

BAT SURVEY REPORT

**BOVERTON HOUSE, BULWARK ROAD,
BULWARK, CHEPSTOW, NP16 5JE**

for

BMJ INTERNATIONAL

Focus Environmental Consultants

Unit 2

Ball Mill Top Business Park

Worcester

WR2 6PD

Email: quotes@focus-enviro.com

Tel. 01905 780700

CONTROL SHEET

BMJ International
Boverton House, Bulwark Road, Bulwark, Chepstow, NP16 5JE
Bat Survey Report

	Name	Position
Author	Natalie Walsh	Senior Ecologist

Contract No.	Project Contact	Revision No.	Date of Issue
2342	Natalie Walsh	01	22 September 2021
2342	Natalie Walsh	02	17 March 2022

Disclaimer

Focus Environmental Consultants® is the trading name of Focus Ecology Limited. Please Note that all reasonable care and attention is made by Focus Environmental Consultants to produce reports and advice to a high, professional standard. However, no responsibility is accepted for any consequences howsoever caused, by the release of this report to third-parties. Focus Environmental Consultants operates a bespoke Quality Assurance System in order to maintain the high standards of report writing that our clients and peers expect. Completed reports are appraised using a detailed Quality Assurance Checklist focussing not just on grammar and formatting but also sense and scientific argument before they are issued. The reports of all staff are quality-assessed on a prescribed, regular basis to ensure that these high standards are maintained.

Template Version: V2 (January 2021)

TABLE OF CONTENTS

CONTROL SHEET 1

1. RECOMMENDATIONS 3

2. SUMMARY OF RESULTS 5

3. DISCUSSION & CONCLUSIONS 7

 3.1 Interpretation of Results 7

 3.2 Predicted Impact in Absence of Mitigation 8

 3.3 Predicted Scale of Impact 9

 3.4 Compliance with Three Licensing Tests 9

4. ANNEXES 10

 4.1 Photographs 11

 4.2 Survey Data 12

 4.3 Plans 14

 4.4 Survey Objectives 18

 4.5 Limitations 18

 4.6 Methods & Parameters 18

 4.7 Background Data 20

 4.8 References & Bibliography 22

 4.9 Bat Ecology & Legislation 24

5. QUALIFICATIONS & EXPERIENCE 27

1. RECOMMENDATIONS

Boverton House has been confirmed as an active bat roost for a small number of common pipistrelle bats. Current proposals will retain the roosts *in situ*. The following recommendations are made to ensure compliance with wildlife legislation, government guidance and best practice.

1. A detailed Reasonable Avoidance Measures (RAMs) Method Statement of works must be produced and implemented by a suitably qualified (bat-licensed) ecologist to demonstrate due diligence and legal compliance during the development works proposed at Boverton House. The report will provide details on the following:
 - Timing (e.g. works in vicinity to the existing roosts should ideally be carried out between September and April, inclusive, to avoid disturbing bats when they are most likely to be utilising summer roosts (Mitchell-Jones, 2004)), appropriate weather conditions and sensitive operations requiring direct supervision by a licensed ecologist (such as the removal of tiles).
 - Pre-start dusk or dawn survey immediately preceding the start of works to identify any changes in roost status and bat activity.
 - Appropriate compensation and enhancement measures.
 - Strict plan of action if roosting bats are unexpectedly discovered or suspected during works.

Notes:

- i. **In the event that roosting bats are discovered within the areas to be impacted on by the proposals, works must cease immediately and the appointed ecologist be contacted. They will liaise with Natural Resources Wales (as required) and advise on any licensing requirements to allow lawful completion of the work.**
- ii. **If proposals change and the roosts identified are to be directly impacted upon by the proposed development, a bat mitigation**

(development) licence from Natural Resources Wales will be required for the works.

2. A sensitive scheme of artificial night-lighting to prevent unnecessary illumination of the identified bat roosts within the property, as well as adjacent wildlife habitats (e.g. hedgerows, mature trees etc.), must be implemented on site. Lighting must be low-level and of the minimum wattage, as recommended by the Bat Conservation Trust & Institute of Lighting Professionals (2018). PIR motion-sensitive lights are beneficial to ensure that lights do not remain active when not required.
3. In line with Government policy on biodiversity, the following opportunities to compensate for development impacts and enhance the site for bats should be realised:
 - Installation of at least two in-built or wall-mounted bat boxes, suitable for crevice-dwelling species (e.g. Schwegler Wall-mounted Bat Shelter, Ibstock Enclosed Bat Box Unit, Low Profile Woodstone Bat Box or Eco Kent Bat Box), within the post-development site. Boxes should be installed on / within existing or newly built structures, at least 4m above ground-level, and not placed above windows. Alternatively, access tiles (ridge and / or slope) could be incorporated into the roofs of newly built structures during the works. Access tiles must be underlain with a traditional bitumastic-type felt suitable for use by bats due to the well-publicised danger that breathable membranes pose to roosting bats (Waring *et al.*, 2013).
4. This report is deemed valid for 12 months. Should any development work commence after this time has elapsed an update survey will be required to determine the status of the site during the intervening period.
5. The Preliminary Ecological Appraisal (Focus Environmental Consultants, 2021) for the site should be referred to for other recommendations.

2. SUMMARY OF RESULTS

1. Development proposals are for retention and conversion of Boverton House in its current form with alterations to the roof including: three new dormer windows, a large flat roof dormer to the main house and six new roof lights within one of the extensions to the north. A new apartment block will also be constructed in the south of the site with a new car parking area to the east. Focus Environmental Consultants have been appointed by BMJ International to provide advice on the potential impact of the proposals upon bats and make recommendations as appropriate to ensure compliance with wildlife legislation and recognised best practice.
2. A Preliminary Ecological Appraisal (including Preliminary Roost Assessment) of Boverton House, Bulwark Road, Bulwark, Chepstow, Monmouthshire (centred on Ordnance Survey grid reference ST 53090 93371), was undertaken on the 19 August 2021 (Focus Environmental Consultants, 2021).
3. The survey site is c.0.35ha in size and comprises a large, detached property ('Boverton House') set within substantial grounds, located in the south of Chepstow. Boverton House is a three-storey, stone and brick-built building with a cellar level and a multi-pitched slate-tiled roof, built in the late 19th century. Modern extensions have been added to the property, including two single-storey extensions to the north and a three-storey lift tower to the south, which were added to facilitate the properties use as a community and education centre until its closure in 2016. In front of the property and to the south is a tarmac car park. The surrounding grounds comprise expanses of lawn, with ornamental shrub planting and semi-mature - mature trees around the perimeters. Some areas of the ornamental shrub planting have been previously cut back / cleared, leaving areas of bare ground with short ruderal / ephemeral vegetation, scattered scrub and remnant shrubs.
4. Boverton House has previously been the subject of bat surveys (daytime and nocturnal) in 2014 and 2017. These surveys recorded the presence of summer day roosts for small numbers of common pipistrelle bats within the roof structure

of the building. Please refer to the Ecological Survey Report (Just Mammals Consultancy LLP, 2017) for full details of these surveys.

5. Given the time elapsed since the initial surveys, and suitability of the building for bats, update bat surveys were commissioned to identify any changes to the roost status at the site and provide up to date information to support the planning application and a bat mitigation (development) licence (where required), and design appropriate mitigation and compensation. Boverton House was classified as having 'moderate' suitability for bats (with reference to published guidelines (Collins, 2016)) during the update Preliminary Roost Assessment (Focus Environmental Consultants, 2021).
6. One pre-dawn return and one dusk emergence survey was undertaken of the building on the 26 August and 14 September 2021 respectively, by five experienced and / or appropriately licensed surveyors.
7. The surveys have confirmed the presence of summer day roosts within Boverton House used by small numbers of common pipistrelle bats.
8. Bat foraging and commuting activity was observed on site during all of the surveys. The following bat species were recorded on / passing through the site; common pipistrelle, soprano pipistrelle, brown long-eared bat, *Myotis* sp. and noctule.

3. DISCUSSION & CONCLUSIONS

3.1 Interpretation of Results

The bat activity surveys carried out at Boverton House have confirmed the presence of summer day roosts used by small numbers of common pipistrelle bats. The bats were observed emerging / returning to roost under barge boarding on a west-facing gable elevation (peak count: 3 bats) and east-facing gable elevation (peak count: 1 bat). These results are consistent with previous bat survey work carried out at the site in 2014 and 2017 (Just Mammals Consultancy LLP, 2017).

No evidence of a large or significant roost of bats (e.g. maternity roost) has been recorded during any of the surveys completed at the site. There is no evidence to suggest that the structure is being used during the winter period for hibernation.

Taking the results collectively and applying the guidelines of Natural England (endorsed by Natural Resources Wales) (see Mitchell-Jones, 2004, p 39 Figure 4) the conservation significance of the identified roost within Boverton House is **low** based on the presence of '*small numbers of non-breeding common species. Not a maternity site*' (common pipistrelle).

The site lies within 1km of the Wye Valley Woodlands / Coetiroedd Dyffryn Gwy Special Areas of Conservation (SAC), where the Annex II species lesser horseshoe bat is a qualifying feature. This means the site falls within the Core Sustainance Zone (CSZ) for lesser horseshoe bats utilising the roosts within this SAC. The CSZ for lesser horseshoe bats is habitat within 2km of the roost site (Collins, 2016). The site is also situated within the 3km maternity buffer for the lesser horseshoe bat and 3km hibernation buffer for the greater horseshoe bat in relation to the Wye Valley and Forest of Dean Bat Sites / Safleoedd Ystlumod Dyffryn Gwy a Fforest y Ddena SAC (Forest of Dean District Council, 2021). Based on the collective nocturnal data for the site (2014, 2017 and 2021 surveys), no evidence has been recorded to suggest that Boverton House is used by lesser horseshoe or greater horseshoe bats. Furthermore, neither of these species have been recorded foraging or passing through the site during the suite of bat surveys. Please refer to the Preliminary Ecological Appraisal (Focus Environmental Consultants, 2021) for further details on the SACs.

3.2 Predicted Impact in Absence of Mitigation

The proposals are for residential development of the site. This will involve alterations to the existing roof of Boverton House and the associated extensions, as well as internal and external works to convert the building into residential accommodation.

Short-term impacts: the proposals aim to '*retain the gables in their present condition*', although roof works will be necessary to incorporate in new dormer windows and roof lights. As such, no direct short-term impacts on bat species at the site (e.g. through killing/injuring of individual bats, physical disturbance) are predicted. However, in the absence of mitigation, the proposed works do have the potential to cause associated indirect impacts (e.g. noise, dust, vibration) on bats utilising the property as a roost site at the time of the work.

Long-term impacts: no direct long-term impacts on bat species roosting at the site (e.g. destruction / damage to a roost) are predicted.

During the nocturnal surveys, bat activity was concentrated along the boundary vegetation. Based on the current scheme, the mature trees and shrubs on site will be retained, and the proposals will likely result in only minor loss of foraging habitat for bats through removal of neglected ornamental shrubs and scrub. Therefore, the proposed development is not considered likely to result in the severance or isolation of bat foraging or commuting habitats through removal of vegetation.

There is likely to be an increase in artificial night-lighting at the post-development site over the existing baseline, generated by proposed new dwellings. In the absence of mitigation, an insensitive scheme of lighting has the potential to disturb bats roosting within the property and using the site for foraging and commuting, specifically species less tolerant to light such as brown long-eared bats, through the illumination of vegetated habitats.

Taken collectively, in the absence of mitigation and based on the survey results obtained, the impact of the proposed works on the bat species presently roosting within Boverton House is **low** (see page 37 of Mitchell-Jones, 2004 and Natural England and DEFRA's Standing Advice (Natural England & DEFRA, 2015)). This

assessment is based on '*post-development interference*' / '*modified management, such as changes to light, temperature or noise which will affect bats*'.

3.3 Predicted Scale of Impact

Based on the information collected during nocturnal surveys carried out at the site and current proposals supplied by the client (Proposed Roof Plan (produced by Childs & Sulzmann Architects), the proposed works will not be impacting directly upon the bat roosts identified within the property.

The predicted scale of impact will be reduced by undertaking the works under the auspices of a specific Reasonable Avoidance Measures (RAMs) Method Statement and implementation of a sensitive lighting scheme during the works and within the post-development site to minimise / avoid indirect impacts upon bats roosting within the property (see recommendations, above).

3.4 Compliance with Three Licensing Tests

It is the opinion of the author of this report that based on the current proposals, providing that the development is carried out in strict accordance with a written Method Statement (as recommended), the proposed works are considered highly unlikely to impact upon the 'favourable conservation status test' of bat species at the site or give rise to any offence under the relevant legislation (Wildlife and Countryside Act 1981; The Conservation of Habitats and Species Regulations 2017) that would otherwise require a licence from Natural Resources Wales.

4. ANNEXES

4.1 Photographs

4.2 Survey Data

4.3 Plans

4.4 Survey Objectives

4.5 Limitations

4.6 Methods & Parameters

4.7 Background Data

4.8 References & Bibliography

4.9 Bat Ecology & Legislation

4.1 Photographs

All photographs taken on the 19 August 2021



Plate 1: front view of Boverton House. Photograph looking north-west.

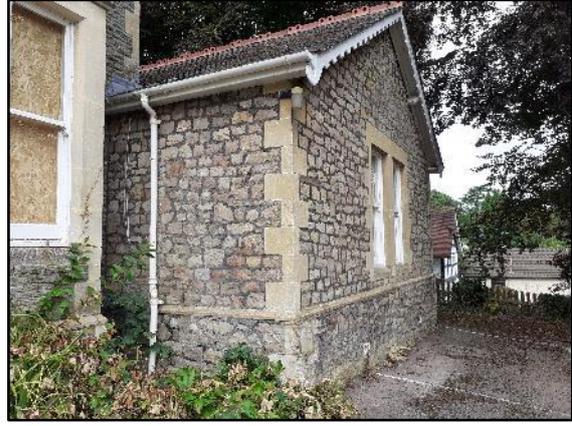


Plate 2: view of the eastern-most northern extension to Boverton House. Photograph looking north-west.



Plate 3: view of the western-most northern extension to Boverton House. Photograph looking south-west.



Plate 4: showing a view to the rear of Boverton House. Photograph looking north.



Plate 5: view within the cellar of Boverton House.

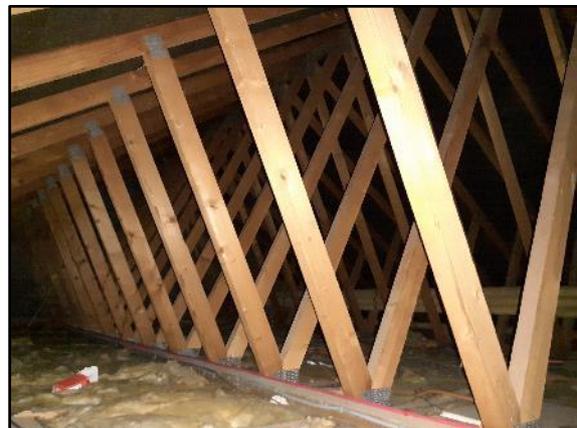


Plate 6: typical view within one of the loft voids of the extensions to Boverton House.

4.2 Survey Data

4.2.1 Nocturnal Surveys

A brief summary of the results of each nocturnal survey is provided below. Field survey recording sheets are held by Focus Environmental Consultants and are available on request.

Pre-dawn Return Survey (25 August 2021):

Surveyor 1 was positioned to the east of the property.

Surveyor 2 was located to the south-east of the property.

Surveyor 3 was situated to the south-west of the property.

Surveyor 4 was located to the west of the property.

Surveyor 5 was situated to the north of the property.

The survey started at 04:47. The first bat recorded was a soprano pipistrelle, observed foraging to the west of the property at 04:44. At 05:51 a common pipistrelle bat was observed returning to roost near the base of the barge board on a west-facing gable elevation. At 05:52, a second common pipistrelle bat was observed returning to roost within this same location. At 05:58 a common pipistrelle bat was recorded returning to roost near the top of the barge board of this same gable elevation. Foraging activity by common pipistrelle bats was frequently recorded throughout the survey and was concentrated around the boundary trees and shrubs. A small number of passes by soprano pipistrelle, noctule, brown long-eared bat and *Myotis* sp. bats were also recorded. The survey ended at 06:27.

Dawn Survey Count:

Common pipistrelle: 3

Dusk Emergence Survey (14 September 2021):

Surveyor 1 was positioned to the east of the property.

Surveyor 2 was located to the south-east of the property.

Surveyor 3 was situated to the south-west of the property.

Surveyor 4 was located to the west of the property.

Surveyor 5 was situated to the north of the property.

The survey started at 19:13. The first bat recorded was a common pipistrelle, observed emerging from near the base of the barge board on a west-facing gable elevation at 19:45. A second common pipistrelle bat was observed emerging from this same location at 19:49. At 19:48 a common pipistrelle bat was observed emerging from under the barge board on an east-facing gable elevation. Bat activity was predominantly from common pipistrelle bats and concentrated around the boundary trees and shrubs. *Myotis* sp., brown long-eared bat, soprano pipistrelle and noctule bats were also recorded. The survey ended at 20:58.

Dusk Survey Count:

Common pipistrelle: 3

4.3 Plans

Plans:

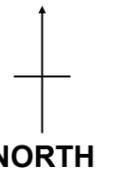
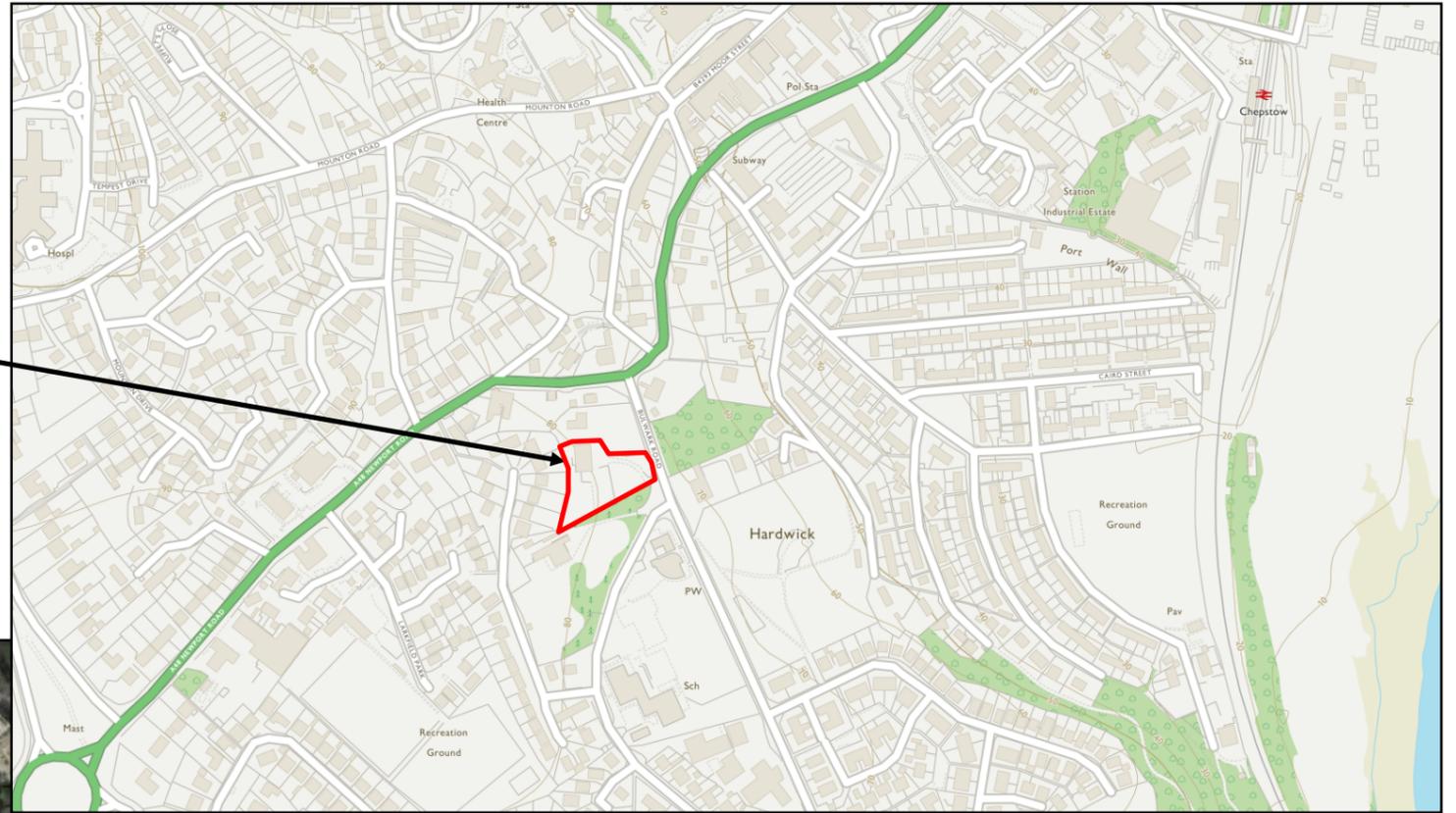
4.3.1 Location Plan

4.3.2 Pre-dawn Return Survey Plan (25 August 2021)

4.3.3 Dusk Emergence Survey Plan (14 September 2021)

4.3.1. Location Plan

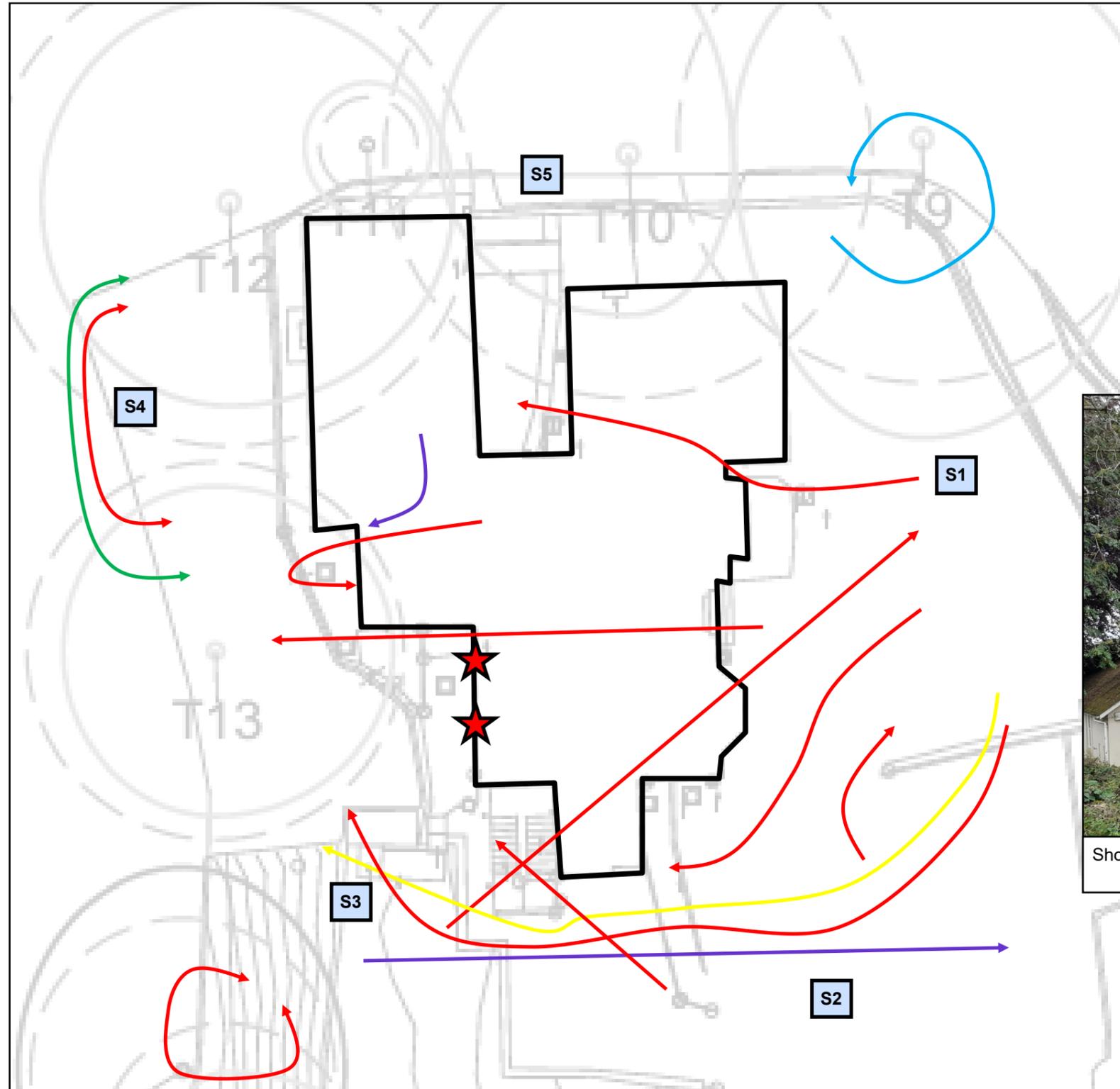
Site



Client: BMJ International
Site: Boverton House, Bulwark Road, Bulwark, Chepstow, NP16 5JE
Title: Location Plan
Contract: 2342
Date: March 2022

Contains Ordnance Survey data © Crown copyright and database right 2015. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Please note: this plan is intended only to indicate the approximate location of features and should therefore, not be treated as an accurate scale plan.

4.3.2. Pre-dawn Return Survey Plan (25 August 2021)



KEY:

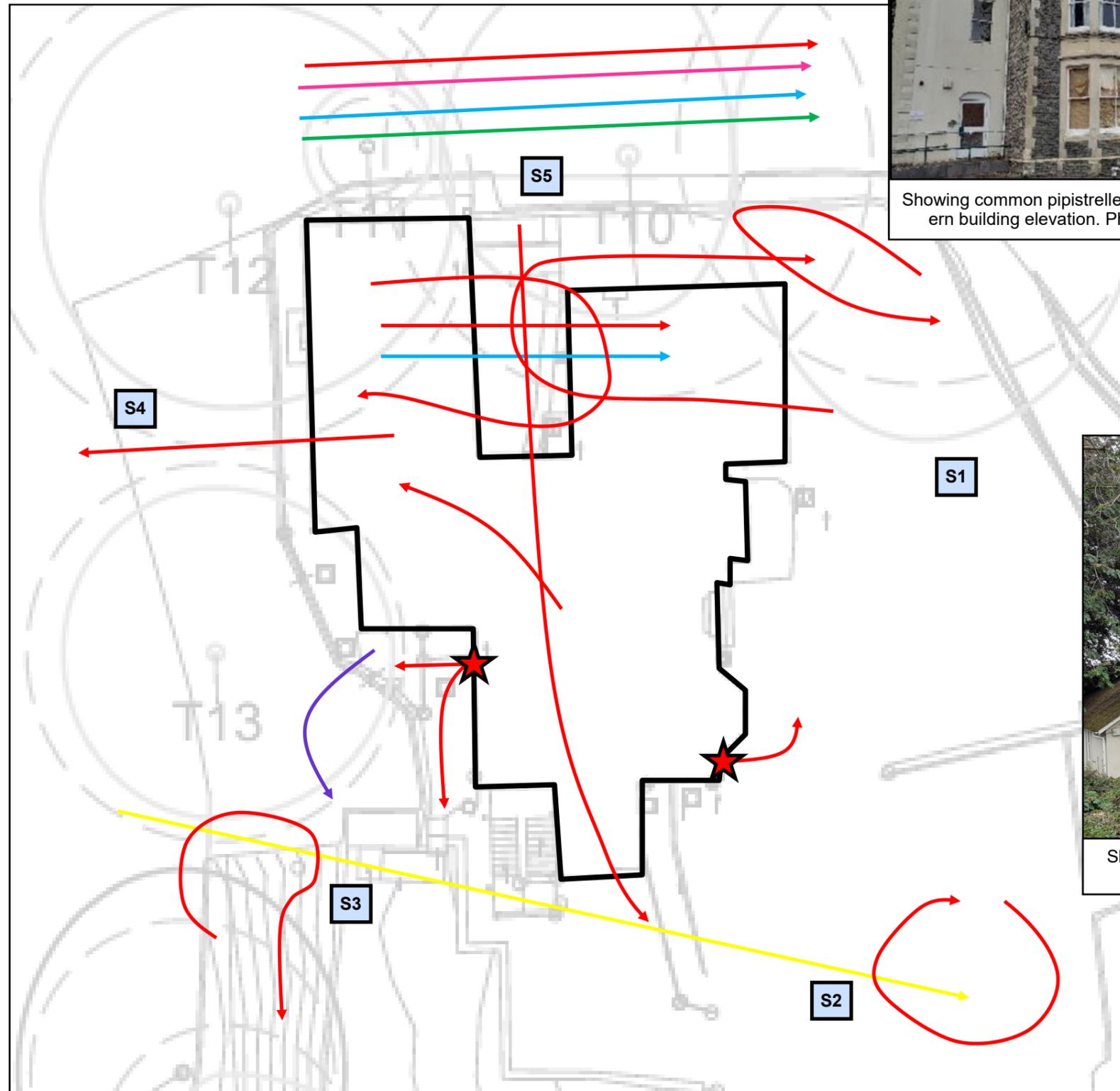
- Building subject to nocturnal survey
- S# Surveyor location
- Common pipistrelle (45 kHz) activity
- Soprano pipistrelle (55 kHz) activity
- Noctule activity
- *Myotis* sp. bat activity
- Non-echolocating bat activity
- ★ Common pipistrelle (45kHz) re-entry point



Client: BMJ International
Site: Boverton House, Bulwark Road, Bulwark, Chepstow, NP16 5JE
Title: Pre-dawn Return Survey Plan
Contract: 2342
Date: 25 August 2021

Contains Ordnance Survey data © Crown copyright and database right 2015. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Please note: this plan is intended only to indicate the approximate location of features and should therefore, not be treated as an accurate scale plan.

4.3.3. Dusk Emergence Survey Plan (14 September 2021)



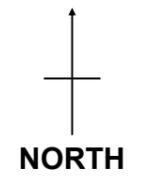
Showing common pipistrelle roosting locations. View of eastern building elevation. Photograph looking north-west.



Showing common pipistrelle roosting locations. View of western building elevation. Photograph looking north-east.

KEY:

- Building subject to nocturnal survey
- Surveyor location
- Common pipistrelle (45 kHz) activity
- Soprano pipistrelle (55 kHz) activity
- Brown long-eared bat activity
- Myotis* sp. bat activity
- Non-echolocating bat activity
- Noctule activity
- Common pipistrelle (45 kHz) emergence point



Client: BMJ International
Site: Boverton House, Bulwark Road, Bulwark, Chepstow, NP16 5JE
Title: Dusk Emergence Survey Plan
Contract: 2342
Date: 14 September 2021

Contains Ordnance Survey data © Crown copyright and database right 2015. Unauthorised reproduction infringes Crown Copyright and may lead to prosecution or civil proceedings. Please note: this plan is intended only to indicate the approximate location of features and should therefore, not be treated as an accurate scale plan.

4.4 Survey Objectives

The objectives of the survey were:

- to carry out nocturnal bat roost surveys based on the suitability of the building for bats and previous daytime survey work completed;
- to provide specialist advice on the possible presence of bats in relation to the planning process;
- to report survey results, likely development impacts and make appropriate recommendations for further surveys and/or works as necessary to ensure compliance with wildlife legislation and standard best practice; and
- to identify appropriate avoidance, mitigation, compensation and enhancement measures as required to demonstrate compliance with the 'mitigation hierarchy' and requirements of local and National biodiversity policies (e.g. the 'biodiversity duty' enshrined within S.40 of the NERC Act 2006, NPPF *etc*).

4.5 Limitations

No limitations to the survey were encountered.

4.6 Methods & Parameters

Emergence, Activity and Pre-dawn Surveys:

The nocturnal surveys were conducted by experienced and/or appropriately licensed surveyors using a variety of equipment with the aim of providing maximum confidence in the presence or absence of roosting bats. Surveyors were situated at strategic points around the site, to ensure full visual coverage of potential bat emerge/return points and roosting locations. The property was observed for the duration of the surveys, in order to record the emergence / return of any bats.

Survey Parameters:

Table 1: Details of survey parameters for Boverton House, Bulwark Road, Bulwark, Chepstow, NP16 5JE.

Date	Survey Type	Sunset / Sunrise	Survey Start & End Times	Weather Conditions	Surveyors & Licence No. (Natural Resources Wales / Natural England)	Equipment
19 August 2021	Daytime	n/a	n/a	Overcast but dry and mild.	N. Walsh: SO89832/1 / 2016-23549-CLS-CLS	Ladders, high-powered torch with red filter, endoscope.
25 August 2021	Pre-dawn Return	Sunrise: 06:12	Start: 04:47 End: 06:27	Dry and mild with a slight breeze. Start: 14°C End: 14°C Relative humidity: 87% Beaufort scale: 0-2 Cloud cover: 100%	N. Walsh: SO89832/1 / 2016-23549-CLS-CLS L. Moorhouse: n/a / 2020-50481-CLS-CLS G. Rudd (n/a) J. Toogood (n/a) D. Young (n/a)	3x Anabat Walkabout 1x Anabat Express 1x Pettersson D240X Bat Detector 1x EchoMeter touch 2
14 September 2021	Dusk Emergence	Sunset: 19:28	Start: 19:13 End: 20:58	Cool, dry and still. Start: 17°C End: 15°C Relative humidity: 89% Beaufort scale: 0 Cloud cover: 70% (hazy)	J. Stuart-Smith: S087859/1 / 2016-25531-CLS-CLS C. Cross: n/a / 2016-23802-CLS-CLS P. Playford: n/a / 2020-44658-CLS-CLS J. Toogood (n/a) D. Young (n/a)	3x Anabat Walkabout 2x EchoMeter touch 2 1x Batbox Duet

4.7 Background Data

Pre-existing Information on the Bat Species at the Survey Site:

Boverton House has been the subject of a series of bat surveys (daytime and nocturnal) in 2014 and 2017. These surveys recorded the presence of summer day roosts for small numbers of common pipistrelle bats within the roof structure of the building. Please refer to the Ecological Survey Report (Just Mammals Consultancy LLP, 2017) for full details of these surveys.

An update Preliminary Roost Assessment was completed at the site on the 19 August 2021 by an experienced and appropriately licensed surveyor from Focus Environmental Consultants (see Focus Environmental Consultants, 2021). Please refer to this report for full descriptions of the site and scope of works.

As part of the Preliminary Ecological Appraisal (Focus Environmental Consultants, 2021) for the site, a 2km third-party data search was completed. The author refers the reader to the Preliminary Ecological Appraisal for full details of the data search.

Table 2: Summary of bat data provided as part of the third-party data search conducted for the site at Boverton House, Bulwark Road, Bulwark, Chepstow, NP16 5JE.

Source	Information Provided
South East Wales Biodiversity Records Centre (SEWBRc)	Bats: the third-party data search returned a large number of records for bats, including the following species: lesser horseshoe bat, greater horseshoe bat, noctule, brown long-eared bat, soprano pipistrelle, common pipistrelle, Natterer’s bat, whiskered / Brandt’s bat, serotine, barbastelle and Daubenton’s bat. Several of these records (foraging records for brown long-eared bat and noctule, and roost records for common pipistrelle) relate to bat survey work previously undertaken at the site (Just Mammals Consultancy LLP, 2017). No records for significant roosts (e.g. maternity, hibernation) were returned from within 500m of the site. However, records for lesser horseshoe hibernaculum sites and greater horseshoe roosting sites are present within 1km of the survey site.
Gloucestershire Centre for Environmental Records (GCER).	Bats: four records for lesser horseshoe bat and a single record for a noctule bat were returned by the third-party data search. This includes a record for a lesser horseshoe hibernaculum and likely maternity roost; neither of which were returned from within 500m of the site.

Status of Bat Species:

Survey results have confirmed that Boverton House supports roosts of common pipistrelle bats.

Common pipistrelle are a relatively common species locally and nationally and population estimates for the UK are between 1 – 3 million individuals. Common pipistrelle are nevertheless listed as a 'Priority Species' under S.7 of the Environmental (Wales) Act 2016.

4.8 References & Bibliography

Altringham, J. D. (2003). *British Bats*. Harper Collins Publishers, Glasgow, UK.

Bat Conservation Trust & Institute of Lighting Professionals (2018). *Bats and artificial lighting in the UK- Bats and the built environment series*. Institute of Lighting Professionals, Warwickshire, UK.

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

Dietz, C., Helvesen O & Nill, D (2009). *Bats of Britain, Europe & Northwest Africa*. A & C Black, London, UK.

English Nature (2002). *Bats in roofs: a guide for surveyors*. English Nature, Peterborough, UK.

Focus Environmental Consultants (2022). *Preliminary Ecological Appraisal with Preliminary Roost Assessment (inc. Third-party Data Search)*. Boverton House, Bulwark Road, Bulwark, Chepstow, NP16 5JE (v2). Focus Environmental Consultants, Worcester, UK [unpublished].

Forest of Dean District Council (in collaboration with Natural England & Gloucestershire Bat Group) (2021). *Wye Valley and Forest of Dean Bat SAC. Development Management – Horseshoe Bat activity survey and assessment guidance*. Available at; <https://www.fdean.gov.uk/media/q1jinfo54/wv-fod-bat-sac-development-management-survey-and-assessment-guidance-vr-july-2021.pdf> (Accessed in August 2021).

Her Majesty's Stationary Office (1981). *The Wildlife and Countryside Act*. Her Majesty's Stationary Office, London, UK.

Her Majesty's Stationary Office (2016). *Environment (Wales) Act*. Her Majesty's Stationary Office, London, UK.

Her Majesty's Stationary Office (2017). *The Conservation of Habitats and Species Regulations*. Her Majesty's Stationary Office, London, UK.

Hutson, A.M. (1993). *Action plan for the conservation of bats in the United Kingdom*. London: The Bat Conservation Trust.

Institution of Lighting Professionals (2020). *Guidance Notes for the Reduction of Obtrusive Lighting*. GN01:20. [online] Institution of Lighting Professionals. Available at <<https://www.ilp.org.uk/guidance-notes-for-the-reduction-of-obtrusive-lighting>>

<https://theilp.org.uk/publication/guidance-note-1-for-the-reduction-of-obtrusive-light-2020/>> [Accessed in September 2021]

Joint Nature Conservation Committee (2004). *Bat Worker's Manual (3rd Edition)*. Joint Nature Conservation Committee, Peterborough, UK.

Just Mammals Consultancy LLP (2017). *Boverton House, Chepstow, Monmouthshire. Ecological Survey Report*. Just Mammals Consultancy LLP, Brecon, UK.

Mathews F, Roche N, Aughney T, Jones N, Day J, Baker J, Langton S. (2015). *Barriers and benefits: implications of artificial night-lighting for the distribution of common bats in Britain and Ireland*. Phil. Trans. R. Soc. B 370: 20140124. <http://dx.doi.org/10.1098/rstb.2014.0124>

Mitchell-Jones, A.J. (2004). *Bat Mitigation Guidelines*. English Nature, Peterborough, UK.

Natural England & DEFRA (2019). *Guidance - Bats: Surveys and Mitigation for Development Projects. Standing advice for local planning authorities to assess impacts of development on bats*. <https://www.gov.uk/guidance/bats-surveys-and-mitigation-for-development-projects> (Accessed September 2021)

Neuweiler, G. (2000). *The Biology of Bats*. Oxford University Press, Oxford, UK.

Office of the Deputy Prime Minister (2018). *National Planning Policy Framework (NPPF)*. Her Majesty's Stationary Office, London, UK.

Russ, J. (2012). *British Bat Calls. A Guide to Species Identification*. Pelagic Publishing, Exeter, UK.

Schofield, H. W (2008). *The Lesser Horseshoe Bat Conservation Handbook*. The Vincent Wildlife Trust, Herefordshire, UK.

Stebbing, R., Mansfield, H. and Fasham, M. (2005). *Bats in: Handbook of Biodiversity Methods: Survey, Evaluation and Monitoring*, 433-449. Cambridge University Press, Cambridge, UK.

Waring, S. D., Essah, E., Gunnell, K. and Bonser, R. (2013). *Double jeopardy: the potential for problems when bats interact with breathable roofing membranes in the United Kingdom*. Architecture & Environment, 1 (1). pp. 1-13.

UK Biodiversity Action Plan; Priority Habitat Descriptions. BRIG (ed. Ant Maddock) 2008.

4.9 Bat Ecology & Legislation

Only two different families of bats occur in the UK, of which the most numerous are the “vesper bats” or *Vespertilionidae*. Only two members of the *Rhinolophidae* or “horseshoe bats” occur in the UK, namely the greater and lesser horseshoe bat. The UK currently supports 17 different resident species of bat from these two family assemblages. One of these, Alcathe’s bat (*Myotis alcathe*) has only been discovered as resident in 2010. The greater mouse-eared bat (*Myotis myotis*) was previously thought to be extinct as a UK mammal species until a single individual was discovered in 2002 at a known hibernation site in Sussex, this may yet turn out to be resident species but is currently regarded by the Bat Conservation Trust as a vagrant/occasional winter visitor. Another species, the pond bat (*Myotis dasycneme*) is increasingly being identified in the UK and may currently be in the process of colonising the country from continental Europe.

British bats are entirely insectivorous, and consume a variety of invertebrate species of various shapes and sizes from the smallest gnats and midges to cockchafers, ground beetles and spiders. Bats are increasingly regarded as being species of conservation concern owing to a decline in both numbers and range. The reasons for these declines are thought to relate primarily to changing agricultural practices (in particular intensification of agriculture and increased use of pesticides) and direct loss of foraging habitats and roosts from human development such as infrastructure projects and conversion of agricultural buildings (see e.g. JNCC, 2004; www.bats.org.uk). All UK bats utilise echolocation to navigate within their environment and hunt for food. It is increasingly being discovered that echolocation calls can also have an important ‘social communication’ function between bats.

Bats are strictly nocturnal unless disturbed, diseased or starved of food due to adverse weather conditions. Consequently bats require a place of shelter and protection (commonly termed a roost) from predators during the daytime. Bat roosts can be found in a variety of both natural and anthropogenic situations including buildings (residential, agricultural, industrial, modern and ancient), mature trees, bridges, tunnels, caves and mines. Purpose built bat boxes are now commercially available and bats will use these, as well as taking advantage of unoccupied bird boxes if available.

Bats are mobile throughout the year and may use different types of roost according to the particular needs of their lifecycle. Different roost types include maternity roosts, hibernation roosts, satellite roosts, day roosts, night roosts, transitional roosts, feeding perches and mating roosts. The most significant roosts in terms of bat numbers and conservation significance are ‘maternity roosts’ and ‘hibernation roosts’. Pregnant female bats will aggregate in maternity roosts to give birth and rear their single offspring (twins occur rarely). These types of roost are normally associated with warm, protected sites. During colder months of the year, bats go into hibernation and require sites with stable temperatures high humidity levels. Bats do not always use roosts in a predictable fashion and tree-dwelling species are notoriously nomadic and will move between a variety of different tree roost sites. By contrast maternity roosts tend to be the most loyally occupied from year to year, although again this differs between the different bat species.

Council Directive 92/43/EEC (“The Habitats Directive”) is transposed into UK law through the Conservation of Habitats and Species Regulations 2017. Bats are a European Protected Species (EPS), and are listed in Annex IV of the Habitats Directive. This affords both the bats and their roosts with strict protection. Some bat species have a higher conservation concern in Europe. The habitats supporting these species can be designated as Special Areas of Conservation (SACs) and the bat species concerned are listed under Annex II of the Habitats Directive. Bats listed on Annex II include the greater and lesser horseshoe bats, the Bechstein’s bat and barbastelle. Actions and activities that are prohibited by this legislation are:

- deliberate capture, injury or killing of a bat;
- deliberate disturbance of a bat and in particular disturbance which is likely to; impair their 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, to hibernate or migrate;
 - or to affect significantly the local distribution or abundance of the species to which they belong.
- damage or destruction of a breeding site or resting place;
- possessing, controlling transporting, selling or exchanging, or offering for sale or exchange, any bat or any part of a bat or anything derived from one.

Substantial penalties including fines and custodial sentences are now in place for offenders under the Conservation of Habitats and Species Regulations 2017.

The primary legislative Act covering wildlife in the UK is the Wildlife and Countryside Act 1981 (WCA), which affords protection to all bat species. The WCA has seen numerous amendments since it was brought into force, of which the most recent and arguably significant have been the Countryside and Rights of Way (CRoW) Act 2000, the Natural Environment and Rural Communities (NERC) Act 2006 and the Conservation of Habitats and Species Regulations 2017 (described above). The intentional or reckless damage of roosts or disturbance of bats is specifically prohibited under the WCA as amended. The offence of ‘reckless’ disturbance and damage is not contained within the Conservation Regulations and has thus been retained within WCA.

Because bats are known to use many roost sites on a regular basis year on year, legal precedent indicates that these roosts should be regarded protected regardless of whether bats are present at the time they are inspected. Legislative changes and amendments have now completely removed the defence of harmful actions being “the incidental result of an otherwise lawful operation” for EPS, which was previously afforded under the Wildlife and Countryside Act 1981 (as amended).

A number of British bat are described as being of 'of principal importance for the purpose of conserving biological diversity' under Section 7 of the Environment (Wales) Act 2016. The Environment (Wales) Act sets out the requirements to plan and manage natural resources of Wales in a more sustainable way.

The National Planning Policy Framework (NPPF) sets out the government's planning policies for England and how they should be applied to achieve the over-arching goal of 'sustainable development'.

5. QUALIFICATIONS & EXPERIENCE

Focus Environmental Consultants® has the expertise to provide sure-fire environmental solutions to a wide range of projects. The company ethos forges the highest standards of professional scientific practice with a best value approach for our clients. Our core area of expertise is in the production of specialist environmental reports and advice to support planning applications. Our comprehensive services include Preliminary Ecological Appraisals (PEA), Ecological Impact Assessment (EclA), Habitat Regulations Assessment (HRA) and fulfilling protected species surveys, licensing and mitigation requirements. Focus Environmental Consultants is a CIEEM Registered Practice, with all ecological staff being members of this professional body. Our flexible approach, range of skills and broad project experience from major infrastructure contracts to small private developments allows us to adapt to your individual requirements. As well as offering a full suite of ecological services, Focus Environmental Consultants can provide expert arboricultural advice and reports and is building an enviable reputation for innovative habitat creation and management solutions. Focus Environmental Consultants is situated in Worcestershire, providing a convenient and central UK location.

Natalie Walsh BSc (Hons) MCIEEM

Natalie is a Senior Ecologist and has over six years' professional experience in the field of ecology. She holds a BSc (Hons) degree in Wildlife Conservation from the University of Plymouth. Natalie is experienced in undertaking Preliminary Ecological Appraisals, Ecological Impact Assessments (EclA), Biodiversity Impact Assessments (BIA) and Habitat Regulations Assessments (HRA) as well as surveying for European Protected Species including great crested newts, bats and hazel dormice. Natalie is also a competent surveyor of badgers, reptiles, barn owls, water voles and otters. Natalie holds Natural England and Natural Resources Wales survey licences for great crested newts and bats (Class 2) and is a Full member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

Jessica Stuart-Smith BSc (Hons) ACIEEM

Jessica is a Senior Ecologist and has over six years' professional experience in the field of ecology. She holds a BSc (Hons) degree in Zoology from the University of Roehampton. Jessica is a skilled ornithologist with expertise in conducting breeding and over-wintering bird surveys and assessments for barn owls. Additional ecological experience includes Preliminary Ecological Appraisals, Ecological Impact Assessments (EclA), Habitat Regulations Assessments (HRA) and surveying for European Protected Species including great crested newts, bats and hazel dormice. Jessica is also an experienced surveyor of badgers and reptiles. Jessica holds Natural England survey licences for bats (Class 2), great crested newts and white-clawed crayfish as well as Natural Resources Wales survey licences for bats and great crested newts. Jessica has been the 'Named Ecologist' on Natural England (development) licences for bats and has considerable experience of developing suitable mitigation strategies and overseeing licensable works. Jessica is an Associate member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

Lucy Moorhouse BSc (Hons)

Lucy joined Focus Environmental Consultants in 2020 as an Assistant Ecologist to support the ecology team with protected species surveys, translocations and supervision. Prior to joining the company, Lucy has worked as a seasonal surveyor for multiple small ecological consultancies in the north-west. Lucy holds a BSc (Hons) degree in Wildlife and Practical Conservation from the University of Salford. Her ecological experience includes conducting Preliminary Ecological Appraisals and surveying for notable

and European Protected Species including bats and great crested newts. Lucy holds a Natural England bat class survey licence and is a Qualifying member of the Chartered Institute of Ecology and Environmental Management (CIEEM).

Josh Toogood BSc (Hons)

Josh joined Focus Environmental Consultants in 2021 as an Assistant Ecologist to support the ecology team with protected species surveys, translocations and supervision. He holds a BSc (Hons) in Ecology and Environmental Science (1st Class) from the University of Worcester.

Sub-Consultants

Focus Environmental Consultants occasionally employs sub-consultants to assist with survey work during the busy summer period. All of our sub-consultants are experienced ecologists, many of which are also licensed. For more details, please contact Focus Environmental Consultants on 01905 780 700.