



Ecological Report

Outline Bat Mitigation and Compensation Strategy

Land on the south-east side of A12
Old Ipswich Road
Ardleigh
Essex
CO7 7QW

January 2024

230961-ED-04a

Limitations and Copyright

TMA has prepared this Report for the sole use of the named Client or their Agents in accordance with our terms of business, under which our services were performed. No other warranty, expressed or implied, is made as to the professional advice included in this Report or any other services provided by us. This Report may not be relied upon by any other party without the prior and express written agreement of TMA. The assessments made assume that the sites and facilities will continue to be used for their current purpose without significant change. The conclusions and recommendations contained in this Report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested. Information obtained from third parties has not been independently verified by TMA.

Tim Moya Associates Standard Limitations of Service apply to this report and all associated work relating to this site. A copy has been supplied with our original quotation and further copies are available on request.

Project	Land on the south-east side of A12, Ardleigh
Report Type	Outline Bat Mitigation and Compensation Strategy
Report Date	21/12/2023
Author	Brooke Waites, ACIEEM, Principal Ecologist
Review	Simon Thomas, MCIEEM, Director of Ecology
Updates	16/01/2024 Version A – amendments to include on-site trees assessed for bat roosting potential.

CONTENTS PAGE

	NON-TECHNICAL SUMMARY	4
1	INTRODUCTION	6
	BACKGROUND	6
	SITE LOCATION	6
2	PREVIOUS INFORMATION	7
	BAT SCOPING SURVEY	7
	POTENTIAL USE OF ROOSTS.....	7
	POTENTIAL IMPACTS OF DEVELOPMENT	8
3	MITIGATION STRATEGY - BATS.....	9
	LEGISLATION.....	9
	SURVEYS	9
	MITIGATION	10
4	REFERENCES	15
	APPENDIX 1 - PHOTOGRAPHS.....	16

NON-TECHNICAL SUMMARY

This report details the proposed bat mitigation strategy at the land on the south-east side of A12, Ardleigh, Ardleigh. The proposed development involves the construction of a storage warehouse alongside associated development, following the demolition of the existing industrial units.

Building B4 was assessed as having **moderate** potential for roosting bats due to the presence of potential roost features such as cracks in blockwork, and access between roof tiles and timber boarding. Also, internal inspection was not possible so that bat roosting potential could not be ruled out.

This Outline Bat Mitigation and Compensation Strategy includes proposals for the prevention of harm to bats on site, measures to provide alternative roosting opportunities for bats during the construction process and measures to ensure that new bat roost features are incorporated into the development.

The building will be subject to two nocturnal emergence surveys (also known as dusk or presence/absence) between **May and August**, inclusive, to sufficiently demonstrate the absence of roosting bats.

If the survey confirms the use of any features by roosting bats, the mitigation strategy will include three key measures:

- Provision of roost features to replace features being lost
- Timing of works to minimise disturbance to bats during key maternity period
- Supervised dismantling of bat roost features to ensure that any bats present during the works are safely relocated.

To provide alternative roost features for roosting bats, the following bat boxes will be installed:

- Prior to demolition: One 'Pole Mounted Maternity Bat Box' on a 3-metre pole
- During construction: Two Miramare Woodstone Bat Boxes

Overall, the number of new bat roost features to be created is expected to be greater than the number being lost. Therefore, there will be a net gain in roosting opportunities for bats at the site.

Proposals for the development include the removal of tree T8 and the line of trees to the west of the site to accommodate the development. All other trees are due to be

retained within the development. Climbed inspection of T8 assessed the tree as offering limited suitability for roosting bats (PRF-I). As such a pre-works inspection is recommended to ensure no bats are present prior to felling.

1 INTRODUCTION

Background

- 1.1 This report has been instructed by Elmhurst.
- 1.2 The proposed development involves the construction of a storage warehouse alongside associated development, following the demolition of the existing industrial units.
- 1.3 This Outline Bat Mitigation and Compensation Strategy includes proposals for the prevention of harm to bats on site, measures to provide alternative roosting opportunities for bats during the construction process and measures to ensure that new bat roost features are incorporated into the development.

Site location

- 1.4 The location of the site is rural, surrounded by industrial sites, arable fields, trees, scrub, woodland, water bodies, and landscaped areas. The A12 road runs adjacent to the west of the site. Crown Quarry is located 60 m to the east of the site.
- 1.5 The central grid reference for the site is TM 02459 29527. The surveyed site covers approximately 0.94 hectares.

2 PREVIOUS INFORMATION

Bat Scoping Survey

- 2.1 Full details of the Bat Scoping Survey are included in the separate Preliminary Ecological Appraisal Report (ref. 230961-ED-01a). The bat scoping survey included an inspection of all buildings and trees within the site in order to assess their suitability for roosting bats.
- 2.2 Building B4 was assessed as having moderate potential for roosting bats due to the presence of potential roost features such as cracks in blockwork, and access between roof tiles and timber boarding. Also, internal inspection was not possible so that bat roosting potential could not be ruled out.
- 2.3 All other buildings were assessed as having negligible bat roosting potential due to the absence of suitable roosting features.
- 2.4 Trees T1, T2, T3, T5, and T8 were assessed as having moderate potential for roosting bats as trees were of the size and maturity to hold potential roost features, and because dense canopy cover may obscure potential roost features from being seen.
- 2.5 Trees T7, T17, T16, T15, T14, T13, T12, T9, and T10 T14 were assessed as having low potential for roosting bats. Wounds were present on the westerly and easterly stems of T7; however, cavities do not lead into a sufficient feature for roosting bats. All other low potential trees were not assessed fully as access to neighbouring land was required, however their size and condition indicates that features suitable for roosting bats could be present.
- 2.6 All other trees on-site were assessed as having negligible bat roosting potential, due to no notable potential bat roost features being viewed.

Potential Use of Roosts

- 2.7 The site itself considered to be of low value for commuting and foraging bats due to the industrial nature of the site. The A12 is located to the north-west of the site, however, the wider landscape contains a variety of habitats including woodland, Ardleigh Reservoir, arable fields, and hedgerows. It is expected that a variety of bat species may be found in the local area. It is likely that foraging or commuting bats use the site itself to a certain extent.

- 2.8 By far the most frequent bat species found in industrial sites are common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*). These species are both crevice-dwelling species, as opposed to cavity or void roosting bats. As such, the crevice features present between timber boarding and roof tiles are considered suitable.
- 2.9 The likelihood of the crevices being used by bats is considered to be moderate due to the industrial location of the building and limited number of features. However, the wider landscape offers good opportunities for foraging and commuting, therefore bats roosts are likely to be present in the local area.
- 2.10 Use as a *day roost* by low numbers of common pipistrelle or soprano pipistrelle bats is considered most likely. Use as a maternity roost is considered unlikely due to the limited size of the features and likely use of the site.

Potential Impacts of Development

Roost disturbance/destruction

- 2.11 Demolition of the building will result in the loss of the potential roosting features and has potential to kill or injure bats, if present at the time. As such, replacement bat roost features will be included within the development and measures will be implemented to reduce the risk of harm to bats.
- 2.12 Proposals for the development include the removal of tree T8 and the line of trees to the west of the site to accommodate the development. Climbed inspection was undertaken on 19th December 2023 of T8 (see report ref. 230961-ED-05), which assessed T8 as offering limited suitability for roosting bats (PRF-I). As such a pre-works inspection is recommended to ensure no bats are present prior to felling.

3 MITIGATION STRATEGY - BATS

Legislation

Bats

- 3.1 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 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.

National Planning Policy Framework (NPPF)

- 3.2 The National Planning Policy Framework is clear that pursuing sustainable development includes moving from a net loss of biodiversity to achieving net gains for nature, and that a core principle for planning is that it should contribute to conserving and enhancing the natural environment and reducing pollution.
- 3.3 Planning policies should promote the preservation, restoration and re-creation of priority habitats, ecological networks and the protection and recovery of priority species populations. If significant harm resulting from a development cannot be avoided (through locating on an alternative site with less harmful impacts), adequately mitigated, or, as a last resort, compensated for, then planning permission should be refused.
- 3.4 The bat roost features detailed below are intended to provide more roost features than the number previously existing within the site. This will ensure that the long-term result of the development will be a net gain in roosting opportunities for bats.

Surveys

- 3.5 As Building B4 has been identified as having potential for roosting bats, in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2023), the building will be subject to a nocturnal emergence survey (also known as dusk or presence/absence) on two occasions to sufficiently demonstrate the absence of roosting bats by at least three surveyors. The surveys should be undertaken between **May and August**, inclusive and separated by a minimum of three weeks.

- 3.6 If the survey demonstrates the likely absence of bats with sufficient confidence in accordance with Bat Surveys for Professional Ecologists: Good Practice Guidelines (Collins, 2023), no further surveys or mitigation measures will be required with regards to roosting bats.
- 3.7 If the survey confirms the use of any features by roosting bats, additional emergence/re-entry surveys may be required. Any works likely to disturb bats or damage/destroy bat roosts may then only be undertaken once a Natural England Mitigation Licence has been obtained. It may be that the details within the Natural England Licence differ from the details given within this report.
- 3.8 If so, it must be noted that the Natural England Licence will form the legal documentation stipulating which activities are permitted. As such, the Natural England Licence will supersede this report.
- 3.9 Climbed inspection was undertaken on 19th December 2023 of tree T8 to confirm if features identified on the tree during the ground level inspection provide suitable opportunities for roosting bats (see section 2.12).

Mitigation

- 3.10 If the survey confirms the use of any features by roosting bats, the following mitigation strategy will be followed. For this reason, the strategy refers to the 'existing roost' even though no such roost has yet been identified.
- 3.11 This strategy is outlined based on the feature being used as a *day roost* by a low number of common or soprano pipistrelle bats. It is considered very unlikely that the feature will be used by any other species or for any other roost type, but if so, the mitigation strategy may need to be amended accordingly following the detailed surveys.
- 3.12 The bat mitigation and compensation strategy will include the following measures:
- Ecologist supervision when dismantling potential bat roost features.
 - If necessary, restricted timing of dismantling works to minimise the risk of harm to bats – particularly avoiding disturbance of bat maternity roost features between May and September (if applicable, depending on survey results).
 - Provision of suitable alternative bat roosting features during the period that the building is absent (see below).

- Provision of sufficient permanent replacement roost features into the new building.

Replacement roost features

- 3.13 Since retention of the existing bat roost features within the proposed development is not possible, compensatory bat roost features will be created within the site. Suitable roost features must be in place and ready for use by bats before the destruction of existing bat roosts. Additional roost features will then be included within the structure of the new building during the construction phase.
- 3.14 Replacement bat roost features will replicate existing bat roost features (crevice) as closely as possible to maximise the likelihood of being used by the bat species affected (most likely common and soprano pipistrelles).
- 3.15 The bat roost features and boxes detailed below are intended to provide more roost features than the number previously existing within the site. This will ensure that the long-term result of the development will be an increase in roosting opportunities for bats. This will also account for the fact that not all bat boxes/features will necessarily become occupied by bats.

Bat boxes installed prior to demolition:

- 3.16 To provide replacement common or soprano pipistrelle bat roosting opportunities before destruction of the existing roost, a pole-mounted bat box will be installed in a suitable location towards the north-east of the site. The proposed model is the 'Pole Mounted Maternity Bat Box' on a 3-metre pole. This box is a large three crevice box which is designed for colonies of crevice-dwelling bats such as pipistrelles. The pole-mounted box will be installed in a location where disturbance during the demolition and construction stages will be minimised. The box will face south and the location will be chosen so that it receives maximum sunlight and is not shaded by surrounding trees or structures. This box will also provide a location to move relocated bats to during building demolition.
- 3.17 As the pole-mounted bat box is designed primarily to accommodate relocated bats during demolition, it may be relocated or removed following completion of construction of the new house (which will include additional bat boxes as below), only if further survey can demonstrate that it is not used by roosting bats. This detail must also be included within the Natural England licence to permit the relocation or removal of this new bat roost feature.

Bat boxes installed during construction phase:

- 3.18 To replace roosting crevices present on the building, two suitable bat boxes will be installed on mature trees within the site. The proposed model is the Miramare Woodstone Bat Box, which is designed to be suitable for species which are most commonly found roosting in buildings in the UK, including common and soprano pipistrelle bats. This bat box is designed to be mounted onto trees. This box does not require any maintenance as the droppings fall out of the entrance. These boxes will be installed along the eastern boundary facing south and east to provide a direct flight path to areas of suitable habitat, away from the A12 and any artificial lighting.
- 3.19 The recommended bat boxes are shown below (alternatives may be used if approved by an ecologist prior):



Supervised demolition and timing

- 3.20 Timing restriction: If a bat roost identified is considered to be a maternity roost, destruction of the roost will **only** be undertaken between October and April (inclusive), to avoid the maternity season, in accordance with the Bat Mitigation Guidelines (Reason P.F and Wray, S. 2023)
- 3.21 Works to demolish the building do not necessarily need to be fully complete within the given period but must at least be sufficiently advanced for returning bats to be dissuaded from using the roost during the maternity period. This will involve exposing the bat roost feature by removal of wooden cladding or other materials.

3.22 Although there is a very minor risk of bats hibernating within the structure, this is not a typical roost feature for substantial numbers of hibernating bats. As such, if a torpid bat is found, works will cease and the ecologist will assess whether to relocate the bat or leave it in its roosting place. An amendment to the Natural England licence may be required if the building is deemed to be a hibernation roost.

3.23 **Toolbox talk:** Before commencing demolition or dismantling of the building, all site staff will be inducted by a suitably experienced bat ecologist as to all considerations and stipulations of the supervised demolition. This will include the reasons for supervised demolition, the features most likely to be used by bats, the methods to be used and the importance of following the methods set out in the Natural England licence.

3.24 **Supervised dismantling:** The soft strip of parts of the building in the vicinity of bat roost feature(s) will be overseen by suitably qualified ecologists, under the Mitigation Licence to be granted by Natural England. The soft strip activities must be undertaken by suitably qualified demolition contractors, but the ecologist will guide the work closely to ensure that features with potential to contain bats are removed carefully. Dismantling of bat roost features must only be done using hand tools. The ecologist must be provided close access to inspect features and remove bats where necessary. Any bats must be removed from areas due to be impacted.

3.25 The soft strip method will continue until the ecologist can confirm that roosting bats are not present, at which stage the demolition can proceed using normal methods.

3.26 During phases of work not directly under the supervision of the licensed bat ecologist/ecological clerk of works, where bats are found, contractors will be advised to stop works immediately and inform the site manager who will contact the ecological clerk of works. Likely options will be to leave the feature open overnight for the bat to relocate itself, or to manually relocate the bat to one of the pre-built replacement roost features within the site.

Lighting

3.27 The proposed development is not due to alter the overall character of the site and is due to retain habitats of value to foraging and commuting bats.

3.28 The foraging and commuting behaviour of bats is known to be altered by artificial lighting and bats may avoid illuminated areas (ILP, 2023).

3.29 In order to avoid a detrimental impact on bats using the site, there will be no increased light spillage on to suitable habitats, particularly on the periphery of the site, where bats are most likely to forage and commute. Lighting will be restricted to the interior of the site and kept to a low level. Lighting must also avoid illuminating the areas surrounding artificial roost features (including bat boxes). The following measures will 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, 2023).
- In some cases a Lighting Impact Assessment may be required to demonstrate that lighting will not have a detrimental impact on bats.

4 REFERENCES

- Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4th edn). The Bat Conservation Trust, London.
- Reason, P.F. and Wray, S. (2023). UK Bat Mitigation Guidelines: a guide to impact assessment, mitigation and compensation for developments affecting bats. Chartered Institute of Ecology and Environmental Management, Ampfield
- Tim Moya Associates (December 2023). Land on the south-east side of A12, Ardleigh – Preliminary Ecological Appraisal (230961-ED-01a)
- Tim Moya Associates (December 2023). Land on the south-east side of A12, Ardleigh– Aerial Tree Bat Inspection (230961-ED-05a)

Appendix 1 - Photographs

Photo 1 – Crevices under fascia of Building B4



Photo 2 – Access points on Building B4



Photo 3 – Northern elevation of B4



Photo 4 – Tree T8





TIM MOYA ASSOCIATES

arboriculture ecology landscape innovation

The Barn, FeltimoresPark, Chalk Lane, Harlow, Essex CM17 0PF

0845 094 3268 | info@tma-consultants.co.uk | www.timmoyaassociates.co.uk

Tim Moya Associates is a trading name of Tim Moya Tree Services Ltd. Company Reg No. 3028475