Bat Survey: Westwinds, St Andrews Road, Dinas Powys, Vale of Glamorgan, CF64 4HB

Instructed by: Rakesh Aggarwal

Reported by: Ecological Services Ltd
10 Mount Pleasant, Llanelly Hill, Abergavenny, Monmouthshire, NP7 0NT

Author	Date	Version
Rich Watkins	June, 2021	V1.0

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1.0 The Brief; its Background and Purpose

1.1 Westwinds is a large residential dwelling located on St Andrews Road in the village of Dinas powys in the Vale of Glamorgan. The property is situated in approximately 2.5 acres of grounds, where there is a substantial rear garden. The property is located adjacent to existing properties on St Andrews Road and is not currently in use. Planning permission is sought to demolish the current building and out buildings that are present at the front of the main house and replace these buildings with a new dwelling. There is an existing stable block to the rear of the property, this will be retained. This report will investigate if there is potential to disturb bats and will be used to assist in the planning process.

1.2. To support the planning application a bat report has been commissioned to investigate if bats use the current property in any capacity during the maternity season, and for any evidence suggesting that bats use the property at other times of the year.

1.3 The report is prepared and undertaken by Mr. Richard Watkins BSc., an experienced bat ecologist with 13 years experience, and Aislinn Harris, a Natural Resources Wales licensed bat ecologist, license number S085699-1.

1.4 A desktop search did not identify any historic records of bats being present in the buildings. The nearest recorded day roosts are 380m from the property which is a record for a Common Pipistrelle and 481m from the property which is a record for a Lesser Horseshoe. There are various non roosting records for bats in the area, the nearest being 481m from the property which is a record for a foraging Common Pipistrelle and Soprano Pipistrelle. A high level of Brown Long Eared bat activity was recorded 1123m from the property. The property is not within 10km of a designated SAC or SSSI for bats.

2.0 Site Description

2.1 The property consists of the main house, with two garages to the front of the property and a stable block to the rear of the property. The property is detached. The main building is large in size and is partly sand cement rendered and partly wood clad. The building consists of a tiled, apex roof with a tiled ridge and three brick rendered chimneys. There are numerous windows on the building. There is a small flat roofed conservatory to the rear of the building and two flat roofed extensions; one to the left side of the building and one to the right side. The building has two storeys. There is wooden fascia and soffit all around the building. There is a cavity wall in the building. There is a tiled, lean-to extension to the front of the building which acts as the entrance to the building. Neither the main building or any of the outbuildings are currently in use.

There is a detached, two storey garage to the front right of the main building. The garage is brick with sand cement render and a tiled, apex roof. There are no chimneys on the garage. The top of the garage is partly wood clad. The garage has an open front; a single window and a single side door. There is a loft in the garage. There is no cavity wall in the garage. There is a separate flat, plywood roofed extension block to the left side of the garage with two open doors.

There is a detached, two storey garage to the front left of the main building. The garage is brick with sand cement render and a tiled, apex roof. There are no chimneys on the garage. The top of the garage is partly wood clad. There is wooden fascia and soffit all around the garage. There is a loft in the garage which could be seen from inside. The inside of the garage has a vaulted ceiling which consists of felt on top of timber trusses. There is an open front to the garage; a single window and a single side door. There is no cavity wall in the garage. There is a separate flat, plywood roofed extension block to the right side of the garage with two closed, wooden doors and one open front. There is wooden fascia on the extension block and no soffit. One of the sections of the extension block was used as an outdoor toilet.

There is a detached, single storey stable block to the rear of the property. The stable block is block built on a hardstanding and sand cement rendered. There is a flat, tin sheet roof on the stable block. There are timber stable doors to the front of the building. There is no cavity wall in the stable block.

2.2 The building dates back to in excess of 60 years. The building is located in a semi rural area in the village of Dinas Powys in the Vale of Glamorgan.

2.3 The nearest significant watercourses are St Andrews Quarry, approximately 139m to the north of the property and the Cadoxton River, approximately 1.2km to the east of the property. There is a smaller watercourse, the Wrinstone Brook, approximately 1.5km to the north west of the property.

2.4 The property is located in a semi rural environment. The property itself is on a road at the start of a residential area. The property is situated in a substantial garden with tree lines extending to the rear of the property. There are tree lines extending northwards from the property directly to St Andrews Quarry. There are numerous open fields and farmland to the immediately to the north and west of the property. Dinas Powys Common lies approximately 391m to the east of the property and Parc Bryn-y-Don lies approximately 1.1km to the south east of the property. There is optimal ecological connectivity for bats to the wider environment and there are plentiful supplies of fresh water in the immediate and intermediate areas around the property, with riparian corridors surrounding all of the water sources.

2.5 The National Grid Reference of the site is: **ST 1428 7114.**

3.0 Report Constraints

3.1 The report is solely concerned with bats in relation to this building. Trees and other buildings not mentioned directly have not been included in this report.

3.2 Ecological surveys are limited by factors which affect the presence of plants and animals such as the time of year, migration patterns and behaviours. The survey methods employed can provide evidence for the potential presence of

bats at the times when the site was visited. Although the methods follow best practice guidance and were carried out in such a way as to maximise the chances of detection, failure to detect the target species cannot be considered as definitive proof of their absence.

3.3 Even though bats are habitual creatures they can still move to new roosts if they are more suitable. Therefore this report cannot predict the status of the structure in regard to bat occupancy in the future. This report should be acted upon as soon as practical and will be valid for two years from the date of issue. If planning or building works are delayed, it is the responsibility of the client to discuss and gain approval from the *author* before work commences. Natural Resources Wales will only consider reports up to two years old.

3.4 Due to the Covid-19 pandemic no internal inspection was undertaken of the main building, however, it is suggested that this did not significantly alter the reports conclusions.

4.0 Legal Constraints

4.1 Bats, and any place a bat uses for breeding or shelter, either currently occupied or unoccupied, are protected by European and British law, predominantly by **The Conservation of Habitats and Species Regulations 2017**, which are the principal means by which the Habitats Directive is transposed from European directive into law in England and Wales.

4.2 In summary this law states that it is an offence to:

- **Deliberately capture or kill a bat**
- **Deliberately disturb a bat**
- **Damage or destroy a breeding site or resting place of a bat**
- **Keep, transport, sell or exchange, or offer for sale or exchange a living or dead bat or any part of a bat**

4.3 'Deliberately' may also be interpreted, as not intending to injure or kill a bat but having done so due to being insufficiently informed and unaware of the consequences of the action.

4.4 For a more comprehensive description and exact wording of the legislation please refer to:
http://www.legislation.gov.uk/uksi/2010/490/contents/made

4.5 Where there is a risk that a bat roost may be present, it is incumbent upon the owner to commission a specialist bat survey to identify bat roosts before any work commences. Maximum penalties for offences relating to disturbance to bats or their roosts can amount to imprisonment for a term not exceeding six months or 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.

4.6 If a bat roost is discovered, no work that could affect the roost can be undertaken until Natural Resources Wales grants a licence endorsing the work. A thorough method statement and adequate mitigation proposal will need to be submitted to support any licence application.

4.7 The Environment (Wales) Act 2016 puts an onus onto responsible bodies such as Local Planning Authorities to not only preserve but also to enhance biodiversity, meaning that planning applications must offer an element of ecological gain as well as preserving any aspects of ecological importance.

5.0 General Information

5.1 Bats are unable to build roosts themselves and instead rely on both man made and naturally occurring features to provide suitable accommodation. Bats generally prefer older buildings built with traditional materials, as traditional building methods provide more opportunities for gaps and entrances to buildings. Traditional cut roofs are preferred to a roof with trusses. Bats also prefer to roost where the external roost area has access to sunlight during the day such as south facing roof elevations.

5.2 Bats can utilise the following features on a building; end tiles, barge board, soffit, gable end, porch, lead flashing hanging tiles**,** ridge tiles**,** broken tiles**,** eaves**,** sash window frame**,** wood cladding**,** fascia board**,** window sill, and internal roof spaces and timbers. Although this list demonstrates the most popular roosting sites it is by no means definitive. Bats can use apertures as small as 10mm in diameter to gain access.

5.3 The UK bat population is divided into two distinct families, Rhinolophidae and Vespertilionidae. In general, Rhinolophidae (Horseshoe) bats differ in their roosting requirements to Vespertilionidae (the remainder of UK bat species). Horseshoe bats prefer to roost in large areas such as internal attic spaces and hang in the open from the roof of the roost. They tend to roost in visible clusters to maintain the high temperatures that a maternity colony needs. Horseshoe bats also prefer free flight access and egress into the roosting area. Horseshoe bats tend to be more light averting to other UK bat species, and routinely fly around the internal roosting area to warm up before exiting. It is noted that Plecotus (Long Eared) bats share some of these preferences. Vesper bats are, on the whole, crevice dwelling bats who squeeze into small apertures to access the roost. These, like Horseshoe bats, will cluster in maternity colonies but are normally hidden from view. Vesper bats, with the exception of Long Eared bats, do not require a large internal roost to fly around before exit. Long Eared bats, although part of the vesper family are very light averting and will, on occasions share the roosting patterns of both Horseshoe and crevice dwelling species.

6.0 External Scoping Survey

6.1 The external scoping survey was undertaken on the 26th May, 2021 and in conditions of good natural light. All external aspects of the buildings were comprehensively evaluated for roost potential. Evidence was also sought for any staining or droppings which could suggest bat occupation. Binoculars and an endoscope were used when required.

6.2 The buildings were inspected for overt evidence of bat presence and occupation such as:

- Staining around entry of roosting points caused by oils secreted by the bat into its fur
- Scratching on surfaces caused by the bat in the acts of take off and landing
- Bat droppings on walls, floors, roof voids, window cills or panes and barge boards
- Urine stains below a possible entrance site, within the entrance to a cavity or on timbers used for roosting
- Bats can produce chatter on warm evenings prior to leaving the roost. A heterodyne bat detector is used to help determine this
- Flies around the entrance or on the floor of possible roosts, which may be attracted to bat guano

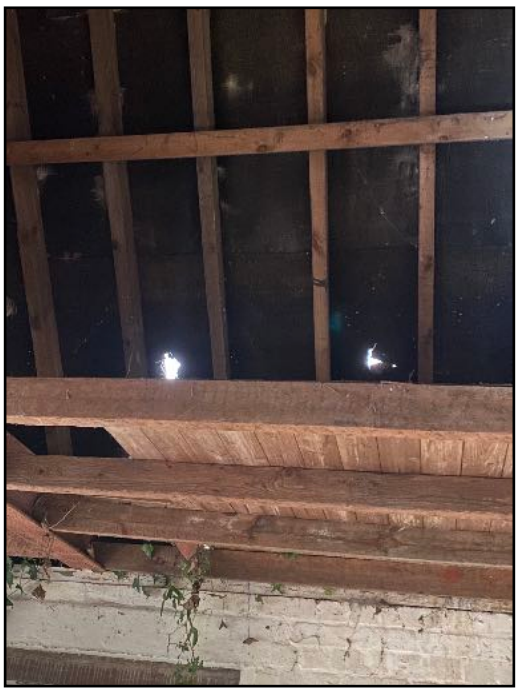
6.3 Due to the condition of the buildings, there were a high number of opportunities for bats to access and use the buildings. Those that were available were deemed as high potential and the buildings were classed as high potential for roosting bats.

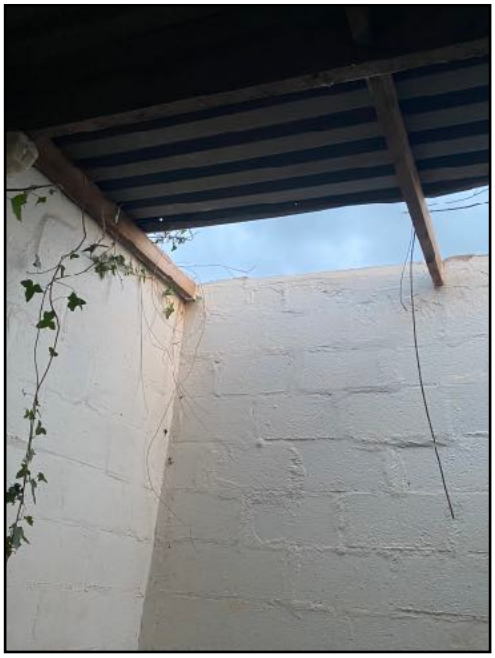
Potential Features for Bats to Access and Use the Buildings

Main Building	Front Left Garage	Front Right Garage	Stable Block
Gaps in the Wood Cladding	Gaps in the Wood Cladding	Raised Roof Tiles	Open Timber Doors
Holes in the Right Gable End Wall (Sand Cement Render)	Missing Tiles on the Roof	Gaps in the Wood Cladding	Gap where the Roof Meets the Building
	Raised Roof Tiles	Missing Timbers in the Loft Floor	Missing Sheets off the Roof
	Gaps in the Felt in the Loft	Disused Loft	Gaps Between the Timber and the Building
	Missing Timbers in the Loft Floor	Open Side Door	
	Open Door on the Side Extension	Missing Tiles on the Roof	
	Gaps in the Plywood Roof on the Side Extension	Open Door on the Side Extension	
	Open Front	Gaps in the Door on the Side Extension	
		Open Front	

6.4 No droppings or evidence of bats were discovered on any external features although this would not be definitive of bats not using the building at other times of the year.

6.5 Examples of apertures allowing access to cavities in the buildings:





7.0 Internal Inspection

7.1 Due to the Covid-19 pandemic no internal inspections of the main building were undertaken, however, it is suggested that this did not significantly alter the reports conclusion.

8.0 Emergence and Dawn Surveys

8.1 The emergence surveys were carried out during the maternity season and adhered to current best practice guidelines. These surveys were conducted from half an hour before sunset until two hours post sunset. The surveyors used are all experienced bat counters who have undergone sufficient training in basic bat ecology and bat activity. The surveyors used were Tyrone Evans; Hannah Evans; Ryan Smith, Alan Harvey; Debbie Parry; Mason Smith; Caitlin Watkins; Keith Watkins; Richard Watkins, Kieron Turner and Scott Watkins. All Sound analysis was undertaken by Richard Watkins.

8.2 The emergence surveys gave extra consideration to the features identified during the external scoping survey which could be utilised by bats.

8.3 Emergence Survey on 26th May, 2021.

- Sunset: 21:13
- Weather: Dry and calm with 20% cloud cover
- Temperature: 12 degrees celsius

In total, 16 bats were observed emerging from the main building and surrounding outbuildings. 1 Serotine; 1 Common Pipistrelle; 5 Soprano Pipistrelles; 6 Brown Long Eared.

1 Common Pipistrelle emerged from the front west garage from a gap in the roof tiles. 1 Brown Long Eared bat emerged from a missing roof tiles on the eastern garage.

In the main building, the Serotine, Brown Long Eared bats and Common Pipistrelle emerged from separate gaps behind the timber cladding on the east gable. The Soprano Pipistrelles emerged from a gap under the roof tiles on the western aspect of the south elevation.

8.4 Emergence Survey on 16th June, 2021.

- Sunset: 21:32
- Weather: Dry and calm with 70% cloud cover
- Temperature: 18 degrees celsius

In total, 26 bats were observed emerging from the main building. 1 Serotine; 9 Soprano Pipistrelles and 16 Brown Long Eared bats.

The Serotine, Brown Long Eared bats and Common Pipistrelle emerged from separate gaps behind the timber cladding on the east gable. The Soprano Pipistrelles emerged from a gap under the roof tiles on the western aspect of the south elevation. No bats were observed using the garages on the second survey.

8.5 Return Survey 17th June, 2021

- Sunrise: 04:52
- Weather: Dry and calm with 60% cloud cover
- Temperature: 15 degrees celsius

In total, 24 bats were observed returning to the the main buildings. 1 Serotine; 9 Soprano Pipistrelles and 14 Brown Long Eared bats. These returned to their known exit locations.

8.6 The weather conditions were dry and calm with very little wind and no rain and therefore conducive for bat activity.

8.7 The best viewing conditions were obtained.

8.8 Echo-meter Touch 2 Pro bat detectors were present to acoustically record any bat calls.

8.9 Analysis of sound recording on bat detectors:

Species of Bats Recorded Emerging from the Buildings:	
Brown Long Eared	*Plecotus auritus*
Common Pipistrelle	*Pipistrellus pipistrellus*
Grey Long Eared	*Plecotus austriacus*
Lesser Horseshoe	*Rhinolophus hipposideros*
Serotine	*Eptesicus serotinus*
Soprano Pipistrelle	*Pipistrellus pygmaeus*

Species of Bats Recorded in the Area:	
Myotid Species	*Myotis species*
Noctule	*Nyctalus noctula*

8.10 Further bat activity was noted around the site but these bats were not observed exiting the buildings. A Noctule was observed flying high above the property but did not exit any of the buildings. A lesser Horseshoe bat arrived from the east of the property and was observed light sampling in and around the out building to the front of the property. Myotis species were also observed and recorded around the property.

9.0 Concluding Remarks and Recommendations

9.1 A maximum of 26 bats were observed using the building as a day roost.

9.2 The building is now a confirmed bat roost. No work that could affect the bat roost is permitted by law, without the permission from Natural Resources Wales, including any works to the roofs. Direct illumination of the building is also not permitted, as this could constitute disturbance. (Please see Section 5 of this report for further information).

9.3 The bats using the buildings are:

A single brown long ear was observed using the front western garage as an occasional day roost. This bat was either a male or non breeding female. These types of bat are found roosting in rural buildings. These bats are less tolerant to light than other species of bat. The bats require dark areas to fly around prior to exiting the site. These bats will also require protected dark corridors from the roost to the wider environment.

A single Common Pipistrelle was observed using the eastern garage as an occasional day roost. This bat was either a male or non breeding female. These are are common species of bat who can tolerate higher light levels than some other species of bat.

A single Serotine bat was observed using the west gable of the main building. This bat was either a male or non breeding female. This is a nationally rare bat.

A single Common Pipistrelle was observed using the western gable of the main house as an occasional day roost. This bat was either a male or non breeding female. These are are common species of bat who can tolerate higher light levels than some other species of bat.

9 Soprano Pipistrelle bats was observed using the roof of the south elevation. These bats were thought to be a small maternity colony. These are are common species of bat who can tolerate higher light levels than some other species of bat.

16 Brown Long Eared bats were observed using the western gable of the main house. These bats were likely to be a maternity colony. These are a relatively common species of bat are found roosting in rural buildings. These bats are less tolerant to light than other species of bat. The bats require dark areas to fly around prior to exiting the site. These bats will also require protected dark corridors from the roost to the wider environment.

9.4 The buildings did not offer significant potential for hibernating bats.

9.5 If careful consideration is made to incorporate improved roosting conditions into the new build scheme, then this project could offer ecological gain for the resident bats. New roost creation in the new building scheme is required to accommodate crevice dwelling species of bats. There is potential to offer ecological gain for bats and nesting birds if the project proceeds. This would help satisfy the local planning authorities legal responsibility to preserve and enhance biodiversity under the Environment (Wales) Act 2016. The creation of new roosting

features will be incorporated into the schedule of works. This can be achieved at very little expense and with no impact to the owners of the building.

9.6 If planning is approved, the legal owner must apply and be in possession of a licence to destroy the roost. This will take approximately 40 working days to be issued. This licence would have to offer a methodology to ensure that any loss of roosting sites be replaced and preferably enhanced in the new build and the project be undertaken in a way which minimises any risk to bats. An ecological clerk of works will be pointed and retained for the duration of the project.

10.0 Proposed Mitigation

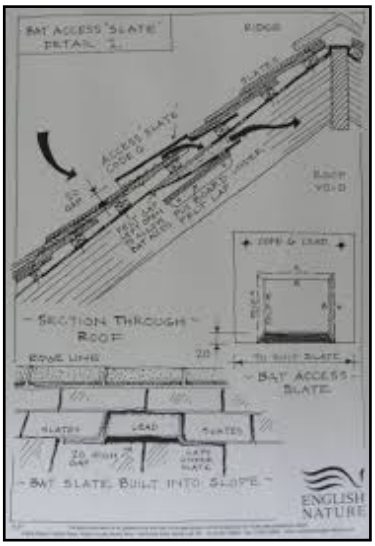
10.1 The Brown Long Eared bats will require an internal attic space to internally fly around prior to exiting the roost. This will also add ecological gain for the Lesser Horseshoe bat that was observed flying around the site.

10.2 One new large internal attic space will be created above the exiting stable-block. This is a more quiet and dark aspect of the site. Offering a dark corridor away from the site.

10.3 The new internal roosting area will have the following:

- **The stable building is located at the south of the site, this will have the benefit of being in a quiet aspect of the proposed site layout.**
- **This building will not be obscured from direct sun light.**
- **The building will be thermally stable with a tile roof.**
- **The building will have a ceiling which will separate the ground floor from the attic space.**
- **The roof will be traditionally cut and not trusses, so there will be unimpeded internal flight space. The roof of the internal roosting areas will be slate with a 1F bitumen felt liner. No bats will have access to breathable membranes as this can be harmful to bats.**
- **The new internal roosts will be for the use of bats only. No storage or access will be permitted into these areas other than for maintenance purposes. Access will be via 750x750 hatchways.**
- **Horseshoe bats will access the internal roost via a 350x250 open letter box type aperture located in a gable wall. A " L" shaped vertical baffle will be created internally behind the opening to shield the interior from, any external light and bad weather.**

- **Brown Long Eared bats will access the car port building via 2 bat access slates on each pitch of the roof. Long Eared bats will access the roost above the kitchen area via gaps created behind the barge board on the east gable.**



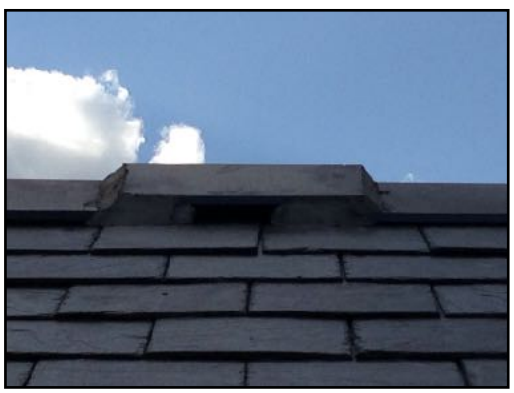
- **A hot box Plywood bat roost will be created inside the apex of the building, offering increased warmth that may be utilised as a maternity roost.**

10.4 New roosting will also be created for crevice dwelling species of bats. This includes:

- **A number of Kent bat boxes will be fitted to the internal walls making it suitable for Myotid and Pipistrelle species of bat. The barge board will have regular 100x25 apertures left around the building making it suitable for roosting crevice dwelling species of bat. These apertures will give access to the top of the wall plate. The roof will over hang the walls, where the purlings and rafters extend over the external walls gaps will be left to the side of these at wall level. These small pockets will allow access by crevice dwelling bats.**

- **Around the elevations the rafters will be left exposed. There will be apertures created around the building to allow bats and nesting birds to access the top of the stone walls. In any areas that have breathable membrane fitted then timber boarding will be used to form an open box that allows bats to access for the exterior but dose not allow direct contact to the breathable roof membrane.**

- **Timber cladding from the house will be reused to clad the stable block suitable gaps will be left in the cladding for access for bats and nesting birds. The cladding will not be fitted flush to the block work but instead will be battoned off the main building creating a minimum 150mm gap between the cladding and the block work.**



- **Crevice dwelling features will be created under raised ridge tiles. One in the middle of the roof and two at each end, located one ridge tile in from the end tile. The raised ridge tiles will be bedded up on mortar which a 100x25mm gap retained for access. The roofing felt will not be cut at the apex. The two end ridge tiles will not have the**

ends mortared up, allowing further crevice dwelling access. The entire ridge tile line will have a retained internal linear cavity through out its length with no mortar obscuring this internal cavity.

- **No breathable roofing membrane will be used on the stable block. Traditional 1F bitumen felt will be used in its place.**

Signed: R Watkins *Date: June, 2021*

10.0 Appendix

Aerial Site Photo

OS Map

Aerial Site Photo

The site in its wider environment showing optimal ecological connectivity to the surrounding habitat.

OS Map National Grid Reference ST 1428 7114.