Greena Ecological Consultancy

Stage II Bat activity report

LACOCK ABBEY

16th December 2021

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Brief

Surveys were previously conducted in 2019 on the presumption all roofs could be affected and ingress of cables could be made through any roof spaces, revised proposals are mainly to have conductors fitted externally lessening substantially the potential impacts to bats roosting in the property. This report presents the findings of a further bat activity survey targeting key sensitive areas where bats have been recorded emerging and works are proposed.

This ecological survey is intended to ascertain sufficient information to evaluate the situation adequately in preparation of the above-mentioned works. The information gathered will be necessary to comply with the UK wildlife legislation and European Regulations, which relate to planning regulations and with The Wildlife and Countryside Directives and Habitat Regulations.

Summary

1. Extensive bat surveys were previously conducted in 2019 on the presumption all roofs could be affected and ingress of cables could be made through any roof spaces, revised proposals are mainly to have conductors fitted externally lessening substantially the potential impacts to bats roosting in the property. This report presents the findings of a further bat activity survey targeting key sensitive areas where bats have been recorded emerging and works are proposed.

2. The building where works are proposed is Lacock Abbey, a National Trust property, were surveyed by Greena Ecological Consultancy in September and October 2019. This was a follow up survey previously Greena Ecological Consultancy inspected the property in 2017 and 2018 and Just Ecology carried out a partial survey for bats and birds in 2016.
   At least 11 bat species have been recorded around Lacock including nursery bat colonies that have been known at Lacock Abbey for many years, including one roost that at times holds over 1000 Soprano pipistrelle bats in the tower.

3. The Abbey and the grounds of the historic property provide ideal habitat for bats and 11 bat species have been confirmed to utilise the surrounding area for foraging or commuting.
   Bats of seven species were confirmed to roost within the structures in low numbers, together with a large maternity colony of soprano pipistrelles roosting in the south-eastern part of the complex.

4. These surveys combined with data obtained in 2019 show several sensitive areas exterior works should be carried out with care with a licensed watching brief attending. With the exterior nature of works no EPS bat licence is required for the works.

1. Introduction

1.1 Background

Lacock Abbey, a National Trust property, was surveyed extensively by Greena Ecological Consultancy in September and October 2019. This was a follow up survey previously Greena Ecological Consultancy inspected the property in 2017 and 2018, and Just Ecology carried out a partial survey for bats and birds in 2016.

The objective of this survey is to determine where and what bats roost in all roof areas in preparation for the proposed project of lightening conductors being fitted to all roofs which involves disturbance of parts of all roofs, this report presents the findings of a further bat activity survey targeting key sensitive areas where bats have been recorded emerging and works are proposed.

The survey site comprises target sections of the historic property.

The survey aimed to provide sufficient information for the decision making as well as to satisfy requirements of Natural England this will enable the National Trust team to develop the design proposals with informed consideration of ecological requirements and impacts.

1.2 Legislation

1.2. Bats

All UK bat species and their roosts are fully protected under the Wildlife and Countryside Act 1981 (as amended) through inclusion in Schedule 5, under the Countryside and Rights of Way Act 2000, and under Schedule 2 of the Conservation of Habitats and Species Regulations 2017. The Conservation Regulations designate bats as European Protected Species. In addition, they are protected by the Bern Convention and are given migratory species protection within the Bonn Conservation Agreement.

Taken together, the Acts and Regulations protecting bats make it an offence to:

- Deliberately kill, injure, capture or take bats
- Deliberately disturb bats. This particularly relates to disturbance that is likely to:
    - Impair their ability to survive, breed or reproduce, or to rear or nurture their young
    - Impair their ability to hibernate or (for migratory species) migrate
    - Affect significantly the local distribution or abundance of the species to which they belong
- Damage or destroy bat roosts
- Possess or transport a bat or part of a bat, unless acquired legally
- Sell, offer for sale or exchange bats or parts of bats.

A roost is any structure or place used for shelter or protection. Bats need to have access to a number of roosts because they use different roosts depending on season, breeding status and prevailing weather conditions. For this reason roosts are protected whether or not bats are present at the time.

As bats are designated European Protected Species (EPS), development and building works that are likely to result in the disturbance of bats, damage to or destruction of their roosts, or require bats to be caught or translocated, usually require an EPS licence to be obtained from Natural England before any works begin. Obtaining a licence involves completing an Application Pack, including a Method Statement that details mitigation

appropriate to maintaining the 'favourable conservation status' of the local bat population. Three conditions must be met before a licence can be granted:

- There is no satisfactory alternative
- The development will not be detrimental to the maintenance of local bat populations at a 'favourable conservation status' in their natural range
- The development must be for 'imperative reasons of overriding public interest including those of a social or economic nature' unless falling under other special categories such as prevention of the spread of disease.

An EPS licence is required for all development activities if there is a reasonable likelihood that an offence against Conservation of Habitats and Species Regulations 2017, Wildlife and Countryside Act 1981 (as amended) or Environmental Damage Regulation 2009 (as amended) will be committed.
The following offences could potentially be committed by carrying out the proposed development if any bat species are present during the proposed works:

- Capturing or killing – a wild animal of a European Protected Species (EPS) could be deliberately captured, injured or killed (Reg 41(1)(a))
- Disturbing EPS – a wild animal of an EPS could be deliberately disturbed including in particular a disturbance which is likely to impair its / their ability to survive or hibernate (Reg 41 (1)(b))
- Disturbing EPS whilst occupying a structure or place used for shelter or protection – includes intentional and reckless disturbance (s9 (4)(b)WCA)
- Damage of an EPS breeding site or resting place – (Reg 41 (1)(d)) – strict liability

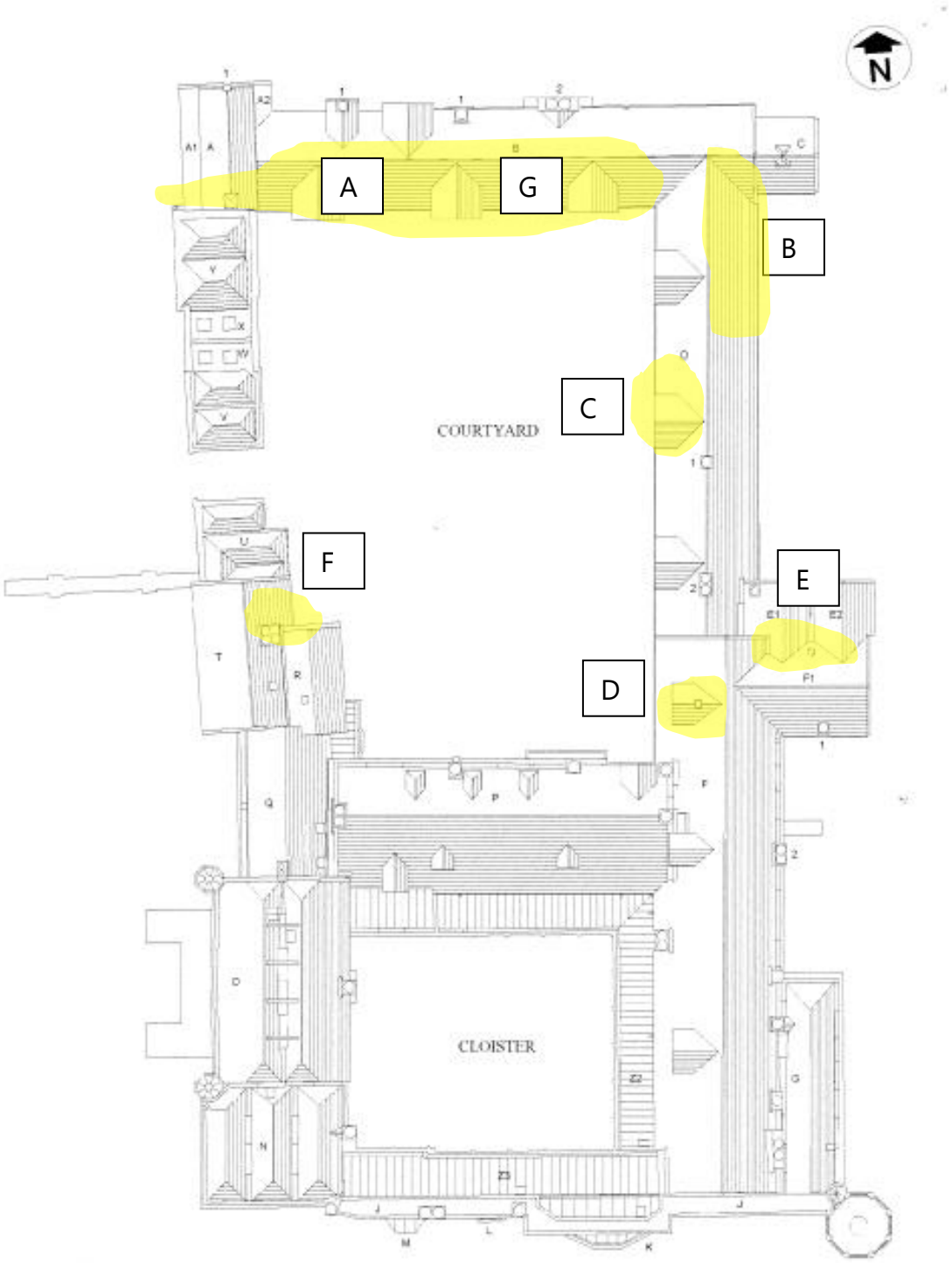
The above stated **offences can be avoided** where works are to take place when bats are not present and bat roost will be maintained. If roost is going to be available to bats at the time they usually occupy the structure, a **continued ecological functionality of the site will be preserved**. Suitable mitigation measures must be put in place prior, during and post works to ensure that continued ecological functionality will be maintained. An EPS licence is not required if continued ecological functionality is preserved and roosting conditions for bat will remain unchanged or will improve as a result of the proposed works. An experienced ecologist must attend works potentially affecting roosting bats to ensure legality of works.
In case the above listed offences cannot be guaranteed to be avoided throughout the proposed development, an EPS licence must be sought.
A simpler and faster way of carrying out development with low ecological impact has been introduced by Natural England and is now fully accepted for sites with low numbers of more commonly occurring bat species. The development is then carried out in line with a method statement prepared for the works and under the supervision of the licensed ecologist. **Low ecological impact class development licence** only covers low numbers of "common" bats: i.e. Common pipistrelle *(Pipistrellus pipistrellus)*, Soprano pipistrelle *(Pipistrellus pygmaeus)*, Daubenton's bat *(Myotis daubentonii)*, Brown long eared (*Plecotus auritus)*, Natterer's bat *(Myotis nattereri)*, Whiskered (*Myotis mystacinus)* and Brandt's bat (*Myotis brandtii),* providing the site in question does not serve as a maternity or hibernation roost. Serotine bats *(Eptesicus serotinus)* and Lesser horseshoe bats *(Rhinolophus hipposideros)* have recently been added to the low ecological impact class licence list of species for certain counties in England where these species are considered widespread.

2. Aims and Objectives

To carry out further bat activity survey targeting key sensitive areas where bats have been recorded emerging and works are proposed.

This report/ survey have been produced with reference to current guidelines for preliminary ecological appraisal (CIEEM, 2017).

Figure 1 Layout of Lacock Abbey – original Seymour and Bainbridge Ltd. Key Plan Roof 2006 with bat survey areas



3. Methods

Geoff Billington of Greena Ecological Consultancy carried out a site meeting with Sarah Maddaford & Andy Webster on 18th June 2021 to discuss proposals and to assess potential impacts, following on a bat activity survey of target areas (A – F) was carried out on 2nd September.

A single bat dusk emergence survey was carried out by Geoff Billington and Jacquie Billington both experienced bat surveyors. The surveyors were aided with five infrared cameras.
The cameras used for the surveys were SpyCameraCCTV 1080HD with built in infrared illumination. The manufacturer's specifications of the high-definition cameras list its range for both, colour (daytime, dusk) and black&white (post-dusk to complete darkness) during infrared illumination as 100ft (30.48metres). The cameras are fitted with a varifocal (adjustable) 2.8-12mm lens covering the field view from very wide (up to 100 degrees) to narrow and zoomed in. The setting is manual, and a maximum possible view of the surveyed structure is always ensured prior to the start of the survey. The smart IR technology enables the cameras to automatically adjust the intensity of the infrared lighting based on the distance objects are located from the cameras (wide dynamic range enhancement). The recording from each night is subsequently viewed by an experienced licensed bat ecologist with the possibility to rewind and view segments repeatedly, providing much higher accuracy of the assessment than the traditional in-field survey method alone.
The cameras were used with time-synchronized bat detectors and recorders EcoObs Batcorder.
Batcorder is the first worldwide data recorder that distinguishes bat calls from other sound sources in real-time (online signal analysis). Calls are recorded digitally as call sequences. Bush crickets and other sounds (e.g. wind, water, and rustling of leaves) are under most circumstances not recorded at all. Batcorder was developed specifically to be used as an autonomous recording device in the field. In contrast to other such devices, each Batcorder and its microphone calibrated for a fixed sensitivity allowing the comparison of activity recorded at different locations and with different detectors (Nhbs.com, 20120).
Surveyors used hand-held frequency division and heterodyne bat detectors BatBox Duet, Walkabout and D1000X real time recording bat detector systems.

4. Results

2nd September

Bat activity survey was conducted overall between 1932 & 2108 sunset 2052

	Temp.	Cloud	Rainfall	Wind
Start	16C	100%	0	0
End	15C	90%	0	1

Weather conditions during the survey were very satisfactory for bats to be active and complied with BCT Survey Guidelines on seasonal timings and weather suitability

Area A

Jacquie Billington

time	bat species	Notes
2012	2x 55P	Heard
2013	Noc	Heard distant
2025	LE	Briefly heard
2030	Noc	Heard distant
2040	55P	Heard distant
2045	Noc	Heard distant
2047	55P	In courtyard social calling
2100	Sert	Calling from inside roof not emerging
2100	45P	Social calling
2100	55P	Social calling

45P – Common pipistrelle, 55P – Soprano pipistrelle, LE– Long eared, Noc – Noctule, Sert – Serotine

No bats confirmed emerging

Area B

Geoff Billington

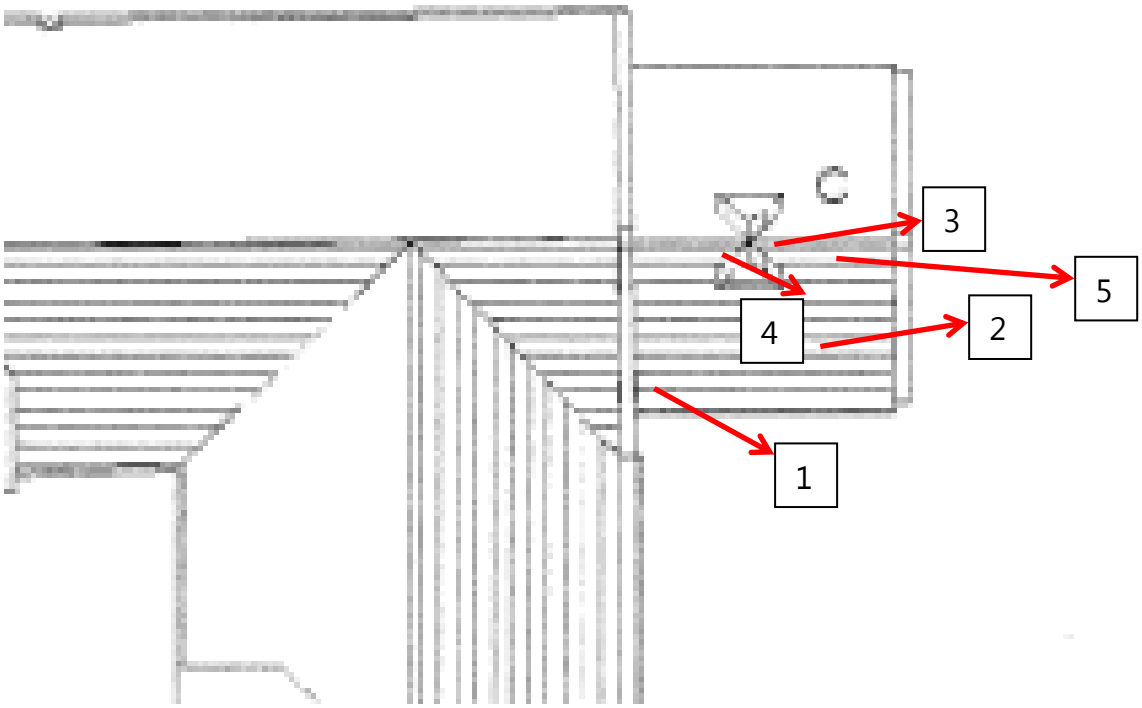
time	bat species	Notes
2002	55P	Emerged from 1 see Figure 2
2003	2x 55P	Emerged from 1 see Figure 2
2004	LE	Emerged from 2 see Figure 2
2008	55P	Emerged from 1 see Figure 2
2010	55P	Past S - N
2011	U	Past S - N
	55P	Foraging up & down wall
2012	55P	Emerged from 1 see Figure 2
2013	55P	Past S - N
2014-2018	55P	Foraging N – S - N
2016	U	Emerged from 3 see Figure 2
2019	Natt	S - N

2022	Sert	Past S – N
2023	LE	Emerged from 4 see Figure 2
2027	55P	Emerged from 5 see Figure 2
2032	Natt	S-N
2040	LE	Past
2041	45P	Heard to east
2043	Noc	Heard distant
2045	Noc	Heard distant
2051	55P	Heard distant

45P –Common pipistrelle, 55P – Soprano pipistrelle, LE– Long eared, Noc – Noctule, Sert – Serotine, Natt – Natterer's

Six Soprano pipistrelle, two Long eared & one unidentified bats emerged.

Figure 2 Area B bat emergence points



Area C

Batcorder

time	species
2023-2100	17x Noc

Noc – Noctule

Video
No bats emerged

Area D

Batcorder

time	species
2016	55P
2023-2108	5x Noc

55P – Soprano pipistrelle, Noc – Noctule

Video
No bats emerged

Area E

Batcorder
No recordings

Video
No bats emerged

Area F

Batcorder

time	species
2015	55P
2022-2058	6x Noc
2102	4x 55P & 2x Sert

55P – Soprano pipistrelle, Noc – Noctule, Sert - Serotine

Video
No bats emerged

Area G

Batcorder
No recordings

Video
No bats emerged

SUMMARY

No bats were recorded emerging from any of the target areas A – G, nine bats were recorded emerging from a roof adjacent to area B from northeast corner of site.
Because bats can move around and seasonal use can vary from year to year so previous survey data should also be considered i.e. full survey conducted in 2019.

Surveys in 2019 identified several areas of relevant interest for works with bats present as detailed below in Figures 3 – 6.

Figure 3 Northwest corner of courtyard (including A in 2021)



Figure 4 Central east side of courtyard (including C in 2021)

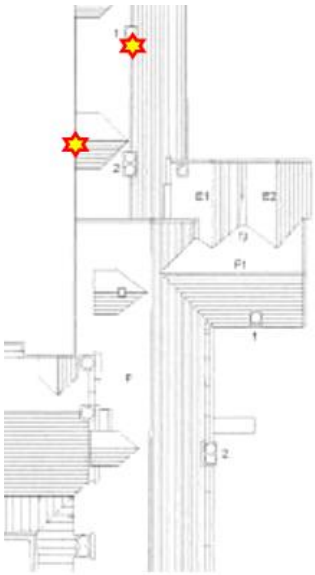


Figure 5 Northeast corner of courtyard (including B in 2021)

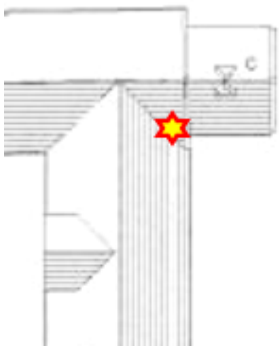
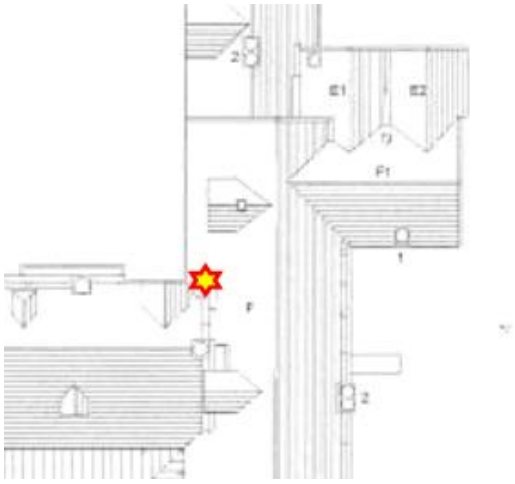


Figure 6 Southeast of courtyard (including D in 2021)



5. Discussion / Conclusions

Two bat species were confirmed to be roosting during these targeted surveys of seven areas Lacock Abbey around the courtyard in 2021. These were soprano pipistrelle and long-eared bats. Also in 2019 two further bat species were recorded in these areas – Common pipistrelle and Serotine bat.

Area A
A sensitive area with bats emerging from several locations in 2019.

Area B
A sensitive area with bats emerging adjacent to the work area in 2021 and from the work area in 2019.

Area C
One bat emerging from one location in the work area in 2019 from under edge of roof (apex).

Area D
One bat emerging from one location in the work area in 2019 from under edge of roof (valley).

Area E
No bats recorded in the work area in 2019 or 2021, so of no concern.

Area F
No bats recorded in the work area in 2019 or 2021, so of no concern.

Area G
No bats recorded in the work area in 2019 or 2021, so of no concern.

Areas A, B, C, D
For these a watching brief should attend to discuss with contractors and to check tiles where any fastenings will be inserted into the roof.

Areas E, F, G
No requirements

Any ingress of works into roof spaces must be accompanied by a watching brief and not be in the bat breeding period May-August.

For the proposals with exterior conductors and minimal interference to the structure I consider the works do not require an EPS bat licence.
But for works in bat emergence areas a check should be carried out first under tile edges (by licensed bat ECW) before any persons/ladders are put onto the roof in case bats are roosting between tiles, if works are carried out in winter (November – March) this requirement will be reduced.

6. References

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