

Bat Survey of:

Palace Green Library and the Education and Learning Centre
Palace Green
Durham

Prepared for:

Howarth Litchfield
Liddon House
Belmont Business Park
Durham
DH1 1TW

Report Ref:

HL_PalaceGreen_Bat2.1

Report prepared by	Position	Date
Barry Anderson MCIEEM MArborA	Director	31/10/2023
Report verified by	Position	Date
Barry Anderson MCIEEM MArborA	Director	31/10/2023



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Appendix 1 – Bat Activity Flight Plan for 05/09/2023

1.0 EXECUTIVE SUMMARY

1.0.1 Dendra Consulting Ltd was commissioned by Howarth Litchfield to undertake a bat survey of two buildings on Palace Green, Durham. The buildings are Palace Green Library and The Education and Learning Centre. Both roofs are in a poor state of repair. Both roofs currently incorporate a breathable membrane.

1.0.2 Surveys of an adjacent building on Palace Green, undertaken by Dendra Consulting Ltd in 2013, found 5 roosting common pipistrelles in The Education and Learning Centre. The roost was categorised as day roost and not a maternity or hibernation roost. Several other surveys of neighbouring buildings have been undertaken by Dendra between 2013 and 2023 and have not recorded bats in either of the two buildings.

1.0.3 A further survey undertaken in early September 2023 did not reveal any roosting bats in either of the two buildings. Given the results of the survey in 2023, coupled with previous surveys results, it is possible that day roosts used by low number of common pipistrelles could be found on site. Maternity use is considered unlikely. Hibernation use cannot be ruled out. The presence of breathable membrane suggests that neither building offers suitable long term opportunities for bats due to the snagging propensity of these types of membranes.

1.0.4 A mitigation strategy has been provided and will include the following:

- The development will **not** require licence from Natural England.
- Works will be time to avoid starting during the hibernation period.
- The project ecologist will provide a toolbox talk at the start of the project.
- The works near the historic roost will be supervised by the ecologist.
- Roosting opportunities will be retained in the finished roofs.
- A breathable membrane will not be installed in the new roofs unless it has passed a snagging propensity test and is certificated. If this is not possible the roofs will be covered with traditional 1F felt.

1.0.5 Due to the status of the historic roost on site, long term monitoring is not required.

2.0 INTRODUCTION

2.1 Purpose of Report

2.1.1 Dendra Consulting Ltd was commissioned by Howarth Litchfield to undertake a bat survey of two buildings on Palace Green, Durham. The buildings are Palace Green Library and The Education and Learning Centre.

2.1.2 The scope of the contract was to:

- Undertake a bat survey of the buildings.
- Assess the potential for the current proposals to affect bats.
- Formulate an appropriate mitigation plan.

2.2 Details of proposals

2.2.1 It is proposed to re-roof the buildings as the current roof coverings are in a state of disrepair.

2.3 Legislation

2.3.1 Bats

All UK species of bat are protected under The Conservation of Habitats and Species Regulations 2019. This law makes it illegal to:

- Deliberately capture, injure or kill a bat
- Deliberately disturb a bat^[*]
- Damage or destroy a bat roost or resting place

^[*]Disturbance of bats includes in particular any disturbance which is likely to:

- Impair their ability
 - to survive, to breed or reproduce, or to rear or nurture their young; or
 - to hibernate or migrate
- Affect significantly the local distribution or abundance of the species to which they belong.

2.4 Limitations

- 2.4.1 Throughout the year bats are known to roost deep in cracks, crevices and cavity walls, making roosts difficult to identify during a visual assessment. Furthermore, bats may move between several roosts depending on metabolic and social requirements (English Nature, 2004) and therefore may not be resident at a particular roost at the time of survey. Bat roosts remain protected throughout the year, including periods during which they are not occupied. A lack of evidence should not be considered conclusive proof of an absence of roosting bats.
- 2.4.2 The information and conclusions contained in this report remain valid for a period of **one year** from the date of the latest survey. Any changes to the development proposals or the site boundary may require the report recommendations to be reviewed and re-assessed.

3.0 DESKTOP STUDY

3.1 Site Location and Surrounding Area

3.1.1 The buildings are located on Palace Green, Durham City. The approximate national grid reference is NZ273422. The approximate altitude is 100m AOD. The buildings are surrounded by other buildings, amenity grassland, amenity trees and hardstanding. The wooded banks of the River Wear lie 70m to the west, providing excellent foraging and roosting potential for bats. Figure 1 shows the site location and surrounding area.

Figure 1 – Site location and surrounding area.



3.2 Pre-Existing Information

3.2.1 Data held by the Durham Bat Group has revealed the presence of all eight of the species commonly occurring in the county to be present within the locality. Durham Cathedral, located 100m south, and surrounding buildings on the Durham Peninsula hold numerous roosts of potentially very large numbers of bats.

3.2.2 Surveys of an adjacent building on Palace Green, undertaken by Dendra Consulting Ltd in 2013, found 5 roosting common pipistrelles in The Education and Learning Centre. The roost was categorised as day roost and not a maternity or hibernation roost.

3.3 Status of Bat Species

3.3.1 The status of bat species found within County Durham are provided in figure 2 below.

3.4 Site/Building Inspection

3.4.1 The Education and Learning Centre (Photographs 1 and 2) is a two storey stone built structure attached to other buildings on its north, south and west elevations. The east elevation overlooks Palace Green. The roof is pitched and covered with stone slates. Information from the client suggests that the roof is lined with breathable membrane below the tiles. No internal inspection was undertaken.

3.4.2 Palace Green Library is a single storey stone built structure attached to other buildings on its north, east and west elevations. The southern elevation overlooks a narrow alley. The roof is virtually impossible to view from ground level and photograph 3 shows it viewed from the roof of a neighbouring building. The roof is covered with stone tiles. Information from the client suggests that the roof is lined with breathable membrane below the tiles. No internal inspection was undertaken.

Figure 2 – Status of species recorded in the search area

Species	Local status (<2km – from data searches)	County Status – Durham (NEENP)	National Status (BCT 2023)
Brandt's bat	Recorded	Rare and roosts in the Durham area are of national importance.	Stable
Brown long-eared bat	Recorded	Reasonably widespread.	Stable
Common pipistrelle	Recorded	Ubiquitous throughout the whole of the County.	Increasing
Daubenton's bat	Recorded	Widespread along water courses.	Stable
Nathusius' pipistrelle	Not recorded	Present but no roost sites known	No population trend data available
Natterer's bat	Recorded	One of Durham's rarer species	Increasing
Noctule	Recorded	Localised in the area's mature woodland in rural areas.	Stable
Soprano pipistrelle	Recorded	Widespread.	Increasing
Whiskered bat	Recorded	Widespread but localised. Roosts in the Durham area are of national importance.	Stable

Photograph 1 – East and south elevations of The Education and Learning Centre. Red arrow shows roost location found in 2013



Photograph 2 – South and West elevations of The Education and Learning Centre viewed from roof of neighbouring building.



Photograph 3 – West elevation of Palace Green library roof viewed from roof of adjacent building



3.5 Survey Timing, Methodology & Personnel

- 3.5.1 The survey and report were undertaken by Barry Anderson. Barry is an experienced ecologist holding a Natural England Level 2 Bat Survey Class Licence (WML-CL18) and full membership of the Chartered Institute of Ecology and Environmental Management (MCIEEM).
- 3.5.2 As a result of previous knowledge of the site, and the results of previous surveys by Dendra, the site was classified as having a high potential to support low numbers of roosting bats. Maternity use was not considered to be highly likely given past surveys of the area. Given the time of year a single nocturnal activity survey was undertaken. Information from other surveys has also been drawn upon to reach any conclusions and recommendations in this report.
- 3.5.3 The nocturnal activity surveys were conducted by an experienced lead surveyor, holding a Natural England Level 2 Class Licence to survey bats of all species for scientific and/or educational purposes (WML-CL18). The lead surveyor was accompanied by additional surveyors with previous experience of carrying out such surveys. A list of personnel, together with relevant Natural England Class Licence numbers, can be found in Figure 3. Weather conditions during the nocturnal survey are also summarised in Figure 3.

Figure 3 – Weather conditions and personnel during surveys.

Date	Weather Conditions					Surveyors and Licence numbers (Lead surveyor in bold)
	Precipitation	Cloud cover (%)	Wind (Beaufort)	Start temp (°C)	End temp (°C)	
05/09/2023	None	0-20	B1	21.3	19.4	Barry Anderson 2015-15082-CLS-CLS Shaun Morrison 2015-12715-CLS-CLS +2 unlicensed surveyors

3.6 Survey Results

3.6.1 Desk Study and Risk Assessment survey Results

A previous roost was found in 2013 by Dendra Consulting Ltd in The Education and Learning Centre. Five common pipistrelles were found emerging from a point shown in Photograph 1. Other surveys of the adjacent Exchequer Building to the north were undertaken in 2013 by Dendra Consulting Ltd and did not record any bats from The Education and Learning Centre, but did record a roost of a single Common Pipistrelle from the west elevation of The Exchequer Building. Generally the buildings on Palace Green are likely to hold small numbers of common pipistrelles and various times of the year. The Cathedral, to the south, is a known autumn swarming site for large numbers of common pipistrelles.

3.6.2 Dusk activity survey – 5th September 2023

During the dusk survey bat activity was constant but surprisingly low given the location, time of year and weather conditions. Common pipistrelles were regularly observed commuting past and foraging near the buildings. Noctules were observed high overhead. Brown long-eared bats were recorded by one of the surveyors. No bats were recorded leaving the buildings by any of the surveyors.

3.6.3 A thermal imaging camera was deployed, and set to record, for the duration of the survey. The footage was viewed the following day and no bats were recorded emerging from the buildings.

3.6.3 The results of the nocturnal bat activity survey are summarised in Figure 4 below. A bat activity plan (appendix 1) shows surveyor locations, the location of the thermal camera, main flight paths and foraging areas.

Figure 4 – Table summarising findings of nocturnal surveys

Date	Number of Surveyors	Sunset or Sunrise time	Start time	End time	Species recorded	Emergence/ Re-entry
05/09/2023	4	19.49	19.30	21.00	Common pipistrelle Noctule Brown long-eared	None

4.0 INTERPRETATION AND EVALUATION OF SURVEY RESULTS

4.1 Presence/absence

4.1.1 The survey in 2023 did not reveal the presence of bats within either of the two surveyed buildings. However, previous surveys in 2013 did reveal the presence of 5 common pipistrelles from The Education and Learning Centre. Other surveys from 2014 did reveal a single common pipistrelle from a neighbouring building to the north.

4.1.2 Given the number of surveys undertaken on this site over a period of time, it is likely that bats could be present in the buildings at various times of the year. A historic roost has been established in The Education and Learning Centre and it is likely that bats will utilise this, and other buildings, in the future. Presence has not been confirmed in 2023. However a precautionary approach would be to assume low numbers of bats could be present at any time.

4.2 Population Assessment

4.2.1 The highest number of bats observed during the surveys was 5 in 2013. This is considered to be a good indication of maximum numbers likely to be found.

4.3 Site Status Assessment

4.3.1 The buildings could contain low numbers of non-breeding bats and it is likely that day roosts of common pipistrelle will be present. Roosts of this nature are categorised as being of low conservation significance under the Bat Mitigation Guidelines (Mitchell-Jones, 2004) (Figure 5). Maternity use on the site has not been established and is considered unlikely. Hibernation use cannot be ruled out.

4.4 Constraints

- 4.4.1 The survey information contains only a single survey from 2023 and this was outside of the maternity period of May to August inclusive. However, given our prior knowledge of this site, this is unlikely to pose a significant constraint.

Figure 5 – Summary of roost status, conservation significance and mitigation requirements. Adapted from the Bat Mitigation Guidelines (Mitchell-Jones 2004).

Roost status	Conservation significance	Proportionate mitigation
Individuals or small numbers of common species (not a maternity site)	Low	Flexibility over new roosting provisions. No conditions about timing or monitoring
Individuals or small numbers of rarer species (not a maternity site)	Low/Medium	New roosting provisions need not be like for like but should be suitable based on species requirements. Minimal timing constraints and monitoring requirements
Hibernation sites for small number of bats Maternity sites for common species	Medium	Timing constraints. More or less like for like roost replacement and bats not to be left without a roost. Monitoring for 2 years preferred.
Maternity sites for rarer species	Medium/High	Timing constraints. Like for like roost replacement as a minimum. No destruction of roost until replacement is in use Monitoring for 2 years minimum.
Significant hibernation sites for rarer/rarest species and species assemblages Maternity sites for rarest species	High	Ideally no interference. Design changes must be strongly considered. Timing constraints. Improved roosting provisions. No destruction of roost until replacement is in use. Monitoring for as long as possible.

5.0 IMPACT ASSESSMENT

5.1 Short Term Impacts: Disturbance

5.1.1 The proposals could result in disturbance to low numbers of common pipistrelles. This is a locally, regionally and nationally common species. Disturbance is unlikely to affect a maternity colony but could impact on hibernating bats.

5.2 Long-Term Impacts: Roost Modification

5.2.1 Works to the buildings could impact upon the known historic roost on site. This could result in the loss of the roost.

5.3 Long-Term Impacts: Roost Loss

5.3.1 The proposed works could result in the loss of the historic roost.

5.4 Long Term Impacts: Fragmentation and Isolation

5.4.1 The scale of the proposed works will ensure that there will be no fragmentation of bat habitat and no isolation of bat populations. No impacts of this nature are predicted.

5.5 Post Development Interference Impacts

5.5.1 Roof replacement will not alter the use of the site and therefore no impacts of this nature are predicted.

5.6 Predicted Scale of Impacts

5.6.1 Negative impacts could occur from potential disturbance to low numbers of non-breeding bats, and the loss of a single historic day roost. Disturbance to hibernating bats cannot be ruled out. Given the scale of the proposals, and the species present, these impacts are likely to be confined to a site level only. No wider level impacts are predicted.

6.0 MITIGATION & COMPENSATION

6.1 Summary of Mitigation Strategy

6.1.1 The following mitigation strategy is based on the following:

- The presence of a historic roost from 2013
- The lack of evidence of a roost in 2023
- The presence of low numbers of a common species of bat
- A maternity roost is unlikely to be present
- Hibernating bats cannot be ruled out
- The roofs of the two buildings are already lined with breathable membrane, which is detrimental to bats and can lead to entrapment and death.

6.2 Licensing Requirements

6.2.1 In this instance we do not consider a licence from Natural England to be a requirement. A licence should be a last resort, as advised by natural England, and in this instance we consider the proposals would be better served with a method statement and supervision by a licensed ecologist.

6.3 Timing and/or Phasing of Works

6.3.1 Works will commence outside of the hibernation period of November to March inclusive.

6.4 Capture and Exclusion

6.4.1 No exclusion will be required. Capture and relocation may be necessary but this will need to be assessed at the time.

6.5 Roost Retention

6.5.1 The roof covering will be arranged so that bats will have access at the eaves of The Education and Learning Centre. It is hoped that one such location will be in the area previously identified as a bat roost in 2013. Critically the roof will

not be recovered with a breathable membrane that has not passed a 'snagging propensity test'. The roof will be covered with either a breathable membrane that has passed a snagging propensity test (and has a certificate) or it will be covered with traditional 1F felt. This will help improve the overall opportunities for bats on site.

6.6 Roost Modification

6.6.1 6.5.1

6.7 Replacement Roosts

6.7.1 as 6.5.1

6.8 Supervision

6.8.1 The ecologist will carry out the following works:

- Act as the project ecologist.
- Provide a tool box talk to the contractors at the start of works.
- Supervise the removal of materials near the historic roost.
- Check the installation of the membrane and check that access for bats is available.
- Provide an emergency standby service in the event that bats are unexpectedly discovered at any time during the project.

6.9 Monitoring

6.9.1 Due to the status of the roost no monitoring is required.

6.10 Mitigation Site Ownership

6.10.1 No third party permissions are required.

7.0 REFERENCES

Bat Conservation Trust (2023). *The National Bat Monitoring Programme Annual Report 2022*. Bat Conservation Trust, London. Available at <https://www.bats.org.uk/our-work/national-bat-monitoring-programme/reports/nbmp-annual-report>

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Last available at:

<https://neenp.org.uk/natural-environment/biodiversity-priorities/>

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Available at:

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Accessed 28th August 2023

APPENDICES

Appendix 1 – Bat Activity Flight Plan for 05/09/2023

Key	
Surveyor location	1
Thermal camera	TC
Flight path	
Foraging areas	
Surveyed buildings	

Bat Survey of:
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Prepared for:
 Howarth Litchfield
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 Belmont Business Park
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 DH1 1TW

Report Ref:
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Scale: Not to scale

Dendra Consulting Ltd
 41A Front Street
 Sacriston
 Durham
 DH7 6JS
 Tel/Fax: 0191 3719636
 email: info@dendra.co.uk
www.dendra.co.uk

