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FORMER ESTATE OFFICE AND STABLES
TREVOR ROW
CHIRK
WREXHAM
LL14 5HE

BUILDING DEVELOPMENT

Protected Species Surveys



Former Estate Office and Stable Block.

Client	Daniel Jones
Planning Authority	Wrexham County Borough Council
Grid Reference	SJ2923237579
Dates of Surveys	25 May, 20 June and 15 July 2022
Reference	082022/BES/DJ



TABLE OF CONTENTS

1.0 SUMMARY	3
2.0 INTRODUCTION	4
2.1 Brief	
2.2 Purpose of this report	
2.3 Scope of report	
2.4 Relevant background information	5
2.5 Qualifications	
2.6 Copyright	
3.0 DATA COLLECTION	6
3.1 Site Description	
3.2 Methodology	7
3.3 Results	
4.0 SITE EVALUATION	10
5.0 IMPACT ASSESSMENT	11
5.1 Short-term impact	
5.2 Long-term impact – roost losses	
5.3 Long-term impact – fragmentation and isolation	
5.4 Post-development interference impacts	
5.5 Predicted scale of impact	
6.0 CONCLUSIONS	12
7.0 MITIGATION AND RECOMMENDATIONS	13
7.1 Compensation	
7.2 Reasonable Avoidance Measures	14
7.3 Bat roosting opportunities	
7.4 Roof Insulation	15
7.5 Timber treatment	16
7.6 Lighting	
7.7 Bird nesting opportunities	17
8.0 WILDLIFE AND THE LAW	17
8.1 European Protected Species	
8.2 Other Protected Species – Nesting Birds	20
8.3 Environment (Wales) Act 2016	21
8.4 Planning Policy Wales (PPW 2021)	
8.5 Key Principles of PPW (2021)	22
APPENDICES	
Appendix 1 – Site Plan	23
Appendix 2 – Photographs	24
Appendix 3 – Grading System for Bat Habitats	26
Appendix 4 – Bat Sonographs	27
Appendix 5 – Mitigation Details	29
Appendix 6 – Bibliography	32



1.0 SUMMARY

The proposed work is for change of use and to convert the former estate office and stable block building into a residential dwelling. The planning process requires that ecological surveys be carried out to highlight any potential conflict regarding the protected species (bats and birds), and the proposed development work. The results of the surveys will guide what mitigation/compensation measures are required.

An initial scoping survey was carried out on 25 May 2022 by licensed bat worker, Stephen Cutmore. During the scoping survey a single Lesser Horseshoe bat was encountered in the loft void. Evidence of recent bat activity was observed in the form of bat droppings and discarded butterfly wings on the loft floor in the upper level. The droppings appeared to be old, from previous seasons.

Further emergence surveys were carried out on 20 June and 15 July 2022. During the emergence surveys up to 7 x Soprano Pipistrelle, 1 x Common Pipistrelle, 1 x Whiskered/Brandt's and 1 x Lesser Horseshoe bats were observed emerging from the building.

Brown Long-eared and Noctule bat species were detected foraging in the vicinity of the site.

The former estate office and stable block building, Trevor Row, Chirk is therefore a known roost. The proposed development work to convert the building will result in the disturbance/destruction of a confirmed roosts being used as a small day roost by 7 x Soprano Pipistrelle, 1 x Common Pipistrelle, 1 x Whiskered/Brandt's and 1 x Lesser Horseshoe bats. A derogation licence will be required from Natural Resources Wales, to avoid an offence being committed.

Mitigation in the form of compensation in the form of alternative roosts must be provided, to minimise the impact on bats, prior to the proposed development works commencing. If mitigation is provided, Reasonable Avoidance Measures in the form of timing of operations are followed and bat-friendly features are incorporated into the development as enhancements, the proposed scheme is likely to have a low impact on the favourable conservation status of the locally recorded bats and likely have a positive impact on locally recorded bats.



2.0 INTRODUCTION

2.1 Brief

Stephen Cutmore, a licensed bat worker (NRW[S087991/1]), was instructed by Daniel Jones, to carry out protected species surveys of the former estate office and stable block building, Trevor Row, Chirk, Wrexham, LL14 5HE.

The definition of the assignment was to:

1. Carry out an initial day-time visual scoping survey of the building to examine if there is any evidence of recent bat use or nesting birds.
2. Carry out further emergence surveys to determine if any roosting bats are present.
3. Provide a report with mitigation measures.

2.2 Purpose of this report

The purpose of this report is to advise you of the results of the parts 1 and 2 of the assignment. These results are set forth in the *Conclusions* section, following. This report describes the field conditions as found and interpreted.

2.3 Scope of report

Date of consultation.

The field surveys were made on 25 May, 20 June and 15 July 2022, and observations and conclusions are as of those dates.

Limit of scope.

This is solely a protected species survey results report and cannot comment on topics outside this discipline. If additional advice is required, it is strongly recommended that other professionals are consulted.

Unless stated otherwise:

- 1) information contained in this report covers only those buildings that were examined:
- 2) the inspection is limited to visual examination of the buildings, utilising a high powered torch and endoscope. Electronic bat detectors are utilised on emergence surveys.
- 3) there is no warranty or guarantee, expressed or implied, that bats may not utilise the buildings after the survey has been completed, that are not discovered utilising the buildings during the inspection. Bats are highly mobile and some species frequently move roosts. It may be possible that bats could move into a building after a survey has taken place. An assessment of the suitability of the building to support roosting bats has therefore been carried out, to establish the likelihood of this occurring.
- 4) this report has been prepared for the sole use and benefit of the client. Any liability of Stephen Cutmore Arboricultural & Ecological Services shall not be extended to any third party.



2.0 INTRODUCTION (continued)

2.4 Relevant background information

The proposed work is for change of use and to convert the former estate office and stable block building into a residential dwelling. The planning process requires that ecological surveys be carried out to highlight any potential conflict regarding the protected species (bats and birds), and the proposed development work. The results of the surveys will guide what mitigation/compensation measures are required.

2.5 Qualifications

Stephen Cutmore has over twenty five years' experience as an arboricultural and ecological consultant. Stephen holds a BSc (Hons) in Arboriculture & Urban Forestry and is a Chartered Arboriculturist. Stephen is a member of the Bat Conservation Trust (102994) and a member of Clwyd Bat Group. Stephen has been a Licenced Bat Worker since May 2007 and a Licenced Amphibian Worker since March 2011 and currently holds bat licences with NRW and NE (NRW[S087991/1], NE[2015-16936-CLS-CLS]) and GCN licences with NRW and NE (NRW[S088921/1], NE[2016-19908-CLS-CLS]).

2.6 Copyright

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3.0 DATA COLLECTION

3.1 Site Description

The former estate office and stable block building, Trevor Row, Chirk, Wrexham, LL14 5HE, is located at Grid Reference SJ2923237579. The site is located within the South of the town of Chirk, some 6.5km to the South of the city of Wrexham.

The River Ceiriog lies approx. 425m to the South of the site and the Llangollen Canal is some 185m to the South. Other small watercourses are in the locality. The surrounding landscape has improved pasture fields with native hedgerows and trees. Chirk Wood is situated within approx. 25m to the South of the site, with other areas of woodland in the locality. All these landscape features provide good habitat for foraging bats.

The Cofnod (Local Ecological Records Centre) website was accessed (www.cofnod.org.uk) and a Cofnod Data Request (E10094) was made for a data search for bats and roof-nesting birds within a 500m radius of the site. Due to the sensitivity of the data, specific records for protected species cannot be disclosed, but there are records of Lesser Horseshoe and Pipistrelle spp. bat species within 500m radius of the site. Records of bird species include Blue Tit, Great Tit, House Martin, House Sparrow, Swallow and Wren. Designated sites within 500m include the River Dee (SSSI), River Dee and Bala Lake (SAC) and a Traditional Orchard site.

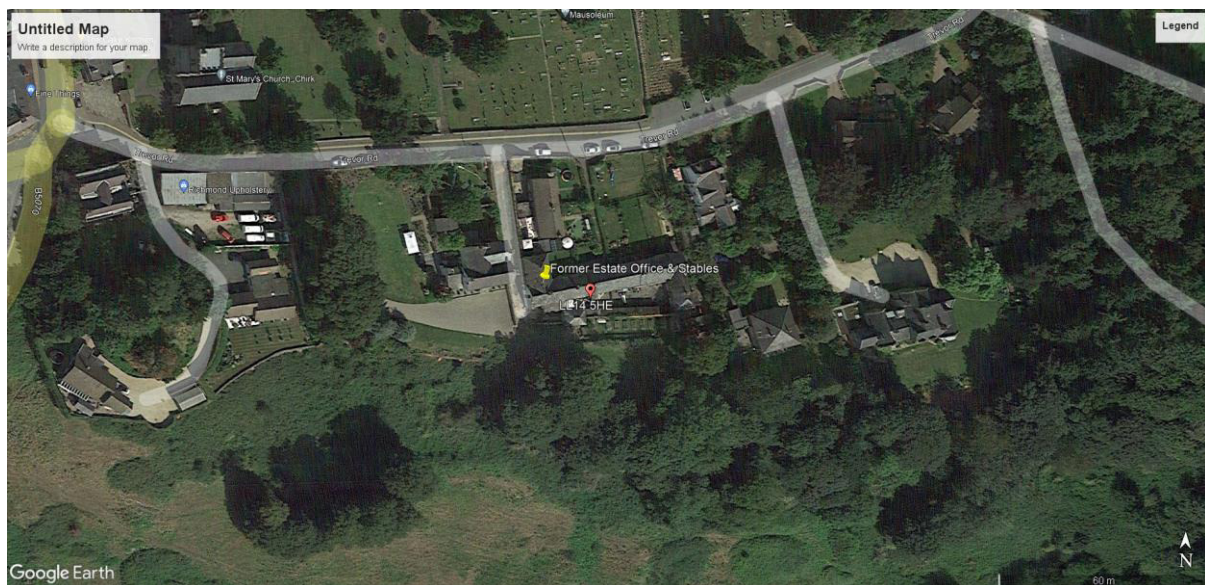


Figure 1: Aerial photograph of the former estate office and stable block, Trevor Row, Chirk, showing good connectivity in the surrounding landscape.



3.0 DATA COLLECTION (continued)

3.2 Methodology

3.2.1 Bats

A day-time building survey was carried out on 25 May 2022, by licensed bat worker, Stephen Cutmore. The structure of the buildings was visually examined, utilising a high power torch [Cluson Clulite CB2 Clubman Deluxe] and endoscope [Ridgid Micro CA-350]. The walls (both internal and external), floor, and all accessible roof spaces, crevices and other potential roosting areas were methodically closely visually examined for signs of bat occupation, in the form of droppings, feeding remains, staining around crevices, as well for the animals themselves. The buildings were also assessed for potential habitat for roosting bats.

3.2.2 Emergence surveys

Further emergence surveys were carried out on 20 June and 15 July 2022, by Stephen Cutmore and three assistant surveyors. The surveyors took up strategic positions around the buildings, which were visually monitored to check for any emerging bats. Electronic bat detectors (Anabat Walkabout and Scout), were used to record and analyse the frequencies of bat echo-location calls. The observed flight pattern of the observed bats and the frequency of the echolocation calls enabled the species of bat to be identified.

3.2.3 Other protected species

The building was visually examined for the presence of and evidence of recent use by birds.

3.3 Results

3.3.1 Bat scoping survey

Description

The former estate office and stable block is a detached two-storey rendered brick building, with a pitched roof covered with natural slates. The building is derelict, with the roof over the stable block partially collapsed, which is allowing rain to penetrate the building, causing the floor timbers to rot, with holes in the floor, which is very unsafe. The roof over the office and bedroom is intact and in a fairly good condition.

Ground floor

A high level of natural light is penetrating into the stable block and the estate office via the windows and the holes in the roof. No bats were encountered and no evidence of recent bat activity was observed in the form of droppings, feeding remains etc.

Upper level

A high level of natural light is penetrating into the hay loft and the bedroom above the estate office, via the windows and the holes in the roof. Due to the rotten floorboards, it was not possible to carry out a close visual inspection of the hay loft floor, to check for evidence of recent bat activity (droppings/feeding remains). A high powered torch was used to illuminate the floor whilst standing on the rickety stairs. No bats were encountered in either the hay loft area or the bedroom.

Loft void

The loft void is dark and the roof is intact. Piles of fresh bat droppings and discarded butterfly wings were observed on the loft floor. A single Lesser Horseshoe bat (*Rhinolophus hipposideros*) was observed hanging from the 1F bitumastic felt beneath the slates.



3.0 DATA COLLECTION (continued)

3.3 Results

3.3.1 Bat scoping survey

Roof and external walls

The roof over the estate office and the loft void is intact and in a fairly good condition. The roof over the stable block is partially collapsed, with holes in the roof from missing slates and rotten roof timbers. On the sections of intact roof, gaps were observed beneath ridge tiles and some slates and between the walls and the wooden fascia boards/eaves/bargeboards etc.

Potential for roosting bats

The building was assessed as having a moderate [due to derelict condition] potential for roosting bats (a structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status). The surrounding habitat was assessed as having a high potential for foraging bats.

3.3.2 Nesting birds

No evidence of nesting birds was observed in the building or on the outside.

3.3.3 Emergence surveys

1st evening emergence survey 20 June 2022

The emergence survey started at 21.25hrs, with sunset time of 21.41hrs. The starting air temperature was recorded as 14°C. The weather was dry, with 10% high broken clouds. There was a gentle breeze.

The survey was stopped at 23.15hrs, with a finishing temperature of 12°C.

The first bat detected at 21.30hrs was observed flying high over the site. Echolocation calls recorded [18kHz] identified this as a Noctule (*Nyctalus noctula*). This bat was observed making several foraging/commuting passes over the site throughout the survey.

At 21.34hrs two bats were observed emerging from beneath a ridge tile on the main roof above the estate office. Echolocation calls recorded [55kHz] identified these as Soprano Pipistrelle (*Pipistrellus pygmaeus*). At 22.07hrs and 22.19hrs two more Soprano Pipistrelle bats were observed emerging from beneath ridge tiles on the main roof.

At 21.39hrs a Soprano Pipistrelle was observed emerging from beneath the eaves near the left-hand corner of the South elevation. At 21.42hrs a Soprano Pipistrelle was observed emerging from the left-hand side of the apex of the West gable-end. At 21.46hrs a Soprano Pipistrelle was observed emerging from beneath the eaves near the left-hand corner of the South elevation.

At 21.50hrs a bat was observed flying onto the site from the North and foraging along the West of the building. Echolocation calls recorded [45kHz] identified this as a Common Pipistrelle (*Pipistrellus pipistrellus*).



3.0 DATA COLLECTION (continued)

3.3 Results

3.3.3 Emergence surveys

1st evening emergence survey 20 June 2022

At 21.10hrs a bat was observed flying to the window open doorway in the South elevation and flying back inside. Echolocation calls recorded [108kHz] identified this as a Lesser Horseshoe (*Rhinolophus hipposideros*), which was light sampling. At 22.27hrs, this Lesser Horseshoe bat emerged from the rear door and flew to the North.

Throughout the survey, the Pipistrelle species bats made frequent foraging/commuting passes around the site.

2nd evening emergence survey 15 July 2022

The emergence survey started at 21.15hrs, with sunset time of 21.31hrs. The starting air temperature was recorded as 15°C. The weather was dry, with 20% cloud cover. There was a gentle breeze.

The survey was stopped at 23.05hrs, with a finishing temperature of 13°C.

The first bat was detected at 21.33hrs and was a Soprano Pipistrelle that emerged from the bottom left-hand side of the East gable-end of the roof of the neighbouring Trevor House.

At 21.56hrs a Lesser Horseshoe was observed light sampling at the open door in the West elevation of the upper level hay loft. At 22.01hrs the Lesser Horseshoe flew out the hay loft door, but re-entered the building via a broken window in the West elevation of the ground floor office. At 22.04hrs the Lesser Horseshoe was light sampling at the open door in the West elevation of the ground floor office and flew out.

At 22.02hrs a bat was observed flying out of the open door in the West elevation of the upper level hay loft. Echolocation calls recorded [46kHz] identified this as a Myotis species bat. The call was analysed utilising Anabat Insight software, which identified it as either a Whiskered (*Myotis mystacinus*), or Brandt's (*Myotis brandtii*).

At 22.08hrs a Noctule bat flew high over the site.

At 22.22hrs a bat was observed foraging at the side of the building (not seen emerging from the building), then flying to the trees towards the South of the building. No echolocation calls were recorded, so a positive identification could not be made. The size of the bat and the fluttering flight pattern, suggested it was likely a Brown Long-eared (*Plecotus auritus*).

At 22.24hrs a Common Pipistrelle emerged from the broken window in the West elevation of the ground floor office.

Throughout the survey, the Pipistrelle species bats made frequent foraging/commuting passes around the site.



4.0 SITE EVALUATION

During the scoping survey a single Lesser Horseshoe bat was encountered roosting in the loft void in the upper level. Evidence of recent bat activity was observed in the form of bat droppings and discarded butterfly wings on the floor of the loft void in the upper level. The roof over the stable block is partially collapsed, with holes in the roof from missing slates and rotten roof timbers. On the sections of intact roof, gaps were observed beneath ridge tiles and some slates and between the walls and the wooden fascia boards/eaves/bargeboards etc.

The building was assessed as having a moderate [due to derelict condition] potential for roosting bats (a structure with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status).

The River Ceiriog lies approx. 425m to the South of the site and the Llangollen Canal is some 185m to the South. Other small watercourses are in the locality. The surrounding landscape has improved pasture fields with native hedgerows and trees. Chirk Wood is situated within approx. 25m to the South of the site, with other areas of woodland in the locality. All these landscape features provide good habitat for foraging bats. The surrounding habitat was assessed as having a high potential for foraging bats.

During the emergence surveys up to 7 x Soprano Pipistrelle, 1 x Common Pipistrelle, 1 x Whiskered/Brandt's and 1 x Lesser Horseshoe bats were observed emerging from the building.

Brown Long-eared and Noctule bat species were detected foraging in the vicinity of the site.



5.0 IMPACT ASSESSMENT

5.1 Short-term impact

Disturbance through increased human presence, noise and changes in site layout may have a detrimental effect on bats. If bats were present, they could be killed or abandon a roost if works start when present between spring and summer. If works started in winter and not completed by spring, bats would have no roost to return to. Timing of operation will minimise disturbance.

5.2 Long-term impact – roost losses

7 x Soprano Pipistrelle, 1 x Common Pipistrelle, 1 x Whiskered/Brandt's and 1 x Lesser Horseshoe bats were observed emerging from the building. The proposed work to convert the building into a residential dwelling would result in these small day roosts being disturbed/destroyed by the proposed development.

2 x wall-mounted bat boxes will be provided as compensation to provide alternative roosts for the crevice-dwelling bat species. A dedicated bat loft will be provided in a timber building to be erected adjacent to the East of the brick garage building as compensation for the Lesser Horseshoe bat, to provide an alternative roost, close to the existing roost, in the same orientation and with access to existing flightlines.

5.3 Long-term impact – fragmentation and isolation

No vegetation requires removing to facilitate the proposed development, so there is no predicted long term impact from fragmentation or isolation. New tree/shrub/hedge planting in a post-construction landscape scheme will enhance the site for foraging bats and nesting birds.

5.4 Post-development interference impacts

Any bright, artificial lighting on roost entrances and flightlines would be negative. Any lighting will be low level, with illumination directed downwards to minimise impact (see 7.6 Lighting below).

5.5 Predicted scale of impact

The impact on individual bats of all species concerned would be high and the impact on the favourable conservation status of locally recorded bats would be low. It is essential that appropriate compensation and mitigation measures are implemented and that Reasonable Avoidance Measures are followed, in order to minimise the impact on locally recorded bats.



6.0 CONCLUSIONS

6.1 Bats

During the scoping survey a single Lesser Horseshoe bat was encountered roosting in the loft void in the upper level. Evidence of recent bat activity was observed in the form of bat droppings and discarded butterfly wings on the floor of the loft void in the upper level. The roof over the stable block is partially collapsed, with holes in the roof from missing slates and rotten roof timbers. On the sections of intact roof, gaps were observed beneath ridge tiles and some slates and between the walls and the wooden fascia boards/eaves/bargeboards etc.

7 x Soprano Pipistrelle, 1 x Common Pipistrelle, 1 x Whiskered/Brandt's and 1 x Lesser Horseshoe bats were observed emerging from the building. The proposed work to convert the building into a residential dwelling would result in these small day roosts being disturbed/destroyed by the proposed development.

Brown Long-eared and Noctule bat species were detected foraging in the vicinity of the site.

The former estate office and stable block building, Trevor Row, Chirk is therefore a known roost. The proposed development work to convert the building will result in the disturbance/destruction of a confirmed roosts being used as a small day roost by 7 x Soprano Pipistrelle, 1 x Common Pipistrelle, 1 x Whiskered/Brandt's and 1 x Lesser Horseshoe bats. A derogation licence will be required from Natural Resources Wales, to avoid an offence being committed.

Mitigation in the form of compensation in the form of alternative roosts must be provided, to minimise the impact on bats, prior to the proposed development works commencing. If mitigation is provided, Reasonable Avoidance Measures in the form of timing of operations are followed and bat-friendly features are incorporated into the development as enhancements, the proposed scheme is likely to have a low impact on the favourable conservation status of the locally recorded bats and likely have a positive impact on locally recorded bats.

The building is in a derelict condition and has holes in the roof due to slipped and missing slates. If nothing was done, building would continue to decline in condition and likely start to collapse, which would pose a significant safety risk to the landowner and his family and visitors to the site. This would likely lead to the loss of the current small day-roosts, so doing nothing is not a viable option.

Providing an alternative roost as appropriate and suitable compensation for the 1 x Lesser Horseshoe bat, in a dedicated bat loft in a timber building to be erected adjacent to the East of the garage building, and providing 2 x woodcrete bat boxes as an alternative roost for the crevice-dwelling bat species is therefore considered the best available option.



6.0 CONCLUSIONS (continued)

6.2 Nesting birds

No evidence of bird nests were observed inside the building, or on the outside.

Birds are protected by European and UK legislation. Any proposed development works which may affect nesting birds should be carried out between October – March to avoid the nesting season.

7.0 MITIGATION AND RECOMMENDATIONS

The proposed development work will result in the disturbance/destruction of a confirmed roost being used by up to 7 x Soprano Pipistrelle, 1 x Common Pipistrelle, 1 x Whiskered/Brandt's and 1 x Lesser Horseshoe bats. Mitigation in the form of compensation must be provided prior to the commencement of the proposed development, to minimise the impact on bats.

7.1 COMPENSATION

Mitigation in the form of compensation is required, to provide an alternative 'like-for-like' bat roost on the site. The replacement roost should 1) match the existing roost in terms of size, height and aspect; 2) have a thermal regime suitable for the target species; 3) be situated as close as possible to the roost being lost and; 4) have an entrance close to the existing flight lines and appropriate habitat, to maximise chances of the bats finding and adopting it.

Lesser Horseshoe bats will not use bat boxes. Lesser Horseshoe bats, being roof void dwelling species, require exposed timber joists or beams and roofing felt on which to roost. The loft void should not be trussed, in order to allow unobstructed flight. A dedicated bat loft (4m length x 2.5m width x 2.6m floor to ridge height) will be provided in a timber building to be erected adjacent to the East of the garage, as mitigation in the proposed development, to compensate for the small day roost to be lost. This location has direct sun throughout the day, so would benefit from solar radiation on the roof. The building will be insulated by installing suitable insulation (e.g. Kingspan sheets) on the inner surface of the walls and lined on the inner side with plyboard sheets. Similarly a 'sandwich' of insulation sheets between plyboard sheets will be used for the loft floor. 1F bitumastic felt will be used beneath the natural slates on the pent roof. A 'fly-in' access will be provided for the Lesser Horseshoe bats, in the form of a 'letterbox' opening (300mm x 200mm) in the South elevation wall. Internal baffles of plyboard sheeting will help prevent light and wind ingress into the dedicated bat loft.

The dedicated bat loft should be completed between October-April, so that a replacement roost for the void-dwelling bat species is available for when the bats emerge from hibernation.

Compensation in the form of an alternative bat roost must be provided for crevice-dwelling bats before any proposed work commences. This will be in the form of 2 x woodcrete bat boxes [suggest either a Schwegler (1FQ) wall-mounted bat box (75) or a Schwegler 1WQ summer & winter bat roost] [available from www.wildcareshop.com], fixed to the South elevation of the garage, high enough (>2-3m) to avoid predation by cats. Given the on-going problem of obtaining Schwegler products, a similar style woodcrete bat box by a different manufacturer would be a satisfactory alternative (e.g. Harlech Woodcrete bat box).



7.0 MITIGATION AND RECOMMENDATIONS (continued)

7.2 REASONABLE AVOIDANCE MEASURES

General recommendations

Timing of the development works is crucial. The optimum time for work involving a summer roost (where bats are present but without dependable young) is 1st September – 1st May. It is recommended that any works that could disturb bats is carried out under supervision by a Licenced Bat Worker.

Development works

A derogation licence must be obtained from NRW and any work that has potential to harm bats should be directly supervised by a licenced ecologist. During the development work, great care should be taken when removing any materials, to ensure no harm is caused to bats. Extreme caution must be exercised when removing roofing materials especially where two materials meet as there is potential for finding bats. The individual slates/tiles should be gently lifted by hand before removal and checked underneath for bats. Check for bats also in timber joints, behind mortar fillets etc. A similar precautionary approach should be taken by checking around window frames, lintels, lintel bearers, doorframes, structural members, wall plates, gaps in blockwork/stonework, lead flashing etc., before proceeding with any work, to ensure no bats are injured during the development work.

The amendments to the European Habitat Regulations came into force in August 2007, which means that the ‘incidental result defence’, which previously covered acts that were the incidental result of an otherwise lawful operation, such as a planning permission, has now been removed. Therefore if any bats, or signs of bats (droppings etc.), are encountered, work should stop immediately and not resume until advised by an ecologist. If any bats are discovered, Natural Resources Wales must be notified as to what bat species and numbers were encountered and what action has been taken.

Any proposed development works which may affect nesting birds should be carried out between October – March to avoid the nesting season.

7.3 BAT ROOSTING OPPORTUNITIES

It is recommended that bat friendly features be incorporated into the proposed development, as wildlife enhancements, in order to keep in line with the Local Biodiversity Action Plans.

As suitable roosting opportunities for bats will be incorporated into the roof structure of the proposed development, traditional hessian backed 1F bitumastic underfelt **must** be used. Results of recent research commissioned by The Bat Conservation Trust (http://www.bats.org.uk/pages/breathable_roof_membranes.html) has concluded that Breathable Roofing Membrane (BRM) poses a serious threat to bats, due to loose spun-bond filaments becoming entangled around bats feet and wings, resulting in bats becoming immobilised and eventually dying. The functionality and longevity of BRM can also be affected in those parts altered by the presence of bats.



7.0 MITIGATION AND RECOMMENDATIONS (continued)

7.3 BAT ROOSTING OPPORTUNITIES

2 No. 'Slate-line' bat tiles installed in the pitches of the roof, to allow bats access to the space between the slates and roofing felt (available from Summit Slate Supplies, Welshpool <http://www.summitslate.co.uk/>). Also three ridge tiles will have 20mm high x 100mm long gaps cut in one of the lower edges, to allow access for bats, or alternatively leave gaps in the mortar (see *Appendix 5 – Mitigation Details*).

After the development work has been completed, a Schwegler 1FQ wall-mounted bat box (75) [available from www.wildcareshop.com], will be fixed to the South-facing external wall of the building, high enough (2 - 3m) to avoid predation by cats. As there are often problems with obtaining supplies of Schwegler products, an equivalent design woodcrete bat box by a different manufacturer will be a suitable alternative.

A simple crevice box will be constructed from untreated rough sawn boards (1.5m long x 15cm deep, with a gap of 22mm between the boards as the roosting space) and hung from the underside of the roof of the dedicated bat loft, as near to the apex/ridge board as possible. The 22mm battens should be fixed between the boards at either end and along the top edge, to leave the underside open for bat access.

Any bat-friendly features to be incorporated in the new development should be detailed on the development plans/drawings.

7.4 ROOF INSULATION

As bat-friendly features are to be incorporated in the roof sections, any new insulation (e.g. Kingspan sheets), will be fixed to a counter batten, attached to the underside of the rafters. Care must be taken to ensure that a 50mm airspace between the insulation and the slates/tiles is maintained for bat access.



7.0 MITIGATION AND RECOMMENDATIONS (continued)

7.5 TIMBER TREATMENT

Any timber treatment to protect against insects, fungal growth or weathering in areas with potential to be accessed by bats, should only be carried out utilising chemicals from the Natural Resources Wales approved list. A list of Approved Products is available at <https://www.gov.uk/guidance/bat-roosts-use-of-chemical-pest-control-products-and-timber-treatments-in-or-near-them>, which provides links to Timber Treatment Table 1. If the product is not listed, check the active ingredients listed in Timber Treatment Tables 2-7.

You can't use chemical products in or near a known bat roost if there are bats present. The best time to apply treatments is usually between autumn and spring.

Pre-treated timber products

Pre-treated timber products are not included in the tables mentioned above. You can use timber that's been pre-treated off-site, because the chemicals are injected deep into the timber leaving lower concentrations on the surface which isn't harmful to bats. However you shouldn't apply products used to pre-treat timber on-site, because the active ingredients will be more concentrated on the timber surface and may be harmful to bats.

Stains and preservatives

Decorative wood finishes, like stains or wood preservative, can be used around bat roosts as long as you only use them on external timber.

7.6 LIGHTING

Bats can be disturbed by bright, artificial lighting at night (ALAN). Where lighting is essential in the vicinity of any proposed new development, subdued lighting will be used and the illumination will be directed downwards to where it is needed (upward light ratio 0%) and light spillage avoided. This can be achieved by the design of the luminaire and by using accessories such as hoods, cowls, louvres and shields to direct the light to the intended area only. The light should be as low as guidelines permit. If lighting is not needed in any particular area, do not light.

LED luminaires should be used where possible, with a warm white spectrum (<2700Kelvin) to minimise blue light component. Luminaires should have peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats. Alternatively, the use of low pressure sodium lamps or high pressure sodium instead of mercury or metal halide lamps where glass glazing is preferred due to its UV filtration characteristics. The use of motion sensor-triggered security lighting with short (1 min) timers, is preferable to permanent lighting. If roosting opportunities are to be incorporated into the new development, it is essential that roost access points and flightlines used for foraging/commuting (e.g. hedgerows, lines of trees) are not illuminated. The use of soft landscaping and fencing [supported by concrete posts to ensure long-term contribution] can be used to screen light spill. The latest Guide Note 08/18 can be downloaded at www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/

As an ecologist I am not qualified to recommend specific makes/models of lights, so further advice should be obtained from a qualified lighting specialist, to ensure that the lighting conforms to the above BCT/ILE specification.



7.0 MITIGATION AND RECOMMENDATIONS (continued)

7.6 LIGHTING

Numerous lighting design software programmes are currently available which can be used to predict where the light cone and light spill will occur, which produce an image of the site in question, showing how the area will be affected by light spill when all the factors of the lighting components listed above are taken into consideration. This should be a useful tool for the architect/designer, to help inform lighting plans, demonstrating how lighting decisions will illuminate a site.

7.7 BIRD NESTING OPPORTUNITIES

Consideration should be given to providing some simple measures that would have a positive conservation benefit on local bird populations. These may be in the form of eaves built to be suitable for house martins. Suitable crevices left unsealed in exterior stonework or brickwork provides potential for nesting house sparrows. Provision for Swallows could be made in an outbuilding, by installing starter platforms in the form of 90mm x 90mm wooden battens fixed 450mm down from the roof apex. A range of woodcrete bird boxes will be fixed to mature trees to be retained. Post-construction landscape planting will provide suitable habitat and food sources for birds.

8.0 WILDLIFE AND THE LAW

8.1 EUROPEAN PROTECTED SPECIES

The Bern Convention (The convention on the conservation of European Wildlife and Natural Habitats) was adopted in 1979 and came into force in 1982. To implement this agreement, the European Community adopted the EC Habitats Directive. The EC Habitats Directive has been transposed into UK legislation by the Wildlife and Countryside Act, 1981 (as amended) and the Conservation of Habitats and Species Regulations, 2010. The Countryside and Rights of Way Act (CROW), 2000 strengthened the existing wildlife legislation in the UK. The UK has also signed the Bonn Convention (The Convention on the Conservation of Migratory Species of Wild Animals) and is therefore party to various agreements.

As from 30th November 2017 the legislation relating to European Protected Species has been consolidated into a new Regulation "The Conservation of Habitats and Species Regulations 2017".



8.0 WILDLIFE AND THE LAW (continued)

8.1 EUROPEAN PROTECTED SPECIES

8.1.1 Bats

All 17 bat species found in the UK and their roosts are protected in the UK under Schedules 5 and 6 of the Wildlife & Countryside Act 1981 (as amended) and are therefore afforded protection under Section 9 of this Act. The Countryside Rights of Way Act (CroW) 2000 strengthened the existing wildlife legislation in the UK.

In addition, five British bat species are also listed on Annex II [and all bats are listed on Annex IV] of the EC Habitats Directive, which is transposed into national law by means of The Conservation of Habitats and Species Regulations (2017).

These are:

- Greater horseshoe bat (*Rhinolophus ferrumequinum*);
- Lesser horseshoe bat (*Rhinolophus hipposideros*);
- Bechstein's bat (*Myotis bechsteinii*);
- Barbastelle (*Barbastella barbastellus*) and
- Greater mouse-eared bat (*Myotis myotis*).

Bats are listed under Appendix III of the Bern Convention. Bats and their habitats are also listed under Appendix II of the Bonn Convention and therefore the UK has an obligation to protect their habitat, including links to important feeding areas. The UK had designated maternity and hibernacula areas as Special Areas of Conservation (SACs) under the Habitats Directive. Implementation of the UK Biodiversity Action Plan also includes action for a number bat species and the habitats which support them.

8.1.2 Legislation relating to European Protected Species

In relation to a development a person commits an offence if they –

- Deliberately captures, injures or kills a European Protected Species
- Deliberately or recklessly disturbs wild animals of any such species in such a way as to be likely significant to affect:
 - (i) the ability of any significant group of animals to survive, breed, or rear or nurture their young; or
 - (ii) the local distribution or abundance of that species;
- Damages or destroys a breeding site or resting place (even if unintentional or when the animal is not present)
- Intentionally or recklessly obstructs access to a structure or place used for protection or shelter
- This legislation applies, regardless of the life stage (including eggs).

A European Protected Species Licence is required to carry out any activity that would otherwise involve committing an offence.

To avoid disturbance during habitat management, a written strategy is required following guidance provided by Natural Resources Wales. If the guidance is followed and major disturbance can be avoided, then a licence is not required.



8.0 WILDLIFE AND THE LAW (continued)

8.1 EUROPEAN PROTECTED SPECIES

8.1.3 *European Protected Species Licences*

At the present time, Natural Resources Wales requires the following three ‘tests’ to be met, in order that a licence may be granted.

Test 1. Regulation 53 (2) (e) states that licences granted to ‘preserve public health, or public safety or other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment’.

Test 2. Regulation 53 (9) (a) states that a licence may not be granted unless the licensing authority is satisfied ‘that there is no reasonable alternative’.

Test 3. Regulation 53 (9) (b) states that a licence cannot be issued unless the licensing authority is satisfied that the action proposed ‘will not be detrimental to the maintenance of the species concerned at a favourable conservation status in its natural range’.

8.1.4 *Recent changes in Licences*

Following a recent intervention from the European Court, there have been significant changes in the interpretation of the way licences are issued. In considering a licence request, Natural Resources Wales will seek information relating to the size and importance of the population/colony and will require evidence to demonstrate that the species will be maintained ‘at a favourable conservation status in their natural range’. In effect, this means that to obtain a licence, Natural Resources Wales must be satisfied that the applicant will implement mitigation to safeguard (and ideally enhance) the population concerned. Natural Resources Wales will need to see evidence that the development work which will disturb/destroy a roost site will be undertaken using current best practice, also that the bats can be provided with an alternative roost site on or in the immediate area.



8.0 WILDLIFE AND THE LAW (continued)

8.1 EUROPEAN PROTECTED SPECIES

8.1.5 Important EPSL Information

Please note that a European Protected Species Licence can only be obtained once planning permission has been granted. When assessing planning applications where a European Protected Species could be affected by proposed works, the local Planning Authority must take into account the potential impacts on the species concerned. In practice this could make further survey work (such as emergence surveys in the case of bats) essential prior to planning permission being granted. Alternatively the LPA may grant planning permission whilst imposing planning conditions to undertake further survey work. The local Planning Authority must also have regard for the three 'tests' as outlined above – Regulations 53 (2) (e), 53 (9) (a) and 53 (9) (b). Once planning permission has been granted a European Protected Species Licence application can be submitted to Natural Resources Wales. The application requires detailed Method Statements to be produced by a qualified bat ecologist to demonstrate how Regulation 53 (9) (b) can be satisfied. The applicant will also need to complete a Reasoned Statement form demonstrating (with evidence) that Regulations 53 (2) (e) and 53 (9) (a) are satisfied. This involves producing evidence to show that no reasonable alternative to the proposed action is available and that the action must take place to either 'preserve public health, or public safety or other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment.

8.2 OTHER PROTECTED SPECIES - NESTING BIRDS

All wild birds are protected under Part 1 of the Wildlife and Countryside Act, 1981 (as amended). Therefore in the UK it is an offence to:

- Take, damage or destroy the nest of any wild bird whilst it is being built or in use.
- Kill, injure or take any wild bird.
- Take or destroy the eggs of any wild bird.

To avoid committing an offence no works should be carried out on a structure/feature that is being used by nesting birds. Nesting is deemed to be over when the young have fully fledged. Certain species which are listed in Schedule 1 of the Wildlife and Countryside Act receive special protection. In these cases any form of intentional or reckless disturbance when they are nesting or rearing dependent young, constitutes an offence. Any disturbance of nesting birds between 1st March-30th September could constitute a criminal offence.



8.0 WILDLIFE AND THE LAW (continued)

8.3 ENVIRONMENT (WALES) ACT 2016

This Act sets out Wales' approach to planning and managing natural resources at a national and local level with a general purpose linked to statutory 'principles of sustainable management of natural resources' defined within the Act.

The Environment (Wales) Act introduces a new, enhanced Biodiversity and Resilience of Ecosystem Duty on public bodies to ensure that biodiversity is an integral part of decision making. The Duty will replace the existing Natural Environment and Rural Communities (NERC) Act 2006 Duty. Public authorities will be required to report on the actions they are taking to improve biodiversity and promote ecosystem resilience. Section 6 of the Act places a duty on public authorities to seek to maintain and enhance biological diversity (referred to as biodiversity). All public bodies, statutory undertakers, Ministers of the Crown and other public office holders are required to apply the duty when they are carrying on any functions in Wales, or in relation to Wales. Section 7 of the Act is similar to the duty in *section 42 of the NERC Act 2006* which it replaces. It places a duty on the Welsh Ministers to publish, review and revise lists of living organisms and types of habitat in Wales, which they consider are of key significance to sustain and improve biodiversity in relation to Wales.

8.4 PLANNING POLICY WALES FRAMEWORK

Planning Policy Wales (Edition 11, Dec 2021) sets out the Welsh Government's planning policies and how these are expected to be applied. The planning system manages the development and use of land in the public interest, contributing to improving the economic, social, environmental and cultural well-being of Wales, as required by the Well-being of Future Generations (Wales) Act 2015. It should reconcile the needs of development and conservation, securing economy, efficiency and amenity in the use of land, and protecting natural resources and the historic environment. A well-functioning planning system is fundamental for sustainable development.



8.0 WILDLIFE AND THE LAW (continued)

8.5 KEY PRINCIPLES OF PPW (2021)

Chapter 6 'Distinct and Natural Places' provides policies for protection of biodiversity and geological conservation.

Para.6.4.3 Development proposals must consider the needs to:

- support the conservation of biodiversity, in particular the conservation of wildlife and habitats;
- ensure action in Wales contributes to meeting international responsibilities and obligations for biodiversity and habitats;
- ensure statutorily and non-statutorily designated sites are properly protected and managed;
- safeguard protected and priority species and existing biodiversity assets from impacts which directly affect their nature conservation interests and compromise the resilience of ecological networks and the components which underpin them, such as water and soil, including peat; and
- secure enhancement of and improvements to ecosystem resilience by improving diversity, condition, extent and connectivity of ecological networks.

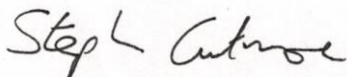
Para 6.4.22 states:

- The presence of a species protected under European or UK legislation is a material consideration when a local planning authority is considering a development proposal which, if carried out, would be likely to result in disturbance or harm to the species or its habitat.
- Local planning authorities should advise anyone submitting a planning application that they must conform with any statutory species protection provisions affecting the site concerned, and should consult Natural Resources Wales before granting permission.
- An ecological survey to confirm whether a protected species is present and an assessment of the likely impact of the development on a protected species may be required in order to inform the planning decision.

Para 6.4.23 states:

- Developments are always subject to the legislation covering European protected species regardless of whether or not they are within a designated site.
- New developments for which development works would contravene the protection afforded to European protected species require derogations from the provisions of the Habitats Directive.
- A derogation may only be authorised if there is no satisfactory alternative and if the action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in its natural range.
- The development works to be authorised must be for the purposes of preserving 'public health or safety, or for other imperative reasons of overriding public interest, including those of a social or economic nature and beneficial consequences of primary importance for the environment'.
- Derogations are granted by a licence issued by Natural Resources Wales. Local planning authorities are under a duty to have regard to the requirements of the Habitats Directive in exercising their functions.
- To avoid developments with planning permission subsequently not being granted derogations in relation to European protected species, planning authorities should take the above three requirements for derogation into account when considering development proposals where a European protected species is present.

Report written and compiled by



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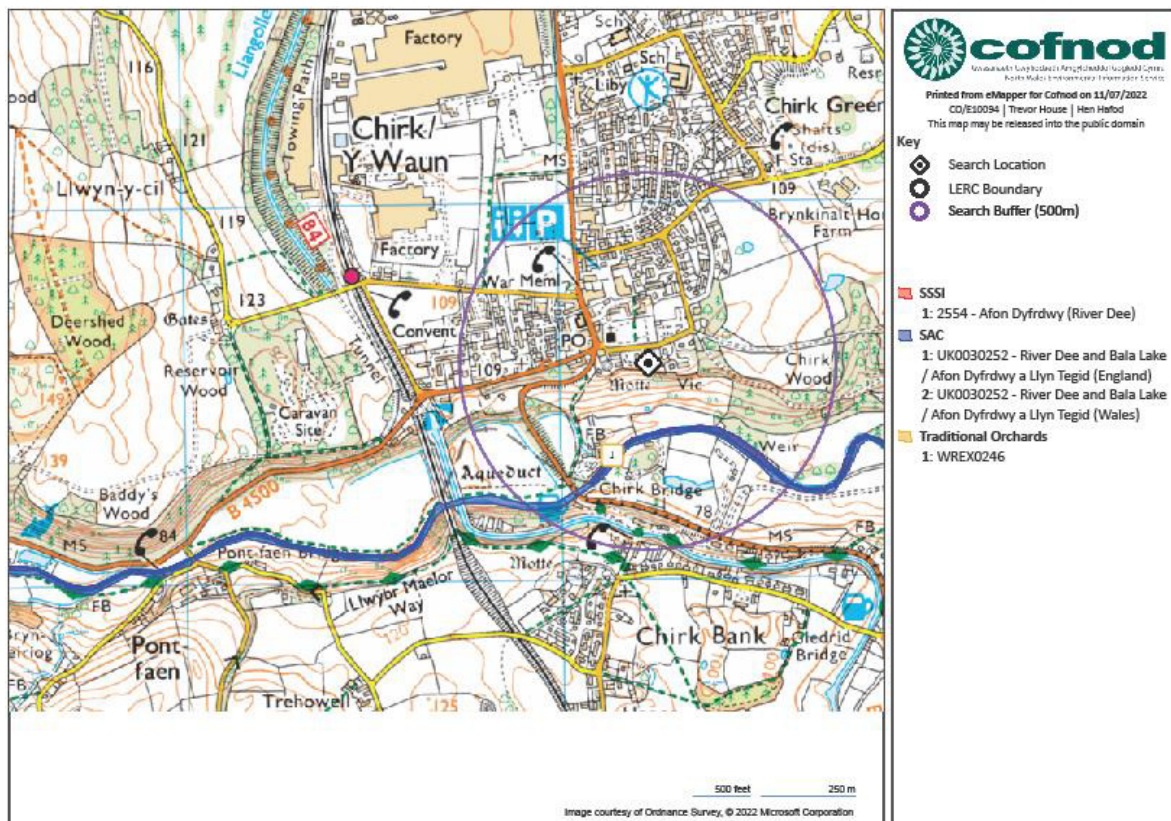
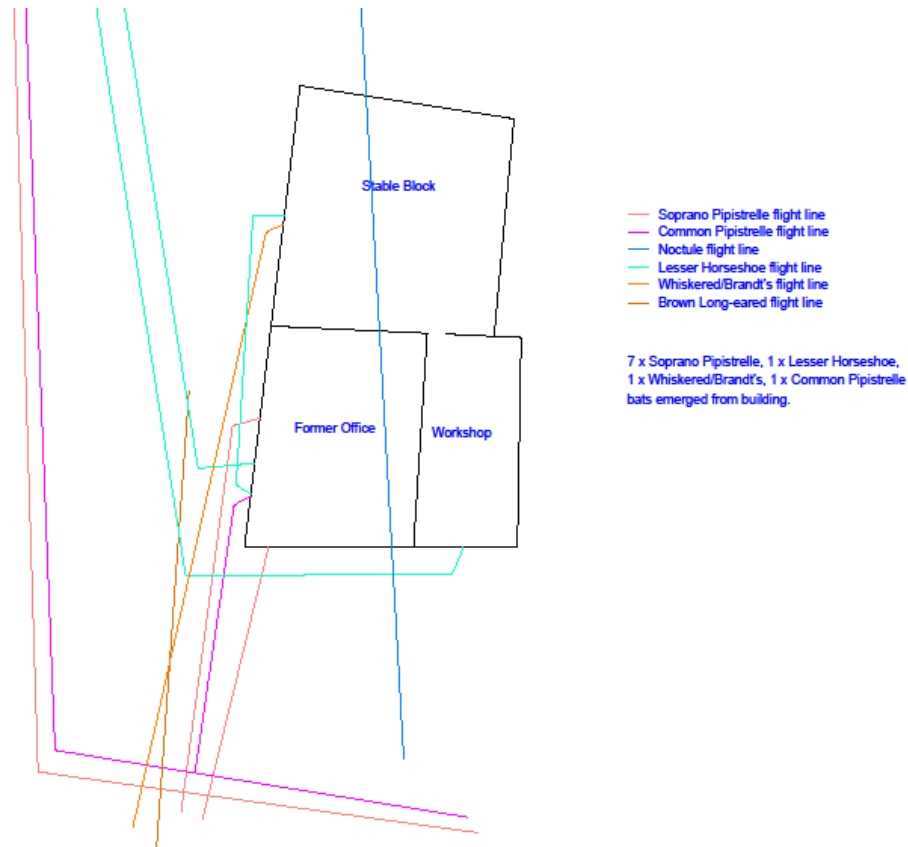
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Protected Species Surveys
Former Estate Office & Stables, Trevor Row, Chirk

15 August 2022
page 22 of 32



APPENDIX 1 – Site plan



Designated sites within 500m of site.

Client: Daniel Jones
Ref: 082022/BES/DJ

Protected Species Surveys
Former Estate Office & Stables, Trevor Row, Chirk

15 August 2022
page 23 of 32



APPENDIX 2 – Photographs



Photo 1: Brick garage to South of building.



Photo 2: Roost access points (red = Soprano Pip, green = Common Pip, Yellow = LHS, Purple = Wh/Br).



Photo 3: Roof over stable block has holes in.

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Protected Species Surveys
Former Estate Office & Stables, Trevor Row, Chirk

15 August 2022
page 24 of 32



APPENDIX 2 – Photographs



Photo 4: Roof partially collapsed and upper level hay loft floor is rotten.



Photo 5: A Lesser Horseshoe bat is roosting in the loft void in the Southeast corner of the building.



Photo 6: Fresh bat droppings and discarded butterfly wings on floor of loft void.

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Protected Species Surveys
Former Estate Office & Stables, Trevor Row, Chirk

15 August 2022
page 25 of 32



APPENDIX 3 – Grading system for bat habitats

It should be noted that low suitability roosting habitats may be present in commuting/foraging habitats that are of high suitability and vice versa. Roosting habitats and commuting/foraging habitats should be assessed separately and independently.

Table 1: Guidelines for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape, to be applied using professional judgement.

Suitability	Description Roosting habitats	Commuting and foraging habitats
Negligible	Negligible habitat features on site likely to be used by roosting bats.	Negligible habitat features on site likely to be used by commuting or foraging bats.
Low	A structure with one or more potential roost sites that could be used by individual bats opportunistically. However, these potential roost sites do not provide enough space, shelter, protection, appropriate conditions and/or surrounding habitat to be used on a regular basis or by larger numbers of bats (i.e. unlikely to be suitable for maternity or hibernation). A tree of sufficient size and age to contain PFRs but with none seen from the ground or features seen with only very limited roosting potential.	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated i.e not very well connected to the surrounding landscape by other habitat. Suitable, but isolated habitat that could be used by small numbers of foraging bats such as a lone tree (but not in a parkland situation) or a patch of scrub.
Moderate	A structure or tree with one or more potential roost sites that could be used by bats due to their size, shelter, protection, conditions and surrounding habitat but unlikely to support a roost of high conservation status (with respect to roost types only – the assessments in this table are made irrespective of species conservation status, which is established after presence is confirmed).	Continuous habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees or scrub or linked back gardens. Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	A structure or tree with one or more potential roost sites that are obviously suitable for use by larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter, protection, conditions and surrounding habitat.	Continuous, high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge. High-quality habitat that is well connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree-lined watercourses and grazed parkland. Site is close to and connected to known roosts.



APPENDIX 4 – Bat sonographs

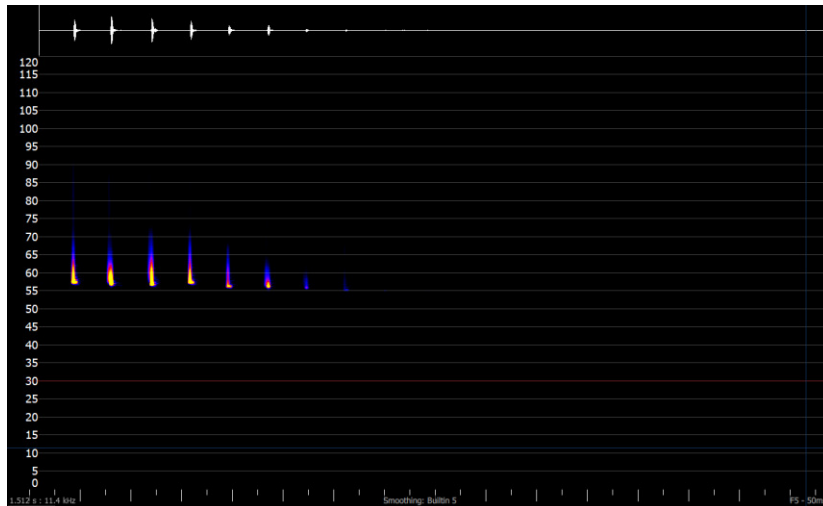


Plate 1: Soprano Pipistrelle [55kHz] emerging from building.

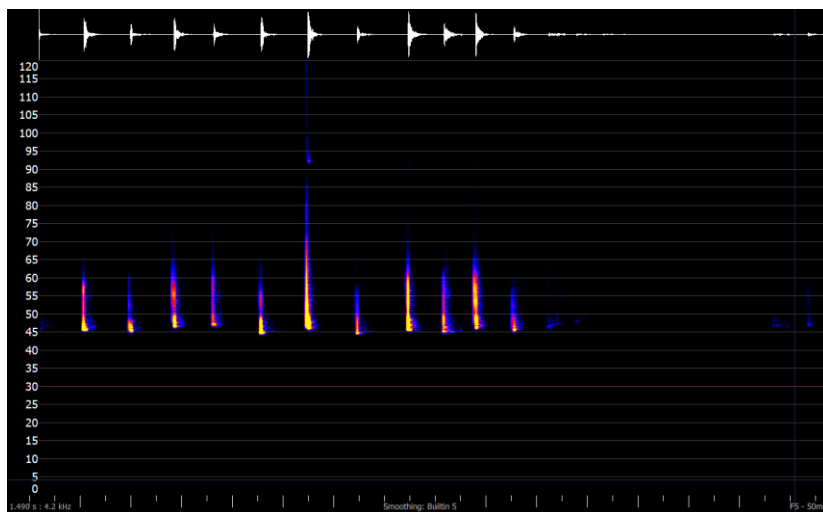


Plate 2: Common Pipistrelle [45kHz] emerging from building.

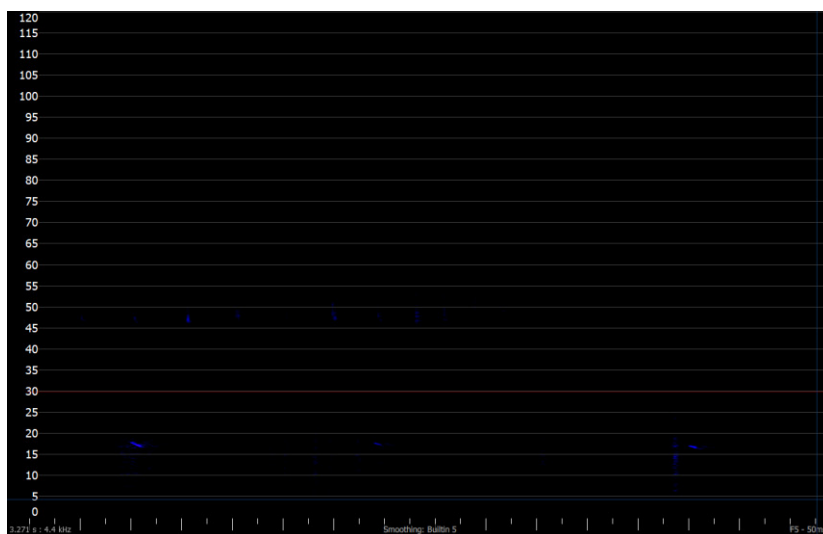


Plate 3: Noctule [18kHz] foraging high over site.

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Protected Species Surveys
Former Estate Office & Stables, Trevor Row, Chirk

15 August 2022
page 27 of 32



APPENDIX 4 – Bat sonographs

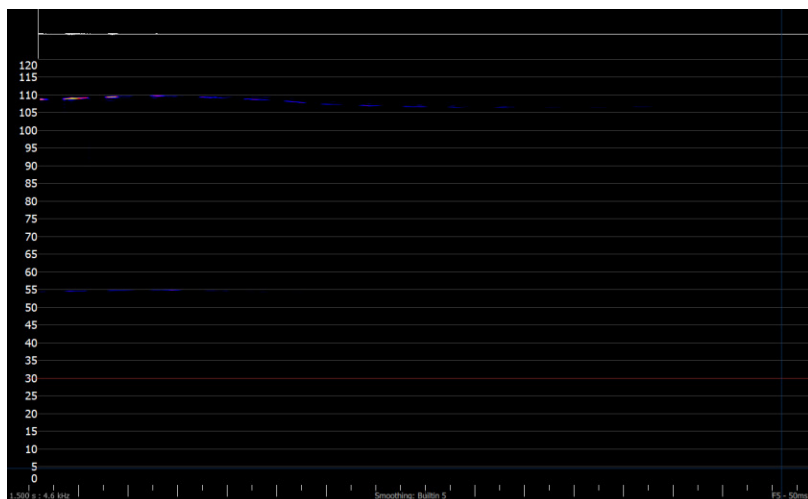


Plate 4: Lesser Horseshoe [108kHz] emerging from building.

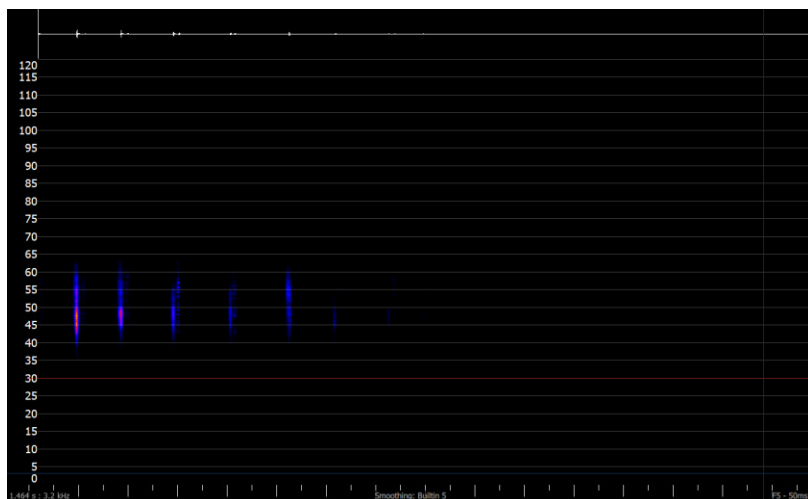


Plate 5: Whiskered/Brandt's [46kHz] emerging from building.



APPENDIX 5 – Mitigation details

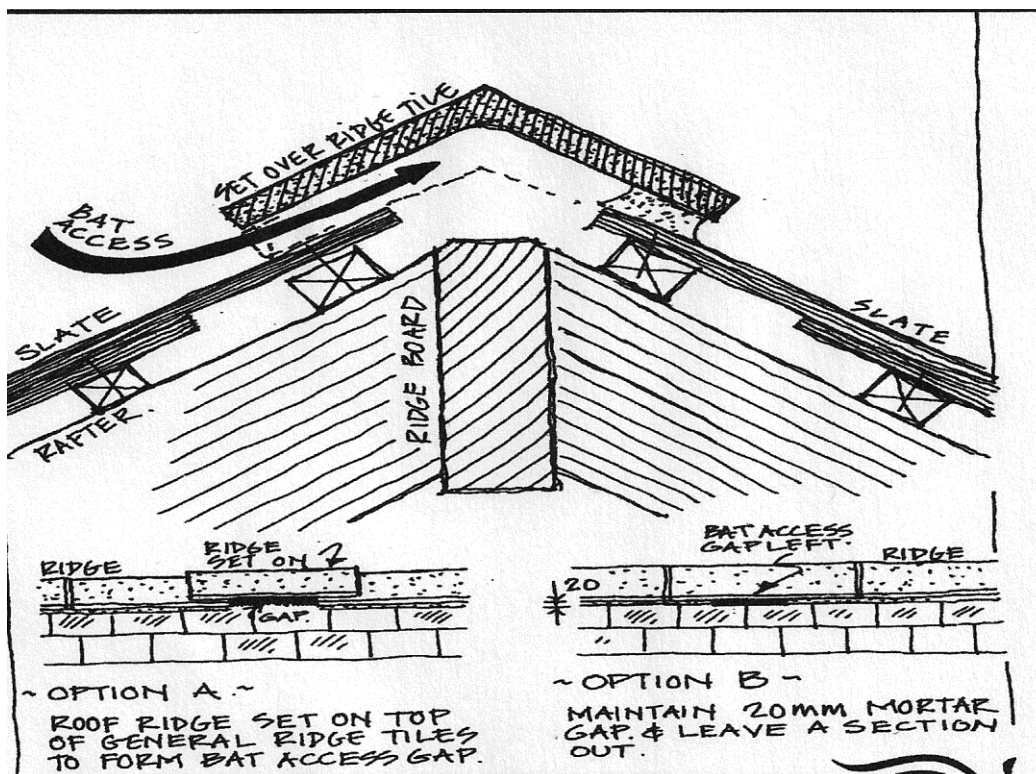


Figure 2: Ridge tile details

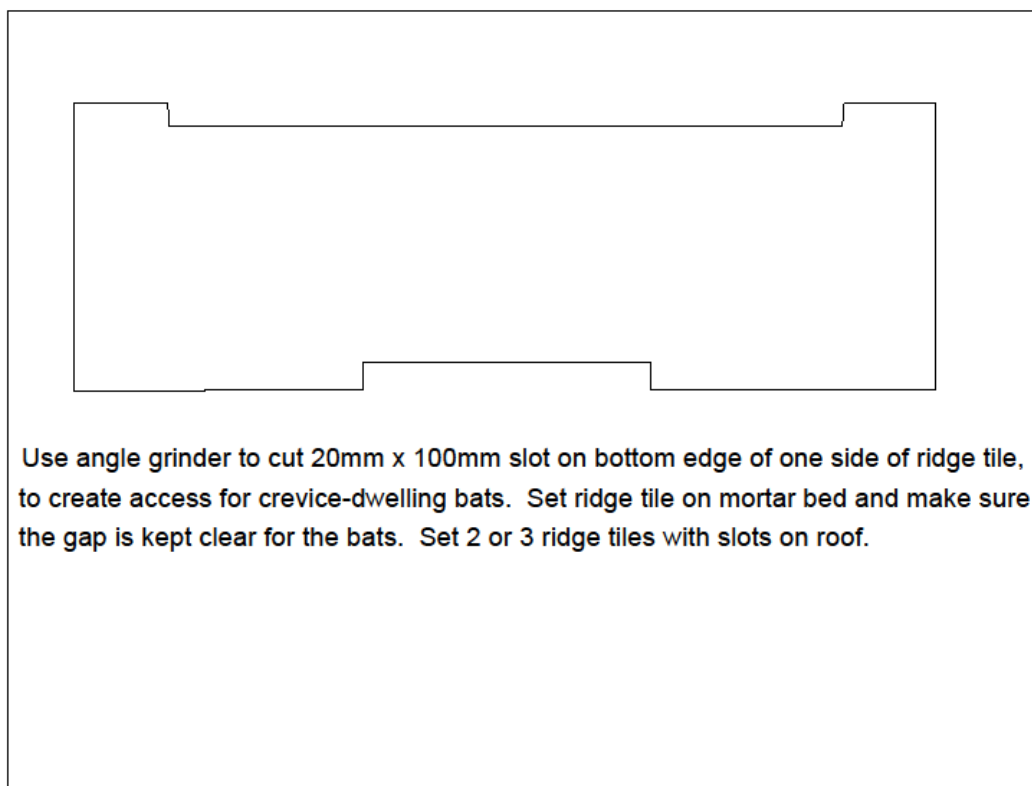


Figure 3: Ridge tile details



APPENDIX 5 – Mitigation details

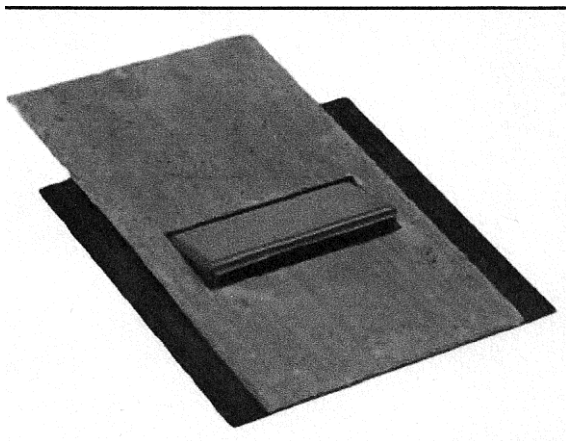


Figure 4: 'Slate-line' bat tile

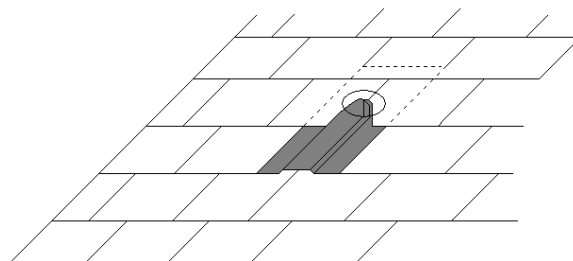


Figure 5: To allow access into the loft void, a hole (75mm x 30mm) needs to be cut in the underfelt, adjacent to a rafter or wall

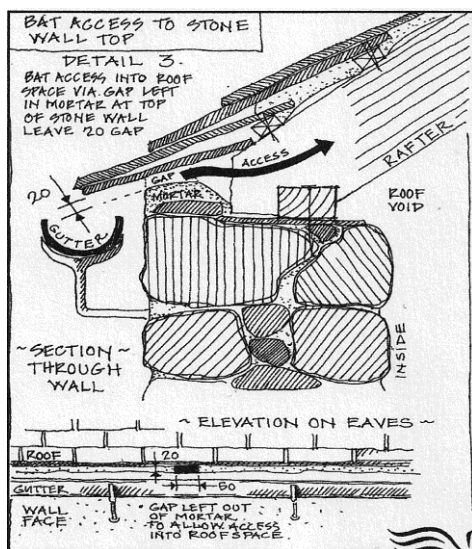


Figure 6: Bat access via eaves



Figure 7: Schwegler 1FS bat box (95).



Figure 8: Schwegler (1WQ) Summer & winter roost box



Figure 9: Schwegler (1WQ) bat box fitted to wall.



APPENDIX 5 – Mitigation details

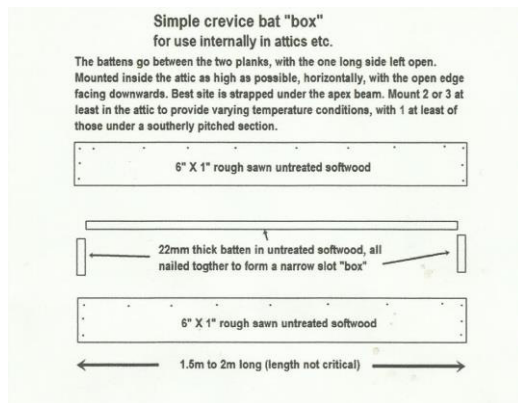


Figure 10: Simple crevice boxes design.



Figure 11: Example of crevice box in a loft void.



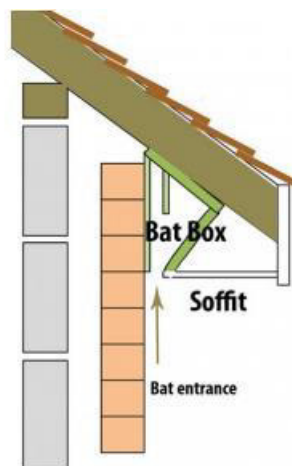
Figure 12: Lesser Horseshoe 'fly-in' entrance.



Figure 13: Lesser Horseshoe covered porch entrance.



Figure 14: Soffit bat box



APPENDIX 6: Bibliography

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