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**A Bat Survey Report
from**

**Caldyne
for**

Mr's Williams, Jacobs And Hooper

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appropriate bodies.

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Executive Summary

- ❑ Mr's Williams, Jacobs And Hooper intends to develop some land for residential units.
- ❑ To support the planning application the client has asked for information on the suitability of the site for bats and whether/how any impacts need/can be avoided/offset.
- ❑ The only tree loss will be small, immature trees that have been classified as being of Low suitability for bat roosts. There are trees with High bat roost potential on the fringes of the proposed development site. Significant direct and indirect impacts on tree roots and roosts can be designed out by creating a buffer strip and using cellular mattresses to upgrade access.
- ❑ Consequently, it is unlikely that bats using the mature woodland will be affected.
- ❑ You will thus have to design the layout to retain trees with bat roost potential (or their own inherent value) and whilst this often means big old trees, small trees may also have bat roost potential.
- ❑ In summer and autumn 2019 Verdant Ecology conducted manned dusk/dawn and automated bat surveys.
- ❑ Surveys found bats foraging in all parts of the site. The range of species and level of activity was Low.
- ❑ Assuming no significant roost loss, the loss of 1ha of land dominated by goat's rue or rhododendron is unlikely to be a significant negative impact on the population status of any bat species.
- ❑ However, policy seeks to improve the state of wildlife so it is advocated that trees be retained and/or new tree planting be created to create a buffer of at least 15m round all the mature woodland.
- ❑ This will act as:
 - ❑ 1) A screen for any indirect impacts (e.g. from light pollution) on the woodland.
 - ❑ 2) Protection for tree roots.
 - ❑ 3) Compensatory habitat of a higher value than that lost (woodland in place of goat's-

rue), whilst the buildings and gardens will provide continuing habitat for species associated with open areas.

☐ Consequently, impacts on bats should not be a reason for refusing planning consent.

Introduction

Background to Activity/Development

The site is Caldyne Park, Turners Hill Road, West Sussex, RH10 4NB and is at OS grid reference TQ322366.

It is an open area of wasteland dominated by goat's-rue and rhododendron set in the remnants of Ancient Semi-natural Woodland fringing the site.

The applicant has requested information on the value of the site 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 2019, Verdant Ecology was commissioned to conduct an investigation into the use of the site by bats and to provide recommendations about how any impacts on bats might be avoided/offset.

Survey

Pre-existing Information on Bats at the Survey Site

Calumma conducted a baseline survey in 2014. Sussex bat group provided local records for Brown Long-eared bats including possible maternity roosts in buildings.

Site/Habitat Description

The habitat likely to be directly affected by the development is of three types. The largest is a clearing dominated by goats-rue. There is a second, smaller portion to the E of the clearing that is dominated by young (<10 year old) willow trees and rhododendron. To the S of the clearing is an area of overgrown heath, now dominated by young (<10 year old) birch and willow trees and rhododendron. The area around the development site but within the ownership site appears suitable for bats (woodland). Indirect impacts on this are possible.

On a scale of Negligible, Low, Moderate, High (as defined in Table 4.1 of the Bat Conservation Trust's 2016 Good Practice Guidelines, Collins 2016), habitats surrounding the development site were considered to have High suitability but habitats on the development site, Low.

Objectives of the Survey

To determine what species are present on site, what level of use, which areas are preferred and to see if season influences this.

Method

In accordance with Collins 2016 for habitats of Low suitability, an automated detector was set out and a manned activity survey conducted at the proposed development site in each of spring, summer and autumn.

The autodetector positions are indicated in Appendix 1. Manned survey spot count positions are indicated in Appendix.

Results

Information is provided in Appendix *****. In summary:

Roosts

No roosts were detected (this is only an incidental part of such work) but some of the bat emergences were 'early enough' for them to have been likely to have come from trees on the ownership site.

Bat Activity

Generally low.

Interpretation and Evaluation

The personal impression of the surveyor during the manned surveys was that species diversity and level of activity was Low.

The surveys were in line with the Bat Conservation Trust Good Practice Guidelines except where highlighted below.

Limitations

The spring survey was actually the last 3 nights of spring (May) and the first 2 of summer (June). This is not considered significant.

Due to battery failure, the device stopped recording 1hr 42mins before dawn on the 3rd June. This is not considered significant.

During the autumn survey, the recording of the night of the 11th/12th September contained interference so the night of the 13th/14th was analysed instead (and the guidelines ask for 5 consecutive nights of suitable weather). This is not considered significant.

Impact Assessment

1 Potential Impacts

Potential impacts considered are;

- ☐ Habitat loss.
- ☐ Indirect impacts on foraging habitat or on any roosts that may occur in nearby areas

(run-off pollution, light, noise, vibration, fumes etc. associated with the proposed work).

- ☐ Habitat fragmentation.
- ☐ Post-development impacts such as disturbance.

Predicted Impacts (Without Mitigation)

The proposed work is likely to affect bat foraging through habitat loss. If the development is confined to the existing open area and/or the area dominated by young trees and rhododendron, direct impacts on habitat are considered insignificant.

There is potential for negative indirect impacts on bats roosting or foraging nearby (e.g. toxic materials in the air or in run-off water or extra external lighting associated with the development).

Habitat fragmentation is not likely to be an issue if the development retains the fringing woodland.

Post-development interference cannot reasonably be prevented but would be residential in type and retaining and/or planting a buffer strip of new trees around the existing mature woodland can reasonably be considered to offset this.

Predicted Scale of Impacts

See Appendix for tables of relative terms used by Verdant Ecology to describe the value of ecological features and level of change.

Without mitigation and based on survey work to date, the proposed work will have a Major Negative Impact on a feature of Negligible value into the Long Term. If indirect impacts (e.g. significant light pollution) are not prevented, impacts could be Major Negative on a feature of County value (the Ancient Semi-natural Woodland) into the Long Term.

With successful mitigation (retaining trees with bat roost potential, buffer planting, pollution prevention), impacts would be Short Term and the project would have a Minor to Major Positive impact.

Recommendations

It may not be necessary to provide the measures recommended below in detail before seeking planning permission. However, there should be enough information provided for it to be reasonable to believe that the proposals can and will be delivered.

Commit to the recommendations within and include this report with any planning application.

- ☐ Design in a strip of planting at least 15m wide as a buffer for the woodland.

- ❑ Design in minimal light pollution. This might mean that buildings with lots of glass are not acceptable. See <http://www.theilp.org.uk/documents/guidance-note-8-bats-and-artificial-lighting/>
- ❑ Adhere to a pollution prevention plan in line with the COSHH Regulations and the Environment Agency's Pollution Prevention Guidelines series.
- ❑ All membranes in the new buildings (e.g. behind hanging tiles/cladding and below roof tiles) must not be breathable, 'Tyvek' type. Acceptable types are 1F 'traditional' bitumen lining or Pavatex fibreboard types. Thus venting will may be necessary and this too cannot be of a type that uses a roll-along-the-ridge breathable membrane.
- ❑ Retain existing trees around the site. Incorporate habitats suitable for bats and connected to the wider area into the project layout; namely, a planting and establishment plan that includes tree planting within the development site and ideally a pond or reed filter system.

❑

Summary

- ❑ Bat foraging will be directly affected by the proposals.
- ❑ Bat roosts are unlikely to be affected.
- ❑ Mitigation principles herein are considered adequate to demonstrate that significant negative impacts on bats/roosts can reasonably be avoided and/or offset.
- ❑ If there is no reasonable alternative to the proposed work and the project is in the overriding public interest, bats should not be a reason for refusing planning permission.
- ❑ An appropriate condition to any planning consent would be to require compliance with the recommendations herein.
- ❑ You should seek the advice of an ecologist at least quarterly and/or if there are changes in plans.

Appendices

Appendix 1. Site Plan

Appendix 2. Survey Details

Automated Surveys

Anabat Express, microphone set on maximum sensitivity. Strapped to a tree about 1.5m above ground (see Appendix 1 for locations). Recordings were reviewed using AnalookK. There were relatively low numbers of calls so all were reviewed (even if only briefly). Categories were: species of bat (e.g. 'Noc'), possible species of bat (e.g. 'Noc?'), 'bat' and 'bat?'. If it fell in the last category (or was obviously not a bat) it was ignored. Notes were made of social and foraging calls. Number of calls was divided into 'dusk' (sunset to 1.5hours later), 'dawn' (1.5hours before sunrise to sunrise and 'overnight' (the rest).

Manned Surveys

Surveyors set tuneable detectors to 39kHz (whilst recording all frequencies) to maximise their chances of hearing Long-eared bats. Surveyors were positioned so as to start at a different location each time. Surveyors detected for approximately 15-30mins then moved to the next spot as quickly as possible.

Survey Dates and Times

	29/05/19	29/05/19 - 03/06/19	01/07/19	01/07/19 - 05/07/19	08/09/19 - 16/09/19	16/09/19
Type	Manned dusk survey	Automated	Manned dusk survey	Automated	Automated	Manned dawn survey
Survey times	21.00 – 23.00	nightly	21.15 – 23.20	nightly	nightly	04.30 – 06.36
Sunset/ sunrise time	21.02	Approx. 21.05 and 04.52	21.19	Approx. 21.17 and 04.52	Approx. 19.27 and 06.27	06.36
Staff	Jon Bradley*	n/a	Jon Bradley*	n/a	n/a	Jon Bradley*
Equip-ment	Batbox Duet to digital dictafone (Olympus VN5500PC)	Anabat Express	Batbox Duet to digital dictafone (Olympus VN5500PC)	Anabat Express	Anabat Express	Batbox Duet to digital dictafone (Olympus VN5500PC)

*(CL15-2016-17506, CL18-level 2-2015-13844, CL21-184)

Weather Conditions for Surveys

Night of	Sunset temperature (°C)	Minimum temperature (°C)	Rain (yes/no)	Humidity (%)	Wind (max mph)
Spring					
29/05	13	13	n	99-96	8
30/05	18	13	n	78-94	8
31/05	17	9	n	80-88	6
01/06	21	13	n	63-88	4
02/06	17	11	n	82-90	10
Summer					
01/07	19	12	n	60-76	8
02/07	18	12	n	60-94	9
03/07	18	10	n	56-84	9
04/07	21	14	n	61-78	4
05/07	20	15	n	67-79	6
Autumn					
08/09	17	9	n	66-86	2
09/09	14	9	n	89-98	4
10/09	17	13	n	80-80	7
12/09	18	16	n	87-95	9
13/09	19	8	n	74-96	6
16/09	18	16	n	79-82	0

Manned Survey Results

Approximate Number of Bat Passes Detected by Automated Detector

	dusk *	over night	dawn *	total	ppip	ppyg	leb	Noc	Sero	Leis	Myo	bat	comments
Spring													
29/05/19	20	39	5	64	48	0	4	0	0	0	1?	11	
30/05/19	7	38	21	66	44	0	3	0	0	0	2	17	
31/05/19	8	26	1	35	23	0	3	0	0	0	4	5	
01/06/19	12	55	6	73	39	0	9	0	0	0	4	21	
02/06/19	11	120	?	131	119	0	4	0	3	0	1	4	Kit failed for dawn on last day
Summer													
01/07/19	1	48	20	69	48	0	12	2	0	0	0	7	
02/07/19	3	22	12	37	28	0	5	0	0	0	0	4	

03/07/19	4	20	9	34	23	0	8	0	0	0	0	3	
04/07/19	19	210?	12	00's	200?	0	22	1?	0	0	0	21	All these calls seemed to be just one piping
05/07/19	1	13	2	16	7	0	2	0	0	0	0	7	
Autumn													
08/09/19	21	25	2	48	19	0	8	2	2	0	0	17	
09/09/19	6	16	1	25	8	0	5	2	0	0	1?	9	
10/09/19	14	33	28	75	44	0	15	5	0	0	0	11	
12/09/19	31	000's	20	000's	000's	0	5	0	0	0	0	8	A (presumed) individual Common Piptrelle spent over 1hr making social calls during the middle of the night.
13/09/19	10	25	4	39	14	0	2	3	7	1	2	10	

Appendix 3. 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.

Appendix 4. 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).

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 (i.e. there is a need for the work),
- ☐ 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.

Appendix 5. Assessment and Evaluation Tables Used by Verdant Ecology

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	

Matrix for Estimating the Significance of Impacts

				Degree of Impact		
Major negative		Minor negative		Negligible		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

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