

Llangwryd Uchaf.

Llwynmawr, Llangollen, LL20 7BD.

Bat Survey Report

July 2018

Produced by



www.wildbanksconservation.com

Contents

1	INTRODUCTION	2
1.1	Background Information.....	2
1.2	Site Description	2
2	LEGISLATION AND PLANNING POLICY	3
3	METHODOLOGY	5
3.1	Introduction	5
3.2	Bat Scoping Survey	5
3.3	Bat Activity Survey.....	5
3.4	Limitations.....	6
4	RESULTS	7
4.1	Introduction	7
4.2	Bat Scoping Survey	7
4.3	Bat Activity Surveys	8
4.4	Appraisal of Potential Effects.	9
5	OUTLINE MITIGATION STRATEGY.....	11
5.1	Introduction	11
5.2	Post Development Site Safeguard	12
6	CONCLUSION AND RECOMMENDATIONS	13
6	REFERENCES	14

Appendices

A1	Site Photographs - Plates 1 – 16
----	----------------------------------

1 INTRODUCTION

1.1 Background Information

- 1.1.1 Wildbanks Conservation was instructed by Mr Tim Maddock to undertake a Bat Survey, in relation to the proposed conversion of a barn at Llwynmawr, Llangollen, LL20 7BD.
- 1.1.2 This report provides the results of the Bat Survey. The report also provides an appraisal of the potential effects the proposed development may have on bats and recommendations for mitigation and enhancement, where required.
- 1.1.3 The report is required in accordance with a condition of the current planning consent. A previous report in support of the planning application was produced by All Things Trees in 2012. The report details the survey work undertaken in 2012 and concludes that the barn did not support a roost. Since the survey data is now almost six years old, it is necessary for an update survey to be undertaken to ensure that any changes in the status of the barn are fully considered and the development does not result in effects on biodiversity.

1.2 Site Description

- 1.2.1 The Site comprises a single stone barn dating from the 1800's. To the back of the barn is a large garden/paddock and a narrow area of amenity grassland. To the front is the lane. Beyond the landowner's boundary are isolated detached houses, associated gardens, fields, river and woodlands.
- 1.2.2 The proposed development is hereby referred to as the Site and comprises the barn. However, it was considered necessary to look at surrounding habitat to provide context and understanding of how nearby habitats may influence the use of the Site by bats.

2 LEGISLATION AND PLANNING POLICY

- 2.1.1 Many sites, animals and plants are protected by European and/or UK legislation either because of their decline across Europe and the UK or due to the persecution they have placed upon them by negligent or illegal acts such as baiting or trade. Legislation is also in place to prevent the spread of introduced or non-native invasive species and harmful weeds. When undertaking an appraisal of a proposed development, such legislation is taken into account.
- 2.1.2 All bat species are protected in the UK under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). The species is also protected under Annex II of the Council Directive 92/43/EEC 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora (the EC Habitats Directive). This has been transposed into UK law by the Conservation of Habitats and Species Regulations 2010 (as amended) in England and Wales. Bats are referred to as European Protected Species (EPS).
- 2.1.3 It is an offence to deliberately capture, injure or kill a bat; intentionally or recklessly disturb in a way that would affect their local distribution or abundance, or affect their ability to survive, or breed. It is also an offence to damage or destroy a bat roost and to possess, advertise, control, transport, sell, exchange or offer for sale/exchange any live or dead bat or any part of a bat.
- 2.1.4 If work is proposed that would affect an EPS then a license will be required. Natural Resources Wales (NRW), in exercise of the powers conferred under regulation 53(1) and 56(3) (a) of the Conservation of Habitats and Species Regulations 2010, may issue licenses for the following purposes:
- Preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment;
 - Preventing the spread of disease;
 - Preventing serious damage to livestock, foodstuffs for livestock, crops, vegetables, fruit, growing timber or any other form of property or to fisheries; to allow people to carry out activities which would otherwise be illegal.
- 2.1.5 Before issuing a license under the Habitats Regulations, the licensing authority must be satisfied that “there is no satisfactory alternative” to the work as proposed and, that the proposed actions “will not be detrimental to the maintenance of the population of the species at a favorable conservation status (FCS)”.

2.1.6 To ensure these requirements are met, the licensing authority must have enough information to complete an assessment of the application. This includes sufficient survey data so that the roost and how it is used by bats is understood and impacts upon the roost are appropriately assessed so that mitigation and/or compensation can be designed into the proposed development that will ensure the bat population can be incorporated and maintained in the long term.

2.1.7 Seven bat species are UK BAP Priority Species. These are as follows:

- Barbastelle *Barbastella barbastellus*
- Bechstein's *Myotis bechsteinii*
- Brown long-eared *Plecotus auritus*
- Greater horseshoe *Rhino ferrumequinum*
- Lesser horseshoe *Rhinolophus hipposideros*
- Common noctule *Nyctalus noctula*
- Soprano pipistrelle *Pipistrellus pygmaeus*.

3 METHODOLOGY

3.1 Introduction

- 3.1.1 To inform this Appraisal, a bat scoping survey of the Site was undertaken in February 2018 and three nocturnal surveys in May and June 2018.

3.2 Bat Scoping Survey

- 3.2.1 Wildbanks Conservation carried out Bat Scoping Survey of the Site on 19 February 2018. The weather was mild with an average temperature of 7°C. The survey was carried out by Rebecca Sambrook MCIEEM. The surveyor is a Full Member of the Chartered Institute of Ecology and Environmental Management (CIEEM) and adheres to that organization's Code of Professional Conduct.
- 3.2.2 The surveys followed the methodology set out in the Bat Conservation Trust Handbook Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016).
- 3.2.3 The barn was inspected both externally and internally for evidence of the presence of bats. The survey started with an examination of the external part of the barn to locate potential roosting features such as lifted/missing roof material, gaps around soffits, barge boards and similar and holes, cracks and crevices in the stonework. Evidence such as staining, droppings, urine splashes and individuals were also searched for. Ten minutes was also spent listening for squeaking noises that bats make when in their roost, although this can be limited at this time of year. With no evidence externally, an internal inspection was undertaken, searching for the same evidence.

3.3 Bat Activity Surveys

- 3.3.1 The surveys followed the methodology set out in the Bat Conservation Trust Handbook Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016).
- 3.3.2 Three activity surveys (1 dusk and 2 dawn) were undertaken in May and June 2018 during appropriate weather conditions. The dusk survey commenced 15 minutes before sunset until 1.5 hours after and the dawn surveys commenced 1.5-2 hours before sunrise until 15 minutes after.
- 3.3.3 All of the surveyors are experienced in bat activity surveys; Mick Smith (NRW bat licence no: 77555: OTH:CSAB:2018), Chris Gossett, Rebecca Sambrook MCIEEM and Jack Halpin. Two or three surveyors carried out the survey and were positioned strategically so that good coverage of the buildings was achieved.

3.3.4 The surveyors each used a Wildlife Acoustics' EM Touch Pro detector and/or a Batbox Duet with MP3 player recorder.

3.3.5 The following table provides details of the surveys.

Table 1: Survey Data

Date	Survey type	Time started	Time completed	Sunrise/Sunset time	Temperature	Weather conditions
02/05/2018	Dusk	20:24	22:12	20:42	18°	Dry, mild, partial cloud
05/06/2018	Dawn	03:12	05:05	04:52	14°	Cloudy, slight breeze, occasional light drizzle
25/06/2018	Dawn	03:10	05:03	04:48	9°	Dry, partial cloud

3.4 Limitations

3.4.1 No limitations were encountered.

4 RESULTS

4.1 Introduction

- 4.1.1 This section provides a commentary on the data collected during and Bat Survey undertaken in 2018. Photographs depicting the site can be found in the Photographs section at the back of this document.

4.2 Bat Scoping Survey

- 4.2.1 No evidence of the presence of roosting bats was identified during the survey, however, a few scattered droppings were found internally. The barn does provide potential roosting features. Externally, the barn exhibits few potential bat roosting features in the roof given it comprises corrugated tin in the most part. The soffits are intact all around the barn and there are gaps that bats could use to crawl behind. The barn is easily accessible through broken/missing windows and open doors. The main potential roosting features are the numerous cracks, holes and crevices within the stone walls that are of sufficient size and extent to support roosts. No evidence of usage (such as staining or droppings) of these features was recorded but that is not unusual at the time of year the assessment was carried out (ie February), given likelihood of adverse weather washing evidence away.
- 4.2.2 Internally, the barn is divided into 5 sections, many of which have a first floor. The upper floors were accessed where the floor did not represent a hazard. Binoculars were used where necessary. Results of the survey are in Table 4.1 below. Sections of the building are shown within plates 4-12 and on Figure 1.

Table 4.1. Results

Section	Brief Description	Evidence of bats
1	Store room with loft above (loft accessed from back of building)	None
2	Open fronted wood cutting room with loft above (loft accessed through hatch)	None
3	Livestock stalls, part upper floor comprising tree	2 droppings on upper floor.

	trunks. Walk way at back leading through to Section 4.	Singe butterfly wind caught on cobweb underneath beam.
4	Feed room, no upper floor so rises into apex. Upper 'floor' of section 3 was accessed from this section.	2 droppings on piece of furniture.
5	Livestock stalls, part upper floor comprising floor boards. Walk way at back leading through to section 4.	None

- 4.2.3 A few scattered droppings were identified in sections 3 & 4 with a single butterfly wing also identified in this area. It is more than likely that bats may use the building as a feeding roost.
- 4.2.4 In the wider area, the Site is rural and provides excellent commuting and foraging opportunities for bats, particularly the adjacent river and quiet country lanes. It is likely bats are present in local houses.
- 4.2.5 Overall, the main consideration is the potential of the stone walls to support bat species. When undertaking a Bat Scoping Survey, it is not always possible to see evidence of roosting if bats are tucked away in crevices. In order to confirm if bats are using this building, activity surveys were conducted.

4.3 Bat Activity Surveys

Dusk Survey 02/05/2018

- 4.3.1 Activity on this evening was low level. Two common pipistrelles were seen emerging from the front of the barn (from open doorway in Section 2 at 21:07 and from a hole towards the top of the wall next to the drain pipe near Section 2 at 21:11, see Plate 1). Bat droppings were observed on the floor of Section 2, at the base of an internal wall containing a large crevice. Two or three common and soprano pipistrelles were recorded and observed foraging and socialising intermittently throughout the evening with two passes by brown long-eared bats

Dawn Survey 05/06/2018

- 4.3.2 Activity levels were slightly higher than the dusk survey with an increase in the number of individuals observed and recorded, many of which were associated with nearby buildings. Common

pipistrelle bats were recorded foraging around the barn and commuting past the barn towards adjacent properties. Two bats were seen to enter the front of the barn along the lane in the north western corner, underneath the guttering above Section 4 at 04:27 and in through the doorway of Section 2 at 04:30. At the back of the barn, bats were seen to fly in and out of the doorway into Section 1 and through a window in Section 3 between 03:47 and 04:21. Both myotis and pipistrelle species were recorded in low numbers (exact quantification difficult due to nature of their behaviour flying in and out but considered to be around 3 pipistrelles and 1 or 2 myotis bats). Foraging and commuting was recorded throughout the morning.

Dawn Survey 25/06/2018

- 4.3.3 A similar amount of activity to the previous dawn survey was recorded. In the main, activity was attributed to pipistrelle bats (mainly common), with foraging and commuting activity in low numbers throughout the survey. No bats were seen entering the front of the barn but a single pipistrelle was seen to enter the building through gaps in the southern gable end at 03:33 (see Plate 3). At the back of the building, common pipistrelle and myotis were again recorded flying in and out of the large upper window in Section 3 starting at 03:22. At 03:51, a single common pipistrelle was observed landing on the wall of the barn and going into a large crack in the stonework in Section 2 (see Plate 16). Foraging within the barn continued until around 04:30. A single noctule was recorded flying at height overhead at 04:28.
- 4.3.4 Echolocation analysis was undertaken using batsound software on the recordings of the nocturnal software, which identified the myotis bats as whiskered/brandts bats.
- 4.3.5 In summary individual common pipistrelle and Whiskered/Brandts bats were observed roosting within the building in five locations. The highest count in one nocturnal survey was 3 common pipistrelle bats and 2 whiskered/brandts bats entering the barn. It is likely that no maternity roost exists within the building and that it is used by individual bats

4.4 Appraisal of Potential Effects.

- 4.4.1 The Site and surrounding habitats provide excellent roosting, foraging and commuting habitat for bat species and there is excellent connectivity to good quality bat habitat in the wider area.
- 4.4.2 The conversion of rural stone barns often give rise to numerous effects on bats in the absence of mitigation. Direct impacts can include disturbance, loss or modification of roosts due to building work, and fragmentation and isolation due to modification of habitats that bats may use to commute to areas for foraging and roosting. Post-construction, the long term impacts of a then habitable

residence should be considered. Lighting both on the barn and associated garden could give rise to impacts on existing and replacement roosts and deter some species of bats from foraging.

- 4.4.3 Currently, bats are using the barn, including the stone walls of the barn as roost spaces. The barn will be converted into living accommodation. The holes in walls where mortar has dislodged will require infilling in order to prevent further degradation and ultimately dilapidation of the stone walls. The roof will also be replaced and therefore the potential for roosting bats to enter the building will be further reduced. It is therefore necessary to provide an alternative roost space which will be sufficient to provide a like for like replacement roost
- 4.4.4 The landscape surrounding the barn will remain relatively unchanged post construction and any minor changes will not negatively impact upon bats, a suitable landscaping scheme may even have a positive influence on diversity of available foraging resources.
- 4.4.5 Lighting during the construction period will not be switched on permanently throughout the night to avoid effects on foraging and commuting areas of light sensitive species such as brown long eared..
- 4.4.6 The external lighting scheme of the property should be designed sympathetically to reduce the potential for impacts on light sensitive bat species. Guidance on lighting schemes can be found on the Bat Conservation Trust website at www.bats.org.uk.
- 4.4.7 The proposed development includes the complete removal and replacement of the roof as well as sections of the walls (internal and external) being removed/rebuilt and re-pointing where necessary. This will give rise to direct impacts upon bats and their roost, in terms of both removal of actual roosting features and access to them, if measures to prevent harm are not implemented. The presence of roosts gives rise to the necessity of providing mitigation and compensation measures, which includes replacement roosts in order to ensure there is no net loss of opportunities for bats, and that they are themselves protected from harm. Furthermore, the development can commence only upon the granting of a licence from Natural Resources Wales. The following Section 5 provides an outline mitigation strategy for the proposed development. The information provided will form the basis of a licence application.
- 4.4.8 A detached garage will be built to the south-east of the barn, some 10m from the SE corner of the barn, that will allow the inclusion of new bat roosting features.

- 4.4.9 Adjacent to the site are further dwellings. During the nocturnal activity surveys it was noted that bats were using these as roosts. Eight common pipistrelle bats were seen entering a roost on the gable end of the house to the north of the site, a further 5 bats were seen entering a roost around the chimney of the same property. This roost is within 5m of the development site and as such its presence should be regarded within a NRW licence application. Therefore mitigation will take into account the presence of this roost. This property is not within the landowners permission and as such full survey results are not available, only anecdotal notes.
- 4.4.10 To fully inform the NRW licence application a data search from COFNOD will be requested to hopefully provide further information on the adjacent roost

5 OUTLINE MITIGATION STRATEGY

5.1 Introduction

- 5.1.1 In the absence of potential effects on other species, the mitigation strategy focuses on bats. Where the potential for impacts on bats and their roosts has been identified, the proposed development must include the implementation of suitable compensation and mitigation measures to prevent harm to bats and their roosts and to maintain favourable conservation status of the species concerned.
- 5.1.2 This mitigation strategy will form the basis of a licence application to Natural Resources Wales. The application to NRW can not be submitted until full planning permission has been received. **The development must not commence until a licence has been granted and appropriate mitigation and compensation measures have been implemented.** The results of 2018 surveys will be valid for 18 months. If a licence is applied for after December 2019, it is likely these surveys will require repeating.
- 5.1.3 The overriding emphasis of the mitigation strategy is preventing harm and securing the long-term viability of populations. The detailed mitigation strategy will be informed by the activity surveys. However, based on the information gathered thus far, the following principles of mitigation will be taken forward:
1. The demolition of the existing house supporting roost/s will commence outside of the two most vulnerable periods; breeding (late April to September) and hibernation (November to February);
 2. A 'soft works' technique will be used for the initial works, to include removal of roof features (tin sheets/timbers) by hand.

3. A licensed ecologist will provide a watching brief during the initial works, including removal of corrugated tin sheets and some timbers as required and will be available on an on-call basis throughout construction.
4. Replacement roosts will be installed in the barn and in the new detached garage in the form of one of or similar to the following: an Ibstock Enclosed Bat Box 'C', 1FR Schwegler Bat Tube, Build-in Woodstone Bat Box, 1WI Schwegler Summer and Winter Bat Box or 1WQ Schwegler Summer & Winter Bat Roost (see nhbs.com);
5. As a pre development measure, 2 bat boxes (such as a 2FN Schwegler Bat Box) will also be erected in mature trees, within the applicant's ownership or on suitable other structures available. These will be installed once planning permission has been received or a minimum of 3 months prior to works commencing. This will enable bats to 'find them' prior to any works taking place on the barn. These will act as immediate temporary roosting opportunities.
6. If the detached garage is built and completed up to 3 months before the barn development starts then the bat roosting features within this structure will suffice for pre development roosting features and point 5 would not be required.
7. A lighting scheme will be designed that is sensitive to the requirements of bats; the replacement roost will not be illuminated;
8. The landscaping scheme will remain the same post-construction. It currently provides a range of foraging opportunities and will continue to do so in the long term.
9. Prior to any works taking place a 2-3m tall screen will be erected on the northern boundary of the site between the barn and the lane. This screen will protect the roost within the gable end of the neighboring property from dust and disturbance during the building works. This screen would consist of large site mesh panels covered in fine debris netting. Building works in this area will be limited to those that do not produce excess noise, vibration, dust etc.

5.2 Post Development Site Safeguard

- 5.2.1 A monitoring programme will be implemented for the first 2 years from completion of the renovation.
- 5.2.2 On an annual basis for the first 2 years, a single monitoring dusk or dawn survey will be undertaken in June to record activity around the bat boxes, following methodology set out in Bat Conservation Trust's Bat Surveys for Professional Ecologists, Good Practice Guidelines (3rd Ed.).

- 5.2.3 The bat boxes are designed to be self-maintaining and therefore no maintenance is proposed. Monitoring of them will take place at the same time as the nocturnal survey.
- 5.2.4 The results of the monitoring programme will be reported to the Local Records Centre.

6 CONCLUSION AND RECOMMENDATIONS

- 6.1.1 The Site has been the subject of Bat Surveys in February, May and June 2018. These revealed that the barn supports bats. Both the internal spaces of the barn and the crevices in the stonewalls are being used by low numbers of pipistrelle and whiskered/brandts species. It is concluded that this is a summer roost, most probably used as an irregular alternative option to the adjacent houses which support much larger roosts.
- 6.1.2 It is recommended that work does not commence until a license from Natural Resources Wales has been granted (see Chapter 2) and suitable mitigation is incorporated into the development.
- 6.1.3 The detached garage to the South-east of the development can be built without the need for the EPS licence to be in place. It is some 10m from the barn and some 18m from the closest location of a roost. However a precautionary approach should be undertaken which will include the following measures
- Actions creating significant/sustained dust, vibration or noise will not be carried out within 5m of any roost identified within Figure 1.
 - No storage of materials or plant will be block any entrances to the roosts identified within Figure 1
 - Working at night or illumination of any of the roosts identified in Figure 1 will not take place.

6 REFERENCES

- CIEEM (2017). *Guidelines for Preliminary Ecological Appraisal*. Winchester. CIEEM.
- Collins, J (ed.). 2016. *Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn)*. The Bat Conservation Trust. London.
- Department for Communities and Local Government (2012). *National Planning Policy Framework*.
- Mitchell-Jones, A.J. 2004. *Bat Mitigation Guidelines*. English Nature, Peterborough
- Natural England (2010). *European Protected Species and the Planning Process*.

Photographs of the Site

Plate 1: Front of barn



Plate 2: Back of barn



Plate 3: Gable end



Plate 4: Section 1



Plate 5: Section 1 loft space



Plate 6: Section 2



Plate 7: Section 2 upper floor

Plate 8: Section 3

Plate 9: Section 3 upper floor



Plate 10: Section 4



Plate 11: Space in apex of Section 3 & 4



Plate 12: Section 5



Plate 13: Section 5 upper floor



Plate 14: General roof structure

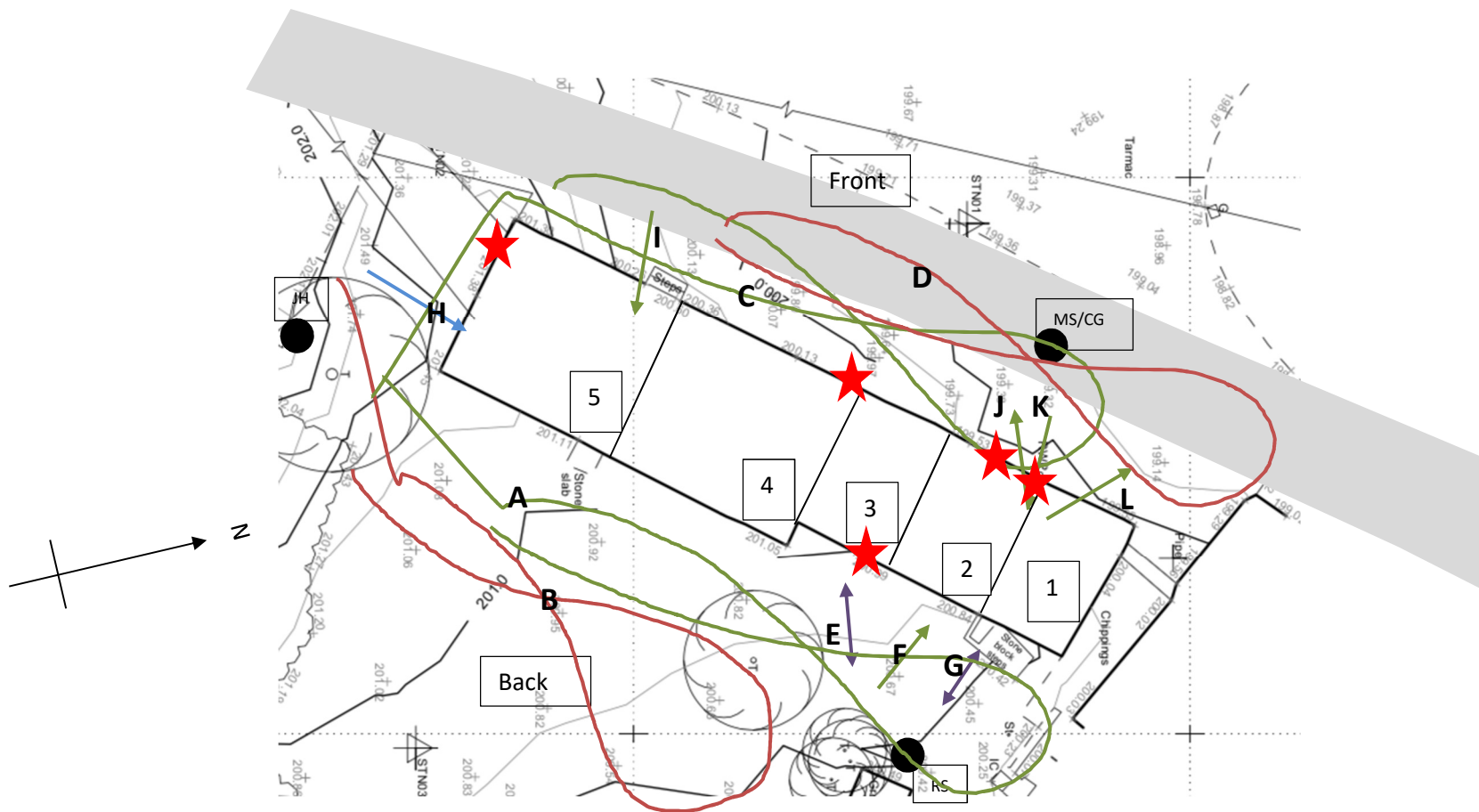


Plate 15: Holes in back wall



Plate 16: Large crack in wall where pipistrelle entered





A-D: Common and soprano pipistrelle foraging around the barn and commuting past intermittently throughout all surveys.
 E: 3-4 common pipistrelles and myotis flying in and out of window .during both dawn surveys. Seen through window flying around in building.
 F: Single common pipistrelle entered crack in stone wall at 03:51 (26/6).

G: 3-4 common pipistrelles and myotis flying in and out of doorway at top of stone steps throughout 2 dawn surveys.
 H: Single Myotis entered through gaps in window at 03:33 (25/6).
 I: Single bat entered stonewall under guttering at 04:27 (05/6).
 J: C. pipistrelle emerged 21:07 (02/5).
 K: single bat entered building through doorway at 04:30 (05/6).
 L: C. pipistrelle emerged from hole next to guttering at 21:11 (02/5).

Title: Nocturnal Survey Results Plan

Project: LLangwryd Uchaf

Client: Mr Tim Maddock

Key:

- S. Pipistrelle
- C. Pipistrelle
- Myotis
- C. pipistrelle & Myotis
- ★ Roost location

Date: 19/07/2018

Version: **Draft**
 for client
 comment