



TIM MOYA ASSOCIATES

Bat Survey Report

Emergence Survey

Noak Hill Fish Farm
259A Noak Hill Farm, Billericay
Essex
CM12 9UN

June 2023

221028-ED-02

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Project	Noak Hill Fish Farm
Report Type	Bat Survey Report
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Original Report Date	06.06.2023
Updates	

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NON-TECHNICAL SUMMARY

This report assesses bat roosting activity at the proposed development site at Noak Hill Fish Farm. The proposed development involves the demolition of the existing buildings and construction of a new residential dwelling with associated landscaping and access.

The site bat survey included the following:

- Bat Emergence Survey of Building B1 and B2, assessed as having low bat roosting potential.
- Automated bat detector surveys of Building B1 and B2 during the summer.

Key Findings:

- No bats were seen emerging from the building during the bat emergence surveys.
- Results of the automated bat detector surveys are not suggestive of bat roosting.
- Roosting bats are considered unlikely to be present and no further surveys are recommended. However, due to the high level of bat activity in the surrounding areas precautionary measures are recommended. See report for details.
- Lighting should be minimised to avoid illuminating suitable bat foraging and commuting habitats.

1 INTRODUCTION

Background

- 1.1 This report has been instructed by GNB Developments.
- 1.2 The proposed development involves the demolition of the existing buildings and construction of a new residential dwelling with associated landscaping and access.

Site Description

- 1.3 The site is located in Noak Hill, Essex, between Basildon and Billericay. The surrounding area is dominated by sub-urban development to the north and west and arable fields to the south and east.
- 1.4 The central grid reference for the site is TQ 68484 91200.

Previous Ecological Surveys

- 1.5 A Preliminary Ecological Appraisal had been prepared by Tim Moya Associates (January 2023) which included a bat scoping assessment. The assessment identified buildings B1 and B2 on site as having **Low** potential for roosting bats, due to the presence of potential roost features including cavity walls, gaps between roof tiles and internal cavities.
- 1.6 To ascertain whether the buildings are used by roosting bats, in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2016), it was recommended that a single emergence survey, and automated bat detector surveys are carried out during the active bat survey season (May to August inclusive) to determine likely absence or confirmed presence of roosting bats in building B1 and B2.

Aims of Surveys

- 1.7 The bat emergence surveys aim to collect sufficient data to draw conclusions about the use of the buildings by roosting bats, primarily by observation of bats leaving or returning to the building at dusk and/or dawn.
- 1.8 This report contains the details of the survey methodologies and results of the surveys.

- 1.9 Survey findings will be used to assess the conservation value of the site for the bat species present and determine likely impacts of the proposed development and which type of mitigation measures (if any) would need to be employed.

Information supplied

- 1.10 This report has been prepared with reference to the following supplied plan (amongst others), showing the extent of the site boundary and the proposed development:
- Proposed Site Arrangement, Mansfield Monk, September 2021 (ref.2708-SK01 rev. B)
- 1.11 Please note the above-named plans may be superseded or updated without warranting an update of this report, if the changes are insignificant to the impact of the development on biodiversity.

Legislation

- 1.12 All species of bat and their breeding sites or resting places (roosts) are protected under Regulation 41 of The Conservation of Habitats and Species Regulations 2017 and The Conservation of Habitats and Species (Amendment) (EU Exit) Regulations 2019 and Section 9 of the Wildlife and Countryside Act 1981. It is an offence for anyone intentionally to kill, injure or handle a bat, to possess a bat (whether live or dead), disturb a roosting bat, or sell or offer a bat for sale without a licence. It is also an offence to damage, destroy or obstruct access to any place used by bats for shelter, whether they are present or not.

2 METHODS

Bat Emergence Survey Methods

- 2.1 A single bat emergence survey was undertaken on 11th May 2023. This falls within the optimal period for bat emergence surveys. Survey methodology followed the Bat Conservation Trust's *Bat Surveys for Professional Ecologists* (Collins, 2016).
- 2.2 In order to provide coverage of all potential bat roosting features and access points, five surveyor positions were utilised. See Appendix 1 for surveyor and building locations.
- 2.3 Elekon Batlogger M, Batlogger M2 and Echo Meter Touch 2 Pro bat detectors were used to detect and record bat calls. Surveyor details are given in Appendix 2.
- 2.4 Where appropriate infra-red and thermal imaging cameras were used to aid surveyors. Following the survey, the footage was reviewed as necessary. The time and nature of the activity was noted and compared to notes from the relevant surveyor. The locations of the cameras are shown in Appendix 1.
- 2.5 The dusk survey was commenced at least 15 minutes before sunset and continued for 90 minutes after sunset.
- 2.6 The weather conditions during the bat emergence survey were as follows;

Table 1. Dates and weather conditions

Date	Survey type	Sunset/sunrise time	Survey start	Survey end	Cloud cover (%)	Precipitation	Wind (Beaufort)	Minimum temperature (°C)
11/05/2023	Dusk	20:37	20:22	22:07	15-98%	None	1	12

Automated Bat Detector Methods (Summer)

The aim of this survey technique was to sample bat activity inside both Building B1 and B2 to provide information as to their use by bats over a number of days. Automated bat detectors were deployed inside both buildings. Anabat Chorus and Anabat Swift Bat detectors were used. Appendix 1 shows the location(s) of the

automated bat detector(s). The automated bat detectors were deployed within the buildings for a total of 8 nights between 11th May and 19th May 2023.

Limitations

- 2.7 As the attributes of the site and its potential for protected species, including bats, may change over time, this report is broadly considered valid for a duration of one year, after which time it is recommended that an update site assessment is undertaken.
- 2.8 Bat emergence surveys, even when undertaken during the optimal season and over the recommended number of occasions, can only take a snapshot of bat roosting patterns. Bats are often nomadic in their roosting habits and may use some roosting features only sporadically and in low numbers. In sites where a high number of potential roost features exist, there remains some possibility of bats roosting within features not identified as roosts during the surveys. As such, mitigation measures should include a precautionary approach to features with high potential to be used by bats, even where their presence was not recorded during surveys.
- 2.9 The lower amplitude of calls of species such as brown long-eared or barbastelle are more difficult to detect. Therefore, passes by these species may be under-recorded.
- 2.10 Automated bat detectors do not discern between multiple bats or a single bat passing the microphone several times and therefore the data recorded can only provide an indication of bat activity as bat passes per unit time.
- 2.11 The calls of bat species of the genus *Myotis* require detailed analysis to differentiate between species.
- 2.12 It is considered that the overall dataset obtained is representative of the level of bat activity within the application site. Furthermore, it is unlikely that the above constraints have resulted in a significant detrimental impact on the quality of the data and will have minimal effect on the subsequent conclusions and recommendations provided.

3 RESULTS

Emergence Surveys

Roosting Bats

- 3.1 During the dusk emergence survey, no bats were seen to emerge from either building.

Non-Roosting Bat Activity

- 3.2 During the dusk survey, levels of bat activity were considered to be high. Almost constant common pipistrelle (*Pipistrellus pipistrellus*) bat activity was recorded throughout the survey, with activity highest around the pond, located to the north-east of the site. No other bat species were recorded.

Automated Bat Detector Surveys

- 3.3 During the period 11th May 2023 to 18th May 2023, the automated bat detector in Building B1 detected the following;

- 70 common pipistrelle bat calls

- 3.4 However, all the calls were of very low amplitude and were consistent with commuting calls. No social calls or feeding buzzes were recorded. The building has significant roof damage and broken windows, meaning that other external bat passes would trigger the bat detector.

- 3.5 No calls were recorded before sunset, suggesting bats were not roosting within the building during the time that the automated bat detector was deployed. The earliest calls were common pipistrelles recorded over 60 minutes after sunset.

- 3.6 Therefore, the calls recorded are not considered to have been from within the building itself, but faint passes detected from commuting bats flying over the building.

- 3.7 No bat calls were recorded from the detector located in Building B2.

4 IMPACT ASSESSMENT AND RECOMMENDATIONS

Buildings

- 4.1 No bats were recorded roosting within the building during the survey. The surveys have followed the recommended standards to demonstrate likely absence of roosting bats (Collins, 2016). The proposed demolition is therefore not expected to impact roosting bats. No further surveys are recommended with regard to roosting bats.
- 4.2 Due to the high levels of activity within the site and presence of suitable roosting features such as the presence of broken wooden cladding, precautionary measures in relation to the demolition of the buildings are recommended as follows:

4.3 Recommendation: While surveys have demonstrated the likely absence of roosting bats, it is recommended that Building B2, particularly the northern end, should be dismantled by hand under supervision of a suitability qualified ecologist.

- 4.4 Should any bats, or evidence of bats such as droppings, be found during the supervised dismantling, work must cease until the appropriate surveys can be undertaken and a natural England licence obtained.

Foraging and commuting habitat

- 4.5 The site was used by a number of bats for commuting and foraging during the surveys. The site is therefore considered likely to provide an important resource for foraging and commuting bats, particularly around the pond to the rear of the site. The proposed development may result in a slight increase in light-spill due to the construction of residential property, compared with the existing disused buildings. However there is already a considerable amount of artificial lighting around the buildings.
- 4.6 The foraging and commuting behaviour of bats is known to be altered by artificial lighting and bats may avoid illuminated areas (ILP, 2018).

4.7 Recommendation: To avoid a detrimental impact on bats using the site, there should be no increased light spillage on to suitable habitats, particularly on the periphery of the site and around the pond area and tree lines, where bats are most likely to forage and commute. Lighting should be restricted to the interior of the site and should be kept to a low level. The following measures should be implemented within the lighting scheme:




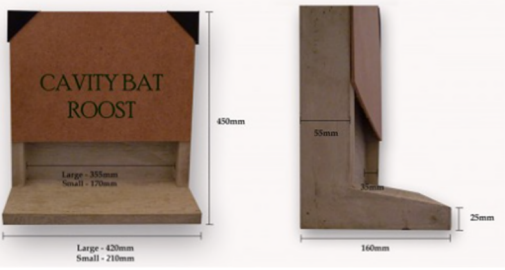
- Minimise light spill through careful aiming, positioning and selection of luminaires and column heights.
- LED luminaires should be used where possible due to their sharp cut off, lower intensity and dimming capacity.
- Lighting must have no upward spill.
- Warm white luminaires with peak >550nm. UV lighting should be avoided.
- Reduce the light intensity to the minimum required for safety and security;
- Where security lamps are used these should use a trigger to illuminate them (e.g. infra-red detector), and switch off after a short period, rather than remaining on all night.
- Further guidance is available in Bats and artificial lighting in the UK (ILP, 2018).
- In some cases a Lighting Impact Assessment may be required to demonstrate that lighting will not have a detrimental impact on bats.

5 OPPORTUNITIES FOR ENHANCEMENTS

5.1 In accordance with the National Planning Policy Framework, recommended opportunities for biodiversity enhancement (above and beyond those required to mitigate for the identified impacts) are set out below.

Bat boxes

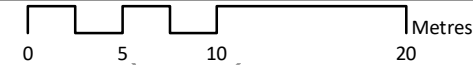
5.2 The inclusion of bat boxes provides new roost sites for bats within the local area. A variety of bat box designs are available, for installation on external building walls, or to be in-built into the structure of new buildings. Bat boxes should be located in sheltered spots away from artificial lighting and placed at a height of at least 3 metres from the ground, ideally facing south. Recommended models are shown below;

	
<p>Habibat 003 – built in bat box (wildcare.co.uk)</p>	<p>Habibat 3S with closed top (wildcare.co.uk)</p>
	
<p>Integrated eco bat box – crevice (wildcare.co.uk)</p>	<p>Cavity bat roost (wildcare.co.uk)</p>

6 REFERENCES

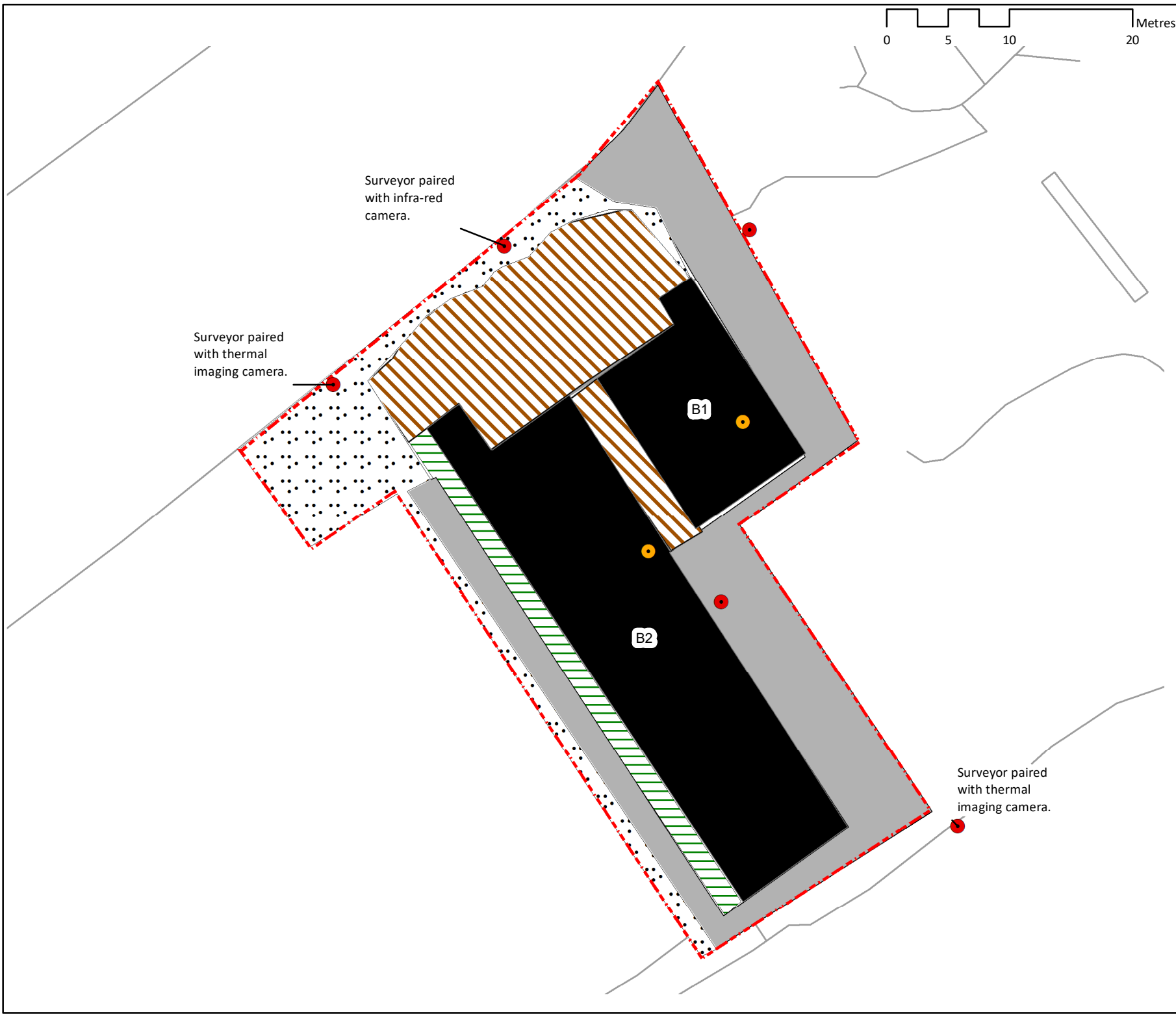
- Collins, J. (ed.) (2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.
- Institution of lighting professions (2018) Bats and artificial lighting in the UK.

Appendix 1 - Surveyor Locations



Legend

- Site Boundary
- Surveyor position
- Automated bat detector location
- Building



Title:		
Habitat Plan		
Client:		
GNB Developments		
Project:		
Noak Hill Fish Farm		
Date	Drawn by	Authorised
06/06/2023	JCF	BW
Drawing No	Rev	Scale
221028-EC-02	-	1:400



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Appendix 2 - Surveyor Details

Surveyor	Bat Survey Licence Holder	Experience Levels
Simon Thomas Director of Ecology	Yes	Over 10 years of experience undertaking bat surveys
Bradley Collins Ecological Consultant	No	Over 3 years of experience undertaking bat surveys
Charles Torr Assistant Ecologist	No	Over 1 year of experience undertaking bat surveys
Hattie Taylor Freelance Ecologist	No	Over 5 years of experience undertaking bat surveys
Patrick Davies Freelance Ecologist	No	Over 5 years of experience undertaking bat surveys



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