

Glascoed
Lon Maes Du
Cefn Coed y
Cymmer
Merthyr Tydfil
CF48 2HH



An Ecological Survey
Report By:



On Behalf Of:

Mr Mark Hopkins

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1 Executive Summary

- 1.1 The owners of Glascoed wish to add an extension to the property. The proposals include the creation of a two-storey extension situated at the eastern elevation of the house with an attached ground floor level extension, which will provide a balcony feature. The extension will span the whole length of the eastern side. The two-storey extension will have a pitched roof which will tie into the existing roof structure. At the time of writing this report the proposed works to the house are focused on the eastern side only. Additionally, a small detached ground floor workshop, located on the northern boundary of the site, will be rebuild on the same footprint. The proposals will require consent from the local planning authority – Merthyr Tydfil County Borough Council.
- 1.2 To inform the planning process, a Preliminary Roost Assessment was carried out in July 2020, by a small team of experienced ecologists. The primary focus for the appraisal was the presence, or potential presence, of bats and nesting birds. No live bats were found and no evidence of bats was found in either the house or workshop. Survey of the house and workshop assessed both structures to have moderate potential to be used by bats. Particularly on the eastern side of the house. These features were sufficient to trigger the need for additional assessment.
- 1.3 Two dusk emergence/activity observations were both carried out in August 2020, by a team of experienced, licenced ecologists and observers, using high quality detection equipment. During the first dusk activity observation carried out on the 5th August 2020 no bats were observed emerging from the house or workshop. However, during the second observation, conducted on the 31st August 2020, two common pipistrelle bats emerged from the ridge area of the existing western extension of the house. The location of this daytime roost is away from the main ridge line of the dwelling and situated on the opposite side of the building to where the new extension work is proposed. No bat emergences were noted from the workshop.
- 1.4 It was concluded that the proposed works to extend the house will not result in impacts on the bat roost location, and no further survey effort is required. It is further concluded that there is no requirement to obtain a European Protected Species licence in order to carry out the proposed extension works. The only recommendation relates to lighting along the western elevation of the house, in the area of the bat roost.
- 1.5 Bats can be encountered unexpectedly during building work, and if this occurs, it is important to stop activity in the vicinity of the bat(s). It is possible that a bat will be in a torpid state and unable to fly off for several minutes or even up to 20 minutes. Advice must be sought from NRW, or if this is not possible, then from a bat ecologist who holds a licence to disturb bats. To proceed without taking advice would be committing an offence.
- 1.6 If, however, there are changes to the proposed works which include the western extension, then the client must provide details of such works so that this report can be amended. Any impacts on the bat roost identified near the ridge of the existing western extension, such as disturbance, loss and damage to roost locations; and loss of access or obstructed bat access would need detailed consideration. Repair works, dust, noise, vibration or the erection of scaffolding could have implications for the roost and it may be necessary to apply for a European Protected Species licence for any works in that area. No work to the western extension, which has the potential to affect bat roost locations, could commence until such time as a licence had been issued.
- 1.7 When the nature conservation significance of the site is considered against recognised criteria (Bat Mitigation Guidelines 2004 and Good Practice Guide: NRW Approach to Bats and Planning October 2015), the nature status of the site is assessed to be low, due to the presence of a small number of animals of a single common species (common pipistrelle), and no breeding colony.
- 1.8 The proposed works to the workshop also result in no impacts for bats. No bats were observed to emerge from the workshop. It is not considered to be a bat roost and no further survey is required.
- 1.9 When the Preliminary Roost Appraisal was conducted in July 2020 found no active or inactive bird nests bird were noted around the house or workshop. No bird activity was observed to indicate birds are nesting anywhere in either structure. General advice on the legal protection afforded to breeding birds is given in the report and modest enhancements for wildlife are recommended with the installation of three timber bird boxes.

2 Introduction

- 2.1 The owners of Glascoed wish to add an extension to the eastern side of the dwelling. The proposed works will include the creation of a two-storey extension on the eastern elevation of the house with an attached ground floor level extension, providing a balcony feature. The extension will span the entire length of the eastern side of Glascoed. The proposed two-storey extension will feature a pitched roof which will tie into the existing east facing roof structure. At the time of writing this report the proposed works to the house are focused on the eastern side of the house only. Additionally, a small detached ground floor level workshop, located on the northern boundary of the property will be rebuilt on the same footprint. In close proximity to the northern gable end of the house is a detached garage, which is not included in the survey effort. The proposals will require consent from the local planning authority – Merthyr Tydfil County Borough Council.
- 2.2 Located at National Grid Reference (NGR) SO 03267 08378, at an altitude of 257m Above Ordnance Datum. The property is lies on Lon Maes Du, on the northern edge of Cefn Coed y Cymmer, with the Afon Taf Fechan situated a short distance to the east. The property is some 2.64km north-west of Merthyr Tydfil town centre.
- 2.3 In order to consider the presence or potential presence of protected species, a Preliminary Roost Assessment (PRA) was conducted by the Just Mammals Consultancy LLP, in July 2020, followed by two dusk bat activity observations both undertaken in August 2020 by a team of experienced ecologists and support staff.
- 2.4 Principal objectives of the survey effort were to;
- determine if bats are roosting in the building, and if so, identify roost locations;
 - identify the species and the type of roost (maternity, day, transitional etc);
 - identify any important bat foraging or commuting behaviour in relation to the building;
 - identify any important bat flight lines;
 - determine if breeding birds are also using the building;
 - identify potential impacts, if any, from the development proposals;
 - gather sufficient information to be able to make appropriate recommendations in order to minimise any impacts.
- 2.5 This report documents the findings of the assessment which includes the daytime external inspection and two bat activity observations in the active summer period, and makes appropriate recommendations in light of the results.

3 Survey Team Experience

- 3.1 Lead surveyor was Robert Morgan, who is also the author of this report. A small team of ecologists participated in the appraisal and details of their experience are given in Table 1 below.

Table 1: Survey Team Experience

Name/Position/Detector	Licences	Experience
Robert Morgan Ecologist (TE)	S087709/1 expiry February 2022	Robert has fifteen years' experience with bats (Natural Resources Wales (NRW) licence holder), carrying out roost surveys, emergence surveys, radio tracking of lesser horseshoe bats and monitoring of important sites. In addition, he has expertise in respect of dormice (NRW licence holder) and barn owls (NRW licence holder). Rob has experience surveying for otters, water voles, reptiles, amphibians, birds and marsh fritillary butterfly, and is an Ecologist with the Just Mammals Consultancy LLP
Phoebe Williams BA (Hons) Student CIEEM Assistant Ecologist (TE)		A Geography graduate from the University of Exeter, and a former trainee at Gwent Wildlife Trust she has completed a Natural Talent trainee programme, studying Hemiptera at the National Museum of Wales. Practical experience includes survey work for dormice, botany, newts, reptiles, and invertebrates. She has also carried out practical habitat management work whilst volunteering for Gwent Wildlife Trust. Phoebe is undertaking a MSc in Wildlife and Conservation Management at the University of South Wales. She is an Assistant Ecologist with the Just Mammals Consultancy LLP
Maja Hudej BA (Hons) MSc QCIEEM Trainee Ecologist (TE)		Maja is a Qualifying Member of the Chartered Institute of Ecology and Environmental Management (QCIEEM). She holds an MSc in Wildlife Conservation and Management. Maja has practical experience with bat and reptile surveys and is working towards protected species licences. Maja is a Trainee Ecologist with the Just Mammals Consultancy LLP

Nigel Isaksson Senior Survey Assistant (TE)	S086633, expiry July 2021	Nigel has over ten years' experience undertaking bat surveys, flight line observations, census counts. Nigel holds an NRW licence to disturb bats, and is also licenced to disturb dormice, and is a Senior Survey Assistant with the Just Mammals Consultancy LLP
Ben Gibson BA (Hons) Survey Assistant (TE)		A graduate of Cambridge University with a degree in Natural Sciences, Ben specialised in Plant Science in his final year studies. Ben is a Survey Assistant with the Just Mammals Consultancy LLP with twelve years' experience of undertaking bat surveys flight line observations, and census counts

Note: Detectors

TE = Time expansion (Pettersson D-240X)

4 Survey Methodology

- 4.1 An initial day time visual assessment of the house and workshop was carried out in July 2020, which involved an external inspection of the structure, seeking signs of the presence of bats. The external survey involved examining outer surfaces from the ground and looking for signs of bat presence including bat faeces (droppings) on ledges and walls. A high-powered lamp and close focusing monocular were used to examine potential access and roosting areas. Any gaps or crevices in the structure were inspected as closely as possible. The context of the building within the surrounding landscape was also assessed at this time.
- 4.2 Two dusk bat observations were both conducted during the month of August within the summer period of 2020. In order to carry out these observations, the surveyors were equipped with Pettersson D-240X machines. These devices are particularly sensitive and excellent at separating species which employ the middle range frequencies for foraging (45 – 55 kHz). They are therefore very good at identifying the different pipistrelle species (*Pipistrellus sp.*), and the different myotis bats* (*Myotis sp.*) (*myotis bat is a collective term used where the species could not be specifically identified beyond this broad group). The myotis group encompasses seven species of British bat including Alcaho's (*Myotis alcaho*); Bechstein's (*M. bechsteinii*); Brandt's (*M. brandtii*); Daubenton's (*M. daubentonii*); greater mouse-eared (*M. myotis*); Natterer's (*M. nattereri*); and the whiskered bat (*M. mystacinus*).
- 4.3 The Pettersson D-240X machine can be used in heterodyne or time expansion modes and for the purposes of this survey, only the time expansion facility was used. The received signals were then down loaded to Roland RO-5 recording devices for later analysis. The time expansion method is similar to making a high-speed tape recording of a bat's ultrasonic call and then playing it back at a slower speed. Digital technology is used to make the recording and slow it down for play back. Since the signal is stretched out in time, it is possible to hear details of the sound not audible with other types of detector.
- 4.4 Time expansion is also the only technique which preserves all characteristics of the original signal, which makes time expanded signals ideal for sound analysis. In addition to the simple echo-location calls which can be used for commuting, enabling the bat to find its way about, bats will also produce feeding 'buzzes' when foraging. These buzzes occur when the bat closes in on its prey and are a consequence of the Doppler Effect, which results in a feeding 'buzz' as the reflected signal shortens when the animal approaches its prey. Such buzzes are used to assess the importance of an area for foraging. The recorded echo-location calls are then interpreted using BatSound sound analysis software. By use of the software it is possible to separate the different species by analysis of the sonograms produced.
- 4.5 Nesting birds were also considered at the time of assessment, with the surveyor looking for signs of historic bird activity, nest remains, evidence of collections of bird dropping, feathers or any other indications of use by birds.

5 Site Description

- 5.1 Glascoed is situated on Lon Maes Du, towards the northern end of the community of Cefn Coed. In the immediate vicinity there are a number of residential properties. To the north is the home ground of Cefn Coed RFC, known as The Black Patch, with Cefn Coed Golf Club situated a short distance to the north-west. The A465 Heads of the Valleys Road is approximately 219m to the south, whilst the Afon Taf Fechan, which flows into the Afon Taf is located some 156m to the south-east. Merthyr Tydfil town centre is located approximately 2.64km to the south-east of the property.
- 5.2 The house is two-storey and it is generally rectangular in shape. There is an existing extension that projects outwards from the western elevation of the house, this has a pitched roof that ties into the main roof of the house. At the southern end of the eastern elevation there is a small ground

floor level conservatory attached that has a mono-pitched roof. The main ridge line of the house lies closely aligned to a north-south axis. At the north end of the house there is a detached garage with a pitched roof, this lies in close proximity but it is not connected to the main property.

- 5.3 It is assumed that the house is built from brick. The first-floor level of the east and west facing walls are covered in uPVC horizontal cladding, this includes the western projecting extension. Below the uPVC cladding on the ground floor level of the eastern wall the brick work can be seen which has been painted white, the lower half of the western wall and western extension is covered with a pebble dash render. The southern gable end wall is covered with a pebble dash render and the northern gable end wall has a smooth cement render. The main roof of the house is pitched and covered with cement tiles with cement ridge tiles. This roof is likely to be supported by a timber roof structure. The roof structure of the attached western extension has the same cement tiles as the main roof of the house. There is a brick chimney located at the northern end of the main roof. It is unknown what lining membrane is present or if there is a central ridge board.
- 5.4 All barge boards and fascia boards around the house appear to be timber with uPVC capping. The soffits around the building all appear to be wooden. All window frames, doors and door frames are uPVC. The rainwater products are all plastic. At the south and north gable end walls, on the edge of the roof structure there are what appears to be metal capping connected to the top of the barge boards that folds over cement tiles on the ends of the roof.
- 5.5 The small ground floor level conservatory has a low-level brick wall with a timber frame, it is covered with cement tiles and has uPVC horizontal cladding on the north and south elevations. The soffits, barge ends, fascia boards and rainwater products are all uPVC. There is a single wooden door in the northern elevation of the conservatory, the door frames and window frames are wooden.
- 5.6 A short distance to the north of the house and situated on the north-west boundary of the site is a small rectangular shaped workshop. It has a mono-pitched roof covered with corrugated metal sheets. The construction of the workshop is assumed to be built from brick with a rough cement render applied to the external walls. This workshop was built up against the boundary wall which is stone. It has timber fascia boards; at the rear north-west elevation of the workshop the fascia boards are covered with uPVC capping. There is a single wooden door in the south-west side of the structure, the door frames and window frames are also timber. The rainwater products are plastic. Dense ivy (*Hedera helix*) covers the boundary wall and it has grown over the north-west corner of the workshop.
- 5.7 There is good quality habitat connectivity to Glascoed via mature tree lines either side of Lon Maes Du, north of the property. This provides great connectivity to Cwm Taf Fechan Woodlands Site of Special Scientific Interest (SSSI), and in turn the riparian corridor of the Taf Fechan. To the north-east is the Taf Fechan Nature Reserve which can easily be reached by following the river and also leads to Pontsticill Reservoir. In the wider countryside there are large areas of pastoral farmland and a small amount of arable farmland. There are large areas of coniferous woodland to the west. These features in the countryside provide excellent foraging habitat for bats and only a short distance away from the survey site.

6 Desktop Study

- 6.1 The context of the site was considered with regard to statutory sites of nature conservation interest, such as a SSSI's, Special Area of Conservation (SAC), National Nature Reserves (NNR's) or Local Nature Reserves (LNR's) etc. Within a 2km radius of the site there are two sites designated for nature conservation. The Cwm Taf Fechan Woodlands SSSI is some 153m to the south-east and Penmoelallt SSSI lies approximately 1.54km to the north-west of the survey site. The development proposals are not considered likely to impact on any of the designated sites in the vicinity.
- 6.2 A record search revealed the presence of several bat species in the vicinity, including common pipistrelle (*Pipistrellus pipistrellus*), soprano pipistrelle (*Pipistrellus pygmaeus*), pipistrelle sp., and Natterer's. Roost types include maternity sites, but most records relate to commuting activity.

7 Survey Constraints

- 7.1 There were no particular constraints encountered during the day time survey carried out in July 2020 or during the both dusk observations carried out in August 2020.
- 7.2 Internal inspection was not possible at the time of survey. The dwelling is occupied and current Covid-19 health and safety protocols advise social distancing to avoid the risk of virus transmission.

8 Survey Results

- 8.1 Details of the survey activities and weather conditions are summarised in Table 2 below. Sunset times were ascertained in all cases by use of a geo-positioning system (GPS). Wind speeds shown employ the Beaufort scale.

Table 2: Summary of Survey Activity and Weather Conditions

Date	Survey Type	Timing	Weather Conditions
17/07/2020	Day time visual inspection (RM, PW)	10.00 – 12.00 hours British Summer Time (BST)	Air temperature: 17°C Cloud cover: 6/8 oktas Wind speed: F2, light breeze Conditions: Dry
05/08/2020	Dusk emergence/activity observation (RM, PW, MH, BG)	20.25 – 22.05 hours BST (Sunset 20.55 hours)	Air temperature: 16.8°C – 15.3°C Cloud cover: 8/8 oktas Wind speed: F1, light air Conditions: Dry
31/08/2020	Dusk emergence/activity observation (RM, MH, NI, BG)	19.20 – 21.10 hours BST (Sunset 20.01 hours)	Air temperature: 16.3°C – 13.1°C Cloud cover: 7/8 oktas Wind speed: F2, light breeze Conditions: Dry
Surveyors	Robert Morgan (RM), Nigel Isaksson (NI), Phoebe Williams (PW), Maja Hudej (MH), Ben Gibson (BG)		

- 8.2 A PRA was carried out in July 2020. This day time appraisal commenced with an external inspection of the house and an internal and external inspection of the detached workshop. Survey of both structures found no live bats. External inspection of the house found no evidence of bats, no bat droppings, no staining or insect remains were noted. However, potential access points that bats might exploit on the dwelling were identified as:
- gaps beneath slipped and raised cement tiles;
 - gaps beneath ridge tiles near the chimney;
 - gaps between the cement tiles and the barge capping at the north, south and west facing gable ends;
 - gaps underneath the lead work around the chimney;
 - gap in the horizontal uPVC cladding on the eastern elevation of the house.
- 8.3 Internal and external inspection of the workshop found no evidence of bats, no bat droppings, no staining or insect remains were noted. However, potential access points that bats might exploit on the dwelling were identified as:
- gaps beneath the barge boards on south elevation;
 - gaps between the timber soffits and the wall plate;
 - holes in rotten timber fascia boards;
 - gaps around single door frame;
 - dense ivy growth on the north-west corner of the workshop.
- 8.4 Two dusk emergence/activity observations were undertaken, with results shown in Tables 3 and 4 (see Appendix II). The first observation was conducted by four observers on the evening of Wednesday the 5th of August 2020. During this survey no bats were observed to emerge from the house or the workshop. The first bat recorded was at 20.56 hours which was identified as a common pipistrelle, the animal was observed foraging around the mature trees to the north of the house. The evening was dominated by common pipistrelle activity around the site, these animals were observed commuting over the property and passing through the garden on the east side of the house. Common pipistrelle bats were continuously foraging in the trees to the north of the house and around the garden. Both brown long-eared (*Plecotus auritus*) bat and soprano pipistrelle bats were noted to be commuting along the Lon Maes Du lane towards the northern end of the property. A single unidentified myotis bat was recorded to the north-east of the house, near the workshop. The last bat recorded during the observation was a common pipistrelle at 21.54 hours.
- 8.5 The second dusk emergence/activity observation was conducted on the evening of Monday the 31st of August 2020, and again four observers were present. During the second dusk observation no bats emerged from the workshop. However, two common pipistrelle bats were seen emerging from the western extension of the house. The first bat emerged at 20.01 hours exactly at the sunset time. This bat emerged from the ridge area of the small extension on the western elevation of the house, looped around passing the western gable wall heading north towards Lon Maes Du lane. This animal emerged from a location away from the area of the proposed works. Then at 20.13 hours a second common pipistrelle emerged from the same location at the ridge of the western extension some twelve minutes after the sunset time of 20.01 hours, this animal flew away from

the house heading south-west. Commuting and foraging activity around the site occurred throughout the observation by mainly common pipistrelle bats. A single brown long-eared bat was seen commuting through the site at 20.10 hours. This animal was seen to fly over the flat-roofed shed to the south of the house, fly into the garden and across the lawn heading north-east.

- 8.6 Evidence of nesting birds was assessed during daytime external inspection in July 2020 and no active or inactive nests were found. During both dusk activity observations nothing was seen to indicate birds are nesting anywhere in the structure. Throughout the second dusk observation only a single blackbird (*Turdus merula*) was seen in the garden on the east side of the house. However, opportunities for birds to create nests were identified as:
- against the soffits underneath the eaves on the east and west facing elevations of the house;
 - against the soffits of the north, south and west facing gable end walls of the house;
 - rotten hole in the fascia board leading into the soffit of the east side of the workshop;
 - within the dense ivy growth on the north-west corner of the workshop.

9 Discussion and Conclusions

- 9.1 Survey results indicate that Glascoed is a bat roost. Proposed works will include the creation of a two-storey extension situated at the eastern side of the house. This extension will span the whole length of the eastern elevation of Glascoed. The extension will have a pitched roof which will tie into the existing east facing roof. At the time of writing the proposed works to the house are focused on the eastern side only. Additionally, a small detached workshop located on the northern boundary of the site will be rebuilt on the existing footprint. In close proximity to the northern gable end of the house is a detached garage; this is not included in the survey effort. The proposals will require consent from the local planning authority.
- 9.2 A PRA was carried out in July 2020, which involved an external inspection only. No bats were seen and no evidence of bats, indicating the presence of a roost were found; no bat droppings, staining or insect remains were noted. However, the house was found to offer moderate potential for crevice roosting bat species. There were slipped and raised cement tiles, gaps between the cement tiles and the barge capping at the north, south and west facing gable ends and a gap in the horizontal uPVC cladding on the eastern elevation of the house. Also, gaps beneath the ridge tiles near the chimney and beneath the lead work around the chimney. These features were sufficient to trigger the need for additional assessment, and consequently two dusk emergence/activity observations were both carried out in August 2020.
- 9.3 Survey also included the workshop situated to the north of the house. Inspection of this structure found no bats and no evidence of bat roosts. No bat droppings, staining or insect remains were found. The workshop also offered moderate potential to be used by bat. There were gaps beneath the barge boards on the south facing elevation, gaps between the wall plate and the timber soffit, and holes in the fascia boards on the eastern side of the building. There is a gap in the door frame in the southern wall of the structure and also dense ivy growing over the north-west corner. This workshop was also observed during both dusk activity surveys carried out in August 2020.
- 9.4 During the first dusk observation carried out on the 5th August 2020 no bats were seen to emerge from either the house or workshop. The evening was dominated by common pipistrelle activity across the site. Commuting and foraging activity by common pipistrelle, soprano pipistrelle, brown long-eared bat, and an unidentified myotis bat, was recorded.
- 9.5 At the time of the second observation on 31st August 2020 no bats emerged from the workshop. However, on this occasion two common pipistrelle bats emerged from the ridge area of the west facing extension. The first emerged at 20.01 hours, looped around the west facing gable end and flew away from the property heading north towards Lon Maes Du lane. Then twelve minutes later at 20.13 hours a second common pipistrelle emerged from the same location and flew away south-west. Both bats appeared to emerge from the ridge line of the western extension near the apex, the ridge tiles appear to be tight fitting and it is considered that the bats may have emerged from the gaps identified between the barge capping and the edge of the cement tiles. Commuting and foraging activity occurring throughout the observation primarily by common pipistrelle bats. A single brown long-eared bat was observed commuting onto the site from the west, passing the south facing gable of the house and then flying across the garden to the north-east.
- 9.6 The bat roost identified is situated on the west side of the house, on the opposite side of the building to where the extension works are proposed. These two common pipistrelle bats emerged from the

roof of the existing extension, on a different ridge line to the main roof of the house. No bats emerged from the area of the proposed new extension which will tie into the existing eastern facing elevation of the property. The proposed works to extend the property do not impact on any bat roost locations. It is therefore concluded that no roosts are present in this area of the house, and no further survey is required.

- 9.7 Additionally, no bats were observed to emerge from the workshop. It is not a bat roost and again no further survey effort is required.
- 9.8 At the time of writing no works are intended for the western extension, but if this changes the findings of this report will need to be amended. Any impacts on the bat roost identified near the ridge of the existing western extension, such as disturbance, loss and damage to roost locations; and loss of access or obstructed bat access. Repair works, dust, noise, vibration or the erection of scaffolding. It will be necessary to apply for a European Protected Species (EPS) licence for any proposed works in that area.
- 9.9 If new lighting is proposed on the west side of the house, particularly in the area of the roost location, then bat friendly lighting must be used. To avoid affecting bat roost locations and foraging areas, lights must be on timers to ensure that lights are extinguished within 30 seconds of movement ceasing and they must have no upward light spill.
- 9.10 Presence of bats at other times of year, apart from the summer was considered and both the house and workshop are assessed to have negligible potential to be used by hibernating bats. The house offers no features that bat can use for hibernation. Although the workshop has dense ivy growth situated at the north-west corner of the structure, it is not considered to be a suitable location for crevice roosting bat species to hibernate.
- 9.11 When the nature conservation significance of the site is considered against recognised criteria (Bat Mitigation Guidelines 2004 and Good Practice Guide: NRW Approach to Bats and Planning October 2015), the nature conservation status of Glascoed is assessed to be low due to the presence of a low number of animals of a single common species (common pipistrelle) and no breeding colony.
- 9.12 The PRA carried out in July 2020 found no active or inactive nests during the external inspection of the house. Again, no active or inactive bird nests were found during the survey of the workshop. Throughout both dusk activity observations nothing was seen to indicate birds are nesting anywhere in either structure. During the second dusk observation a single blackbird was seen in the garden on the east side of the house. The house offers potential for birds to create nests against the soffits underneath the eaves on the east and west facing elevations of the house. Also, at against the soffits of the north, south and west facing gable end walls of the house. The workshop provides opportunities for birds to access the soffits via a hole in the fascia board on the east side of the structure. The dense ivy growth at the north-west corner of the workshop also offers birds nesting opportunity. All breeding birds are legally protected and once a nest is established it is an offence to disturb or destroy the nest. Advice concerning birds is given below.

10 Recommendations

- 10.1 Glascoed is a bat roost, but the detached workshop is not. Sufficient appraisal has been undertaken to be confident of these facts, and no additional assessment is necessary. All bat species are legally protected from the impacts of disturbance, as well as loss and damage to roost locations; and loss of access or obstructed bat access. As indicated in the previous section, it is considered that the works to extend the house at the eastern facing elevation will not result in impacts on bats and their roosts.
- 10.2 Bats are protected under the provisions of Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), whilst their roosting places are also protected under the provisions of the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019. All bats and their places of rest are fully protected under British legislation, and as such, where there is evidence for the presence of bats, or where there is potential for them to be present, detailed assessment is appropriate.
- 10.3 In respect to both the house and workshop, there is no requirement to obtain an EPS licence in order to carry out the work. The only recommendation below is for any proposed lighting at the western elevation of the property. Bats can be encountered unexpectedly during building work, and if this occurs, it is important to stop activity in the vicinity of the bat(s). It is possible that a bat will be in a torpid state and unable to fly off for several minutes or even up to 20 minutes. Advice

- must be sought from NRW, or if this is not possible, then from a bat ecologist who holds a licence to disturb bats. To proceed without taking advice would be committing an offence.
- 10.4 If, however, circumstances change, and work will be done that may impact on the identified roost location in the western extension, then the client must provide details of such works so that this report can be amended. Any impacts on the bat roost near the ridge of the existing western extension, such as disturbance, loss and damage to roost locations; and loss of access or obstructed bat access. Repair works, dust, noise, vibration or the erection of scaffolding. It will be necessary to apply for an EPS licence for any proposed works in that area. This will require an Ecological Method Statement (EMS) and an appropriate scheme of mitigation to ensure that small gaps are provided for this species. No work to the western extension which has the potential to affect bat roost locations can commence until such time as a licence has been issued.
- 10.5 A Bat Conservation Trust study of the impacts of lighting on bats has considered the increased risk of the bats being preyed on in well illuminated areas. Lighting was found to be harmful when present near woodland edges and hedgerows. Inappropriate lighting can result in the isolation of bat colonies and affect insect behaviour which then adversely affects bats. If the modifications to the house will result in new external light fittings, then bat friendly lighting must be used to minimise impacts on nocturnal wildlife must be prepared. External lighting features must ensure low output; fitments must be attached to external walls at a low level with all light directed downwards. There must be no upward light spill and shrouds or deflector fittings are a simple way of avoiding this. Lights must be on timers to ensure that lights are extinguished within 30 seconds of movement ceasing. It is also desirable that internal lighting is sunk into ceilings, rather than pendant lights, and this appears to reduce external lighting impacts if curtains or blinds are not used.
- 10.6 Breeding birds are protected under the provisions of the Wildlife and Countryside Act 1981 (as amended), and active bird nests cannot legally be disturbed or destroyed. Once a nest is established, the birds must be able to have access at all times until the young have fledged and the nest is no longer active. The bird breeding season commences as early as March for some species and continues to late August for species which rear a second or third brood. If an active nest is found, it must be retained and protected from disturbance. A cordon must be established for a safe working zone a suitable distance from the nest site, and not until the chicks have fledged can the nest be destroyed and the cordon taken down. To avoid nesting birds disrupting the development timetable, it is best for such work to be planned to avoid the breeding season.
- 10.7 Planning policy requires that development activity provides a positive outcome for local biodiversity. As an enhancement feature, it is recommended that a suite of three timber bird boxes are installed at the site in suitable locations, avoiding full sunlight and the risk of predation from cats.

11 References

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Appendix I: Site Location Plan

Figure 1: Site location plan and aerial view



Appendix II: Results of Bat Activity Observations

Table 3: Glascoed, Lon Maes Du, Cefn Coed – Dusk Observation 5th August 2020

Time (24 Hour Clock)	Species (Common Name)	Recording No.	Observed Activity
20.56 hours	Common pipistrelle	1 PW	Foraging high around tree tops north of house
20.57 hours	Common pipistrelle	1 BG	Foraging over garden near south-east corner of house
21.02 hours	Common pipistrelle	2 BG, 1 MH	Commuting south-west to north on west side of house heading towards lane
21.02 hours	Common pipistrelle	1 RM	Foraging in tree tops along edge of lane north of house
21.04 hours	Common pipistrelle	2 PW	Foraging in garden on east side of house, flew away south
21.05 hours	Common pipistrelle	3 BG	Foraging from west towards house then flew away west along lane
21.11 hours	Common pipistrelle	3 PW	Heard but not seen by observer at south-east corner of house
21.12 hours	Common pipistrelle	4 PW	Foraging in garden on east side of house
21.12 hours	Common pipistrelle	2 RM	Foraging in tree tops along edge of lane north of house
21.15 hours	Common pipistrelle	3 RM	Foraging along lane then flew away to north
21.19 hours	Brown long-eared	4 RM	Commuting along lane from west to north
21.20 hours	Common pipistrelle	5 PW, 4 BG, 2 MH	Flew into garden from south then began foraging over lawn on east side of house
21.21 hours	Common pipistrelle	5 RM	Heard but not seen by observer, at north end of house
21.24 hours	Common pipistrelle	6 PW, 5 BG	Flew into garden from south-east then flew west heading past south facing gable of house
21.27 hours	Common pipistrelle	6 RM 3 MH	Foraging beneath mature oak tree near north-east corner of house
21.27 hours	Common pipistrelle	7 RM	Foraging along lane from north to west past north end of house
21.30 hours	Soprano pipistrelle	8 RM	Commuting along lane north of house
21.38 hours	Common pipistrelle	9 RM	Heard faintly but not seen by observer, at north end of house
21.39 hours	Common pipistrelle	10 RM	Commuting along lane from north to south heading into garden at rear east side of house
21.49 hours	Myotis sp	4 MH	Heard but not seen north-east of house near workshop
21.54 hours	Common pipistrelle	6 BG	Heard but not seen at south-west corner of house

Note: Highlighted records indicate emergence activity

Table 4: Glascoed, Lon Maes Du, Cefn Coed – Dusk Observation 31st August 2020

Time (24 Hour Clock)	Species (Common Name)	Recording No.	Observed Activity
19.50 hours	Common pipistrelle	1 NI	Commuting south-west to north along lane to north of house
19.59 hours	Common pipistrelle	2 NI, 1 MH	Commuting up lane from north heading south-east into garden
20.00 hours	Common pipistrelle	1 RM	Foraging from north-west to south-east across garden on east side of house
20.01 hours	Common pipistrelle	1 BG	Emerged from near ridge of extension on west facing side of house; flew away to south-west
20.03 hours	Common pipistrelle	2 RM	Commuting north-west to south-east passing southern gable end of house
20.09 hours	Common pipistrelle	2 BG	Commuting along lane from west to north-east
20.09 hours	Common pipistrelle	3 RM	Emerged from eastern elevation of neighbouring property directly south of house, flew into garden heading north-east
20.10 hours	Brown long-eared	4 RM	Commuting across site from west to north-east, flew over roof of small flat roofed shed to south of house
20.13 hours	Common pipistrelle	3 BG	Emerged from near ridge of extension on west facing side of house, looped around west facing gable end and flew away to north towards lane
20.15 hours	Common pipistrelle	5 RM	Foraging over lawn on east side of house
20.18 hours	Common pipistrelle	6 RM, 4 BG	Commuting south-west to north-east high over roof of house
20.27 hours	Common pipistrelle	5 BG	Commuting east to west along lane to north-west of house
20.27 hours	Common pipistrelle	7 RM	Commuting north-west to south-east across garden on east side of house
20.30 hours	Common pipistrelle	3 NI	Commuting south-west to north along lane to north of house
20.30 hours	Common pipistrelle	8 RM	Commuting from west past south facing gable of house heading around to garden and off to north
20.35 hours	Common pipistrelle	2 MH	Foraging around mature oak tree next to workshop
20.35 hours	Common pipistrelle	9 RM, 6 BG	Commuting and foraging from west to east high over roof of house
20.38 hours	Common pipistrelle	10 RM	Commuting across garden on east side of house from north-east to south-west
20.44 hours	Common pipistrelle	11 RM	Flew into garden from north-east then past southern gable heading west
20.48 hours	Common pipistrelle	3 MH	Commuting from south to west over roof of workshop

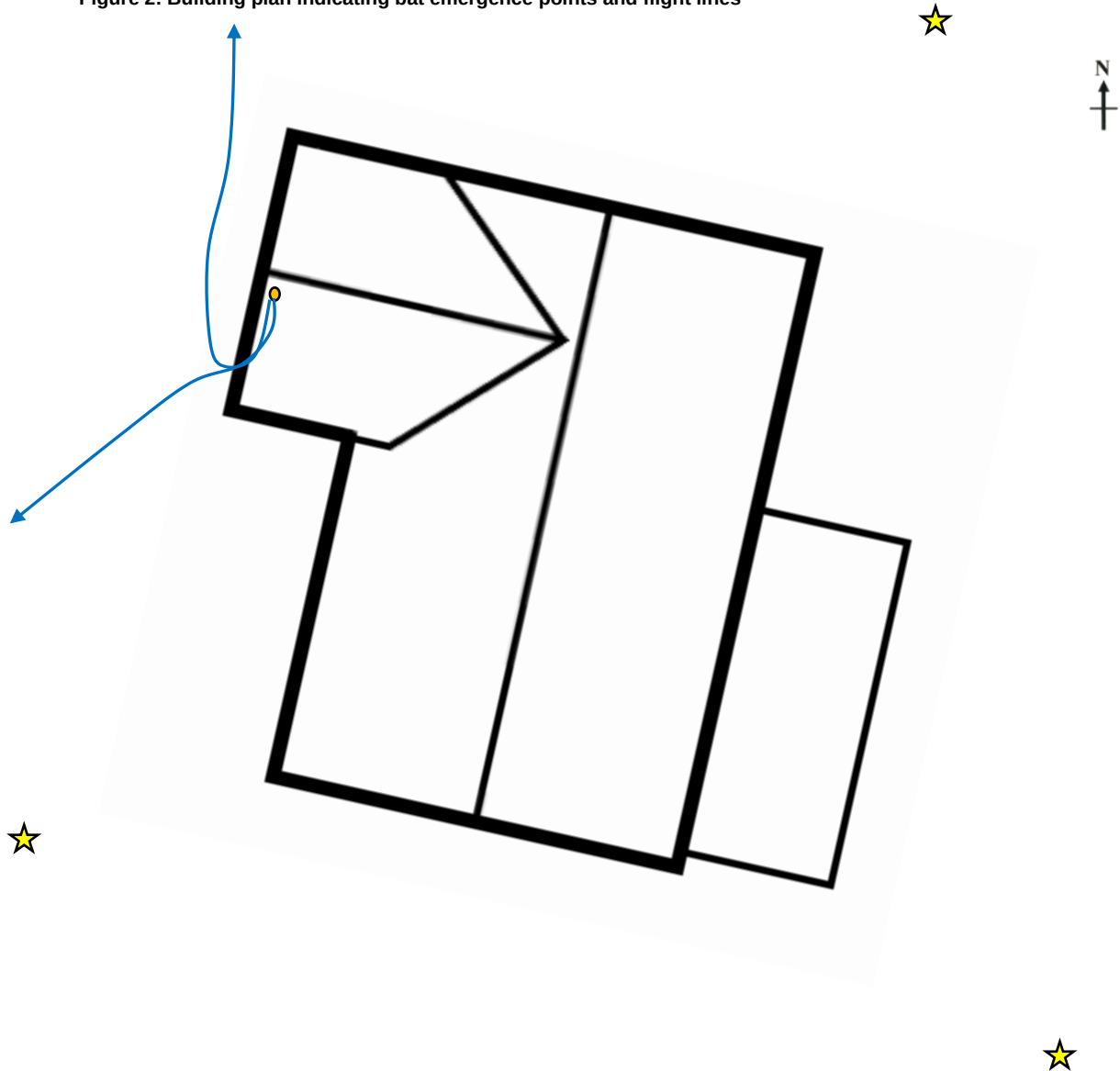
Note: Highlighted records indicate emergence activity

Appendix III: Evidence of Bat Roosts

Roost location:	Glascoed, Lon Maes Du, Cefn Coed y Cymmer, Merthyr Tydfil, CF48 2HH	
Survey date(s):	Day survey:	17 th July 2020: Robert Morgan, Phoebe Williams (Just Mammals Consultancy LLP);
	Dusk observations:	5 th August 2020: Robert Morgan, Phoebe Williams, Maja Hudej, Ben Gibson 31 st August 2020: Robert Morgan, Maja Hudej, Nigel Isaksson, Ben Gibson (Just Mammals Consultancy LLP)
Description:	The house is generally rectangular in shape with a small two storey extension attached to the west facing elevation of the house. A small ground floor conservatory is attached to the eastern elevation of the house. The main body of the house lies on a north-south alignment. It is built from brick, the upper half of the walls are covered with horizontal uPVC cladding with the lower half either exposed brick or covered with a pebble dash render. The property has a pitched roof covered with cement tiles with cement ridge tiles. This is likely supported by a timber frame. It is unknown if a what lining membrane is present or if a central ridge board is present. The doors, door frames and windows frames are uPVC, except for the door on the conservatory which is wooden. All soffits are wooden. The fascia boards and barge boards are wooden with uPVC coverings. The rainwater products are also all uPVC	
Actual and potential bat access points:	• gaps beneath slipped and raised cement tiles; • gaps beneath ridge tiles near the chimney; • gaps between the cement tiles and the barge capping at the north, south and west facing gable ends; • gaps underneath the lead work around the chimney;	
Actual and potential bat roosting sites:	• gap in the horizontal uPVC cladding on the eastern elevation of the house • the ridge area of the western extension, there are gaps between the barge capping and the edge of the cement tiles	
Species and number recorded:	Common pipistrelle: (2) emerged 31 st August 2020 from a gap at the ridge area of the western extension	
Droppings recorded:	No evidence of bats was found externally, no bat droppings, staining or insect remains were noted	

Appendix IV: Building Plan

Figure 2: Building plan indicating bat emergence points and flight lines



Key

-  = 31st August 2020 (2nd Dusk) emergence flight lines of bats
-  = location of bat emergence points
-  = location of observers

Appendix V: Site Photographs

Plate 1: Eastern elevation of Glascoed



Plate 2: Western elevation of Glascoed



Plate 3: Southern end of the existing conservatory



Plate 4: Northern end of the existing conservatory



Plate 5: South facing gable end wall of Glascoed



Plate 6: Eastern elevation where the proposed extension will tie into the existing roof

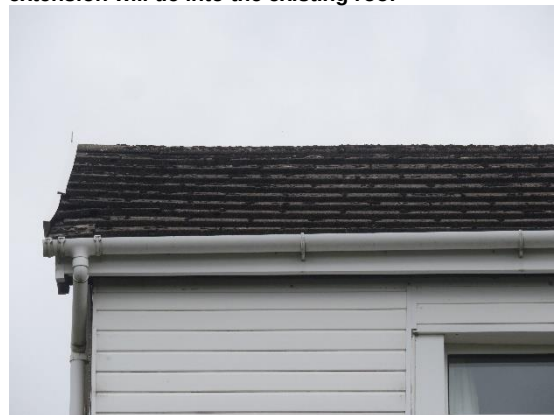


Plate 7: Bat flight lines from the ridge at west gable



Plate 8: Gap in the uPVC cladding on the east side



Plate 9: South elevation of the workshop



Plate 10: East elevation of the workshop



Plate 11: North-west corner of the workshop



Plate 12: Gap in fascia board on east side of workshop



Plate 13: Gap beneath the barge board on the south facing elevation of the workshop



Plate 14: Plan of proposed eastern extension



Appendix VI: Ecology of British Bats

There are at least 18 species of bats breeding in Britain. Most of them are regarded as threatened due to a variety of factors including habitat loss, intolerance and disturbance/damage or loss of roosts. Of these species a number regularly use buildings at certain times of year in order to find safe secure roost sites. Often several different species can use a building over the course of the year, and not all species are present at the same time, making assessment of their presence complex.

Bats are highly mobile flying mammals, which in Britain, feed entirely on insects. They have evolved over seventy million years and have developed sophisticated mechanisms to allow them to effectively 'see' in the dark by using sound waves. This system is called echo-location which enables them to track and hunt down small moving insects whilst in flight, rather like radar does in a modern military fighter aircraft. It is possible to record this sound, and because each species of bat echo-locates in a different way, determine what the species is without actually handling the animal which made the call.

In winter, when their prey is scarce, British bats hibernate or enter torpor, in cool parts of caves, buildings (cavity walls), and tree cavities. They may wake occasionally and will feed if evening temperatures are greater than 7°C, when flying insects can be active. Generally however, activity during cold winters is very limited and bats only become fully active in spring, with late March and early April being a critical time for animals desperately trying to save energy whilst gaining weight. Disturbance during these months can therefore be more devastating to bats than at other times of year.

By late spring female bats will gather together in maternity roosts in order to give birth and rear their single baby in June. Such maternity roosts are often near to important foraging areas in order to save energy as flight requires vast energy resources. Flight routes to and from such roosts can therefore also be important and some bats are extremely light averse preferring dark locations without street or security lamps which can force them to take complex routes to reach foraging areas. Such lighting can also badly degrade foraging areas where they occur close to buildings and hedgerows and tree lines can be particularly important areas for bat foraging to take place particularly when close to the roost building.

Whilst females form maternity colonies, usually in warmer roofs or trees, male bats tend to seek out cooler sites which may not be so close to the foraging areas. Males are often solitary and do not exhibit the social behaviour that marks out females during the birthing period. Non-breeding females will also roost in this way, when they have no need to spend energy on raising a single baby.

Several British bat species are known to rely heavily on buildings to roost. Of these species, the most likely are the soprano pipistrelle bat and the common pipistrelle. Other bat species regularly found in buildings are the brown long-eared bat; Natterer's bat; Brandt's bats and whiskered bat. Pipistrelle species and the small myotis or mouse-eared species (Brandt's, whiskered etc) often favour locations at the ridge or around the exterior shell of the structure. Brown long-eared and Natterer's tend to prefer living within the roof area of a building – large lofts being popular.

Other species that are known to use the internal areas of built structures such as barns include the two horseshoe species, the greater horseshoe bat (*Rhinolophus ferrumequinum*), and lesser horseshoe bat (*Rhinolophus hipposideros*), as well as western barbastelle bat (*Barbastella barbastellus*).

Appendix VII: Relevant Legislation

Bats

All species of bat in Britain, and their places of rest are protected under the provisions of the Wildlife and Countryside Act 1981 (WCA), Section 9(1), 9(4)(a) and 9(4)(b) as amended by Schedule 12 of the Countryside and Rights of Way Act 2000. Further protection is afforded by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019. In relation to structures used by bats for shelter or protection (i.e. roosts), this legislation makes it an offence to either intentionally or recklessly damage, destroy or obstruct access to any site used by bats, whether bats are present at the time or not, or to intentionally or recklessly disturb bats within a roost.

Infringements under this legislation include building demolition, removal of hollow trees, blocking, filling or installing grills over old mines or tunnels, building alteration or maintenance work, re-pointing of stone walls, getting rid of unwanted bat colonies, re-roofing, remedial timber treatment, re-wiring or plumbing in roofs, treatment of wasps, bees or cluster flies (Mitchell-Jones, 1992; Childs, 2001). Greater horseshoe bat, lesser horseshoe bat, Bechstein's bat, greater mouse eared bat and barbastelle are included in Annex II of the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019 and hence require special protection.

Maximum penalties for committing offences relating to bats or their roosts can amount to imprisonment for a term not exceeding six months or to fines of up to Level 5 on the standard scale under the Criminal Justice Act 1982/1991 (i.e. £5000 in April 2001) per roost or bat disturbed or killed, or to both. Bodies corporate and their directors/secretaries are liable for offences under the (Amendment) (EU Exit) 2019 Regulations and the WCA. Additionally, where such an offence results in the offender benefitting in a monetary form from the illegal action, confiscation or civil recovery of the proceeds can occur under the Proceeds of Crime Act 2002.

It is sensible to assess as soon as possible if bats are present at potential sites for development – preferable before the land is acquired. In some cases the period required for adequate survey work may span more than one calendar year. If a development, including demolition or change of use, is likely to impact on bats and their roosts then a licence will usually be required. Adequate survey results are a necessary input to any licence application. If bats are not found until late in the development stage this may result in delays while a licence is sought and even in offences being committed.

The law with respect to dwellings and other structures is applied equally. Where disturbance is deemed likely to have a significant effect on bats to survive, breed and rear their young or will affect the local distribution and abundance of the species, a European Protected Species licence issued by Natural Resources Wales. A licence application must demonstrate that the development will not be detrimental to the maintenance and conservation status of the species concerned.

This explanation must be regarded only as a guide to the law. For further details, reference must be made to the Wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019, and the Countryside and Rights of Way Act 2000.

Wild birds

All wild birds, their eggs and nests are protected by The Wildlife and Countryside Act 1981 (as amended). 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;
- sell wild birds or put them on display for sale;
- use traps or similar items to kill, injure or take wild birds; and
- intentionally, or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Penalties that can be imposed for criminal offences in respect of a single bird, nest or egg contrary to the Wildlife and Countryside Act 1981 (as amended) is an unlimited fine, up to six months imprisonment or both. In exceptional cases NRW and Natural England issues licences for specific purposes, so that legitimate work may be undertaken without breaking the law.

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