



BRYNTAIL AND MINERS COTTAGE; LLANIDLOES

BAT EMERGENCE SURVEYS

DATE	ECOLOGIST	APPROVED	VERSION	COMMENTS
08/08/2021	Keymar Wake	Rhian Hughes	V1	

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Contents

Executive Summary 3

1.0 Introduction 4

2.0 Methodology..... 5

3.0 Activity Survey Results 6

4.0 Discussion..... 11

5.0 Mitigation, Compensation and Reasonable Avoidance Measures (RAMs) 16

6.0 Legislation 25

7.0 References and Useful Information Sources 26

Executive Summary

Site	Bryntail and Miners Cottage, Llanidloes, SY18 6NU NGR:SN91798706
Surveyors	Keymar Wake, Rhian Hughes and 5 assistants
Proposed work	Remedial works and renovation of both Bryntail and Miner's Cottages, including localised roof repairs and loft insulations. Demolition of two outbuildings and rebuilding of corrugated metal extensions.
Type of survey	Dusk Emergence Surveys on 18 th June and 16 th July 2021; Static detector survey between 18 th June – 17 th July 2021
Results of survey	<ul style="list-style-type: none"> • Both cottages had several suitable external roosting features and Miner's Cottage had an accessible, suitable loft space. • Two unknown bats (thought to be BLE) were recorded on the infrared camera, emerging from Miner's Cottage; one BLE was observed, and BLE and <i>Myotis sp.</i> were recorded on the static, within the loft space of Miner's Cottage. • No bats were seen emerging from Bryntail Cottage. • Pipistrelle bats were recorded commuting and foraging within the site. • Swallow and others birds nests were observed within both cottages.
Survey conclusions	<ul style="list-style-type: none"> • Miner's Cottage is a known bat roost for BLE and <i>Myotis sp.</i>, and possible Pipistrelle bats. • Both cottages have potential to be used occasionally by small numbers of crevice dwelling bats. • The existing bat roosts will be largely retained as part of the works, with some potential modifications to access points and external roosting areas.
RAMs and Mitigation	<ul style="list-style-type: none"> • A licence will be required from NRW before any works can commence. • Wherever possible, access points and suitable roosting features will be retained or replaced like-for-like. • Enhancements to the existing loft spaces and roofs will increase roosting opportunities for bats. • Bat and bird boxes will be erected around the site to enhance the site for these species. • Swallow nesting areas will be created in the roof void of the corrugated metal buildings within the site.

1.0 Introduction

- 1.1 Enfys Ecology Limited were commissioned by Mr Neil Mackintosh to undertake bat emergence surveys of both Bryntail Cottage and Miner's Cottage, Llanidloes.
- 1.2 The proposed works include the renovation of both buildings including remedial works to the walls and roofs; as well as the demolition of the existing outbuildings/ toilet blocks.
- 1.3 A bat scoping survey was undertaken by Jon Sloan Ecological Consultants on 5th May 2021 (Jon Sloan Ecology, 2021). At this time a full Preliminary Roost Assessment (PRA) was carried out including an internal and external assessment of the building for evidence of bats, and features suitable for roosting by bats. The survey found several potential roosting areas and access points around both cottages including gaps under slates and ridge tiles, open window apertures, gaps in the intersection of bargeboards and stone work and gaps in the eaves. Scattered droppings were found in the loft space of Miner's Cottage; no droppings were found in the loft space of Bryntail cottage; and no droppings or evidence of bats was found around the exterior of either of the cottages. The toilet block outbuildings were considered to have negligible suitability for bats and while they were observed during the emergence surveys, they were not required to have further survey and are not discussed in detail in this report.
- 1.4 As the cottages were found to have potential for, and evidence of, roosting bats (the level of potential was not determined in the previous report but is discussed in Section 4), further bat emergence surveys were recommended to determine how bats were using the buildings, as well as the species and number of bats.
- 1.5 Following this recommendation, Enfys ecology were commissioned to carry out two emergence surveys, a static detector survey and a dawn re-entry survey. The emergence surveys were carried out on the 18th June and 16th July 2021; and the static detector was in place between these two dates. Due to the low activity levels within the site, it was considered that sufficient information was gathered from these surveys, and it would have been disproportionate to undertake a dawn re-entry survey. This report is considered valid for a period of 18 months from the latter date (July 2021) in accordance with best practice.
- 1.6 As the initial PRA report was produced by Jon Sloan Ecology (Jon Sloan Ecology, 2021), this report does not include a PRA survey or detailed descriptions of the buildings and should be read alongside the original survey report. The loft spaces of both cottages however, were inspected for any recent evidence of bats at the time of the first emergence (18th June 2021).
- 1.7 All British bats (and roost sites) are protected under the Wildlife and Countryside Act (WCA) 1981 (as amended). In addition, all bats are classified as European Protected species by The Conservation of Habitats and Species Regulations 2017 (as amended). Under this legislation, it is an offence to kill, injure, or disturb a bat, or to destroy any place used as a shelter by bats.

2.0 Methodology

- 2.1 The dusk emergence and static detector surveys were undertaken in June and July 2021, which is within the peak bat survey months of May to August (inclusive).
- 2.2 Both emergence surveys were carried out by Keymar Wake (accredited on NRW licence S087351-1), Rhian Hughes (licence holder - S087351-1) and five assistants, who monitored both cottages on all elevations and focused on the potential roosting features identified during the PRA. The emergence surveys began approximately 30 minutes before sunset and continued for approximately 90 minutes after sunset.
- 2.3 Records were taken if any bats were observed emerging from the buildings, and of any other bat activity taking place in the area during the survey. The surveyors used Batbox Duet and Anabat Scout detectors, which recorded any bat calls for further analysis. Infrared and thermal imaging cameras were set up on suitable features on the east and west elevations of Miner's cottage during both emergence surveys, to record any bats emerging from the building that may have been missed after the light levels dropped. The bat call data was analysed using Anabat Insight Software with the BatClassify plugin set at 80% confidence to auto analyse the bat calls; all of the calls were then reviewed and re-assessed as required.
- 2.4 Anabat express detectors were left in both loft spaces of Miner's cottage between June and July for the static detector survey, to record any bats within these areas.
- 2.5 *Limitations*
 - 2.5.1 As described in the original PRA report (Jon Sloan Ecology, 2021), there was a loft space over the south west section of Miner's Cottage (Loft Space A), and an upper floor in the roof void of the north east section of the building (Loft Space B); see Figure 3.1. Loft space B had an open window aperture on the north eastern gable so any bats recorded on the express in this roof void would not necessarily be within the building as it would likely pick up any bats flying past the open window; however, it was considered that the results would give an indication of bat activity around the building, and can be compared with the express data within the enclosed loft space to the south west.
 - 2.5.2 Due to discrepancies with the time stamps on the infrared and thermal imaging cameras, it was not possible to know the exact time that the recordings took place. Approximate timings were calculated based on the time the cameras were turned on and how long into the recording an event happened; it is considered that this would still provide sufficient information to inform the results and conclusions.
 - 2.5.2 Bats are a difficult group to survey, and as bats are highly mobile animals it is possible that they could move into a building after the survey has occurred. Therefore, it cannot be guaranteed that bats will not move into the building following the survey.

3.0 Activity Survey Results

3.1 Loft Inspections

The loft spaces of both cottages were inspected prior to the first emergence survey to assess whether there was any further evidence of bats using these areas since the initial PRA survey. There were scattered droppings, characteristic of brown long eared bats (BLE), throughout Loft Space A of Miner's Cottage but no large piles to suggest high numbers of bats, or to show potential access points; there was a single dropping found in Loft Space B. There were five loft spaces spanning the length of Bryntail cottage, each separated by dividing stone walls that did have gaps and holes along the top that could be utilised by bats to move between the loft spaces. No droppings or evidence of bats was found within any of the loft spaces of Bryntail Cottage; as per the original PRA report (Jon Sloan Ecology, 2021); and the loft spaces appeared very well sealed with no visible light gaps from the inside. Figure 3.1 shows the two cottages surveyed and the location of scattered droppings.

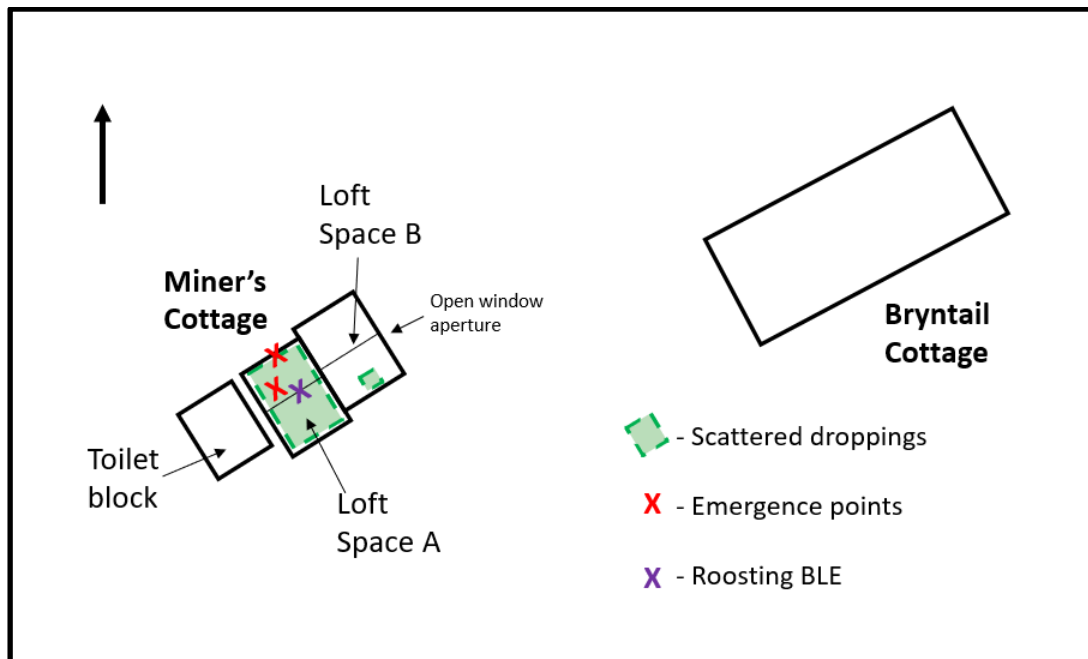


FIGURE 3.1 – PLAN OF BUILDINGS AND LOCATIONS OF DROPPINGS AND EMERGENCE POINTS (NOT TO SCALE)

3.2 *Emergence Surveys*

Table 3.1 provides details of the emergence surveys with timings and weather conditions. The activity of each survey is described in Tables 3.2 and 3.3 below.

TABLE 3.1 – SUMMARY OF SURVEY DETAILS

Survey	Date	Start time	Sunset / sunrise time	End time	Temp. at start	Weather
Dusk Emergence	18/06/2021	21:10	21:40	23:10	14°C	100% cloud cover, dry, light breeze
Dusk Emergence	16/07/2021	20:58	21:28	22:58	19°C	0% cloud cover, dry, no wind.

3.2.1 *First Dusk Emergence*

The results of the first dusk emergence survey are detailed in Table 3.2.


TABLE 3.2 – SUMMARY OF FIRST EMERGENCE SURVEY ACTIVITY

Time	Species	Activity	Emerge?	Location
21:31 (First bat)	Noctule	Call recorded but not seen or heard by surveyors	No	Recorded on detector to north east of Bryntail Cottage
21:36	Soprano Pipistrelle (S.pip)	Heard not seen	No	Recorded on detector to the south east, between the two cottages
21:38 – End of survey	S.pip	Regular passing and foraging	No	Around and in between both cottages; individual or small number of bats
21:52 – End of survey	Common pipistrelle (C.pip)	Regular passing and foraging	No	Around and in between both cottages; individual or small number of bats
22:02 + 22:35	Noctule	Heard not seen	No	Recorded by several surveyors across site
22:36	Brown Long Eared (BLE)	Brief pass - heard not seen	No	Recorded on detector to the north east of Bryntail cottage
23:11	Myotis sp. (characteristic of whiskered/Brandt’s)	Heard not seen	No	Recorded on detector to the south east, between the two cottages
<p>General Activity Individual, or very low numbers of common and soprano pipistrelles were observed and recorded foraging around both of the cottages, and mature trees on site, throughout the survey. There were three brief noctule passes recorded; the first was not heard by surveyors and the others were heard by several surveyors, suggesting they were commuting over the site. One BLE call was recorded towards the north east of the site and one brief <i>Myotis sp.</i> call was recorded to the south of the site, in between the two cottages. No bats were observed emerging from either cottage by surveyors and no emergences were recorded on the infrared or thermal imaging cameras. No other species of bat were heard or seen throughout the survey.</p>				

3.2.2 *Second Dusk Emergence*

The results of the first dusk emergence survey are detailed in Table 3.3.

TABLE 3.3 – SUMMARY OF SECOND EMERGENCE SURVEY ACTIVITY

Time	Species	Activity	Emerge?	Location
21:57 – End of Survey; First bat	S.pip	Occasional passing and foraging	No	Around and in between both cottages; individual or small number of bats
21:59 – End of survey	C.pip	Occasional passing and foraging	No	Around and in between both cottages; individual or small number of bats
22:25; 22:32; 22:34	BLE	Brief calls – Heard not seen	No	The first recorded call was from the centre of the site, between the two cottages. The others were recorded to the north west of the Miner’s cottage.
Approx. 22:30 – 22:35	Unknown bat x 2 (35 seconds apart)	Recorded emerging on infrared camera; not seen by surveyors but BLE’s were recorded around the same time	Yes	The first bat appeared to emerge from the north west roof pitch where there are loose slates and the second appeared to emerge from the hole in the window. 
22:58	Noctule	Passing – Heard not seen	No	Recorded on detector to the south east of the site.

General Activity

Individual, or very low numbers of common and soprano pipistrelles were observed and recorded foraging around both of the cottages, and mature trees on site, throughout the survey; occasionally but not consistently. Two bats appeared to emerge on the infrared camera from the north west elevation of Miner’s Cottage between 22:30 and 22:35; the bats were not seen or heard by surveyors but the timing coincides with BLE calls recorded to the north west of Miner’s cottage. There was one brief noctule pass, recorded on one detector, likely commuting over the site from a distance. No other bats emerged from the buildings and no other species of bat were heard or seen throughout the survey.

3.3 *Static Detector Surveys*

The static detectors were placed in a central location of Loft Space A and B in Miner’s Cottage, from 19th June – 16th July 2021. As there was no evidence of bats using the loft spaces in Bryntail Cottage, and no apparent access points into the loft spaces, it was not considered necessary to leave static detectors within Bryntail Cottage. The weather throughout the static survey period was agreeable with typical bat survey conditions. The static in Loft Space A recorded only BLE and *Myotis sp.* (characteristic of whiskered/Brandt’s but this could not be confirmed), and they were never recorded in the loft space at the same time; there were several nights where no bats were recorded within the loft space. The static in Loft Space B primarily recorded common and soprano pipistrelles, with occasional BLE passes; however, the calls of all species (except one foraging BLE call) were very weak and short suggesting they were recorded from passes outside the open window aperture as opposed to from inside the roof void. There were two calls recorded on the 22nd June that loosely resembled those of greater horseshoe (GHS) bats; again, these calls were short and weak suggesting it was not from inside the building, but identification could not be confirmed. The data from the entire survey of Loft Space A is provided in this report; ten nights of data from Loft Space B are provided for the purpose of the report, though the whole data set was analysed and there were no results on any night that differed from the first ten nights. The results from the static detector surveys are shown in Table 3.4 and 3.5.

TABLE 3.4– STATIC DETECTOR RESULTS FROM LOFT SPACE A

Date	Time	Species
19/06/2021	01:02; 01:09; 01:11; 01:13; 01:17-01:18; 01:27; 03:17	BLE
20/06/2021 – 27/06/2021	-	No Calls Recorded
28/06/2021	03:18	<i>Myotis sp.</i> (poss whiskered/Brandt’s) – just one call
29/06/2021	22:09	<i>Myotis sp.</i> (poss whiskered/Brandt’s) – just one call
30/06/2021	21:54-21:55; 22:00-22:01; 22:06-22:07; 22:12	<i>Myotis sp.</i> (poss whiskered/Brandts)
01/07/2021	22:15	BLE – just one call
02/07/2021	22:14	BLE – just one call
03/07/2021	22:16	BLE – two calls
04/07/2021 – 07/07/2021	-	No calls recorded
08/07/2021	22:09 – 22:10; 22:19	BLE
09/07/2021	-	No calls recorded
10/07/2021	22:05	BLE – just one call
11/07/2021	21:56	BLE – just one call
12/07/2021 – 16/07/2021	-	No calls recorded

TABLE 3.5– STATIC DETECTOR RESULTS FROM LOFT SPACE B

Date	Time	Species
19/07/2021	23:01; 23:07; 00:16	C.pip
	00:46	BLE – clear foraging call
20/07/2021	22:20; 23:19; 23:24; 23:44 – 23:47	C.pip
	23:31; 03:45	BLE
	00:48-00:49	S.pip
21/07/2021	22:34; 22:49; 00:44	S.pip
	00:08 – 00:11; 00:16 – 01:12	C.pip – regular short calls
22/07/2021	0024; 0025	Possible GHS
23/07/2021	01:24; 04:20 – 04:25	C.pip
	01:58	S.pip
24/07/2021	01:37; 01:50; 02:01; 02:09-02:12	C.pip
25/07/2021	22:01 – 04:23	C.pip – regular short calls
	22:14; 01:42	BLE
26/07/2021	22:49 – 04:32	C.pip – sporadic short calls
27/07/2021	22:34 – 04:09	C.pip – sporadic short calls
	23:33	BLE
28/07/2021	23:19 – 04:23	C.pip – sporadic short calls
	02:33	BLE

3.4 *Incidental Sightings*

While the static detector was been collected on the morning of the 17th July 2021, there was one BLE observed roosting against the central ridge beam in Loft Space A of Miner’s Cottage (Figure 3.1).

3.5 *Nesting Birds*

The initial PRA showed evidence of swallows and pied wagtails nesting within Bryntail Cottage (Jon Sloan Ecology, 2021); evidence of swallows nesting was also found in Loft Space B and the ground floor workshop underneath of Miner’s Cottage during the loft inspection in June. No birds were observed actively using either of the cottages to nest within during the emergence surveys.

4.0 Discussion

4.1 *Proposed Works*

4.1.1 The proposed works comprise remedial works and renovations to both Bryntail and Miners cottage; the demolition of the existing toilet block outbuildings of Miner’s cottage and the construction of a new corrugated metal extensions to the north east and south west elevations (Figure 4.1); and the rebuild of the current extension on the north east elevation of Bryntail Cottage (Figure 4.2). The construction and re-build of the extension buildings on both cottages will be the same height as the current outbuildings and extension and will not

interfere with the roofs of either cottage. Remedial works to both cottages includes the re-pointing and painting of the stone walls, the replacement of doors and overhaul of the current porch canopies. The remedial works to the roofs of both cottages are the same; the natural slate roofs and chimneys will be retained as much as possible and only receiving localised repairs where necessary, including the replacement of slates and felt where required. The existing fascias and bargeboards will have new softwood replacements and the guttering will be replaced. Internally the loft spaces will be retained but the existing insulation will be replaced with sheep's wool; the proposed plans specify that a clear ventilated path at the eaves, from behind the fascia into the loft space, will be maintained (Figure 4.3). The existing mature trees on site will be retained and the existing hedge to the north of Bryntail cottage will be rejuvenated.

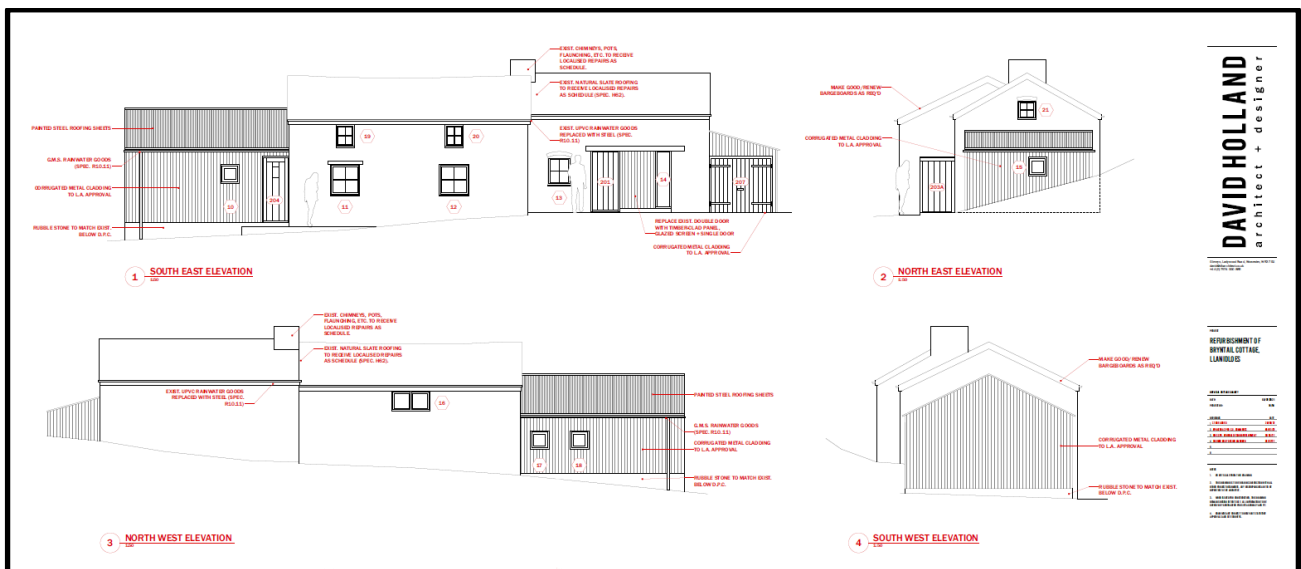


FIGURE 4.1– PROPOSED PLANS FOR MINER'S COTTAGE ©DAVID HOLLAND ARCHITECTURE

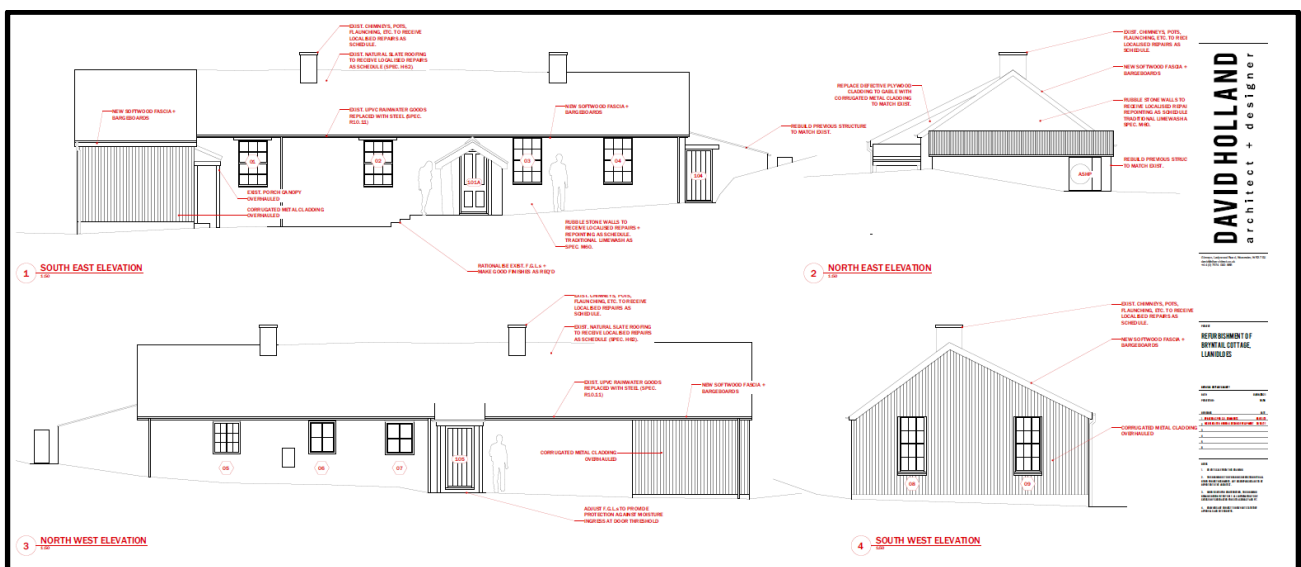


FIGURE 4.2– PROPOSED PLANS FOR BRYNTAIL COTTAGE ©DAVID HOLLAND ARCHITECTURE

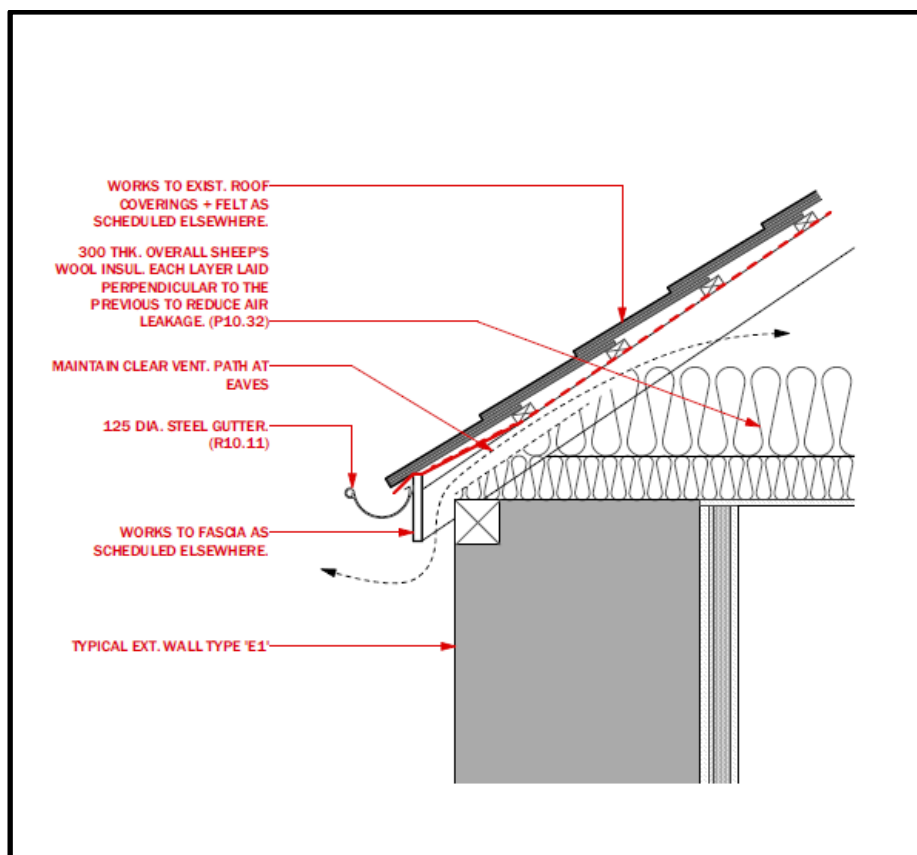


FIGURE 4.3– PROPOSED REMEDIAL WORKS TO THE ROOFS OF BOTH COTTAGES ©DAVID HOLLAND ARCHITECTURE

4.2 Designated Sites

4.2.1 There are no designated sites within 1km, and no sites designated for bats (LHS or GHS) within 2km, of the survey area; therefore, the proposed works will not have any impact on any statutory or non-statutory designated sites.

4.3 Bats

4.3.1 Miner's Cottage had several potential roosting features and access points for bats as detailed in the original PRA report (Jon Sloan Ecology 2021). There was potential for crevice dwelling bats across both sections of the cottage under the slates, fascias and barge boards, as well as limited potential within the shallow holes in the stone walls. There were several access points into Loft Space A through the eaves and broken slates and the felt lined loft space provided suitable roosting space for crevice dwelling bats, including species such as BLE and Natterer's that prefer an enclosed space to fly in before emerging. Scattered droppings characteristic of BLE were found throughout the loft space. The ground floor of this section of the building was accessible through a hole in a window on the north western elevation;

no droppings or evidence of bats was found within the ground floor room but a bat was recorded emerging from this hole in the window. Loft Space B was easily accessible by bats and birds through the open window aperture and open hatch on the floor, but was subject to high light and air flow levels during the day through these access points and therefore considered unsuitable for day roosting by free-hanging species. One dropping was found in Loft Space B, again characteristic of BLE, suggesting that bats have entered this loft space but there was no evidence of it being used as a regular night roost (e.g. no piles of droppings typical of a night roost). Again, this loft space was lined with felt and therefore provided suitable day-roosting areas for crevice dwelling bats.

- 4.3.2 Bryntail Cottage offered the same external roosting opportunities for crevice dwelling bats as Miner's Cottage, under slates, fascias and barge boards on the main roof and the porch canopy roofs, as well as limited potential in shallow crevices in the stone walls. Access into the loft spaces of Bryntail cottage appeared to be limited; while there appeared to be gaps in the eaves externally, there were no visible light gaps from the interior of the loft spaces and no evidence of bats within them. There were no droppings found around any of the features on the exterior of the cottage.
- 4.3.3 The surrounding habitat was suitable for bats consisting primarily of pastoral farmland, and scattered woodland blocks 400m from the site and Llyn Clywedog within 500m to the north and west. The site itself contained several large mature trees and hedgerows, but was otherwise quite exposed with limited connectivity to the wider areas through defunct hedgerow boundaries and scattered trees. There were scattered buildings in the area but no urban environments or areas with many buildings that would be subject to higher levels of lighting and noise.
- 4.3.4 Under the Good Practice Guidelines (Collins, J., 2016), the site as a whole is considered to have **moderate potential** for bats. This is defined as '*A structure with one or more potential roost sites that could be used by bats due to its size, shelter, protection, conditions and surrounding habitat...continuous habitat connected to the wider landscape that could be used by bats for commuting and foraging...but unlikely to support a roost of high conservation status*'. It cannot be completely discounted that the site, particularly Loft Space A of Miner's Cottage could be used as a maternity roost, but there were limited spaces available for high numbers of crevice dwelling bats, and the size of the suitable loft space (6m x 4m x 1.75m high) doesn't quite offer the preferred space, or height in particular, for BLE's to use. There was no evidence of either of the cottages being used as a maternity roost during any of the surveys.
- 4.3.5 Surveyors did not observe any bats emerging from either of the cottages during the emergence surveys. Two bats were recorded on the infrared camera emerging from the north west elevation of Miner's Cottage; one from under a raised slate on the roof pitch and one from the hole in open ground floor window. These bats were considered to be BLE due to their pale appearance on the camera, the later emergence time, and the timing coinciding with BLE calls recorded in the same area; however, this could not be confirmed as common

and soprano pipistrelles were calling within the site at the same time. The static detector in Loft Space A showed the loft space was used occasionally by BLE and *Myotis sp.* (thought to be whiskered/Brandt's but identification was not confirmed; all species of *Myotis* will be mitigated for in Section 5), on an apparent mutually exclusive basis. One BLE was also found within Loft Space A of Miner's Cottage the morning after the emergence survey when the static detector was collected. No bats were observed emerging from Bryntail Cottage during the activity surveys. There were moderate levels of activity from low numbers of bats around the site, with at least four species using the site to commute through or forage within (common and soprano pipistrelle, *Myotis sp.*, and BLE). There were two possible GHS calls recorded from the static in Loft Space B of Miner's Cottage. Both calls were very brief and very weak so confirmation of this was not possible and suggests that it was not recorded from within the loft space. There were no other calls from the month that the static was in position, or on any of the emergence surveys, that resembled GHS, suggesting that any visits to the site are infrequent; and there was no evidence to suggest they are roosting within the site.

- 4.3.6 Miner's cottage is considered to be an occasional or temporary day roost for a small number of BLE and *Myotis* bats; as well as potentially common and soprano pipistrelle bats. Loft Space B has potential to be used as a night roost for crevice dwelling and free hanging species but there was no evidence found of this; such as in the form of dropping piles; and the majority of the static detector calls were short and weak suggesting they were recorded from bats passing the loft space as opposed to entering it; with the exception of one clear BLE foraging call. Therefore, Loft Space B is not considered to be a night roost but it is used infrequently by foraging bats within the site. The survey results did not show Bryntail cottage to be a known roost but it had several available features to crevice dwelling bats and it should be assumed that individual or small numbers of bats would use these features on an occasional basis. The majority of loft spaces within both cottages will be retained as part of the works; with the exception of Loft Space B as this is currently a converted upper floor room and will continue to be so.
- 4.3.7 As the site hosts a known bat roost, a licence will be required from NRW before any works can commence. The proposed works involve the retention of Loft Space A of Miner's cottage and all the loft spaces of Bryntail Cottage, all of which can be made available to bats on site. The ventilated pathways proposed from the eaves will ensure access points in these areas will still be available and localised repair will allow for the retention of current roosting areas under the slates with the installation of access slates. Therefore, the proposed works will not result in the destruction of a bat roost and will not have a negative impact on the favourable conservation status of bat populations within the area as long as mitigation and compensation measures are in place, as well as timing constraints of works and specific working method. These will be provided in detail within the licence method statement but some mitigation measures are included (but not limited to) in Section 5.
- 4.3.8 The process of works and the increased lighting levels during the works and after the completed works, when the cottages are in use again, have the potential to cause some

disturbance to bats using the site, and immediately adjacent areas, without mitigation. The RAMs detailed in section 5 will be put in place to reduce any risk or disturbance to bats within the site.

4.4 *Nesting birds*

- 4.4.1 Both cottages provided suitable nesting habitat and there was evidence of nesting swallows and pied wagtails. The proposed works will result in the loss of suitable bird nesting habitat. RAMs to reduce risk to nesting birds and compensatory nesting recommendations are provided in section 5.

5.0 Mitigation, Compensation and Reasonable Avoidance Measures (RAMs)

5.1 *Bats*

- 5.1.1 **As the site is a known bat roost, no works to the building must commence until a licence has been obtained from NRW. A licence can only be applied for following the granting of planning permission and the discharge of any ecology related conditions. Once submitted, the licence application takes 40 working days to be processed by NRW (or more if any there are any queries).** In order to apply for a licence a suitable method statement detailing the specific working method and proposed mitigation for any loss of habitat or disturbance to bats must be created by a suitable qualified ecologist and submitted to NRW.

- 5.1.2 Mitigation measures and recommendations will be included in the licence application, and are also included below.
- The toilet block outbuildings were considered to have negligible potential for bats and nesting birds in the initial PRA survey (Jon Sloan Ecology, 2021) and the emergence survey results support this; therefore, no timing constraints or specific mitigation for bats is required for the demolition of these buildings. General RAMs and lighting guidance will be followed at all times to reduce the risk to bats and birds within the site during the works.
 - As the cottages are not being used as a maternity roost, and only used by a small number of common species, works to the roof structures and the walls of the cottages can be carried out at any time of year.
 - Prior to works being carried out, a toolbox talk will be given to all construction workers informing them of the species involved and specific working methods to adhere to. A log of participants will be kept.
 - The works to all of the roof structures of both cottages, including the replacement of any ridge tiles, slates, barge boards and fascias; as well as the re-pointing of the stone walls; must be undertaken by hand and under a watching brief of a licensed ecologist

who is named on and authorised to act under the specific licence granted by NRW for this works, and will determine areas that need to be supervised. Areas that can be inspected, such as the loft spaces, holes in the walls and behind fascias, will be inspected with a torch and/or endoscope by the licenced ecologist prior to works commencing. If a bat is found and accessible it should be captured and placed in an appropriate bat box that will be made available onsite prior to works commencing (which will contribute to one of the proposed mitigation bat boxes - see 5.1.4). If a bat is found and is not accessible works will start from the furthest point from the bat and continue in a directional manner to encourage the bat to leave of its own accord. If a hibernating bat is found then all works must stop and be postponed until after the hibernation season if possible. If it is necessary to continue works through the hibernation season then a bat box suitable for hibernating bats will need to be made available on site for any bats found to be moved to.

- Where replacement felt is required within the loft spaces it should be the same as the existing; non-breathable Bitumen 1F felt. Breathable membranes can be fatal to bats when they get caught in the fibres and cannot escape.
- Should any timber frames need to be replaced in the roof, they will only be untreated or pressure treated wood. If treatment is required, only timber treatments listed on Natural England Technical Information Note TIN092 will be used.
- Sufficient compensatory roosting opportunities and enhancements will be provided for bat species within the site to contribute to biodiversity net gain (see 5.1.4). These will include the retention and enhancement of Loft Space A for the BLE and *Myotis* bats currently using Miner's Cottage; providing access into the loft spaces of Bryntail cottage so these areas are also available; replacement roosting opportunities with the remedial roof works such as access slates and ridge tiles; and bat boxes erected within the site to enhance the site for crevice dwelling bats.

5.1.3 Lighting

The immediate surrounding habitats of the site are suitable for bats and the emergence survey showed bats using these areas to commute and forage. Therefore, any lighting associated with the site during and after the works has the potential to impact bats and nocturnal birds. To reduce the potential impact of any light spillage on commuting bats during the construction and post construction phases of the development, lighting design for the site (both during the works and of the completed building) should seek to minimise the levels of light along any areas used by bats. The following recommendations should be used when forming the lighting plan for the proposed development (Bat Conservation Trust (20018) and Stone, E.L. (2013)):

General Lighting Guidance

- There must be no lights focused on the hedgerows or mature trees within the site. There will be no illumination of the recommended bat mitigation and bird boxes (see below) once the works are complete.
- Internal luminaires should be recessed in all rooms to minimise light spill and glare via the windows.
- Construction should start at least one hour after dawn and finish at least hour before dusk during the summer months (May – August) to prevent light and noise levels disturbing the bats using the site.
- Any external or security lighting should be limited to provide some dark periods during the night. The lighting should be motion activated, and not stay on longer than one minute, in order to provide maximum darkness when not needed as well as providing safe lighting conditions of residents when required.

The following luminaire specifications are provided by Bat Conservation Trust and Institute of Lighting Professionals (2018) and must be incorporated into the lighting plan for the proposed development.

- All luminaires should lack UV elements when manufactured. Metal halide, fluorescent sources should not be used.
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability.
- A warm white spectrum (ideally <2700Kelvin) should be adopted to reduce blue light component.
- Luminaires should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats
- Column heights should be carefully considered to minimise light spill.
- Only luminaires with an upward light ratio of 0% and with good optical control should be used.
- Luminaires should always be mounted on the horizontal, ie no upward tilt.
- Any external security lighting should be set on motion-sensors and short (1min) timers.
- As a last resort, accessories such as baffles, hoods or louvres can be used to reduce light spill and direct it only to where it is needed.

5.1.4 Mitigation – compensation

The proposed works will result in the modification of a BLE and *Myotis sp.* roost, as well as the potential loss of some access points and roosting features for crevice dwelling bats; this will need to be compensated for within the proposed works. In line with Planning Policy Wales, and following the Environment Wales Act (Section 6) and guidance provided in the recent letter by the Chief Planner in Wales, there is a requirement to ensure that a **net benefit for biodiversity** is also provided in all applications for planning in Wales; and that applications are to be refused if they cannot show a gain of biodiversity. The licence method statement will detail measures to be followed to mitigate for the loss of bat roosting areas; and to enhance the site for bats; and will include (but not be limited to):

- Access slates will be installed on the roof pitches of both cottages, particularly in the area where a bat was recorded emerging on the north west pitch of Miner's Cottage, and in any other areas deemed suitable by the ecologist when the roof repair works start. At least 10 access slates will be used over the two cottages, with at least four on Miner's Cottage and six on Bryntail cottage as it is a larger building. The access slates should provide a combination of internal loft space access, where the felt gap is left open to allow access under the slate (Figure 5.4); and external roosting opportunities for crevice dwelling bats, where they do not provide access into the loft space but provide roosting areas between the slate and the felt (Figure 5.3). Example locations are shown in Figure 5.1a+b but exact locations will be based on replacing the existing features.
- Six access ridge tiles will be installed; two on Miner's Cottage and four on Bryntail Cottage to provide roosting opportunities underneath them, against the felt; as well as access into the loft spaces of Bryntail Cottage (Figure 5.3, 5.4 and 5.1a+b for locations).
- Increased roosting opportunities within Loft Space A will be provided in the form of two panel boxes, that will be created and mounted on each of the internal gable walls. These will comprise a piece of plywood board fitted to 1inch x 1inch timbers with a gap on the underside only so bats can access the space from underneath. Inclusion of a rough sawn timber running parallel to the ridge to provide a "double ridge board" which will also provide increased roosting opportunities.
- Panel boxes (as described above) should be installed in each of the five loft spaces of Bryntail Cottage, erected onto the internal gable walls and the diving stone walls where appropriate.
- Two external bat boxes will be installed on the south eastern and western elevations of each cottage (four boxes in total) as close to eaves as possible and not directly adjacent to any windows (Figure 5.1a+b for locations). It is recommended that woodstone or woodcrete boxes are used as they last longer and require much less

maintenance than wooden boxes. A range of bat boxes are available online and it is recommended that two of the Beaumaris Woodstone bat boxes and two large multichamber bat boxes are installed to provide roosting opportunities for a range of species; the ecologist will approve the bat boxes used if different to those suggested.

- The replacement fascias and barge bargeboards on both cottages will be soft wood (see timber specs above) and have a gap between them and the walls of the buildings of approx. 20-30mm to provide roosting opportunities behind them. The proposed ventilated pathways along the eaves suggest that access will be available for bats into the loft spaces; the ecologist will check there is a sufficient gap for bats to utilise these pathways and if not, suitable sized gaps will be created.
- The loft spaces should not be used for storage or any other reason that will involve someone having to enter them and disturbing the roost. The loft hatches should be retained, however, for the licenced ecologist only, to inspect the loft space in monitoring visits.
- As the current roost is used by a small number of bats on an occasional basis, a full monitoring programme of emergence surveys is considered disproportionate and is unlikely to provide sufficient results as there is only a small chance of encountering bats emerging from the buildings on the day the survey is actually carried out; emergence surveys with no bats present would not mean they are not using the building. Therefore, an internal inspection will be carried out towards the end of the Summer (August – September) the year after the works have been completed, to determine if bats have been in the loft spaces via the evidence of droppings. The bat boxes will be inspected at the same time.



FIGURE 5.2: EXAMPLE OF ACCESS SLATE

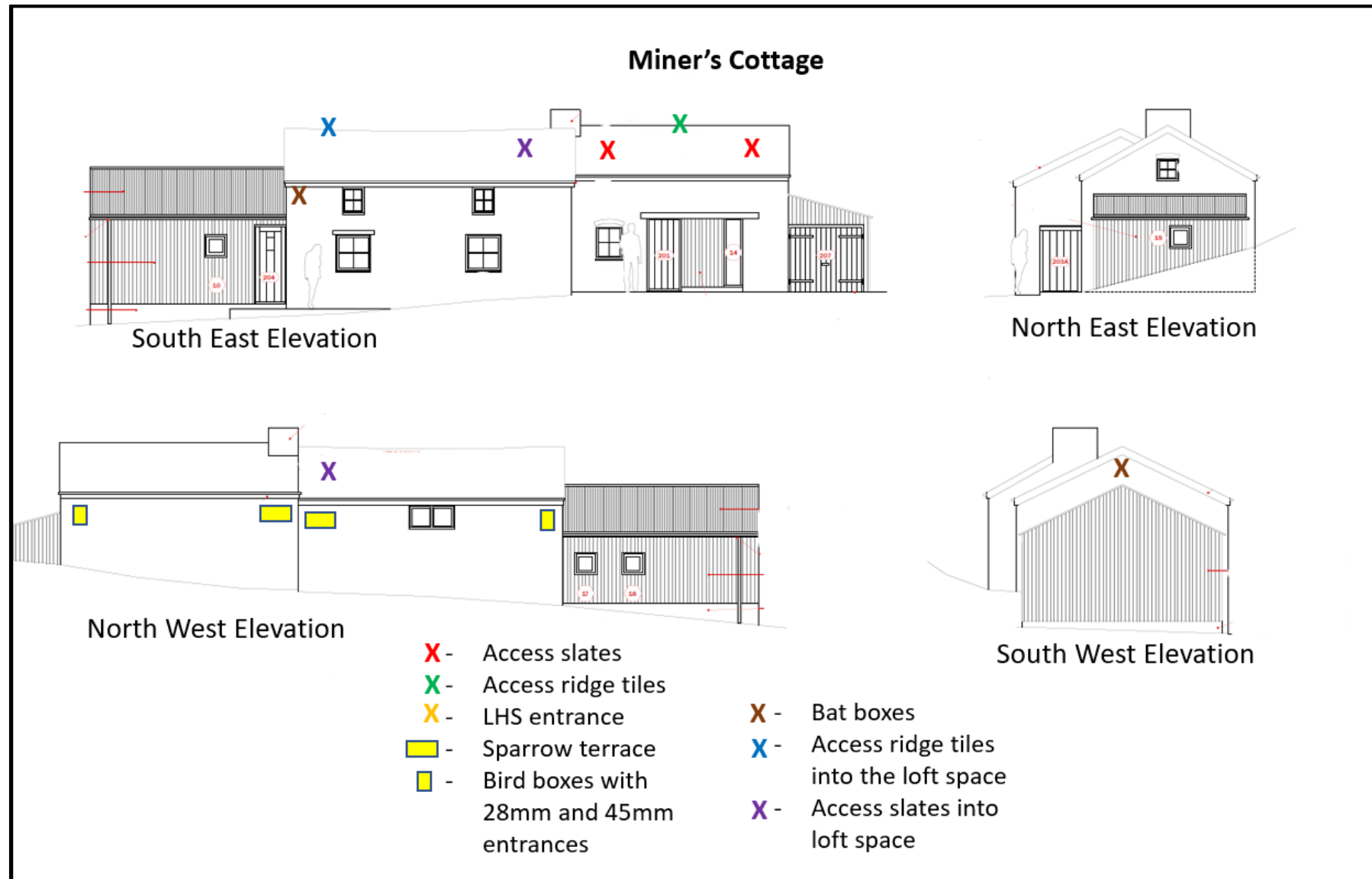


FIGURE 5.1A): PROPOSED LOCATIONS OF BAT AND BIRD MITIGATION – MINER'S COTTAGE. BASE IMAGE © DAVID HOLLAND ARCHITECTURE

Bryntail and Miner's Cottage – Bat Activity Surveys

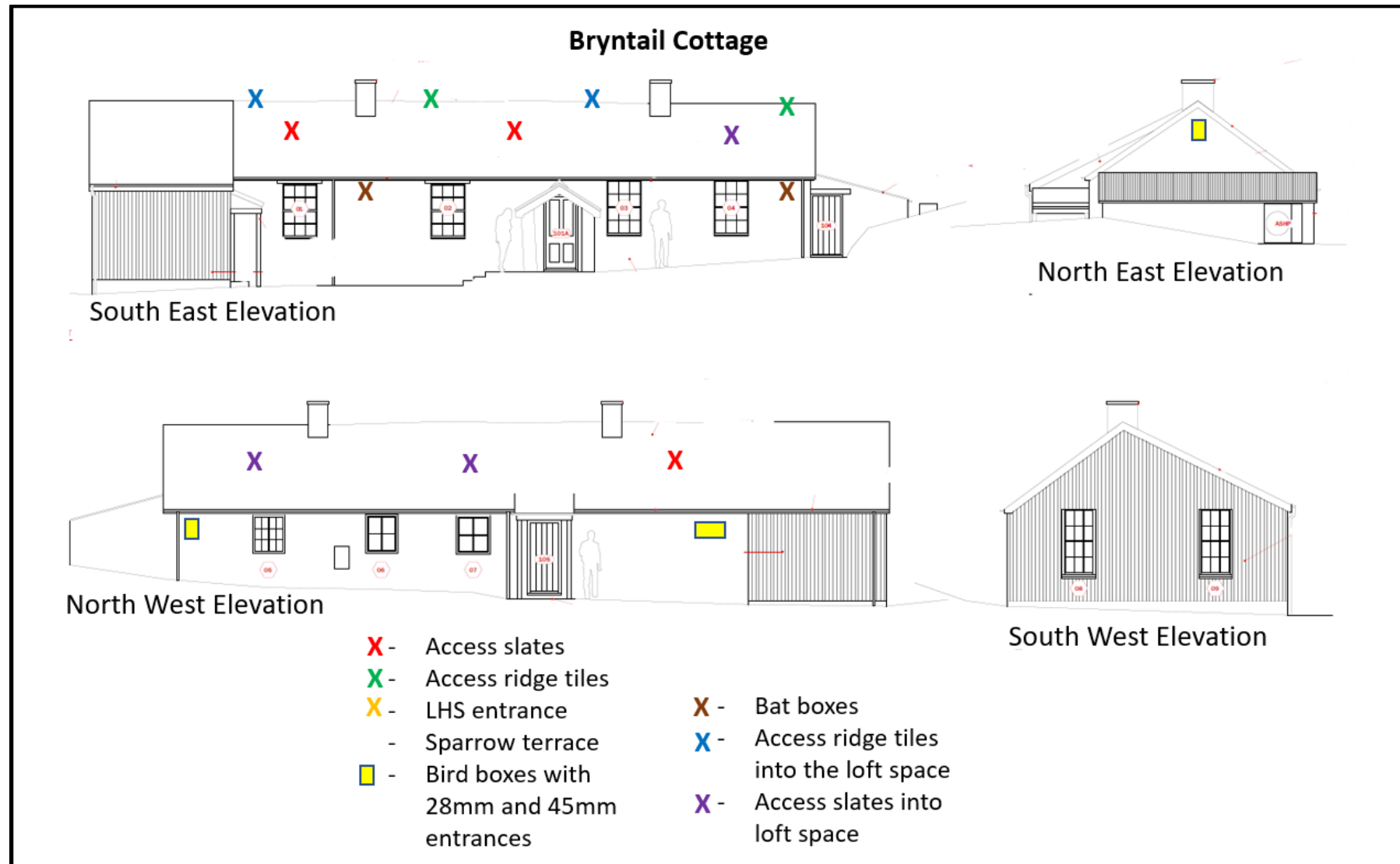


FIGURE 5.1B): PROPOSED LOCATIONS OF BAT AND BIRD MITIGATION – BRYNTAIL COTTAGE. BASE IMAGE © DAVID HOLLAND ARCHITECTURE

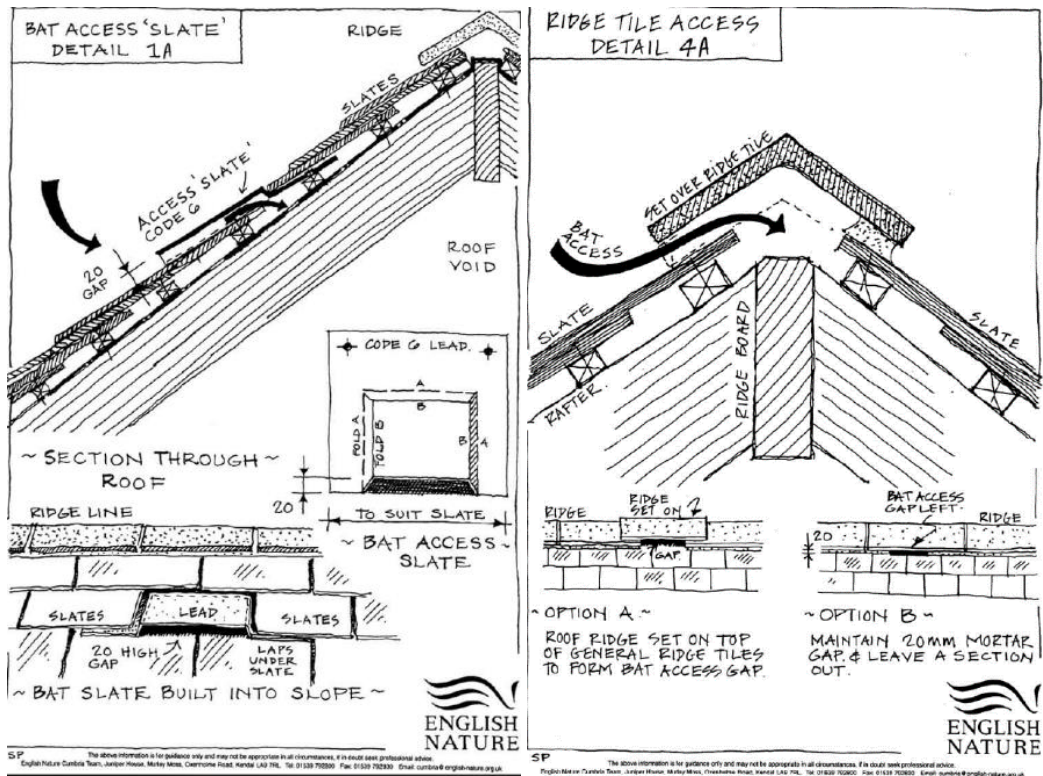


FIGURE 5.3: A) DIAGRAM OF ACCESS SLATE INSTALLATION; B) EXAMPLE OF RIDGE TILE ACCESS

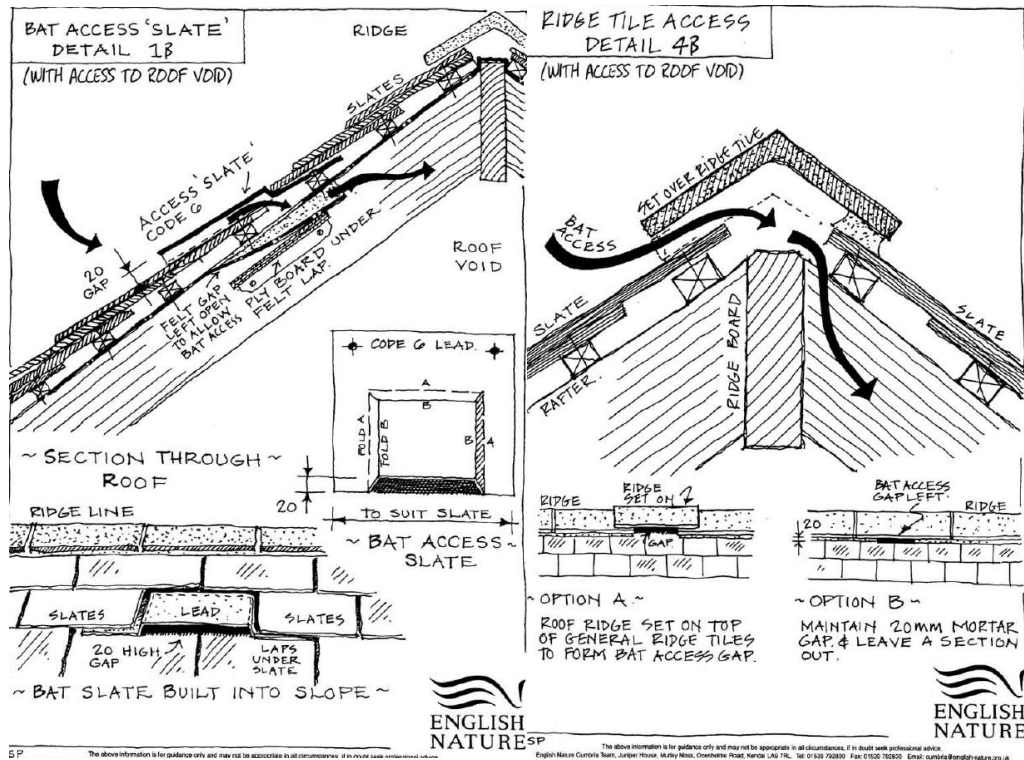


FIGURE 5.4: A) DIAGRAM OF ACCESS SLATE B) RIDGE TILE ACCESS – INTO LOFT SPACE

5.2 *Nesting birds*

- 5.2.1 Swallows and other birds nests were found within both cottages the site. The works should therefore be undertaken outside of the bird nesting season (March - September inclusive) to reduce the risk of disturbance to nesting birds. Should it be necessary to carry out works within the nesting bird season, a nesting bird check should be carried out by an ecologist immediately prior to (no more than 48hrs before) works commencing to ensure that no active nests will be affected. If active nests are found then all work in the vicinity of the nest **must be delayed** until all chicks have fledged.
- 5.2.2 To compensate for the loss of bird nesting habitat in the conversion works; and enhance the site for birds; bird nesting opportunities will be created with the provision of bird boxes around the site. A minimum of seven boxes suitable for small birds need to be erected on site (four on Miner's cottage and three on Bryntail), - three suitable for *Passer domesticus* (house sparrows) with a 32 mm entrance (preferably in a multicavity terrace form); two for smaller birds (28 mm) and two suitable for *Sturnus vulgaris* (starlings) with a 45 mm entrance. Examples of suitable bird boxes are: vivara pro woodstone house sparrow nest-box; vivara pro seville 28mm woodstone nest-box; vivara pro woodstone starling nest-box. Woodstone next boxes are more durable and require less maintenance than wooden boxes. These boxes should be mounted onto the northern elevations of the cottages (Figure 5.1a+b for locations).
- 5.2.3 Swallow nesting habitat will be lost as part of the proposed works. This can be compensated for by providing space for swallows within the roof voids of one or more of the corrugated metal extensions proposed within the site. A false or wooden panel ceiling should be installed to create a 'loft space' of at least 1m in height, within the extension and create an area available for swallows that will not be subject to disturbance when the building is in use. Within this loft space, nesting platforms consisting of a wooden shelf 100mm wide and sloping slightly forwards (at an angle of no more than 30°) will be installed on the inside of each roof pitch, attached to a purlin. This ledge should be at least 80cm from the apex of the roof, preferably more and the ledges should be approximately 1.5m away from each other to encourage multiple nesting sites. At least two gaps of 50mm by 70mm must be provided within the eaves to allow access, a minimum of one on each side of the building. Swallows can enter through this small gap, and do not require much light. Should the false ceiling need to be installed higher than the eaves of the extension buildings, access points can be created under the barge boards on the gable ends.

6.0 Legislation

6.1 *Bats*

6.1.1 The Wildlife and Countryside Act (WCA) 1981 (as amended) forms the key legislation protecting habitats and species in the UK. All UK bat species are fully protected under the 1981 Act through inclusion on Schedule 5. All bats are also listed under Schedule 2 of the Conservation of Habitats and Species Regulations (2017) which transcribes the EC Habitats Directive into UK law. In combination, this legislation makes it an offence to:

- Deliberately or recklessly take, injure or kill a bat;
- Deliberately or recklessly damage or destroy a place or structure used by bats for shelter or protection;
- Deliberately or recklessly obstruct access to a bat roost; or
- Deliberately or recklessly disturb bats while occupying a roost.

6.1.2 Bat roosts are protected under these laws whether the animals are present at the time of survey or not. Under both laws the Welsh Government and D.E.F.R.A. are empowered to issue licences to carry out work to bat roosts for reasons of overriding public interest. It is not illegal to tend to a disabled bat pending recovery.

6.2 *Birds*

6.2.1 In addition, under the Wildlife and Countryside Act, 1981 (as amended) and the Countryside and Rights of Way, 2000, all wild birds, their nests and eggs are protected during the breeding season (typically March to August inclusive). This makes it an offence to:

- Intentionally kill, injury or take any wild bird.
- Take, damage or destroy the nest of a wild bird included in Schedule ZA1.
- Take, damage or destroy the nest of any wild bird while that nest is in use or being built.
- Take or destroy an egg of any wild bird.

7.0 References and Useful Information Sources

Bat Conservation Trust (2018) Bats and artificial lighting in the UK- bats and the built environment series www.bats.org.uk

Collins, J. (ed.) (2016) *Bat Surveys for Professional Ecologists: Good Practice Guidelines* (3rd edn). The Bat Conservation Trust, London. ISBN-13 978-1-872745-96-1

Mitchell-Jones, A. J (2004) *Bat Mitigation Guidelines*, Natural England

Mitchell-Jones, A. J. & McLeish, A. P. (1999). *The Bat Workers' Manual (2nd Ed.)*. JNCC, Peterborough. ISBN 1-86107-462-X. [3rd edition in 2004].

Sloan, J. (2021) BATS – Preliminary/ Scoping Survey; Bryntail and Miner's Cottage. Jon Sloan Ecological Consultants.

Stone, E.L. (2013) Bats and lighting: Overview of current evidence and mitigation guidance