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Site Address: Brunett Barns
Lower Wych Lane
Ty Broughton
Whitchurch
SY13 3BA

Report Reference: 20-05 107.2R

Date of Issue: 10th March 2022

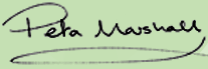
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The report should be read in its entirety.

Questions arising from the survey report should be directed to the author of the report who will be pleased to clarify any technical issues raised.

Whilst the surveyors make every reasonable effort, Greenscape Environmental Ltd cannot guarantee that all protected species have been identified and survey results are definitive. Many species are cryptic and transitional in habit.

Reports are considered valid for one year for planning purposes, after which time further survey information may be required.

Greenscape Environmental Ltd can provide advice and support for recommendations and planning conditions.

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1 Executive Summary

1.1 Purpose of the Report

Greenscape Environmental Ltd was commissioned by Mr C Jones to undertake an update of the ecological appraisal of barns at The Brunette Ty Broughton to provide supporting information for a new planning application for a barn conversion to residential accommodation.

The survey report has these principal aims:

- To provide an initial assessment of the ecological value of the site in local context.
- To identify potential ecological constraints relating to the development, and recommend measures to avoid, reduce, or manage negative effects, and to provide a net ecological gain.

1.2 Methodology

The appraisal included a desktop study, reviews of other surveys previously conducted in the area by Greenscape Environmental, and a site visit undertaken at the site, OS grid reference SJ47214 42956 on 2nd and 16th August 2021 by P Marshall and B Marshall. Phase 2 bat surveys were conducted between August and September 2021 with P and B Marshall, Chloe Sheil.

The report needs to be read in conjunction with report ref 1996 001R which provides information about previous surveys conducted at site.

1.3 Key Impacts and Mitigation Measures

The desktop study included a search for previously recorded protected species. Low numbers of 4 common bat species were identified in previous site surveys conducted in 2018. It was deemed necessary for the work to be conducted under Mitigation licence from Natural Resources Wales (NRW).

Mr Jones and family purchased the barns in February 2021 and have commenced work on the buildings in order to conserve the grade II listed building. Work has been halted due to the lack of EPS licence, and this report produced in order to support the licence application and the alteration in plans.

An update of the survey was conducted on 2nd Aug 2021. Bat species recorded included day roosts of brown long eared bat, common and soprano pipistrelle bat. A natterers bat was also recorded. These results are similar to 2018 observations, but roost positions have altered.

1.4 Conclusion

The conversion of the building and roof works must be conducted under a Mitigation Licence from Natural Resources Wales. Compensation for the loss of three bat roosts will consist of bat access along the ridge of the building, and provision of a bat loft in a re-roofed barn which is not being further altered and erection of bat box.

The method statements provided in section 6 of this report will be followed, and work will be conducted at a suitable time of year to minimise potential impacts.

There are no other ecological constraints to the development as currently proposed.

**Table 1.1. Timing of Works**

Action	Timing	Justification
Update phase 1 survey	After 18 months from survey issue date	Ecological features can change and develop over time
Update emergence/re-entry survey	If work is to commence more than 12 months after the survey is complete	To ensure site conditions have not significantly altered prior to commencement



2 Introduction

This report has been compiled by Peta Marshall BSc (hons) MA who has over 10 years' experience conducting ecological appraisals. It has been reviewed in line with Greenscape's Quality Management System.

For full details of surveyors and licences please see Appendix A.

2.1 Project Background

Greenscape Environmental Ltd was commissioned by Colin Jones to conduct a survey to determine the presence of protected species and potential for the damage or destruction of habitats of value. This forms part of the planning application for a barn conversions at The Brunett.

The site was previously surveyed in 2018 by Greenscape Environmental and in 2013 by J W Ecological Ltd.

Year	Species	Peak Count
2013	Common pipistrelle	2
2018	Common pipistrelle	1
	Soprano pipistrelle	2
	Brown long eared bat	1
	Natterer's bat	1

2.2 Purpose of the Report

This report aims to:

- Identify the key ecological constraints to the proposed development.
- Inform planning to allow significant ecological effects to be minimised or avoided where possible.
- Allow any necessary mitigation or compensation measures to be developed following the mitigation hierarchy.

2.3 Site Context and Location

The site is located in a rural area, with good connectivity to Caeparbet Wood, 400m to the North, and Blackwood to the northwest. Immediate surrounds comprises open fields, principally arable and pasture.



3 Methodology

Broad methodologies for data collection and interpretation were informed by guidance outlined in CIEEM (2017) – Guidelines for Preliminary Ecological Appraisals. Full details can be found in Appendix B.

3.1 Desk Study

The desk study provides contextual information such as the site's proximity to designated areas and known records of protected or notable species.

3.2 Field Survey

3.2.1 Date and Survey Conditions

Table 3.1. Survey conditions

Date	Time Start – End (Sunset Time)	Structure	Equipment Used	Weather
02/08/2021	20:53-22:27 (21:03)	Barn	Camera, Anabat Walkabout, Anabat SD2 and LED Torches	13°C light breeze, 50% overcast high cloud
Comments	Two surveyors used: Peta Marshall, Brian Marshall			
16/08/2021	20:00-22:00 (21:35)	Barn	Anabat Walkabout x3, Anabat SD2 and LED Torches	15°C light breeze overcast, no rain
Comments	Three surveyors used: Peta Marshall, Brian Marshall, Chloe Sheil			

3.3 Species Survey

Features on site were assessed for potential for bat roosts, foraging and commuting. Phase 2 surveys were conducted to confirm the presence/absence of any roosts and ascertain the nature of them. These were conducted in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd Edition, BCT, Collins (ed.) (2016).

Features on site were assessed for potential for nesting birds.

3.4 Constraints of the Survey

All areas were accessible for this survey. It was conducted at an optimal time of year for the assessment of bats and nesting birds. No specific constraints have been identified.

The internal search revealed that the buildings had not been subjected to any form of specific cleaning and was in a natural redundant state.

The identification of calls and species using sonogram analyses are dependent on the clarity of the sonogram recording, which may be affected by the distance from the bat and background noise. Species of *Myotis* bats are identified to genus level on the basis of the inherent difficulty in distinguishing between species from their echolocation calls.



4 Baseline Ecological Conditions

4.1.1 Nearby European Protected Species Licences

The site is within 2km of some EPS licences. Work has been conducted under EPS licence for bats at Ty Broughton, where Natterers bats, common and brown long eared bats were recorded.

4.1.2 Buildings

The same notation for the barns has been used as in the Greenscape report from 2018.



Figure 4.1. Buildings on site 2018



Barn 1.1

Leach



Figure 4.2. Building 1.1

Since the previous survey in 2017, the roof of building 1 has been stripped and the metal roof replaced with modern breathable membrane. There are significant gaps along the eastern elevation of the building where, for structural reasons, the building has had to be strapped and secured.



Figure 4.3. View from interior through eastern elevation



Leach

Scattered bat droppings were seen on the mezzanine floor to the north of the building. These seemed to be associated with areas where there remains open mortice joints in the timbers.



Figure 4.4. Open mortice joint in roof timbers

Work has been stopped on this building by the council. The southern gable end was seen to be in as poor condition as in 2018.



Figure 4.5. Southern gable end



Barn 1.2

Leach



Figure 4.6. Barn 1.2

Barn 1.2 has not been worked on by the current client.

The eastern end of this building opens into barn 1.1.



Figure 4.7. Opening into barn 1.1



Leach

This section of the building remains dark, but the slate roof is not lined and clear gaps can be seen between the roof and the western gable end. The building offers low opportunity for bats.



Figure 4.8. Showing gap along western elevation

Scattered bat droppings were observed within the building on stored items, but there was not enough accumulation of droppings to suggest the presence of a maternity roost.

Feeding remains of yellow underwing moth were observed suggesting presence of a brown long eared bat.

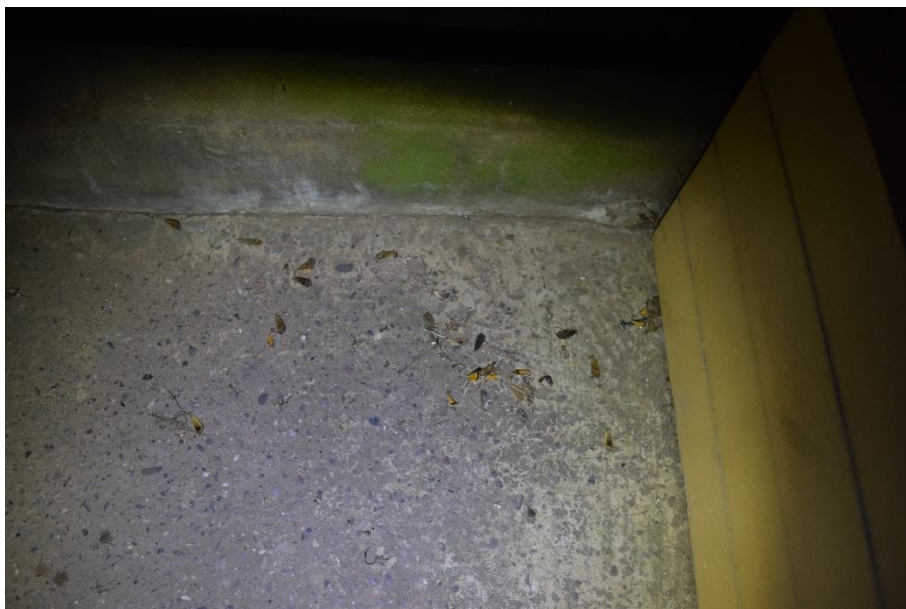


Figure 4.9. Feeding remains



Barn 1.3

Leach



Figure 4.10. Barn 1.3 from west

Barn 1.3 has no roof. The building was examined internally and no evidence of bat activity was noted. The building is considered to have negligible potential for bat roosts.

Barn 1.4



Figure 4.11. Building 1.4

There have been no alterations to building 1.4 since 2018. This is still a metal roofed structure with block and timber on the southern elevation.



Figure 4.12. Interior of B1.4

No bat droppings were seen within this building and with gaps along the wall plates is considered to have low potential for bat roosts.

Barn 2



Figure 4.13. Building 2

Barn 2 has been re-roofed with a replacement metal roof and breathable membrane.



Large spaces are visible into the roof void of the building which allows continued access for bats.



Figure 4.14. Showing potential bat access areas.

The building is being used for storage and no further construction work is anticipated now the building has been stabilised.

As no further alterations are anticipated, no further surveys were considered necessary, but as surveyors were situated close to the western aspect of the building, some was possible.



4.1.3 Phase 2 Bat Activity Survey

Building 1 was examined internally and externally prior to each evening bat activity survey. No bats were observed in any crevices.

Date	Time Start – End	Species and Numbers	Roost Type	Structure	Roost Location	Access Points	
02/08/2021	20:30-22:45	Soprano pipistrelle x1	Day	Barn 1.2	Western section	Southern gable of barn 1.1	
		Brown long-eared bat x1	Day	Barn 1.2	Western section	Southern gable of barn 1.1	
		Natterer’s bat x1	Day	Barn 1.1	Eastern side	Mortice joint	
Notes:	A soprano pipistrelle was seen to emerge from the southern gable end of barn 1.1 at 21:25. This was recorded foraging around the building until the end of the survey. A brown long eared bat emerged from barn 1.2 at 21:43, and was seen to fly south out of 1.1. At 21:59 a Natterer’s bat was recorded from the ridge of the barn 1.1. A common pipistrelle emerged from a roost in barn 2, entered barn 1.2 to forage and emerged again through an opening on the wall of the barn. Constant foraging around the buildings was noted.						
	16/08/2021	20:00-22:00	Soprano pipistrelle x1	Day	Barn 1.2	Western section	Seen to come from inside dark area
			Soprano pipistrelle x1	Day	Barn 2	Western gable end	Under eaves
			Brown long eared bat x1	Day	Barn 1.2	Western section	Seen to come from inside dark area
			Natterer’s bat x1	Day	Barn 1.1	Eastern side	Mortice joint
Notes:	P Marshall stood within the building to more closely observe the activity and monitor where the roosts were. 20:50, a soprano pipistrelle emerged from the western section of barn 1.2 and left via southern gable. 20:59 a brown long eared bat was observed from the western section of barn 1.2. 21:05 a soprano pipistrelle was observed emerging from the re-roofed barn to the east of the site. 21:12, a Natterer’s bat was observed from the northern end of barn 1.1. No emergences were recorded by the surveyors to the north or south of the building, but regular passes by soprano and common pipistrelle were noted.						

From the position of the droppings, the roost positions in barn 1.2 is under the central ridge.

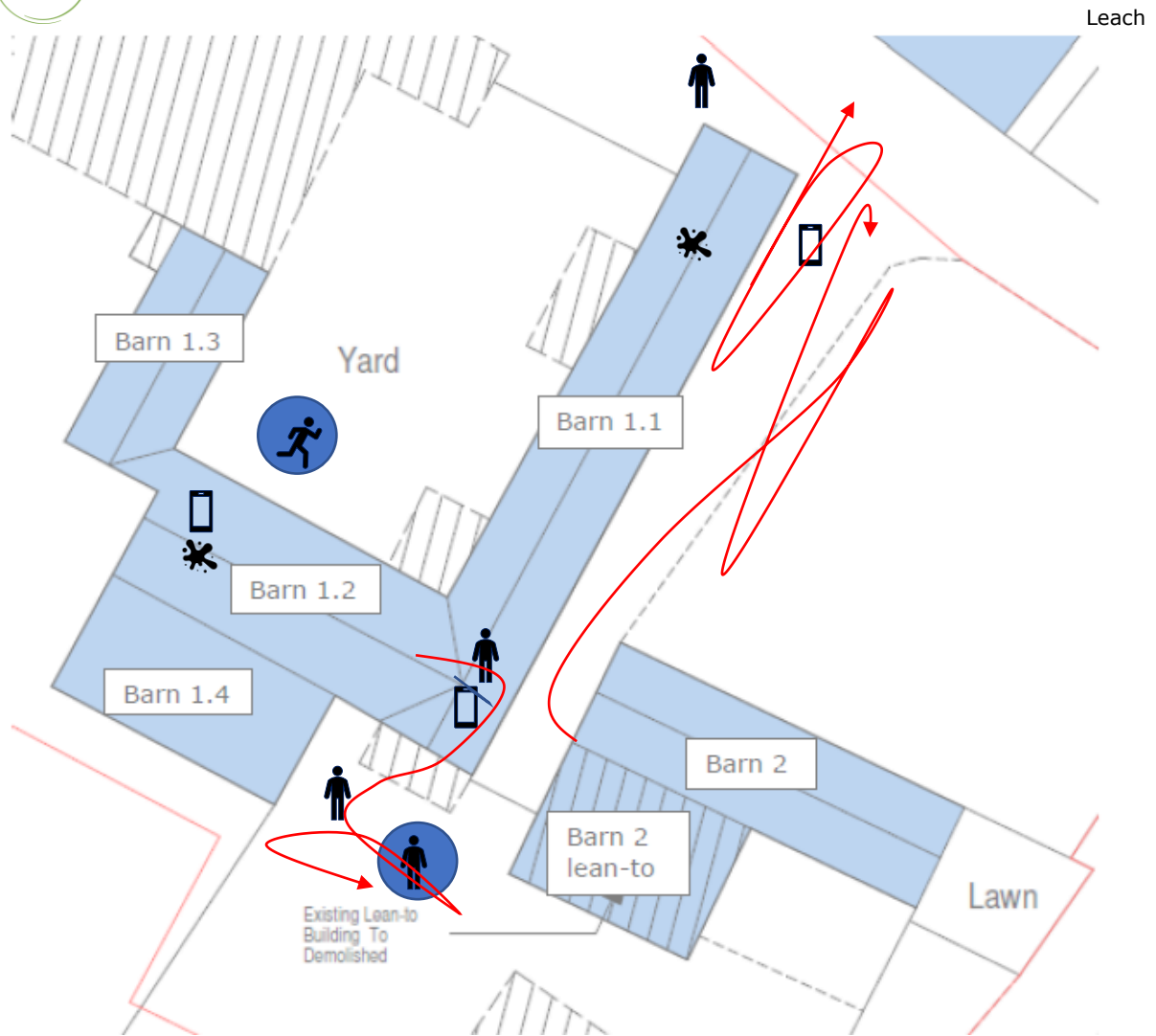


Figure 4.15. Survey area showing observations

Icon	Description
	Static Detector
	Stationary Surveyor survey 1
	Surveyor on Transect
	Surveyors survey 2

Icon	Description
	Roost Location
	Droppings Location
	Flight Paths

No bat activity was recorded from barn 1.4.



Leach

A soprano pipistrelle was recorded from barn 2, but there is no alteration to this building anticipated.

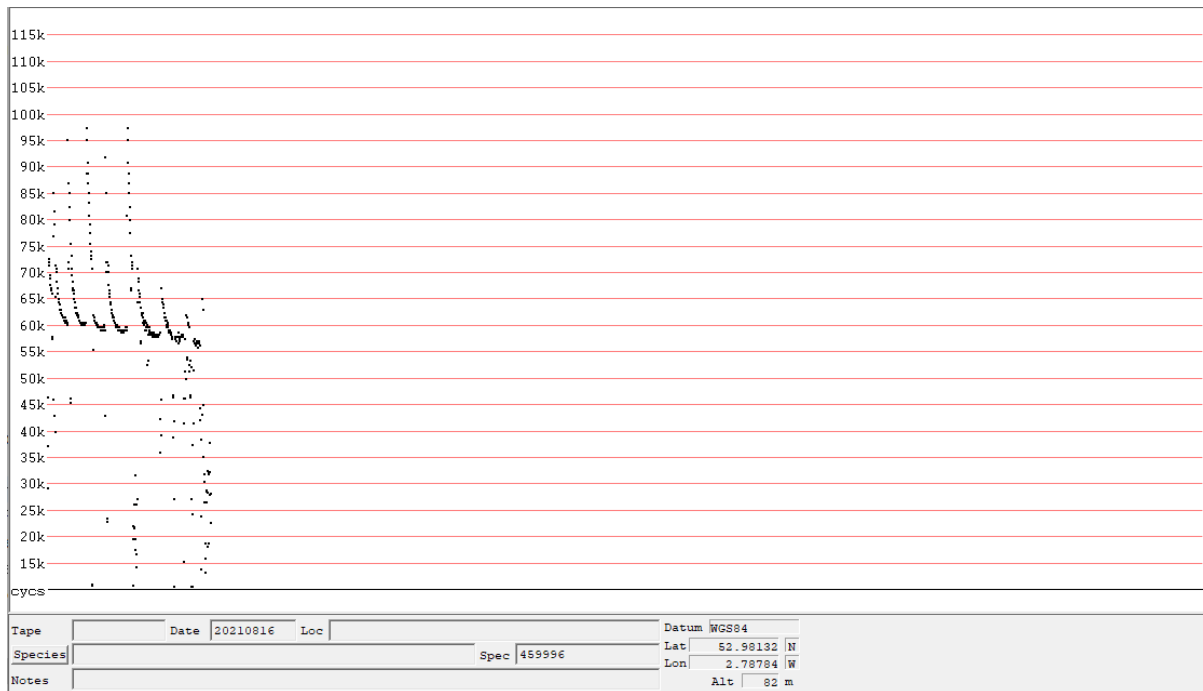


Figure 4.16. Soprano pipistrelle emergence from 16th August

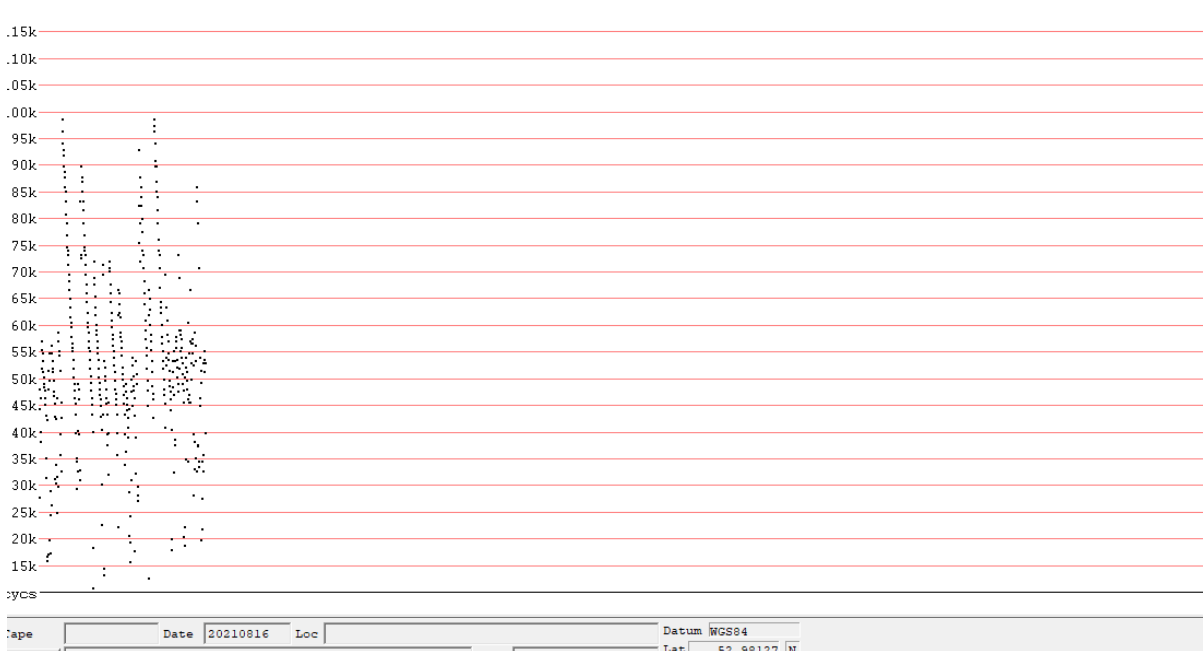


Figure 4.17. Natterer's bat



Summary

Emerging from building	Roost position
Soprano pipistrelle	In area 1.2, under central ridge
Brown long eared bat	In area 1.2 under central ridge
Natterers bat	In timber work in area 1.1 over mezzanine floor
Common pipistrelle	In barn 2
Soprano pipistrelle	In barn 2



Figure 4.18. Roost location summary

Comparison with results from 2018.

The same species in similar numbers have been recorded this year. Clearly the roost sites have altered due to work on site, but these species need to be taken to consideration for ongoing work on site.



5 Bat Conservation Plan

5.1 Impacts

Without consideration, there will be the destruction of roosts of brown long-eared bat, soprano pipistrelle bat and Natterer's bat. The roosts identified of these three species are day roosts and are of low numbers. All three species are common and widespread and destruction of roosts for these species is of low ecological concern.

Determination of conservation significance of roosts was taken from Figure 4: Guidelines for proportionate mitigation (Bat Mitigation Guidelines P. 39).

However. This would be an offence and therefore work on barns 1.1, and 1.2 need to be conducted under mitigation licence from Natural Resources Wales.

It is proposed that:

- Alternative roosts need to be provided prior to the development continuing
- Provide supervision for soft demolition and bat exclusion
- Incorporate new roosting opportunities in the structures and trees on site (one per species)

Work on barn 1.3 can be continued without causing disturbance to bats and an offence is highly unlikely.

For roosts of low ecological significance there is no timing constraint for work. However the presence of the ecologist will be necessary in areas where there is greatest potential to disturb bats.

A conservation plan will need to be followed so that favourable conservation status of bats is maintained in the area.

5.2 Aims

The aims of the Conservation Plan (CP) are to:

- Protect habitats of ecological quality at the site.
- Conserve the species of ecological value at the site.
- Establish any maintenance and management responsibilities.

5.3 Objectives

The objectives of the CP are to:

- Minimise damage to adjacent habitats and protect habitats on site that are part of the final development.
- Ensure that no breach of British wildlife legislation occurs on site for the duration of the proposed development.

5.4 Ecological Issues and Legislation

The priority ecological issues, i.e. those that have legislative requirements or planning considerations and are relevant to the site and proposed works are as follows:



The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 – as listed in:

- Schedule 2. European protected species of animals

The Wildlife and Countryside Act (1981) – as listed in:

- Schedule 5. Protected animals

Countryside and Rights of Way Act (2000)

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

5.5 Control of Works

To ensure that the works are undertaken in accordance with the CP, a series of control measures will be utilised. The measures include:

1. Appointment of an ecological management team
2. Identification of ecologically sensitive areas and tasks using a traffic light risk zone

The application of the 'traffic light' system allows classification of the level of risk and ecological sensitivity of the ecological systems. There are three levels of risk; red, amber and green, with red being the highest risk areas or tasks. Works within all levels of risk will be controlled to some degree.

5.6 Legislation

Based on current understanding of site no licences to undertake works are required from Natural Resources Wales.

5.7 Ecological Management Team

The ecological management team will consist of the following posts:

- Ecological Clerk of Works (ECoW)
- Site Manager

The ecological management team will ensure that all site personnel are appropriately briefed on the ecological issues within the site. This will be undertaken through inclusion of ecological briefings within the toolbox talks given to all staff as part of the site induction process. The roles are detailed as follows:

Ecological Clerk of Works

- Develop method statements and site protocols.
- Provide guidance for the site team including legal and statutory requirements affecting works.
- Undertake toolbox talks and advise the site manager.
- Ensure site managers are aware of any changes.
- Monitor and report on the protective measures and habitats.
- Carry out audits to check for non-compliance with environmental legislation, consents, and objectives.
- Complete ECoW visit record sheet.

**Site Manager**

- Ensure the CP is developed and held on site and that it is implemented throughout all phases of the project.
- Ensure the site team and subcontractors comply with site protocols.
- Ensure the site and all stored materials and chemicals are safe and secure.
- Ensure the site is kept in a tidy and orderly fashion.
- Ensure all emergency protocols are up to date.
- Ensure all those that work on site have a site induction including briefing on environmental issues pertinent to the project and relevant toolbox talks.
- Ensure activities are carried out in accordance with the requirements of any associated method statements.

5.8 Ecological Control of Works**Table 5.1. Ecological sensitivity of works**

Status	Task / Area	Control
Red	• Removal of the roofs and re-roofing • Repair of walls and timbers	• ECoW to provide method statements prior to work. • ECoW to give toolbox talk prior to works. • ECoW to ensure all ecological protection measures are in place prior to work commencing.
Amber	• Reinstating the roof with new insulation • Implementation of ecological mitigation features.	• ECoW to approve method statements prior to work commencing. • ECoW to give toolbox talk on proposed work and its impact on the ecology.
Green	• Restoration and conversion of the barn 2 • Works outside of ecologically sensitive areas or after ecological mitigation works.	• Works to be carried out to ecological best practice. • ECoW to approve method statements prior to work commencing. • ECoW to certify the works have been carried out according to pre-agreed plans and method statements.

Method Statement

1. Conversion and construction work will need to follow a rigid method statement. It will need to be conducted under a European Protected Species Licence (EPSL)
2. A suitably licensed ecologist will be employed as an Ecological Clerk of Works (ECoW) to oversee works in areas sensitive to bats and provide expert advice.
3. The licence can only be applied for when full planning permission has been granted.
4. A toolbox talk will be provided by the ECoW. The developer and the contractors will be made aware that there is a possibility that bats may be found during works, and will be advised to work in a way to ensure bats are not harmed during work in areas sensitive to bats; particularly around the gable ends and roofs and where ever it is deemed possible for occasional bat use such as mortar joints. They will be provided with a simple emergency procedure to follow if bats are found at any stage of the work on site. It will be ensured that the method statement is retained on site at all times.



5. A pre-commencement check will be conducted by the ECoW using a strong torch and borescope where appropriate.
6. The work around the bat roost areas will occur when bats are least likely to be present, from October to end of March
7. A bat loft will be prepared in barn 2. As the building has already been reroofed, a loft floor will be installed and the loft space enhanced with appropriate roost features.
8. Bats will always be allowed access to an undisturbed area during works- such as the bat loft
9. The ECoW will be present on site when work is being conducted in the area of the bat roosts, particularly around the ridges, gables, hips, valleys and verges.
10. Bats will be excluded using one-way gates where appropriate. This will be erected with the assistance of the ECoW.
 - a. The one-way exclusion will be left in place for five days before being checked by the ECoW.
11. If a bat is found when the ECoW is not present, work will stop immediately and the ECoW contacted for advice.
12. The bat can only be handled by the ECoW or authorised person unless it is in immediate danger. The bat must be carefully placed in a well-ventilated lidded box with a small container (i.e. a plastic bottle lid) with water in it. The container must be kept in a quiet and safe place.
13. Care should be taken to avoid rousing the bat whilst transferring to a suitable location, such as a suitable roost box or alternative roost space that provides a safe, quiet environment with a stable cool temperature and relatively high humidity.
14. If the bat is underweight or injured it will be cared for by an experienced bat carer until such time that it is strong enough to be released into a suitable alternative replacement roost on site.
15. The bat compensation will be created following the instructions in the EPS compensation scheme and the client will agree that any bat box erected must stay in place for a minimum of five years post-development.
16. The removal of the roof will not take place if the temperature has been below 6°C for four consecutive days and nights.
17. Once the building has been reroofed, bat access will be limited by sealing all doors and windows, thus reducing the potential for bats to re-enter where they are not expected.



Compliance Audit

Where necessary, works as outlined in Table 5.1 will be conducted under a watching brief from a suitably experienced and licenced Ecological Clerk of Works (ECoW). This person will fill out a form on each visit to state what work has been overseen and what potential issues have been arisen, including how they were dealt with and what future work is required. This log will be kept on site throughout works and will be made available to any authorised person attending site wishing to see it. A form such as the example below will be used.

ECOLOGICAL CLERK OF WORKS DAILY RECORD SHEET

Site			
Personnel			

Date and Time	Issues/Location	Notes	Action required/by whom

Figure 5.1. Example compliance audit record form

Work conducted under licence from Natural Resources Wales will also be audited, and will monitor general performance indicators relating to the licence. The example audit report template from NRW is found in Appendix D.



5.8.1 Compensation & Enhancements



Figure 5.2. Bat Compensation Summary

Note that the above plan is the “existing site plan” from 2018 and does not reflect changes made in 2021. No plans to that effect currently exist, and no proposed plans have been drawn up for the new proposal at the time of writing. The areas highlighted for compensation in the figure above will, however, be retained.



Leach

Provision will be made for roosting opportunities for bats with the erection of at least one woodcrete bat box suitable for day roosts on a tree to the southeast of barn 2. A Schwegler 1FF box or equivalent will be erected.

This will be erected at a height of 3-4 m and in a westerly facing direction.



Figure 5.3. Example woodcrete bat box: Schwegler 1FF

Bat access along ridge line

Bat access will be prepared along the ridge of barn 1.2 and 1.3.

1. The roofs will be lined with bitumen hessian felt and a 15mm deep and 20mm wide gap will be left under five ridge tiles.



Figure 5.4. Showing approximate positions of bat access under ridge tiles on 1.2



Bat Loft

A bat loft is to be created in barn 2. This has been re-roofed and is now a stabilised structure. This will provide space for pre-emergence flights and light sampling. The following specifications will be adhered to when designing the loft:

1. The total volume of a suitable bat loft must be no less than 20m³. Scaled drawings of this barn are not available at the time of writing, but it is approximately 6m from north to south. The loft will be approximately 4m long and 2.5m from ridge to floor. This will result in a void of approximately 30m³.
2. Skylights will not be placed in the roof section designated as a bat loft.
3. The modern breathable membrane over the loft section will be removed from the interior – cut out between timbers. Type 1F bitumen hessian felt (BS EN 13707:2013) will then be added in between the timbers.
4. The loft space will have a small access hatch, so it can be checked for bat activity but not used for storage. This will be a 400mm² access.
5. Roost opportunities will be made inside the loft by creating crevices with rough-sawn timber, these will have an entry gap of 15mm.
6. The loft space will be insulated between the floor and ceiling and not under the tiles. This is the best method to keep the area the correct temperature for bats in summer.
7. Monitoring the roost will be required in years 2 and 5 following completion of the project.
8. Ongoing monitoring of the roost conditions will be aided by data loggers left inside the loft to monitor temperature and humidity.
 - If monitoring reveals the loft is unsuitable, modifications can be recommended to alter the conditions. For example, boarding out the loft with OSB would affect conditions if required.
9. Bat access will be maintained by keeping the eaves open.



Figure 5.5. Mitigation on barn 2 and tree



Lighting

A specific lighting arrangement has not been drawn up as proposed plans have not been agreed at the time of writing. A generic lighting scheme will therefore be designed outlining key points to consider. Lighting needs to be designed to have minimal impact on bats and their commuting and foraging areas. This results in the recommended use of downlights and the horizontal spread of lighting to be kept to a minimum.

Where it is not possible to reduce the horizontal spread of light, a 2700°K to 3000°K LED light bulb is recommended, which will provide a warm white light. This range has the least impact on bats and invertebrates.

1. A lighting scheme will be drawn up in line with ILP and BCT Guidance Note 08/18.
2. External lighting will illuminate the vegetated boundary to the southeast where a bat box will be installed.
3. There will be no direct illumination of any enhancement features erected for bats outlined in Figure 5.2.
4. All domestic lighting will be below 10 lux, orientated towards the ground and controlled by PIR (Passive Infra-red), set on a short timer.



Figure 5.6. Example external down light design



Figure 5.7. Dark area map



5.8.2 Monitoring

As this site will involve low numbers of common species of bat, no monitoring is technically necessary. It is however recommended that a site survey is conducted one year after the work has been completed to see how successful the bat loft and bat boxes are.

The client will be expected to maintain these for a minimum of 10 years, and they be conserved in perpetuity with the details being provided in sales documents should the site change hands again

Failing boxes or enhancements will be replaced at the cost of the developer if deterioration or damage is noted within five years post-development.

6 Description of Proposed Development

The current plans are for the conversion of the barn to residential with some sections for holiday let. Specific plans have not been drawn up at the time of writing.



Appendix A – Surveyor Details

Table A.1. Details of surveyors' experience and licences held

Name	Membership of associations/ experience	Licenses
Peta Marshall BSc(hons)MA	Principal Consultant MCIEEM PIEMA Peta has a degree in Applied Biology and has been working in commercial environmental assessment for over 10 years. She has 10+ years' experience surveying for protected species. As a member of the CIEEM she is bound by professional conduct.	Holder of survey licenses for bats and newts in England and Wales. Registered Consultant for Mitigation Class Licence for Bats <u>England:</u> Bats - 2015-12200-CLS-CLS BMCL - RC084 GCN - 2015-18939-CLS-CLS Dormice - 2017-29225-CLS-CLS <u>Wales:</u> Bats – S087133-1 GCN – S087606-1
Ben Jones BSc(hons) MSc	Senior Consultant Ben has a degree in Marine and Freshwater biology and a Master's degree in "Managing the Environment". He has 7 years' experience conducting environmental appraisals and phase 2 surveys for bats and newts in England and Wales.	Holder of survey licenses for bats and newts in England and Wales. <u>England:</u> Bats - 2017-29112-CLS-CLS GCN - 2016-25209-CLS-CLS <u>Wales:</u> Bats – S088669-2 GCN – S087992-1
Brian Marshall	Technical Director FIEMA CEnv PEA Consultant with over 35 years in the Environmental Sector	
Chloe Sheil MZool (Conservation)	Chloe has a master's degree in Zoology with Conservation from Bangor University. She has 3 years' experience assisting with surveys.	Listed as an accredited agent on Ben Jones' NRW bat licence – S088669-2



Appendix B – Methodology

Species Surveys

Bats

Methodology used is in accordance with recommendations by BCT, Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition, Collins (2016).

Features on site were assessed for potential for bat roosts, foraging and commuting.

An external assessment of all structures on site was undertaken to determine potential roost features (PRF). The potential suitability of the structures assessed was assigned a rating of low to high in accordance with table 4.1 of Bat Surveys for Professional Ecologists: Good Practice Guidelines 3rd edition, Collins (2016).

An internal assessment of all structures was undertaken by a suitably licensed surveyor for evidence of roosting bats such as droppings, feeding remains and staining.

Daytime surveys were conducted with the aid of a strong torch and a pair of Pentax Papilio 8.5x21 close focus binoculars. Bat species may leave little evidence of their presence.

Evidence for the presence of bats includes:

- Holes, cracks and rot holes used as roosts, marked by streaks of urine and faeces.
- Smoothed, darkened edges where bats have rubbed and left natural body oils when entering and exiting a space.
- Faeces under a roof access point, a well-used feeding point or a resting spot.
- Feeding signs such as discarded insect wings under a feeding point.
- Lack of cobwebs around eaves, roof spaces, beams or ceilings where routes are kept clear by bats or presence of droppings in a cobweb.
- Presence of roosting or dead bats in or behind any object.

Phase 2 bat activity surveys were conducted to reinforce the findings using heterodyne and frequency division bat detectors (Anabat SD1 and 2, Anabat Walkabout)

Surveys were conducted when the weather conditions were suitable for bat activity, i.e. when the ambient temperature exceeded 10°C at sunset and when there was little or no rain. Dusk surveys were begun approximately 15mins prior to sunset and continued for 90-120mins following sunset depending on visibility and site conditions.

Activity surveys are conducted to establish the presence of bats within a structure, what species they are, approximately how many are present, and if possible, where they are exiting a roost.

Bats were identified from the characteristic echolocation calls using appropriate computer sonogram analysis software.



Appendix C – Policy

The following areas of policy and legislation are of relevance to ecology and provide context to the surveys conducted. Findings presented in this report are in line with the following:

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 – as listed in:

- Schedule 2. European protected species of animals

The Wildlife and Countryside Act (1981) – as listed in:

- Schedule 1. Birds protected by special penalties at all times
- Schedule 5. Protected animals

Countryside and Rights of Way Act (2000)

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

Bats

All bat species are protected under The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 which implements the EC Directive 92/43/EEC in the United Kingdom. It is an offence, with certain exceptions, to:

- Deliberately capture or kill any wild animal of a European Protected Species.
- Deliberately disturb any such animal.
- Damage or destroy a breeding site or resting place of such a wild animal.
- Keep (possess), transport, sell or exchange, or offer for sale or exchange, any live or dead wild animal or plant of a European Protected Species, or any part of, or anything derived from such a wild animal or plant.

A person found guilty of an offence is liable on summary conviction to imprisonment for a term not exceeding six months or to an unlimited fine or to both.

Seven bat species are on the UK Biodiversity Action Plan and are listed as Species of Principal Importance under the provisions of the Natural Environment and Rural Communities (NERC) Act 2006. The National Planning Policy Framework (NPPF) states that to minimise impacts on biodiversity and geodiversity, *“planning policies should... promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations”*.

To allow a development that might result in an offence, a derogation licence can be sought via the implementation of a European Protected Species Licence. This is provided by Natural England.

Work can be conducted under a derogation licence from Natural England providing suitable compensation and mitigation is provided and the “three tests” can be met. These are:

Regulation 55(2)(e) states: a licence can be granted for the purposes of “preserving public health or public safety” or other imperative reason of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment.

Regulation 55(9)(a) States: the appropriate authority (Natural England) shall not grant a licence unless they are satisfied “that there is no satisfactory alternative”



Leach

Regulation 55(9)(b) states that the appropriate authority shall not grant a licence unless they are satisfied "that the action licensed will not be detrimental to the maintenance of the population of the species concerned at favourable conservation status in its natural range."

The method statement in the EPS licence is a legally binding document which outlines the species, context of the colony, method of mitigating and compensating and ongoing habitat management for ensuring favourable conservation status.



Appendix D – Example Compliance Audit Form

No	Performance Indicator	Evidence Required - this list should be adapted to reflect the agreed method statement.	Pass (Yes/No), Comments	What action is required as a result of findings?
	General			
1	The licensee will advise NRW Species Officer of the start date for the works prior to works commencing.	Written or electronic documentation with notification of start of works.		
2	A suitably experienced licensed ecologist will be appointed and retained during the life time of this licence to provide on-site advice.	Letter, contract or other document outlining the appointment of an ecologist for the lifetime of the project.		
3	Prior to the start of any works on site, all site workers will be inducted by the project ecologist. This induction will cover the legal status of the species, the method of working and, action to be taken if protected species are encountered.	Copy of documents from ecological induction, showing induction content and detailing contact numbers and contingency procedures should be found during the course of works. List of induction attendees.		
4	Preparation and implementation of a biosecurity risk assessment as detailed in E.5 of the method statement	Biosecurity risk assessment is available for inspection. Log of biosecurity measures is available for inspection and shows that they have been implemented. Field observation shows that biosecurity measures are in place e.g. anti-fungal spray		



	Licence available for inspection by any police constable, employee of the Welsh Assembly Government or employee of the Countryside Council for Wales or authorised persons on demand.	Licence is available for inspection on site		
	No agent of the licensee shall act under licence unless they are in possession of a letter signed by the licensee appointing them by name as the duly accredited agent of the licensee for the purposes of this licence, and shall carry with them the said letter and a copy of this licence and shall produce them to any police constable or employee of the Natural Resources Wales or other authorised person on demand	All relevant accredited agents have copies of licence holder's letter of authorization. Licence holder's letter is available for inspection.		
	E.1 Bat disturbance, capture and exclusion			



5	Works affecting bat roosts will not commence until the Project Ecologist has inspected the area and confirmed that work can go ahead – as detailed in E.1 of the method statement.	Log and field observation show disturbance, capture and exclusion (as relevant) have been undertaken as detailed in the method statement. Dates of action taken should be noted. Examples of actions to be included - - timing of observations and methods used to confirm if bats still present - details of exclusions or deterrent methods used		
6	Action taken if bats found during the course of work	Log detailing - number and species of bats found and location - actions undertaken if animals found		
	E.2 Bat roost and habitat retention, modification and / or creation			
7	<u>Retention of existing roost/s</u> and features (minor changes and maintenance works) as detailed in E.2.1 of the method statement.	Log and field observation demonstrate retention is in accordance with method statement including: - type of replacement roofing material - specification of roofing membrane - use of appropriate timber treatment chemicals & works timed to avoid injury - addition / changes to insulation and impact on temperature/humidity. - retention or modification of roost entrances - enhancements to the roosts e.g. crevice provision		
8	<u>Modification of existing roosts</u> as detailed in E.2.2 of the method statement	Log and field observation demonstrate modification was in accordance with Method Statement including: - number, location and dimensions of roost areas, including partitioning of roof voids - construction materials (e.g. roofing membranes, roofing material) - number, location and design of entrances - provision of roost crevices - use of appropriate timber treatment chemicals & works timed to avoid injury - lighting scheme to avoid illumination of roosts/ entrances - installation of services that may require maintenance		
9	<u>Creation of new roosts</u> (including bat houses and bat boxes) as	Log and field observation demonstrate construction and installation was in		



	detailed in E.2.3 of the method statement	accordance with Method Statement including: - number, location and dimension of roost areas - construction materials (e.g. roofing membranes, roofing material) - number, design & location of entrances - number, design & location of roost crevices - number, location and design of bat boxes as specified (e.g. make & model number) - lighting scheme avoids illumination of roosts / entrances - replacement roost in good order and ready for occupation (or occupied) before old roost damaged or destroyed		
10	<u>Retention &/or modification of existing and creation of new habitat</u> as detailed in E.2.4 of the method statement	Log and field observation demonstrate retention, modification or creation was in accordance with Method Statement including: - measures to ensure that existing bat habitat (e.g. vegetation features close to roosts and/or used as flightlines, foraging habitat) have been retained and not damaged during construction. for new or modified habitat: - design, habitat type, planting schemes & locations; - provenance of imported plants & biosecurity considerations		
	F and H Post-development site safeguard			
11	Implementation of <u>roost site / bat habitat management / maintenance and monitoring</u> as detailed in F.1 and F.2 of the method statement	If audit undertaken during <u>development phase</u>: - Habitat/site management plan demonstrates measures are in place to ensure ongoing maintenance of roost site/s and management of habitat (retained, modified and newly created) post-development and rectifying errors &/or ineffective mitigation including: - responsibility for and funding for roost site maintenance and management - maintenance and retention of existing bat habitat features - monitoring the condition of new planting schemes including irrigation when appropriate, replacement of material that has failed within 2 months with new planting of the same species and size If audit undertaken <u>post development</u>:		



		- log or report demonstrate roost site management plan has been implemented - site management works are maintaining the ecological functionality of the mitigation/compensation site		
12	Implementation of <u>population monitoring</u> as detailed in F.2 of the method statement	If audit undertaken <u>during the development phase</u>: - monitoring plan demonstrates measures are in place to undertake bat population monitoring post-development. If audit undertaken <u>post-development</u>: - log or report demonstrate monitoring plan has been implemented - log or report demonstrate results passed to local record centre		
13	Implementation of <u>long term site safeguard proposals</u> as detailed in F.4, H.1 and H.2 of the method statement <i>NB Not all schemes will require all of the activities</i>	Log of works demonstrates implementation eg: (i) land transfer or other legal interest proposal (ii) mitigation/compensation site been listed as a local land charge (iii) proposed legal agreements and contracts been completed (iv) wardening requirements implemented to proposed timescales and in accordance with the submitted Method Statement (v) financial plan in place to resource mitigation, compensation, monitoring, site management or wardening		
14	Any other points to note/comments from auditor:			



Appendix E – Bibliography

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