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Bat hibernation survey of building B15 for proposed new prison, bowling club, and boiler house on land adjacent to HMP Garth and HMP Wymott, Leyland

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1	31/03/2022	n/a
2	14/06/2022	Change of wording in section 6 following Mace comments.

Non-technical summary

Introduction

CGO Ecology Ltd (CGO) was instructed by Mace Ltd, on behalf of the Ministry of Justice (MoJ), to conduct a bat hibernation survey of building B15 (occupied by the Probation Office), adjacent to HMPs Garth and Wymott, Leyland, Lancashire. The MoJ proposes a development as part of its New Prisons Programme on land centred on (SD 502 205). The Local Planning Authority (LPA) is Chorley Council.

Methodology

CGO subconsultants Haycock and Jay Associates Ltd (HJA) undertook the survey. It comprised two visits in January and February 2022. Detailed internal inspections and endoscope surveys were conducted, and a static electronic bat detector was placed on B15 to record any bat activity over two periods of at least a week in January and February 2022. The surveys were led by Karl Harrison MCIEEM (Natural England CL18 licence).

Results

A single hibernating bat, presumed to be a common pipistrelle, was identified during the building inspections. Common pipistrelle activity was recorded on two nights in February 2022 by the static bat detector (total of 95 calls detected). B15 is likely to be a hibernation roost for between 1 and 10 common pipistrelles, with local importance.

Conclusions, mitigation, enhancement recommendations

B15 contains a bat hibernation roost, and any development impacts must be mitigated. Although building B15 will be retained, it is in relatively close proximity to construction works. Potential impacts include disturbance from increased levels of noise, vibration, and artificial lighting during the construction and operational phases.

Mitigation measures to seasonally-avoid or minimise these impacts will be included in the Construction Environment Management Plan. This will ensure that there is no significant negative impact on bats hibernating in B15.

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1. Introduction

1.1. Background

CGO Ecology Ltd (CGO) was instructed by Mace Ltd, on behalf of the Ministry of Justice (MoJ), to conduct a bat hibernation survey of building B15 (occupied by the Probation Office), adjacent to HMPs Garth and Wymott, Leyland, Lancashire. The MoJ proposes a development as part of its New Prisons Programme on land centred on (SD 502 205). The Local Planning Authority (LPA) is Chorley Council.

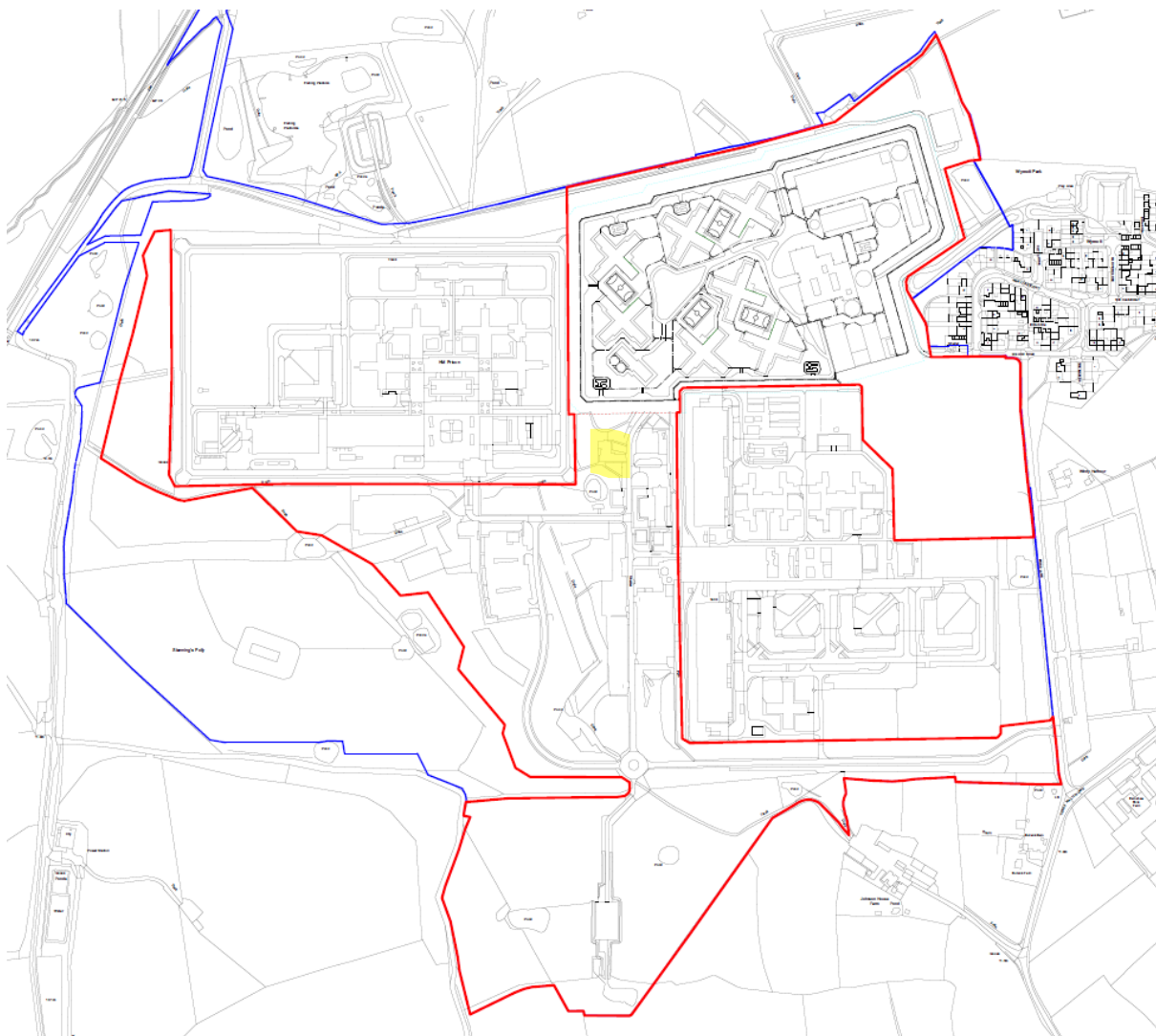


Figure 1 – Development site boundary (red line), MoJ ownership boundary (blue line), and location of B15 (yellow area).

All UK bats and their roosts are protected by the Wildlife and Countryside Act 1981 (as amended) and the Habitats Regulations 2017 (as amended). Bats may roost in crevices in building roofs, loft voids, and other built features, or in trees and other natural cavities.

Bat roost surveys of buildings and woodland were conducted in 2021 (Harrison & Gleed-Owen, 2021; Gleed-Owen, 2021). A previously-known maternity roost of common pipistrelles was identified in B15, and mitigation measures have been invoked to minimise and avoid construction impacts. Among the mitigation toolkit is seasonal avoidance of the May-August period, to avoid disturbance during the maternity period.

A hibernation survey of B15 was deemed necessary to identify whether the winter months might also present a seasonal constraint. The location of B15 is at Ordnance Survey grid reference SD 5031 2062.

CGO subconsultant Haycock and Jay Associates Ltd (HJA) was commissioned to carry out the surveys. Karl Harrison MCIEEM (Level 2 Class Licence no. 2017-32750-CLS-CLS) was the lead surveyor, assisted by Ciaran Rowett.

The authors of this report are Will Steele ACIEEM of HJA, and Dr Chris Gleed-Owen MCIEEM, Director and Principal Ecologist of CGO.

This report aims to follow CIEEM (2017) guidance.

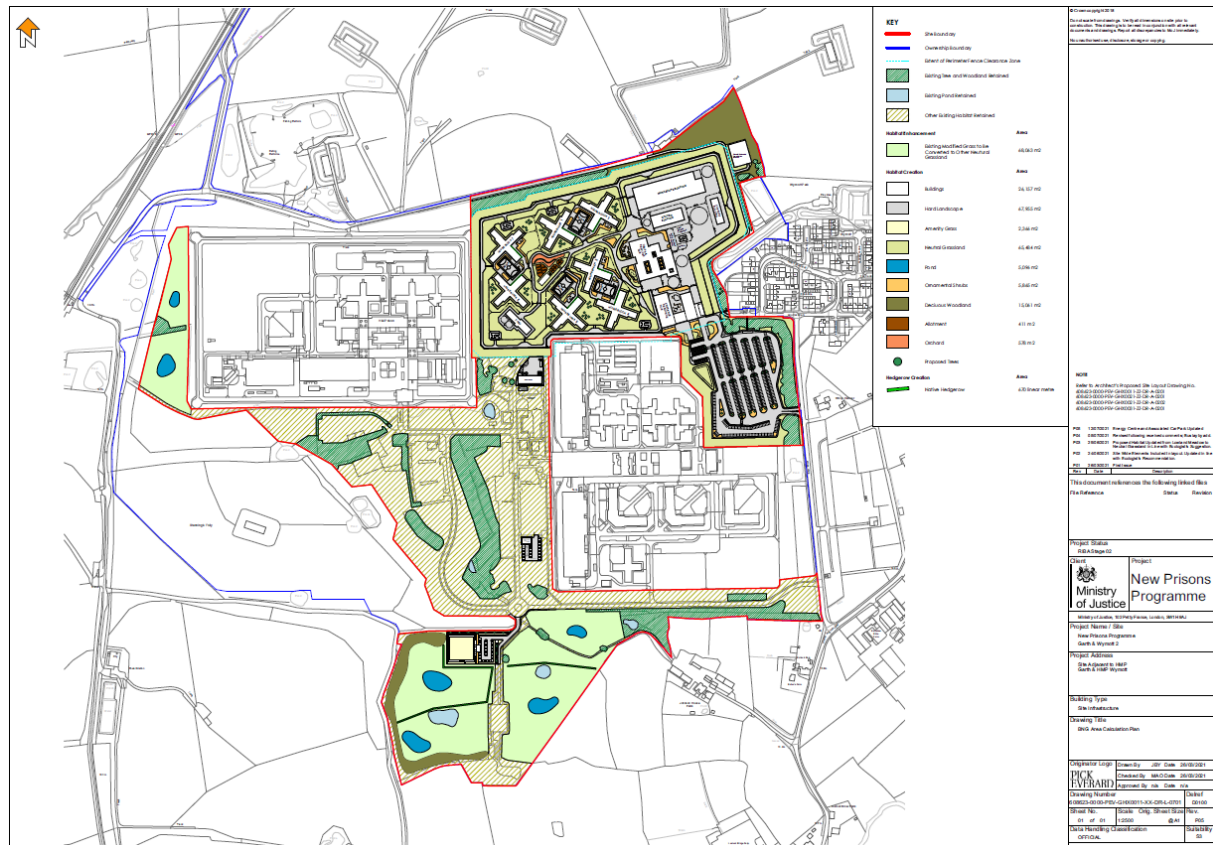


Figure 2 – Proposed development and landscaping plan.

1.2. Site context

The development site comprises predominantly land north of HMP Wymott, currently used as a sheep (*Ovis aries*) farm, stables, bowling club, boiler house, and utility buildings. The part within HMP Wymott is a sports field and disused assault course. The new boiler house will be between the existing prisons. The new bowling club will be on farmland to the south. Some woodland will be lost for the new prison development. Larger areas of woodland will remain.

The surrounding area is intensively farmed for a mixture of livestock and arable crops, but there are significant areas of woodland and other land uses. A large area of woodland lies to the southwest of the site, extending around the west and north of HMP Garth. This will be retained unaffected.

There are major urban areas to the northeast (Leyland and Preston), and a network of minor roads, railway lines, villages, hamlets, and farms in all directions.

1.3. Proposed works

The proposed development is a hybrid planning application seeking: Outline planning permission (with all matters reserved except for access, parking and landscaping) for a new prison (up to 74,531.71m²) within a secure perimeter fence following demolition of existing buildings and structures and together with associated engineering works; Outline planning per-

mission for a replacement boiler house (with all matters reserved except for access); and Full planning permission for a replacement bowling green and club house.

2. Methodology

2.1. Hibernation inspections

Detailed inspections of the building were undertaken on 24th January and 16th February 2022 by Karl Harrison (CL18 Natural England licence), assisted by Ciaran Rowett.

The January survey involved only an external inspection; the February survey involved both external and internal inspection.

The inspections were carried out during daylight hours, and in accordance with standard Bat Conservation Trust methodology (Collins, 2016). All accessible cracks, crevices and voids were inspected for hibernating bats, with the aid of a powerful torch, flexible endoscopes, and close-focus binoculars. The internal inspections covered all areas of the building where safe access was possible.

Cavities, cracks and crevices which may offer suitable hibernation roosting features for bats were identified, and where accessible searched. Hibernating bats can be difficult to find, as they often crawl deep within cavities and crevices. Flexible endoscope was used where practical. As well as hibernating bats, other evidence of presence was also searched for, such as droppings and oily staining inside and around potential roost features, and droppings below features.

In addition, the inspections recorded any evidence of use by bats that may have accumulated at other times of the year, including feeding remains, claw marks, staining from urine and fur, and bat droppings on floors and surfaces. The inspections focused on the basement/cellar and roof spaces of the building. The office spaces are well-sealed, well-lit, warm, and unattractive to bats.

2.2. Static detector monitoring

Static detector monitoring was undertaken using an Anabat Express recording electronic bat detector. The detector was placed on the north side of the building from 24th to 31st January 2022 (seven nights), 1st and 2nd February 2022 (two nights), and 16th to 27th February 2022 (11 nights).

The detector was positioned strategically to be close to the main access point for the known maternity roost (Harrison & Gleed-Owen, 2021), where most bat activity was expected. The detectors also recorded air temperature.

The static detector monitoring was conducted in line with standard methodology (Collins, 2016), whereby detectors were left to record for at least a week in both January and February, from at least 30 minutes before sunset until at least 30 minutes after sunrise.

Bat calls recorded give an indication of bat activity around the north aspect of the building during the monitoring periods. Any bat species using the building can be identified from the recordings, and give a general impression of bat activity levels, but the data cannot be used to give an accurate determination of the number of bats present.

The Anabat Express static detector records in Zero Crossing format. Calls were analysed manually in AnalookW (Titley Scientific). Where possible, calls were identified to species level.

2.3. Interpretation and evaluation

The recorded data were used to categorise the roost according to the main bat roost types listed in the Natural England European Protected Species licence application form, and in

accordance with current guidelines (Collins, 2016). This information was used to assess the potential impacts of the proposed development, and to identify a suitable mitigation response.

2.4. Limitations

Not all areas of the large, boxed soffits around B15 could be inspected exhaustively. Soffits at the gables were too high to access, and they were not surveyed. It was not possible to access and inspect any wall cavity.

3. Results

3.1. Hibernation inspections

A single unidentified bat was present within the timber soffit at the east gable during both the January and February 2022 building inspections.

During the February survey, when internal access to B15 was possible, bat droppings and several dead juvenile bats (probably also common pipistrelle) were observed in the loft space. This is consistent with the maternity roost known to be present.

3.2. Static detector monitoring

The results show some bat activity, suggesting that a small number of common pipistrelle may be hibernating in, or close to, B15. The calls were recorded on the evenings of 21st February 2022 (34 passes) and 25th February 2022 (40 passes). The peak of activity was around 19:00.

The static detector recorded temperatures from 4.25°C to 13.25°C in January, and 4°C to 12.75°C in February 2022. This shows that nocturnal temperatures were sufficient to allow bat flight in some nights in both months.

Survey Dates	Species recorded	Notes
24 th to 31 st January 2022 1 st and 2 nd February 2022	No bat activity recorded	
16 th to 27 th February 2022	Common pipistrelle (95 calls/passes)	All bat activity comprised common pipistrelle and occurred on seven of the 14 recording nights, each in the first half of the night.

Table 1 – Summary of static detector monitoring results.

4. Baseline ecological conditions

The baseline ecological conditions are that:

- A single hibernating bat, assumed to be common pipistrelle, was recorded in January and February 2022 within the soffits at the east gable of B15:
- Low levels of common pipistrelle call activity were recorded in February 2022.

The evidence suggests that B15 is being used by low numbers (1-10) of hibernating common pipistrelle bats. This includes allowances for limitations which reduced detectability.

Building B15 is therefore considered to be a bat hibernation roost of local importance, and of lesser importance than its value as a common pipistrelle maternity roost.

5. Impact assessment

Building B15 will be retained, but construction activities nearby could potentially cause disturbance if unmitigated. Construction of the new boiler house around 20m east of B15 will cause unavoidable noise, vibration, and dust which could disturb hibernating bats in B15. Examples of particularly high-impact activities would include heavy vehicle movements, the use of pneumatic drills, piling equipment, other high-impact plant, and flood-lighting.

During the operational phase, the proximity of the new boiler house to B15 could increase the levels of human activity and vehicle movements. However, the bats using B15 will already be habituated to background noise and other disturbance, being located adjacent a well-used road and in an occupied building.

Disturbance of or damage to the common pipistrelle hibernation roost has the potential to result in roost abandonment.

6. Mitigation, compensation

Building B15 must be highlighted in the Construction Environmental Management Plan (CEMP) as an ecological receptor which is sensitive to noise, vibration, and dust. As a general rule, mitigation must seek to avoid and/or minimise disturbance events in terms of severity, frequency, and proximity.

Avoidance and mitigation must be used for high-impact works such as drilling, piling, increased vehicle movements, and other noisy and vibration-causing activities used in the construction of the new boiler house. One preferred mitigation option is realignment of the main construction route which currently runs adjacent to B15 to around 50m east of B15.

Road realignment would remove much of the noise, vibration, and dust impacts. However, it is acknowledged that this is problematic, and 50m may not be achievable. Increased road curvature could also increase vehicle noise due to gear changes for example.

Other mitigation options being considered include acoustic barriers, electric vehicle use, optimisation of logistics movements, bat-sensitive lighting, and seasonal avoidance.

After mitigation, all works causing significant residual disturbance must be timed to avoid the maternity period (May to August inclusive) and ideally also the hibernation periods (November to March inclusive). The hibernation roost is of lesser importance than the maternity roost, and some periods of disturbance may be acceptable in the winter months where residual impacts are unavoidable.

Increased levels of internal access to B15 by contractors or others must be prevented during works.

7. Residual effects, enhancements

The mitigation measures outlined above will minimise the disturbance to hibernating bats at building B15.

As the hibernation roost (and maternity roost) will be protected during the construction and operational phases, under the guidance of the CEMP, no significant residual effect is anticipated.

8. References

CIEEM (2017) *Guidelines for Ecological Report Writing*. Chartered Institute of Ecology and Environmental Management, Winchester.

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

Gleed-Owen, C. (2021) *Bat roost assessment of woodland areas and trees for proposed new prison, bowling club, and boiler house on land adjacent to HMP Garth and HMP Wymott, Leyland*. CGO Ecology Ltd, Christchurch.

Harrison, K. & Gleed-Owen, C. (2021c) *Bat roost surveys for proposed new prison, bowling club, and boiler house on land adjacent to HMP Garth and HMP Wymott, Leyland*. CGO Ecology Ltd, Christchurch.

9. Appendices

Appendix 1 – Static detector results by night

Appendix 2 – Static detector results by hour

Appendix 1 – Static detector monitoring results by night

January 2022 - B15 - Bat passes per night

Night*	Common pipistrelle	Total
24/01/2022	0	0
25/01/2022	0	0
26/01/2022	0	0
27/01/2022	0	0
28/01/2022	0	0
29/01/2022	0	0
30/01/2022	0	0
31/01/2022	0	0
Total	0	0

* includes the night and following morning of the date stated

February 2022 - B15 - Bat passes per night

Night*	Common pipistrelle	Total
01/02/2022	0	0
02/02/2022	0	0
16/02/2022	0	0
17/02/2022	8	8
18/02/2022	0	0
19/02/2022	0	0
20/02/2022	0	0
21/02/2022	34	34
22/02/2022	1	1
23/02/2022	2	2
24/02/2022	0	0
25/02/2022	40	40
26/02/2022	1	1
27/02/2022	9	9
Total	95	95

Appendix 2 – Static detector monitoring results by hour

January 2022 - B15 - Bat passes per hour

Time	Common pipistrelle	Total number
18:00	0	0
19:00	0	0
20:00	0	0
21:00	0	0
22:00	0	0
23:00	0	0
Total	0	0

February - B15 - Bat passes per hour

Time	Common pipistrelle	Total number
18:00	17	17
19:00	55	55
20:00	15	15
21:00	2	2
22:00	2	2
23:00	4	4
Total	95	95