



Report Type: Ecological Appraisal-
Phase 2 Bat activity Surveys

Client Name: Christian

Site Address: Castle Buildings
Llanrhaeadr-ym-Mochnant
Powys
SY10 0JU

Report Reference: 21-06 206.1R

Date of Issue: 1st October 2021

Author: Peta Marshall BSc (hons)





Report Details	
Classification	Ecological Appraisal
Status	Final
Reference	21-06 206.1R

Version History	
Report Reference	Date of Revision
21-06 206.1R	1 st October 2021

Quality Assurance			
	Name	Signature	Date
Author:	P. Marshall BSc(hons) MCIEEM PIEMA Principal Consultant		28 th September 2021
Reviewed by:	B. Jones BSc(hons) MSc Lead Consultant		1 st October 2021

Greenscape Environmental Ltd.
Registered Office: Long Acres, Lyth Bank, Shrewsbury, Shropshire, SY3 0BW
Company Reg number: 5364283

This report is the copyright of Greenscape Environmental Ltd. Any unauthorised reproduction or usage by any person without the specific authority of Greenscape is prohibited.

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.

The use of this report or survey data for any form of formal submission to an NGO or other authority implicitly implies acceptance of the terms and conditions.



Table of Contents

1	EXECUTIVE SUMMARY.....	1
1.1	Purpose of the Report	1
1.2	Methodology	1
1.3	Key Impacts and Mitigation Measures.....	1
1.4	Conclusion	2
2	INTRODUCTION	3
2.1	Project Background.....	3
2.2	Purpose of the Report	3
2.3	Site Context and Location	3
3	METHODOLOGY.....	4
3.1	Desk Study	4
3.2	Field Survey.....	4
3.3	Species Survey.....	4
3.4	Constraints of the Survey	5
4	BASELINE ECOLOGICAL CONDITIONS.....	6
4.1	Nearby Features of Importance	6
4.2	Habitats on Site.....	7
4.3	Bats.....	9
4.4	Birds.....	13
5	DESCRIPTION OF PROPOSED DEVELOPMENT.....	15
6	IMPACTS, ENHANCEMENTS AND MITIGATION	16
6.1	Nearby Features of Importance	16
6.2	Habitats on Site.....	16
6.3	Bats.....	16
6.4	Birds.....	19
7	CONCLUDING REMARKS.....	20
	APPENDIX A – SURVEYOR DETAILS.....	21
	APPENDIX B – METHODOLOGY	22
	APPENDIX C – POLICY	25
	APPENDIX D – BAT SURVEY DATA.....	28
	APPENDIX E – BAT CONSERVATION PLAN.....	30
	APPENDIX F – BIBLIOGRAPHY	33



Table of Figures

Figure 4.1. Identifying any designated areas near site, a 1km buffer is shown	6
Figure 4.2. Plan taken from planning portal identifying the sections of building discussed	7
Figure 4.3. Building from the east	8
Figure 4.4. Building from the north	8
Figure 4.5. Outbuilding	9
Figure 4.6. Showing ceiling on second floor	10
Figure 4.7. View up chimney	10
Figure 4.8. View of roof over cottage three.....	11
Figure 4.9. Scattered droppings.....	11
Figure 4.10: Wren nest on ground floor	13
Figure 4.11: Swifts over building in village	14
Figure 5.1. Proposed plans	15
Figure 6.1. Example woodcrete bat box: Beaumaris Bat Box Midi	17
Figure 6.2. Example external down light design	18
Figure 6.3. Swift and bat box	19
Figure D.1. Survey area.....	28
Figure D.2. Survey results.....	29
Figure E.1. Fly in accesses suitable for LHS bats	32

Table of Tables

Table 1.1. Timing of Works.....	2
Table 3.1. Survey conditions	4
Table 4.1. Evaluation of survey results	12
Table A.1. Details of surveyors' experience and licences held.....	21
Table B.1. Data sources	22
Table B.2. Criteria of ecological values.....	22
Table B.3. Windspeed scale	23
Table D.1. Survey results table	28



1 Executive Summary

1.1 Purpose of the Report

Greenscape Environmental Ltd was commissioned by Mr Garry Christian, to undertake phase 2 bat activity surveys to provide supporting information for a planning application for the renovation of Castle Buildings, Llanrhaeadr-ym-Mochnant.

The survey report has these principal aims:

- To provide an 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 brief review of the phase 1 assessment of the site by Arbtech, a data search for previously recorded protected species in the area and phase 2 bat activity surveys undertaken at the site, OS grid reference SJ1219 2612 on 15th July by P Marshall and BR Marshall, and 3rd August 2021 by B Jones and C Sheil. No further surveys are considered necessary at this time.

1.3 Key Impacts and Mitigation Measures

The desktop study included a search for nearby designated sites and previously recorded protected species. It was considered highly likely that the site would provide potential habitat for bat and bird species, and these should be the main focus of the ecological appraisal.

The building is constructed of stone with a lined slate roof. It is understood it was re-roofed in 2016, and there is no intention to do any re-roofing or alterations to the gables, eaves or any external timber around the roof.

The building was originally three discrete cottages, but a previous owner made modifications to combine two by partially removing a first-floor internal wall. Cottages one and two are therefore treated as a single property separate from the third cottage. Cottages one and two are well sealed, with no internal roof access for bats. As there is no planned alteration to the eaves, it is concluded that work can commence on buildings one and two with no negative impact to bat species. Disturbance is considered highly unlikely.

Work on cottage three will need to be conducted under derogation licence from National resources Wales (NRW). Two lesser horseshoe bats were observed in the building on 15th July. Emergence was from an opening over the ground floor door. A method statement will need to be followed to ensure the bats are provided with a suitable roost area during and post restoration of the building. Work on this section is not likely to commence for several years and it will be necessary to conduct some restoration work in order to maintain the integrity of the building. The pipistrelles are likely to be disturbed, but the roost will not be lost when this section of the building is worked on.

A significant number of swifts were observed nesting on the exterior of the whole building. These will not be impacted as there will be no alterations to the eaves. It is recommended



Christian

that if scaffolding is needed for fenestration or maintenance of gutters, then this needs to be conducted out of the bird nesting season which is February to August inclusive.

Work on cottages one and two can commence once planning permission has been granted. Work on the third cottage (not scheduled in the near future) will need to be conducted under mitigation licence from Natural Resources Wales following an update of the activity surveys.

1.4 Conclusion

It has been agreed with the client that the biodiversity value of the site will be enhanced post-construction with the inclusion of bat and bird boxes. These will be combined swift and bat boxes erected on the outside under the eaves of the building.

The method statements provided in section 6.3.1 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 – this will include work on building 3.	To ensure sufficient updated information is in place for the mitigation licence application



2 Introduction

This report has been compiled by Peta Marshall BSc (hons) MA who has over 15 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 Mr G Christian to conduct a survey to determine the presence of protected species, particularly bats and potential for the damage or destruction of habitats of value for the planning application for the restoration of three cottages at Castle Buildings.

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.
- Identify any additional surveys that may be required to inform the assessment.

The Local Planning Authority have requested further information regarding bat species as the work involves alterations to a grade II listed building.

2.3 Site Context and Location

The site is located to the west of Llanrhaeadr-ym-Mochnant, OS grid reference SJ1219 2612. There is good connectivity to open countryside with tree lined lane to the west, and to Afon Rhaeadr. Immediate land to the east is well lit village, but to the west is countryside. There is connectivity to the Old School site to the north of the village where there is a known population of lesser horseshoe bats in a site prepared for compensation for the species.



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/rise Time)	Structure	Equipment Used	Weather
15/07/2021	20:45-22:30 (21:31)	Building	2x Anabat SD2 and 2x Anabat Walkabout	17-16°C Wind speed F1 No cloud cover
Comments	Two surveyors used: P Marshall and BR Marshall			
03/08/2021	03:30-05:45 (05:53)	Building	Wildlife Acoustics Echometer Touch 2 Pro and Anabat Walkabout, Anabat SD2, Sony FDR AX-33 night sight camera with 2x IRLamp6 illuminators	12-15°C No wind No cloud cover Waning crescent moon
Comments	Two surveyors, Ben Jones and Chloe Shiel			

3.2.2 Habitats

The level of survey is aimed to identify field signs of, or habitats with the potential to support protected species and therefore assist in the determination of site value.

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).

Bird nesting was also recorded by observing the building and environs.



3.4 Constraints of the Survey

All areas were visible for this survey but parts of cottage three were unsafe for thorough inspection. It was conducted at an optimal time of year for the assessment of maternity roosts of bats and of nesting birds such as swallows, house martins and swifts.

The internal search revealed that the buildings had not been subjected to any form of specific cleaning and cottage three was in a redundant state. One area of roof void in this section was not safely accessed but viewed from the second floor. No specific constraints have been identified.

The identification of bats species from calls and 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 Nearby Features of Importance

4.1.1 Designated Sites

The map from Natural England presented in Figure 4.1 indicated that the site is not within 1km of any designated areas.

MAGIC Castle Buildings, Llanrhaeadr-ym-Mochnant

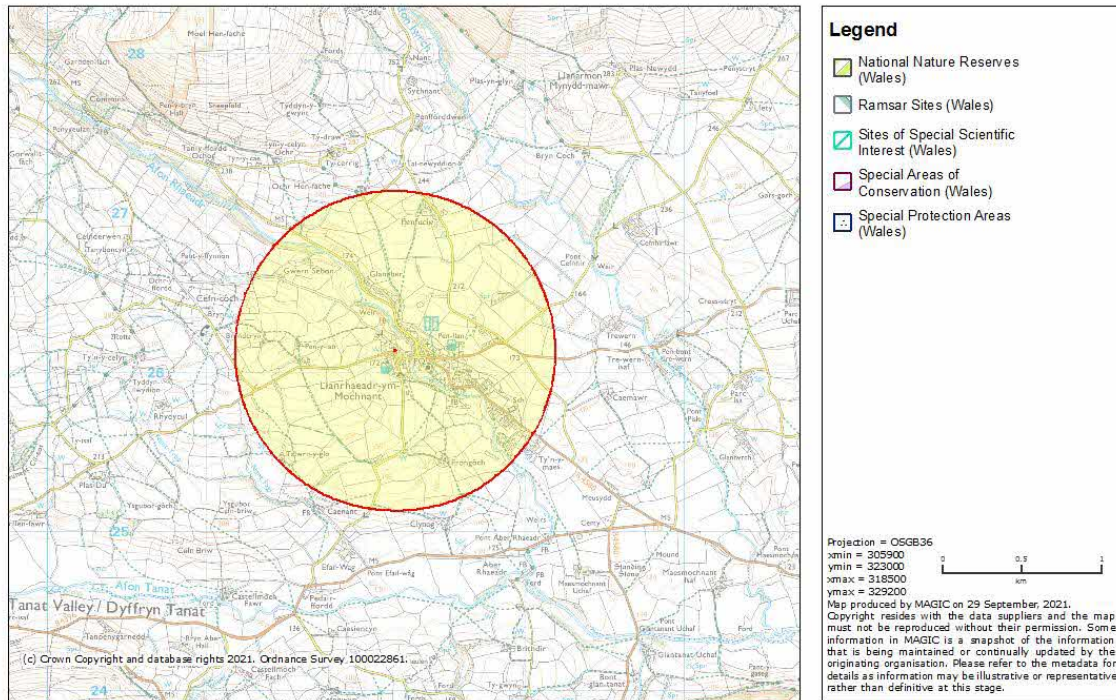


Figure 4.1. Identifying any designated areas near site, a 1km buffer is shown



4.2 Habitats on Site

The site comprises three cottages in one building. There is a very small amount of habitat in the curtilage of the building, with only a small courtyard with outbuildings in poor condition. The courtyard is of hardstanding and of no ecological value.

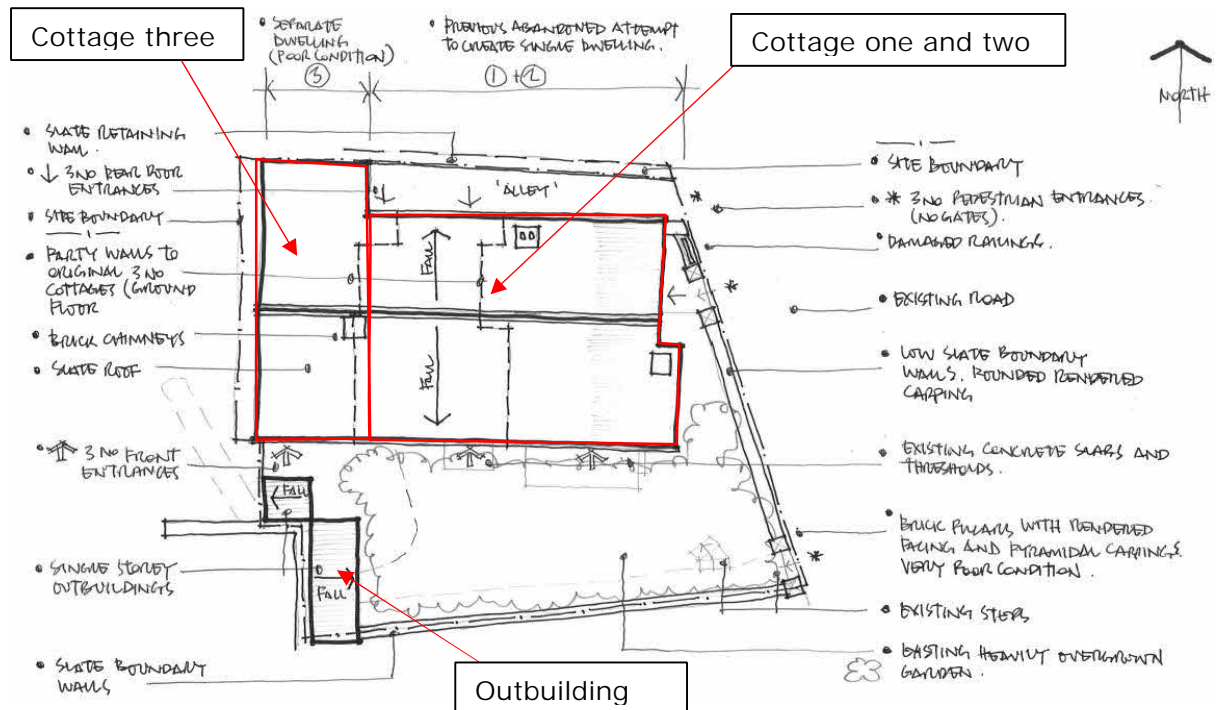


Figure 4.2. Plan taken from planning portal identifying the sections of building discussed



Building

The building is split into thirds comprising what was originally three cottages. Cottages one and two are the eastern two thirds and have been significantly altered by a previous owner, but cottage three remains in a derelict condition.



Figure 4.3. Building from the east

The building comprises three storeys, with a loft area over. Some windows on the first and second floors are in a poor state and covered with polythene, wood or broken glass.

The roof of the building is in good condition, comprising slate with F1 bitumen lining. It is understood the building was reroofed in 2016 and there is no intention to further alter the roof or eaves.



Figure 4.4. Building from the north



Outbuilding

The outbuilding is constructed of brick and stone with an unlined corrugated metal roof.



Figure 4.5. Outbuilding

4.3 Bats

4.3.1 Records

Records of bats within 2km include lesser horseshoe bats (*Rhinolophus hipposideros*) which were recorded at The Old School in Llanrhaeadr-ym-Mochnant by Greenscape Environmental.

Other records of bats within the area include Brandt's bat (*Myotis brandtii*), Daubenton's bat (*M. daubentonii*), whiskered bat (*M. mystacinus*), Natterer's bat (*M. nattereri*), common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*P. pygmaeus*) and brown long-eared bat (*Plecotus auritus*). Almost all bats are recorded along the Afon Rhaeadr, and many within the village of Llanrhaeadr-ym-Mochnant itself. Most recent records are from 2018.

4.3.2 Field Observations

The cottages and outbuilding were examined internally and externally by an NRW licensed surveyor using a strong torch and Anabat walkabout detector.

No bat droppings were found in the outbuilding and no evidence of lesser horseshoe bats observed.

As the cottages were empty, and there was potential bat access through open windows, they were examined internally prior to the first emergence survey.

Cottages one and two

No bat droppings were observed in cottage one and two. The ceiling on the second floor was seen to be intact with no potential access to the roof void or No bats were observed in accessible chimneys.



Figure 4.6. Showing ceiling on second floor

Stonework on the exterior of the building was seen to be in good condition with little potential for bat roost features.



Figure 4.7. View up chimney



Cottage three

The roof over cottage three was viewed from the first floor only as access could not be safely made up the stairs.



Figure 4.8. View of roof over cottage three

Scattered droppings were observed on the temporary flooring on the first floor.



Figure 4.9. Scattered droppings



4.3.3 Phase 2 Surveys for Bats

Two activity surveys have been conducted, one dusk and one dawn.

Surveyors were situated so all elevations of the building could be observed.

During the first survey, no bats were observed from cottage one and two, but two lesser horseshoe bats were observed later in the evening in cottage three and two common pipistrelle bats were observed emerging from the western end of the building

The second survey did not see any bats roosting, and the activity levels were low, all bats seen flew off site to the south to roost elsewhere.

Full details of the surveys are found in Appendix D.

Table 4.1. Evaluation of survey results

Structure	Species	Count	Roost Location	Site Status Assessment (e.g. maternity)	Conservation Significance
Cottage 1 and 2	-	-	-	none	nil
Cottage 3	Common pipistrelle	2	Under eaves and gabled	Day roost	Low
Cottage 3	Lesser horseshoe bats	2	In building	Night roost	Low



4.4 Birds

4.4.1 Records

Records of roof-nesting birds within 2km include common passerine species such as blue tit (*Cyanistes caeruleus*), swallow (*Hirundo rustica*) and swift (*Apus apus*).

4.4.2 Field Observations

Outbuilding

No nesting birds were observed in the outbuildings

Cottages

Approximately 55 swifts were recorded coming in to roost during the dusk survey on the 15th July. These were under the eaves and there was no sign of them at all inside the three cottages.

A wren nest was observed in a former swallow nest on the ground floor of cottage three.

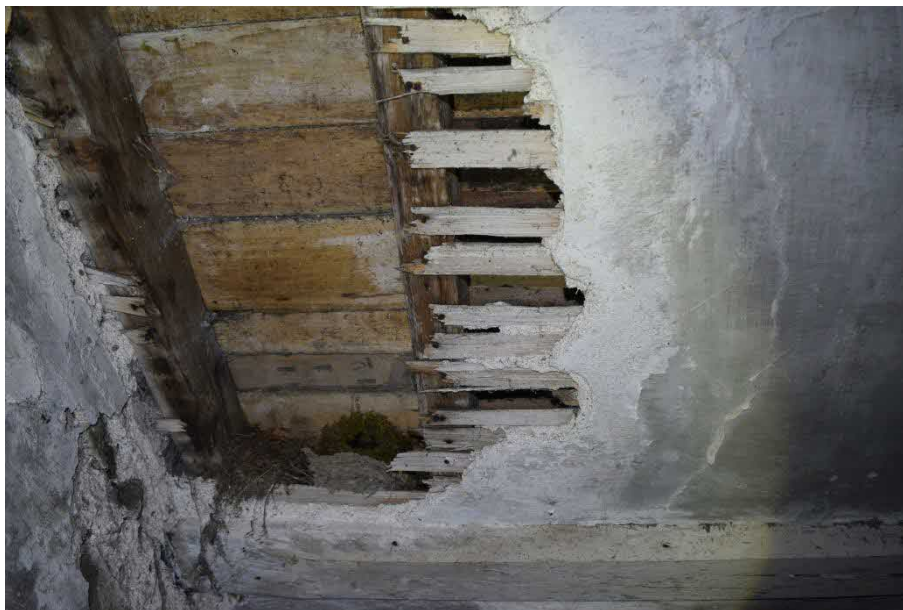


Figure 4.10: Wren nest on ground floor

Swifts were observed flying around the building and village at the start of the survey. Surveyors counted approximately 25 swifts per side of building coming in to roost. Nesting swiftlets were recorded calling at the start of the survey.



Christian



Figure 4.11: Swifts over building in village



5 Description of Proposed Development

The current plans are for the interior renovation of the buildings. This will not require reroofing or alteration of the eaves.

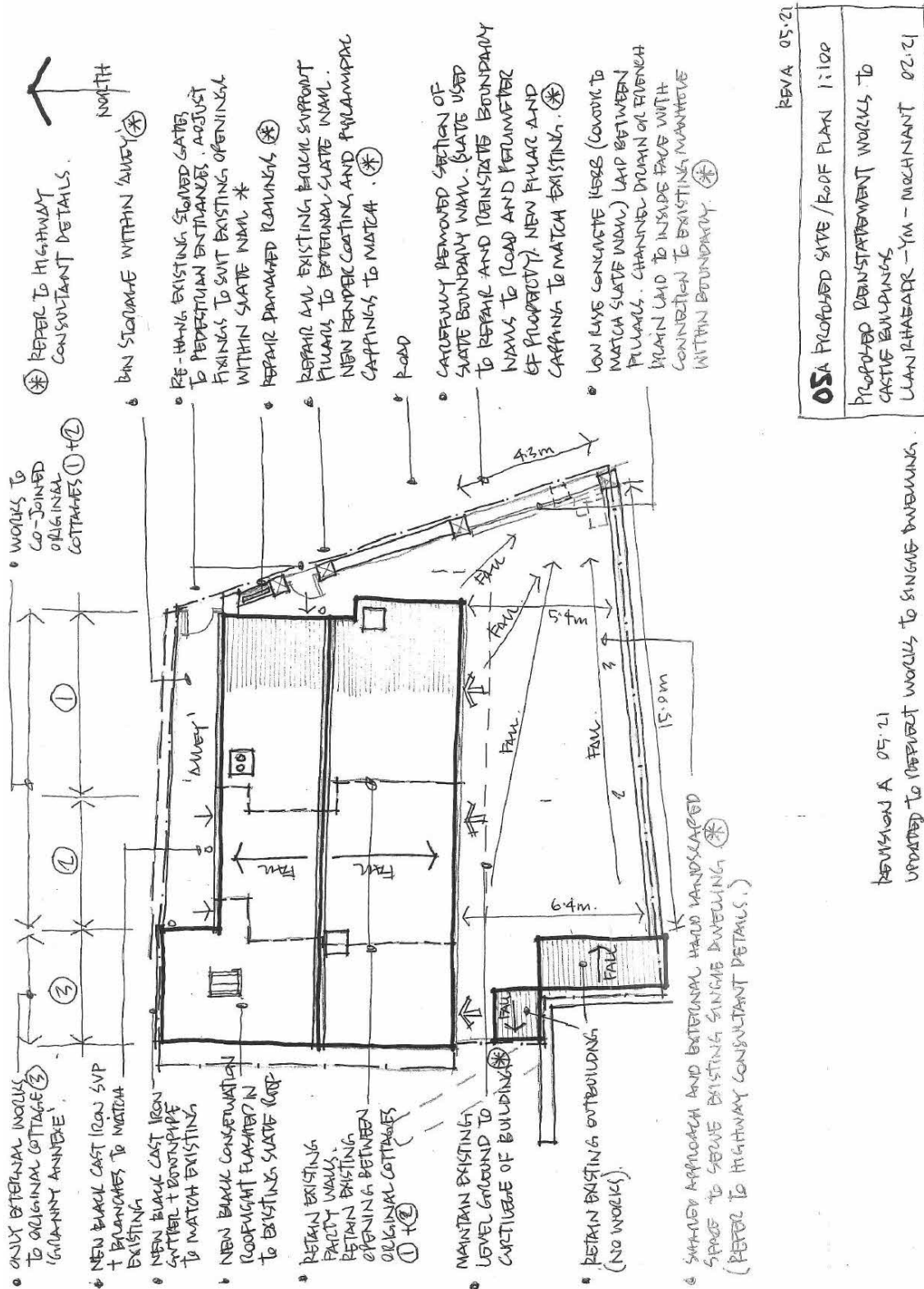


Figure 5.1. Proposed plans



6 Impacts, Enhancements and Mitigation

6.1 Nearby Features of Importance

Figure 4.1 shows that there are no designated sites within 1km. No further consideration is required.

6.2 Habitats on Site

The development as proposed will not result in the loss of any habitats of value according to Section 41 of the NERC Act (2006), and so mitigation and enhancements will be delivered at a species level.

6.3 Bats

6.3.1 Impacts

Cottage one and two

No bats were recorded emerging or entering cottages one and two. As the ceilings are well plastered and there is no access into the building through the roof or eaves, no further surveys are considered necessary. No negative impact is anticipated on bats when these two cottages are restored and modernised. Bats will neither be disturbed, nor any roosts lost and no damage or death of individual bats is considered likely. An offence is considered highly unlikely.

Cottage three

Two lesser horseshoe bats were recorded in cottage three on the first activity survey. These were not recorded returning on the dawn survey. It is therefore considered this is an occasional roost of low numbers of the species. Without consideration, the restoration of this cottage could result in the loss of the roost along with the potential death or damage of individual bats. Work on this building will therefore need to be conducted under mitigation licence from Natural resources Wales.

The impact on the favourable conservation status of the species is likely to be low, as these are low numbers of a species that is common in the area. There is a known roost site within 500m of this one

As this cottage is not going to be altered in the next few years, the licence cannot be applied for now, and the survey data will need to be updated prior to licence application. Three activity surveys will need to be conducted within a summer season prior to the licence application.

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



6.3.2 Mitigation

Work which can be conducted immediately once planning permission has been granted includes:

Work on the interior of cottages one and two
Fenestration of cottages one and two.

Work which will need to be conducted under European Protected Species Licence from Natural Resources Wales includes:

Internal work on cottage three

Work requiring a licence must follow a strict method statement, which will be provided when the licence is granted. Works on cottages one and two is not likely to impact bats and can proceed without further consideration.

6.3.3 Compensation & Enhancements

It is recommended that provision be made for roosting opportunities for crevice dwelling bats with the erection of at least one woodcrete bat box suitable for day roosts of crevice dwelling species on the western gable end at a height of 3-4m.



Figure 6.1. Example woodcrete bat box: Beaumaris Bat Box Midi



Lighting

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. All newly proposed external lighting will be directed away from any vegetated boundary features to retain dark corridors for commuting bats.
3. There will be no direct illumination of any enhancement features erected for bats.
4. There will be no direct illumination of the roof of cottage three.
5. 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 6.2. Example external down light design



6.4 Birds

6.4.1 Impacts

Over 50 swifts were recorded nesting under the eaves of cottages one to three inclusive. No evidence of these could be seen in the buildings and there is no physical alteration to the crevices along the eaves where the nests are. Therefore, no negative impact on the birds is anticipated. No external work on the eaves or gutters is anticipated at this stage, but it will be recommended that should any maintenance be needed, and the fenestration, should be conducted out of the bird nesting season.

These birds are likely to return on an annual basis. Swifts are on the UK amber list, protected by the Wildlife and Countryside act 1981. Loss of the nest sites would therefore be undesirable.

An enhancement will be the erection of a swift box under the eaves and it is recommended a combined swift and bat box is used.

6.4.2 Mitigation and Enhancements

1. Any work on the exterior of the buildings, including scaffolding should this be needed for fenestration, or maintenance of gutters etc must be conducted out of the bird nesting season which is end of February to August inclusive.
2. Should a nesting bird be found, a 4m buffer will be left around the nest, and no further disturbance conducted until the young have fledged.
3. It is recommended that a swift boxes is erected under the eaves to provide an enhancement for swifts.



Figure 6.3. Swift and bat box

6.4.3 Monitoring

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



7 Concluding Remarks

The survey has focussed on the potential habitats or protected species to be damaged or destroyed as part of this development.

Bat activity surveys identified low numbers of lesser horseshoe bats roosting inside cottage 3 and common pipistrelles on the western gable of cottage 3. No works are proposed on this cottage at this time, but work will require a mitigation licence preceded by updated bat activity surveys when it is done. A bat conservation plan is provided in Appendix E with example mitigation for this work.

No bats were seen roosting in cottages one or two, and so work can proceed on these without any potential negative impact. A lighting plan will ensure the known roosts in cottage three are not disturbed by the works.

Swifts were seen nesting under the eaves and so appropriate enhancements are recommended to ensure ongoing nest suitability for these species in perpetuity.

The development can proceed without the loss of habitat of significant value, and without the loss of the favourable conservation status of any protected species. As there is no evidence of protected species within and around the development site, there is no requirement to address the three tests under Regulation 55 of The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019.

The method statements provided in sections 6.3.2 and 6.4.2 of this report will be followed and works will be done at a suitable time of year. Other than those listed above, there are no ecological constraints to the development as currently proposed.



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	<p>Principal Consultant MCIEEM PIEMA</p> <p>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.</p> <p>As a member of the CIEEM she is bound by professional conduct.</p>	<p>Holder of survey licenses for bats and newts in England and Wales. Registered Consultant for Mitigation Class Licence for Bats</p> <p><u>England:</u> Bats - 2015-12200-CLS-CLS BMCL - RC084 GCN - 2015-18939-CLS-CLS Dormice - 2017-29225-CLS-CLS</p> <p><u>Wales:</u> Bats – S087133-1 GCN – S087606-1</p>
Brian Marshall	<p>Technical Director FIEMA CEnv PEA</p> <p>Consultant with over 35 years in the Environmental Sector</p>	
Ben Jones BSc(hons) MSc	<p>Lead Consultant</p> <p>Ben has a degree in Marine and Freshwater biology and a Master's degree in "Managing the Environment".</p> <p>He has 6 years' experience conducting environmental appraisals and phase 2 surveys for bats and newts in England and Wales.</p>	<p>Holder of survey licenses for bats and newts in England and Wales.</p> <p><u>England:</u> Bats - 2017-29112-CLS-CLS GCN - 2016-25209-CLS-CLS</p> <p><u>Wales:</u> Bats – S088669-2 GCN – S087992-1</p>
Chloe Sheil MZool (Conservation)	<p>Chloe has a master's degree in Zoology with Conservation from Bangor University. She has 3 years' experience assisting with surveys.</p>	<p>Listed as an accredited agent on Ben Jones' NRW bat licence – S088669-2</p>



Appendix B – Methodology

Desk Study

Table B.1. Data sources

Organisation/Resource	Information Assessed
Local Records Centre	Protected/UK BAP Species records (2km)
MAGIC website	International statutory designations (1km) Special Protection areas (SPA) Special Areas of Conservation (SAC) RAMSAR sites National statutory designations (1km) Sites of Special Scientific Interest (SSSI) National Nature Reserves (NNR)

A data search was purchased from BIS on 22nd September 2021

A search on Multi Agency Geographic Information for the Countryside (Magic Maps) determined nearby designated areas. The map is presented in Section 4.1.

Field Survey

An assessment of habitats was conducted broadly following the JNCC Handbook for Phase 1 Surveys 2010.

The level of survey is aimed to identify field signs of or habitats with the potential to support protected species and therefore assist in the determination for detailed phase 2 surveys.

Determination of Ecological Value is based on the general criteria provided by IEEM (IEEM 2006).

Table B.2. Criteria of ecological values

Ecological Value	Description and Examples
High	Habitats or features that have high importance for nature conservation, such as statutory designated nature conservation sites of international or national importance or sites maintaining viable populations of species of international or national importance (e.g. Red Data Book species; European protected species).
Medium	Sites designated at a county or district level, e.g. Local Wildlife Site (LWS), ancient woodland site, ecologically 'important' hedgerows or ecological features that are notable within the context of a region, county or district (e.g. a viable area of a Priority Habitat on the county BAP or a site that supports a viable population of a county BAP species).
Low	Sites of nature conservation value within the context of a parish or neighbourhood, low-grade common habitats, such as arable fields and improved grasslands and sites supporting common, widespread species.



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 SD2, Anabat Walkabout, Wildlife Acoustics Echo Meter Touch), and a Sony FDR-AX33 night-sight camera with a pair of IRLamp6 illuminators. The footage was analysed by an experienced bat ecologist. Anabats were left within the buildings to reinforce findings.

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. Dawn surveys were begun approximately 90-120mins before sunrise, depending on the species expected, to 15 minutes after sunrise. Dawn surveys were only conducted if the temperature at the previous sunset was over 10°C.

Table B.3. Windspeed scale

Wind Force	Description	Speed mph (kph)	Specifications
0	Calm	<1 (<1.6)	Smoke rises vertically
1	Light Air	1-3 (1-5)	Direction shown by smoke drift but not by wind vanes
2	Light Breeze	4-7 (6.5-11)	Wind felt on face; leaves rustle; wind vane moved by wind



Christian

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.

Birds

Searching for evidence of nesting birds, including barn owls, involved looking for:

- Presence of nests
- Collections of droppings and/or feathers
- Highly distinctive droppings or splats under roosting points.
- Presence of owl pellets/feathers
- Listening for bird song
- Recording bird activity



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 Rurally Communities (NERC) Act (2006)

Planning Policy Wales 2002, updated Dec 2018

Section 6.4 – Biodiversity and Ecological Networks

The Nature Recovery Plan for Wales – Setting the course for 2020 and beyond (2015)

Environment Act (Wales) (2016)

Section 7

Powys Local Development Plan: Policy DM2 – The Natural Environment



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 Resources Wales.

Work can be conducted under a derogation licence from Natural Resources Wales 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 Resources Wales) shall not grant a licence unless they are satisfied "that there is no satisfactory alternative"

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.



Birds

Under Section 1 of the Wildlife and Countryside Act 1981 (as amended), birds, their nests and young are all protected from damage, particularly during the breeding season. The Act allows for fines or prison sentences for every bird, egg or nest destroyed. It makes it an offence to:

Intentionally kill, injure or take any wild bird.

Take, damage or destroy the nest of any wild bird whilst it is in use or being built.

Take damage or destroy the egg of any wild bird.

To have in one's possession or control any wild bird, dead or alive or egg or any part of a wild bird or egg.

Some bird species are included in the UK and local BAPS and are recognised as species of principal importance for nature conservation in accordance with section 41 of the NERC Act 2006. Such species and their habitats receive protection through the provisions of the NPPF.



Appendix D – Bat Survey Data

Table D.1. Survey results table

Date	Time Start – End	Species and Numbers	Roost Type	Structure	Roost Location	Access Points
15/07/2021	20:45-22:30	LHS x2	Day	Cottage 3	Inside upper floor loft	Opening above southern doorway on ground floor
		C-Pip x2	Day	Cottage 3	Western gable end	Under fascia boards
Notes:	Two lesser horseshoe bats were seen to emerge from a gap over the door on the southern side of cottage 3. Two common pipistrelles also emerged from cottage 3 but from the western gable end, under the fascia boards.					
03/08/2021	03:30-05:45	--	--	--	--	--
Notes:	No bats were seen to enter any of the cottages to roost on this survey. Activity was scarce, and all bats seen flew south to roost elsewhere. A lesser horseshoe bat was recorded at 03:42 but was not seen. A camera set up for night-sight with infra-red illuminators was watching the previously identified entrance point on the southern side of the building and no bats were seen to enter. A common pipistrelle was seen to forage over the garden to the west of the building before leaving site to the south at 04:51.					

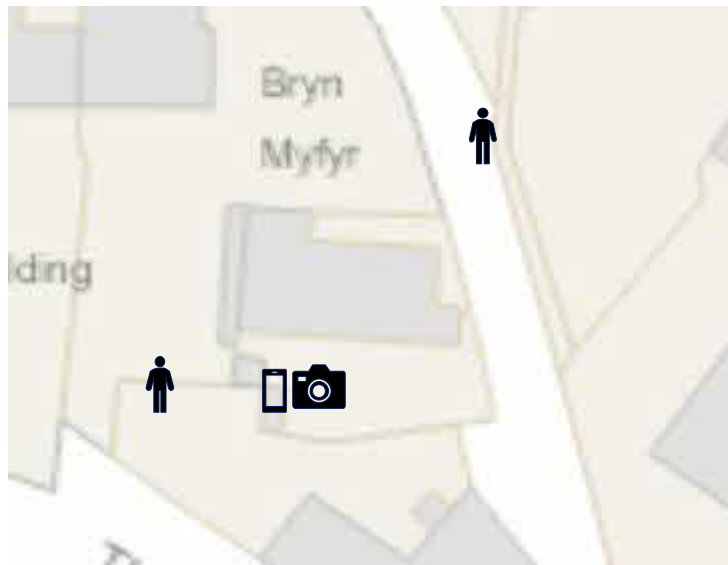


Figure D.1. Survey area

Icon	Description
	Sony FDR-AX33
	Static Detector
	Stationary Surveyor

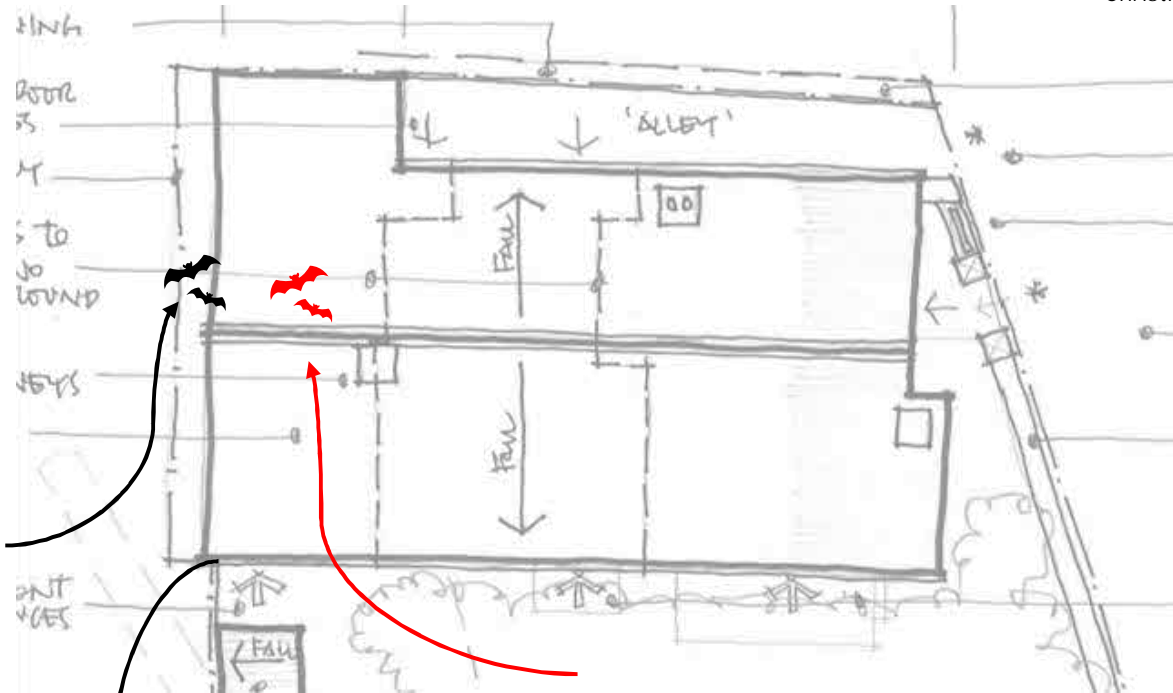


Figure D.2. Survey results

Icon	Description
	Lesser horseshoe roost location
	Common pipistrelle roost location
	Lesser horseshoe roost access and flight path
	Common pipistrelle flight path



Appendix E – Bat Conservation Plan

Work to cottage 3 will need to be conducted under licence from Natural Resources Wales. This will involve working to a strict method statement, and providing suitable mitigation for the loss and disturbance of roosts. An example method statement and mitigation plan is provided here.

Example Working Method Statement

1. Construction 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 areas of known bat roosts. 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 area will occur when bats are least likely to be present, from October to March
7. The lofts will only be accessed when necessary.
8. Bats will always be allowed access to an undisturbed area during works.
9. The ECoW will be present on site when work is being conducted in the area of the bat roost, particularly around the ridges, gables, hips, valleys and edges.
10. If a bat is found when the ECoW is not present, work will stop immediately and the ECoW contacted for advice.
11. 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.
12. 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.
13. 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.



14. The bat compensation will be created following the instructions in the EPS method statement and the client will agree that any bat box erected must stay in place for a minimum of five years post-development.
15. The removal of the roof will not take place if the temperature has been below 6°C for four consecutive days and nights.
16. 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.

Bat Loft – Lesser Horseshoe

As two lesser horseshoe bats has been identified using cottage three, the loft will be prepared for use by this species when work takes place under licence in **several years time**. 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 the void will be 20m³, recommended minimum dimensions are 4m wide, 5m long and 2m high to the peak of the roof.
2. Skylights will not be placed in the roof section designated as a bat loft.
3. The loft space will have a small access hatch, so it can be checked for bat activity but not used for storage.
4. Type 1F bitumen hessian felt (BS747) will only be used as lining beneath the slates, so bats cannot come into contact with non-bitumastic modern breathable membranes.
5. Human access to the bat loft will be made by creating a 400mm² access which will not allow the loft to be used for storage but allow site checks to be undertaken.
6. Roost opportunities will be made inside the loft by creating crevices with rough-sawn timber, these will have an entry gap of 15mm.
7. The loft space will be insulated between the floor and ceiling and not under the slated. This is the best method to keep the area the correct temperature for bats in summer.
8. Monitoring the roost will be required in years 2 and 4 following completion of the project.
9. Bat access to the roof will be via an opening suitable for lesser horseshoe bats. This will be 400mm wide (between rafters) and 300mm high and lined with lead to create a fly in access.



Figure E.1. Fly in accesses suitable for LHS bats



Appendix F – Bibliography

Chartered Institute of Ecology and Environmental Management (CIEEM), (2006). EcIA Guidance (Terrestrial, Freshwater and Coastal 2006).

Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). Bat Conservation Trust

The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019:
<https://www.legislation.gov.uk/ukdsi/2019/9780111176573>

JNCC

HMSO (2000) Countryside and Rights of Way Act 2000 - HMSO, London
<http://www.legislation.gov.uk/ukpga/2000/37/contents>

HMSO (1981) Wildlife and Countryside Act 1981 - HMSO, London
<http://www.legislation.gov.uk/ukpga/1981/69>

ILP (2018) Guidance Note 08/18 Bats and artificial lighting in the UK, The Institute of Lighting Professionals

Mitchell-Jones A.J. (2004) Bat Mitigation guidelines, English Nature

National Planning Policy Framework 2018:
https://assets.publishing.service.gov.uk/government/uploads/system/uploads/attachment_data/file/728643/Revised_NPPF_2018.pdf

Natural England – Nature on the Map, Magic Maps. Copyright Natural England, containing Ordnance Survey data, crown copyright and database right 2018:
<http://magic.defra.gov.uk/magicmap.aspx>

Natural Environment and Rural Communities Act 2006:
<http://www.legislation.gov.uk/ukpga/2006/16/contents>