

kite ecology

Bat Surveys

**The Barn, North Bay View Terrace,
Dinas Cross, Pembrokeshire**

Final Report

July 2021

kite ecology

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Contents

1	Executive summary	3
2	Introduction and site description	3
3	Desk study and survey methodology	4
4	Baseline (results and findings)	6
5	Limitations to survey	8
6	Legislation and planning	9
7	Discussion and key recommendations	10
8	Conclusions	11
9	References	11

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This report, and the information contained in it, is intended to be valid for a maximum of 12 months from the date of the survey, providing no significant baseline changes have occurred.

Project number	Report number	Revision number	Date of issue
1883	002	Draft	24052021
1883	002	Final	12072021

1 Executive Summary

- 1.1 Bat surveys of a barn on land at North Bay Terrace View, Dinas Cross, Pembrokeshire were commissioned by Wales & West Housing, in relation to a planning application. Under the current proposals, the barn is to be converted as part of a larger housing development on the site.
- 1.2 A walkover survey of the site was originally completed by RDS Landscaping Solutions in March 2019 when the barn was identified as having bat potential, so requiring additional surveys. Based on this, a visual inspection was completed on 4th May 2021 when a static detector was deployed inside the barn, with an emergence survey completed on the evening of 7th May 2021 and a dawn survey on the morning of 24th May 2021. All surveys were completed by, or under the supervision of, suitably licensed and experienced ecologists.
- 1.3 No evidence of bats was found inside the barn and no bats were recorded emerging from it, returning to it, or within it during the static detector survey. All roof coverings are intact and the gable end walls are very well bedded down with no gaps externally and cobwebs along them internally. There is a single storey lean to on the northern gable end and there is a broken window between this and the main barn, so providing fly in opportunities giving the building night roosting potential, however, no bats were recorded during the static detector survey.
- 1.4 Small numbers of common pipistrelle, soprano pipistrelle and occasional noctule bats were recorded foraging along the boundary features of the field, but particularly to the north. Consideration must be given to external lighting. Enhancement measures will also be included in the scheme to provide roosting opportunities in the future.

2 Introduction and site description

2. Bat surveys of a barn on land at North Bay Terrace View, Dinas Cross, Pembrokeshire were commissioned by Wales & West Housing, in relation to a planning application. Under the current proposals, the barn is to be converted as part of a larger housing development on the site. The centre of the site is located at OSGR SMO1313894.
- 2.2 The survey relates to a single storey stone walled barn that has an unlined corrugated cement fibre roof. The gable ends are well bedded down with no gaps externally and cobwebs along them internally. Internally, the barn has been used as a stable with the floor covered in straw as well as a number of stored items. There are single storey lean to extensions on either gable end. The northern lean to has corrugated cement fibre walls and roof, while the southern lean to has brick walls, with a partially collapsed roof. The window on the northern gable end of the main barn has broken, so there is fly in access to the building.



Figure 1. Eastern aspect of the barn.

2.3 Unless the client indicates otherwise, all species records will be submitted to the relevant biological records centre.

3 Desk study and survey methodology

3.1 General

A walkover survey of the site was originally completed by RDS Landscaping Solutions in March 2019 when the barn was identified as having bat potential, so requiring additional surveys. Based on this, a visual inspection was completed on 4th May 2021 when a static detector was deployed inside the barn, with an emergence survey completed on the evening of 7th May 2021 and a dawn survey on the morning of 24th May 2021. The weather conditions during the surveys are summarised in Table 1. All surveys were undertaken by a suitably licensed ecologist who is a full member of the Chartered Institute of Ecology and Environmental Management and a Chartered Environmentalist. Surveys and reports have been completed following accepted guidelines and in accordance with CIEEM Guidelines for Ecological Report Writing (2015) and BS 42020:2013 *Biodiversity. Code of practice for planning and development.* (2013).

Table 1. Summary of weather conditions during the surveys

Date	Type of survey	Wind speed	Wind direction	Temperature	Cloud cover	Other
04.05.2021	Visual	3	North westerly	11°C	30%	-
07.05.2021	Emergence	2-3	North westerly	11°C	30%	-
04/05.05.2021	Static	4	North westerly	7°C	50%	Occasional heavy shower
05/06.05.2021	Static	3-4	North westerly	6°C	50%	-
06/07/05.2021	Static	4	North	6°C	40%	-
07/08.05.2021	Static	3	North westerly	8°C	100%	Heavy showers
08/09.05.2021	Static	4	South easterly	11°C	100%	-
24.05.2021	Dawn	1	South westerly	12°C	50%	Occasional shower overnight

3.2 Desk study

3.2.1 Local Records Centre Data Search

A data search was not commissioned in this instance due to the experience and local knowledge of Kite Ecology in this particular area.

3.2.2 Aerial photographs

Google Earth was used to identify any important landscape features surrounding the site.

3.2.3 Designated sites

The Multi-Agency Geographic Information website (www.magic.gov.uk) was used to identify the presence of any protected sites within 2km of the survey area.

3.3 On site surveys

3.3.1 Bats

3.3.3.1 *Visual inspection*

An initial internal inspection of the buildings was undertaken using a ladder and powerful torch. Binoculars, a LUX meter and an endoscope were also available. The buildings were searched thoroughly for any signs of bats including droppings, feeding remains, staining and the bats themselves. Any potential bat access points were also recorded. Following this initial inspection, an emergence survey was carried out.

3.3.3.2 *Emergence survey*

During this, the surveyor using an Echometer Touch Pro bat detector, monitored potential bat access points identified during the initial inspection for emerging bats. The survey commenced 15 minutes before sunset and continued for over an hour after sunset.

3.3.3.3 *Static detector survey*

An Anabat Express was deployed inside the barn from 4th – 9th May 2021. The detector was positioned in such a way that only calls inside the barn were recorded (positioned facing away from windows and doors). Any calls were analysed using Analook software.

3.3.3.4 *Dawn survey*

During this, the surveyor using an Echometer Touch Pro bat detector monitoring the building for returning bats. The survey commenced two hours before sunrise and continued until sunrise itself, or for 10 minutes after the last bat was recorded depending on which was later.

3.3.2 Other species

Incidental records of any other species seen or heard on site during the survey were also recorded.

4 Results

4.1 Desk study

4.1.1 Aerial photographs

Positioned centrally in the linear village of Dinas Cross, the barn is situated to the west of a semi-improved grassland field with hedgerows on all elevations. The hedgerow adjacent to the barn was classed as defunct in the original RDS Landscaping Solutions Ecological Appraisal dated 2019. The barn is adjacent to the western hedgerow of the field, with neighbouring houses and gardens to the west. The surrounding habitats can be seen in Figure 2.



Figure 2. Aerial photograph of the site in relation to the surrounding landscape and habitats.

4.1.2 Designated sites

At its closest point, the site is 870m to the south of the Cwm Dewi Site of Special Scientific Interest and 1.2km to the south west of the West Wales Marine Special Area of Conservation.

4.2 On site surveys

4.2.1 Bats

4.2.1.1 Visual inspection

No evidence of bats was found either internally or externally. All roof coverings are intact and as there are windows on the northern, southern and western elevation, there was an internal LUX reading of 35. A summary of LUX levels is described in Table 2, with the level recorded inside the barn highlighted in red. The gable end walls are very well bedded down with no gaps externally and cobwebs along them internally (Figure 3). The window on the northern gable end of the main barn has broken, so there is fly in access to the building (Figure 4). All sections of the building were accessible and had not been cleaned prior to the survey being completed.

Table 2. Chart of example lux levels (taken from Bats and artificial lighting in the UK).

Lighting conditions	Lux levels
British sunshine	50,000
Overcast sky	5,000
Well lit office	500
Minimum for easy reading	300
Passageway or outside working area	50
Good main road lighting	5-20
Sunset	10
Typical road lighting	5
Minimum security lighting	2
Twilight	1
Clear full moon	0.25 to <1
Typical moonlight/cloudy sky	0.1
Typical starlight	0.001
Poor starlight	0.0001



Figure 3. Internal view of the southern gable end of the barn.



Figure 4. Internal view of the barn with the broken window on the northern gable end highlighted.

4.2.1.2 Emergence survey

Small numbers of common pipistrelle, soprano pipistrelle and occasional noctule bats were recorded foraging along the boundary features of the field, but particularly to the north. The bats were recorded over 25 minutes after sunset.

4.2.1.3 Static detector survey

No bat activity was recorded during the static detector survey.

4.2.1.4 Dawn survey

No bats were recorded re-entering the barn. As with the emergence survey, several passes of common pipistrelle and soprano pipistrelle were recorded foraging around the field.

4.2.2 Other species

No other species were recorded using the barn. During the 2019 survey by RDS Landscaping Solutions, stands of Japanese knotweed *Fallopia japonica* were identified to the north and south of the barn. Since 2019, these stands appear to have undergone treatment.

5 Limitations to surveys

5.1 The results and recommendations of the report are based on findings as they were at the time of the survey. Kite Ecology cannot be held responsible for any base line changes to the site that have occurred since the survey was carried out that may have any effect on the results and recommendations.

6 Legislation and planning policy

6.1 Designated sites

Special Areas of Conservation and Sites of Special Scientific Interest are strictly protected through the Conservation of Habitats and Species Regulations 2017.

6.2 Bats

All species of bat and their breeding sites or resting places (roosts) are protected under the Conservation of Habitats and Species Regulations 2017 which transcribes the EC Habitats Directive (Council Directive 92/43/EEC on the conservation of natural habitats and wild flora and fauna) into UK law. Bats are also protected under Section 9 of the Wildlife and Countryside Act 1981 (as amended). It is an offence for anyone intentionally to kill, injure or handle a bat, to possess a bat (whether live or dead), disturb a roosting bat, or sell or offer a bat for sale without a licence. It is also an offence to damage, destroy or obstruct access to any place used by bats for shelter, whether they are present or not. Licences are available from Natural Resources Wales to allow actions that would otherwise be unlawful.

6.3 Well Being of Future Generations (Wales) Act 2015

The Well-being of Future Generations (Wales) Act is about improving the social, economic, environmental and cultural well-being of Wales. The Act places a duty on public bodies listed in the Act to carry out sustainable development.

6.4 Environment (Wales) Act 2016

The Environment (Wales) Act has been designed to complement the Wellbeing of Future Generations (Wales) Act by applying the principles of sustainable development to the management of Wales' natural resources. The Act puts the ecosystem approach into statute through a set of Sustainable Management of Natural Resources (SMNR) principles, which are based on the 12 principles (Ecosystem Approach principles) contained in the UN Convention on Biological Diversity (CBD).

6.5 Natural Environment and Rural Communities Act 2006

Section 40 of the NERC Act places a 'Biodiversity Duty' on local planning authorities as far as is consistent with the proper exercise of their functions.

6.6 Technical Advice Notes 5

TAN 5 gives advice to local authorities on development control issues for Special Protection Areas (SPAs), Special Areas of Conservation (SACs), and Sites of Special Scientific Interest (SSSIs). It also covers the selection and designation of non-statutory nature conservation sites, such as local nature reserves, and the protection of species, commons and greens.

6.7 Local Development Plan

Policy GN.37 (Protection and Enhancement of Biodiversity) from the Pembrokeshire Local Development Plan states:

'All development should demonstrate a positive approach to maintaining and, where ever possible, enhancing biodiversity. Development that would disturb or otherwise harm protected species or their habitats, or the integrity of other habitats, sites or features of importance to wildlife and

individual species, will only be permitted in exceptional circumstances where the effects are minimised or mitigated through careful design, work scheduling or other appropriate measures.'

6.8 Additional Regulations

Local Authorities also have a duty under Regulation 9 (Parts 1 and 5) of the Habitat Regulations to have regard for the requirements of the Habitat Directive which includes a requirement to maintain the populations of Protected Species in a 'favourable Conservation Status'.

7 Discussion and key recommendations

7.1 Designated sites

The re-development of the barn is unlikely to impact on the designated sites as it is adjacent to existing residential properties and as such will make use of existing utilities.

7.2 Bats

7.2.1 While no bats were recorded using the building, given that there are a high number of bat records in the area (pers comm), initial works will be completed following the precautionary principle set out in 7.2.2.

7.2.2 *Precautionary principle*

All contractors involved in the scheme must be made aware of the potential for bats on site and a copy of this report made available to them for reference purposes. Initial works to strip the roof on the existing building to allow the replacement of the roof will be carried out by hand. All roof coverings will be lifted (not rolled) by hand and checked on the underside prior to disposal/stacking to ensure that no bats are clinging to the underside. Particular care will be taken when removing roof coverings along the gable ends, wall plates and ridges as these are areas particularly favoured by roosting bats. Fascia's and weatherboards will also be carefully removed by hand. Should a bat be encountered then all work in that area must stop immediately and advice be sought from either Kite Ecology or Natural Resources Wales on how to proceed.

7.2.3 *Enhancements*

To enhance the roosting opportunities on site, a bat box will be included in the scheme. In this instance, a Beaumaris woodstone bat box or similar design would be most appropriate as these are flat backed to fit against buildings. Bat boxes should be sited as high up on a building as possible but, avoid being positioned over windows or doors. An example is shown in Figure 5.



Figure 5. Example of a Beaumaris woodstone bat box.

7.2.3 Lighting

As bats are in the area, any new external lighting should be hooded, downward facing and positioned to avoid shining directly onto the features such as woodland edges and hedgerows. The lighting should also be PIR sensitive LED type which have a much more directional lighting range. An example is shown in Figure 6.



Figure 6. Example of different PIR LED lighting.

7.2.4 Note to client and architect

All enhancement measures must be clearly marked up on plans submitted as part of the planning application.

8 Conclusions

Although no bats were recorded using the building, as there are bats in the area, the re-development of the barn will be used as an opportunity to enhance the site for roosting bats by including roosting opportunities in the scheme.

9 References

Bat Conservation Trust (2016). Bat Surveys for Professional Ecologists: Good Practice Guidelines. 3rd Edition. Bat Conservation Trust, London.

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