JAMES BLAKE ASSOCIATES

Bat Activity Survey Report

Of

Phases 2-6 and Relief Road,
Haverhill,
Suffolk

on behalf of

Persimmon Homes (Suffolk)

December 2019

Over 30 Years of Service, Value and Innovation

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Title: Bat Activity Survey Report of Phases 2-6 and Relief Road, Haverhill, Suffolk.

Disclaimer

James Blake Associates Ltd. have made every effort to meet the client's brief. However, no survey ensures complete and absolute assessment of the changeable natural environment. The findings in this report were based on evidence from thorough survey: It is important to remember that evidence can be limited, hard to detect or concealed by site use and disturbance. When it is stated that no evidence was found or was evident at that point in time, it does not mean that species are not present or could not be present at a later date: The survey was required because habitats are suitable for a given protected species, and such species could colonise areas following completion of the survey.

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0 NON TECHNICAL SUMMARY

Site:	Phases 2-6 and Relief Road, Haverhill, Suffolk
Ordnance Survey National Grid Reference (from the centre of the site)	TL 668 469
Report Commissioned by:	Persimmon Homes (Suffolk)
Date of Bat Activity Survey:	17th April 2019 to 16th September 2019

Considerations	Description	Potential impacts and timings
Roosts Identified	No roosts identified on site.	N/A
Foraging and commuting bats	Common and soprano pipistrelle, noctule, brown long-eared, and barbastelle were recorded foraging and/or commuting on site.	Loss of foraging and commuting routes. Lighting minimisation scheme to be implemented to avoid impact to foraging and commuting bats. See Section 5 for proposed avoidance, mitigation and compensation measures.

1 INTRODUCTION

Background to the study

1.1 James Blake Associates Ltd. was commissioned by Persimmon Homes (Suffolk) to undertake a bat activity survey of land at Haverhill, Suffolk (grid ref TL 670 468, taken from the centre of the site).

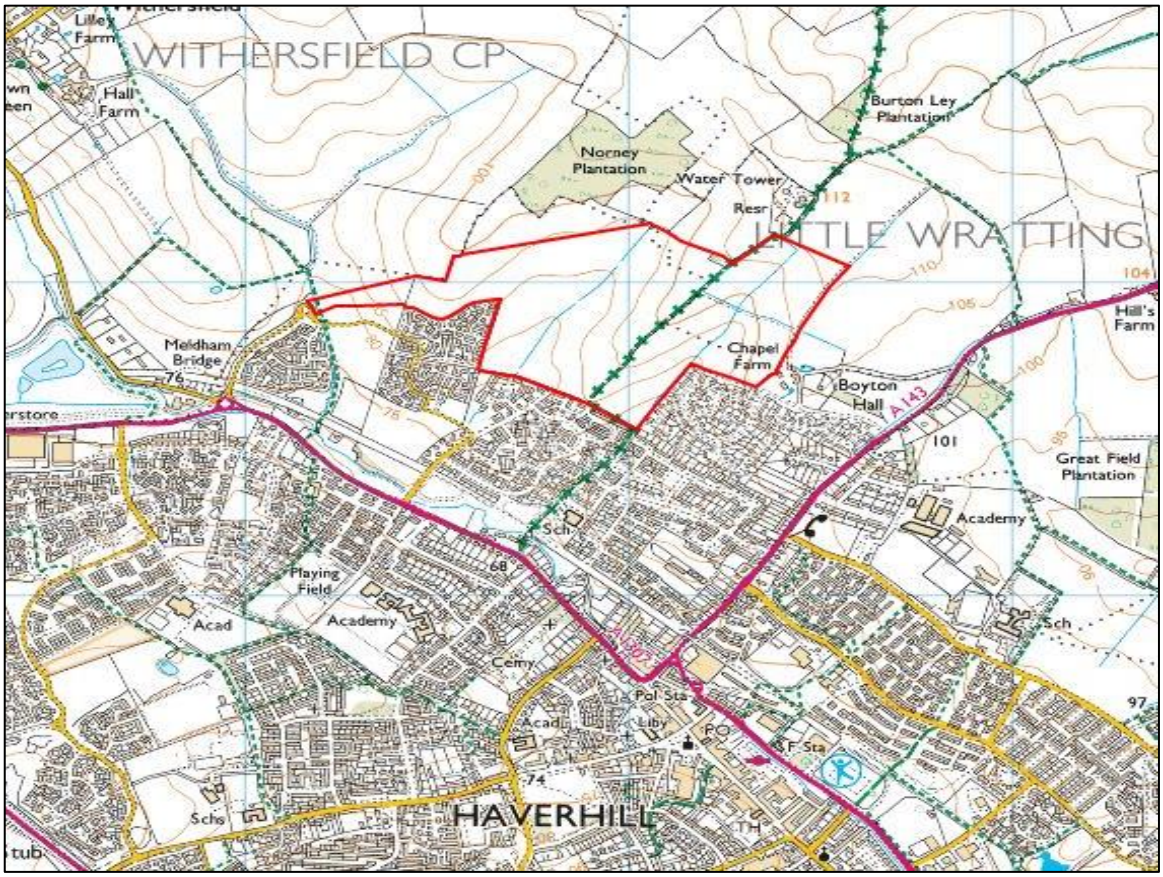
1.2 All UK bat species are protected under European and UK law (Conservation of Habitats and Species Regulations 2010; Wildlife and Countryside Act 1981), and some are Species of Principal Importance (SPI) in England under Section 41 of the Natural Environment and Rural Communities (NERC) Act 2006. Protected and principally important species are a consideration under the National Planning Policy Framework (NPPF) 2019. The NPPF places responsibility on Local Planning Authorities to aim to conserve and enhance biodiversity and to encourage biodiversity in and around developments.

Site Description

1.1 The site was located to the north west of Haverhill Road (A143), north of Haverhill town in Suffolk. Arable fields bordered the site with residential housing to the south. Norney Plantation County Wildlife Site (CWS) an area of ancient replanted woodland, was approximately 65m north of the site boundary. The wider landscape included mainly arable fields with scattered woodland. The River Stour lay approximately 1.8km east of the site, and the Stour Brook lay approximately 300m south, along with a series of drainage ditches (see Figure 1 below).

1.2 The site itself is approximately 47 hectares, comprising four former arable fields separated by hedgerows. Trees and scrub border the residential properties on the southern and western boundaries of the site. A public right of way runs through the middle of the site from northeast to southwest adjacent to hedgerows.

Figure 1: Site location



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Details of the proposals

1.3 The proposed development would involve the creation of new residential housing with associated infrastructure.

Aims and objectives

1.4 The aims of the surveys were;

- To determine bat use of the site, including the species, amount and type of activity; and
- Assess the risk of impact on bats, bat roosts and local bat conservation status from the proposed development and, if necessary, design appropriate precautionary measures, compensation or mitigation measures.

2 SITE SURVEY AND ASSESSMENT

Desk Study

2.1 A desk study was undertaken; data was received from Suffolk Biodiversity Information Service (SBIS) for protected species (JBA, 2018). The desk study included records of bat species (*Chiroptera)* within a 2km search radius of the site (SBIS data provided on the 11th January 2019).

2.2 Lack of species records does not necessarily indicate that they are absent from the surrounding area, and can be due to a lack of survey efforts in the area.

2.3 Within the desk study Common Pipistrelle (*Pipistrellus pipistrellus*) recorded 1.3km north west in 2015, Soprano Pipistrelle (*Pipistrellus pygmaeus*) 1.8km south east in 2014, Daubenton's Bat (*Myotis daubentonii*) were recorded 1.1km south of site in 2000. Noctule (*Nyctalus leisleri*) and Western barbastelle (*Barbastella barbastellus*) bats were recorded 1.2km south east in 2014 and Serotine (*Eptesicus serotinus*) bat 460m south east in 2014. Brown long-eared (*Plecotus auritus*) recorded within 2km square 240m east in 2012 and an unidentified bat 1.8km in 2014.

2.4 Previous bat activity surveys undertaken by RPS (2009) recorded six species of bat commuting on site.

Survey Methods

Bat Activity Surveys

2.5 Seven activity surveys were undertaken between April 2019 and September 2019, comprising of one dawn activity survey and six dusk activity surveys. The surveys were undertaken within the optimal survey window for bat activity. For clarity, the optimal survey window for bat activity is April to September inclusive.

2.6 The surveys were carried out by ecologists; Sam Rigg BSc (Hons) ACIEEM (Natural England Bat Survey Class Licence, level 1, WML-CL17), Dr Alison Collins MCIEEM, Sam Kench BSc (Hons), Rachel Hall BSc (Hons), Christopher Bridge BSc, Larissa Cooper, and Dan Blake BSc (Hons) QCIEEM.

2.7 The survey methodology followed standard techniques and designs recommended by Natural England and the Bat Conservation Trust. The transect routes are shown in Appendix A. The dates of the surveys carried out is shown in Table 1 below:

Table 1: Survey dates and weather conditions

Date	Dusk /Dawn	No. Of surveyors	Weather
17/04/19	Dusk	4	Cloud cover 30%, Beaufort scale 3, temperature 12ºC
22/05/19	Dusk	4	Cloud cover 50%, Beaufort scale 1, temperature 14ºC
17/06/19	Dusk	4	Cloud cover 70%, Beaufort scale 0-1, temperature 13ºC
18/06/19	Dawn	4	Cloud cover 70%, Beaufort scale 1, temperature 11ºC
10/07/19	Dusk	4	Cloud cover 80%, Beaufort scale 1, temperature 21ºC (heavy rain near end)
12/08/19	Dusk	4	Cloud cover 100%, Beaufort scale 0-1, temperature 16ºC
16/09/19	Dusk	4	Cloud cover 100%, Beaufort scale 0, temperature 19ºC

2.8 Most surveys were conducted in optimal weather conditions (mild, dry, little wind). Due to heavy rain the July dusk activity survey time was reduced, however this is not considered to be a major constraint as the majority of the survey had been completed. Dusk activity surveys started at sunset and continued for approximately two hours after sunset. Dawn activity surveys started approximately two hours prior to sunrise and finished at sunrise.

2.9 Equipment used included Wildlife Acoustics EM3 and EM3+ detectors. Recordings were analysed using BatSound and Kaleidoscope software.

2.10 No static bat detectors were employed as the site is heavily used by pedestrians.

3 RESULTS AND EVALUATION

Dusk activity surveys

3.1 The time at which bat activity was first recorded, along with commuting routes observed on site, would suggest that there were common and soprano pipistrelle roosts nearby.

3.2 The first activity of each bat species on each survey, and the approximate time after sunset is provided in Table 2.

3.3 Hedgerow numbers are shown in Appendix B.

Table 2: First bat activity recorded per bat species on dusk activity surveys

17th April 2019		**Sunset:** 19:59
Time recorded (time past sunset)	**Bat species**	**Activity**
20:30 (31 minutes)	Common pipistrelle	Bat pass at northern field boundary along hedgerow 7 at transect 3.
20:36 (37 minutes)	Soprano pipistrelle	Bat pass along hedgerow 2 at transect 3.

22nd May 2019		**Sunset:** 20:58
Time recorded (time past sunset)	**Bat species**	**Activity**
21:22 (23 minutes)	Soprano pipistrelle	Bat pass at hedgerow 7 on transect 4.
21:24 (25 minutes)	Common pipistrelle	Bat foraging along hedgerow 7.
22:08 (69 minutes)	Barbastelle	Bat pass flying north along hedgerow 7 at transect 4.
22:08 (69 minutes)	Brown long-eared	Bat pass flying south along hedgerow 7 at transect 4.

17th June 2019		**Sunset:** 21:21
Time recorded (time past sunset)	**Bat species**	**Activity**
22:02 (41 minutes)	Common pipistrelle	Bat was heard but not seen, surveyor was located at hedgerow 9 at transect 1.
22:26 (65 minutes)	Noctule	Bat was heard but not seen, surveyor was located at hedgerow 5 along transect 2.
22:39 (78 minutes)	Barbastelle	Bat was heard but not seen, surveyor was located by hedgerow 6 along

		transect 3.

15th July 2019		**Sunset:** 21:17
Time recorded (time past sunset)	**Bat species**	**Activity**
21:25 (8 minutes)	Common pipistrelle	Bat pass along hedgerow 7 at transect 3.
21:53 (36 minutes)	Soprano pipistrelle	Bat was foraging along hedgerow 7 at transect 3.
22:08 (51 minutes)	Barbastelle	Bat was heard by not seen, surveyor along hedgerow 2 at transect 2.

12th August 2019		**Sunset:** 20:28
Time recorded (time past sunset)	**Bat species**	**Activity**
20:50 (22 minutes)	Common pipistrelle	Bat was foraging along hedgerow 7 at transect 4.
20:57 (29 minutes)	Soprano pipistrelle	Two bats were commuting along hedgerow 7 at transect 4.
21:46 (76 minutes)	Barbastelle	Bat was heard but not seen, surveyor was located northern field boundary at transect 4.

16th September 2019		**Sunset:** 19:10
Time recorded (time past sunset)	**Bat species**	**Activity**
19:23 (13 minutes)	Common pipistrelle	Bat was foraging along hedgerow 5 at transect 2.
20:57 (27 minutes)	Soprano pipistrelle	Bat was foraging along hedgerow 2 at transect 2.

3.4 Pipistrelle bats usually emerge within 15-20 minutes after sunset. They will usually forage in habitats around the roost before commuting to other feeding areas or other roosts such as a night roost. Pipistrelle bats typically roost under roof tiles of where there are suitable gaps, around window sills, behind barge boards, under soffits or above doorways. They can roost in trees, usually behind loose bark. Common pipistrelles were recorded on every dusk survey and the dawn survey at times to suggest there is a nearby roost. Soprano pipistrelle bats were recorded every dusk survey apart from June. Recording times for soprano pipistrelles also implies there is a roost nearby.

3.5 Noctule bats usually emerge at the time of sunset and have been known to emerge a few minutes before sunset. They will usually forage in large open habitats. Noctule bats rarely roost in buildings and typically roost in trees, often

in rot holes and woodpecker holes. Noctule bats were recorded on the June dusk survey at time which does not imply there is a roost nearby. Noctule bats have been recorded to fly far distances from roost to feeding areas.

3.6 Barbastelle emerge between 25- 65 minutes after sunset. They prefer wooded countryside and will hunt in wooded river valleys and often in the tree canopy. They also often forage in more open countryside with scrubby trees. Barbastelle will use hollow trees and buildings for summer roosts. Barbastelle bats were recorded on the May, June, July and August dusk surveys along with the June dawn survey. It is likely that a barbastelle roost is located in a nearby woodland and they are using the site for foraging activities.

3.7 Barbastelle have additional conservation status in that they are Habitat Directive Annex II species, therefore core areas of their habitat are designated as Sites of Community Importance (SCIs) and included in the Natura 2000 network. These sites must be managed in accordance with the ecological needs of the species.

3.8 Barbastelle are considered to be 'Near Threatened' on the IUCN Red list of Threated Species 2016.

Dawn activity surveys

3.9 The last activity of each bat species on the dawn surveys, and the approximate time before sunrise is provided in Table 3.

Table 3: Last bat activity recorded per bat species.

18th June 2019		**Sunrise: 04:38**
Time recorded (time before sunrise)	**Bat species**	**Activity**
03:49 (49 minutes)	Common pipistrelle	Two bats feeding along hedgerow 7 at transect 3.
03:46 (52 minutes)	Soprano pipistrelle	Bat feeding along hedgerow 7 at transect 3.
03:28 (70 minutes)	Brown long-eared	Bat was heard by not seen, surveyor was located adjacent to scrub along hedgerow 7 at transect 3.
02:51 (107 minutes)	Barbastelle	Bat was heard by not seen, surveyor was located along hedgerow 7 at transect 3.

3.10 A single brown long-eared bat was recorded approximately 70 minutes before sunrise on the June dawn survey. This time does not suggest that there is a roost nearby.

Foraging / commuting bats

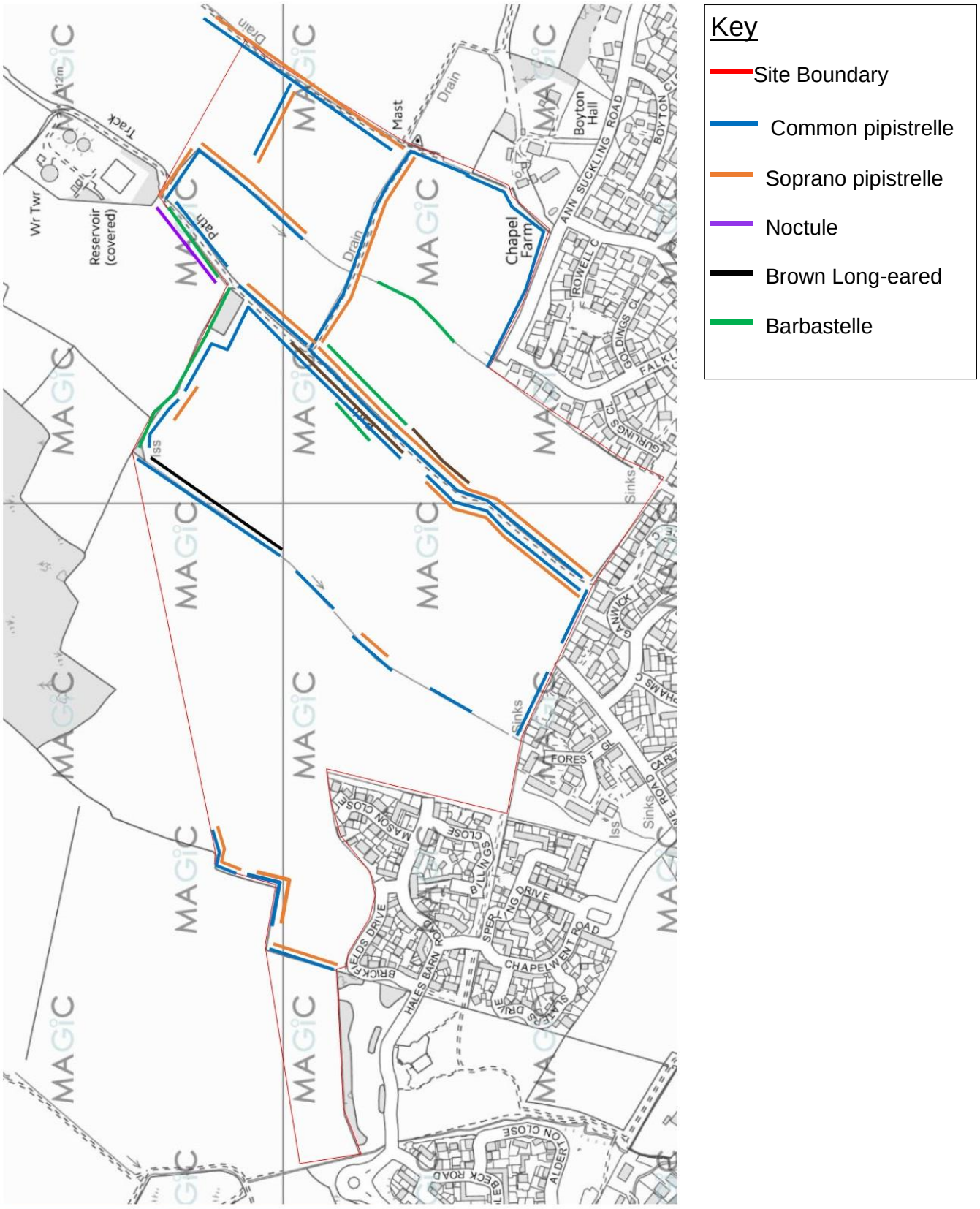
The number of bat passes per species was recorded during transects and static detectors on the bat activity surveys. A bat pass is a series of bat calls emitted as a bat flies by a detector, the number of bat passes can give an indication of the amount of bat activity on the site, but not an indication of the number of bats present. The most active species recorded using the site were common and soprano pipistrelles.

3.11 Foraging activity on the site was dominated mainly by common and soprano pipistrelle bats.

3.12 Bats were recorded using all hedgerows on field boundaries of the site for foraging as well as commuting. All hedgerows were associated with bat activity. The majority of the bat foraging activity appeared to be along hedgerow 2, 5 and 7.

3.13 A map showing the locations where bats were recorded foraging or commuting are shown in the Figure 3.

Figure 3: Location of foraging and commuting bats



4 IMPACT ASSESSMENT

4.1 Based on the plans for the creation of new dwellings with associated infrastructure and access roads on the proposed development site and the results of the bat surveys the following assessment has been made of the likely impacts of the proposed development on bats in the absence of appropriate mitigation.

Foraging and Commuting Bats

4.2 The proposed works could **without** appropriate mitigation cause the following impacts:

- Long term fragmentation of commuting routes such as hedgerows known to be used by bats
- Long term loss of foraging habitat along hedgerows
- Long term increase in external lighting and noise levels around the site following the change to residential use.
- Disturbance to foraging and commuting bats if the development was undertaken at a time of year when bats were active (April to September inclusive).
- Increase in risk of mortality from cat predation.

4.3 Bats were recorded using all hedgerows of the site, with the majority of activity focused on hedgerows 2, 5 and 7. It was considered that in the absence of appropriate mitigation, the impacts of lighting from new access roads could have a negative impact on commuting and foraging bats.

5 RECOMMENDATIONS

5.1 The following recommendations are made to comply with current legislation, planning policy and best practice as recognised by the various statutory authorities.

Restrictions in external lighting

5.2 External lighting would have a negative impact upon foraging and roosting bats. The use of lights near a known bat roost, or an area known to be used by bats that results in disturbance to bats and their normal patterns of behaviour is likely to be unlawful. Therefore, the implementation of a lighting minimization scheme is recommended. This will enable the bats to continue to use the hedgerows as commuting and foraging routes and roost in the trees undisturbed.

5.3 To minimise risk of disturbance to foraging and commuting, and potentially roosting bats on the site, the following lighting minimisation precautions are recommended for the development:

- No works on site should be conducted after sunset and if security lighting is required then this should be kept to the minimal level (as necessary for safety and security).
- Post development lighting should be directed away from boundary and on-site trees and hedgerows that are to be retained, particularly those to the south and north of the site.
- Any external lighting which is required for access (particularly where these occur along hedgerows) should be positioned low down (no higher than 1m from the ground) and the lights should be covered with a hood.
- Installation of lighting columns at the lowest practical height level with box shield fittings will minimise glare and light spillage.
- Lux level of lamps should be as low possible with covers made from glass rather than plastic as this minimises the amount of UV light, reducing the attraction effects of lights on insects.

- Security lights should be set on short timers, and be sensitive to large moving objects only.

5.4 Please refer to the publication, *Bats and Artificial Lighting in the UK* for more information.

Avoidance and compensation measures for the loss of and fragmentation of commuting routes

5.5 Current development proposals show that the existing gaps in hedgerows are to be used for the proposed access roads. This would reduce the requirement for creating new gaps in the hedgerows and avoid fragmentation to commuting bats.

5.6 If this is not possible, we recommend that the existing gaps in the hedgerows should be plug-planted up with native species. These should be planted in the autumn or in the spring. Alternatively, new planting of hedgerows using native species should be incorporated into the proposed development.

5.7 It is recommended that more hedgerows where possible are incorporated into the proposed development to compensate for the loss of the current hedgerow to the eastern boundary of the site.

5.8 Where hedgerows are being removed for access routes, vegetation either side should be encouraged to grow so that it connects and forms a ‘bridge’ over the access route. This would be at a height to allow large vehicles to pass underneath.

6 CONCLUSIONS

6.1 A number of bat species were recording using boundary vegetation and hedgerows as commuting routes and for foraging. Bat species recorded on site included; common pipistrelle, soprano pipistrelle, noctule, brown long-eared and barbastelle. Pipistrelle bats were recorded at a time that would suggest a roost is nearby. It is likely that a barbastelle roost is located in a nearby woodland and they are using the site for foraging activities.

6.2 Adequate mitigation and compensation will be required to reduce the impacts of bat commuting routes becoming fragmented, including implementation of a lighting minimization scheme. A sensitive lighting scheme would ensure that bats are not adversely affected by an increase in external lighting from new houses and roads.

6.3 Appropriate compensation measures include creating new hedgerows where possible and the planting up of existing gaps with native species, such as oak, hornbeam, blackthorn and hawthorn.

6.4 If works do not commence within 12 months of the date of these surveys, updated surveys will be required to identify any changes which may have occurred in the interim.

7 REFERENCES

Bat Surveys for Professional Ecologists: Good Practice Guidelines, 3rd edition (2016). Bat Conservation Trust, London.

Bat Mitigation Guidelines, English Nature, 2004

Bats and Artificial Lighting in the UK: Bats and the Built Environment Series Guidance Note 08/18. Bat Conservation Trust, London.

National Planning Policy Framework (2019) ISBN: 9781409834137

James Blake Associates (2019) Hedgerow Survey of Haverhill Phases (2-6) and Relief road, on behalf of Persimmon Homes (Suffolk).

James Blake Associates Ltd (2019) Preliminary Ecological Appraisal of Land at Haverhill Phases 2-6, Suffolk, on behalf of Persimmon Homes (Suffolk).

RPS (2009) *Land at North-west Haverhill – ecological surveys and assessment,* for Bidwells.

Piraccini, R. 2016. *Barbastella barbastellus* . *The IUCN Red List of Threatened Species* 2016

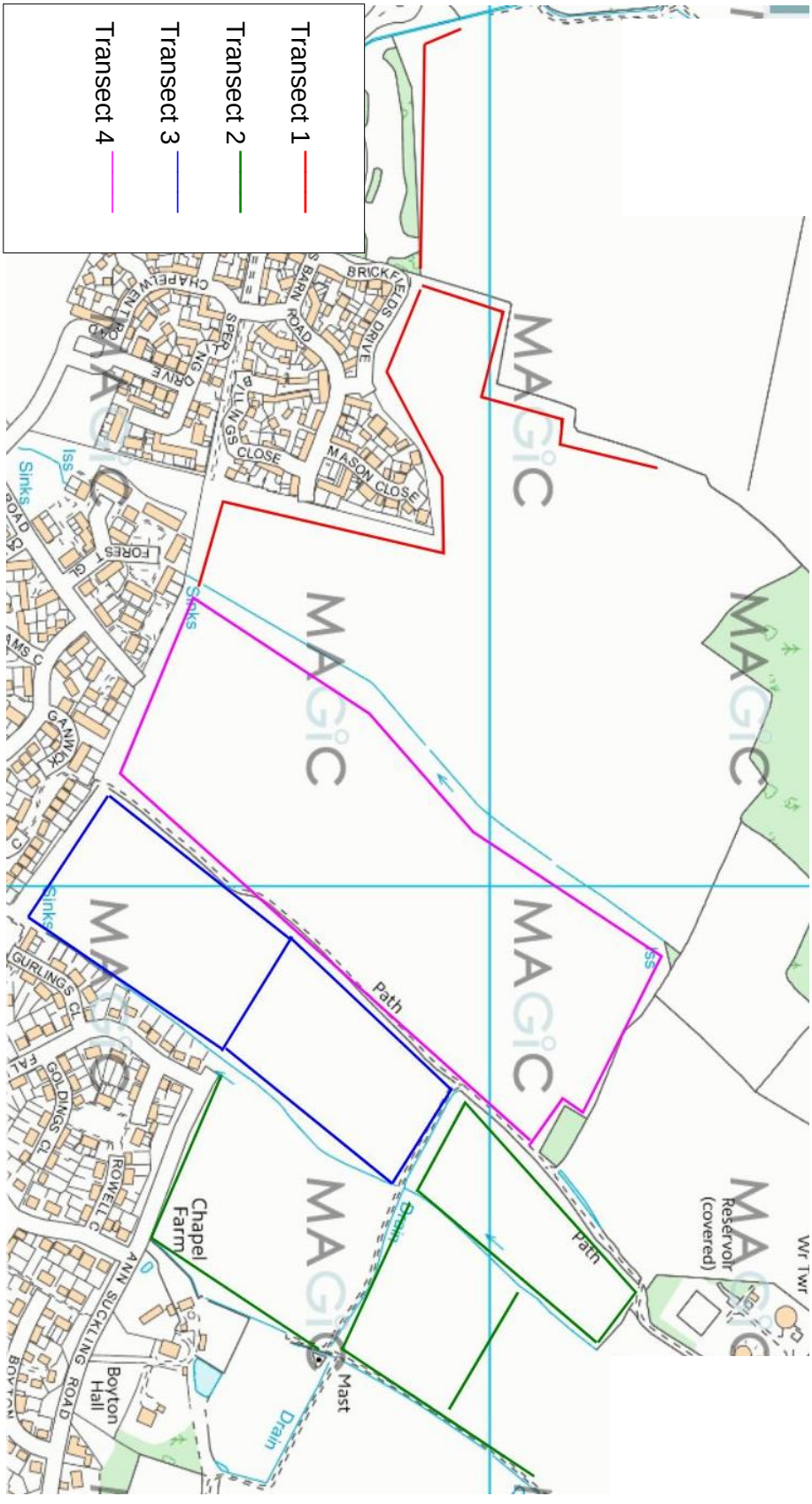
Web references

Natural England online guidance: “Bats: surveys and mitigation for development projects.

UK BAP www.ukbap.org.uk

8 APPENDICES

Appendix A: Transect routes followed on dusk and dawn activity surveys



Appendix B: Site map with hedgerow number