BAT ACTIVITY SURVEY REPORT

OPTION TWO DEVELOPMENT LTD

LAND AT COURTHOUSE FARM

COPTHORNE COMMON ROAD

COPTHORNE, WEST SUSSEX

REF: 5096-LLB-XX-XX-T-EC-0006

STATUS: PLANNING

DOCUMENT ISSUED:

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Revisions:

P01	20.11.25	CC	First draft
P02	24.11.25	CC	Final version

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1. EXECUTIVE SUMMARY

S.1 A bat activity survey, including night-time bat walkover and static detector deployment, of Land at Courthouse Farm, Copthorne Common Road, West Sussex, RH10 3LA was undertaken across the period May to October 2025, inclusive. This was to determine the assemblage of bat species utilising the Site and overall levels of activity.

S.2 The survey effort comprised one vantage point survey in May, followed by a transect survey in June, August and September 2025.

S.3 The static detectors were deployed during May, June, July, August, September and October. They recorded a total of 1,241 hours from over 50 recording nights.

S.4 The surveys recorded an assemblage of at least seven bat species, including common pipistrelle, soprano pipistrelle, serotine, noctule, Leisler's, brown long-eared and at least one *Myotis* species considered likely to be a Daubenton's.

S.5 The night-time bat walkover survey recorded 'low' levels of activity.

S.6 The static detectors recorded an overall bat passes per hour for the Site of 23.85, which is within the descriptive parameters of 'low' activity levels. The passes per hour value varied between months, with June and August assessed as 'moderate' levels of activity, and May, July and October assessed as 'low' levels of activity.

S.7 Common pipistrelle comprised the overwhelming majority of the recorded bat activity in both the manual (recorded on all manual surveys) and static detector surveys (approx. 95% of all recorded passes). Most of the remaining species' activity was attributable to soprano pipistrelle and *Nyctalus* species, (noctule and Leisler's bat). Brown long-eared bat and *Myotis sp* were only recorded as a few passes during static detector surveys only, while individual serotine passes were recorded both from static detector and during the June night-time bat walkover survey.

S.8 During the night-time bat walkover survey visual observations of bats were limited, but common pipistrelle were observed foraging early in the survey with activity then reducing.

S.9 Based on the survey results and habitat assessment, the local bat assemblage (commuting and foraging use) is likely of 'local' (district) importance.

S.10 To ensure delivery of a coordinated and integrated ecology strategy, measures relating to foraging and commuting bats are not detailed in this report. Detail of bat-related avoidance, mitigation, compensation and enhancement measures are included in the 'Ecological Impact Assessment Report' for the project. These recommendations remain valid following assessment of the completed survey results. As such, both reports should be read in full.

2. INTRODUCTION

INSTRUCTION

2.1 Lloydbore Ltd was instructed to undertake a bat activity survey of Land at Courthouse Farm, Copthorne Common Road, West Sussex, RH10 3LA (approximate centre: TQ 32421 39053).

2.2 The survey was commissioned in light of recommendations provided within the 'Preliminary Ecological Appraisal Report' (PEA) (Lloydbore Ltd, 2019) and updated walkover undertaken in June 2025.

2.3 Bats are afforded legal protection by The Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended). Further details on this legislation can be found in Appendix 1.

SITE CONTEXT

2.4 The Site is located within the Mid Sussex District Council. The Site supports heavily grazed semi-improved grassland, scattered trees, one stable building and a single-track access road.

2.5 The Site has a golf course to the west, woodland and grassland to the south and residential houses to the east/south-east. To the north, the Site adjoins the A264 Copthorne Common Road.

PROPOSED DEVELOPMENT

2.6 The proposed development is an outline application with two separate outline designs comprising a residential scheme and a retirement village option.

SURVEY OBJECTIVES

2.7 The objectives of the survey and report are to: -

- Identify the bat species that use the Site;
- Determine the level of Site use by the species present;
- Identify how bat species utilise on-site habitats based on the type of bat activity recorded (foraging and/or commuting);
- Identify any important bat foraging and/or commuting habitats; and
- Assess the geographic level of importance of on-site habitats for foraging bats.

3. METHOD

DESK STUDY

3.1 A biological records search was undertaken by Sussex Biodiversity Record Centre (SxBRC) for the PEA in 2019 and then updated to support the 'Ecological Impact Assessment Report' (EcIA) in June 2025. The data obtained through this search included records of bats. The search radius was 5km, measured from the Site boundary.

3.2 Records obtained within the ten-year period prior to the date of the record search are considered 'recent.' Records older than this are considered 'historic.'

3.3 The Multi-Agency Geographic Information for the Countryside (MAGIC) website was used to identify approved bat European protected species mitigation (EPSM) licences located within 5km of the Site.

PRELIMINARY HABITAT APPRAISAL

3.4 The PEA survey visit was undertaken by Emily Cummins BSc (Hons) Pg.Dip GradCIEEM on 10th December 2018 and included an assessment of the suitability of on-site and adjacent habitats for roosting, foraging and commuting bats.

3.5 An update habitat survey of the Site was undertaken on 21st June 2025, by Charlotte Clements BSc (Hons) ACIEEM. Charlotte is an Associate member of the Chartered Environmentalist of the Chartered Institute of Ecology and Environmental Management (CIEEM) and has over 10 years' experience of habitat survey and ecological assessment.

3.6 The surveys highlighted that the mixture of hedgerows, tree lines, open grassland, woodland edge and scattered mature trees provides suitable habitats for foraging, commuting and roosting bats within and immediately adjacent to the Site.

3.7 These habitats are assessed as being of 'moderate' suitability for foraging and commuting bats.

3.8 Bat surveys were required to determine the level of use of the Site by bats and the species composition present. Surveys were split between a basic habitat assessment for roosts during a daytime bat walkover, undertaken in June 2025 and subsequent activity survey and static detector deployment.

BAT ACTIVITY SURVEY

DAYTIME BAT WALKOVER

3.9 A ground level tree inspection was conducted on the 21st June 2025 by Charlotte Clements, to assess their suitability for roosting bats based upon the presence of any potential roosting features (PRFs).

3.10 This inspection focused on those trees that either require removal or tree works to facilitate development.

3.11 A high-powered clulite torch and binoculars were used to identify PRFs and to search for any evidence of bat roosting.

3.12 PRFs on trees that may be used by bats include, but are not limited to: -

- Woodpecker holes;
- Knot holes;

- Lifted bark; and
- Hazard beams.

3.13 An initial assessment in accordance with Collins (2023) was made to classify on-site trees tree as one of the below: -

- PRF - A tree with at least one PRF present;
- FAR - 'Further Assessment Required' to establish if PRFs are present; or
- None - either no PRFs in the tree or highly unlikely to be any.

3.14 Note that a tree classified as FAR may require further survey (such as climbed/aerial inspection) to finalise its assessment.

3.15 Trees that were recorded as having at least one PRF present were classified in accordance with Collins (2023) into two different categories: -

- PRF-I. The PRF is only suitable for individual bats or very small numbers of bats either due to size or lack of suitable surrounding habitats.
- PRF-M. The PRF is suitable for multiple bats and therefore be used by a maternity colony.

MANUAL SURVEY - NIGHT-TIME BAT WALKOVER

3.16 A night-time bat walkover (NBW) survey, comprising three dusk visits between April and October 2025 (inclusive), was undertaken in accordance with current good practice guidance (Collins, 2023).

3.17 During the NBW survey two surveyors walked a predetermined transect route to observe and record bat activity. The transect route is shown in the '*Bat Activity Survey Plan'* in Appendix 2.

3.18 The transect route comprised a vantage point location and four additional predetermined stopping points along the route, walked twice during a survey and prioritising the most suitable areas of habitat for bats. The first survey visit comprised a vantage point survey only, to gather baseline data on bat activity levels around the Site and inform the optimal design of the transect route based on the above and the topography of the Site.

3.19 During the vantage point survey, surveyors used ambient light to observe potential commuting routes and scan the Site for observations of bats in flight. This observation period began at sunset and lasted for a duration of at least 30 minutes or up to 60 minutes depending on visibility.

3.20 Each subsequent NBW survey began at sunset with a vantage point survey lasting at least 30 minutes, followed by a walked transect in which surveyors spent five minutes at each stopping point and five minutes on each walk between allocated stopping points.

3.21 The transect route was walked forward on two survey visits and in reverse on one survey visit, to ensure adequate sampling of bat activity at different times along the transect route and account for any time-space recording bias.

3.22 All survey visits were led by Jaimé Turner BSc (Hons) or Mark Wingrove BSc (Hons) CEnv MCIEEM. Jaimé is a Qualifying Member and Chartered Environmentalist of the Chartered Institute of Ecology and Environmental Management (CIEEM) and has over three years of experience of habitat survey. Mark is a Full member of CIEEM and has over 17 years' experience in bat surveys.

3.23 Surveyors were equipped with a BatLogger M or M2 detector with a built-in recording device.

3.24 BatExplorer and Anabat Insight software was used to verify species identifications when required or when identification was uncertain.

3.25 Table 1 provides details of the timings and weather conditions recorded during the surveys.

Table 1 2025 NBW survey details.

Date of survey visit	Survey start (Sunset time)	Walking start time	Finish time	Start / end weather conditions
04/06/2025	21:09	21:39 (following 30-minute vantage point survey)	23:19	14°C - 12°C; wind Beaufort* (B)3 - B3; 6 oktas** - 3 oktas cloud cover; dry
26/08/2025	19:59	20:29	22:34	15°C - 13°C, wind B0; 4 oktas cloud cover, dry
11/09/2025	18:42	19:12	20:42	15°C - 12°C, wind B2; 1 oktas 3 cloud cover, dry

* Wind speed is measured using the Beaufort wind force om a scale where B0 - Calm, B3 - Gentle breeze. B6 - Strong breeze and beyond.

** Cloud cover can be measured in Okta's on a scale of 0 (clear) to 8 (completed cloud) with 9 used for sky obscured by fog or other meteorological phenomena

AUTOMATED SURVEY - STATIC DECTECTOR

3.26 The remote survey to record bats across consecutive nights was set up within the Site on six occasions between May and September 2025 (inclusive), in accordance with current good practice guidance (Collins, 2023).

3.27 Four Elekon Batlogger A+ static detectors were used for the survey, placed out on Site broadly once per month at the same location. The static detectors were set up to record from sunset to sunrise for the recommended minimum of five consecutive nights. The microphone was located between *c.*1-1.5m above the ground, mounted near the top of the boundary hedgerows.

3.28 The location of the static detector placement is shown in the '*Bat Activity Survey Plan'* in Appendix 2. The detectors were placed within an area that was assessed as being of the highest suitability habitat on Site for foraging and potentially commuting bats during the initial habitat assessment.

3.29 Table 2 provides full details of the survey effort for static detectors.

Table 2 Summary of static detector survey effort from May to October 2025.

Month	Survey period	Time parameter (sunset-sunrise)	Night length (hours)	Number of complete nights	Total recording hours
May	27/05/25 - 31/05/25	30 mins before sunset - 30 mins after sunrise	8.25	8	66
June	20/06/25 -24/06/25		7.5	17	127.5
July	24/07/25 - 30/07/25		8	9	72
August	20/08/25 - 26/08/25		9.5	4	38
September	19/09/25 - 23/09/25		11.75	0	0
October	15/10/25 - 20/10/25		13	12	156
TOTAL				50	459.5

DATA ANALYSIS

3.30 Recordings were analysed through BatExplorer software. It is not possible to determine whether consecutive bat calls are from multiple individual bats passing or from one single bat repeatedly

passing the detector. Therefore, each sound file is counted as a single pass by a single bat. An activity index is used to calculate relative level of bat activity at each location by dividing bat passes by recording hours.

3.31 Note that the term 'pass' is defined as a single file made up of the call sequence of a single species, i.e., this may be one bat in a file or many bats in a single file.

3.32 Passes per hour (pph) are the total number of single bat call sequences/number of hours recorded.

3.33 This reflects the relative activity levels and therefore relative importance of the surrounding habitat.

3.34 Note that due to species, seasonal and spatial variation in activity, pph has been presented in a number of contexts in order to aid evaluation as follows:

- Overall mean pph for the entire assemblage and for individual species. The mean pph provides an overall assessment of activity across the entire Site and season.
- Pph has also been presented temporally to assist in accounting for seasonal variations in activity. In accordance with the deployment of static detectors this has been sub-divided into monthly descriptions where useful to isolate seasonal variation.

3.35 The temporal categories are used to present 'seasonal pph values', as activity during some periods is likely to be higher or lower than the overall mean pph.

3.36 Relative bat activity level descriptions have been interpreted to assist discussion and evaluation. No guidance is available on what constitutes low, moderate or high bat activity based on the number of passes recorded during a set period. This report utilises a relative descriptive scale where: -

- 'Very low activity' is a mean of less than 2 bat pph.
- 'Low activity' is a mean of 2 to 25 bat pph.
- 'Moderate activity' is a mean of 26 to 100 bat pph.
- 'High activity' is a mean of over 100 bat pph.

ASSESSMENT AND EVALUATION

3.37 The *'Bat Surveys for Professional Ecologist's* (Collins, 2023) and the '*Bat Workers Manual'* (Joint Nature Conservation Committee (JNCC), 2004) have been used to: -

- Assess the suitability of the habitats for foraging and commuting bats;
- Inform the scope of survey works required to assess the bat species that utilise the Site for foraging and/or commuting, and the level and type of Site use by these species; and
- Interpret the results of the bat activity survey undertaken.

3.38 The '*Guidelines for Ecological Impact Assessment'* (CIEEM, 2018) were used as guidance to determine the ecological importance of the Site for bats.

3.39 CIEEM's *'UK Bat Mitigation Guidelines'* provide a standard method for assessing the level of geographic importance of a species assemblage with respect to regional species distributions (Reason & Wray, 2023).

ZONE OF INFLUENCE

3.40 The potential impacts of a development are not always limited to the boundaries of the site concerned. The area over which a development may impact ecologically important features is known as the Zone of Influence (ZoI).

3.41 The ZoI is determined by the source / type of impact, the potential pathway(s) for that impact and the location and sensitivity of the ecologically important feature(s) beyond the site boundary.

3.42 In the absence of mitigation and compensation, the proposed development could result in disturbance of foraging and/or commuting bats that might use the on-site and boundary habitats and would likely result in adverse effects upon the wider local populations of bats. Lighting associated with the proposed development could also result in adverse effects upon roosting and foraging bats.

3.43 Based on the core sustenance zones (CSZs) for the four species of bat recorded frequently using the site the ZoI of the proposed development, in relation to foraging and commuting bats and in the absence of mitigation, is likely to extend to 4km from the Site boundary. This is based on the estimated CSZ value provided in Bat Conservation Trust (BCT) (2016) for the species recorded regularly foraging/feeding on-site during the bat activity survey (noctule (*Nyctalus noctula*). The other bat species recorded regularly foraging/feeding on-site have smaller estimated CSZs.

3.44 Details of the proposed mitigation measures relating to commuting and foraging bats that will be delivered and the lighting-related mitigation measures that will be implemented are provided in the associated EcIA produced by Lloydbore Ltd.

SURVEY LIMITATIONS

LIMITATIONS APPLICABLE TO ALL SURVEY TYPES

3.45 The ecological character of a site can change throughout both the course of a year and from year to year, impacting on the extent and quality of habitats potential to support protected species. Similarly, populations of species and their distribution can vary between years depending on factors such as weather patterns.

3.46 The aim of a desk study is to help characterise the baseline context of the Site and provide valuable background information that would not be captured by a single survey alone. Information obtained during a desk study is dependent upon people and organisations having made and submitted records for the area of interest. As such, a lack of records for a particular species does not necessarily mean that the species do not occur in the study area. Likewise, the presence of records for a particular species does not automatically mean that these still occur within the area of interest or are relevant in the context of the project.

3.47 Common pipistrelle (*Pipistrellus pipistrellus*) and soprano pipistrelle (*Pipistrellus pygmaeus*) can have some call frequency overlap in certain situations. As such, all frequency calls above 52 kHz were classified as soprano pipistrelle.

3.48 Myotis calls are difficult to identify to species level and have therefore been identified as '*Myotis* species' which can include alcathoe bat (*Myotis alcathoe*), Bechstein's bat (*M. bechsteinii*), Brandt's bat (*M. brandtii*), Daubenton's bat (*M. daubentonii*), natterer's bat (*M. nattereri*) and whiskered bat (*M. mystacinus*).

3.49 Bat detectors have some bias towards louder echolocations, and can therefore under record quieter bats, such as brown long-eared (*Plecotus auritus*).

3.50 Due to project timings, no survey was undertaken during April which is the beginning of the active season when most bats have come out of hibernation (March/April), however, overall activity levels are highly dependent on weather conditions. The habitats on Site were assessed as of 'moderate' suitability for commuting and foraging activity, which requires one survey visit per season as follows: April/May (spring), June/July/August (summer) and Sept/Oct (autumn). Therefore, no surveys undertaken in April is not considered to be a limitation to the survey results.

NBW SURVEY

3.51 During NBW surveys there is a risk of surveyors mistaking their position on a route in the absence of visible landmarks. To mitigate this limitation, routes were drawn to follow hedgerows and fence lines to aid navigation in the dark while still surveying suitable areas of habitat.

3.52 Terrain difficulties may be encountered during an activity survey which were not visible on aerial imaging when the transect route was initially planned out and/or which may be unsafe to traverse in the dark. The initial vantage point survey was preceded with a walkover and visual assessment of the proposed transect route to mitigate potential difficulties. Additionally, any ad hoc route alterations were noted by surveyors on paper maps during the survey, and the transect was redrawn prior to the next survey along that route to ensure that all surveyors were following the same, safe, path.

STATIC DETECTOR SURVEY

3.53 The static detector was powered by batteries and carried an SD card with 32 GB of memory, and on several occasions the detector could not complete a full survey period (five nights) due to low battery or equipment malfunction. The number and schedule of deployment of static detectors was consistent with published good practice guidance (Collins, 2023) for the small size of the Site and low level of habitat complexity present, but the partial failure of a detector on several occasions meant that the static detector survey effort of five consecutive recording nights per season was not fully met during August. However, the large size of the remaining data set and small size of the Site means that sufficient static detector data has been collected for the purposes of this assessment.

3.54 Due to an unexpected error the dataset for the September survey was unable to be recovered in full, however considering that static detectors still covered the autumn period (with deployment in October) this is unlikely to have materially changed the overall survey results and recorded levels of activity.

3.55 The August and October deployments included a mix of heavily distorted call files which were unsuitable for reliable species identification and files of insufficient quality, which could be analysed. Failed detector nights have been excluded from pph analysis. However, the large size of the remaining data set means that sufficient static detector data has been collected for the purposes of this assessment.

3.56 Static detector results presented within this report were filtered to a call quality of 10% and above and at least 3 'calls' (using BatExplorer parameters) to enable proportionate exclusion of 'junk' files and noise. While some bat passes may have been excluded from the dataset as a result, the large size of the remaining dataset and sampling review of the excluded files means that the bat assemblages and activity conclusions have not been significantly affected by this filtering.

3.57 Note that static data analysis includes all dates sampled, without removal of dates for poor weather conditions. Review of the data set shows that weather (temperatures and rainfall) was generally favourable during the recording period and bat passes were recorded on all nights, with generally at least ten passes per night and usually more than this. Analysis is included to account for the effect

of including periods where bat activity is often lower (particularly early and at the end of the survey season) with the data set assessed monthly to account for such effects.

LIFESPAN OF SURVEY DATA

3.58 If more than 18 months elapse between the completion of surveys and the commencement of works (November 2027), a suitably experienced ecologist will need to undertake a Site visit and review the validity of this report. Additional bat survey work may be required within the period May to October to ensure the status of the on-site habitat has not changed and to provide up-to date survey data. In this instance, a suitably experienced ecologist should be consulted for advice.

4. RESULTS

DESK STUDY

4.1 The SxBRC data search returned recent and historic records of ten bat species within 5km of the Site. These species were common pipistrelle, soprano pipistrelle, Nathusius pipistrelle (*P. nathusii*), noctule, serotine (*Cnephaeus serotinus)*, barbastelle (*Barbastella barbastellus*), brandt's, natterer's Daubenton's and brown long-eared bat.

4.2 The data search did not include details of maternity or hibernation roosts.

4.3 The MAGIC search returned 11 granted bat EPSM licences located within 5km of the Site. The closet licence is located 500m north-east of the Site (EPSM2012-5030) and evidenced the presence of non-breeding brown long-eared roost in or around 2012 to 2014.

4.4 No internationally designated sites (i.e. Special Areas of Conservation) for bats were identified within 7km of the Site and no other statutory designated sites (i.e. Sites of Special Scientific Interest) designated for bats were identified within 2km.

HABITAT ASSESSMENT

4.5 The Site is comprised almost entirely of vegetated areas and is surrounded by hedgerows, lines of trees and woodland edges. The on-site grasslands provide suitable species and structurally diverse enough to offer foraging habitat. In accordance with good practice guidelines (Collins, 2023), the Site was assessed overall as 'moderate' suitability for foraging and commuting bats.

DAYTIME BAT WALKOVER

4.6 The DBW was undertaken during the updated Site walkover in June 2025 and included a GLTA of trees present on Site. All trees currently present are to be retained within each of the outline schemes (both residential and retirement).

4.7 A total of 10 trees were considered in relation to roosting bats, mostly comprising mature or very mature oak (*Quercus robur*) and one semi-mature beech (*Fagus Sylvatica*). The results of the GLTA are provided in the table below.

Table 3 Ground level tree assessment results

Tree ID	Species	Assessment
T01	Oak	Very mature oak with knot hole and split bark to eastern aspect PRF-I
T02	Oak	As above
T03	Oak	Mature oak with knot holes and split bark but limited PRF-I
T04	Oak	Some broken branches present PRF-I
T05	Oak	Semi-mature tree, no PRFs present
T06	Beech	Semi-mature, no PRFs present
T07	Oak	Mature, broken branches present PRF-I
T08	Oak	No PRFs present
T09	Oak	Some split bark and broken branches PRF-I
T10	Oak	Mature with two knot holes and split bark PRF-I

4.8 All the trees were assessed as PRF-I, with limited PRFs present that may be of use to roosting bats, the remaining three trees had no visible PRFs present and were therefore scoped out of the assessment. All the trees subject to the GLTA are to be retained and furthermore, set back from areas of development on both outline scheme options. The project EcIA contains mitigation measures appropriate for roosting bats.

MANUAL SURVEY - NIGHT-TIME BAT WALKOVER

4.9 The NBW survey recorded an assemblage of at least five species (common pipistrelle, soprano pipistrelle, serotine, noctule and one unidentified *Myotis* species), as shown in terms of presence, passes and relative activity levels in Table 4 below. The largest values for the entire dataset or a species are shown in bold.

*Table 4 Species recorded during NBW surveys, number of passes and relative activity levels**

Dates	Species recorded & number of passes*						Relative activity (all species combined)
	PIPI	PIPY	NYNO	EPSE	MYSP	Total passes	
04/06/2025	26	0	0	2	0	28	Low
26/08/2025	36	2	4	1	0	43	Low
29/09/2025	40	2	3	0	1	46	Low
Species presence on NBW	3 of 3	2 of 3	2 of 3	2 of 3	1 of 3	-	-
Total no. of recorded passes	102	4	7	3	1	117	-
Percentage of all recorded passes	87	3	6	3	1	100	-

*PIPI - common pipistrelle; PIPY - soprano pipistrelle; NYNO - noctule; EPSE - serotine; MYSP (unknown *Myotis* species).

4.10 Overall relative activity was recorded as low, with similar activity during all surveys.

4.11 Common pipistrelle was the most frequently encountered species, recorded as present during every manual activity survey. The relatively high number of passes appears attributable to periods of extended foraging activity recorded along the boundary tree lines.

4.12 Table 5 further summarises surveyor observations recorded during the NBW surveys.

Table 5 Summary of surveyor observations.

Date	Species	Summary
04/06/2025	Common pipistrelle, serotine.	The first bat recorded was a serotine pass at 21:29. Between 21:34 and 22:04 near constant common pipistrelle activity was recorded by individual or low numbers of bats. Activity included foraging behaviour along the western boundary of the Site. Throughout the remainder of the survey activity was restricted to occasional passes by common pipistrelle, without any periods of extensive activity.

Date	Species	Summary
26/08/2025	Common pipistrelle, soprano pipistrelle, noctule, serotine.	The first bat recorded was a common pipistrelle pass at 20:14. Early in the survey two common pipistrelle bats were observed foraging along the eastern boundary. Until 21:14, frequent unseen passes by individual common and soprano pipistrelle bats were recorded. At 21:49 and 22:34 a noctule was observed commuting across the Site. At 21:54 a single, likely serotine, bat was observed foraging along the south-western boundary. The majority of passes appear to originate from individual pipistrelle bat(s) foraging along hedgerows and tree line edges for extended periods of time. While more common pipistrelle passes were recorded, activity from both common and soprano was recorded sporadically throughout the survey, with the main period of activity being early in the survey.
29/09/2025	Common pipistrelle, Soprano pipistrelle, Noctule and *Myotis sp.*	The first bat recorded was a common pipistrelle pass at 18:48. Early in the survey a period of foraging activity was observed by at least two bats (common and soprano pipistrelle) in the canopy on the eastern boundary. The remainder of the survey had very low activity with only occasional passes recorded of unseen pipistrelle bats. At 20:07 a brief foraging record of a single *Myotis sp* bat was recorded. At 20:12 an unseen noctule pass was recorded.

AUTOMATED SURVEY - STATIC DETECTORS

SPECIES ASSEMBLAGE AND OVERALL ACIVITY LEVELS

4.13 At least seven bat species were recorded across the Site by static detectors, including common pipistrelle, soprano pipistrelle, serotine, noctule, Leisler's, brown long-eared bat and at least one unidentified *Myotis* species.

4.14 The overall bat pph for the Site was 23.9 within the descriptive parameters of 'low 'levels of activity.

4.15 Most passes (over 95% of all static data) were from common pipistrelle (over 10,490 total passes).

4.16 Soprano pipistrelle were the next most commonly recorded species with approximately 2.8% (318) of all passes. All other species individually represented less than 1% of the total passes, equating to 'very low' levels of activity.

4.17 The total number of passes per species are shown in Table 6 and further quantified as average pph for each species throughout the monitoring period as well as overall pph for all species combined.

Table 6 Summary of static data by species, total passes and average pph across combined 2025 survey period.

Activity measure	Species recorded and recorded passes*							All species combined
	EPSE	MYSP	NYLE	NYNO	PIPI	PIPY	PLAU	
Total passes	10	52	36	44	**10,490**	318	35	10,985
Percentage of total calls	0.09	0.47	0.33	0.40	**95.49**	2.89	0.32	100
PPH	0.02	0.11	0.07	0.09	**22.8**	0.69	0.07	23.85

*Key to Species: EPSE – serotine, MYSP (unknown Myotis species), NYLE - Leisler's bat, NYNO - noctule, PIPI - common pipistrelle, PIPY - soprano pipistrelle, PLAU - brown long eared bat.

MONTHLY RELATIVE ACTIVITY LEVELS

4.18 To provide a summary understanding of the use of the Site by bats temporally (by month), the pph data has been sub-divided by month to provide an analysis of activity variation across the year.

4.19 Given the relatively small size of the Site and relatively close proximity of the four static detector locations, no comparison by location has been produced.

4.20 Tables are presented for the following data:

- Pph per month for all species combined (overall monthly activity);
- Pph per month for overall bat activity recorded versus pph for common pipistrelle (which comprises the majority of the data) only;
- Individual pph for the remaining species, broken down by month; and
- Pph per season for all species combined except common pipistrelle.

4.21 Pph per species across each consecutive recording period is derived from the following number of recording hours shown previously within the Methodology section (Table 2). The total recording effort equates to 50 nights and approximately 459.5 hours.

Overall Monthly Activity

4.22 The total number of recorded passes each month are presented below, both as a total and also weighted against recording effort to calculate a monthly pph.

Table 7 Summary of monthly static data for all species combined

Activity measure	Month						All passes recorded
	May	June	July	Aug	Sept	Oct	
Total passes	1,081	5,602	1,639	2,053	-	610	10,985
Total recording hours	66	127.5	72	38	-	156	459.5
Overall pph	16.37	**43.93**	22.76	**54.02**	-	3.90	23.90

4.23 From the above table overall activity in pph is highest during June and August with a notable decrease in October.

4.24 The relatively high pph for August must consider the small dataset from which it has been calculated; only one out of the four static detectors successfully recorded during August. This may cause an inflated overall pph.

4.25 A significant decrease in activity occurs in October may be due to overnight rain recorded during this period distorting the results.

4.26 May, July and October are within the descriptive range of 'low' (2 to 25pph), whilst June and August fall within the 'moderate' range (25 to 100pph).

Common Pipistrelle

4.27 As common pipistrelle constitute the vast majority of the recorded passes, this species is shown separately in Table 8 so that trends for rarer species can be more easily seen in the separate Table 9.

Table 8 Summary of monthly static data for common pipistrelle.

Activity measure	Month						All passes recorded
	May	June	July	Aug	Sept	Oct	
PIPI passes	1,072	5,510	1,465	1,942	-	501	10,490
PIPI % of total passes	99.16	98.35	89.38	94.59	-	82.13	95.49
PIPI pph	16.24	43.21	20.34	**51.10**	-	3.21	22.83

4.28 From Table 8 it can been seen that common pipistrelle activity comprises the majority (percentage of total passes) of the recorded passes during all months.

Remaining Species

4.29 The species where sufficient calls were recorded to potentially identify monthly trends are shown in Table 9.

4.30 Where a species is recorded so infrequently (i.e. less than 35 passes in total) these are excluded from the table and described within the text below.

Table 9 Summary of monthly static data for other regularly occurring species.

Activity measure	Month						All passes recorded
	May	June	July	Aug	Sept	Oct	
PIPY passes	4	69	98	94	-	53	318
PIPY % of total passes	0.00	0.01	0.06	0.04	-	0.09	0.03
PIPY pph	0.06	0.54	1.36	**2.47**	-	0.33	0.69
***NYSP* species passes (includes NYNO and NYLE)**	5	7	51	8	-	9	80
***NYSP* % of total passes**	0.00	0.00	0.03	0.00	-	0.01	0.00
***NYSP* pph**	0.07	0.05	**0.70**	0.21	-	0.06	0.17
***MYSP* passes**	0	11	14	8	-	19	52
***MYSP* % of total passes**	0.00	0.00	0.00	0.00	-	0.03	0.00
***MYSP* pph**	0.00	0.09	0.07	**0.21**	-	0.12	0.09

4.31 All species other than common pipistrelle are within the descriptive range of 'very low' activity (0 to 2pph) for every month, except for soprano pipistrelle passes in August which just fell into the 'low' range (2 to 50pph).

4.32 June and July appear to have the highest levels of activity for all species, comprising a large portion of the recorded total passes. The recorded number of passes in October is very low but follows the general trend for the overall reduction of activity levels in that month.

4.33 In terms of the remaining species recorded: -

- Serotine. Two passes in June and eight passes in July; and
- Brown long-eared. Three in June, three in July, one in August and 28 in October.

4.34 The recorded serotine and brown long-eared passes comprise a very low proportion of the total data set, approximately 0.005% of all passes. Recording is reasonably consistent but at minimal levels of activity compared to other species, i.e. usually less than ten passes in a month.

4.35 The above species appear to use the Site only occasionally, although all species were recorded during interspersed months rather than being linked to a particular season.

5. EVALUATION AND RECOMMENDATIONS

ASSEMBLAGE AND RELATIVE ACTIVITY

5.1 The range of species reflects the size of the Site, mix of habitats present (including hedgerows, woodland edges and grassland) and is likely reflective of the wider similar landscape present beyond the Site across the district.

5.2 The surveys recorded mostly common bat species (particularly common pipistrelle) that are widespread in the UK and would be expected to be found in similar habitats elsewhere in the county. *Nyctalus* species also appear to forage within and commute across the Site regularly.

5.3 Passes of the remaining uncommon and rarer species reflect the extensive survey effort and size of the Site and would be expected to be recorded, with none of these species being recorded as large number of passes or as a large proportion of the data set. The few passes recorded may be occasional commuting or migratory flights across the district.

5.4 It was noted that few individual bats were observed foraging on Site during the NBW surveys, and that the majority of observations recorded were in relation to bat passes and foraging activity along the hedgerows and tree line edges. Activity sometimes comprised a period of intense foraging activity within the first hour (usually by common or soprano pipistrelle), which then reduced later into the survey into occasional passes during which other species were then recorded.

5.5 It may be that bats from nearby potential roost locations (within woodland or nearby housing) utilise the Site for foraging as an area near to their roosts, based on the proximity to sunset of some recorded activity periods but do not appear to extensively forage throughout the remainder of the night.

5.6 While the number of bats utilising a Site cannot be quantified (as stated within Section 2), an indication of relative abundance is achievable from review of the activity levels (pph) from static detector data and frequency of species encountered during manual activity surveys.

5.7 The levels of activity recorded from the static detector survey were generally within the 'low' or 'very low' range across all months and locations. With the exception of common pipistrelle activity in June and August which reached 'moderate'.

LEVEL OF IMPORTANCE

5.8 A brief description of the relative conservation importance of the species recorded in a national and regional context is provided below.

5.9 The most frequently recorded species, common pipistrelle, is classed within Reason and Wray (2025) as widespread species within Eastern England.

- Common pipistrelle is nationally common and widespread, with a mean estimated population for England around 1,870,000 (BCT, 2024). *"Widespread, occasionally common. One of the two species most likely to be encountered*" as described in a county context (Essex Bat Group, undated).
- Soprano pipistrelle is a nationally common and widespread species, with a mean estimated population for England around 2,980,000 (BCT, 2024).
- Noctule occurs across England, Wales, and southern Scotland. The noctule population in Great Britain is described as stable, with a mean estimated population for England of 565,000 (BCT, 2024).

- Leisler's bat is uncommon but widespread throughout England, Wales and Scotland. It is more abundant in Northern Ireland, as Ireland is a stronghold for the species. Insufficient data is available for an accurate estimate of population nationally or within the county (BCT, 2024). ' Widespread, but scarce and possibly declining' as described in a county context (Essex Bat Group, undated).

5.10 The rarely recorded species are summarised below. Within Eastern England, serotine are classed within Reason and Wray (2025) as 'rarer' species. Brown long-eared and *Myotis* species classed as 'widespread'

- Brown long-eared bat occurs across most of the UK. The national population is considered to have been stable in the long term (since 1999) but may be experiencing short-term decline since 2017. The mean estimated population for England is around 607,000 (BCT, 2024).
- The serotine population in Great Britain (only occurring in England and Wales) is considered to have been stable in the long-term (since 1999) and short-term (since 2017). A mean estimated population for England is 136,000. *"Widespread, but scarce*" in a county context (Essex Bat Group, undated).
- The *Myotis* species passes recorded during the survey could be attributable to species that are widespread within eastern England (i.e., Daubenton's and/or Natterer's bat).

5.11 Based on the range of bat species recorded at the Site, frequency of relative activity, and known to occur within the wider local area, the Site is assessed as being of 'local' (district) importance (based on criteria within Reason & Wray, 2023) for forging and commuting bats. 'Rarer' species have been recorded but do not appear to utilise the Site for any extended periods of time, being restricted to occasional passes.

RECOMMENDATIONS

5.12 The recommendations with the EcIA report provide details of avoidance, mitigation and compensation measures relating to bats. These recommendations remain valid following assessment of the completed survey results.

6. REFERENCES

Bat Conservation Trust (BCT) (2016*). Core sustenance zones: Determining zone size.* Available via: https://www.bats.org.uk/our-work/landscapes-for-bats/core-sustenance-zones [Accessed 28/10/2025].

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Chartered Institute of Ecology and Environmental Management (CIEEM) (2018). *Guidelines for ecological impact assessment in the UK and Ireland: Terrestrial, freshwater, coastal and Marine*. Version 1.3. CIEEM: Winchester.

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Lloydbore Ltd (2019). *Land at Courthouse Farm*. Preliminary Ecological Appraisal. Document ref. 5096-LLB-RP-Ec-0001-S4-P03_Preliminary Ecology Appraisal. Lloydbore Ltd: Kent.

Lloydbore Ltd (2025). *Land at Courthouse Farm. Ecological impact assessment*. Document ref. 5096-LLB-XX-XX-T-Ec-0005-S4-P02_Ecological Impact Assessment. Lloydbore Ltd: Kent.

Reason, P., F., and Wray, S. (2023). *UK bat mitigation guidelines: A guide to impact assessment, mitigation and compensation for developments affecting bats*. CIEEM: Ampfield.

7. APPENDIX 1: LEGISLATION AND PLANNING POLICY

7.1 The Conservation of Habitats and Species Regulations 2017 and the Wildlife and Countryside Act 1981 (as amended) afford legal protection to bats.

7.2 The specific legal protection afforded to bats can be found within the Sections and Schedules of the relevant legislation and relevant case law.

7.3 In general, any person and/or activity that: -

- Damages or destroys a breeding or resting place of bats. (This is sometimes referred to as the strict liability or absolute offence);
- Deliberately captures, injures or kills a bat/s;
- Deliberately disturbs bats, and in particular disturbance likely to impair animals ability to survive, breed or nurture young, their ability to hibernate and migrate and disturbance likely to have a significant effect on local distribution and abundance;
- Intentionally or recklessly disturbs a bat/s while occupying a structure or place used for shelter and/or protection (Wildlife and Countryside Act 1981 (as amended)); and
- Intentionally or recklessly obstructs access to any structure or place that bat / bats use for shelter or protection (Wildlife and Countryside Act 1981 (as amended)).

…may be guilty of an offence.

7.4 The legislation applies to bat roosts even when they are not occupied.

7.5 Actions affecting multiple animals can be construed as separate offences and therefore penalties can be applied per animal impacted.

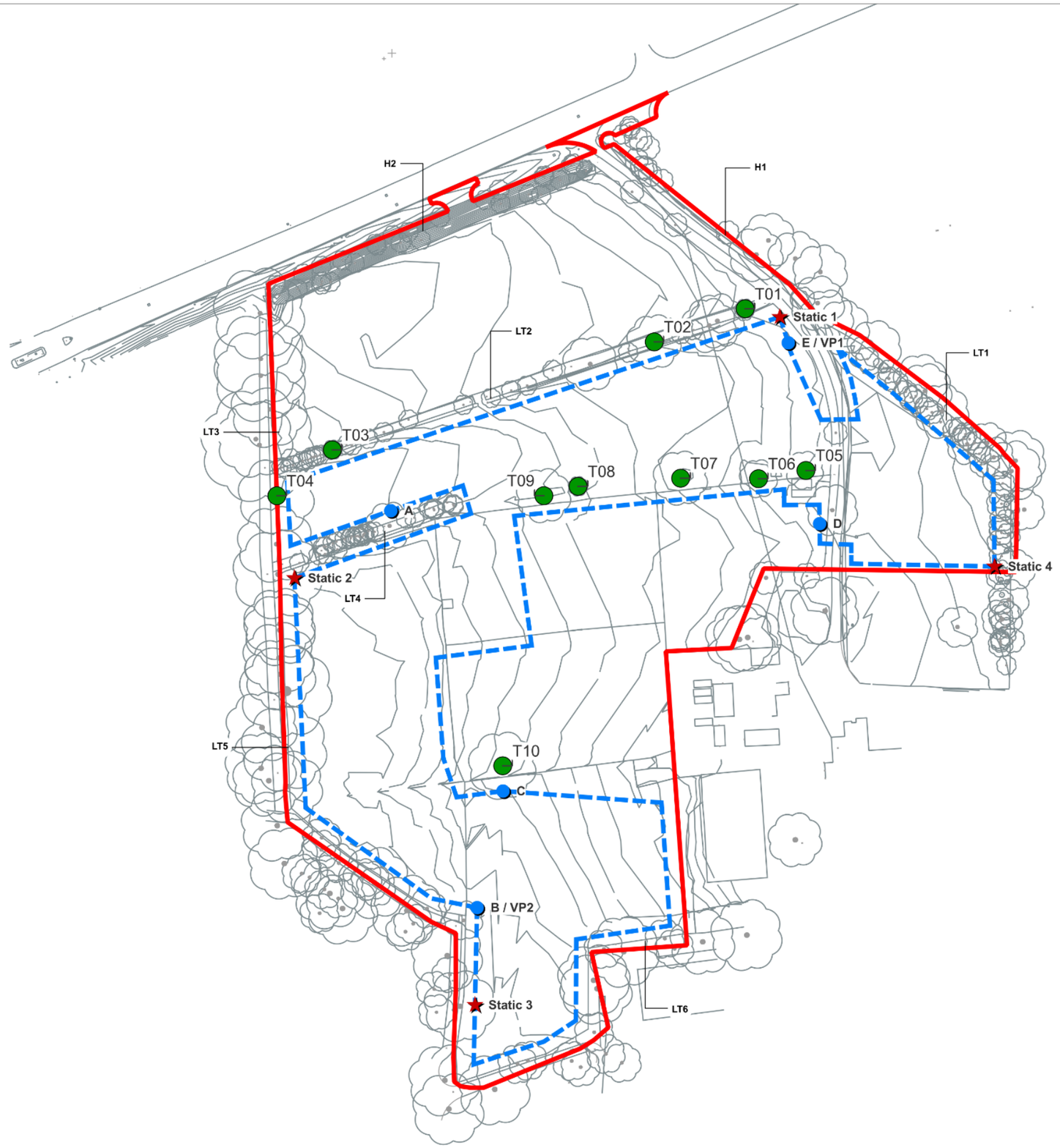
7.6 Under certain circumstances licences can be granted by the Statutory Nature Conservation Organisation (Natural England in England) to permit actions that would otherwise be unlawful.

7.7 There are some very specific defences associated with the Conservation of Habitats and Species Regulations 2017, however these are unlikely to apply to construction related projects. The Sections of the Regulations provide further details of these defences.

7.8 The Wildlife and Countryside Act (1981) includes defence for those aspects of the legislation that apply to bats. These defences are unlikely to apply to construction related projects and do not apply to those acts included in the Conservation of Habitats and Species Regulations 2017. The Schedules of the Act provide further details of defences.

7.9 Local authorities have obligations under sections 40 and 41 of the Natural Environment and Rural Communities Act (NERC) 2006 to have regard to the purpose of conserving biodiversity in carrying out their duties. Seven species of bat species are listed on Section 41 the NERC Act.

8. APPENDIX 2: BAT ACTIVITY SURVEY



Legend:

- Transect stop point
- Location of static detector
- Existing Tree
- Transect route
- Existing native hedgerow, with trees
- Existing Non-native and ornamental hedgerow
- Existing line of trees
- Existing line of trees, ditch
- Red line boundary: Total area approx: 4.3645 ha.

0 15 30 m

1:1500

client. *Option Two Development Ltd*
project. *Land at Courthouse Farm*
Copthorne Common Road
Copthorne, West Sussex

drawing no. *5096-LLB-RF-0029*
drawing title. *Bat Activity Survey Plan*
title 2.
title 3.

scale. *1:1500*
sheet. *A3*
author. *DM*
checked. *CC*

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