Home Farm, Broadmoor, Abinger Common, Dorking, Surrey. RH5 6JY
07570 923905 www.verdantecology.co.uk info@verdantecology.co.uk

July 2024

A Potential Roost Assessment and Bat Survey Report

from

Springvale

for

Mr and Mrs Cave

Surveys conducted by Verdant Ecology and report produced by
Jonathan Bradley
BSc, MSc, TechCertArb, MArborA
Consultant Ecologist, Arborist and Land Manager
07570 923905 jonathan@verdantecology.co.uk

Copyright
All rights reserved. No part of this document may be copied or reproduced without prior written consent from Verdant Ecology.

Disclaimer
Opinions expressed and information gathered and contained within the report have been done so competently, whilst using diligence and care but no explicit warranty is provided as to their accuracy or effectiveness. This is especially true where information comes from third parties. We are not lawyers – whilst we seek to understand legislation and stay abreast of changes and case law, where we refer to legislation, this is our interpretation and/or summary. This report has been prepared for use by the commissioning party only. No liability is accepted by Verdant Ecology for any inappropriate use of this report. Our protected species survey licences oblige us to pass records to the relevant body.

1 Executive Summary **3**

2 Introduction **5**

2.1 Background to Activity/development 5

3 Survey **5**

3.1 Pre-existing Information on Bats at the Survey Site 5

3.2 Site/Habitat Description 5

3.3 Objectives of the Survey 5

3.4 Building Inspection Method 5

3.5 Building Inspection Results/Assessment 6

3.6 Dusk Vigil Method 6

3.7 Dusk Vigil Results 6

4 Interpretation **6**

5 Impact Assessment **7**

5.1 Potential Impacts 7

5.2 Predicted Impacts 7

5.3 Evaluation and Predicted Scale of Impacts 8

6 Summary **8**

7 Appendices **8**

7.1 Appendix 1. Photographs of the Existing Buildings 8

7.2 Appendix 2. Details of Survey Methods and Results 8

7.3 Appendix 3. Site Plan 13

7.4 Appendix 4. Plans of Proposals 13

7.5 Appendix 5. Bat Ecology 14

7.6 Appendix 6. Protective Legislation Pertaining to Bats 14

7.7 Appendix 7. Assessment and Evaluation Tables Used by Verdant Ecology 15

7.8 Appendix 8. References 15

1 Executive Summary

- Mr and Mrs Cave intend to demolish a residence and to construct a new residence and a sand-school.
- We understand that it is exempt from a formal BNG (Biodiversity Net Gain) exercise.
- A PEA (Preliminary Ecological Assessment) and PRA (Potential Roost Assessment) was carried out in May 2024 by Arbtech. They found no evidence of bats and categorised the residence as being of Moderate suitability (as defined in Table 4.1 of Collins 2023). We also found no evidence and agree with the assessment of Moderate suitability.
- We conducted two dusk surveys. One in June, one in July 2024.
- No bats were detected using the buildings.

2 Introduction

2.1 Background to Activity/development

Springvale, Woodland Lane, Colgate, West Sussex, RH13 6HU. OS grid reference TQ22913133 https://maps.app.goo.gl/X7kccn7ZR7iqod7v8

Demolition and rebuild. Plans can be seen in Appendices 3 and 4.

The applicant has requested information on the site's potential for bats in order to allow the local planning authority to make an informed decision in line with the National Planning Policy Framework and ODPM 2005. In May 2024, Verdant Ecology was commissioned to conduct an investigation into any possible use of the buildings by bats and to provide recommendations.

3 Survey

3.1 Pre-existing Information on Bats at the Survey Site

Records were not sought from Sussex Biodiversity Centre. This is because the only occupants since the construction of the building(s) have been Mr and Mrs Cave and they would therefore know if anyone had reported bats (and they have not).

Two bat impact/mitigation licences have been awarded within approximately 2km. These are for Common Pipistrelle, Soprano Pipistrelle and Brown Long-eared bats. Neither include breeding roosts.

3.2 Site/Habitat Description

The site and surrounding areas seemed very suitable for bats. It is a residence with a few square metres of garden. There is a stable block and several outbuildings. The rest of the site is horse-grazed pasture, fringed by trees, hedgerows and woodland. Further information can be found in Arbtech's PEA/PRA.

3.3 Objectives of the Survey

To find physical evidence of, or roost potential for, bats. If found, to determine what species are present, in what numbers, where in the buildings/trees, what type of use is made of them and where the point(s) of access/egress/roosting are.

3.4 Building Inspection Method

In June 2024 the buildings were subject to a visual inspection. This involved an inspection of the building from both inside and outside for potential roost sites, access/egress holes and for signs of bats, using binoculars, torches and ladders.

3.5 Building Inspection Results/Assessment

See Appendix 1 for photographs of the existing building.

The house is a single-storey dwelling about 12m x 6m. It is timber framed and clad . Timber cladding is on vertical battens on breathable liner on fibreboard with a gap between the battens that is open at the bottom (the building is supported on brick pillars), leaving gaps sufficient to allow bat access. The timber cladding itself has numerous gaps, also sufficient to allow bat access. The roof is pitched without hips and is clad in cedar shingles. Some shingles have slightly lifted but were considered insufficient to provide bat roosts. There is a skeeling void about 50cm high.

The (detached) stable block is timber framed and clad with a shingle roof. It is unlined. There is no loft. It seems suitable for feeding roosts but will not be directly affected so as long as there is no significant increase in light spill from the new residence.

No evidence of bats was found associated with the buildings.

The house is considered to be of Moderate suitability (as defined in table 4.1 of Collins, 2023).

3.6 Dusk Vigil Method

Details are provided in Appendix 2. In summary:

In June and July 2024, two dusk vigils were conducted. Each involved one surveyor using two IR cameras and IR lighting and various bat detectors/recorders.

3.7 Dusk Vigil Results

Details are provided in Appendix 2. In summary:

No bats were detected associated with the house.

4 Interpretation

No evidence of roosts exists.

The surveys were well-timed for detecting maternity roosts.

The buildings are considered too exposed and draughty to provide suitable hibernation roosts. The loft may be used in periods of milder winter weather (but there was no evidence for this and it is considered almost certain that evidence would exist if it was used).

The building inspection and vigils were in line with the 2023 good practice guidelines except that one camera was unmanned. This is not considered significant because the building is so small that the cameras would have sufficed without any surveyor and one surveyor could reasonably cover it all even though not able to directly view the opposite corner.

The surveyor had no reason to suspect that evidence might have been deliberately removed.

Brown Long-eared bats can be easy to miss because of the 'softness' of their calls. Using full-spectrum detectors, reviewing recordings using software and the use of IR cameras/lights reduces the chances of this.

5 Impact Assessment

5.1 Potential Impacts

Potential impacts considered are;

- Loss of bat roosts (including obstruction of access/egress).
- Physical harm to bats during work.
- Indirect impacts on any roosts that may occur in neighbouring buildings or mature trees nearby (run-off pollution, light, noise, vibration, fumes etc. associated with the proposed work).
- Indirect impacts on foraging habitat.
- Habitat fragmentation.
- Post-development impacts.

5.2 Predicted Impacts

On the basis of work reported here (assuming pollution prevention, appropriate building membranes and tree protection), the proposals would mean no direct impacts on bats.

There is always potential for significant negative indirect impacts on bats roosting or foraging nearby (e.g. toxic materials in the air or in run-off water). This can be avoided by adhering to a pollution prevention plan and by making sure any lighting (internal and external) complies with best practice at the time of execution. Currently, this is The Bat Conservation Trust and Institute of Lighting Engineers (2023), GN 08/23 Bats and Artificial Lighting at Night.

Habitat fragmentation is not considered an issue because the new building will be in the same place and no new access created.

The intended post-development use is the same as the current use (residential) and is thus unlikely to cause any significant extra disturbance to bats using the area (but see comments elsewhere herein with regard to lighting).

If breathable membranes are used in combination with tiles or cladding that allow bats to gain access to the membrane, it could kill bats. Using traditional building materials or a breathable membrane with a successful, independent snagging propensity test result will prevent this. Pavatex/Pavatherm type roofing materials are also acceptable. Note that dry ridge systems that incorporate a breathable membrane are also incompatible with bat safety.

5.3 Evaluation and Predicted Scale of Impacts

See Appendix 7 for a definition of the relative terms used here.

Based on survey work to date and without mitigation the proposals will have no impact on bats. If breathable membranes are used or pollution (including light spill) occurs, the impacts could become Major and Long Term. With successful mitigation (see Appendix 4), the proposal would have a Minor-Major Positive impact on bats at the Local scale into the Long Term.

6 Summary

- The building has no evidence of bats.
- Before starting on site consult an ecologist. You may want to start this process many months in advance because seasonal restrictions necessitate careful scheduling.
- Clear the site as advised.
- The local authority should seek opportunities to benefit wildlife by asking for enhancements. They cannot dictate exactly what. Examples include bird/bat boxes, semi-natural planting plans, new trees etc.
- The above issues can be secured with planning conditions.
- Consequently, ecological features should not be a reason for refusal of listed building consent/planning permission.
- If bats or signs of bats are found at any time, work must stop immediately and advice be sought.

7 Appendices

7.1 Appendix 1. Photographs of the Existing Buildings

These can be seen in Arbtech's PEA/PRA report dated May 2024

7.2 Appendix 2. Details of Survey Methods and Results

Vigils started at least 15minutes before sunset and continued until at least 1.5hours after sunset.
Surveyors/equipment were positioned so as to cover all relevant facades and features.
IR cameras started when surveyor felt it was appropriate (e.g. at start of vigil or too dark to rely on eyes or when still light but bat activity became very busy). Start time will be indicated in field notes.
Surveyors used IR cameras according to their preference (i.e. those with large screens/tablets tend to view these throughout whilst remaining in the same spot, those with small screens tend to rely on their eyes throughout, move closer to the potential roost as it gets darker, and check recordings post-vigil).
Tuneable detectors set at about 39kHz to maximise chances of hearing Long-eared bats.
M500 detector settings: frequency trigger mode, -35dB, frequency limits 15kHz and 24kHz, microphone cone off.
Anabat Express detectors microphone sensitivity set at maximum.
Echo Meter Touch detector settings: HET mode; 1/10 audio division; min frequency for trigger 18kHz; trigger sensitivity 'high'; auto-ID sensitivity 'sensitive'.
Selected audio recordings analysed using BatScan 9.0 and/or BatSound Touch Lite and/or Analook W and/or Kaleidoscope.
Selected video recordings were reviewed (e.g. to clarify any uncertainty recorded by surveyor during vigil; when Long-eared bats were likely to emerge; when bats were heard but not seen).

7.2.1 Survey Dates and Times

	Visit 1	Visit 2
date	04/06/24	06/07/24
type	Building inspection and dusk vigil	Dusk vigil
vigil times	20.55	21.00
sunset/ rise time	21.10	21.16
staff	Jonathan Bradley (CL15 2016-17506, CL18 level 2 2015-13844, CL21-184).	Jonathan Bradley
equipment	Torches, binoculars, ladders, endoscope. 2 x Sony DCR-SR32, 6 x multi-LED IR lamps. EchoMeter Touch 2, Batbox Duet to Olympus digital dictafone VN5500PC, Petterssen M500.	Sony DCR-SR32 x 2, Nightfox XB5 Pro x 4. Batbox Duet to Olympus digital dictafone VN5500PC, EchoMeter Touch 2. Anabat Express.
weather description	Dry. Temperature = 13.4˚C at start, 11.6˚C at end. Cloud = 1 octa. Wind = 0-2 (Beaufort).	Dry. Temperature = 15ºC at start, 13˚C at end. Cloud = 0 octas. Wind = 1 (Beaufort).

7.2.2 Building Inspection

No figure provided as plan, photos, figures and the written description in main text is considered adequate.

7.2.3 Darkest IR Camera Screenshots









7.2.4 **Dusk Vigil Field Notes, 4th June 2024**

Site: S. Vale Date: 4/6 Survey type (dusk/dawn, roost/activity). Surveyor name: J Temp (°C): start 13.4 end 11.6

Humidity (%) start 76 end 78 Wind 0-2 (Beaufort) Cloud cover 1 (octas) Cloud type (hi/lo, thick/thin). Rain (Y/N, spots, drizzle, light, heavy, recent)

Sunset/rise time 21.10 Survey start time 20.55 Kit used SEE PIC Recorder start time 21.00 Track number(s) A2??

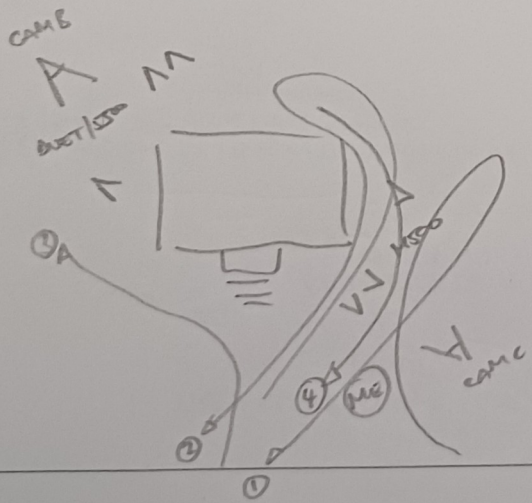
Camera start time 7 Security lights/sensors off/covered and curtains closed? ✓ Any constraints (e.g. noise, light, view blocked)? NO

CAM B: 21.00 CAM C: 21.02 How did you offset this ..... Any other useful info

Codes: H = Heard (only), S = Seen (only), FR = From Roost, TR = To Roost, F = Foraging, C = Commuting, © = circling, Soc = Social calls, Q = Quiet, A = Abrupt, Bx2 = 2 bats, Px1111 = passesx4

ref	real time	Notes - please use codes (above) so you are writing for the shortest time possible	Leave blank for post-survey: device time	ID	ref	real time	Notes	Leave blank for post-survey: device time	ID
1	21.35	pip CF		55			M500 - 55 pips		
2	21.36	" " " prob same bat		"			during same time period		
3	21.37	" " " " " "		"					
4	21.39	" " " " " "		"					
		but poss FR other side,		~~[illegible]~~					
		check cam. →		nothing ~~[illegible]~~ on other cam					

Bird's eye view



Side view (of any confirmed/possible roosts only)

Bird's eye view of locations of staff and kit

7.2.5 **Dusk Vigil Field Notes, 6th July 2024**

Site: SELWYNE Date: 6/7/24 Survey type (dusk/dawn, roost/activity). Surveyor name: ..... Temp (˚C): start 15 end 13

Humidity (%) start ? end ? Wind 1 (Beaufort) Cloud cover 0 (octas) Cloud type (hi/lo, thick/thin). Rain (Y/N, spots, drizzle, light, heavy, recent)

Sunset/rise time 21:16 Survey start time 21:00 Kit used SET PIC Recorder start time 21:18 Track number(s) C1

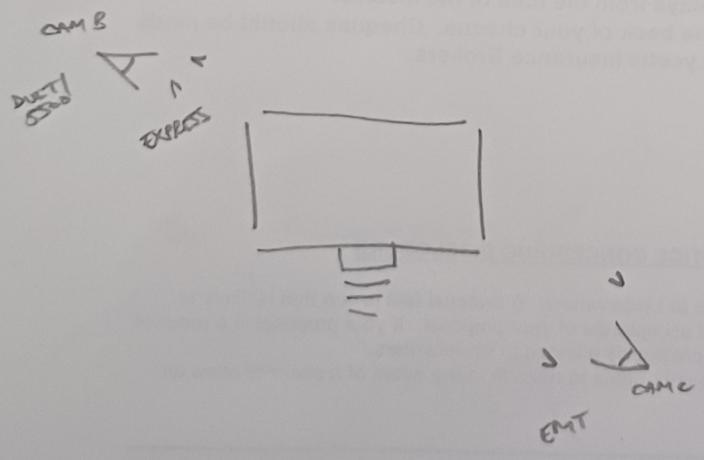
Camera start time..... Security lights/sensors off/covered and curtains closed?..... Any constraints (e.g. noise, light, view blocked)?.....

CAM B ON: 21.17 CAM C on: 21.20 How did we offset this ..... Any other useful info

Codes: H = Heard (only), S = Seen (only), FR = From Roost, TR = To Roost , F = Foraging, C = Commuting, © = circling, Soc = Social calls, Q = Quiet , A = Abrupt, Bx2 = 2 bats, Px1111 = passesx4

ref	real time	Notes - please use codes (above) so you are writing for the shortest time possible	Leave blank for post-survey: device time	Leave blank for post-survey: ID	ref	real time	Notes	Leave blank for post-survey: device time	Leave blank for post-survey: ID
-	22.17	H Myotis? AQ		no rec					

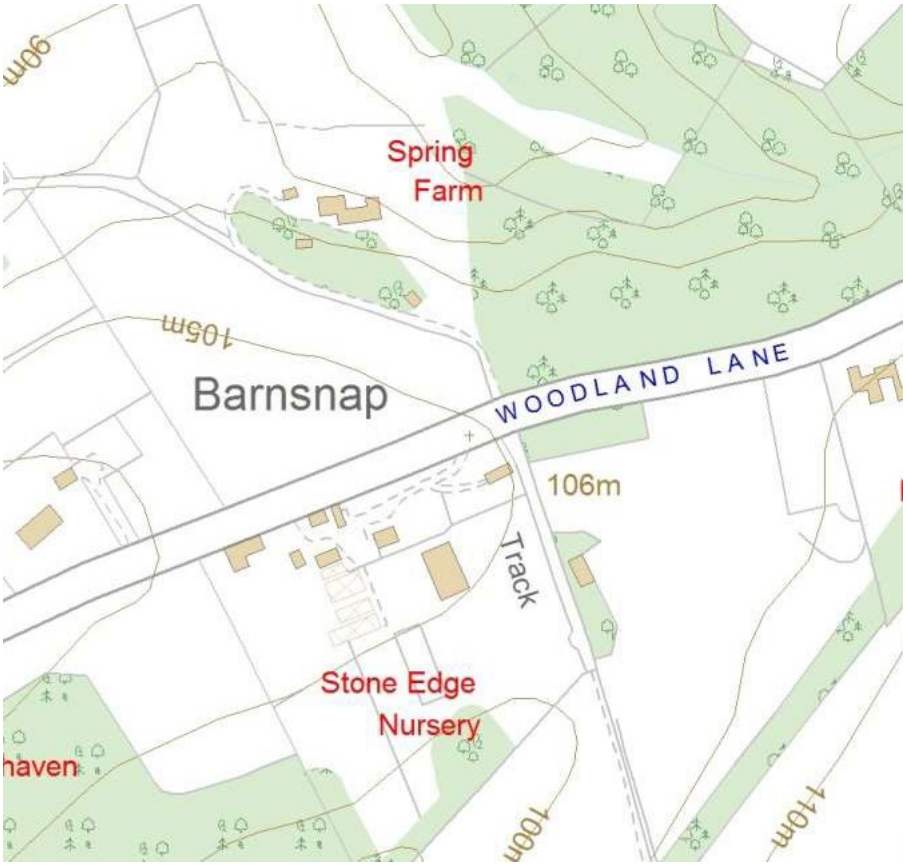
Bird's eye view



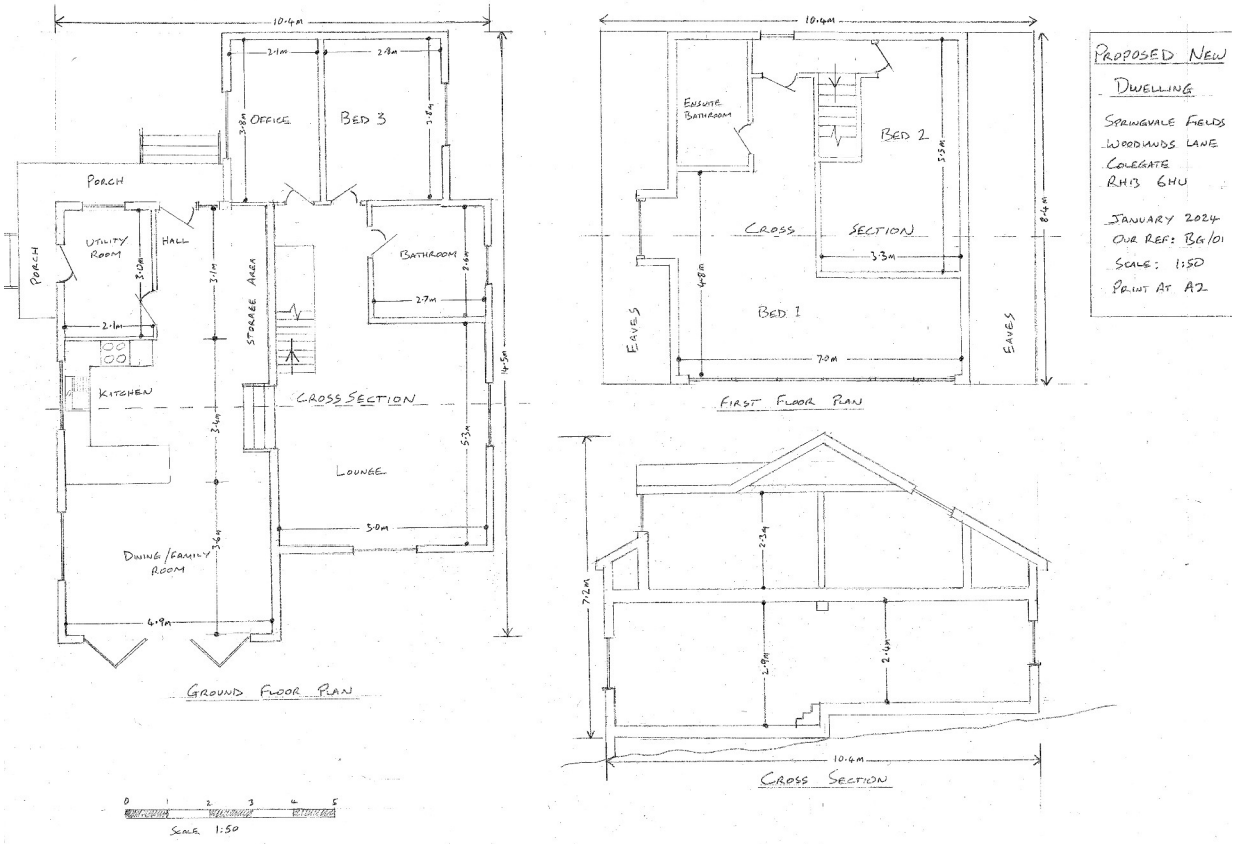
Side view (of any confirmed/possible roosts only)

Bird's eye view of locations of staff and kit

7.3 **Appendix 3. Site Plan**



7.4 **Appendix 4. Plans of Proposals**



7.5 Appendix 5. Bat Ecology

The ecology of bats varies somewhat according to species but the following generic information gives an idea of their habits.

All British bats are insectivorous and forage in most habitats (often many kilometres from their roosts) but waterbodies, wetlands and wooded habitats are favoured. They are free-roaming (whilst often showing site fidelity) and use a variety of roosts in sequences that may be hard to predict for resting, giving birth, raising young and 'hibernating'. Roosts may be found in crevices in trees, buildings, tunnels, mines and natural stone features such as caves. Some bat species have a tendency to follow linear features (commuting) such as treelines. They mate in the autumn, and females give birth the following summer. They are relatively inactive over winter, 'hibernating' for extended periods. Although some species are widespread and often locally common in England, they are of conservation concern because they are believed to be in rapid decline and because some species are considered especially rare, local or vulnerable.

7.6 Appendix 6. Protective Legislation Pertaining to Bats

The main items of legislation protecting bats in England are;

- The Conservation of Habitats and Species Regulations 2010 (a consolidation of The Conservation (Natural Habitats & c.) Regulations 1994 and subsequent amendments).
- The Wildlife and Countryside Act 1981 (as amended).

Combining the legislation means it is an offence to;

Intentionally or recklessly kill, injure, take or disturb bats, or to damage, destroy or obstruct access to any structure or place used for shelter, breeding or protection. Bat roosts are protected even if unoccupied.

Additionally, some bat species are 'Priority Species' in the UK Biodiversity Action Plan and Local Biodiversity Action Plans may also be in place for certain bat species. The Countryside and Rights of Way Act 2000 and The Natural Environment and Rural Communities Act 2006 expect those in a position of influence to consider the impacts of their actions on biodiversity, especially Biodiversity Action Plan features and to seek opportunities to benefit them.

Bats are a material consideration in planning decisions under the National Planning Policy Framework, meaning that local planning authorities must consider the potential impacts of development on bats before granting permission.

Bats may also be indirectly protected by virtue of their association with trees (also a material consideration), veteran trees and habitats that serve to connect (both specifically mentioned in PPS9) and hedgerows (Hedgerow Regulations 1997).

7.6.1 What This Means for You

Planning permission should only be given if the status of the affected protected species can be maintained or enhanced and if measures are taken to avoid harming individuals. Recent changes in legislation and policy are increasing the emphasis on expecting improvements or enhancements.

Changes to the law in 2007 also removed certain defences – the most significant of which was that of an offence being excusable when '*an incidental result of an otherwise lawful operation*' (such as planning permission). Further changes in early 2009 mean remaining defences (such as health and safety issues) no longer apply if there was a suitable alternative and the action negatively affects the favourable conservation status of the species concerned (individuals are still protected from harm by the Wildlife and Countryside Act). The onus is on the developer to provide enough information to enable the planning authority to make an informed decision as to whether the development will have negative impacts on the local bat population. If bats are found to be using an affected feature, the developer must demonstrate to the planning authority how, in principle, the work can be carried out without negatively affecting bats.

If planning permission is granted, a European Protected Species mitigation licence from Natural England may be available - to protect you from what may otherwise be an offence (disturbance, destruction of roosts, etc.). Such a licence is only granted if;

- there is no reasonable alternative,
- it is in the overriding interest of the public,
- the population of concern will remain in favourable conservation status.

Recent court cases have suggested that local authorities should also consider these three conditions in making their decision. The licence application (if needed) will have to justify the need for your proposed actions. It will also have to include a comprehensive plan that seeks to preserve habitats and any roosts, minimise disturbance, prevent killing or injury, ensure a continuation of suitable habitat and provide enhancements. It is usual for several years post-construction monitoring of bat populations to be a condition of licensing.

7.7 Appendix 7. Assessment and Evaluation Tables Used by Verdant Ecology

Table 1. Relative Terms in Assessment and Evaluation of Ecological Features and Potential Impacts

Importance of Ecological Feature		**Area of Impact**
Negligible		Negligible
Local/Site		Local/Site
District/Borough		District/Borough
County		County
Regional		Regional
National		National
International		International
Duration		**Extent of Change**
		Major negative
Short term (1-5 years)		Minor negative
Medium term (5-20 years)		Negligible/Neutral
Long term (>20 years)		Minor positive
		Major positive

Table 2. Matrix for Estimating the Significance of Impacts

		Degree of Impact				
		Major negative	**Minor negative**	**Negligible**	**Minor positive**	**Major positive**
Geographic Scale	**International**	Major	Major	Negligible	Major	Major
	National	Major	Major	Negligible	Major	Major
	Regional	Major	Moderate	Negligible	Moderate	Major
	County	Moderate	Minor	Negligible	Minor	Moderate
	District/ Borough	Moderate	Minor	Negligible	Minor	Moderate
	Local/Site	Minor	Negligible	Negligible	Negligible	Minor

7.8 Appendix 8. References

- Collins, J. ed (2023). Bat Surveys for Professional Ecologists: Good Practice Guidelines. Bat Conservation Trust
- Bat Conservation Trust and Institute for Lighting Engineers (2023). GN 08/23 Bats and Artificial Lighting at Night.

- Reason, P.F. and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. CIEEM, Ampfield.
- Mitchell-Jones, A.J. & McLeish, A.P. (2004). Bat Workers' Manual (3rd Edition). Joint Nature Conservancy Committee, Peterborough.
- Wildlife and Countryside Act 1981 (as amended). www.opsi.gov.uk
- The Hedgerows Regulations 1997 (as amended). www.opsi.gov.uk
- The Conservation of Habitats and Species regulations 2010. www.opsi.gov.uk
- The Conservation (Natural Habitats, &c.) Regulations 1994. www.opsi.gov.uk
- The Countryside and Rights of Way Act 2000. www.opsi.gov.uk
- The Natural Environment and Rural Communities Act 2006. www.opsi.gov.uk
- The National Planning Policy Framework 2012. www.opsi.gov.uk
- The Town and Country Planning Act 1990. www.opsi.gov.uk
- The Town and Country Planning (Trees) Regulations 1999. www.opsi.gov.uk
- HM Government (1995). Biodiversity: The UK Steering Group Volume 2: Action Plans. JNCC, Peterborough.
- HM Government (1998). Tranche 2 Action Plans: Volumes I and II. English Nature, Peterborough.
- Institute of Ecology and Environmental Management (2012). Guidelines for Preliminary Ecological Appraisal. IEEM, Winchester.
- Institute of Environmental and Ecological Management (2006). Guidelines for Ecological Impact Assessment in the United Kingdom.
- Institute of Environmental and Ecological Management (various dates). Professional Issues Series. Various documents.
- Environment Agency. Pollution Prevention Guidelines (various), www.environment-agency.gov.uk
- Health and Safety Executive (2002). Control of Substances Hazardous to Health Regulations.