Report	:	Bat and Nesting Bird Assessment: House at No.26 Maesydre, Caersws SY17 5HX
Reference	:	LJ/2797/22.1
Date	:	15 August 2022
Client	:	Mr. J. & Mrs. L. Jandrell No.26 Maesydre Caersws SY17 5HX
Proposed development	:	Construction of a two storey extension

Disclaimer.

Declaration of compliance.

The information, data, evidence, advice and opinions which I have prepared and provided is true, and has been prepared and provided in accordance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct. I confirm that the opinions expressed are my true and professional bona fide opinions.
Dr R. M. Jones.

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Date: 15 August 2022

Bat and Nesting Bird Assessment:
House at No.26 Maesydre,
Caersws SY17 5HX.

1. Introduction

No.26 Maesydre is a domestic property situated within the north area of the small village of Caersws.

There is a proposal to extend the House within the No.26 Maesydre property.

Full details of the proposed development may be obtained from Mr. J. & Mrs. L. Jandrell.

The House is approximately 64m^2 (0.064 hectare) in size and stands at approximate National Grid Reference (NGR) 303355, 292245.

On 12 July 2022 the House was surveyed for:
a) the potential for Bats to roost on and/or in the House;
b) the potential for Small Breeding Birds to construct their nests on and/or in the House;
c) physical evidence of Bats and their roosts on and within the House; and,
d) physical evidence of nesting birds on the exterior and within the interior of the House.

The survey was carried out by Dr. R. M. Jones MCIEEM, Natural Resources Wales Bat Licensed surveyor S085628/1.

Surveyor attention was focused on the areas of the House to be structurally altered by the proposed development.

An assessment was made of the affect of the proposed development on Bats and nesting birds.
The survey/assessment has been carried out with regard to the following published guidance:
- 'Bat surveys for Professional Ecologists – Good Practice Guidelines'(1)
- the gov.uk website(2)
- BS42020:2013 'Biodiversity – Code of practice for planning and development'(3)

A photographic record of the Bat and Nesting Bird Assessment is provided in Appendix 1.

2. Legislation and Policy

2.1 Bat

All bat species (*Rhinolophidae* and *Vespertilionidae*) are protected under the Wildlife and Countryside Act 1981, the Countryside and Rights of Way Act 2000 and the Conservation of Habitats and Species Regulations 2017 (as amended).

Under the Conservation of Habitats and Species Regulations 2017 legislation it is illegal to:

- deliberately capture, injure or kill a bat;
- deliberately disturb bats. This includes in particular, disturbance in a way any such which is likely to (i) impair their ability to survive, breed or reproduce, or to rear or nurture their young; (ii) impair their ability to hibernate or migrate; or (iii) to affect significantly the local distribution or abundance of the species to which they belong;
- damage or destroy a breeding site or resting place of a bat;
- to be in possession or control, to keep, transport, to sell or exchange, or to offer for sale or exchange, any live or dead bat, or any part of, or anything derived from such a wild animal.

Under the Wildlife and Countryside Act 1981, it is illegal to:

- intentionally or recklessly disturb a bat while it is occupying a structure or place which it uses for shelter or protection.
- intentionally or recklessly obstruct access to any structure or place which a bat uses for shelter or protection.

A bat resting place may be a structure a bat uses for breeding, resting, shelter or protection. Resting place sites are protected whether or not bats are in occupation, as they may be re-used by bats.

Eight species of bat are listed as 'priority species' under Schedule 7 of the Environment (Wales) Act 2016.

A European Protected Species (EPS) Development Licence from Natural Resources Wales may be required for development works triggering Conservation of Habitats and Species Regulations 2017 offences against bats.

2.2 Nesting Bird

Nesting birds are protected by the Wildlife and Countryside Act 1981.
Under the Wildlife and Countryside Act 1981, all birds are protected while breeding. It is an offence, with certain exceptions to:

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird while it is in use or being built;
- intentionally take or destroy the egg of any wild bird.

3. Historical records of bat

A formal search of historical records of bat within the vicinity of the House was not commissioned.
Considering the nature, scale and location of the proposed development; the constraint of not carrying out an historical biodiversity record search is considered negligible.

The owners of No.26 Maesydre are not aware of bats roosting within the House.

4. House Description

The House forms the south-end of a terrace of recently (within the last 30 years, or-so) constructed houses. However, the height of the House roof structure is slightly (no more than 0.5m) higher than the roof structure of the adjoining house at the northwest.

Predominantly two-storey, the House is constructed of brick and concrete-block and has a composite inter-locking tile covered apex roof. Roof-slopes are underlined with bitumastic/hessian (1F) roofing felt.
The roof apex is covered with composite abutting ridge tiles bedded on mortar.

The roof structure overhangs gables and (gable) soffit boxes have been formed.
Mortared roof tile verges oversail the barge boards by approximately 30mm and are supported by composite board under-cloaking.
Eaves overhang and (eave) soffit boards have been formed.

A roof-space is present, roughly between eave-height and the underside of the ridge board. The roof structure has been formed with modern-type 'W' shape roof trusses, and the floor of the roof-space is lined with fibre-glass (or similar) quilt insulation and is partly boarded-out. The roof-space is used for the storage of various household items.

A small single-storey, enclosed, brick porch is present on the northeast elevation. The porch has a roofing-felt covered apex roof. Lead flashings are present between the roof structure and the abutting part of the northeast elevation wall of the main, two-storey, section. The gable and eaves of the porch are flush and closed. The porch has no roof-space.

5. Bat Assessment

5.1 Method

5.1.1 Bat roosting potential

The House was assessed for its potential to support bats and the type and number of bat roosts.

This involves consideration of a number of abiotic factors including:
- Access to the interior of the House
- Age
- Construction fabric
- Habitat context
- Light levels
- Previous use of, and activity within, the House
- Temperature regime and protection from weather

5.1.2 Physical evidence of bat occupation

The House was searched for the presence of bats and their roosts.
Search methods included the use of mirrors, torches (including a Fenix RC40 3800 lumen torch and a DeWalt DCL043 1000 lumen torch), binoculars (Zeiss 10x42), borescope (Visual Optics VO18 5.8mm Fibre Optic), fibrescope (Provision PV2636-21 5.8mm), video-scope (Draper 05163 Recording Flexi Inspection Camera), thermal imaging binoculars (Pulsar Accolade 2 LRF XP50 Pro Thermal Binocular (50Hz)), thermal imaging monocular (Zeiss DTI 3/25 Thermal Monocular), a night vision scope (Sytong HT-66 with infrared illuminator), a 3.8m Telescopic ladder, 4.1m Telescopic ladder, 8.15m Combination ladder, 3.6m Double Extending Roof Ladder; and combinations of these.

A search was also made for notable signs of past and/or present bat roost activity, including bat urine stains, fur oil stains, scratch marks and faeces. These may be found around a bat roost entrance, within a roost, and within flight/foraging areas.

The following list explains how the survey equipment was used to inspect the House:

- torches are portable battery powered (artificial) light emitting devices that were used to illuminate areas/features to aid the surveyor's inspection for physical evidence of bat.

- mirrors are portable reflective pieces of equipment that can aid the visual perception of features that may otherwise be inaccessible.

- binoculars are portable pieces of equipment that consist of two magnification telescopes, mounted side-by-side, and were used to aid the visual perception of distant and/or small objects.

- borescopes, fibrescopes and video-scopes are portable battery powered optical devices with flexible (light emitting) tubes that were used to aid the internal visual inspection - for physical evidence of bat - of small (structural) features and crevices that would otherwise be inaccessible.

- thermal imaging binoculars and monoculars are handheld electronic devices with an integrated visual display, designed for detecting heat energy, that were used to aid the external and internal visual inspection for bat presence.

- night vision binoculars, monoculars and (spotting) scopes are electro-optical devices that are used to detect visible and infrared energy and provide a visible image. The night vision scope was used to aid internal inspection for bat presence.

- a rigid ladder is a portable piece of equipment used for climbing up and/or down, which consists of two vertical stiles (bars) that are joined together by a series of horizontal rungs. Rigid ladders are self-supporting and may be leaned against (vertical) structures (such as walls) and/or on gradients (such as roof-slopes). The ladder was used to aid access to otherwise inaccessible spaces/features and therefore allow the close inspection of spaces/features for physical evidence of bat.

Combinations of survey equipment were used throughout the survey to enable the survey of spaces/features and inspections for physical evidence of bat.
For example; a surveyor used unaided visual perception from the ground to establish that there may be gaps between the lower edges of (roof apex) ridge tiles. The surveyor may then use binoculars and a torch to confirm or not, from the ground, if gaps are present and if these gaps are likely to provide bats with potential access to voids beneath the ridge tiles (i.e. within ridge tile voids - above the roof apex and beneath the undersides of ridge tiles).

5.1.3 Limitations

Considering the structural fabric of the House and the results of the survey (no evidence of bat found); it is not considered that there are any significant constraints on the survey.

5.2 Results

5.2.1 Weather conditions

The survey was carried out in bright and fine conditions with no breeze.

5.2.2 Potential for Bats

On the date of survey, the House was occupied by Mr. J. & Mrs. L. Jandrell and their family. The House is in a good and maintained structural condition and does not provide bat roost potential.

There is no potential bat access to the roof structure.
All roof tiles are intact, *in situ* and close-fitting and do not provide bat roost habitat.
All ridge tiles are intact, *in situ*, close-fitting and bedded on intact mortar and do not provide bat roost habitat.

There is no potential bat access to gable or eave wall-plates.
Gable and eave soffit boxes are intact, *in situ*, close-fitting and bedded on intact mortar and do not provide bat roost habitat.

There are no missing-mortar crevices, or similar, within external walls (in which bats may roost).

Exterior windows and window frames are intact.
Exterior doors and door frames are intact.

5.2.3 Physical evidence of Bats

No physical evidence of bat was found on the exterior of the House.
No physical evidence of bat was found within the House.

6. Nesting Bird Assessment

6.1 Method

The House was searched for the presence of bird nests.

6.2 Results

No evidence of bird nesting was found.

7. Conclusion

7.1 Bat

7.1.1 Survey results

The House does not provide bat roost habitat.

No physical evidence of bat was found on or within the House.

Bats do not impose a constraint on the proposed development.

It is not considered necessary for further bat survey work to be carried out to inform the proposed development.

It is not necessary for a European Protected Species Licence for bats to be issued by Natural Resources Wales to allow the proposed development to lawfully proceed.

7.1.2 Mitigation

Bats do not impose timing or work method constraints on the proposed development.

7.1.3 Enhancement

New bat roost opportunity may be installed during or after the proposed development.

External lighting that may be installed within the No.26 Maesydre property (as part of the proposed development) should be sensitive to bats.

Suggested enhancement measures for bats are contained in Appendix 2.

7.2 Nesting Bird

7.2.1 Survey results

No evidence of nesting bird was found.
However, it is possible that birds may nest on the exterior of the House in the future.

Should the proposed development receive approval; mitigation for Small Breeding Bird – provided in Section 7.2.2 - should be adhered to.

7.2.2 Mitigation

Ideally, development work should not be started between 1st March and 1st October (inclusive).

Should it not be possible to time development work to avoid disturbance to nesting birds, potential access points to bird nesting locations should be closed off with mesh or fabric barriers, in order to prevent birds from nesting.
Should it be required that development works commence between March and September, the House should be inspected by a suitably qualified ecologist for evidence of nesting birds.

No works may commence if birds have started to build, or if they already occupy, nests.

If birds start nesting on/within the House - prior to or during development work - delays will be inevitable up to the moment when the young birds leave the nest.

7.2.3 Compensation and Enhancement

In order to encourage small nesting birds to nest within the No.26 Maesydre property: it is recommended that woodcrete (or similar) purpose-made bird nest boxes be installed.

Ideally nest box placement and construction of nesting features should be undertaken outside the bird breeding season (March-September inclusive).
Nest boxes may be placed under the gables and eaves of the post-development House.
Ideally nest boxes should be positioned in areas of low future disturbance.

It is recommended that a minimum of:
a) two House Martin nest boxes (e.g. Schwegler House martin Nest 9A)
b) two Swift nest boxes (e.g. Schwegler No. 16 Swift box)
c) two Tit nest boxes (e.g. Schwegler 2M woodcrete bird box)

be installed within the No.26 Maesydre property (and/or within its vicinity) post-development.

8. **Relevant publications**

1: Collins, J. (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd ed., Bat Conservation Trust.

2: 'Bats: surveys and mitigation for development projects' (28 February 2022). United Kingdom Government Website: https://www.gov.uk/guidance/bats-surveys-and-mitigation-for-development-projects

3: BS42020:2013 'Biodiversity – Code of practice for planning and development.' British Standards Limited.

Appendix 1 – Assessment photographs

Photograph 1. Exterior.
Northeast elevation.

Photograph 2. Exterior.
Left and centre: part of the Southwest elevation.
Right: Southeast elevation.

Photograph 3. Interior.
View of part of the roof-space.
Looking southeast from northwest.

Appendix 2 – Enhancement for Bat

Bat roost boxes

In order to encourage bats to reside within the No.26 Maesydre property in the future: it is recommended that woodcrete (or similar) purpose-made bat roost boxes are installed.

Ideally Bat Boxes should be positioned in areas of low future disturbance and Bat Boxes should be installed more than 3m height above the ground.

Specially designed Bat Boxes are available that may be built into walls or encased by exterior weather boarding.
Recommended designs are the Schwegler 1FR and 2FR Bat Tubes which provide maintenance-free roosting opportunities, Ibstock Enclosed Bat Boxes and Wienerberger Habibat Bat Boxes.
These Bat Tubes and Boxes may be aesthetically unobtrusive if sympathetically integrated into the finished design of the proposed development.

It is recommended that a minimum of either:
- one Schwegler 1FF Bat Box;
  or,
- one Schwegler 1FD Bat Box (or similar alternatives)

is installed within the No.26 Maesydre property (and/or within its immediate vicinity) post-development.

Ridge tile bat roosts

Ridge tiles on the apex of the new extension roof may be permanently raised to potentially allow bats to roost on the underside of them.

It is recommended that a minimum of two ridge tile bat roosts be created during the development.

Purposely raised ridge tiles

Raised ridge tiles may be created by:
a) narrowing the gap between tiles and resting the middle tiles on their neighbours, or by packing the ends of tiles with an excess amount of mortar (or similar).

b) laying all ridge tiles onto a 20mm deep bed of mortar and at approximately every 1.5m, leaving gaps between 30 and 150mm without mortar. (A temporary support, such as a piece of roof tile, may be required to support ridge tiles until mortar has set).

c) securing ridge tiles on the roof with mortar placed on the inner lower half of the ends of ridge tiles only. The height of bat openings will be between 18mm and 22mm.

Where possible, fixing ridge tiles with mortar on their inner lower half only - rather than in the apex – would create long voids favoured by crevice dwelling bats.
It may be possible to avoid using any mortar at all.

Reclaimed and/or misshaped ridge tiles

Should re-claimed and/or misshaped ridge tiles be used during roofing work, it is possible that not all of the ridge tile will fit closely with roof tiles underneath them. Should these gaps be between approximately 12mm and 22mm in height – there is potential that crevice dwelling bats may use them to gain access to the undersides of ridge tiles. The 'natural' gap of misshaped ridge tiles may be exaggerated by packing with mortar and the undersides of the ridge tile should not be completely filled with mortar to provide a potential roosting space for bats.

Purpose-made ridge tile bat roosts

Purpose-made ridge tiles with bat-access openings are available commercially.
For example (only), the handmade 'bat access ridge tile' produced Tudor Roof Tile Co. Limited, Dengemarsh Road, Lydd, Kent, TN29 9JH.

External Lighting

In order to avoid any unnecessary disturbance to bats in the future, any external lighting to be installed should:

- use Light emitting diodes (LED) luminaries
- have a warm white spectrum <2700° Kelvin (degrees colour temperature)
- have peak wavelengths higher than 550nm
- be set on motion-sensors
- use short duration (e.g. one minute) timers
- not be in the vicinity of, or shine towards, bat roost openings
- not shine towards (the) roof structure(s)
- not be in the vicinity of, or shine towards, boundary vegetation