Former Community Centre School Lane Gilwern Monmouthshire



An Ecological Survey Report by:



On Behalf Of:



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1 Executive Summary

- 1.1 The former community centre in Gilwern is no longer in active use and the owner is looking to redevelop the site, which is expected to involve conversion of the main building and its extension wing, to provide new dwellings. A separate annexe structure will possibly be converted to a dwelling, but demolition and replacement with a new building is also under consideration. In order to establish the presence of legally protected species, which may be affected by these development activities, a bat survey was commissioned and undertaken in summer 2017. Survey involved a daytime inspection and two dusk bat emergence/activity observations, conducted in August and September.
- 1.2 Evidence of roosting bats was noted within the former community centre, as well as in the singlestorey extension, attached to the south-west corner, with bat droppings found in the roof voids. The droppings were identified as those of pipistrelle species, and they were a mixture of both old and fresh. During the two dusk observations a total of four bats (both common pipistrelle and soprano pipistrelle) emerged from the main structure, referred to as the former community centre building. No bats were seen to emerge from the extension, or the separate annexe structure.
- 1.3 Survey results indicate a summer day roost for a low number of pipistrelle bat species. The quantity and dispersed pattern of droppings in the roof voids are not significant, such as would typically be expected of a maternity colony. If a small maternity colony has historically been present, such use does not currently prevail, and survey results indicate there is summer day roosting by individual animals, most likely to be males or non-breeding females. Other seasonal bat activity and hibernation usage is assessed to be unlikely.
- 1.4 No precise plans are currently available with respect to the proposed re-development. If such plans include re-roofing or modifying the roof structures of the main building and the extension wing, or altering the ceilings, then such work has the potential to disturb, damage and destroy bat roosts. All bats species and their places of rest are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2010 (as amended). The legal protection for bats concerns impacts from disturbance, loss of roost locations, modifications to roosts and loss of access or obstruction to roost locations. It will therefore be necessary to provide a scheme of mitigation to retain bat roosting opportunities, which are suitable and appropriate for the bat usage at the site. Depending on the precise nature of the impacts for bats, it is likely that a European Protected Species (EPS) licence will also be required from Natural Resources Wales (NRW) before any work commences.
- 1.5 As noted above, no evidence for bats was found in the annexe building, which stands at the western end of the arrangement of structures on the site. No evidence of bat droppings was found inside the building and no bats emerged during the observations. This building is not considered to contain any bats or roost features, and issues relating to the legally protected status of bats do not apply for this structure.
- 1.6 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 2015i*), with a low number of animals of a common species, the site is assessed to be of low significance. The scale of the impact of the development will affect a small number of animals, with a low risk of detrimental impacts to the conservation status at a local level.
- 1.7 Although no current nesting bird activity was noted during any of the surveys, evidence of historic nesting birds was noted during the daytime assessment. All nesting birds, their nests and their eggs are protected by the Wildlife and Countryside Act 1981 (as amended). Guidance in respect to nesting birds and a scheme of mitigation is made in this report.

2 Introduction

2.1 The structures at the site of the former community centre in Gilwern, Monmouthshire are being considered for re-development, and conversion to residential use. In the case of the annexe, re-development of the site may include demolition of the building and replacement with a new dwelling. These activities will require consent from the local planning authority. In order to inform this process, a bat survey was undertaken by the Just Mammals Consultancy LLP, during the summer of 2017. The assessment comprised a day time visual inspection of the building, including external and internal survey. This was followed by two dusk bat emergence/activity

observations, in order to identify any bats roosting within the structures.

- 2.2 Located at National Grid Reference (NGR) SO 24759 14533, at an altitude of 116m Above Ordnance Datum, the former community centre is situated on the southern edge of Gilwern. It sits directly north of the Monmouthshire and Brecon Canal, which in turn is directly adjacent to the A465 Heads of the Valleys Road. An extensive road widening construction programme of this major highway is ongoing at the time of the survey. The survey site is surrounded by residential housing and small commercial properties to the north, east and west; the canal and the A465 to the south; and with more rural and pastoral land use further afield.
- 2.3 Principal objectives of the survey effort were to;
 - determine if bats are present in, or have the potential to roost in the buildings;
 - determine the species of bat present, and the type of roost (maternity, day roost etc);
 - identify any important bat foraging or commuting behaviour in relation to the site;
 - consider if there will be impacts on bats from the proposed works;
 - to consider if nesting birds were present, and might be affected by the proposals, and to;
 - gather sufficient information to be able to make appropriate recommendations.
- 2.4 This report documents the findings of the survey with bat activity observations, and makes appropriate recommendations in light of the results.

3 Survey Team Experience

3.1 Lead surveyor and co-author of this report is Diane Morgan. Assisting with the survey and coauthor is Grace Dooley. The structures at the site result in a complex layout and in order to obtain sufficient views over the elevations, it was necessary to engage a team of six observers for each of the dusk activity observations. The experience of the surveyors and the equipment used is described in Table 1 below.

Name/Position/Detector	Licences	Experience
Diane Morgan BA (Hons) ACIEEM Senior Ecologist (TE)	69062:OTH:CSAB:2015 expiry 31 st December 2017	Licenced bat ecologist of over 20 years, with considerable experience of surveying built structures for bats. She has carried out ringing of Daubenton's bat as part of a multi-year project on the species and has undertaken monitoring work on several important lesser horseshoe bat roosts and assisted in radio tracking projects on the same species. She also holds a licence for ringing greater horseshoe. Other areas of interest include otter, dormice, water voles, reptiles, amphibians, fungi and crayfish. Diane is a Senior Ecologist with the Just Mammals Consultancy LLP and an Associate Member of the Chartered Institute for Ecology and Environmental Management
Phil Morgan CEnv MCIEEM Principal Ecologist (TE)	69142:OTH:CSAB:2015 expiry 31 st December 2017	Over 35 years' experience of undertaking building, tree and cave surveys for all bat species. In addition he has undertaken foraging and flight line surveys using heterodyne and other echo location equipment and in 1991 made a significant contribution to a Bristol University run project, which established the methodology used in the National Bat Monitoring Programme. Phil has also undertaken numerous radio tracking exercises on both lesser horseshoe and Daubenton's bats. He holds Natural Resources Wales (NRW) licence for other protected species including dormice, otter, and great crested newt. Phil is a Principal Ecologist with the Just Mammals Consultancy LLP, and is a Member of the Chartered Society for the Environment, as well as being a Member of the Chartered Institute for Ecology and Environmental Management
Carola Hoskins BSc (Hons) MSc ACIEEM Senior Ecologist (TE)	69063:OTH:CSAB:2015 expiry 31st December 2017	Carola is an Associate Member of the Chartered Institute of Ecology and Environmental Management (ACIEEM) and holds an MSc in Environmental Conservation Management. She has practical expertise with bats, birds, botanical assessments, mammalian and reptile surveys. As well as assisting in conservation-based research, she has carried out biodiversity audits and ecological enquiries. Carola holds licences with Natural Resources Wales for otters, bats, white- clawed crayfish and great crested newts. She has completed a study of water voles and is currently assisting with bird ringing. Carola also holds a City & Guilds Level 2 award for working in Medium Risk Confined Spaces, and is a Senior Ecologist with the Just Mammals Consultancy LLP
Robert Morgan	69182:OTH:CSAB:2015	Over ten years' experience with bats, carrying out roost

Table 1: Survey Team Experience

Former Community Centre, School Lane, Gilwern, Monmouthshire

Ecologist (TE)	expiry 31 st December 2017	surveys, emergence surveys, radio tracking of lesser horseshoes and monitoring of important sites. He holds a City & Guilds Level 2 award for working in High Risk Confined Spaces. Also expertise in respect of dormice (NRW licence holder), great crested newts, barn owls, (NRW licence holder), and reptiles. Robert undertook the analysis of hat calls
		recorded during the surveys, and is an Ecologist with the Just Mammals Consultancy LLP
Grace Dooley BSc (Hons) MSc Assistant Ecologist (TE)		Holds an MSc in Conservation and Ecology and has 3 years' practical experience with bats, great crested newts, badger and reptile surveys, as well as botanical assessments for a variety of projects. Grace is an Assistant Ecologist with the Just Mammals Consultancy LLP and is a Qualifying Member of the Chartered Institute of Ecology and Environmental Management (CIEEM)
Nigel Isaksson Senior Survey Assistant (TE)	76041:OTH:CSAB:2017 expiry 30 th June 2019	Surveyor with nine years' experience undertaking bat surveys, flight line observations, census counts. Nigel is a Senior Survey Assistant with the Just Mammals Consultancy LLP
Kate Jones BSc (Hons) MSc Survey Assistant (TE)		After completing an MSc in Wildlife Management and Conservation at the University of Reading in 2014, Kate volunteered with the National Trust in West Exmoor for six months learning practical habitat management skills and monitoring and surveying techniques. Kate was employed as a contractor for another six months and led a project setting up a wildlife monitoring and surveying framework for the West Exmoor property. Kate now works for the National Trust in the Brecon Beacons as a ranger and undertakes bird, butterfly and mammal surveys as part of her role; but is also a Survey Assistant with the Just Mammals Consultancy LLP
Jim Hoskins Survey Assistant (TE)		Jim is an experienced survey assistant employed by the Just Mammals Consultancy LLP. He has four years survey experience with bats, observing both buildings and trees
Mark Davies Survey Assistant (TE)		Mark has a keen interest in wildlife and a desire to understand more about the natural history of the Brecon Beacons National Park where he lives. He is a Survey Assistant with the Just Mammals Consultancy LLP
Moyrah Gall Survey Assistant (TE)		Moyrah has undertaken studies in field and conservation ecology with Aberystwyth University and has over 4 year's experience working in countryside roles with a range of conservation organisations including NRW, National Trust and Wildlife Trusts. Through these roles and her ongoing passion to build and improve her conservation knowledge and skills, she has gained a diverse range of practical field experience. She holds a licence to disturb and examine dormice. Moyrah is a Survey Assistant with the Just Mammals Consultancy LLP
Note: Detectors TE = Tim	e expansion (Pettersson D-240X)	

4 Survey Methodology

- 4.1 A day time visual assessment of the buildings was carried out in August 2017, which involved an external and internal inspection of the structures, 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 structures were inspected as closely as possible. The context of the buildings within the surrounding landscape was also assessed at this time.
- 4.2 The internal survey searched for the presence of bats or the remains of dead bats (including dead juveniles and babies, which might indicate the presence of a maternity site) and signs of bats including bat faeces (droppings) on floors, stored items and other surfaces. Staining on timbers caused by oil from bat fur was also searched for as well as discarded fragments of insects such as moth wings. The ridge area, which is a favoured roost location, and other suitable features were checked for live bats. Beneath this line and around the roof voids, a careful search for droppings and insect parts was conducted.
- 4.3 Two dusk emergence/activity observations were undertaken by a team of six ecologists on each occasion. 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 myotid bats* (*Myotis sp.*) (*myotid bat is a collective term used where the species could not be specifically identified beyond this broad group). The myotid group encompasses seven species of British bat including Alcathoe's (*Myotis*)

alcathoe); Bechstein's (*M. bechsteinii*); Brandt's (*M. brandtii*); Daubenton's (*M. daubentonii*); Mouse-eared (*M. myotis*); Natterer's (*M. nattereri*); and the whiskered bat (*M. mystacinus*).

- 4.4 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 recorded 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.
- 4.5 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 'buzze' 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.
- 4.6 Nesting birds were also considered at the time of the daytime 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. The activity observations also noted any bird activity around the buildings.

5 Site Description

- 5.1 The former community centre at Gilwern comprises two buildings, which are referred to in this report as the main building or community centre, and a separate annexe, a short distance to the west. The former community centre comprises the main element with a small extension attached at the south-west corner. The main community centre building has the appearance of historic use as a school, but this is not substantiated by any evidence provided to the surveyors. However, as it stands at the eastern end of School Lane it seems very likely. From the entrance gate off School Lane, the three elements stand in a row extending from west to east the first building is the annexe, then the extension, and then the main building. A hard tarmacadam surface extends around all the buildings. To the north of the hard surfaced area, the ground slopes away down a bank of open grassland. A short row of mature alder trees (*Alnus glutinosa*), extend in an east/west line to the north-east of the main building. Self-seeded saplings and buddleja (*Buddleja davidii*), are growing against the external walls of the buildings.
- 5.2 A commemorative wall stone, indicates the main building was completed in 1912. The building is essentially T-shaped, built in stone, and with a roof covered with slate-type tiles and lined with timber sarking. It is unknown if a lining membrane is present behind the sarking. The roof is of a cross-gable construction, and is supported by a timber frame, with lead flashing present in the roof valleys. Ridge tiles are formed from clay, and along certain elevations are decorative, with both triple-arch and toothed crests present. Gable end walls are located on all four elevations with a projecting gable feature supported by timber struts also present along the northern elevation. It is thought that this feature probably housed a school bell. A square stone porch is located on the south-east elevation, and this has a flat roof covered with bitumen felt. Painted timber fascias and soffits are located at the eaves and at the gable walls. Brick detailing is present at the corners of the building and also flanking the windows, where concrete mantels and ledges are also in place. These windows, present along only the northern elevation appear to be single-glazed and encased in metal frames. Rainwater goods are present and appear to be of uPVC material. Remains of dead stems from a partial covering of ivy (Hedera helix) are visible on the eastern gable end wall.
- 5.3 Internally there is ground floor accommodation with several rooms, a hall space, kitchen area and toilets. One large loft space was accessed from a standard loft hatch in the hall. A single large roof void is present with no partitions, with a height at the apex of approximately 3m. Timber sarking is visible upon the underside of the roof throughout the roof space. Timber struts support the roof from within and connect to the timber queen post trusses. Brick pillars also support the purlins at the western and eastern ends of the loft space. There are boarded walkways and fibreglass insulation is laid upon the floor between the joists throughout the space.

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- 5.4 Appearing to have been built more recently than the main element, the single-storey extension, attached to the south-west corner, is an L-shaped structure with the east/west orientated wing forming a linking section to the north/south aligned section which contains ground floor accommodation. The extension is built from brick with external walls clad with a painted pebbledash render. The link section, which provides the main entrance area, has a flat roof covered with bitumen felt, with lead flashing located where the extension abuts the main element. The extension has a timber framed pitched roof, covered with slate-type tiles and lined with a sanded bitumen lining. Like the main building, it also has decorative clay ridge tiles. Gable ends are found at the north and south elevations, where timber bargeboards and brick vents are also present. Soffits are absent from this extension building, with the eaves overhanging on the pitched-roof component. Windows are located on the northern and western elevations and appear to be double-glazed with uPVC frames. Rainwater goods are present upon the structure and appear to also be also of uPVC material. Security lighting is present on the northern elevation at eaves height.
- 5.5 Internally, the extension contains ground floor level accommodation only with a roof void above, within the pitched roof section. The height at the apex is approximately 1m. A bitumen felt lining is present on the internal slope of the roof. The loft contains cabling and is empty with no boarding and no insulation material.
- The annexe is the most westerly building. It is a single-storey, roughly rectangular, and built in 5.6 brick, clad with a cement render. Again it contains two sections: the larger, eastern component is square-shaped and has a timber framed roof with a pyramid-hip construction, with the apex capped in lead. The smaller western component is narrower and rectangular, and has a timber framed hipped roof that abuts the western slope of the pyramid roof. Clay ridge tiles are located on this section, with a flue projecting upon the southern slope. Over the whole annexe building, the roof has a covering of slate-type tiles. The pyramid shaped roof is lined with sarking and the pitched hip roof is lined with a traditional bitumen membrane. Fascia boards are absent from the structure, which affords a view of the rafter tails beneath the uPVC guttering. A single, decorative course of bricks is also present immediately below the rafter tails around the entire structure. A line of decorative timber cladding is also present at the eaves, above the bricks. Double-glazed windows are located upon the northern, western and southern elevations; all are encased by uPVC frames. A transmitter aerial and a service cable attachment are present upon the western elevation at eaves height, with security lighting also located along the northern and southern elevation.
- 5.7 Within the annexe are ground floor level meeting room facilities. The internal space of the square shaped section extends internally into the apex of the pyramid roof. A roof void is present within the pitched roof section projecting on the west elevation which was accessed via a loft hatch. Fibreglass insulation is present on the floor of the loft between the joists but in places it has been pushed into tight bunches. A bitumen lining is present on the slope of the roof and timber sarking of the pyramid roof is visible at the eastern end of the roof void, where the two roofs join. The roof void is empty and not boarded.

6 Desktop Study

6.1 No part of the site contains, or is within, any statutory sites of nature conservation interest, such as a Site of Special Scientific Interest (SSSI), Special Area of Conservation (SAC), National Nature Reserves (NNRs), or Local Nature Reserves (LNRs) etc. Within a 2km radius of the site there are three areas designated for nature conservation. The River Usk SAC, which encompasses the Upper Usk SSSI, and the River Usk tributaries SSSI, is approximately 1km to the north-west; Gilwern Hill SSSI, is located approximately 1.4km to the south; and Cwm Llanwenarth Meadows SSSI, is located approximately 2km to the south-east. Development activity at the former community centre are not considered likely to impact on the designated sites in the vicinity.

7 Survey Constraints

7.1 The close proximity of the tall hedgerow vegetation, which forms the southern boundary of the site, and flanks the Monmouthshire and Brecon canal, obscures the view over much of the south elevation of the structures, and restricted clear views during the bat activity observations.

8 Survey Results

8.1 A daytime internal and external inspection visit was made to the site on Friday the 25th of August 2017. Two dusk emergence/activity observations were also conducted. Table 2 below summarises the details of the conditions under which the various surveys were undertaken. Wind speeds shown employ the Beaufort scale. Local sunset times were calculated on site using a geo positioning system (GPS).

rabio 2. Cuminary of Curroy Activity and Weather Containente			
Date	Survey Type	Timing	Weather Conditions
21/08/2017	Dusk emergence/activity observation (PM, CH, GD, JH, MD, KJ)	20.00 – 21.40 hours British Summer Time (BST) (Sunset 20.26 hours)	Air temperature: 17.5°C Cloud cover: 7/8 oktas Wind speed: F0, calm
			Conditions: Dry
25/08/2017	Daytime internal and external visual inspection (RM, JH)	10.15 – 12.45 hours BST	Air temperature: 19°C Cloud cover: 5/8 oktas Wind speed: F1, light air Conditions: Dry
17/09/2017	Dusk emergence/activity observation(DM, RM, NI, MG, MD, KJ)	18.50 – 20.45 hours BST (Sunset 19.32 hours)	Air temperature: 11°C Cloud cover: 2/8 oktas Wind speed: F2, light breeze Conditions: Dry
Surveyors	Phil Morgan (PM); Rob Morgan (RM); Diane Morgan (DM); Carola Hoskins (CH); Grace Dooley (GD);		
	Kate Jones (KJ); Nigel Isaksson (NI); Jim Hoskins (JH); Mark Davis (MD); Moyrah Gall (MG)		

Table 2: Summary	of Surve	v Activity and	Weather	Conditions
i able 2. Summar	y or Surve	y Activity and	weather	Conditions

- 8.2 The daytime assessment in August 2017 commenced with the external features of the former community centre, which revealed no evidence of bats such as bat droppings, staining or anything to indicate the presence of a bat roost. However, potential access points that bats and birds might exploit were identified. A gap was noted between the soffit and the stonework that runs around the entire structure at eaves height. Along the western and southern ridge lines, the ridge tiles were noted to be positioned off-centre, and at a tilt, with a significant gap beneath the tiles was observed on one aspect. At the eastern gable end, a gap was also noted underneath the terminal ridge tile. Additional gaps were present along the eastern ridge, where tiles on the top course have slipped and created gaps leading to the ridge line itself. Along the northern elevation, in the western valley of the projecting gable, there are additional slipped tiles, as well as broken slates, making way for a larger hole. Lead flashing present on the flat-roofed porch structure, to the south-east, was also noted to have lifted, creating a small gap.
- 8.3 Similarly, external inspection of the single-storey extension revealed no evidence of bats, nor anything that might suggest the presence of a bat roost. Potential access points that bats might exploit were identified. A gap was present beneath the terminal ridge tile at the northern gable end. Additional gaps were also present at the eaves between the underside of the bitumen liner and the wall plate, along the eastern and western elevations.
- 8.4 No evidence of bat presence was noted around the exterior of the annexe. The roof was considered to be well sealed although a gap was noted at the eaves, between the bitumen lining and the exterior timber decorative cladding.
- 8.5 Inside the main building of the former community centre, no live bats were seen, although evidence of the presence of bats was immediately noted. As well as a general scattering of bat droppings, small concentrations of bat droppings were noted in several places. Modifications to the roof were present at the ridge apex, close to each gable end, where it is considered that an air vent was historically sited. Beneath these capped features were accumulations of pipistrelle (*Pipistrellus sp.*) type bat droppings, in aggregations (ranging between 50+ and 150+). Additional bat droppings were noted on the brick support pillars, which appear to correspond to crevices in the brickwork of the pillars themselves. The droppings recorded within the loft were small, and mostly old, with some fresher and recent examples. A large and inactive wasp (*Vespula vulgaris*) nest was noted at the east gable wall plate, near the north-east corner.
- 8.6 Internal survey of the small extension revealed no live bats within the loft space. However, evidence of their presence was recorded at the northern gable end, where a small collection of 15+ old pipistrelle type bat droppings were noted on the internal wall. In addition, *circa* 100+ pipistrelle type bat droppings were recorded underneath the line of the ridge, close to the northern gable end wall. These droppings appeared to be a mixture of both fresh and old. An inactive wasp nest was located against the lattice style vents in the brickwork at the northern end.
- 8.7 Within the interior of the annexe building, no evidence of bats was noted. Two small old wasp

nests were recorded; one against a rafter on the south-western hip, and the other upon the underside of the bitumen lining on the northern elevation.

- 8.8 Evidence of nesting birds was also considered, and no active nests were found. However, the survey visit was conducted outside the main bird nesting season. Several old and inactive nests were seen within the main loft space of the main former community centre. Grassy nests are located at the eastern, western, and southern gable end walls, with nesting material also located directly below each nest. Further evidence of bird nesting activity was noted at the eastern gable end wall, where a nest comprising mainly twigs was recorded at the eastern gable end wall. A total of seven dead juvenile birds were encountered on the floor of the loft space, close to each of the gable end walls. Evidence by way of white droppings indicate that birds are perching atop the wall plates at eaves level in all areas of the loft space. The birds thought likely to make use of the features of this building are pigeon (*Columba livia*), starling (*Sturnus vulgaris*), and house sparrow (*Passer domesticus*).
- 8.9 Inspection of the extension and the annexe building also searched for evidence of nesting birds. No active or inactive nests were found in either building: no nest material, no droppings were noted. Neither of these buildings have potential for birds to nest within the structures.
- 8.10 The former community centre was noted to have good connectivity by way of hedgerows and trees, which stand just to the south of the structures, flanking the Monmouthshire and Brecon canal. Approximately 200m to the west of the site, the canal crosses directly over the Afon Clydach, a tributary of the Usk which, as stated previously is a statutory protected site. These water courses are all lined with broadleaved trees, which connect to additional woodland habitat in the wider landscape.
- 8.11 Two dusk observations were undertaken at the site, with a team of six observers, who could communicate using hand held walkie-talkie radio units. A large quantity of data was gathered and full details are shown in Tables 3 and 4 (see Appendix II).
- 8.12 On Monday the 21st of August, the first bat noted during this observation (see Table 3), was at 20.22 hours, some four minutes prior to sunset, when a noctule (*Nyctalus noctula*) bat was heard over the site. Six minutes later, a soprano pipistrelle bat (*Pipistrellus pygmaeus*), was seen to exit from the apex of the northern gable of the main building before circling and flying off north. A second bat, a common pipistrelle (*Pipistrellus pipistrellus*), emerged from the southern gable end of the main building, at 20.44 hours, although the precise location was not identified due to the presence of vegetation. Noctule bats passed over the site several times. Many of the bats recorded by the observers watching the buildings were heard but not seen, and it is likely that much of this general activity around the site involved commuting and foraging bats within the canal corridor, immediately south of the site. In addition to bat species already mentioned, other bat species recorded were Daubenton's bat, and Brandt's bat, with unidentified myotid bats also recorded. No bird activity was observed.
- 8.13 A second dusk emergence/ activity observation was conducted on the evening of Thursday the 14th of September 2017. The first bat noted emerged two minutes before sunset, at 19.30 hours, from the eastern gable end of the main building roughly half way down the southern slope of the roof. It did not echo locate as it flew out and off to the north, but the experienced surveyor considered it was a pipistrelle from the behaviour and appearance (jizz) of the bat. A common pipistrelle was seen to emerge at 19.50 hours from the northern elevation of the main building, from near eaves level on the western slope of the gable wall, before flying north-east into the tree line. Activity during this survey was lighter than the previous survey. During this dusk observation, a wren (*Troglodytes tyroglodytes*) was seen to fly in to the roof area of the main building at the top of the east gable wall on the northern slope of the roof.

9 Discussion and Conclusions

9.1 Data gathered during the survey has established that the main building, and the linked extension of the former community centre in Gilwern, are day roost locations for crevice-roosting common pipistrelle and soprano pipistrelle bats. A total of four bats were seen to emerge from the main building: a common pipistrelle, and a soprano pipistrelle, during the first observation, and a common pipistrelle and an unspecified pipistrelle, during the second observation. Two bats were seen emerging from the northern elevation gable wall area; one from the eastern gable wall, roughly half way down the southern slope. The fourth bat was seen to emerge from the southern gable end wall, but no precise location was identified. Despite the evidence of bat droppings

within the extension loft space, no bats were seen to exit from this part of the building, but it must still be considered to be a bat roost on the basis of the droppings. No evidence of bat roosts was found relating to the annexe either from the daytime inspection or the dusk observations. This building is not a bat roost at this time.

- 9.2 Numerous gaps and holes were noted around the edge of the roof structure of the main building, and the large loft space and bat friendly roofing materials make it an attractive location. The presence of the Monmouthshire and Brecon canal, immediately to the south, is another factor likely to attract bats to the site, as it will an insect rich foraging habitat with good linear connectivity.
- 9.3 Within the main building, historic alterations in the timber sarking were noted at the ridge, close to the four gable ends, where it is considered air vents were historically positioned. It was possible to view the ridge tiles in these locations. Below these features were small quantities of droppings, which were considered to have fallen through into the loft as a result of bats roosting around the ridge area.
- 9.4 An assessment for the nature of the roost was also made, and it is concluded that it is a summer day roost used by male and non-breeding female pipistrelle bats. During each of the dusk observations, two bats exited the building and there was no consistent pattern to their emergence behaviour. Only pipistrelle bat species were seen to emerge which is consistent with the evidence of the droppings found in the loft space. Given the moderate number of droppings, and the absence of any dead adult or juvenile bats within the loft voids, it was considered that the former community centre is not a maternity roost at this time. A larger concentration of droppings would be expected to mark a roost used by a maternity colony of bats.
- 9.5 Presence of bats at other times of year, apart from the summer months, was also considered. It is thought that the structures have little potential to be used by hibernating bat species, due to the lack of stable, cool conditions in features such as wall cavities, cellar and other such subterranean spaces. Structurally, the main building of the community centre has no cracks in the fabric of the building that could be exploited by hibernating bats. The single-storey extension and annexe are both more recently built structures, and similarly hold negligible potential to support hibernating bats.
- 9.6 Survey was undertaken late in the summer season, with observations in August and mid-September. A thorough inspection of the roof voids was achieved, and the evidence from the bat droppings correlates with the low level of bat activity detected during the dusk observations. The survey data does not present any contradictions, and a valid methodology has been completed. An appropriate number of surveyors were used to ensure good view of the buildings, where the vegetation was not a restricting factor. A full and thorough assessment has been undertaken.
- 9.7 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 2015i*), with a low number of animals of a common species, the site is assessed to be of low significance. The scale of the impact of the development will affect a small number of animals, with a low risk of detrimental impacts to the conservation status at a local level.
- 9.8 Impacts from development proposals upon the structures which are bat roost locations were considered. There are currently no precise proposals but re-development is likely to include conversion, alteration to ceilings and re-roofing. Development plans may also include demolition. These changes to the main building and its extension will result in impacts on bat roost locations by way of disturbance, modification or roosts, obstruction of access points and destruction of roosts. The annexe building is not found to be a bat roost location so development constraints relating to bats to do not apply to this structure.
- 9.9 All bats species and their places of rest are fully protected under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2010 (as amended). The legal protection for bats concerns impacts from disturbance, loss of roost locations, modifications to roosts and loss of access or obstruction to roost locations. As indicated above, as such impacts are likely to occur, it will therefore be necessary to provide a scheme of mitigation to retain bat roosting opportunities, which are suitable and appropriate for the crevice roosting bat usage at the site. A European Protected Species (EPS) licence will be required from Natural Resources Wales (NRW) before any work is done which can potentially affect bats and their roosts.

- 9.10 For the development to proceed, a robust scheme of mitigation is required to ensure that the favourable conservation status of the bat species is not adversely affected. The following broad principles must be followed within any scheme of mitigation or compensation at the site and will need to be delivered under the auspices of an EPS licence:
 - bats must not be left without a place to roost;
 - major works must be timed to avoid periods of the year when bats are likely to be present;
 - any new roost structures provided as part of mitigation and compensation proposals must be suitable for the species of bat and type of roost affected by the development;
 - any scheme must ensure that the 'action authorised will not be detrimental to the maintenance of the population of the species concerned at a favourable conservation status in their natural range', and;
 - post-development monitoring will be necessary to comply with the EPS licence. It is also recommended to form part of the scheme of mitigation for the local authority planning procedures.
- 9.11 Pipistrelle bats are crevice roosting animals, and it is reasonably straightforward to provide new roosting opportunities for these bats within the fabric of modified or new buildings that will be constructed on the site. Roosting opportunities must also be provided during the interim of development activity while demolition and construction are taking place. Recommendations are made below. Timing of work will also be crucial to ensure that the risk of disturbance is minimised and bat friendly materials must be used.
- 9.12 Issues concerning the habitat features of the site must also be taken into consideration. The southern boundary contains a tall hedgerow/tree line of broadleaf species which provides important linking habitat for bats and other species. The canal is popular for boating activities, and the tow path is a busy route for walkers and cyclists. The boundary vegetation provides screening from noise and also privacy for the survey site along the boundary with the canal zone, and retaining this green feature is important. At the eastern end of the site the boundary contains dense and tall shrub vegetation and a short line of mature alder trees. Whilst some thinning and management of this vegetation may be needed, the habitat is important for biodiversity as well as a connective features for bats.
- 9.13 New external lighting installations at the site must be planned with consideration for the importance of the boundary tree lines so as not to have a detrimental impact on nocturnal wildlife. Further comment on lighting issues and recommendations are made below.
- 9.14 Breeding birds must also be considered. No active nests were noted during internal and external inspection, nor were any birds seen to be using the structures to nest during the evening bat activity observations. However, multiple inactive nests and several dead birds were recorded within the interior of the main building. All nesting birds, their nests and their eggs are legally protected by the Wildlife and Countryside Act 1981 (as amended). As nesting birds will be impacted through the proposals, recommendations with a scheme of mitigation are made below.

10 Recommendations

- 10.1 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 any modification/conversion/demolition of the former community centre and the extension section result in impacts on bats. Therefore, an application to NRW for an EPS licence is required for work affecting the main building and its linked extension. No work which has the potential to affect bat roost locations can commence until such time as a licence has been issued.
- 10.2 An EPS licence application for the development must be made to NRW. Under the Conservation of Habitats and Species Regulations 2010 (as amended) an EPS licence can only be issued if NRW are satisfied that:
 - there are imperative reasons of overriding public interest including those of a social or economic nature;
 - there is no satisfactory alternative, and;
 - the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.
- 10.3 As noted above, bats are fully protected under the provisions of the Wildlife and Countryside Act

1981 (as amended), and the Conservation of Habitats and Species Regulations 2010 (as amended). An application for an EPS licence can only be made once planning consent is granted, and can take several weeks to put together. Considerable supporting documentation is needed including the licence application forms; a detailed Ecological Method Statement (EMS) (providing information on the survey effort with recent survey data not older than 18 - 24 months), and details of the local status of the species concerned; the duties of an independent experienced Ecological Clerk of Works (ECW); as well as the duties and responsibilities of the various contractors (e.g. builders, carpenters, electricians, plumbers etc), and the owner/developer of the site. A local planning authority consultation document must also be completed and signed. The Ecological Method Statement (EMS) must also include post project monitoring, for a period of at least one year following completion of the development work. NRW do not currently make a charge for issuing a licence but this circumstance is likely to change in the future.

- 10.4 In the absence of precise development plans, general guidance on a scheme of mitigation bats and birds is given below as well as advice on the likely constraints for development activity.
- 10.5 A bat friendly timetable will be necessary to minimise detrimental impacts on the small number of bats which occupy summer roost locations. All works to the roof areas and eaves must await the issuing of an EPS licence, with roof works timed to be completed in the period between 15th September and 31st March. This will greatly reduce the risk of disturbing and harming bats. Demolition or re-roofing of the structures will require using a 'soft-strip' method, where coverings in key parts of the roof are removed carefully by hand, inspected, and then discarded. Stages of this process must be supervised by an Ecological Clerk of Works (ECW), who will oversee the removal of features of bat interest such as the ridges, gable ends and eaves.
- 10.6 For crevice roosting pipistrelle bats, an appropriate scheme of mitigation must be designed to ensure that small gaps are retained or provided at the barge boards/soffits on the retained building or new housing. Gaps and roosting opportunities must also be made beneath ridge tiles. This design of mitigation must provide the typical small slots and gaps which crevice roosting pipistrelle species utilise around the roof structure. These mitigation measures must be shown on the architect's plans.
- 10.7 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. Also, lighting was found to be harmful when present near woodland edges and hedgerows. Inappropriate lighting can result in the isolation of bat colonies and can affect insect behaviour which then adversely affects bats. 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. There must be no external light spill onto areas where bat access points and bat mitigation features are located or onto boundary hedges and tree lines.
- 10.8 Building developments often result in the installation of other fitments and fittings, some of which can be harmful to bats. It is essential that no satellite dishes, guttering, vents, lights or air conditioning units are located within close proximity of the bat mitigation arrangements. A wind turbine, even a micro turbine unit, would not be suitable at this location given the presence of bat roost locations.
- 10.9 Post-development monitoring will be necessary to comply with the conditions of any EPS licence. It is also recommended to form part of the scheme of mitigation for the local authority planning procedures. For a site assessed to have low nature conservation significance, the level of postdevelopment monitoring recommended (*Bat Mitigation Guidelines 2004*), is one visit in year 2, following completion of the development, with a dusk activity observation carried out during the summer survey period by suitably qualified ecologists.
- 10.10 Birds are also protected under the provisions of the Wildlife and Countryside Act 1981 (as amended), and active bird nests cannot legally be disturbed or destroyed. If a nest is established the adult birds must have unrestricted access and the nest cannot be moved or destroyed until the chicks have fledged and the nest is no longer in active use. 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.

10.11 To mitigate for the loss of nesting locations within the roof of the main building, a suite of four timber nest boxes is recommended. These must be put up in suitable positions around the site, avoiding direct sunlight and out of the direction of driving rain. The chosen locations must avoid possible predation by cats and will ideally offer close proximity to vegetation for shelter, protective cover and easy access into natural habitat.

11 References

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Appendix I: Site Location Plan

Figure 1: Site location plan



Aerial view	of the site	
Project reference:		
BAT 441 7		
Name of site:		
Gilwern Comm	nunity Centre	
Prepared by: Checked by:		
GD	DM	
Date of completion:		
10/11/2017		
Map scale:		
1:20000 & 1:2000		
Source:		
© Google Sat (2017)	ellite Imaging	





Appendix II: Results of Bat Survey Observations

Table 3: Former Community Centre, Gilwern – Dusk Observation 21st August 2017

Lime (24	Species (Common	Recording	Observed Activity
20.22 hours	Name)	1 CD 1 DM	Heard over our exercite
20.22 110015	Noclule	1 JH	Heard over survey site
20.25 hours	Bat	- JH	Circling over hard standing near north-east corner of main building
20.28 hours	Soprano pipistrelle	1 CH, 3 JH	Emerged from apex of north gable of main building, circled and flew off north
20.31 hours	Common pipistrelle	4 JH	Foraging over hard standing at east end of main building
20.32 hours	Common pipistrelle	2 PM	Heard but not seen to south of main building
20.34 hours	Common pipistrelle	3 PM	Heard but not seen to south of main building
20.35 hours	Common pipistrelle and soprano pipistrelle	5 JH	Foraging over hard standing at east end of main building
20.35 hours	Common pipistrelle	1 KJ	Heard but not seen to north-west of annexe
20.37 hours	Soprano pipistrelle & noctule	2 CH	Heard but not seen at north-west corner of the main building
20.37 hours	Soprano pipistrelle & noctule	2 GD, 2 CH 6 JH, 4 PM	One commuting over buildings north to south. Other seen foraging over hard standing at east end of main building
20.38 hours	Bat	1 MD	Commuting west to east past north side of main building
20.39 hours	Common pipistrelle	2 KJ	Foraging over hard standing to west of main building
20.39 hours	Common pipistrelle	2 MD	Commuting west to east past north side of main building
20.39 hours	Common pipistrelle	5 PM	Heard but not seen to south of main building
20.44 hours	Common pipistrelle	6 PM	Emerged from rear (south) gable wall area of main building and flew off south
20.45 hours	Soprano pipistrelle	3 GD	Commuting over buildings from north to south
20.46 hours	Common pipistrelle	4 GD	Heard but not seen to south of annexe
20.47 hours	Soprano pipistrelle	3 KJ	Foraging over hard standing to west of main building
20.48 hours	Common pipistrelle	5 GD	Heard but not seen to south of annexe
20.48 hours	Brandt's	7 PM	Heard but not seen to south of main building
20.50 hours	Myotid sp	8 PM	Heard but not seen to south of main building
20.53 hours	Common pipistrelle	6 GD	Commuting over buildings from north to south
20.54 hours	Common pipistrelle	7 GD	Heard but not seen to south of annexe
20.54 hours	Bat	3 MD	Heard but not seen at north-east corner of annexe
20.54 hours	Common pipistrelle	9 PM	Foraging near south elevation of main building
20.55 hours	Soprano pipistrelle	3 CH	Heard but not seen at north-west corner of main building
20.57 hours	Soprano pipistrelle and common pipistrelle	8 GD	Heard but not seen to south of annexe
20.58 hours	Common pipistrelle	4 KJ	Heard but not seen to north-west of annexe
21.00 hours	Soprano pipistrelle	7 JH	Foraging on northern side of main building
21.00 hours	Common pipistrelle	5 KJ	Foraging near north-west corner of annexe
21.00 hours	Bat	4 MD	Commuting east to west past north side of main building
21.00 hours	Common pipistrelle	10 PM	Foraging near south elevation of main building
21.01 hours	Daubenton's bat	9 GD	Heard but not seen to south of annexe
21.01 hours	Myotid sp	11 PM	Foraging over canal to south of main building
21.04 hours	Soprano pipistrelle	10 GD	Heard but not seen to south of annexe
21.05 hours	Soprano pipistrelle & common pipistrelle	11 GD	Foraging over canal to south of site
21.05 hours	Daubenton's	12 PM	Foraging over canal to south of main building
21.06 hours	Soprano pipistrelle & noctule	6 KJ, 5 MG, 8 JH, 13 PM, 12 GD	Noctule seen commuting from west to east high over the site. The soprano pipistrelle was heard but not seen
21.09 hours	Common pipistrelle	13 GD	Heard but not seen to south of annexe
21.10 hours	Soprano pipistrelle	14 PM	Heard but not seen to south of main building
21.14 hours	Soprano pipistrelle	15 PM	Heard but not seen to south of main building
21.22 hours	Myotid sp	4 CH	Heard but not seen at north-west corner of main building
21.22 hours	Soprano pipistrelle	7 KJ	Heard but not seen to north-west of annexe
21.23 hours	Soprano pipistrelle & noctule	14 GD	Heard but not seen to south of annexe
21.23 hours	Soprano pipistrelle	9 JH	Heard but not seen at north-east corner of main building
21.24 hours	Soprano pipistrelle	10 JH	Heard but not seen at north-east corner of main building
Note: Highlighted re	ecords indicate emergence or re-	entry activity	

Table 4: Former Community Centre, Gilwern – Dusk Observation 14th September 2017

Time (24 Hour Clock)	Species (Common Name)	Recording No.	Observed Activity
19.30 hours	Pipistrelle	- RM	Emerged from east gable end of main building roughly half way down southern slope and flew north into tree line: not echo-locating
19.31 hours	Common pipistrelle	1 RM	Heard but not seen foraging around boundary vegetation to east of main building
19.32 hours	Common pipistrelle	2 RM, 1 MG	Heard but not seen to east and south of main building
19.32 hours	Common pipistrelle	3 RM, 1 DM	Foraging over hard standing at east end of main building
19.37 hours	Soprano pipistrelle	4 RM	Heard but not seen foraging around boundary vegetation to east of main building
19.38 hours	Common pipistrelle	2 DM	Foraging over hard standing to east of main building
19.40 hours	Common pipistrelle	5 RM	Foraging over hard standing at east end of main building
19.48 hours	Soprano pipistrelle	1 MD	Heard but not seen to north-west of annexe
19.50 hours	Common pipistrelle	1 KJ	Emerged from near eaves on west slope of northern gable of main building: flew off north-east to tree line
19.50 hours	Common pipistrelle	6 RM, 3 DM, 2 MG	Foraging amongst trees to south-east of main building
20.01 hours	Soprano pipistrelle	3 MG	Heard but not seen to south of main building
20.03 hours	Soprano pipistrelle	4 MG	Heard but not seen to south of main building
20.05 hours	Soprano pipistrelle	5 MG	Heard but not seen to south of main building
20.06 hours	Soprano pipistrelle	7 RM, 6 MG	Heard but not seen to south-east of main building
20.10 hours	Soprano pipistrelle & common pipistrelle	7 MG	Heard but not seen to south of main building
20.10 hours	Common pipistrelle	8 RM	Heard but not seen to east of main building
20.16 hours	Common pipistrelle	8 MG	Heard but not seen south of main building
20.17 hours	Common pipistrelle	9 RM	Heard but not seen east of main building
20.18 hours	Brown long-eared	1 NI	Commuting south to north over tree line to south of structures
20.19 hours	Brown long-eared	10 RM	Flew around north-east corner of main building from north side and flew off south
20.20 hours	Soprano pipistrelle	2 MD	Heard but not seen to north-west of annexe
20.20 hours	Common pipistrelle	9 MG	Heard but not seen to south of main building
20.20 hours	Soprano pipistrelle	4 DM	Heard but not seen at front, north elevation of main building
20.24 hours	Myotid sp	10 MG	Heard but not seen on tow path to south of main building
20.29 hours	Soprano pipistrelle	5 DM, 11 RM	Heard but not seen along tree line north-east of main building

Note: Highlighted records indicate emergence or re-entry activity

Appendix III: Evidence of Bat Roosts

Roost location:	Former Community Centre, School Lane, Gilwern, Monmouthshire	
Survey date(s):	Day survey: Dusk observations:	25 th August 2017; Robert Morgan, James Hoskins (Just Mammals Consultancy LLP); 21 st August 2017; Phil Morgan, Carola Hoskins; Grace Dooley; James Hoskins; Mark Davies; Kate Jones (Just Mammals Consultancy LLP); 17 th September 2017; Diane Morgan; Robert Morgan; Nigel Isaksson; Moyrah Gall; Mark Davis; Kate Jones (Just Mammals Consultancy LLP)
Description:	A complex of three structures comprising the former community centre which is linked to a single-storey extension plus a separate annexe. The main building is the former community centre which is built in stone with a cross- gabled roof that is covered in slate-type tiles, lined with sarking. The single- storey extension is brick-built with a small flat roof section over the entrance area covered in a bitumen felt lining. A larger section has a pitched roof covered in slate-type tiles lined with a bitumen membrane. The annexe is also brick-built and has two sections; the first with a pyramid-hip roof, the other with a hipped roof that attached to the western slope of the pyramid roof. Both roofs are covered in slate-type tiles, the pyramid roof lined with sarking and the pitched roof lined with a bitumen membrane.	
Actual and potential bat access points:	Former community centre and the stonework; gap b beneath tiled ridge tiles cracked tiles. Single-storey extension: northern gable end; gaps eastern and western eleva Annexe: gap between bit entire structure.	e: gaps around the whole structure between the soffit eneath terminal ridge tile on eastern gable end; gaps along western ridge line; gaps due to slipped and gap between barge boards and wall plate along at eaves between wall plate and bitumen lining along ations. tumen lining and decorative timber cladding around
Actual and potential bat roosting sites:	Former community centre sarking; behind soffit and brickwork on brick suppor coverings and at the tops Single-storey extension: g	e: gaps between ridge coverings and internal timber d fascias; crevices in stone walls at the wall plate, rts within loft void: between roof timbers and the roof of walls. laps between roof coverings and bitumen lining
Species and number recorded:	Soprano pipistrelle: (1) fro Common pipistrelle: (1) fro Pipistrelle: (1) fro Common pipistrelle (1) fro	om north elevation main building 21 st August 2017 om south gable main building on 21 st August 2017 om east gable main building 17 th September 2017 om north elevation main building17 th September 2017
Droppings recorded:	Former community centre Single-storey extension: te	: total approximately 315+ otal approximately 115+

Figure 3: Plan of buildings showing evidence of bats and exit points



Legend

Legend		Source.
*	Approximate surveyor locations Gilwern Community Centre Aggregations of bat droppings Bird nest Dead bird	© Goog (2017)
<u>^</u>	Dedd blid	

= Bat exit flight lines

0 Google Satellite Imaging 017)

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Appendix IV: Site Photographs







Plate 5: Extension and annexe – north elevation

Plate 2: Single-storey extension at south-west corner of former community centre



Plate 4: Former community centre, south elevation



Plate 6: Annexe from the south-west



Plate 7: Buildings viewed from SW on canal tow path Plate



Plate 8: Buildings viewed from the north





Plate 9: Gaps at ridge



Plate 11: Gap beneath bitumen lining at eaves of single storey extension



Plate 13: Loft of former community centre



Plate 15: Bat droppings in loft of main building



Plate 10: Gaps at ridge



Plate 12: Gap beneath lead flashing on porch



Plate 14: East wall in loft of former community centre



Plate 16: Bird remains in loft of main building



Plate 17: Extension loft



Plate 19: Interior of annexe with pyramid roof



Plate 18: Bat droppings on floor of extension loft



Plate 20: Loft of annexe



Appendix V: 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 myotid 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 VI: Relevant Legislation

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 2010 (as amended). 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, repointing 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 2010 (as amended) 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 2010 Regulations and the WCA.

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 2010 (as amended) and the Countryside and Rights of Way Act 2000.

Appendix VII: European Protected Species Licences

Under the Conservation of Habitats and Species Regulations 2010 (as amended) a licence can only be issued if Natural Resources Wales are satisfied that:

- there are imperative reasons of overriding public interest including those of a social or economic nature;
- there is no satisfactory alternative, and;
- the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

Natural Resources Wales will require a copy of the full planning consent, as well as an explanation of why there is a need to carry out the proposed work and what alternative solutions have been considered (e.g. other sites) and why they have been discounted. The alternative of retaining the roost within the development must be considered. The last point will depend on the possibility of implementing appropriate mitigation and on assurances that it can be and will be carried out and maintained and the results monitored. Natural Resources Wales aim to process applications within 30 working days, but in practice licences often take longer depending on the number of applications being processed at any one time.

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This ecological survey report is valid to August 2019.

Just Mammals Consultancy is an ecological consultancy based in Mid-Wales. Specialising in legally protected mammal, reptile and amphibian species, but providing a wide range of ecological services, it provides appropriate expertise on behalf of a range of clients.

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