

Brithdir,
Llwynmawr, Llangollen, LL20 7BE

Bat survey and mitigation plan

For: Jo and Matthew Wilton

(Agent: Geoff Brown)

June 2017
Mitigation Plan amended November 2018 to reflect
revised extension location and size

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Gerald Longley Ecological Consultants

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1.0 INTRODUCTION

1.1 Background – Gerald Longley

Gerald Longley Ecological Consultants (GLEC Ltd) has been commissioned to undertake a Bat Survey for a proposed development at Brithdir, Llwynmawr, Llangollen, LL20 7BE (national grid reference SJ22413611). Gerald Longley has two decades of experience of wildlife surveying and, prior to working as an independent ecological consultant, held posts as Conservation Officer with Montgomeryshire Wildlife Trust and Head of Shrewsbury Countryside Unit.

1.2 Background – This Survey

The development proposal includes demolishing an existing tin shed and constructing a new, two-storey extension on the north side of the house. The request for this bat survey comes from the client's need to ensure that if the buildings are being used by protected species, notably bats or nesting birds, their conservation needs are met and the law is not broken.

Under the law, a bat roost is any structure or place used for shelter or protection. "Structure" could be any building, wall, well, cave or mature tree. Bats use many roost sites and feeding areas throughout the year. These vary according to bat age, condition, gender and species, as well as season and weather. Since bats tend to re-use the same roosts for generations, the roost may be protected whether the bats are present or not. A full citation of the law with regard to bats and birds is given in the Appendices.

1.3 Report Summary

Brithdir, Llwynmawr, Llangollen, LL20 7BE Bat Survey with Mitigation Plan

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A Bat Survey based on Bat Conservation Trust guidelines (BCT, 2016) was carried out by GLEC Ltd on a house at Brithdir, Llwynmawr, Llangollen, LL20 7BE. The survey consisted of a thorough daytime inspection followed by two evening and one pre-dawn bat activity surveys between 30 May and 27 June 2017. Works to demolish an existing tin shed and build a new two-storey extension on the north side of the house are proposed.

A maximum count of six whiskered bats was recorded roosting in the west attic of the house at Brithdir. Maximum counts six soprano pipistrelles and two common pipistrelles were also recorded roosting under cladding and in the roof of the house. All numbers are approximate. These surveys establish that the house at Brithdir is a bat roost and the bats' presence is therefore a material consideration for any works or planning application.

It is recommended that:

1. The presence of roosting bats is a constraint to the proposed works. If works were to go ahead without approved mitigation, it is likely that bats would be negatively affected, especially if works were carried out in the spring or summer.
2. For the works to be carried out, a Mitigation (European Protected Species) Licence with regard to bats will need to be applied for from Natural Resources Wales, once planning consent has been granted.
3. A brief Bat Mitigation Plan (**updated Nov 2018 to reflect a revised extension location and size [smaller]**), including a Method Statement, has been drawn up and is presented in this report. It includes such matters as:
 - a) Timing of works
 - b) Worker/contractor induction on bat presence.
 - c) Contingency for discovering bats.
 - d) Provision of bat boxes.
 - e) Protection of existing/creation of new bat roosts and entry/exit points.
 - f) Applicant to provide details of the mitigation with their application.
 - g) Monitoring

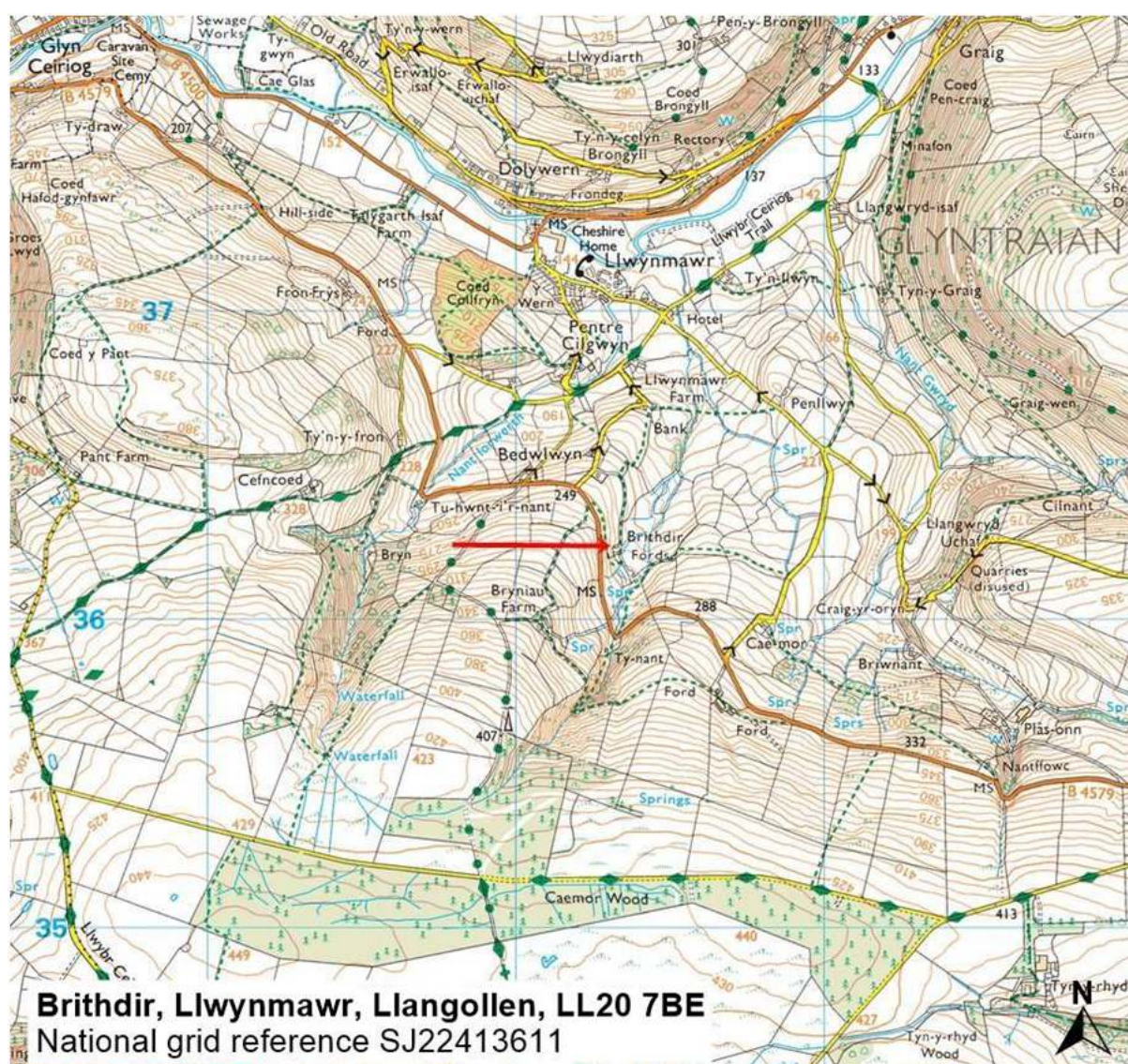
2.0 METHODOLOGY

2.1 Aims of the Survey

- To establish the actual or likely presence or absence of bat roosts and/or bat species in the house and tin shed at Brithdir.
- To establish the presence of any nesting birds in or on the building.
- To make recommendations accordingly.

2.2 Desk Study

The 1:25000 Ordnance Survey map covering the site, and aerial photos accessed from the internet, were scrutinised to initially assess the wildlife value of the proposed development site and surrounding habitat at a crude level. This looked for any semi-natural habitat that may be of value to wildlife, for example ponds, hedges, parkland, wetland, and woodland with interconnecting habitat links. Searches were made on MAGIC and the NBN Atlas for statutory designated sites coincident with or adjacent to the area of search and existing records of the keynote species within two kilometres.



2.3 Site Surveys

Surveys were designed by Gerald Longley using standard techniques based on the guidance and information in the Bat Conservation Trust Bat Survey Guidelines (2016). The surveys of the building consisted of a thorough daytime inspection followed by two evening and one pre-dawn bat activity surveys (not necessarily in that order). See the Appendices for a full list of equipment used. The pre-dawn bat detector survey looked for possible re-entry into the building by bats and the evening activity surveys looked for emergence from the building. The visits also provided checks to assess whether nesting birds used the buildings. The surveyors were Gerald Longley (Natural Resources Wales (NRW) Licence no. 75004:OTH:CSAB:2017) and Mary Thornton (NRW licence no. 68382:OTH:CSAB:2015).

The external and internal survey of the buildings included an assessment for potential for nesting birds and bats and a search for evidence, such as pellets, dead bats, prey remains, droppings, urine marks and staining. Close-focusing binoculars were used immediately below potential roost areas. Droppings around the bases of and/or stuck to walls, on shelves, wall plates, purlins, etc. were searched for with the aid of a high-powered torch. Holes and cracks in the walls, purlins, beams etc. and behind any cladding were inspected with the colour video endoscope where they could be safely reached.



3.0 RESULTS

3.1 Desk Study

No records of bats were found for the site itself or within 2km of the site and no statutory protected wildlife sites were coincident with the site.

Records for Daubenton's, Natterer's, noctule, common and soprano pipistrelles, brown long-eared and greater and lesser horseshoe bats were found approximately 4-5km from Brithdir.

The nearest SSSI was the River Dee SSSI, approximately 920m north of Brithdir at the nearest point. The SSSI is also part of the River Dee and Bala Lake Special Area of Conservation (SAC), notified for aquatic habitats and animals, not bats.

It should be noted that the lack of records for a particular species in a particular location does not confirm that the species is absent.

3.2 Site Surveys

The buildings

House

The oldest parts of the house dated from Tudor times with subsequent alterations and extensions up to the present. The north and south house walls were mainly of white-washed stone with a section of horizontal wood cladding along a dormer extension on the south side. The east wall was of more recent stone construction and the west wall was framed with an ancient wooden cruck beam with slate cladding forming the top part and a rendered section below. The ground sloped up steeply to the west and the west end of the house was built into the slope.

The house had a wooden-framed, pitched, slate roof with a central chimney and a second, brick chimney in the southeast corner. There was a small dormer on the north side. Some old roof timbers remained but many had been replaced when the dormer extension on the south side was constructed and other repairs/alterations made down the years. The ridge of the roof was aligned east-west and the roof was divided into three attics. The roof was lined with a mixture of bitumastic (south elevation) and breathable (north elevation) felt.

There was a lean-to glass porch with a stone base and corrugated perspex roof on the north side and two lean-to glass porches/conservatories on the south side with PVC and stone bases and corrugated perspex roofs.

There were many possible access points for bats into the attics and under tiles and cladding. There were gaps under the eaves on all elevations and at the apexes of the east and west gables; also under the wooden cladding on the south elevation. Slipped slates on the roof of the north dormer and gaps under ridge tiles and flashing around the central chimney were possible access points for bats. Gaps under the slate cladding on the west elevation provided good access to the west attic. The house was lived in by the Wilton family and there was no access for bats into the rooms of the house.

Tin shed

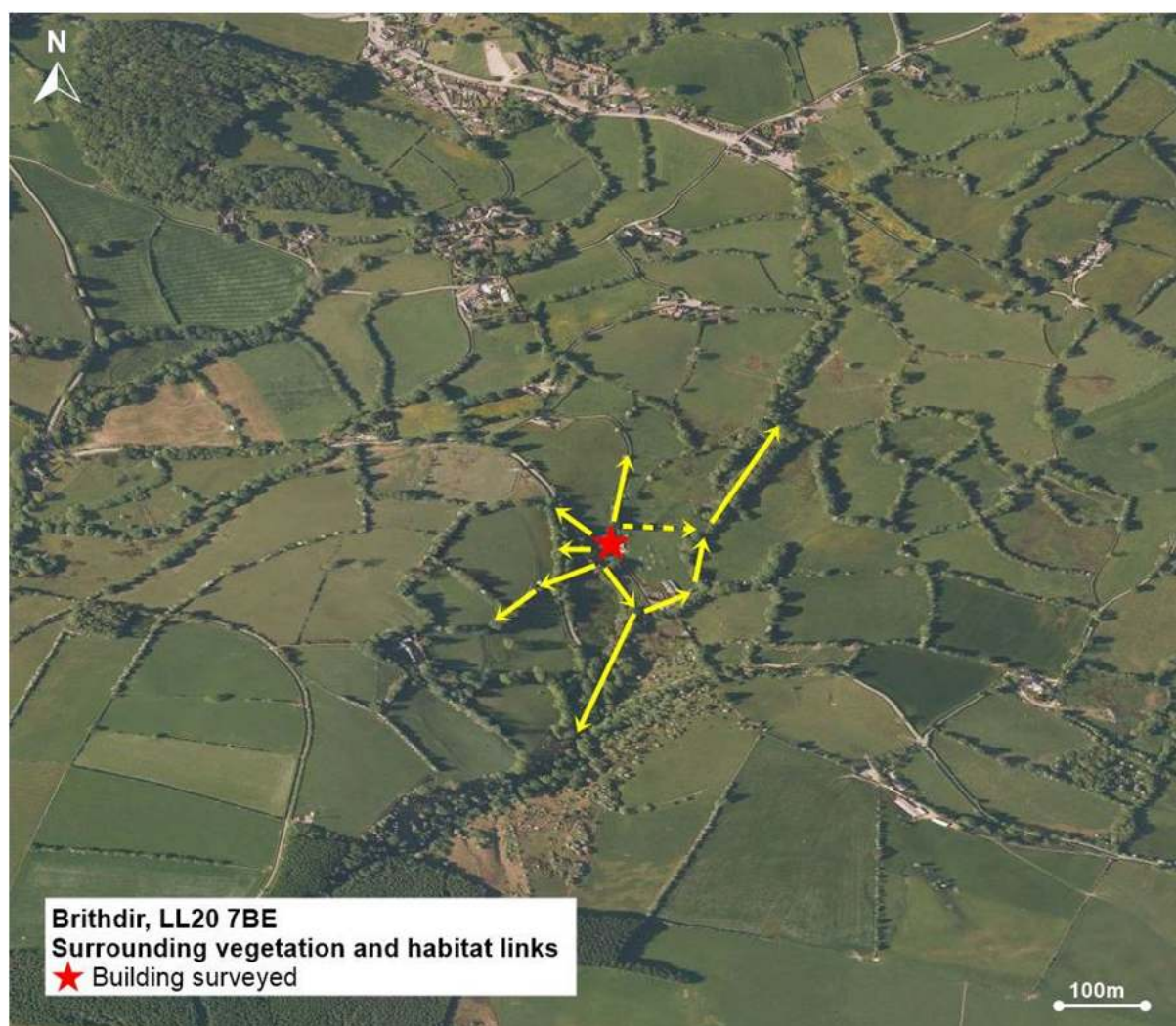
The shed proposed for demolition was a single storey, timber-framed building with tin sheet walls and roof.

PIR lights on the northeast corner of the house and the south-facing gable of the adjacent barn lit up the north and east sides of the house when triggered by passing people or vehicles. The light on the barn stayed on for only a few minutes but the light on the house stayed on for much longer (over 5 minutes).

The surroundings

The house was on the south side of a yard with the tin shed along the west side and stone – walled barns and stables with slate roofs along the east and south sides. Immediately to the west a bank with long grass, trees and woodland sloped up steeply to the outgrown hedgerow along the B4579. To the south was a garden area with ponds, a stream, trees, mature shrubs, boundary hedges and infrequently mown grass. Immediately to the east was the stoned access track with a pasture field beyond. To the north was the access track lined with dense hedges with pasture fields beyond on each side.

Features of the landscape around Brithdir are shown on the aerial photograph below. Solid yellow lines indicate good habitat connectivity (i.e. vegetation links). The house was well connected, particularly to the north, south and west, by dense hedgerows, trees and long vegetation to excellent foraging habitat nearby. The wider landscape was of small improved and semi-improved pasture fields with hedgerows, trees, larger areas of woodland and streams flowing north down into the Ceiriog Valley; excellent, well connected and extensive foraging habitat for bats.



Daytime Inspection – 30 May 2017

House

No bats or signs of bats were found on the outside of the house. Accumulations of bat droppings were found scattered over the floors of the west and middle attics and covering the floor of the east attic. Droppings were mainly larger and coarser textured than pipistrelle-type droppings. A bat was flying in the east attic. Although it was not caught, it could be seen that it was not a brown long-eared bat so the pale fur on the underside identified it as a *Myotis* species bat.

No nests were recorded on the outside of the building, although see first evening survey results below.

Tin shed

No bats or signs of bats were found on the outside or the inside of the tin shed. It did not offer suitable roosting habitat for bat and was not surveyed further.

A single old mud nest with moss added into the top was recorded in the south end of the tin shed. An old swallow nest, most likely taken over by a robin, it was not in use at the time of the survey.

Swallows were recorded nesting in the barns and stables on the north and east sides of the yard. No works were proposed for these barns.

First evening survey

30 May 2017 – 20.55 to 22.10 (sunset 21.26 BST)

A dry, still evening after a breezy day. 14°C. 5/8 oktas cloud cover. The two surveyors were placed so as to attempt to view all elevations of the building.

From 21.42 until 22.05 approximately two soprano pipistrelles (*Pipistrellus pygmaeus*)(55KHz) emerged from under the slate cladding on the west gable.

From 21.41 until 21.43 a single common pipistrelle (*Pipistrellus pipistrellus*)(45KHz) emerged from the apex of the east gable and made passes along the drive before dispersing.

At 21.55 and 22.02 passes from a *Myotis* species bat were recorded at the west and east ends of the building respectively although they were not seen to emerge from the building. Subsequent analysis of the Anabat files with AnalookW found that they were most likely to be whiskered bat (*Myotis mystacinus*).

At 22.04 a single brown long-eared bat (*Plecotus auritus*) pass was recorded on the east side of the building. It was not seen to emerge from the building.

Both common and soprano pipistrelles were recorded emerging from the barn and stables on the north and east sides of the yard. They made passes around the yard and buildings for much of the survey.

A blue tit was recorded flying up into a gap under the eaves above the left-hand (most easterly) window on the north elevation of the house.

Dawn survey

15 June 2016 – 03.55 to 04.55 (sunrise 04.46 BST)

A cool, still morning. 11°C. 3/8 oktas. The two surveyors were placed so as to attempt to view all elevations of the building.

From 03.59 until 04.15 approximately six *Myotis* species bats were observed flying around the base of the brick chimney on the southeast corner of the house. They entered the attic through a gap in the wooden soffit between the chimney and the east end of the wall. Subsequent analysis of the Anabat files with AnalookW found that they were most likely to be whiskered bat (*Myotis mystacinus*).

From 04.06 until 04.26 common pipistrelle passes around the yard and house and two bats entering the house, at the apex of the east gable and at the bottom of the east gable on the north side, were recorded.

From 03.59 until 04.34 soprano pipistrelle passes around the yard and house were recorded. No soprano pipistrelles were seen to enter the house.

Second evening survey

27 June 2017 – 21.15 to 22.40 (sunset 21.42 BST)

A warm, still and overcast evening. 18°C. 8/8 oktas. The two surveyors were placed so as to attempt to view all elevations of the building.

From 21.43 until 22.01 approximately four soprano pipistrelles emerged from under the slate cladding on the west gable. From 21.44 until 21.55 approximately two soprano pipistrelles emerged from the apex of the east gable.

At 22.20 a single *Myotis* species bat emerged from a gap in the wooden soffit adjacent to the brick chimney on the south elevation. Subsequent analysis of the Anabat file with AnalookW found that it was most likely to be a whiskered bat (*Myotis mystacinus*).

See 8.0 SITE PICTURES for entry and emergence points

3.3 Constraints of this survey

As with all wildlife surveys conducted, the data collected is only a representation of the species and species presence markers found during the actual dates of the survey. There are other seasons and many species are mobile or transitory.

There were no constraints. The weather for all the surveys was good with warm temperatures and plenty of insects about. Bats were recorded entering or emerging from the building on each of the survey visits.

Evidence for some crevice-dwelling bats, e.g. *Myotis* species, can be difficult to find. Brown long-eared bats are notoriously difficult to pick up on a bat detector as they call very quietly or not at all. They are also difficult to see during evening emergence, as it is getting very dark when they emerge. All counts of bats should be regarded as good estimates rather than precise numbers.

3.4 Interpretation/evaluation of survey results

The house at Brithdir offered potential roosting habitat for bats in the three attics and also between felt and roof tiles, under wooden and slate cladding, under ridge tiles and lead flashing and inside soffits. The house was surrounded by, and well connected to, excellent and extensive bat foraging habitat.

Three species of bat were recorded roosting in the house during the activity surveys. They were common and soprano pipistrelles and whiskered bat.

A maximum count of six whiskered bats was recorded entering through a gap in the soffit on the southeast corner of the house during the dawn survey. A single bat was recorded emerging from the same place during the second evening survey and a *Myotis* species bat was recorded flying in the east attic during the daytime inspection. Whiskered bat passes were also recorded during the first evening survey and, although, they were not actually seen to emerge, from the presence of a likely whiskered bat in the east attic earlier the same day and the subsequent survey findings, it was concluded that one or two whiskered bats had emerged from the same place during the first evening survey. The scattering of droppings in the west and middle lofts indicated that bats had also used those spaces for flying and roosting. This was considered to be a summer day roost of non-breeding adult males and juveniles.

A maximum count of six soprano pipistrelles was recorded emerging mainly from under the slate cladding on the west gable (four) and at the apex of the east gable (two) during the second evening survey. Soprano pipistrelles (two) were also recorded emerging from under the slate cladding during the first evening survey. A maximum count of two common pipistrelles was recorded entering at different places on the east gable during the dawn survey. A common pipistrelle was also recorded emerging from this gable during the first evening survey. It was considered that small numbers of both common and soprano pipistrelles were often roosting under the slate cladding or inside the west attic, and in the roof of the east attic. Both soprano and common pipistrelles were also recorded entering and emerging from the nearby barn and stables and it was considered that the bats roosting in the house and barns were likely to be part of the same colonies using a variety of roosting sites in the area: typical behaviour for pipistrelle bats.

All the bat species recorded and their roosts are legally protected in the UK and all bats are listed as European protected species under the Habitats Directive. In addition, common and soprano pipistrelles are among the eight bat species included on the Welsh list of Species of Principal Importance for the Conservation of Biological Diversity (sometimes called Priority Species).

A maximum count of six whiskered bats was recorded roosting in the west attic of the house at Brithdir. Maximum counts six soprano pipistrelles and two common pipistrelles were also recorded roosting under cladding and in the roof of the house. All numbers are approximate. These surveys establish that the house at Brithdir is a bat roost and the bats' presence is therefore a material consideration for any works or planning application.

An assessment of the likely impact of the proposed works if they were to go ahead without mitigation is in section 6 along with an outline Mitigation Plan and Method Statement.

The Mitigation Plan approach is to carry out works in the period when bats are least likely to be present (October to April inclusive) and incorporate suitable access for whiskered and pipistrelle bats into the new extension. A European Protected Species (EPS) Mitigation licence will be required from Natural Resources Wales to carry out the works.

4.0 RECOMMENDATIONS

It is recommended that:

1. The presence of roosting bats is a constraint to the proposed works. If works were to go ahead without approved mitigation, it is likely that bats would be negatively affected, especially if works were carried out in the spring or summer.
2. For the works to be carried out, a Mitigation (European Protected Species) Licence with regard to bats will need to be applied for from Natural Resources Wales, once planning consent has been granted.
3. A brief Bat Mitigation Plan (**updated Nov 2018 to reflect a revised extension location and size [smaller]**), including a Method Statement, has been drawn up and is presented in this report. It includes such matters as:
 - a) Timing of works
 - b) Worker/contractor induction on bat presence.
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 - f) Applicant to provide details of the mitigation with their application.
 - g) Monitoring

5.0 REFERENCES

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6.0 MITIGATION PLAN

Brithdir, Llwynmawr, Llangollen, LL20 7BE

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Bat Survey

Whiskered bat summer day roost (max. count 6 bats)

Soprano pipistrelle summer day roost (max. count 6 bats)

Common pipistrelle summer day roost (max. count 2 bats)

Objective: To ensure the bats remain at a favourable conservation status.

Impact assessment (in absence of this mitigation plan)

Proposed works

It is proposed to demolish the existing tin shed and construct a new, two-storey extension on the north side of the house. Plans show that the ridge of the extension roof will join the roof of the house at the same height as the existing ridge and accommodation will extend into the roof space, ie. there will be no attic. Works will include stripping part of the house roof and repairs/replacement of roof timbers to tie in with the roof of the new extension, alterations to the existing north dormer, installing new windows in the north elevation of the house roof and creating new doors and archways in the north wall of the house to link the house and extension

Short-term impacts: disturbance

Adult and juvenile bats could be killed or abandon their roosts if works start while they are present in spring and summer. If works started in the winter and were not completed by the following spring, the bats would have no roosts to return to. Any bats hibernating in cracks in attic walls could be killed or injured if works started while they were present during the winter.

Long-term impacts: roost modification

Roosts and flying space in the middle and east attics will be lost with the addition of the new extension. Accesses could be lost if roof and wall repairs were carried out and no gaps for bats left.

Long-term impacts: roost loss that is relevant

Roosts and flying space in the middle and east attics will be lost as these will become part of the accommodation. Roosts under cladding and roof and ridge slates would be lost if repairs/re-laying were carried out and no gaps for bats left.

Long-term impacts: fragmentation and isolation

Any loss of linear features such as hedges or tree lines, loss of foraging areas such as woodland, increased lighting, or severance of flight lines by open spaces would be negative. None is proposed as part of these works.

Post-development interference impacts

The house is lived in by a family and they would continue to occupy it with the new extension so there would be little change in the amount and timing of human activity. New lighting on and around the building could have an impact on any roosting and foraging bats.

Predicted scale of impact

The impact on the individual bats of all species concerned would be high and the impact on the numbers in the locality would be:

Whiskered bat - moderate
Common pipistrelle – low.
Soprano pipistrelle - low

Land ownership – The house at Brithdir is in the ownership of the applicants Jo and Matthew Wilton.

Method Statement

Brithdir, Llwynmawr, Llangollen, LL20 7BE

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Bat Survey

Whiskered bat summer day roost (max. count 6 bats)

Soprano pipistrelle summer day roost (max. count 6 bats)

Common pipistrelle summer day roost (max. count 2 bats)

a) Timing of works

Carry out all the works to include all roof stripping and taking down of any attic walls, construction of new walls and roof, laying slates/felt, installation of roof and dormer windows, construction of soffits and barge boards, application of verge mortar, creation of bat access points, any rendering and removal of all scaffolding in a single period **01 October to 30 April**. Internal fitment works can continue after this period. Any works to take down, repair or re-point stone and brick walls will take place in **October, November, March or April only** to avoid disturbance or harm to any hibernating bats.

b) Worker/contractor induction on bat presence

Provide a "Tool Box Talk", Method Statement and summary sheet of guidance about bats in old buildings to site owners and all workers/contractors before works begin.

c) Creation of temporary roosts for any bats found during conversion

Erect at 3m to 4m height, prior to any works, three untreated timber bat boxes to BCT design, with a slot width 16 - 17mm within 20m of the building. They will be primarily a safe, temporary roosting site for the licensed ecologist to place bats in if any are found at the searches prior to and during the works.

d) Contingency for discovering bats

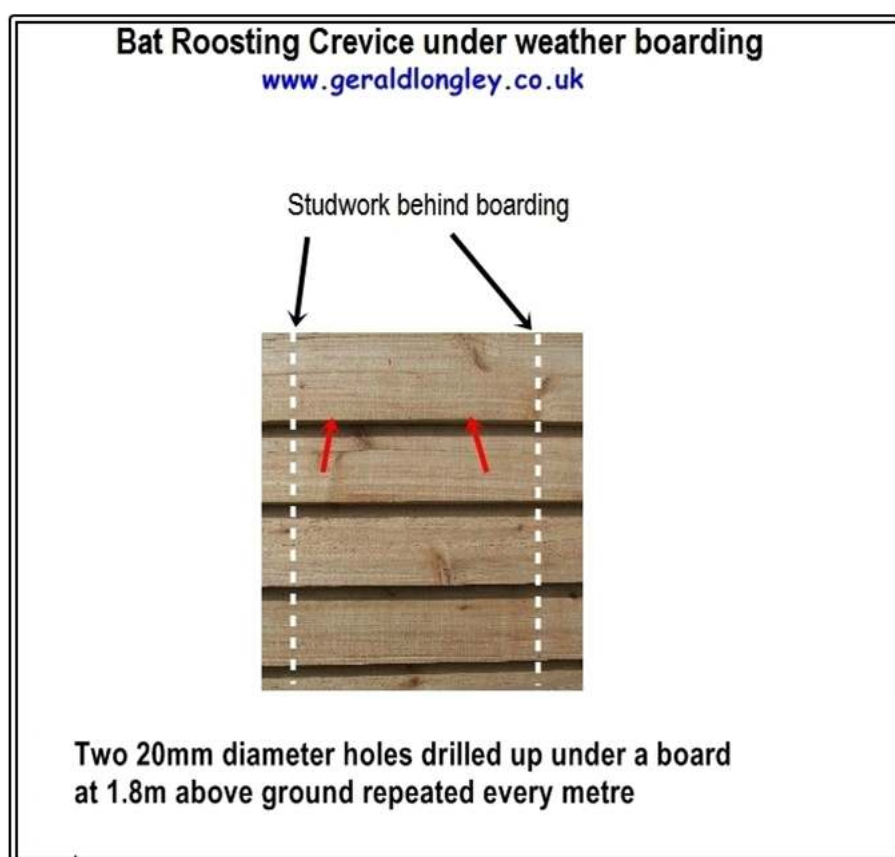
The licensed bat ecologist will carry out a thorough search of the building for bats with an endoscope etc. immediately prior to any work starting and, if bats are found, consider delaying the works until the bats are not present. They will also provide a "watching brief" of work to strip and dismantle the roof and dismantle any walls. This will be by hand. If any bats are found, work will stop and the licensed ecologist will be contacted and will attend the site. Any bats found that do not fly will be released immediately at the site into the bat boxes already erected by the licensed ecologist. If this is not possible they will be rehabilitated at a suitable centre with later release at site.

e) New/existing bat roosting habitat

- (i) Traditional bitumastic roofing felt BS8747:2007 TYPE 1F only will be used in the roof of the new extension and in re-laying or repairs to the roof of the house. Breathable felt is not to be used.
- (ii) Gaps for bat access will be created on the new extension under tiles/slates and ridge tiles and behind soffit/barge boards or at the tops of walls if there are no soffits:
 - a) Gaps for bat access will be created under the eaves and at the gable ends on all elevations of the new extension, with 20 x 100mm gaps made in the bottom of soffits or behind barge boards giving access into the soffit and under the tiles/slates. Gaps will be made approx. 1m apart with the long edge against the walls so that bats can

land on the walls and then crawl up through the gaps. See the drawings Fascia Board Bat Access Detail **7/1** and Access to Stone Wall Top Detail **3** below.

- b) Three evenly spaced ridge tiles on the ridge of the new extension will be “notched” to their lower edges to provide a slot 100mm long and an effective depth, when the ridge tile is in situ, of 20mm (and no larger or smaller) to both lower edges to provide access for bats under the ridge tiles, with a cavity left inside at this point. The ridges will be a mortared not “dry system” ridge. See the drawing Ridge Tile Access **4A** (option c) below.
 - c) Two bat slates will be installed on each side of the roof of the new extension (four in total) giving access under the slates. The bat slates will be located mid-way between the ridge and the eaves and evenly spaced along the roof. See the drawing Bat Access Slate **1A** below.
- (iii) Create 2 holes in each pitch (4 in total), 20mm diameter, on all gables with new slate verge mortar to give access for bats to behind the mortar and under the tiles/slates.
- (iv) Plans show that the new extension will be clad with horizontal weatherboarding. Bat roosting crevices will be formed under the weather boarding over 1.8m above ground, between the studwork, with pairs of 20mm diameter holes made for bats to gain access under this to the cavity inside, approximately every 1m along each elevation. See the illustration of the design below.



- (v) Provide two purpose-designed, wall constructed bat boxes of the integrated eco-bat box type produced by the Nestbox Company (<https://www.nestbox.co.uk/products/integrated-eco-bat-box>). They will be built into the west-facing wall of the new extension at over 2m height and at least 3m apart.

- (vi) No solar panels of any sort will be placed on the roof of the extension or on the roof of the existing house. Solar panels remove heat from roofs making them less suitable for bat roosting.
- (vii) Any new external lighting will meet the requirements of the Bat Conservation Trust Artificial Lighting and Wildlife- Interim Guidance: recommendations to help minimise the impact of artificial lighting (BCT, 2014). A guidance sheet (GLEC Ltd Info sheet 07 Bats and Lighting) can be provided by the ecologist. Security lighting will be motion-sensitive only and on a relatively short timer (<5mins), positioned no higher than 2.5m above ground level, directed downwards only (with no up-lighting of any sort) away from bat roost access points and flight paths and motion-sensitive only to humans and not smaller animals.

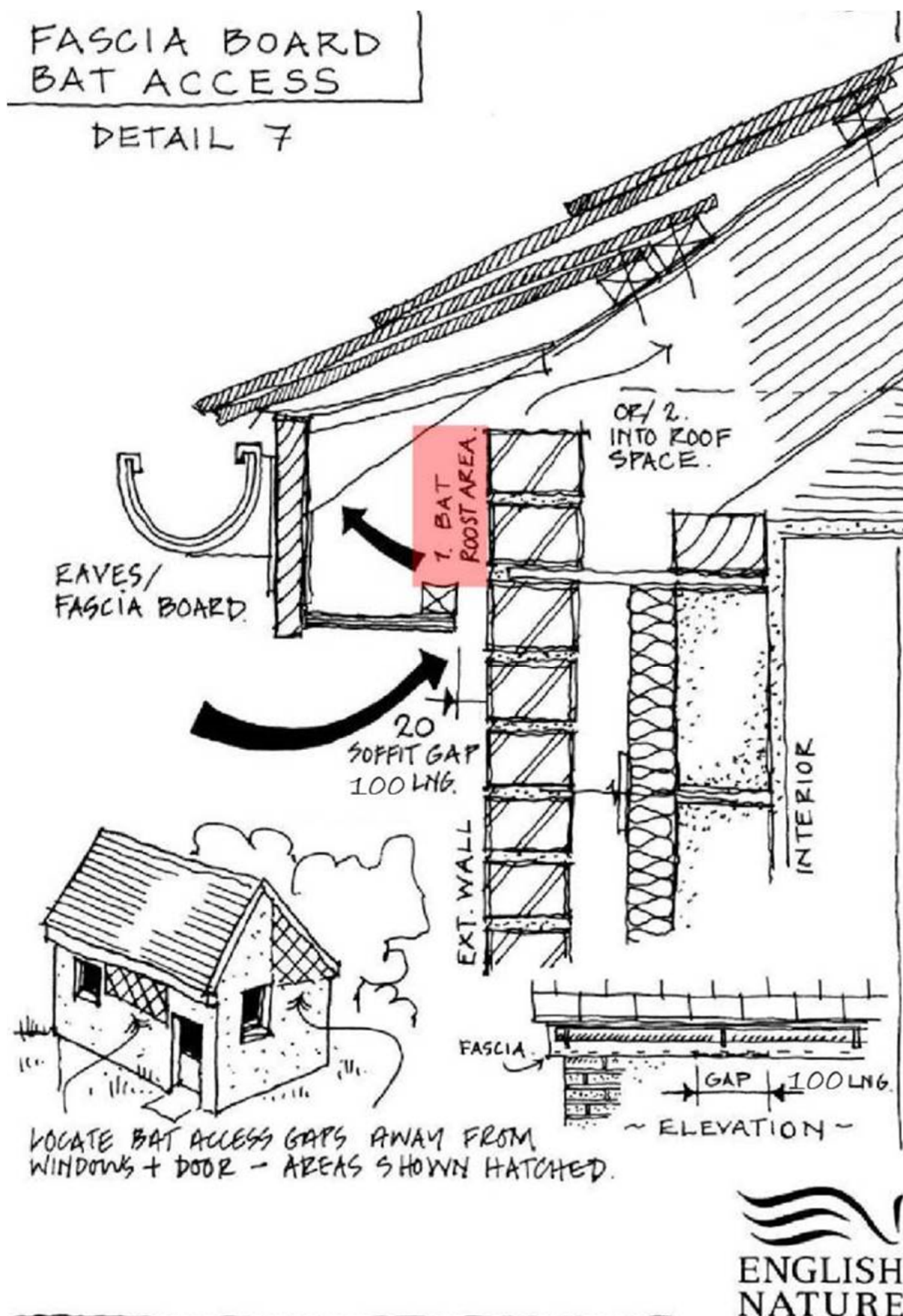
f) Providing clear details and connection to Planning Permission/Listed Building Consent

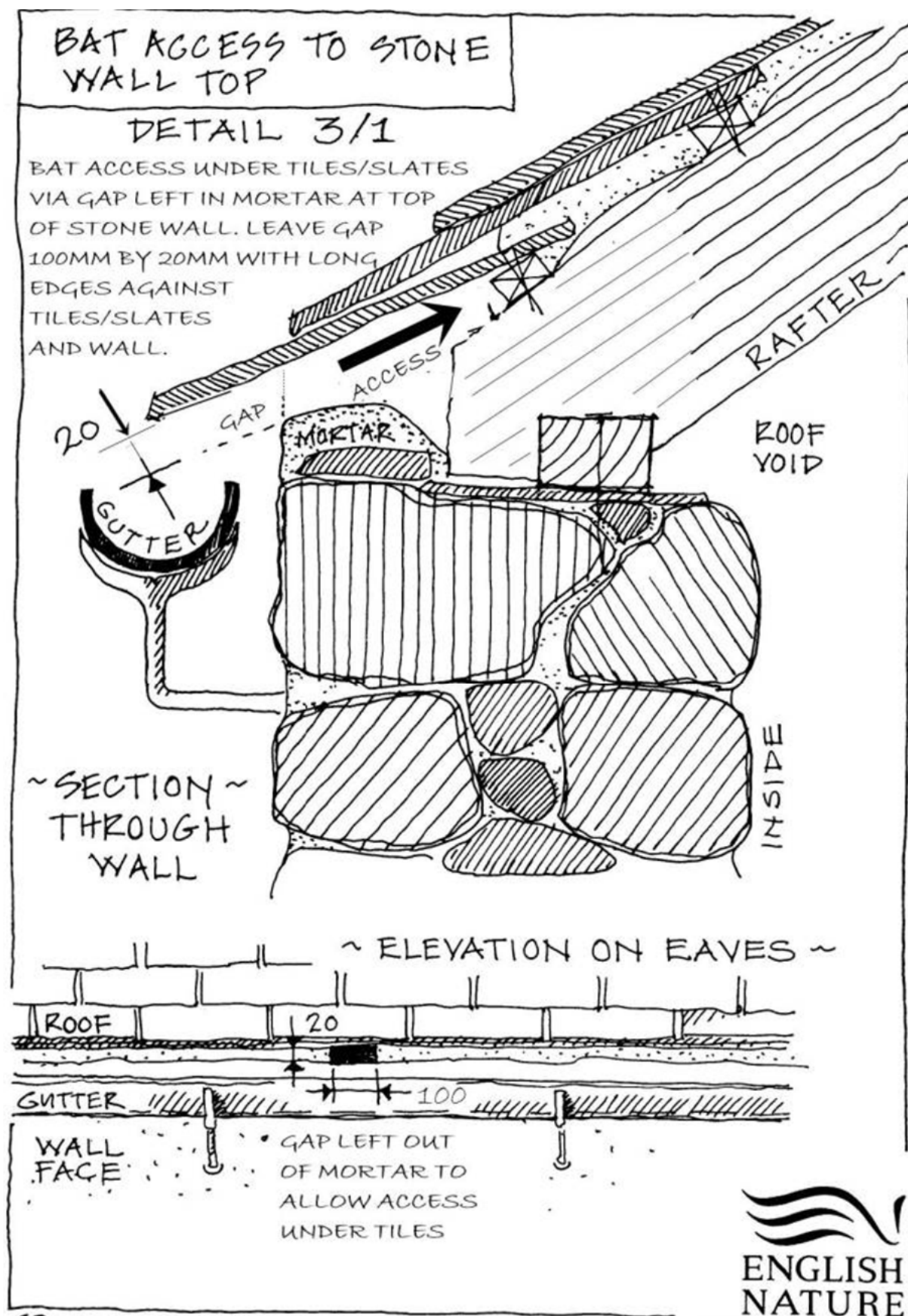
The applicant will provide details of the mitigation with their Planning Application.

g) Monitoring

As the works will take place under an EPS Mitigation licence issued by Natural Resources Wales (NRW) monitoring will be:

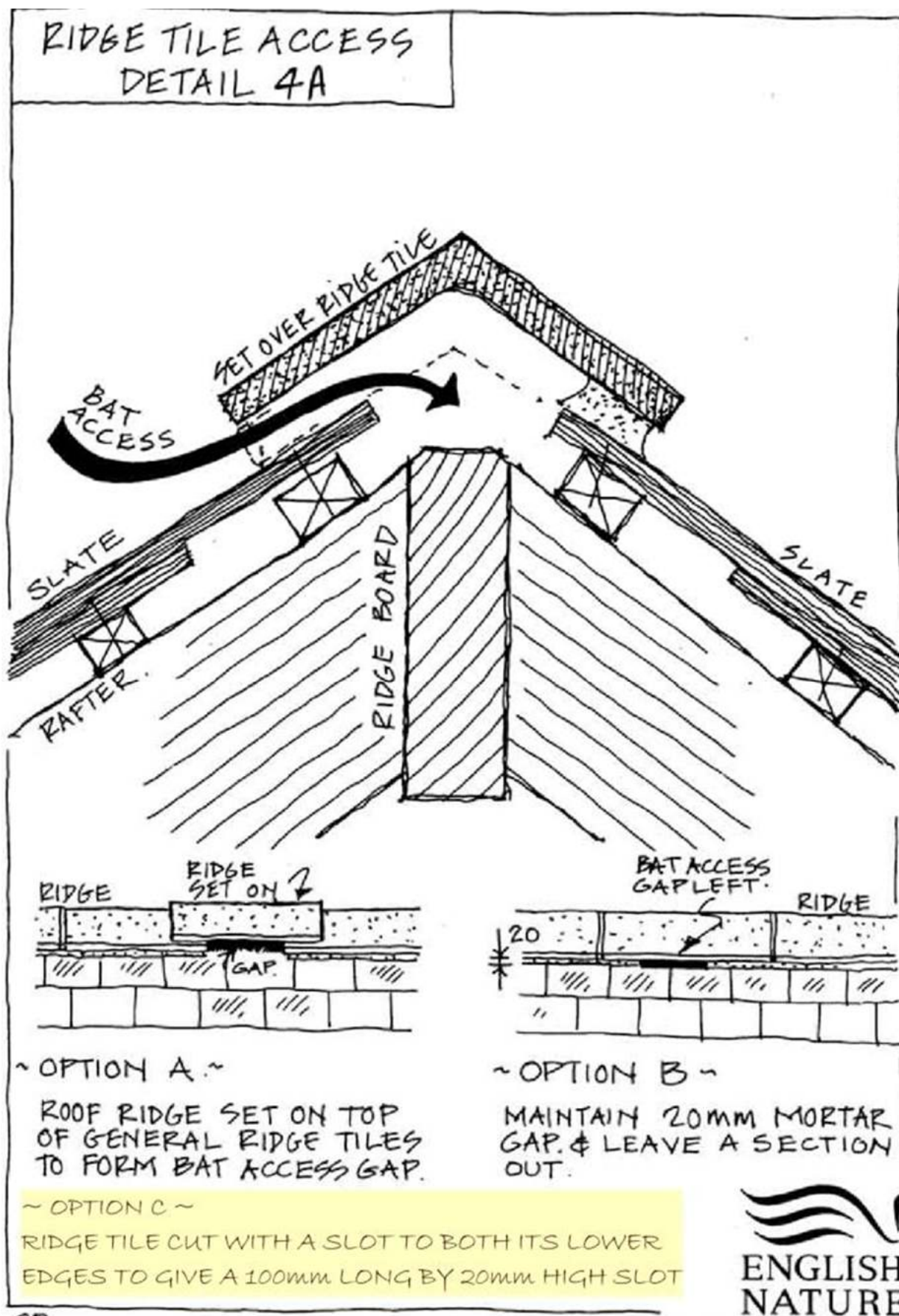
- (i) On completion of building and installation of mitigation works, a report including photographs of the mitigation works will be written and sent to NRW by the ecologist Gerald Longley.
- (ii) Two post development bat surveys will be carried out, one in each of the two summers following completion of the works, to establish the presence or absence of bat roosts and/or bat species in the building and make recommendations accordingly. Surveys will include day time inspections and bat emergence/re-entry activity surveys of the building. They will be carried out with a minimum of two surveyors, using standard methodology as per Bat Conservation Trust (2016).
- (iii) Any remedial works identified and required will form part of recommendations made in a report on the post development monitoring of bats to NRW and the licence holder.





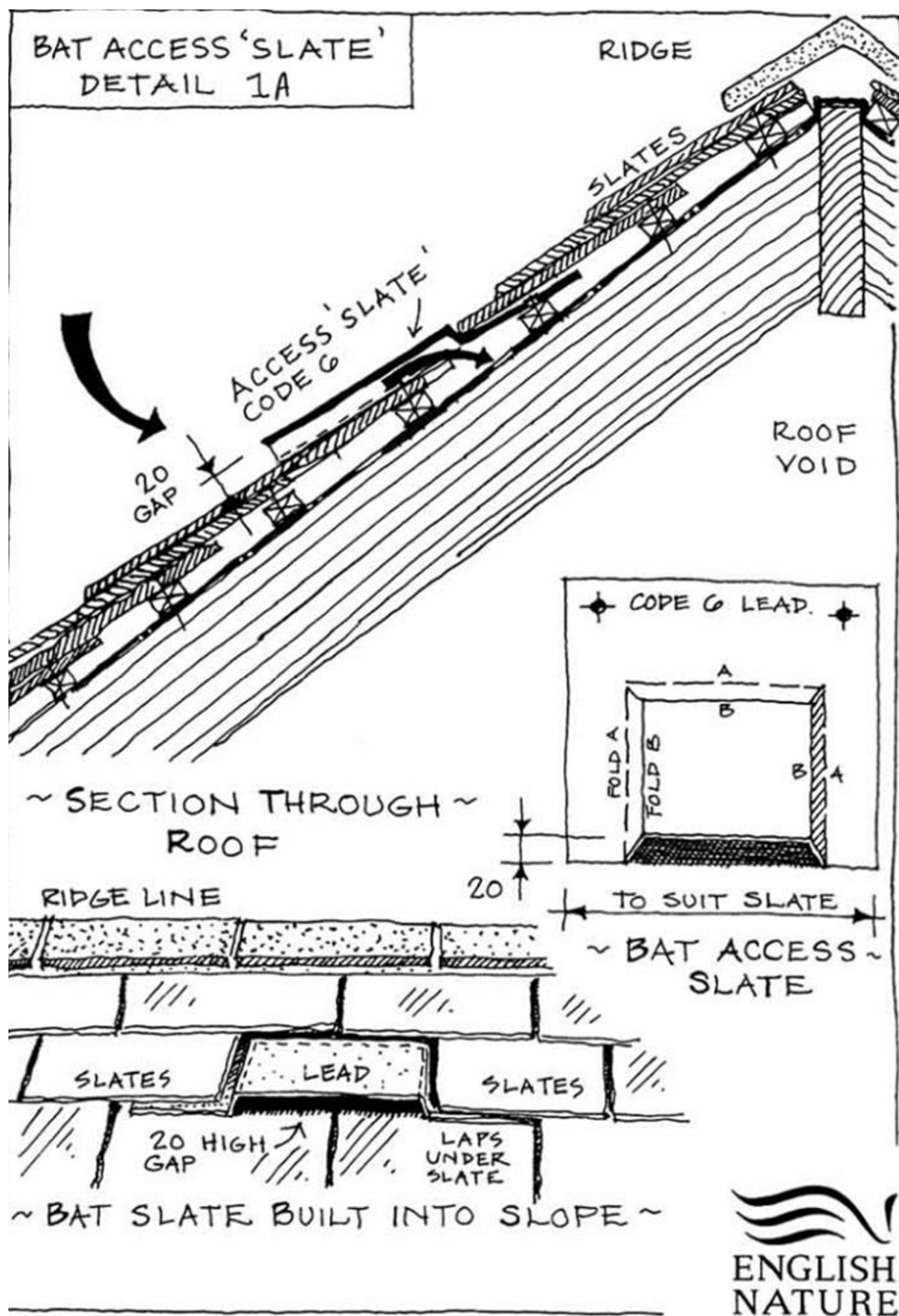
SP

The above information is for guidance only and may not be appropriate in all circumstances. If in doubt seek professional advice.
English Nature Cumbria Team, Juniper House, Mutey Moss, Oxenholme Road, Kendal LA9 7RL. Tel: 01539 792800 Fax: 01539 792830 Email: cumbria@english-nature.org.uk



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7.0 APPENDICES

7.1 Relevant Legislation

Bats – Legislation

All British bat species receive legal protection in the United Kingdom under the Wildlife and Countryside Act 1981 (WCA) (as amended). The WCA 1981 was amended by the Countryside and Rights of Way (CROW) Act 2000. All British bat species are listed under Schedule 5 of the 1981 Act, and is therefore subject to the provisions of Section 9, which makes it an offence to:

- Intentionally kill, injure or take a bat
- Possess or control any live or dead specimen or anything derived from a bat
- Intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection
- Intentionally or recklessly obstruct access to any structure or place which a bat uses for shelter or protection
- Sell, offer for sale, possess or transport for the purpose of sale or publish advertisements to buy or sell a bat

Bats are also included on Annex IV of Council Directive 92/43/EEC of 21 May 1992 on the Conservation of Natural Habitats and of Wild Fauna and Flora. As a result of the UK ratifying this directive, all British bats are also protected under the Conservation of Habitats and Species Regulations 2010. It makes it an offence to:

- Deliberately capture or kill a bat.
- Deliberately disturb a bat in such a way as to be likely to significantly affect i) the ability of any significant group of animals of that species to survive, breed or rear or nurture their young, OR ii) the local distribution of that species.
- Damage or destroy a breeding site or resting place of a bat.

Under the law, a roost is any structure or place used for shelter or protection. This could be any structure, for example any building or mature tree. Bats use many roost sites and feeding areas throughout the year. These vary according to bat age, condition, gender and species, as well as season and weather. Since bats tend to re-use the same roosts for generations, the roost may be protected whether the bats are present or not.

Birds - Legislation

Under Section 1 of the Wildlife and Countryside Act 1981 it is an offence to intentionally kill, injure, handle or remove any wild bird (with the exception of a few pest species); take or damage a nest whilst in use or being built; and take or destroy eggs. A person is not guilty of any offence if their action was the incidental result of a lawful activity and could not have been reasonably avoided.

A higher level of protection is afforded to those birds listed in Schedule 1 of the Act. It is an offence to disturb Schedule 1 species whilst it is building or sitting on a nest, in addition to damaging or destroying their nests or eggs.

It is not an offence to disturb non-Schedule 1 species whilst they are building a nest or sitting on it. However, an offence may be committed if the bird is driven away from a nest by prolonged disturbance which results in the failure of eggs or death of dependent young.

7.2 Field equipment used for the survey:

Escort mini temperature data logger
Silva compass
Leica 8 x 42 close-focusing binoculars
Cluson Clubman 1 Million candle-power lamps
Access Cam Pro-Sight colour video endoscope (1m probe).
Telescopic mirror
Suunto clinometer
3.8-metre extendable ladder
8m extendable ladder
Anabat SD2 bat detectors with GPS and HP iPaq PDAs (active monitoring)
AnalogW v4.1 (bat data analysis software)
Anapocket v2.5b (bat data analysis software)
Wildlife Acoustics EM3+ bat detector
Kaleidoscope v1.12 (sound analysis software)
Batbox Duet bat detector (frequency division and heterodyne bat detector)
SSF Bat2 bat detector (frequency division and heterodyne bat detector)
Two-way radios

8.0 SITE PICTURES

