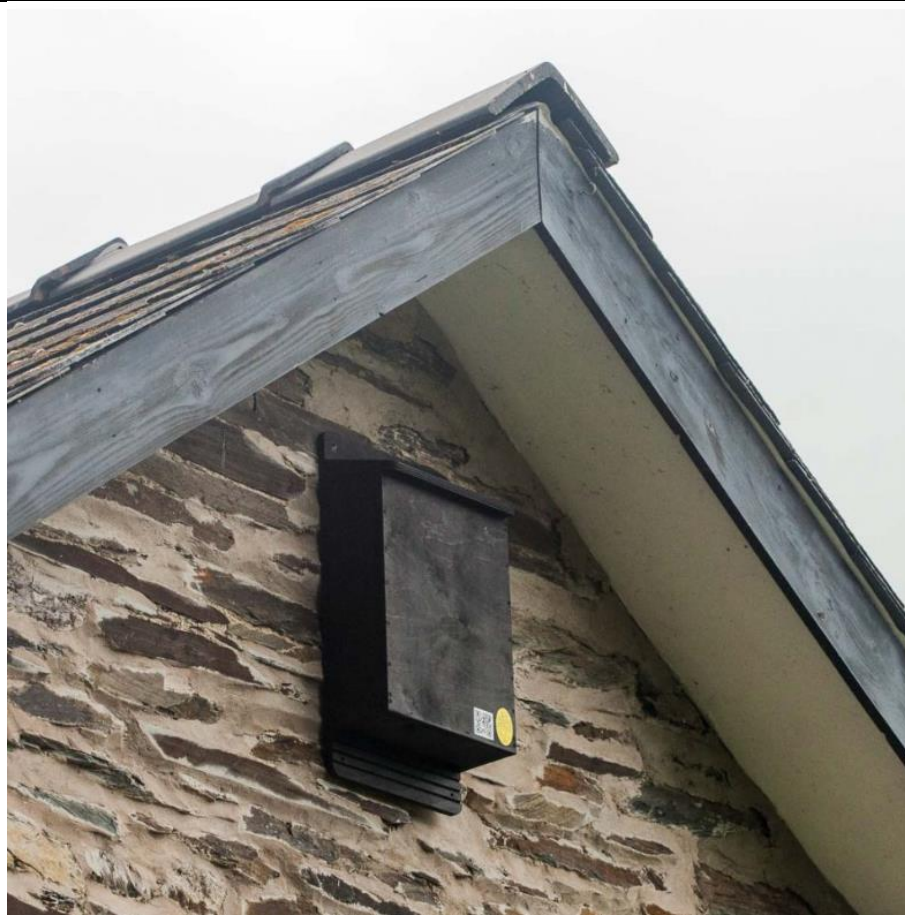
PHOTOGRAPH 20:
Close up of the underside of the Garage roof showing the roof trusses and the black under felt.



PHOTOGRAPH 21:

Picture of a Colony Roost Bat Box attached to a gable wall. Boxes like these could be implemented in the new development to make it more attractive to bats and help increase the biodiversity of the site.

Suitable for larger roosts or maternity groups of the small British crevice-dwelling bats - the Pipistrelles, Soprano Pipistrelles and Barbastelle's.



PHOTOGRAPH 22:
 Picture of a Colony Roost Bat Box attached to a gable wall. Boxes like these could be implemented in the new development to make it more attractive to bats and help increase the biodiversity of the site.
 Suitable for larger roosts or maternity groups of the small British crevice-dwelling bats - the Pipistrelles, Soprano Pipistrelles and Barbastelle's.



PHOTOGRAPH 23:
 Schwegler 3FS Bat Colony Box
 Can be attached to suitable trees to help make the site more attractive to bats. The 3FS Bat Colony Box is constructed from long lasting Woodcrete and is designed for smaller species of bats. The narrow entrance prevents birds, dormice, mice and larger species of bat from accessing the box. The box contains Woodcrete clinging panels which are securely integrated within the bat box, allowing for groups of smaller bats to rear their young in large groups. The front panel can be easily removed for cleaning and inspection. If the box is being used by large numbers of bats it is advisable to check it regularly to remove the droppings.



PHOTOGRAPH 24:

The Ibstock Enclosed Bat Box 'C' from Ibstock is designed for the pipistrelle bat. It is ideal for new builds as it can be integrated directly into the brickwork to produce a discrete but attractive home for bats.

The inside of the box is designed to create several roosting zones which are ideal for crevice dwelling bats such as the pipistrelle. The bottom entrance means that no maintenance is required as droppings will simply fall out the bottom.



PHOTOGRAPH 25:

The Bat Access Tile set provides purpose made access points within your roof tiles or ridge tiles. Available in five traditional roof tile colours, or in Natural Clay (without sand face), the Bat Access Tile Set presents a bat optimized entrance to the under-felt, or to the loft when the under-felt is opened. Each set comprises three roof tiles. The top 'tunnel' tile offers the bat an 18mm high x 165mm long (approx.) tunnel to an entrance hole in the undertiles. This allows the bat to crawl into the roost area. The two tiles beneath the 'tunnel' tile have small cutaway sections to facilitate access for the bat. An advantage of the tiles large double camber is that it provides the maximum amount of natural air flow under the tiles. The carefully designed access, along with this air flow between the tiles and the under-felt, aims to provide conditions where the bats are protected from any extremes of heat.

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