

Report : Bat and Nesting Bird Assessment:
Building at Blaenau Uchaf,
Froncysyllte, Llangollen LL20 7RY

Reference : TP/2696/21.1

Date : 30 March 2022

Client : Mr. T. Pluves
Blaenau Uchaf
Froncysyllte
Llangollen
LL20 7RY
SY21 8BS

Proposed development : Conversion

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**Bat and Nesting Bird Assessment:
Building at Blaenau Uchaf,
Froncysyllte, Llangollen LL20 7RY.**

1. Introduction

There is a proposal to convert a former industrial-type Building within the Blaenau Uchaf yard and building complex into a dwelling.

Full details of the proposed development may be obtained from Mr. T. Pluves.

The Building is approximately 340m² (0.034 hectare) in size and stands at approximate National Grid Reference (NGR) 325890, 340205.

On 14 March 2022 the Building was surveyed for:

- a) the potential for Bats to roost on and/or in the Building;
- b) the potential for Small Breeding Birds to construct their nests on and/or in the Building;
- c) physical evidence of Bats and their roosts on and within the Building; and,
- d) physical evidence of nesting birds on the exterior and within the interior of the Building.

The survey was carried out by Dr. R. M. Jones MCIEEM, Natural Resources Wales Bat Licensed surveyor S085628/1.

An assessment was made of the affect of the proposed development on Bats and nesting birds.

The survey/assessment has been carried out with regard to the following published guidance:

- 'Bat surveys for Professional Ecologists – Good Practice Guidelines'⁽¹⁾
- the gov.uk website⁽²⁾
- BS42020:2013 'Biodiversity – Code of practice for planning and development'⁽³⁾

A photographic record of the Bat and Nesting Bird Assessment is provided in Appendix 1.

2. Legislation and Policy

2.1 Bat

All bat species (*Rhinolophidae* and *Vespertilionidae*) are protected under the Wildlife and Countryside Act 1981, the Countryside and Rights of Way Act 2000 and the Conservation of Habitats and Species Regulations 2017 (as amended).

Under the Conservation of Habitats and Species Regulations 2017 legislation it is illegal to:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats. This includes in particular, disturbance in a way any such which is likely to (i) impair their ability to survive, breed or reproduce, or to rear or nurture their young; (ii) impair their ability to hibernate or migrate; or (iii) to affect significantly the local distribution or abundance of the species to which they belong;
- damage or destroy a breeding site or resting place of a bat;
- to be in possession or control, to keep, transport, to sell or exchange, or to offer for sale or exchange, any live or dead bat, or any part of, or anything derived from such a wild animal.

Under the Wildlife and Countryside Act 1981, it is illegal to:

- 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.

A bat resting place may be a structure a bat uses for breeding, resting, shelter or protection. Resting place sites are protected whether or not bats are in occupation, as they may be re-used by bats.

Eight species of bat are listed as 'priority species' under Schedule 7 of the Environment (Wales) Act 2016.

A European Protected Species (EPS) Development Licence from Natural Resources Wales may be required for development works triggering Conservation of Habitats and Species Regulations 2017 offences against bats.

2.2 Nesting Bird

Under the Wildlife and Countryside Act 1981, all wild birds are protected while breeding.

It is an offence, with certain exceptions to:

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird while it is in use or being built;
- intentionally take or destroy the egg of any wild bird.

3. Historical records of bat

A formal search of historical records of bat within the vicinity of the Building was commissioned. Considering the nature, scale and location of the proposed development; the constraint of not carrying out an historical biodiversity record search is considered negligible.

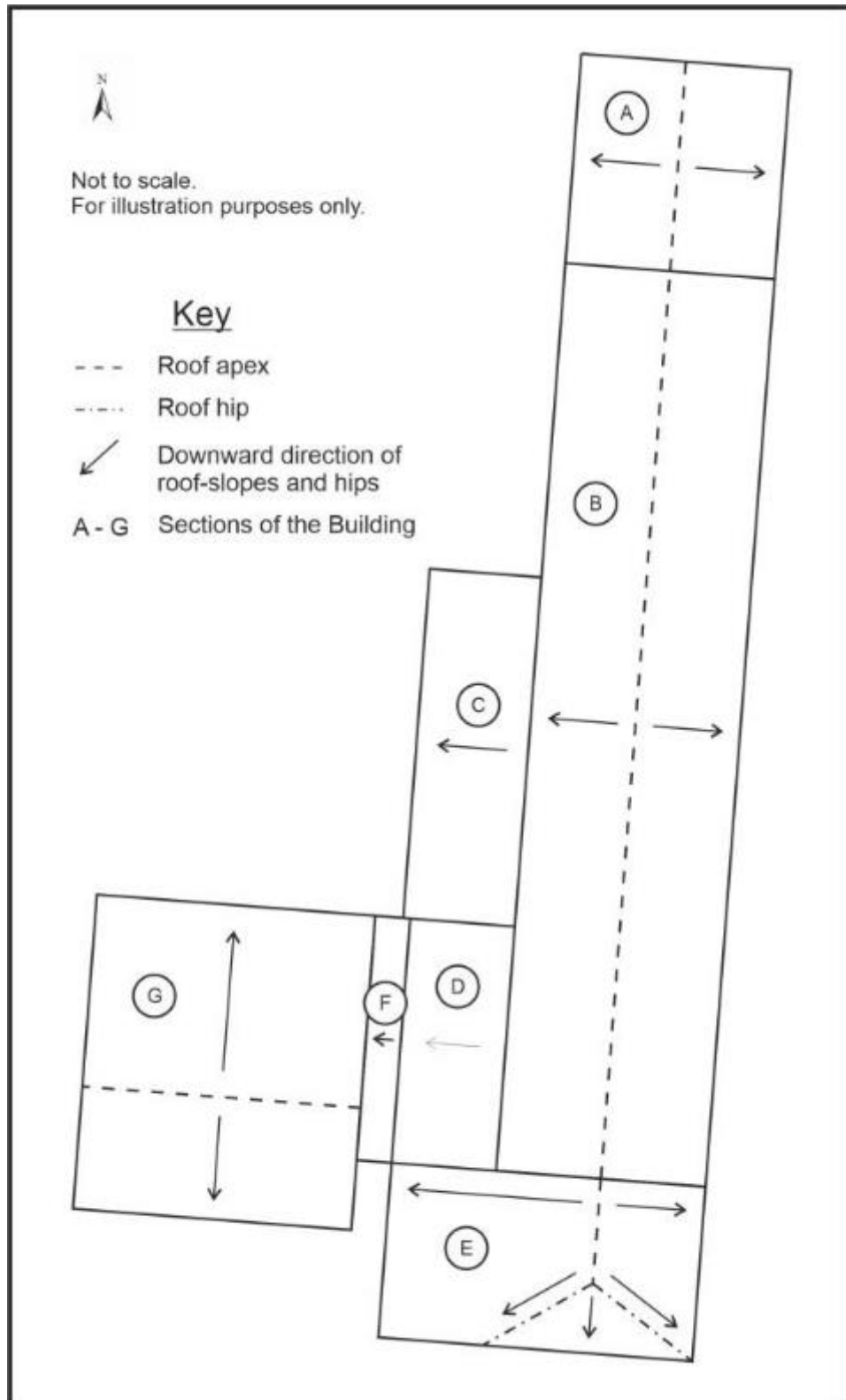
The owners of Blaenau Uchaf are aware that (in the summer months) bats forage in the vicinity of the Building, but are not aware of bats roosting within the Building.

4. Building Description

A brief description of the Building is provided here.

The Building is a single- and two-storey structure in seven distinct structural sections; Sections A – G.

A diagram of the Building showing the locations of Sections A – G is shown below:



Section A

Single-storey. Rendered brick and concrete-block with a composite inter-locking (peg) tile covered apex roof. The roof apex is covered with composite abutting ridge tiles bedded on mortar. The roof structure is supported by the north elevation gable wall, a central angle-iron (King-post, double raking-strut) roof truss and the Section A north elevation wall.

Roof-slope rafter-to-rafter gaps are lined with fibreglass, or similar, quilt insulation and plastic sheeting. The roof structure overhangs the north gable wall and soffit boxes are present. Mortared roof tile verges oversail the gable soffit boxes by approximately 30mm and are supported by composite-board under-cloaking. Eaves overhang and are enclosed with soffit boxes. No roof-space(s) is/are present. Used for the storage of a motor vehicle.

Section B

Two-storey. Rendered stone with an unlined composite-fibre corrugated roof-sheet covered apex roof. The roof apex is covered with (two-part) composite-fibre ridge cappings. The roof structure is supported by gable walls, a (full height) stone wall, three King-post (double raking-strut) roof trusses and two (separate) tie-beams.

Exterior common rafters with barge boards are attached direct to the north elevation gable wall. Roof-sheet verges oversail the barge boards by approximately 20-30mm. Roof-sheet verges oversail the south elevation gable by approximately 20-60mm and are supported by purlin-ends. Eaves are flush/closed and fascia boards are attached direct to exterior wall surfaces.

No roof-space(s) is/are present.

The ground-floor is divided into four rooms, used for general storage purposes and as a workshop. The first-floor is divided into two rooms; a small room at the north-end and a larger central and south-end room.

Section C

Single-storey. Concrete-block, timber-frame, wire-mesh and box-profile sheet-metal clad 'lean-to' with an unlined corrugated sheet metal covered mono-pitch roof. The roof structure is supported by custom-made metal trusses and timber purlins. Sheet-metal flashings are present at the abutments of the roof structure and the adjoining Section A west elevation wall and the Section D north elevation wall.

The roof structure overhangs the north elevation gable and a barge board is attached to purlin-ends. The roof sheet verge oversails the barge board by approximately 20mm. The eave is flush/closed and a fascia board is attached direct to the exterior wall/box-profile sheet surface.

No roof-space(s) is/are present.

Empty and seemingly unused.

Section D

Single-storey. Stone with an unlined composite-fibre sheet covered mono-pitch roof, with two corrugated plastic (or similar) roof-lights.

A barge board is attached direct to the north elevation gable and the roof-sheet verge oversails the barge board by approximately 20mm. The roof sheet verge oversails the south elevation gable by approximately 20mm. The eave is flush/closed and the outside face of a timber (eave) wall-plate is exposed.

No roof-space(s) is/are present.

Empty and seemingly unused.

Section E

Single-storey. Rendered concrete-block with an unlined composite inter-locking (peg) tile covered asymmetric apex double-hipped roof. The roof apex is covered with composite abutting ridge tiles bedded on mortar. Roof hips are covered with abutting hip tiles bedded on mortar. The roof structure has been formed in an open/cut style with purlins and no roof trusses. A rolled-steel-joist beam is present beneath the central area of the west elevation roof-slope, where the roof structure continues down over a probable ('cat-slide') extension.

Lead flashings are present at the abutment between the roof structure and the Section B south elevation wall. The roof eave overhangs the east elevation and is enclosed with soffit box. The south and west elevation eaves are flush and closed. Facia boards are attached direct to the middle and east parts of the south elevation eave and along the west elevation eave. A mortared roof tile verge is present along the west part of the south elevation eave/gable.

No roof-space(s) is/are present.
Used for the storage of machinery.

Section F

Single-storey covered alley constructed of a corrugated sheet metal mono-pitch roof structure supported by the Section D west elevation wall and part of the Section G east elevation wall. No roof-space(s) is/are present.

Section G

Single-storey part-rendered concrete-block and corrugated sheet metal, with an unlined asymmetric apex roof. The north elevation roof-slope is covered with box-profile sheet metal on timber purlins and metal rafters. The south elevation roof-slope is covered with corrugated sheet metals on timber purlins and timber rafters. The roof apex is covered sheet metal ridge cappings.

The roof structure is supported by metal and timber framing. Roof sheet verges oversail gables by approximately 50-100mm. Eaves are closed. The bottom ends of roof sheets overhang the north elevation eave and a 'fascia' (part of a sliding door mechanism cover) is present. The bottom ends of roof sheets overhang the south elevation eave by approximately 40mm.

No roof-space(s) is/are present.
Used for the storage of timber and metal.

5. Bat Assessment

5.1 Method

5.1.1 Bat roosting potential

The Building was assessed for its potential to support bats and the type and number of bat roosts.

This involves consideration of a number of abiotic factors including:

- Access to the interior of the Building
- Age
- Construction fabric
- Habitat context
- Light levels
- Previous use of, and activity within, the Building
- Temperature regime and protection from weather

5.1.2 Physical evidence of bat occupation

The Building was searched for the presence of bats and their roosts.

Search methods included the use of torches (including a Fenix RC40 3800 lumen torch and a DeWalt DCL043 1000 lumen torch), binoculars (Zeiss 10x42), borescope (Visual Optics VO18 5.8mm Fibre Optic), fibrescope (Provision PV2636-21 5.8mm), video-scope (Draper 05163 Recording Flexi Inspection Camera), 3.8m Telescopic ladder, 4.1m Telescopic ladder, 8.15m Combination ladder, 3.6m Double Extending Roof Ladder; and combinations of these. A search was also made for notable signs of past and/or present bat roost activity, including bat urine stains, fur oil stains, scratch marks and faeces. These may be found around a bat roost entrance, within a roost, and within flight/foraging areas.

5.1.3 Limitations

Considering the structural fabric of the Building; it is not considered that there are any significant constraints on the survey.

5.2 Results

5.2.1 Weather conditions

The survey was carried out in bright and fine conditions with little or no breeze.

5.2.2 Potential for Bats

The Building is in a good and maintained structural condition and does not provide bat roost potential.

Roof structures are intact and closed and do not provide bat roost habitat.

There is no potential bat access to roof apices or verges or to gable or eave wall-plates.

All Section A and Section E roof tiles and ridge tiles are intact, *in situ* and close-fitting and do not provide bat roost habitat.

All Section E roof hip tiles are intact, *in situ* and close-fitting and do not provide bat roost habitat.

The Section A gable and eave soffit boxes and the Section E east elevation eave soffit box, are intact, *in situ* and close-fitting and do not provide bat roost habitat.

All fascia boards are intact, *in situ* and close-fitting and do not provide bat roost habitat. Exposed/unenclosed roof sheet verges are intact, *in situ* and close-fitting (to gable wall-plates) and (where present) pointed with intact mortar and/or (polyurethane, or similar) foam, and do not provide bat roost habitat.

The tops of the Section B eave wall-plates (and some rafter-to-rafter gaps) have been infilled with fibre-glass (or similar) quilt insulation.

There are no missing-mortar crevices, or similar, within external or internal walls (in which bats may roost). Mortar pointing and/or (polyurethane, or similar) foam is present between the tops of gable wall-plates and interior dividing walls and the undersides of roof coverings.

Exterior windows and their frames are intact and close-fitting and do not provide bat roost habitat.

Exterior and interior doors and their frames are intact and do not provide bat roost habitat. No external or internal (door or window) lintel crevices, suitable for bat roosting, are present.

There are no open mortise-and-tenon joints within structural timbers. There are, however, three open and unused mortises within the Section B roof trusses. One raking-strut is missing from each roof truss, resulting in an open and unused mortise within the primary rafters of the roof trusses. On inspection, the open and unused mortises (and all other parts of the roof trusses) were clean.

The Building appears to have been used as (an) engineering (and/or similar) workshop(s). For example, it appears that the Section B ground-floor rooms were used for fabrication and machining purposes, whilst the first-floor room was used for the storage of equipment and materials. Section G appears to have been used for the storage of fabrication materials and as a paint shop. As such, the external fabric of the Building is well-sealed and the interior of the Building is inaccessible to bats (or other wildlife, such as nesting bird).

5.2.3 Physical evidence of Bats

No physical evidence of bat was found on the exterior of the Building.
No physical evidence of bat was found within the Building.

6. Nesting Bird Assessment

6.1 Method

The Building was searched for the presence of bird nests, active (in current use) and inactive (not in current use).

6.2 Results

No evidence of bird nesting was found.

7. Conclusion

7.1 Bat

7.1.1 Survey results

The Building does not provide bat roost habitat.
No physical evidence of bat was found on or within the Building.

Bats do not impose a constraint on the proposed development.

It is not considered necessary for further bat survey work to be carried out to inform the proposed development.

It is not necessary for a European Protected Species Licence for bats to be issued by Natural Resources Wales to allow the proposed development to lawfully proceed.

7.1.2 Mitigation

Bats do not impose timing or work method constraints on the proposed development.

7.1.3 Enhancement

New bat roost opportunity may be installed during or after the conversion of the Building.

External lighting that may be installed within the Blaenau Uchaf property (as part of the proposed development) should be sensitive to bats.

Suggested enhancement measures for bats are contained in Appendix 2.

7.2 Nesting Bird

7.2.1 Survey results

No evidence of nesting bird was found on or within the Building.

However, it is possible that birds may nest on (parts of the exterior of) the Building in the future. Therefore, should the proposed development receive approval; mitigation for Small Breeding Bird – provided in Section 7.2.2 should be adhered to.

In addition, proposed development plans should include the provision of bird nesting habitat. Recommendations are provided in Section 7.2.3.

7.2.2 Mitigation

Ideally, development work should not be started between 1st March and 1st October (inclusive).

Should it not be possible to time development work to avoid disturbance to nesting birds, potential access points to bird nesting locations should be closed off with mesh or fabric barriers, in order to prevent birds from nesting.

Should it be required that development works commence between March and September, the Building should be inspected by a suitably qualified ecologist for evidence of nesting birds.

No works may commence if birds have started to build, or if they already occupy, nests. If birds start nesting on/within the Building - prior to or during development work - delays will be inevitable up to the moment when the young birds leave the nest.

7.2.3 Enhancement

In order to encourage small nesting birds to nest within the Blaenau Uchaf property: it is recommended that woodcrete (or similar) purpose-made bird nest boxes be installed.

Ideally nest box placement and construction of nesting features should be undertaken outside the bird breeding season (March-September inclusive).

Nest boxes may be placed under the gables and eaves of the main, two-storey, section of the Building. Ideally nest boxes should be positioned in areas of low future disturbance.

It is recommended that a minimum of:

- a) two House Martin nest boxes (e.g. Schwegler Building martin Nest 9A)
- b) two Swallow nest boxes (e.g. Schwegler Swallow No.10); and,
- c) two Tit nest boxes (e.g. Schwegler 2M woodcrete bird box);

be installed within the Blaenau Uchaf property post-development.

8. Relevant publications

- 1: Collins, J. (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed., Bat Conservation Trust.
- 2: 'Bats: surveys and mitigation for development projects' (14 January 2022).
United Kingdom Government Website:
<https://www.gov.uk/guidance/bats-surveys-and-mitigation-for-development-projects>
- 3: BS42020:2013 'Biodiversity – Code of practice for planning and development.' British Standards Limited.

Appendix 1 – Assessment photographs



Photograph 1. Exterior.

Upper left: part of the North elevation of Section B.

Lower left: East elevation of Section A.

Right: North elevation of Section A.



Photograph 2. Exterior.

Left: North elevation of Section A.

Centre and lower right: West elevation of Section A.

Upper right: part of the North elevation of Section B.

Extreme right: part of the West elevation of Section B.



Photograph 3. Interior.
View within Section A.
Looking north from south.



Photograph 4. Exterior.
Left, centre and right: East elevation of Section B.
Upper far right: part of the North elevation of Section B.
Lower far right: part of the East elevation of Section A.



Photograph 5. Exterior.

Left: part of the South elevation of Section G.
 Upper left-of-centre: parts of the West elevation roof-slopes of Section B and Section C.
 Middle left-of-centre: South elevation of Section D.
 Lower left-of-centre: West elevation of Section E.
 Upper right-of-centre: part of the South elevation of Section B.
 Lower centre and right: South elevation of Section E.



Photograph 6. Exterior.

Lower left and centre: part of the West elevation of Section C.
 Upper left and centre: part of the West elevation of Section B.
 Right: parts of the North and West elevations of Section D and part of the Section F roof structure.
 Far right: part of the West elevation of Section E.



Photograph 7. Exterior.

Far left: part of the West elevation of Section A.
Left, upper centre and upper right: part of the West elevation of Section B.
Lower centre and right: part of the West elevation of Section C.



Photograph 8. Exterior.

Lower left: part of the West elevation of Section A.
Upper left: part of the North elevation of Section B.
Centre and upper right: part of the West elevation of Section B.
Lower right: part of the North elevation of Section C.



Photograph 9. Interior.
View within the Section B north-end first-floor room.
Looking northeast from southwest.



Photograph 10. Interior.
View within the Section B central and south-end first-floor room.
Looking northwest from southeast.



Photograph 11. Interior.
View within the Section B south room.
Looking south from north.



Photograph 12. Interior.
View within Section E.
Looking northeast from southwest.



Photograph 13. Interior.
View within Section D.
Looking south from north.



Photograph 13. Exterior.
Upper left: part of the Section B and Section D West elevation roof-slopes.
Lower left: North elevation of Section G.
Right: West elevation of Section G,



Photograph 14. Interior.
View within Section G.
Looking northwest from southeast.

Appendix 2 – Enhancement for Bat

Bat roost boxes

In order to encourage bats to reside at Blaenau Uchaf in the future: it is recommended that woodcrete (or similar) purpose-made bat roost boxes are installed.

Ideally Bat Boxes should be positioned in areas of low future disturbance and Bat Boxes should be installed more than 3m height above the ground.

Specially designed Bat Boxes are available that may be built into walls or encased by exterior weather boarding.

Recommended designs are the Schwegler 1FR and 2FR Bat Tubes which provide maintenance-free roosting opportunities, Ibstock Enclosed Bat Boxes and Wienerberger Habibat Bat Boxes.

These Bat Tubes and Boxes may be aesthetically unobtrusive if sympathetically integrated into the finished design of the proposed development.

It is recommended that a minimum of either:

- one Schwegler 1FF Bat Box;
- or,
- one Schwegler 1FD Bat Box (or similar alternatives)

is installed within the Blaenau Uchaf property (and/or within its immediate vicinity) post-development.

Ridge tile bat roosts

Ridge tiles on the apex of the Building roof may be permanently raised to potentially allow bats to roost on the underside of them.

It is recommended that a minimum of two ridge tile bat roosts be created during the development.

Purposely raised ridge tiles

Raised ridge tiles may be created by:

- a) narrowing the gap between tiles and resting the middle tiles on their neighbours, or by packing the ends of tiles with an excess amount of mortar (or similar).
- b) laying all ridge tiles onto a 20mm deep bed of mortar and at approximately every 1.5m, leaving gaps between 30 and 150mm without mortar. (A temporary support, such as a piece of roof tile, may be required to support ridge tiles until mortar has set).
- c) securing ridge tiles on the roof with mortar placed on the inner lower half of the ends of ridge tiles only. The height of bat openings will be between 18mm and 22mm.

Where possible, fixing ridge tiles with mortar on their inner lower half only - rather than in the apex – would create long voids favoured by crevice dwelling bats.

It may be possible to avoid using any mortar at all.

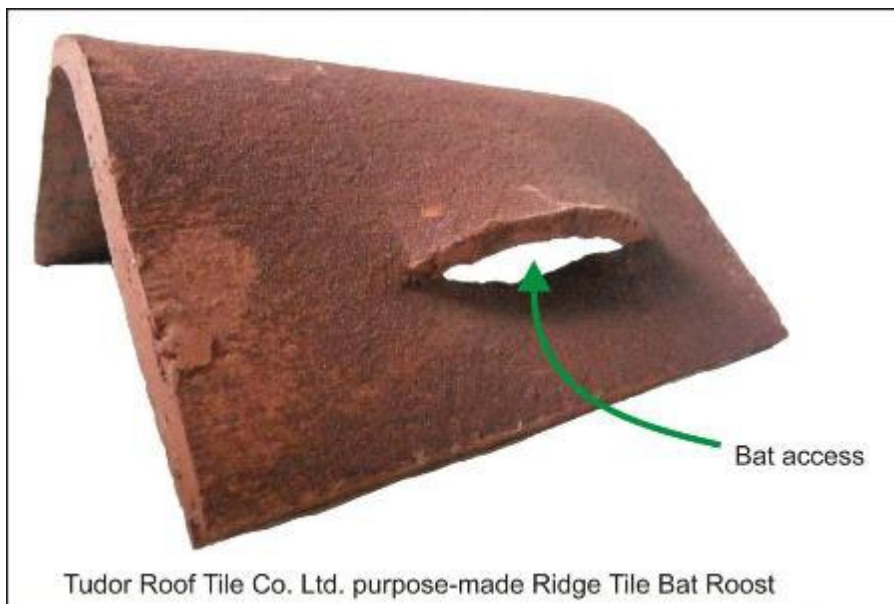
Reclaimed and/or misshaped ridge tiles

Should re-claimed and/or misshaped ridge tiles be used during roofing work, it is possible that not all of the ridge tile will fit closely with roof tiles underneath them. Should these gaps be between approximately 12mm and 22mm in height – there is potential that crevice dwelling bats may use them to gain access to the undersides of ridge tiles. The 'natural' gap of misshaped ridge tiles may be exaggerated by packing with mortar and the undersides of the ridge tile should not be completely filled with mortar to provide a potential roosting space for bats.

Purpose-made ridge tile bat roosts

Purpose-made ridge tiles with bat-access openings are available commercially. For example, the handmade 'bat access ridge tile' produced Tudor Roof Tile Co. Limited, Dengemarsh Road, Lydd, Kent, TN29 9JH.

A picture of the Tudor Roof Co. Limited purpose-made ridge tile bat roost is shown below:



Please note: Star Ecology has no association with Tudor Roof Tile Co. Limited.

External Lighting

In order to avoid any unnecessary disturbance to bats in the future, any external lighting to be installed at Blaenau Uchaf should:

- use Light emitting diodes (LED) luminaries
- have a warm white spectrum <2700° Kelvin (degrees colour temperature)
- have peak wavelengths higher than 550nm
- be set on motion-sensors
- use short duration (e.g. one minute) timers
- not be in the vicinity of, or shine towards, bat roost openings
- not shine towards (the) roof structure(s)
- not be in the vicinity of, or shine towards, boundary vegetation