

WAUNFACH HOUSE, WINCHFAWR ROAD, HEOLGERRIG, MERTHYR TYDFIL

PRELIMINARY ECOLOGICAL APPRAISAL AND BAT SURVEYS 2023



Produced for Andrea Howe

QUALITY ASSURANCE

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SUMMARY

Andrea Howe wishes to apply for planning permission to Merthyr Tydfil County Borough Council to refurbish a house with various works including adding a two storey rear extension and lifting the roof height.

A preliminary ecological appraisal (PEA) and bat potential roost assessment (PRA) were commissioned in support of the application and undertaken by Rebecca Sheahan-East of East Ecology in June and September 2023.

The desk study found no statutorily designated sites close enough to the site to be relevant in terms of development impacts. A diversity of species had been recorded in the vicinity although none originated from the site itself.

The PEA found that the habitats recorded within the survey boundary were disturbed and species poor and of little biodiversity value. The building was found to hold very little in terms of features and suitability for bats. The main habitat of interest was the boundary hedge and the stream running beneath the plot. The habitats affected by the proposals are bare ground/hard standing and the building.

No protected species were observed during the survey and no habitat for them was observed other than the building which was thought to hold low suitability for bat roosting.

Three emergence or re-entry surveys were recommended and carried out in June, July and September 2023 where a **single common pipistrelle was observed emerging** from the gable end on one occasion and the chimney flashing area on another.

In the unlikely situation that dormice, great crested newt or any other higher level protected species are found, work will cease until advice and potentially a licence has been issued by Natural Resources Wales.

Mitigation will include managing excavations overnight by including a ramp for animals to escape and checking of all machinery and materials prior to use each morning. Protecting bats and birds through the destructive work and creating a like-for-like roosting space in the new gable end of the building.

Biodiversity enhancements recommended for the site are further bat entrances to the new ridge, winter bat roost provision, four bird boxes, native hedge planting where space allows, seeding of bare ground with an acidic grassland seed mix with appropriate aftercare and a pond.

INTRODUCTION

Waunfach House, Winchfawr Road, Heolgerrig, Merthyr Tydfil CF48 1TF lies at an approximate National Grid Reference: **SO02980599**. The site is currently in the process of clearance in preparation for building. The land currently consists of an area of some grassy regrowth, a small amount of rubble from former outbuildings or imported, the shell of a two-storey house and boundary hedges. The plot lies within the western end of the built-up area of Heolgerrig which itself lies to the west of Merthyr Tydfil town centre. The nearest semi-natural habitats lie within about 200m to the south which are acidic grassland and scrub. Within about 600m lies a block of mixed or broadleaved woodland with two streams to the east. The relative position of the site can be seen in Figure 1, to the end of the report.

This report is intended to contribute to the information required for a planning application by Andrea Howe under reference **P/23/0075** to demolish existing single storey rear extensions and construction of a two-storey rear extension to Waunfach House. In addition to this the roofline of the house will be raised to accommodate two front dormers with complete renovation including new roof and detached garage. The layout of the proposals are shown in Figure 3.

This report aims to assess the habitats at the plot at Waunfach House for biodiversity value and potential for protected and priority species to be present including bats, reptiles, amphibians, birds, invertebrates and small mammals providing any proposals for mitigation or enhancement where necessary.

The author of this report, Rebecca of East Ecology has over twenty years post graduate experience in ecological consultancy and nature conservation and holds Natural Resources Wales survey licences for protected species including bats. Rebecca is also a full member of the Chartered Institute of Ecology and Environmental Management and a Chartered Environmentalist.

SPECIES ECOLOGY AND LEGISLATION

Reptiles

There are four common species of reptile present in Wales common lizard, slow worm, adder and grass snake with one further species which has a very restricted range in north Wales. Slow worms by far are the more common species occupying a variety of habitats such as tall grasslands and scrub, railway embankments and derelict sites. Adders require a good supply of small mammal prey as do grass snake, but will also take amphibians and small birds. Grass snake are often associated with still water habitats and adders with heath and upland areas. All reptiles require habitat in which to bask and warm their bodies, nearby cover and foraging opportunities and shelter for winter where they go into a type of hibernation called brumation. Hibernaculum can consist of gaps between tree roots, rubble, stone walls and log piles.

Nesting birds

Different bird species make use of a variety of habitats. Woodland, trees and scrub provide habitat for a great many species, but others require grassland, cliffs, buildings or bare ground for ground nesting. Food preference dictates the habitat in which they are found including mudflats, grassland, agricultural land, rivers, moorland and woodland although some are more generalist.

Bats

Bats are nocturnal insectivorous mammals which have been a conservation priority for many years mainly due to habitat loss. Bats occupy a variety of structures including houses, barns, churches and halls as well as other structures, rock faces and tree hollows and move throughout the seasons. The species of bat and life stage dictates the habitat preference, which may be large fly-in spaces or small crevices as well as their foraging style and prey preference. Some species have more specific prey while other such as the pipistrelle species are more generalist. Bats require shelter with nearby unlit vegetation with an abundance of small flying invertebrates on which to feed but can fly several kilometres per night to find good foraging.

Conservation of Species and Habitats Regulations (Amendment) 2017

All bats, great crested newts, dormice and otters found in the UK are Higher Level Protected Species (HLPS) being protected under the Conservation of Habitats and Species Regulations 2017, known as the 'Habitats Regulations'.

Under the Habitats Regulations, it is an offence to:

- Deliberately capture, injure or kill any wild animal of an HLPS,
- Deliberately disturb wild animals of any such species,

- Damage or destroy a breeding site or resting place of such an animal.

Disturbance is defined as that which is likely:

1. To impair the animal's ability:

- to survive, to breed or reproduce, or to rear or nurture their young, or
- in the case of animals of a hibernating or migratory species (e.g. bats), to hibernate or migrate; or

2. To affect significantly the local distribution or abundance of the species to which they belong.

Other offences also exist relating to possession, transport and sale.

Wildlife and Countryside Act 1981

Section 9 of the Wildlife and Countryside Act 1981 (as amended) offers varying degrees of protection to species including otter, bats, dormice, amphibians and reptiles. Animals listed on Schedule 5 of the Act are protected against one or more of the following:

- intentional killing, injuring or taking (not applicable to bats);
- intentional or reckless damage or destruction, or obstruction of access to any structure or place which any wild animal included in Schedule 5 uses for shelter or protection;
- disturbance of any such animal while it is occupying a structure or place which it uses for that purpose;
- sell, offer or exposes for sale, or has in his possession or transports for the purpose of sale, any live or dead wild animal included in schedule 5, or any part of, or anything derived from such an animal.

Wild birds are protected under the Wildlife and Countryside Act (1981) (as amended). It is an offence to intentionally kill, injure or take wild birds, intentionally take, damage or destroy a wild bird's nest while it's being used or built, intentionally take or destroy a wild bird's egg, possess, control or transport live or dead wild birds, or parts of them, or their eggs, sell wild birds or put them on display for sale, use prohibited methods to kill or take wild birds.

Environment Act (Wales) 2016

Section 7 of the Environment (Wales) Act has replaced the Section 42 of the NERC Act 2006 in Wales. Section 7 lists the living organisms and types of habitat in Wales which are considered to be of key significance to sustain and improve biodiversity in relation to Wales.

The Act states that Welsh Ministers must take all reasonable steps to maintain and enhance the living organisms and types of habitat included in any list published under this section, and encourage others to take such steps.

Planning Policy Wales 2021

Section 5.2.8 of Planning Policy Wales states that: 'The planning system has an important part to play in meeting biodiversity objectives by promoting approaches to development which create new opportunities to enhance biodiversity, prevent biodiversity losses, or compensate for losses where damage is unavoidable.'

Well-Being of Future Generations (Wales) Act 2015

places a duty upon public bodies to produce well-being objectives, in addition, the Act also establishes Public Service Boards for each Local Authority area in Wales, who must prepare and publish a local Well-Being Plan, setting out objectives and how the board or it's individual members will achieve them.

METHODOLOGY

Data search

A search was made for available information relating to designated sites within a 10km area for their bat interest, including Internationally and Nationally important sites; Special Areas of Conservation(SAC) and Sites of Special Scientific Interest (SSSI). The South East Wales Biodiversity Records Centre (SEWBRc) supplied) data search for protected and priority species within a 2km radius LERC Reference: 0234-185. Freely available information was obtained from internet source Multi Agency Geographical Information for the Countryside (MAGIC). The data search was conducted to the latest ecological survey guidelines.

Site survey (PEA)

The site survey broadly followed a recognised survey method sometimes known as extended Phase 1.

The Phase 1 habitat survey technique is a standardised habitat mapping system used by consultants, wildlife organisations and agencies throughout the UK. Habitat information is conveyed by means of colour coded maps and symbols with descriptive text and target notes regarding features of wildlife interest (NCC 1990).

Limitations of the method, common to all surveys, are that it provides a 'snapshot' of plant species present and animals tracks and signs at the time of survey. Other plants may be more apparent at different times of year, but most plants are thought to be visible during the summer months. Phase 1 habitat surveys are ordinarily carried out between April and September, but broad habitat types may be identified outside of this season.

Rebecca Sheahan-East of East Ecology, a surveyor experienced in Phase 1 habitat survey carried out a site visit on 12th June 2023 using the extended Phase 1 habitat survey technique. The weather on the day of the survey was hot and sunny. The most dominant plant species were identified to assist in placing the habitat into the correct classification.

Any species not immediately identified were examined with the use of a hand lens and several wildflower keys.

Tracks and signs of fauna were also searched for, including examining opened hazel nuts, droppings, footprints and burrows.

Site Survey

Potential roost assessment

Waunfach House was visited on 12th June 2023 during daylight hours by an experienced and licensed bat ecologist (licence number S089583-1).

All accessible elevations of the building were examined on the outside as well as inside. Equipment used in the searches included a high-powered torch, a telescopic ladder and a pair of close focusing binoculars.

The surveyor searched for evidence of bats:

- Sightings of live bats

- Dead bats
- Bat droppings
- Urine staining
- Grease marks
- Claw marks
- Sound or smell of bats

The surveyor asked the owner if they had any prior knowledge of bats at the property.

The surveyor also noted down features of the building which would be suitable for bat roosting, suitability of the surrounding area with respect to food sources and connectivity of the landscape was also noted according to the latest bat survey guidelines.

While every effort is made during this type of survey to identify positive signs of bat use, evidence may be absent or difficult to access even if small numbers of bats are present. An absence of evidence identified does not necessarily indicate an absence of bats as a structure may still have potential for them.

Dusk emergence surveys/roost characterization surveys

The dusk emergence surveys were carried out on the 21st June, 6th July and 26th September 2023 by an experienced and licensed bat ecologist (licence number S089583-1) and an experienced assistant. Details of the timing and weather condition can be found in table 1.

Date	Start temp	Weather	Sunset/sunrise time	Start time	Finish time
21/6/2023	19°C	30% cloud, light – breeze, no rain	21:36	21:21	23:06
6/7/23	17°C	80-90% cloud, light wind gusts, no rain	21:33	21:18	23:03
26/9/2023	15°C	90% cloud, no wind, slight drizzle at start for 10 mins, otherwise dry	19:03	18:48	20:33

Table 1 Times and weather conditions of dusk emergence survey

The surveyors observed the previously identified potential roost features for crevice dwelling bats from approximately 15 minutes before sunset.

Rebecca Sheahan-East observed the west and north elevations, while Ade Williams observed the east and south elevations. Both surveyors have twenty years or more experience of conducting bat surveys and used a Wildlife Acoustics EM3+, EMT2 and a Batbox duet. Surveyor positions are shown in Figure 3. Surveyor positions could not be altered significantly for the third survey due to the hedge and monkey puzzle tree, but all elevations of the building were observed on all three occasions.

The use of night-vision aids was not thought necessary due to the anticipated early emerging species and the well-lit nature of the area surrounding the building.

Due to the lack of bat evidence internally and very limited internal suitability and the absence

of a fly-in entrance, no static detectors were placed internally.

Constraints

There were no constraints to the survey thought to produce invalid results.

BASELINE CONDITIONS

Data search

Designated sites

Two Sites of Special Scientific Interest SSSI, one Local Nature Reserve (LNR), 14 Sites of importance for Nature conservation (SINC), one regionally important geodiversity site (RIGS), 7 Ancient semi-natural woodlands, 3 restored ancient woodlands, one plantation on ancient woodland site, one ancient woodland site of unknown category, Natural Resources Wales (NRW) priority area for woodland, NRW priority area for heathland and grassland, B lines area all fell within the search area. The site itself fell within only within the B-lines designation which has been placed to enhance pollinator habitat connectivity.

- Cwm Glo SSSI (183m)
- Cwm Taf Fechan Woodlands SSSI (1776m)

The following Sites of Importance for Nature Conservation fell within the search area.

- [Winchfawr West](#) (373m)
- [Cyfarthfa Park](#) (1893m)
- Cwm Taf Fechan (1239m)
- [Afon Taf](#) (1446m)
- [Rhydycar West](#) (1062m)
- Winchfawr East & Clwydyfagwr (570m)
- [Cwm Ffrwd](#) (1319m)
- [Cwm Taf Fawr](#) (1356m)
- [Cwm Taf Fields & Cefn Coed Tip](#) (1040m)
- [Gellideg North Fields](#) (1162m)
- [Coed Meirig Pastures](#) (1362m)
- [Cwm Glo](#) (182m)
- Blaencanaid (1090m)
- [Gethin Forest](#) (794m)

B lines covered a good proportion of the search area including the plot at Waunfach House. The NRW priority area for Heathland and grassland falls to the southeast of the search area and part of the built-up area of Heolgerrig and therefore does not apply to the site.

Habitats

The nearest priority habitat lies at about 200m away marshy grassland and semi-improved neutral grassland, 250m, standing water. The site itself and the adjacent plot has not been categorised or mapped by NRW.

Species records

1267 records of priority species were found within the search area which are summarised in Table 2. Other records supplied but not displayed were 483 records of species of conservation

concern, 659 records of species of local importance. Records occurring at the same distance from the central grid reference are typically submitted by the same recorder visiting the same site.

Scientific name	Common name	Proximity	Number of records	Conservation status
<i>Euphrasia officinalis</i> subsp. <i>anglica</i>	English sticky eyebright	386m	1	S7, RDB1 (Wales) - VU, RDB1 (UK) - EN, LBAP (GWY), LI(SEWBRReC), LI(V47), LI(V48, LS), LI(V49, LR)
<i>Euphrasia officinalis</i> subsp. <i>pratensis</i>	Large flowered sticky eyebright	637m	4	S7, RDB1 (UK) - VU, LBAP (GWY, VOG), LBAP (NPT, VOG), LI(SEWBRReC), LI(V43), LI(V47), LI(V49, LS)
<i>eracium angustatifforme</i>	Small leaved hawkweed	2550m	1	S7, RDB1 (Wales) - CR, RDB1 (UK) - CR, RDB2 (UK) - R
<i>Hyacinthoides non-scripta</i>	Bluebell	637m	25	WCA8, LBAP (ANG, CLY, CON, FLI, SNP, TRA, TRF)
<i>Sorbus leyana</i>	Ley's whitebeam	2545m	1	S7, RDB1 (Wales) - CR, RDB1 (UK) - CR, RDB2 (UK) - R, LBAP (BBNP, POW)
<i>Clavaria zollingeri</i>	Violet coral	495m	1	S7, LBAP (CON, FLI, POW)
<i>Entoloma bloxamii</i> s. lat.	Big blue pink-gill	334m	1	S7
<i>Geoglossum atropurpureum</i>	Dark purple earthtongue	334m	4	S7, LI(BIS)
<i>Microglossum olivaceum</i>	Olive earth tongue	495m	2	S7, LBAP (BBNP, CER, MON, POW)
<i>Poronia punctata</i>	Nail fungus	708m	1	S7
<i>Punctelia jeckeri</i>	Punctelia jeckeri	1824m	1	S7, RDB1 (Wales) - LC
<i>Usnea articulata</i>	Usnea articulata	856m	2	S7, RDB1 (Wales) - VU, RDB1 (UK) - NT, LI(V42, R)
<i>Acronicta psi</i>	Grey dagger	1591m	1	S7, LBAP (GWY, VOG)
<i>Acronicta rumicis</i>	Knot grass	708m	17	S7, LBAP (GWY, VOG)
<i>Agrochola lychnidis</i>	Beaded chestnut	1591m	1	S7, LBAP (GWY, VOG)
<i>Allophyes oxyacanthae</i>	Green brindled crescent	1588m	1	S7, LBAP (GWY, VOG)
<i>Amphipoea oculea</i>	Ear moth	1132m	2	S7, LBAP (GWY, VOG)
<i>Amphipyra tragopoginis</i>	Mouse moth	1591m	1	S7, LBAP (GWY, VOG)
<i>Anchoscelis helvola</i>	Flounced chestnut	1588m	1	S7, LBAP (GWY, VOG)
<i>Apamea remissa</i>	Dusky brocade	1050m	11	S7, LBAP (GWY, VOG)
<i>Arctia caja</i>	Garden tiger	1093m	5	S7, LBAP (GWY, VOG)
<i>Boloria euphrosyne</i>	Pearl bordered fritillary	1591m	1	WCA5, S7, RDB1 (UK) - EN, LBAP (BBNP, CER, CON, DEN, FLI, PEM, POW), LI(SEWBRReC), LI(V43)
<i>Boloria selene</i>	Small pearl bordered	363m	13	S7, RDB1 (UK) - NT, LBAP (BGW, BRG, CON, DEN, FLI, GWY, MTR, NEW, POW, RCT, SNP, SWN, TRF, VOG), LI(SEWBRReC), LI(V43)
<i>Bombus humilis</i>	Brown banded carder bee	1566m	3	S7, LBAP (CER, CON, FLI, GWY, PEM, POW, VOG)
<i>Bombus ruderarius</i>	Red shanked carder bee	2050m	1	S7, LBAP (FLI, MTR, VOG)
<i>Brachylomia viminalis</i>	Minor shoulder knot	1591m	1	S7, LBAP (GWY, VOG)
<i>Caradrina morpheus</i>	Mottled rustic	1588m	1	S7, LBAP (GWY, VOG)

<i>Ceramica pisi</i>	Broom moth	693m	19	S7, LBAP (GWY, VOG)
<i>Chiasmia clathrata</i>	Latticed heath	842m	2	S7, LBAP (GWY, VOG)
<i>Cirrhia icteritia</i>	Sallow	1388m	2	S7, LBAP (GWY, VOG)
<i>Coenonympha pamphilus</i>	Small heath	441m	18	S7, RDB1 (UK) - NT, LBAP (GWY, VOG)
<i>Cupido minimus</i>	Small blue	565m	2	WCA5, S7, RDB1 (UK) - NT, LBAP (CON, PEM, VOG), LI(SEWBRcC)
<i>Diarsia rubi</i>	Small square spot	1093m	9	S7, LBAP (GWY, VOG)
<i>Ecliptopera silaceata</i>	Small phoenix	1051m	10	S7, LBAP (GWY, VOG)
<i>Ennomos fuscantaria</i>	Dusky thorn	2127m	1	S7, LBAP (GWY, VOG)
<i>Erynnis tages</i>	Dingy skipper	708m	8	S7, RDB1 (UK) - VU, LBAP (BGW, BRG, CON, FLI, GWY, SWN, VOG), LI(SEWBRcC)
<i>Eugnorisma glareosa</i>	Autumnal rustic	686m	4	S7, LBAP (GWY, VOG)
<i>Euphydryas aurinia</i>	Marsh fritillary	153m	48	HDir, WCA5, S7, Bern, RDB1 (UK) - VU, LBAP (ANG, BBNP, CER, CON, CRM, GWY, PEM, POW, SNP, TRA, VOG), LI(SEWBRcC)
<i>Euxoa nigricans</i>	Garden dart	2122m	1	S7, LBAP (GWY)
<i>Graphiphora augur</i>	Double dart	1526m	2	S7, LBAP (BRG)
<i>Hemaris tityus</i>	Narrow bordered bee hawk moth	1591m	2	S7, LBAP (CER, CON, GWY, POW)
<i>pialus humuli</i>	Ghost moth	1591m	3	S7, LBAP (GWY, VOG)
<i>Hipparchia semele semele</i>	Grayling	884m	1	S7, RDB1 (UK) - VU, LBAP (BRG, CDF, GWY, RCT, VOG), LI(SEWBRcC), LI(VC43)
<i>Hipparchia semele</i>	Grayling	1033m	7	S7, RDB1 (UK) - VU, LBAP (BRG, CDF, GWY, RCT, VOG), LI(SEWBRcC), LI(VC43)
<i>Hoplodrina blanda</i>	Rustic	1148m	3	S7, LBAP (GWY, VOG)
<i>Hydraecia micacea</i>	Rosy rustic	1591m	1	S7, LBAP (GWY, VOG)
<i>Lasiommata megera</i>	Wall	2050m	2	S7, RDB1 (UK) - NT, LBAP (GWY, VOG)
<i>Leucania comma</i>	Shoulder striped wainscot	1050m	11	S7, LBAP (GWY, VOG)
<i>Litoligia literosa</i>	Rosy minor	1591m	1	S7, LBAP (GWY, VOG)
<i>Lycia hirtaria</i>	Brindled beauty	2050m	1	S7, LBAP (GWY, VOG)
<i>Macaria wauaria</i>	V moth	1591m	1	S7, LBAP (BRG)
<i>Melanchra persicariae</i>	Dot moth	1050m	4	S7, LBAP (GWY, VOG)
<i>Mniotype adusta</i>	Dark Brocade	1050m	7	S7, LBAP (GWY, VOG)
<i>Orthosia gracilis</i>	Powdered quaker	1185m	2	S7, LBAP (GWY, VOG)
<i>Pelurga comitata</i>	Dark spinach	1591m	1	S7, LI(BIS)
<i>Perizoma albulata albulata</i>	Grass rivulet	1591m	1	S7, LBAP (GWY, VOG)
<i>Perizoma albulata</i>	Grass rivulet	1566m	1	S7, LBAP (VOG)
<i>Rheumaptera hastata hastata</i>	Argent and sable	1591m	1	S7, LBAP (BBNP, CON, MON, POW)
<i>Satyrium w-album</i>	White letter hairstreak	1685m	1	WCA5, S7, RDB1 (UK) - EN, LBAP (BRG, FLI, NEW, SWN, VOG), LI(SEWBRcC)
<i>Spilosoma lubricipeda</i>	White ermine	708m	14	S7, LBAP (GWY, VOG)
<i>Spilosoma lutea</i>	Buff ermine	708m	13	S7, LBAP (GWY, VOG)
<i>Stilbia anomala</i>	Anomalous	686m	2	S7, LBAP (GWY, VOG)
<i>Tholera cespitis</i>	Hedge rustic	686m	3	S7, LBAP (GWY, VOG)
<i>Tholera decimalis</i>	Feathered gothic	1591m	1	S7
<i>Timandra comae</i>	Blood vein	1588m	2	S7, L BAP (VOG)

<i>Tyria jacobaeae</i>	Cinnabar moth	693m	8	S7, LBAP (GWY, VOG)
<i>Xanthorhoe ferrugata</i>	Dark-barred twin spot carpet	1087m	4	S7, LBAP (GWY, VOG)
<i>Xestia castanea</i>	Neglected rustic	686m	4	S7, LBAP (GWY)
<i>Xylena exsoleta</i>	Sword grass	1591m	1	S7, LBAP (CON, DEN, POW)
<i>Bufo bufo</i>	Common toad	727m	15	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, TRA, VOG)
<i>Lissotriton helveticuss</i>	Palmate newt	329m	9	
<i>Lissotriton vulgaris</i>	Smooth newt			WCA5, Bern, LBAP (CLY, CON, DEN, FLI, POW, TRA), LI(BIS)
<i>Rana temporaria</i>	Common frog	389m	20	HDir, WCA5, Bern, LBAP (ANG, CLY, CON, FLI, POW, TRA)
<i>Triturus cristatus</i>	Great crested newt	106m	59	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, BBNP, CLY, CON, DEN, FLI, MON, POW, SNP, TRA, TRF, VOG, WRE)
<i>Anguis fragilis</i>	Slow worm	1452m	3	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, VOG)
<i>Zootoca vivipara</i>	Common lizard	708m	6	WCA5, S7, Bern, LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)
<i>Salmo salar</i>	Atlantic salmon	1749m	2	HDir, S7, Bern, RDB2 (UK), LBAP (CLY, CON, DEN, FLI, GWY, POW, TRA, VOG)
<i>Salmo trutta</i>	Brown trout	1462m	7	S7, LBAP (BGW, CLY, CON, GWY, MTR, RCT, TRA, TRF, VOG), LI(BIS)
<i>Acanthis cabaret</i>	Lesser redpoll	441m	19	S7, LBAP (CON), LBAP (DEN, POW, VOG), WBAm(RSPB), UKBR(RSPB)
<i>Accipiter gentilis</i>	Goshawk	1375m	11	WCA1.1, WCA9, CITES, LBAP (CLY, CON, POW, VOG)
<i>Alauda arvensis</i>	Skylark	686m	17	BDir22, S7, LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG), WBAm(RSPB), UKBR(RSPB)
<i>Alcedo atthis</i>	Kingfisher	1462m	12	BDir1, WCA1.1, Bern, LBAP (CLY, CON, DEN, FLI, GWY, POW, TRA), WBAm(RSPB), UKBAm(RSPB)
<i>Anthus trivialis</i>	Tree pipit	686m	19	S7, Bern, LBAP (CON, DEN, FLI, GWY, POW, VOG), WBAm(RSPB), UKBR(RSPB)
<i>Bucephala clangula</i>	Goldeneye	2127m	1	BDir22, WCA1.2, LBAP (CON, POW), UKBAm(RSPB)
<i>Caprimulgus europaeus</i>	Nightjar	708m	9	BDir1, S7, Bern, LBAP (BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, MON, PEM, POW, SNP, VOG), WBAm(RSPB), LI(VC43), UKBAm(RSPB)
<i>Chroicocephalus ridibundus</i>	Black headed gull	999m	9	BDir22, S7, WBR(RSPB), LBAP (GWY, VOG), UKBAm(RSPB)
<i>Circus cyaneus</i>	Hen harrier	493m	2	BDir1, WCA1.1, S7, CITES, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, SNP, VOG), LBAP (BBNP, DEN, FLI, POW, SNP, VOG), LI(VC43)
<i>Crex crex</i>	Corncrake	1583m	1	BDir1, WCA1.1, WCA9, S7, Bern, WBR(RSPB), LBAP (ANG, CON, GWY, PEM), UKBR(RSPB)
<i>Cuculus canorus</i>	Cuckoo	686m	15	S7, WBR(RSPB), LBAP (CON, DEN, FLI, GWY, VOG), UKBR(RSPB)
<i>Dryobates minor</i>	Lesser spotted woodpecker	1583m	1	S7, Bern, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), LI(VC43), UKBR(RSPB)
<i>Emberiza schoeniclus</i>	Reed bunting	493m	10	S7, Bern, WBAm(RSPB), UKBAm(RSPB)
<i>Falco columbarius</i>	Merlin	1583m	2	BDir1, WCA1.1, Bern, CITES, WBR(RSPB), LBAP (CON, DEN, FLI, GWY, POW), LI(VC43), UKBR(RSPB)
<i>Falco peregrinus</i>	Peregrine	714m	10	BDir1, WCA1.1, Bern, CITES LI(VC43)

<i>Falco subbuteo</i>	Hobby	1591m	1	WCA1.1, Bern, CITES, LBAP (CON, GWY, POW, VOG), LI(VC43)
<i>Falco tinnunculus</i>	Kestrel	637m	8	S7, Bern, CITES, WBR(RSPB) LI(VC43), UKBAm(RSPB)
<i>Ficedula hypoleuca</i>	Pied flycatcher	1583m	2	S7, WBR(RSPB), LBAP (CON, GWY, POW, SNP, VOG), UKBR(RSPB)
<i>Fringilla montifringilla</i>	Brambling	990m	3	WCA1.1, LBAP (CON), WBAm(RSPB)
<i>Larus argentatus</i>	Herring gull	686m	18	BDir22, S7, WBR(RSPB), LBAP (CON, GWY, POW, VOG), UKBR(RSPB)
<i>Linaria cannabina</i>	Linnet	493m	20	S7, Bern, WBR(RSPB), LBAP (ANG, BBNP, CER, CLY, DEN, FLI, PEM, VOG), LBAP (CON, GWY), UKBR(RSPB)
<i>Locustella naevia</i>	Grasshopper warbler	441m	13	S7, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), UKBR(RSPB)
<i>Loxia curvirostra</i>	Crossbill	708m	23	WCA1.1, Bern, LBAP (CON, POW), LI(VC43)
<i>Milvus milvus</i>	Red Kite	990m	12	BDir1, WCA1.1, WCA9, CITES WBAm(RSPB)
<i>Muscicapa striata</i>	Spotted flycatcher	1566m	2	S7, Bern, WBR(RSPB), LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, VOG), UKBR(RSPB)
<i>Passer domesticus</i>	House Sparrow	686m	20	S7, WBAm(RSPB), UKBR(RSPB)
<i>Phylloscopus sibilatrix</i>	Wood warbler	708m	8	S7, WBR(RSPB), LBAP (CON, GWY, SNP, VOG), UKBR(RSPB)
<i>Poecile montanus</i>	Willow tit	1774m	2	S7, Bern, WBR(RSPB), LBAP (BBNP, DEN, FLI, POW, VOG), LBAP (CON, GWY), LI(VC43), UKBR(RSPB)
<i>Poecile palustris</i>	Marsh tit	1588m	1	S7, Bern, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), UKBR(RSPB)
<i>Prunella modularis</i>	Dunnock	493m	28	S7, Bern, LBAP (CON, POW, VOG), UKBAm(RSPB)
<i>Pyrhula pyrrhula</i>	Bullfinch	273m	34	S7, WBR(RSPB), LBAP (BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, TRF, VOG), UKBAm(RSPB)
<i>Sturnus vulgaris</i>	Starling	637m	18	BDir22, S7, Bern, WBR(RSPB), LBAP (BBNP, CON, FLI, GWY, VOG), UKBR(RSPB)
<i>Tringa ochropus</i>	Green sandpiper	1575m	4	WCA1.1, Bern, LBAP (CON, VOG), WBAm(RSPB), UKBAm(RSPB)
<i>Turdus iliacus</i>	Redwing	990m	13	BDir22, WCA1.1, WBAm(RSPB), UKBR(RSPB)
<i>Turdus philomelos</i>	Song thrush	637m	36	BDir22, S7, Bern, LBAP (ANG, BBNP, CER, CLY, CON, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG, WRE), WBAm(RSPB), UKBR(RSPB)
<i>Turdus pilaris</i>	Fieldfare	686m	10	BDir22, WCA1.1, WBAm(RSPB), UKBR(RSPB)
<i>Turdus torquatus</i>	Ring ouzel	1306m	2	S7, Bern, WBR(RSPB), LBAP (BBNP, CON, DEN, FLI, GWY, POW, VOG), LI(VC43), UKBR(RSPB)
<i>Tyto alba</i>	Barn owl	1566m	16	WCA1.1, WCA9, Bern, CITES, LBAP (ANG, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRA, VOG, WRE), LI(VC43)
<i>Vanellus vanellus</i>	Lapwing	1058m	10	BDir22, S7, WBR(RSPB), LBAP (ANG, BBNP, CLY, CON, CRM, DEN, FLI, GWY, MON, PEM, POW, SNP, TRF, VOG), LI(VC43), UKBR(RSPB)
<i>Chiroptera</i>	Bats	1562m	20	EPS, WCA5, LBAP (ANG, DEN, FLI, RCT, SNP, TRA, TRF)
<i>Eptesicus serotinus</i>	Serotine	1937m	4	EPS, HDir, WCA5, Bern, RDB2 (UK), LBAP (GWY, POW, TRA, TRF)
<i>Erinaceus europaeus</i>	European hedgehog	714m	16	S7, Bern
<i>Lepus europaeus</i>	Brown hare	1309m	4	S7, LBAP (ANG, BBNP, CER, CLY, CON, CRM, DEN, FLI, GWY, PEM, POW, SNP, TRF, VOG)

<i>Lutra lutra</i>	Otter	1273m	26	EPS, HDir, WCA5, S7, Bern, CITES, RDB2 (UK),
<i>Meles meles</i>	Badger	637m	6	BA, Bern, LBAP (CLY, CON, DEN, FLI, PEM, POW, TRF, WRE)
<i>Micromys minutus</i>	Harvest Mouse	708m	1	S7, LBAP (BRG, CON, FLI, GWY, VOG), LI(BIS)
<i>Mustela erminea</i>	Stoat	1866m	1	NRW, Bern, LBAP (ANG, BGW, BRG, CON, FLI, NEW, POW)
<i>Mustela nivalis</i>	weasel	1152m	2	NRW, Bern, LBAP (ANG, BGW, BRG, CON, FLI, NEW, POW)
<i>Mustela putorius</i>	Polecat	1560m	1	HDir, S7, Bern, RDB2 (UK), LBAP (BGW, BRG, CON, FLI, GWY, NEW, POW, SNP, VOG)
<i>Myotis daubentonii</i>	Daubenton's bat	1640m	11	EPS, HDir, WCA5, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF)
<i>Myotis nattereri</i>	Natterer's	1725m	8	EPS, HDir, WCA5, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF)
<i>Myotis</i>	Myotis bat species	235m	34	EPS, HDir, WCA5, Bern, LBAP (ANG, DEN, FLI, SNP, TRA, TRF)
<i>Nyctalus noctula</i>	Noctule	1937m	13	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)
<i>Nyctalus</i>	Nyctalus species	1937m	12	EPS, HDir, WCA5, Bern, LBAP (ANG, DEN, FLI, SNP, TRA)
<i>Pipistrelle</i>	Pipistrelle bat species	154m	56	EPS, LBAP (ANG, DEN, FLI, SNP, TRA, TRF)
<i>Pipistrellus pipistrellus</i>	Common pipistrelle	165m	55	EPS, Hdir, WCA5, S7, Bern, RDB2 (UK),
<i>Pipistrellus pygmaeus</i>	Soprano pipistrelle	1636m	32	EPS, Hdir, WCA5, S7, Bern, RDB2 (UK)
<i>Plecotus auritus</i>	Brown long-eared bat	235m	21	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, CLY, CON, DEN, FLI, GWY, POW, SNP, TRA, TRF, VOG)
<i>Rhinolophus ferrumequinum</i>	Greater horseshoe bat	2035m	11	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, BBNP, CER, CLY, CRM, DEN, FLI, MON, PEM, POW, SNP, TRA, TRF, VOG)
<i>Rhinolophus hipposideros</i>	Lesser horseshoe bat	1706m	21	EPS, HDir, WCA5, S7, Bern, RDB2 (UK), LBAP (ANG, BBNP, CLY, CON, CRM, DEN, FLI, GWY, MON, PEM, POW, SNP, TRA, TRF, VOG, WRE)

Table 2. Summary of priority and protected species records within 2km

UKBAP = UK Biodiversity Action Plan Priority Species, UKBAP (R) = UK Biodiversity Action Plan Priority Species (Research only species), BDir1 = EC Birds Directive Annex 1 Species, BDir21 = EC Birds Directive Annex 2.1 Species, BDir22 = EC Birds Directive Annex 2.2 Species, Bern = The Bern Convention on the Conservation of European Wildlife and Natural Habitats Bonn = The Bonn Convention on the Conservation of Migratory Species of Wild, Animals Species, CITES = Convention on International Trade in Endangered Species, EPS = European Protected Species, HDir = EU Habitats Directive Species, NRW = Natural Resources Wales Priority Species, RD1 (Wales) = Welsh Red Data Book listing based on IUCN guidelines RD1 (UK) = UK Red Data Book listing based on IUCN guidelines, RD2 (UK) = UK Red Data Book listing not based on IUCN guidelines (Nationally, Rare and Scarce), WBR (RSPB) = RSPB Welsh Red listed birds (not based on IUCN criteria), WBAm (RSPB) = RSPB Welsh Amber listed birds (not based on IUCN criteria), UKBR (RSPB) = RSPB UK Red listed birds (not based on IUCN criteria), UKBAm (RSPB) = RSPB UK Amber listed birds (not based on IUCN criteria) S7 = Environment Act (Wales), Section 7 Species, WCA1.1 = Wildlife and Countryside Act Schedule 1 Part 1 Species, WCA5 = Wildlife and Countryside Act Schedule 5 Species, WCA8 = Wildlife and Countryside Act Schedule 8 Species, WCA9 = Wildlife and Countryside Act Schedule 9 Species, INNS = Invasive Non-Native Species, WSG.P = Guidelines for the Selection of Wildlife Sites in South Wales – Primary, species, WSG.C = Guidelines for the Selection of Wildlife Sites in South Wales -Contributory species, WVP = IUCN Threat Listing of Welsh Vascular Plants, LBAP (xxx) = Local Biodiversity Action Plan Species (see key below), LI (SEWBRc) = Locally Important Species (as identified by local specialists) in SEWBRc area, LI (BIS) = Locally Important Species (as identified by local specialists) in BIS area, LI (BRYO-MON) = Locally or nationally scarce or rare bryophyte in Monmouthshire, LI (VC##) = Locally Important Species (as identified by local specialists) in Vice County ##, LI (VC##, LS) = Locally Scarce in Vice County ##, LI (VC##, LR) = Locally Rare in Vice County ##, LI (VC##, EX) = Extinct in Vice County ##, LI (VC##, UR) = Under Recorded in Vice County ##

Site survey

Habitats

The study area consisted of a former dwelling and its garden. There were patches of bare earth and ruderal weeds and grass regrowth and small piles of material from the house renovations. A single monkey puzzle tree stood close to the house and an intact hedge was noted on all sides of the property. A small watercourse entered the plot at the western end and was culverted under most of the garden area but emerged to the northeast side. Habitats are mapped in Figure 2 towards the end of the report while photographs of the habitat and a plant species list are available in Appendices A and B.

Improved grassland

The former garden area consisted of disturbed ground with regrowth of mainly grasses with other species. False oat grass (*Arrhenatherum elatius*) was the most dominant grass with rough meadow grass (*Poa capilaris*) occurring occasionally with cocksfoot (*Dactylis glomerata*) and red fescue (*Festuca rubra*). Other species present were rosebay willowherb (*Chamaenerion angustifolium*) creeping thistle (*Cirsium arvense*) red dead nettle (*Lamium purpureum*), nipplewort (*Lapsana communis*), ribwort plantain (*Plantago lanceolata*) and common fumitory (*Fumaria officinalis*) all occurring rarely. Others were slightly more common such as dandelion (*Taraxacum officinalis* agg.) lady fern (*Dryopteris filix-femina*) and male fern (*D. filix-mas*), greater plantain (*P. major*) and nettle (*Urtica dioica*).

Running water

A small watercourse enters the plot in the western side but then enters a small culvert. The watercourse emerges at the foot of the garden to the northern boundary. The channel is approximately 40cm deep and 40cm wide. There were no areas of pooling or emergent vegetation present. At the time of survey, a small trickle of water was moving along it after several weeks without rainfall. Due to the gradient the water does not pool and is generally fast flowing under normal conditions.

Intact species rich hedge

To the east leylandii (*Cupressus x leylandii*), box (*Buxus semperivens*), privet, hawthorn, ash, hazel (*Corylus avellana*) sycamore and apple (*Malus domestica*).

Intact species poor hedges

There were hedge boundaries to all sides of the plot. To the north side the hedge contained sycamore (*Acer pseudoplatanus*), snowberry (*Symphoricarpos albus*), holly (*Ilex aquifolium*), privet (*Ligustrum ovalifolium*), hawthorn (*Crataegus monogyna*), oak (*Quercus robur*) and bramble (*Rubus fruticosus* agg.). To the south side creating the boundary to the lane privet, hawthorn, holly, ivy (*Hedera helix*), dog rose (*Rosa canina*), sycamore and bramble. The hedge dividing the plot and the neighbour's garden to the west was made up of leylandii, lilac (*Syringa vulgaris*), apple, sycamore and elder (*Sambucus nigra*).

Bare ground

Some bare ground was recorded around the house where vegetation had been cleared. Other surfaces were crushed roof tile and other building materials or hardstanding.

Buildings

Waunfach house stood near to the centre of the plot and was made of stone and brick with a slate roof. The building had been unoccupied for many years.

Potential for Priority and Protected Species

Bird species

Carion crow (*Corvus corone*) and swifts (*Apus apus*) were noted in flight over the plot while house sparrows (*Passer domesticus*) were seen in the hedge, on the roof and were apparently nesting within the monkey puzzle tree (*Araucaria Araucana*) adjacent to the house. No other signs of bird nesting or activity were noted inside or outside of the house. The interior space of the house is not accessible to larger bird species and chimneys were either capped or not present externally. There may be some potential for house sparrows to nest in the small gaps of the exterior.

Reptiles and amphibians

The site in its current state offers no opportunity for reptiles and is separated from suitable habitat in which they might occur by a fairly busy road and several houses toward the edge of the built-up area. The site occurs to the centre of the housing although has an overgrown plot adjacent to it. The nearest reptile records are from over 700m associated with the nearby protected site and good quality habitat.

The site offers no opportunity for amphibians in its current state and is also separated from suitable habitat. The nearest record of great crested newt (*Triturus cristatus*) was only 106m away, but the garden in which it was found lies close to Cwm Glo SSSI designated site from which many other records originate. The survey site lies further into the built-up area away from the designated site.

Bats

Waunfach house is thought to be at least 100 years old or more and built of stone and brick with a simple slate pitched roof. A single storey rear extension was positioned to the southwest on the rear of the house containing the former kitchen and bathroom. A further lean-to was attached to this extension with two exterior openings, but was not joined internally to the rest of the house.

Internal

The ceilings and first floor of the house and extension had been removed prior to the survey. The owners reported that this had been carried out before they had purchased the house. There was no lining to the roof of either the main house or the kitchen extension and the underside of the slates were visible from beneath. The timber structure of the roof was in-

tact and did not exhibit any crevices in the joints. Roosting opportunities internally were limited to the tops of the wall plate and the ridge. All other gaps in the roof structure were considered unsuitable due to the level of exposure and light inside the building. Daylight was visible in the corners of the roof thereby allowing bat entry to the interior. Ground floor chimneys were checked for evidence of bats, while the first floor one was checked using binoculars, but none was found. Chimneys were generally unsuitable with soot and crumbling mortar falling regularly. There were some exposed areas of stonework where plaster had been removed, but no gaps deep enough between the stonework to accommodate a bat. Due to the missing ceilings and floor the lower and upper windows let in a good deal of light into the whole space. No signs of bats were found on any of the interior surfaces of the house despite a thorough inspection.

External

A small gap was noted on the southeast gable end at the barge board, but the ridge was found to be mainly well mortared with a missing a tile at the south east end. Only very small gaps were found at the barge boards and soffits of the southwest side and the northeast side did have a small gap. A missing mortar hole in the wall of unknown depth was noted in the northeast wall high up towards the north corner.

The ridge and flashing of the extension was well mortared and had no noticeable gaps.

Chimneys were either absent on the exterior or capped with no chimney pots visible.

The site photographs show a missing windowpane on the day of the potential roost assessment survey but was subsequently closed during other visits. The owners report that the pane was only left open on that day and otherwise normally blocked.

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Bat activity observed was of a low-level considering weather conditions were good. One common pipistrelle bat was observed emerging from an unknown location toward the southeast apex, most likely the barge board or ridge gap at 22:09, 33 minutes after sunset. No other bats were observed emerging from the building on that occasion. On the third survey visit a common pipistrelle was observed emerging from the flashing area of the northwest chimney stack at 19:22, nineteen minutes after sunset.

Other bat species observed in flight were soprano pipistrelle, possible Nathusius pipistrelle and Whiskered bat on the June and July visits only.

Full survey notes can be found in Appendix C.

ECOLOGICAL CONSTRAINTS, FURTHER SURVEYS OPPORTUNITIES AND RECOMMENDATIONS FOR MITIGATION

Designated sites

The site did not fall within or close enough to any statutorily designated sites to cause any impacts, direct or indirect, particularly on any floristic element. The site of a nearby SINC was included as part of the same parcel of land as the SSSI. Other SINC's were at a greater distance, but several have records of great crested newt.

Habitats

The habitat most affected by the proposed extension will be the hardstanding and the existing building. No details for the landscaping other than a detached garage have been prepared to date.

Improved grassland

The grass dominated habitat with tall ruderal plants is considered of low conservation significance and no further surveys are thought to be necessary. There will be negligible impacts to this habitat but scope for biodiversity enhancement. Part of the garden area should be enhanced as a meadow by appropriately preparing the ground and removing existing vegetation and enriched soil, if present. The area will be seeded with neutral grassland /acidic grassland seed mix suitable for lowland south Wales. The seed mix will be sown at an appropriate density for the size of the area at the correct time of year. Aftercare will consist of annual cut and lift management with spot treatment of problem species such as dock and nettle. Details of the meadow area size seed mix specification and care will be included in a biodiversity enhancement plan for the whole site.

Running water

The watercourse will remain unaffected by the development of the extension and the garage. Care should be taken moving machinery and stockpiles over the existing culvert through the garden as damage to it may cause blockage and pollution. No suggested enhancements have been made for the culverted watercourse.

Intact species poor hedge

No further surveys are recommended for the hedgerows and no changes are proposed for them, no impacts are therefore anticipated. Some enhancements to the hedges may be possible by substituting non-native species with native, but would affect the integrity of the hedge temporarily. A list of native hedge plants is supplied in Appendix D with the intention of utilising these in a biodiversity enhancement plan.

Bare ground

Bare ground areas are due to be utilised for the extension mainly, other small areas may become part of the domestic garden.

Species

A range of mammals, amphibians, reptiles, invertebrates and bird species were noted from the data search with some limited sightings on the day of the visit.

Birds

No survey for birds is thought to be necessary as no habitat suitable for anything other than common species will be affected, as such no impacts upon them are anticipated unless the monkey puzzle tree in which sparrow appear to be nesting is taken down. There is potential for a negative impact if this or the roof were removed during the nesting season. Tree and roof removal, if carried out will be undertaken between September and February to avoid the bird nesting season. There is opportunity for enhancement for common tree nesting bird species would take the form of four durable bird boxes to be mounted around the margins of the site and on the house. Locations for bird boxes will be shown in a biodiversity enhancement plan.

Reptiles and amphibians

The site as observed during the survey visit had no potential habitat for reptiles. Any piled material in the garden was thought to be very newly created and the site was quite isolated from any suitable habitat from which they could migrate. Care will be taken during construction to protect reptiles and other wild animals by leaving a ramp in excavations left open overnight and by the daily checking of materials and machinery before work. Habitats suitable for reptiles may be created as part of the development. The proposed meadow area will provide suitable foraging habitat for reptiles. Details will be provided in a biodiversity enhancement plan.

The data search found many records of amphibians in the search area, most notably great crested newt. The nearest being from a domestic garden within 200m of Waunfach House, but the location of the record was to the edge of the designated site where they are regularly recorded. Records were noted to the north as well as the south of the site but none from the built-up area of Heolgerrig. The small unnamed watercourse running through the site was not thought to be suitable for any amphibian egg laying due to the fast nature of normal flows and lack of emergent vegetation. The site is quite isolated from suitable amphibian habitat with a relatively busy road between it and the nearest suitable habitat. Enhancement for amphibians will be created in the form of a pond at the lowest point of the site with further details provided in a biodiversity enhancement plan.

Bats

Waunfach House was found to hold low bat roost potential following the potential roost assessment survey. Small features were observed mainly in the southeast facing barge board and ridge and the northeast side fascia board and a small hole in the north wall suitable for summer roosting. The building was thought to have some suitability for winter hibernation due to access to the stone wall plate tops, but with cavity walls absent. The surrounding area was however less suitable for bats being very well lit by street lighting. Six lamps were visible around the plot boundary with at least three of those casting some light upon it and the building. Little tall vegetation long which bats could commute or forage was present, only the

neighbouring overgrown plot and occasional tree in the neighbouring hedge line. Hedges around the plot were kept relatively short and used occasionally for commuting by pipistrelle species.

Records of a diversity of bat species were found in the search area, but none originating from the site itself.

A single Common pipistrelle bat (*Pipistrellus pipistrellus*) was observed emerging from the southeast facing apex of the house on one and the northwest chimney flashing, on another of three survey visits. Other bats were observed flying into the garden and leaving the area. A very small species list was observed potentially due to the degree of street lighting and lack of suitable foraging habitat. The single bat is thought to be a male or non-breeding female and therefore a roost of low conservation significance.

Mitigation for bats will take the form of a soft strip of the roof materials supervised by a competent bat ecologist named on a licence issued by Natural Resources Wales, ideally outside of the winter period as a precaution. However, the bat(s) recorded are less likely to be present at this time. While a temporary bat box is used in the grounds of the house. A permanent build-in bat box suitable for summer and winter roosting such as the Schwegler 1WI <https://www.arkwildlife.co.uk/product/schwegler-1wi-summer-and-winter-bat-box/>

will be installed on the new northwest gable end while two raised ridge tiles will provide access to a bitumen felt lined area along the ridge of the house. In order to create a like-for like roosting space a Vivara Pro build-in woodstone bat access panel or similar model will be placed in the southeast gable end outer skin. Both bat boxes may be rendered over with the exception of the entrance. Work to enclose the space from potential bat access to the tops of the wall plates will be conducted outside of the winter hibernation period (please also note the timing constraints relating to birds on page 18). No details have been provided for exterior lighting as yet but must meet the criteria within the guidance document 08/18 Bats and Artificial Lighting in the UK produced by the ILP and Bat Conservation Trust. <https://theilp.org.uk/publication/guidance-note-8-bats-and-artificial-lighting/>

Further details of mitigation and enhancement features will be provided in a biodiversity enhancement plan for the site.

CONCLUSIONS

The site did not fall within any designated sites, except for the B-lines policy area, but other sites designated for their diverse acidic grassland and heath habitats were found close by, beyond the edge of the housing area of Heolgerrig. Although some mobile species are associated with these sites they are considered to be absent from Waunfach House and its garden and therefore the development is unlikely to affect the sites.

The habitats found at the site were tall ruderal weeds and grasses, intact species poor and rich hedges and a building. The main impacts will occur to the improved grassland habitat and the building.

No ecological surveys further to the dusk emergence surveys already carried out for bats are needed.

The site at the time of survey was not thought to hold habitat with potential for any species or group other than bats and possibly house sparrows and a single common pipistrelle was found to roost near the apex of the house and around the chimney flashing.

The focus of the mitigation needed will be the protection the bat during the work to the house roof and a like-for-like roost space replacement with some enhancement provision, including winter roost provision. Enclosing of the space and access to the wall plate tops will be conducted outside of the winter hibernation period (November to January depending on weather conditions). Work to expose the roof will be undertaken outside of the bird nesting season (March until August). Further to this, enhancements for, birds, amphibians and reptiles will be needed as well as providing a meadow area within the plot.

All details for proposed mitigation and enhancement will be provided in a biodiversity enhancement plan and feature locations included in architects drawings.

FIGURES

Figure 1. Location of Waunfach House. Contains Ordnance Survey data © Crown copyright and database right 2013



Figure 2 Phase 1 Habitats at Waunfach House adapted from Stanwell Architects Drawing
Waunfach House Winch Fawr Road A111

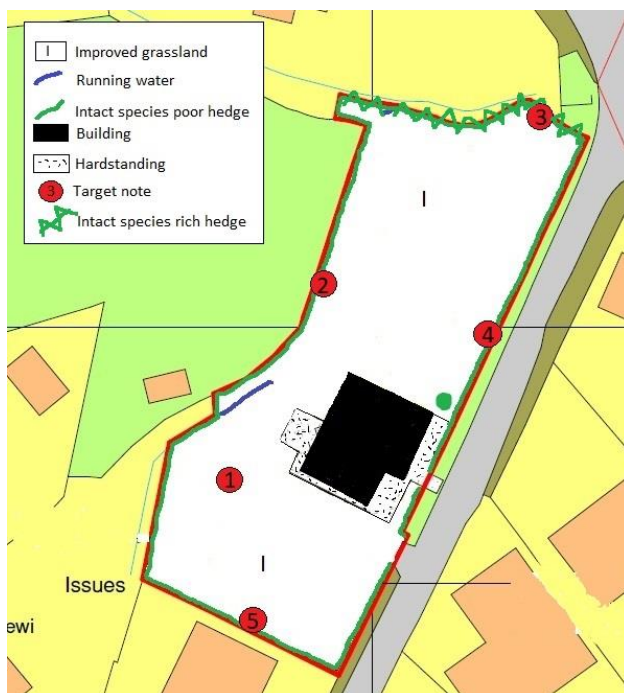


Figure 3 Bat surveyor positions adapted from Stanwell Architects Drawing Waunfach House Winch Fawr Road A111

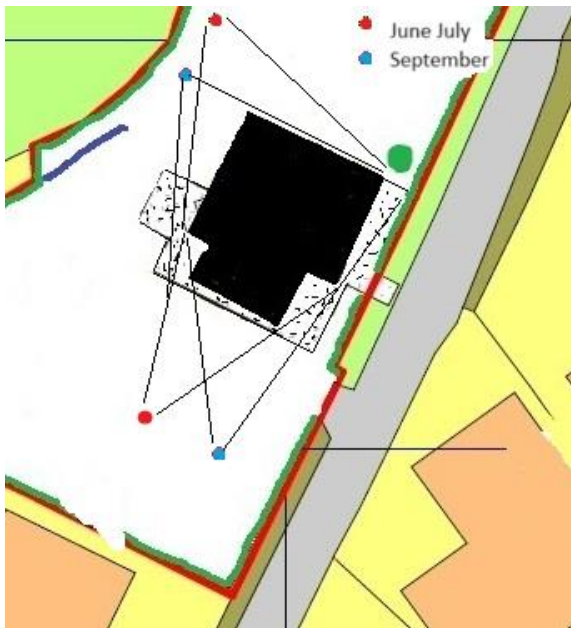
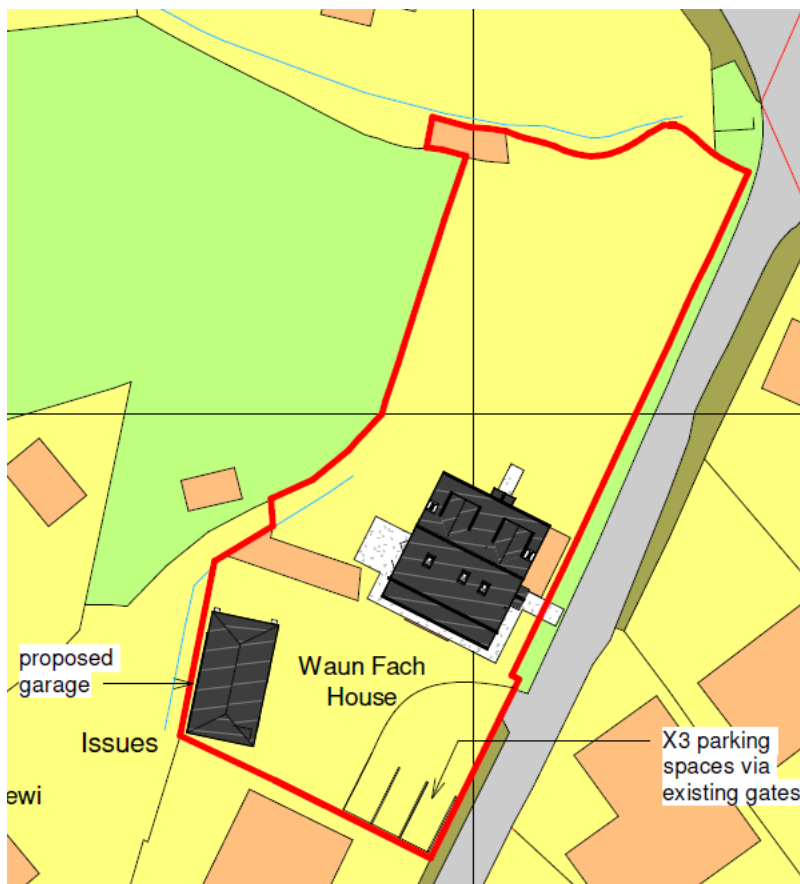


Figure 4 Proposed development layout adapted from Stanwell Architects Drawing Waunfach House Winch Fawr Road A111



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Nature Conservancy Council (1990) *Handbook for Phase 1 habitat survey, a technique for environmental audit.*

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South East Wales Biodiversity Records Centre (2022) *Data search for protected and priority species at Waunfach House, Heolgerrig*

APPENDIX A. SITE PHOTOS



Photo 1.
Front elevation of
Waunfach House
(north).
Windowpane
opened on survey
day by owners, but
usually covered by
board. Covered on
both dusk visits.



Photo 2. Side and
rear elevations
showing extension
(west and south).
Open doorway to
outhouse only. No
access to house
interior



Photo 3. Rear elevations (south)



Photo 4. Side gable end (east) with small gaps at the barge board. Possible bat emergence point highlighted.



Photo 5. Underside of the roof covering, offering very small and poor roosting space over rafters.



Photo 6. Underside of the roof covering



Photo 7. Ground and former first floor interior



Photo 8. Ground and former first floor interior



Photo 9. Unnamed watercourse running through the corner of the site before it is culverted



Photo 10. West hedge boundary between the plot and the neighbouring overgrown plot



Photo 11. North of the plot



Photo 12. South of the plot

APPENDIX B TARGET NOTES

TN1 improved grassland –.

Scientific name	Common name	Abundance
<i>Aquilegia vulgaris</i>	Columbine	R
<i>Arrhenatherum elatius</i>	False oat grass	F
<i>Chamaenerion angustifolium</i>	Rosebay willowherb	R
<i>Cirsium arvense</i>	Creeping thistle	R
<i>Dactylis glomerata</i>	Cocksfoot	O
<i>Dryopteris filix-femina</i>	Lady fern	O
<i>Dryopteris filix-mas</i>	Male fern	O
<i>Epilobium montanum</i>	Broad leaved willowherb	R
<i>Fescua rubra</i>	Red fescue	O
<i>Fumaria officinalis</i>	Common fumitory	R
<i>Galium aparine</i>	Cleavers	O
<i>Lamium purpureum</i>	Red dead nettle	R
<i>Lapsana communis</i>	Nipplewort	R
<i>Lotus corniculatus</i>	Birds foot trefoil	O
<i>Phleum pratense</i>	Timothy	T
<i>Plantago lanceolata</i>	Ribwort plantain	F
<i>Plantago major</i>	Greater plantain	O
<i>Poa capilaris</i>	Rough meadow grass	C
<i>Ranunculus repens</i>	Creeping buttercup	O
<i>Rubus idaeus</i>	Raspberry	O
<i>Rumex obtusifolius</i>	Broad leaved dock	R
<i>Senecio vulgaris</i>	Groundsel	R
<i>Taraxacum officinale agg.</i>	Dandelion	O
<i>Urtica dioica</i>	Nettle	O
<i>Veronica</i>	Speedwell	R

TN 2 Hedge west side

Scientific name	Common name
<i>Acer pseudoplatanus</i>	Sycamore
<i>Crataegus monogyna</i>	Hawthorn
<i>Ligustrum ovalifolium</i>	Privet
<i>Quercus robur</i>	Oak
<i>Rubus fruticosus agg</i>	Bramble
<i>Symphoricarpos albus</i>	Snowberry
<i>Ulex aquifolium</i>	Holly

TN3 Hege north

Scientific name	Common name
<i>Acer pseudoplatanus</i>	Sycamore
<i>Buxus semperivens</i>	Box
<i>Corylus avellana</i>	Hazel

<i>Crataegus monogyna</i>	Hawthorn
<i>Cupressus x leylandii</i>	Leyland cypress
<i>Fraxinus excelsior</i>	Ash
<i>Ligustrum ovalifolium</i>	Privet
<i>Malus domestica</i>	Apple
<i>Rubus fruticosus agg</i>	Bramble

TN 4 Hedge east

Scientific name	Common name
<i>Acer pseudoplatanus</i>	Sycamore
<i>Crataegus monogyna</i>	Hawthorn
<i>Hedera helix</i>	Ivy
<i>Ilex aquifolium</i>	Holly
<i>Ligustrum ovalifolium</i>	Privet
<i>Rosa canina</i>	Dog rose
<i>Rubus fruticosus agg</i>	Bramble

TN5 Hedge south

Scientific name	Common name
<i>Acer pseudoplatanus</i>	Sycamore
<i>Cupressus x leylandii</i>	Leyland cypress
<i>Malus sp</i>	Apple/pear
<i>Sambucus nigra</i>	Elder
<i>Syringa vulgaris</i>	Lilac

Incidental fauna

carrion crow, swift, grasshopper species.

APPENDIX C - BAT SURVEY NOTES

Dusk emergence survey 21-06-2023

Rebecca observing the front and side elevations

Time	Species	Observation
21:52	C pipistrelle	HNS
21:55	C pipistrelle	Flew over hedge to NE through garden to west
22:34	C pipistrelle	As above
22:36	C pipistrelle	HNS (behind surveyor)
22:36	C pipistrelle	As above
22:38	C pipistrelle	Foraging over garden
22:39	S pipistrelle	HNS
22:42	C pipistrelle	HNS but commuting
22:49	C pipistrelle	HNS but commuting
22:50	S pipistrelle	Commuting through garden
22:53	C pipistrelle	Commuting through garden
22:55	C pipistrelle	HNS but commuting
22:56	S pipistrelle	HNS but commuting
22:57	C pipistrelle	HNS

Ade Williams observing the rear and side elevations

22:09	C pipistrelle	Emerged from raised ridge tile NE side, flew south
22:20	C pipistrelle	Commuting flew SE along lane
22:34	C pipistrelle	As above
22:36	C pipistrelle	Return flight
22:39	C pipistrelle	X 2 foraging at street light to the east
22:51	C pipistrelle	Foraging along hedge to east
22:55	C pipistrelle	Flew along lane NE
22:58	C pipistrelle	Foraging at street light to east

Dusk emergence survey 06-07-2023

Rebecca observing front and side elevations.

Time	Species	Observation
22:04	C pipistrelle	From road junction to NE flew in over hedge
22:14	C pipistrelle	From NW back towards the junction
22:25	Nath pipistrelle?	HNS
22:41	C pipistrelle	HNS

Ade observing the rear and side elevations

Time	Species	Observation
21:58	C pipistrelle	HNS
22:02	C pipistrelle	Foraging at street light to the east
22:04	C pipistrelle	HNS

22:13	C pipistrelle	X 2 foraging along west hedge left to east at 22:16
22:22	C pipistrelle	Commuting west to east over surveyor
22:24	Whiskered	HNS
22:42	C pipistrelle	X 2 active around se apex briefly but left to east

Dusk emergence 26th September 2023

Rebecca observing the front and side elevations.

Time	Species	Observation
19:19	C pipistrelle	From road junction flew in over hedge, F briefly around hedge and larger trees
19:21	C pipistrelle	From south to neighbouring land
19:26	C pipistrelle	From S side, close to extension, may have emerged from other side. F briefly by trees
19:47	C pipistrelle	Flew in from east, flew through garden
19:51	C pipistrelle	HNS Passed through along hedge
19:52	C pipistrelle	As above
19:55	C pipistrelle	As above
19:59	C pipistrelle	As above, but seen
20:01	C pipistrelle	S above with social calls
20:19	C pipistrelle	Twice back and fore along hedge with social calls

Ade observing the rear and side elevations.

Time	Species	Observation
19:22	C pipistrelle	Emerged west side of chimney, maybe flashing flew south circled garden, flew west over hedge
19:27	C pipistrelle	From east, circled garden flew away east
19:30	C pipistrelle	HNS to the east
19:37	C pipistrelle	East to west through garden
19:40	C pipistrelle	South to north along roadside hedge
19:49	C pipistrelle	Foraging under street lamp until 19:53
19:53	C pipistrelle	Eats to west through garden
20:21	C pipistrelle	Under street lamp flew north
20:25	C pipistrelle	HNS

APPENDIX D NATIVE HEDGE PLANTS

Adapted from a Natural Resources Wales list

Field maple	<i>Acer campestre</i>
Wild clematis	<i>Clematis vitalba</i>
Dog wood	<i>Cornus sanguinea</i>
Hazel	<i>Corylus avellana</i>
Common hawthorn	<i>Crataegus mongoyna</i>
Spindle	<i>Euonymus europaeus</i>
Alder buckthorn	<i>Frangula alnus</i>
Hop	<i>Humulus lupulus</i>
Holly	<i>Ilex aquifolium</i>
Juniper	<i>Juniperus communis</i>
Wild privet	<i>Ligustrum vulgare</i>
Honeysuckle	<i>Lonicera periclymenum</i>
Blackthorn	<i>Prunus spinosa</i>
Purging buckthorn	<i>Rhamnus cathartica</i>
Dog rose	<i>Rosa canina</i>
Grey willow	<i>Salix sinerea</i>
Osier willow	<i>Salix viminalis</i>
Elder	<i>Sambucus nigra</i>
Wych elm	<i>Ulmus glabra</i>
Wayfaring tree	<i>Viburnum lantana</i>
Gelder rose	<i>Viburnum opulus</i>

