

ECOLOGICAL IMPACT ASSESSMENT
and Bat Activity Survey



The Cloggau,
Newchurch,
Powys

A Report for
Mr & Mrs C. Rogers

Report Information	
Project name	Ecological Impact Assessment and Bat Activity Survey for The Cloggau, Newchurch
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Prepared for:	Mr & Mrs Rogers

Summary

Site	This report has been produced for Mr & Mrs Rogers for the proposed extension of The Cloggau, Newchurch
Survey Methods	<p>An extended Phase I survey was conducted on 19th May 2022 by Katie McMinn (NRW Bat licence: S088350/1).</p> <p>A single dusk bat survey was conducted on 19th May 2022 to establish presence/absence.</p> <p>A data search of local wildlife records was requested in May 2022.</p> <p>The information is true to the data collected at the time of the surveys in 2022. The surveys undertaken are considered to retain validity for 12-18 months from the date of issue. An additional assessment to confirm substantial change at the site is likely required after this period.</p>
Survey Results	<p>No bat droppings or evidence of bat activity was found by the internal and external building inspection.</p> <p>There is a single lifted tile and a section of wall with open eaves within the proposed work area of the southwest extension only.</p> <p>Features offering bat roost potential are limited, a single bat dusk activity survey was carried out.</p> <p>No bats emerged from the building during the bat survey. Common pipistrelle commuting activity was recorded along the garden hedgerow west of the Site.</p> <p>There are house martin nests on the northwest and southeast gable of the building.</p>
Discussion	<p>The proposed works are for two ground floor extensions off the southwest and southeast elevations of the house. The existing loft will not be impacted by the proposed works.</p> <p>The building inspection identified features including a short section of open eaves and lifted tile edge within the work area of the southwest elevation. The features are assessed as providing 'low' suitability for a bat roost.</p> <p>The bat activity survey confirmed absence of a bat roost within the work areas of the Site.</p> <p>The building inspection and bat survey have established likely absence of a bat roost within the proposed works areas. No further surveys are recommended.</p>
Avoidance Measures	<p>Bats: Timing of specific construction works.</p> <p>Birds: Timing of specific construction works.</p>
Licensing requirements	NRW development licence is not recommended for the proposed works.
Biodiversity Enhancements	<p>Birds: x4 house martin nest cups, x1 sparrow terrace.</p> <p>Bats: x2 in-built bat boxes.</p>

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1 Introduction

This report has been produced for Mr & Mrs Rogers to provide an Ecological Impact Assessment and Bat Activity Survey for the proposed demolition of an extension and construction of two ground floor extensions at The Cloggau, Newchurch.

This report has been commissioned to:

- Identify evidence of/potential for protected species.
- Identify presence/absence of a bat roost (location of roost and access point, number of individuals, and bat species).
- Identify if the proposed works will affect protected species.
- Requirement for a Natural Resources Wales Development Licence for protected species
- Set out biodiversity enhancement measures appropriate for the intended works.

The surveys were conducted by Katie McMinn BSc (hons) MCIEEM, she holds a Cyfoeth Naturiol Cymru/ Natural Resources Wales (NRW) great crested newt survey licence: S088349/1 and NRW bat survey licence: S088350/1. Katie has been conducting Phase I Habitat surveys and National Vegetation Classification (NVC) surveys, bat surveys and great crested newt surveys over the past 12 years. KG Ecology are a registered practice, listed in the Chartered Institute of Ecology and Environmental Management (CIEEM).

2 Site Location

The dwelling, The Cloggau, hereafter referred to as the Site, is a detached house located c.3km northwest of the village Newchurch, HR5 3QP at NGR: SO 1876 5262.



Figure 1: Location map showing The Cloggau.

3 Planning Policy and Legislation Context

The **Natural Environment and Rural Communities (NERC) Act 2006** includes a duty on local authorities to regard biodiversity conservation as a material consideration within the planning process. Section 42 of the NERC Act protects those species and habitats of principal importance for the purpose of conserving biodiversity in Wales. Powys County Council has developed local biodiversity action plans to reflect the local Section 42 habitats and species (PCC 2002).

In Powys, this legislation is informed in part by the following planning policies, which include a requirement to inform the application process in view of ecological features and sets out “*a public authority must seek to maintain and enhance biodiversity in the exercise of their functions*”:

- Powys County Council’s LDP Policies SP7, DM2 in relation to The Natural Environment (PCC, 2018)
- Planning Policy Wales (Edition 11, February 2021) requirements
- Technical Advice Note 5, Nature Conservation and Planning (Welsh Assembly Government, 2009); and
- The Environment (Wales) Act 2016 Section 6: Biodiversity and resilience of ecosystems duty (S6 duty)

The Conservation of Habitats and Species Regulations 2017 transcribes the European Commission Habitats Directive into UK law. Species listed under Schedule 2 of these regulations are ‘European Protected Species’ (EPS). It is illegal to deliberately capture, kill, injure, or disturb an EPS animal. Breeding sites and resting places of EPS animals are also protected from reckless damage, destruction, and obstruction. Inclusion of EPS on Schedule 5 of the **Wildlife and Countryside Act (WCA) 1981** (as amended) strengthens the protection given to these species.

Common lizard, slow-worm and grass snake and are listed under Schedule 5 of the Wildlife and Countryside Act (WCA) 1981 (as amended) which prohibits the intentional killing or injury of these animals.

The **Countryside and Rights of Way Act 2000** strengthens the species enforcement provisions of the WCA 1981 (as amended) and makes it an offence to ‘recklessly’ harm or disturb a place of rest or shelter of a protected species.

Under the WCA 1981 (as amended) all birds, their nests and eggs are protected during the breeding season from killing/destruction, damage, and disturbance. The bird breeding season is February to August.

4 Methodology

Desk study

The desk study was conducted in May 2022. Ordnance Survey maps and aerial photographs were used to provide context of the Site location, current and historic land use and identify local habitat features.

The Multi Agency Geographic Information for the Countryside (MAGIC) website (Natural England, 2021) provided statutory and non-statutory nature conservation sites within a 1km radius of the Site.

A biodiversity data search for bats (2km), roof-nesting birds (150m), and sites designated for bats within 10km, was received from the Biodiversity Information Service for Powys and Brecon Beacons National Park (BIS) on 23rd May 2022 (LERC reference: DERF 1960). The data search returned a quotation for 3 bat records only and the results were not requested due to the very low local record count.

Field Survey

The building inspection and field survey were conducted on 19th May 2022 by Katie McMinn. The bat survey was conducted on 19th May 2022 by Katie McMinn.

Phase I Habitat survey

A Phase I Habitat survey was conducted at the Site and habitats adjacent to the Site. The survey used the standard methodology as set out by the JNCC Phase I Habitat Handbook. The Site, including the length of each boundary, was walked over with the dominant habitat areas recorded and target notes used for smaller features of interest. Species lists were recorded for the dominant habitat areas with relative abundance of plants noted using DAFOR scale (Dominant/ Abundant/ Frequent/ Occasional/ Rare).

Building inspection for bats

An appraisal for bat roosts was conducted using methodologies detailed by current good practice guidelines (Mitchell-Jones and McLeish, 2004, Collins, 2016, PCC, 2004). The assessment involved a detailed visual inspection of internal spaces and external building features of the site. The inspection was aided by binoculars, ladder, digital endoscope and one million candle power clu-lit torch. A careful examination was undertaken of the building for features such as gaps and crevices offering bat roost potential and a wider search for evidence of bat use, including bat droppings, staining by fur-oil or urine and in some cases the absence of cobwebs/debris. The presence of cobwebs and debris in roof voids or at access points tend to suggest a lack of use by bats although on its own this evidence is not conclusive.

Photographs were taken of the Site and surroundings to record condition, features of interest and bat evidence.

Current Bat Survey Guidelines suitability categories 'Negligible', 'Low', 'Moderate' and 'High' are used to summarise the bat roost 'suitability' of a Site. The assignment of suitability categories is based on the presence and condition of habitat/structure features, landscape and applied professional judgement (Collins, J., 2016). The suitability categories provide an aid in determining a reasonable minimum number of bat roost surveys to determine bat roost absence and roost characterisation e.g., species, numbers, roost location.

Bat Activity Survey

The work area of the Site has been assessed as a 'Low' Suitability site for bat roosts based on the building inspection conducted in November 2021. A single bat activity survey was conducted in May 2022 to establish presence/absence of a bat roost. The survey was conducted by Katie McMinn (NRW bat survey licence: S088350/1) and Megan Abram.

The timing, number of surveys and surveyors were conducted in accordance with the Bat Survey Guidelines (Collins, 2016) and based on the findings of the initial building assessment.

Bat detectors, along with flight patterns, were used to identify bat species observed during the emergence survey. A Fledermaus-Detector SSF BAT₂ bat detector and Wildlife Acoustics Echo Meter Touch 2 were used, operating using heterodyne and frequency division scanning simultaneously. The Echo Meter Touch 2 provided recording of bat calls, reviewed through their app. A Titley AnaBat Express (a broad-band microphone recording frequency division) was used on site to record bat calls. The recorded files were downloaded and analysed using zero-crossing analysis in Anabat Insight software, aided by call identification reference books (Russ, 2012).

Temperature and weather conditions were recorded at the start, at sunset/sunrise, and end of each survey.

Protected species

A search was conducted for evidence of protected and priority species at the Site and within surrounding adjacent habitats. This included recording actual sightings, evidence of activity by protected/priority species (foraging/ droppings and latrines/ shelters/ hairs/ sloughed skin) and habitat suitable for supporting breeding and sheltering activities.

An inspection for bird nest activity and appraisal for nesting potential was made of the features within the Site.

Species	Summary of field survey conducted
Bat species	Assessment of buildings/trees and habitat to support bat roosts and foraging/commuting activity (further detail below).
Dormouse	Assessment of the likely value of the hedgerows for dormice. Search for chewed hazel nuts along hedgerows adjacent to the Site.
Badger	Assessment of the likely value of the habitat features for badger. Search within 100m of the Site for badger setts and foraging/latrine activity.
Otter	Assessment of the likely value of the watercourse for otter and water vole
Water vole	
Reptiles	Assessment of the likely value of the habitat features for reptiles and amphibians
Great crested newt	

Table 1: Protected species field surveys

5 Baseline Ecological Conditions

Desk Study

There is one designated site protected for ecological features within 1km of the Site:

- **Glascwm and Gladestry Hills Site of Special Scientific Interest (SSSI):** located, at its closest, c.550m. to the west, northwest, and northeast of the Site.

The desk study identified no sites that are designated for bat features within 10km of the Site.

Local landscape

No ponds were identified within 500m of the Site using OS map, aerial imagery, and localised field survey.

The Site has a rural setting, surrounded by hills including Yr Allt, Colva Hill and Black Hill. The hills are areas of upland common land with bracken cover (hills are part of the Glascwm and Gladestry Hills SSSI). The farm has external lighting, used for access and on switch and/or motion sensors.

Habitats within 500m include fields of semi-improved grassland bound by hedgerows, bands of deciduous trees along watercourses, including the River Arrow.

The River Arrow is located within 70m to the west of the Site. The watercourse is tree lined along its length and connects to tributaries in the wider landscape.

The Site is located at approximately 310m above Ordnance datum.

Habitats

The Site is a detached farmhouse with farm buildings located against the east of the house. The farm buildings are a mixture of traditional stone and timber barns and modern agricultural buildings. The Site is set within a managed garden with lawn off the southwest and northwest elevations. There is patio slab against the southwest elevation and southeast gable with gravel against the northeast elevation and northwest gable.

The patio slab is in place and without crevices or gaps.



Plate 1: Southwest elevation.



Plate 2: northeast elevation showing gravel driveway.

Building description

External

The Site is orientated northeast-southwest along the ridgeline. There are extensions off the southwest elevation including lean-to, pitched roof two-storey, and 1970's ground floor lean-to.

Main house: The Site is a stone farmhouse with a pitched roof. The roof is clad in slate, the tiles appear to be intact, except of a tile against the chimney with a lifted edge. The ridge tiles appear to be in place with a good fit to the tiles. Both gable end ridge tiles are filled with mortar, there is a gap leading under the tiles at the southeast gable. There are two chimneys, one centrally, towards the southeast gable (with gaps under the lead) and one at the northwest gable (gaps under tiles). Both are red brick with mortar and bricks intact.

The southwest elevation has open eaves leading onto the wall plate (Plate 3). There are large cavities allowing access onto the top of the wall. The northeast elevation has overhanging eaves sealed with a timber board, the timber has a tight seal to the stonework and roof features without gaps (Plate 4). Both gable ends have six exposed purlin timbers and ridge timbers fitted with an overhanging bargeboard (Plate 5). There is a tight seal between the stonework and soffit. There is a tight fit between the roof tiles and bargeboards.

All elevations of the main house are painted stone, the stonework and mortar appear intact, without gaps. The doorways and windows have a tight fit to the stonework.

Lean-to: The lean-to towards the northeast end of the Site is clad in slate, the tiles are intact. The lean-to is painted stone with bargeboards, the timbers and stonework are intact with tight seals and no gaps.

There is a large bread oven chimney in the southeast wall, the chimney is painted stone and appears intact without missing mortar.

Two storey extension: The extension has a pitched roof clad in slate. The tiles are intact and in place. The ridge tiles have gaps leading under some sections. At the gable end there is a tight seal between the painted stonework and soffit timbers. There are gaps between the bargeboards and roof tiles.

1970's ground floor lean-to: The lean-to is clad in slate. The tiles are intact and in place. There is a tight seal between the rendered walls and bargeboards of the roof. The roof tiles have a tight fit to the bargeboards, except for a single tile against the ridge tiles. The ridge tiles are in place and without gaps. The windows have a tight fit to the rendered walls.



Plate 3: Southwest elevation showing 1970's extension. Plate 4: Northeast elevation.



Plate 5: Southeast gable end and 1970's extension. Plate 6: Main loft space showing timber frame.

Internal

The Site has a single loft space over the main house. There is a chimney breast part way down the loft with a water tank and stored items in the loft, access to the gable walls was not possible due to restricted access. The gable ends were visible for inspection at a distance.

The loft is insulated throughout the northern section and partly boarded for storage. The south section, beyond the central chimney was not insulated. The roof is supported by a three original timber with a tie beam and struts supporting the main rafters. One frame has wattle and daub between the strut and rafter timbers (Plate 6). The timbers have tight joints. All timbers and the loft void had cobweb and debris cover.

The loft is clad in a breathable roofing membrane and appears intact.

The northwest gable has a red brick chimney breast, the chimney and timbers had a heavy cover of spider webs and debris. The central chimney breast is red brick, there was heavy spider and dust debris against the chimney and timbers. The southeast gable end is exposed stonework, the mortar appears intact.

Species and species groups

Bats - Desk Study and Building Inspection

A quotation for a local wildlife records search returned three records within 1km of the site.

No bat droppings or field signs of bat use were found internally or externally by the building inspection.

There are features within the roof including ridge tiles with gaps and lifted leadwork at the chimneys.

Within the proposed work areas of the southeast gable and 1970's lean-to there is a lifted tile and the open eaves of the southwest elevation.

The Site is in a rural and naturally dark area with minimal impacts from external lighting. The hedgerow network surrounding the Site extends throughout the local area, connecting to lines of trees, areas of woodland and watercourses, including the River Arrow and tributaries, providing high suitability commuting and foraging opportunities for local bat populations.

Bats - Bat Roost Surveys

The site was assessed as offering 'Low' Suitability for a bat roost due to limited features of a roof tiles and open eaves of the southwest elevation. Other features are present outside the proposed work area, in the form of gaps under ridge tiles and lead work. Based on the building inspection a single dusk survey was undertaken to determine presence/absence of a bat roost in the work area and inform likely absence and requirement for further survey effort.

Two surveyors were used, located at the south corner (1) and west corner (2) of the southwest elevation to observe the key features of interest.

Survey	Date	Start time / end time	Start/sunset/end temp	Weather
Dusk 1	19 th May 2022	20:45/ 22:30	12°C/11.8°C/10.7°C	80% cloud. Dry, light breeze.

Activity Survey (Dusk 1) 19th May 2022, sunset: 21:05

Time	Details	Species	No. Bats	Surveyor no.	Behaviour
21:00	Pass	Noctule <i>Noctalus noctula</i>	1	2	Call, not seen.
21:17	Pass	Common pipistrelle <i>Pipistrellus pipistrellus</i>	1	1	Flew low, from northeast elevation around gable towards hedgerow, east-south.
21:44	Pass	Common pipistrelle	1	2	Flew over the roof, across the garden east-west.
21:50	Pass	Common pipistrelle	1	1&2	From garden hedgerow, along southwest elevation to hedgerow and barns.
21:53	Pass	Common pipistrelle	2	2	Around surveyor, flying in garden/hedgerow.
22:04	Foraging	Common pipistrelle	1	2	Frequent foraging activity along hedgerow west of surveyor.

22:08	Pass	Common pipistrelle	1	1&2	From garden hedgerow, along southwest elevation to hedgerow and barns.
22:08	Pass	Noctule	1	1&2	Call, not seen.
22:12	Pass	Common pipistrelle	1	1	Call not seen,
22:17	Foraging	Common pipistrelle	1	2	Frequent foraging activity along hedgerow west of surveyor.

Summary: No emergence activity.

Frequent common pipistrelle foraging activity along the garden hedgerows near the surveyors.

Commuting flight lines across and around the farmhouse.

Anabat Express and Echo meter touch 2 recordings confirmed common pipistrelle and noctule calls. No additional species were recorded.

Amphibians and reptiles

The patio and compact gravel around the Site do not provide suitable shelter opportunities for amphibian or reptile species.

There is good habitat suitability and potential for common amphibian species to be present locally.

Birds

There are active house martin nests at the Site. There are three nests at the southeast gable, six at the northwest gable and 1 on the southwest extension gable.

There are active house sparrow nests under the open eaves of the southwest elevation.

The surrounding gardens and hedgerows provide suitable foraging and nesting habitats for common garden birds.

Other protected or priority species

No further habitats or features with potential for protected species were recorded by the survey.

Limitations

Desk Study

The desk study used OS map, aerial imagery, and field survey to aid identification of ponds in the local area. A precautionary approach has been taken for the impact assessment for amphibians. A low threshold is used to identify suitable habitat features to address potential impacts to amphibian species present in the local environment (within 500m) of the Site.

Field survey

The field surveys for a building inspection for bat roosts have no restrictions of timing within the year. A single site visit provides a single 'snap-shot' on which to base a preliminary ecological appraisal.

External inspections for evidence of bats can be strongly affected by detectability i.e., droppings washed away, or not visible from the point of inspection. Internal inspections are impacted from detectability to a lesser degree as field evidence can remain intact for much longer periods, if left undisturbed. To counter these limitations, the building inspection has a strong focus on identifying features and assessing the requirement for further survey based on the suitability of features for a bat roost (Collins, 2016).

For the field survey, access was gained to all internal and external features of the site using appropriate equipment.

For this Site, the limitations set out above have been taken into consideration in setting out appropriate further survey requirements.

6 Description of Proposed Works

Proposed works are to:

- Demolish the existing 1970's ground floor lean-to.
- Replace the 1970's lean-to with a ground floor extension with a larger footprint and increased roof height. The footprint will fall over existing patio/gravel.
- Construct a ground floor extension off the southeast gable. The extension will connect into the roof of the main house but will not interfere with the existing loft of the main house.
- No hedgerows or trees will be removed as part of the work.

7 Discussion

Designated Sites

The application site is within 70m of a watercourse, the River Arrow.

Potential pollution of a designated site is assessed as negligible due to distance and the localised nature of the work within the existing site footprint. The proposed works include demolition and construction works. Pollution prevention measures to prevent localised ground pollution will be required throughout the works.

To prevent localised ground pollution, it is recommended all construction works are conducted following pollution prevention measures informed by the Guidance for Pollution Prevention (GPPs) series:

- GPP 1: Understanding Your Environmental Responsibilities - good environmental practices (October 2020).
- PPG 6: Working at construction and demolition sites (2012) (PPG as not yet updated to a GPP).

As a minimum, the following measures are required: Fuel, oil, and chemical storage must be sited on an impervious base within a bund and secured. The base and bund must be impermeable to the stored substance by of an adequate capacity. Leaking or empty containers must be removed from the site immediately and disposed of in an appropriate manner. Any accumulation of fuel or chemicals in drip trays must be removed through appropriate disposal methods.

Risk of spilling fuel it at its greatest when refuelling plant. Where possible, refuel mobile plant in a designated area, preferably on an impermeable surface located away from drains or watercourses.

Bats

Southwest elevation extension: The proposed works will involve demolition of the 1970's lean-to with the proposed ground floor extension joining into the roof of the main house. The proposed roof will be located 1m below the existing main house ridge line. The extension will result in loss of a 4m section of open eaves on the main house and single lifted tile on the 1970's extension.

Southeast gable extension: The gable end extension will result in loss of the lower section of the gable wall. The proposed roof line will sit 1.5m below the base of the existing bargeboards.

Features offering suitable roost locations are limited to specific features within the work area of the southwest elevation. The Site is in a rural setting with high value habitat and good connectivity. Due to the

limited extent of suitable features in the work area, suitability for a bat roost was assessed as ‘Low’ suitability.

The dusk bat activity survey identified the likely absence of a roost within the roof tile and section of over-hanging eaves.

All bat species in the UK, including places of rest, are protected by law under The Conservation of Habitats and Species Regulations 2017. It is unlawful to demolish or disturb structures where a bat roost may be present or, obstruct access to a roost without first conducting sufficient surveys and mitigation. Where bats are known to roost and damage/loss of a roost and/or disturbance of bats will occur works must be carried out under an NRW development licence. Where surveys identify bats are likely absent, or in situations where works can proceed without disturbing bats or loss/damage to a roost site, an NRW development licence is not required.

The proposed works are for the replacement of a ground floor extension and construction of a new extension at the gable end. The proposed works will result in loss of a lifted tile and 4m of open eaves that the inspection identified as offering ‘Low’ suitability for a bat roost and bat activity survey identified as having likely absence of a bat roost.

The proposed extension off the southwest elevation will connect to the main house roof. The extensions construction will not connect into the main house loft.

Due to the presence of ‘Low’ suitability features within the work area reasonable avoidance measures will be used for bats during the construction process.

The building inspection and bat activity survey have found the likely absence of a bat roost within the tiles and open eaves of the work area. No further surveys are recommended. Avoidance measures are considered necessary for the proposed works.

A Natural Resources Wales development licence is not recommended for these works.

Amphibians and Reptiles

The proposed works are within the existing footprint and patio of the Site.

The proposed works will not result in impacts to amphibians and reptile species.

Birds

There are active house martin and house sparrow nests at the Site. The proposed works will result in loss of open eaves that are used by house sparrows. The existing nest is outside the work area.

Avoidance measures will be required for the construction process for nesting birds.

Summary

Feature/ Species	Further survey requirements
Bats: - Lifted tile and 4m of open eaves within work area. Survey indicates a bat roost is absent.	Absence of a bat roost in the ‘low’ suitability features of the roof tile and open eaves. Avoidance methods required. Work methods for the construction and timing of works.
Birds: - House sparrow using gaps in the open eaves.	Avoidance measures required. Timing of works.

Table 2: Summary table of avoidance measures.

8 Avoidance Measures

Pollution Prevention

To prevent localised ground pollution, it is recommended all site clearance and construction works are conducted following pollution prevention measures informed by the Guidance for Pollution Prevention (GPPs) series:

- GPP 1: Understanding Your Environmental Responsibilities - good environmental practices (October 2020)
- PPG 6: Working at construction and demolition sites (2012) (PPG as not yet updated to a GPP).

Bats

Timing of work: The following actions will be subject to timing restraints:

- Removal of roof tiles from the 1970's extension.
- Removal of roof tiles from the work area of the main house

These works will only be carried out between October-April inclusive. This period is outside the summer activity period for the bat species and will minimise potential for encountering a bat using the site on a sporadic basis.

Compliance: It is recommended that, following installation of the scheme, a report confirming compliance with the avoidance measures for bats, and adequate installation of the biodiversity enhancements set out in section 9 is submitted to the local planning authority.

Birds

Timing of work: Work to the open eaves and roof tiles against the eaves will only be carried out between September-January inclusive. This period is outside the nesting period for birds and will minimise potential for damage or disturbance of an active nest.

9 Biodiversity Enhancements

Locations of the biodiversity enhancements will be set out on proposed elevation plans. See Appendix I for approximate locations.

Wildlife boxes

- x2 integrated bat boxes - two woodcrete/ wood stone bat boxes integrated into the proposed extension gables. One fitted into the southeast gable and one fitted into the southwest gable. Both boxes to be located at the apex of each proposed gable. Suitable designs include Vivara Pro Build-in woodstone bat tube and PRO UK build-in Woodstone bat box.
- x1 sparrow terrace bird box - with a minimum of three chambers. Bird box to be fitted to either the northeast or northwest elevation of the house, under the eaves.
- x4 house martin nest cups - four nest cups or x2 double nest cup designs to be fitted to a northerly elevation, against a nest-free purlin or against the eaves. See the [installation guide](#) by House Martin Conservation UK & Ireland for further information on providing nest cups for house martins¹.

¹ House martin conservation UK & Ireland, Artificial nest cup installation guide: [HMCK-IE A5 Nest-cup-guide Leaflet 2021.pdf \(housemartinconservation.com\)](#)

10 References

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11 Appendix I: Biodiversity Enhancements



Figure 2: Southwest elevation and extension gable showing proposed bat box location (blue box).

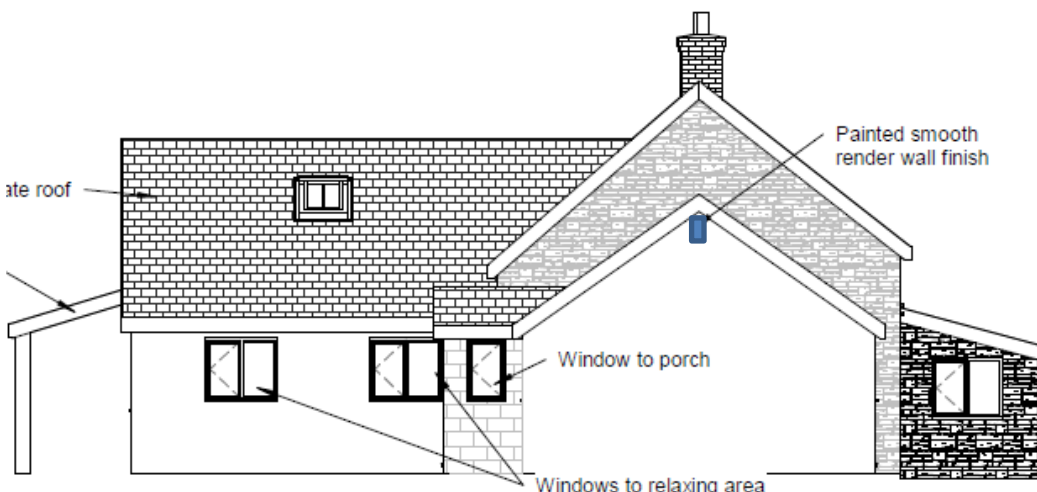


Figure 3: Southeast gable and extension gable showing proposed bat box location (blue box).