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APPENDIX 2: BAT REPORT

Client

Hargreaves Land Limited

Project

Lincolnshire Lakes (North),

Scunthorpe

Date

January 2025

CONTENTS

FIGURES

Rev	Issue Status	Prepared/Date	Approved/Date
-	Issue	CG/10/12/24	AJB/18/12/25

1.0 INTRODUCTION

1.1 The following bat report has been prepared by FPCR Environment and Design Ltd on behalf of Hargreaves Land Limited. It provides the results of bat activity surveys undertaken at the Lincolnshire Lakes (North) Site, Scunthorpe (Central OS grid reference: SE 86470 09734), herein referred to as 'the Site' (see Figure 1 of the EcIA for location).

1.2 This document is provided as an Appendix to the Ecological Impact Assessment (FPCR, 2024) and completes the ecological assessment for bats.

2.0 LEGISLATION, POLICY AND STATUS

Legislation

2.1 All bats and their roosts are afforded legal protection under the Conservation of Habitats and Species Regulations 2017 (as amended) (CHSR) and the Wildlife & Countryside Act 1981 (as amended) (WCA).

2.2 The purpose of the legislation is to maintain and restore protected species to a situation where their population status is favourable.

2.3 Schedule 2 of the CHSR lists all bats belonging to the families Vespertilionidae and *Rhinolophidae* as European Protected Species (EPS) of animals. This includes all known UK bat species.

2.4 Under Regulation 43 of the CHSR it is an offence to

- deliberately capture, injure or kill a bat;
- deliberately disturb a bat; and
- damage or destroy a breeding site or resting place of a bat.

2.5 The definition of disturbance in CHSR is an act that is likely to impair the ability of an EPS to survive, breed, rear, and nurture young, hibernate or migrate, or to significantly affect the local distribution or abundance of the species.

2.6 It is also an offence under Regulation 43 to be in possession or to control or to transport and live or dead or part of a bat.

2.7 Schedule 5 of the WCA lists all bats belonging to the families Vespertilionidae and *Rhinolophidae* as animals which are protected by sections 9(4)(b) 9(4)(c). This includes all known UK bat species.

2.8 Under the above sections it is an offence to intentionally or recklessly:

- disturbs any bat while it is occupying a structure or place which it uses for shelter or protection; or
- obstructs access to any structure or place which a bat uses for shelter or protection

2.9 Foraging habitat and commuting routes used by bats are not directly protected as such but impacts that could prevent bats from using a resource or commuting to or from a valued roosting site may be considered as an indirect impact on a roost or a significant disturbance effect and would therefore also need to be avoided or prevented.

2.10 Several bat species are listed as species of principal importance for the purpose of conserving biodiversity under the Natural Environment and Rural Communities (NERC) Act 2006. These species are barbastelle bat, Bechstein's bat, brown long-eared bat, greater horseshoe bat, lesser horseshoe bat, noctule and soprano pipistrelle.

3.0 METHODOLOGY

Desk Study

3.1 A desk study was undertaken to collate existing information for the Site and its surroundings in relation to bat species. This included a review of:

- biological records requested from Lincolnshire Environmental Records Centre (LERC);
- granted EPS licences for bats from https://magic.defra.gov.uk/magicmap.aspx
- statutory designated sites that include bat species as part of their designation from https://magic.defra.gov.uk/magicmap.aspx; and
- publicly available aerial imagery showing connectivity across the site and to the wider landscape.

3.2 Bat records were searched for at a resolution of 2km around the Site and were limited to records from within the last 20 years.

Pre-Survey Habitat Assessment

3.3 This assessment was carried out prior to any bat surveys being undertaken. Aerial photography was used to assess the potential usage of the Site by bats, what habitat was suitable for bats, any potential roosting locations, potential foraging and commuting areas.

3.4 This assessment aimed to provide a guide to the amount of survey effort expended which should ultimately be proportional to:

- the type and scale of the proposed works/redevelopment and its predicted impacts on bats;
- the size, nature and complexity of the works/redevelopment site;
- the likelihood of bats being present or affected;
- the species and numbers of individuals concerned; and
- the type of roost and/or habitat affected.

3.5 The Site was also categorised for its habitat suitability for bats, which would also provide guidance on survey effort. The suitable habitat was assessed using the latest guidance at the time of surveying from the Bat Surveys for Professional Ecologists: Good Practice Guidelines[1]. Table 4.1 of those guidelines provides an outline for assessing the potential suitability of proposed development sites for bats, based on the presence of habitat features within the landscape. This should be applied using professional judgement. This groups a site into four categories based on habitat suitability for foraging and commuting bats which has been further summarised in Error! Reference source not found., below:

[1] Bat Conservation Trust, 2016. Bat Surveys for Professional Ecologists Good Practice Guidelines 3rd edition.

Table 1: Criteria for Assessing Habitat Suitability for Commuting and Foraging Bats

Suitability	Commuting Habitats	Foraging Habitats
Negligible	Negligible habitat features on site unlikely to be used by commuting or foraging bats.	
Low	Habitat that could be used by small numbers of commuting bats such as a gappy hedgerow or unvegetated stream, but isolated, i.e., not very well connected to the surrounding landscape by other habitat.	Suitable, but isolated habitat that could be used by small numbers of foraging bats such as lone tree (not in parkland situation) or a patch of scrub.
Moderate	Continuous Habitat connected to the wider landscape that could be used by bats for commuting such as lines of trees and scrub or linked back gardens.	Habitat that is connected to the wider landscape that could be used by bats for foraging such as trees, scrub, grassland or water.
High	Continuous high-quality habitat that is well connected to the wider landscape that is likely to be used regularly by commuting bats such as river valleys, streams, hedgerows, lines of trees and woodland edge.	High-quality habitat that is connected to the wider landscape that is likely to be used regularly by foraging bats such as broadleaved woodland, tree lined water courses and grazed parkland. Site is close to and connected to known roost sites

Potential Roost Assessment

Ground Level Assessment of trees

3.6 Trees were assessed from ground level on 3rd, 4th and 17th July 2023, by suitably experienced and licenced bat ecologists (Natural England Class 2, 2015-12569-CLS-CLS and 2016-20709-CLS-CLS), with the aid of a high-powered torch and binoculars. During the surveys Potential Roosting Features (PRFs) for bats such as the following were sought (based on p16, British Standard BS 8596:2015)[2]:

- Natural holes (e.g. knot holes) arising from naturally shed branches or branches previously pruned back to a branch collar;
- Man-made holes (e.g. cavities that have developed from flush cuts or cavities created by branches tearing out from parent stems);
- Woodpecker holes;
- Cracks/splits in stems or branches (horizontal and vertical);
- Partially detached, loose or bark plates;
- Cankers (caused by localised bark death) in which cavities have developed;
- Other hollows or cavities, including butt rots;
- Compression of forks with included bark, forming potential cavities;

[3] English Nature (2004) Bat Mitigation Guidelines.

- Crossing stems or branches with suitable roosting space between;
- Ivy stems with diameters in excess of 50mm with suitable roosting space behind (or where roosting space can be seen where a mat of thinner stems has left a gap between the mat and the trunk).
- Bat or bird boxes; and
- Other suitable places of rest or shelter.

3.7 Certain factors such as orientation of the feature, its height from the ground, the direct surroundings and its location in respect to other features may enhance or reduce the potential value.

3.8 Using professional judgement, trees were classified into general bat roost potential groups based upon the presence of these features using the latest Good Practice Guidelines at the time of surveying. These classifications have been updated in this report so they are consistent with the current Good Practice Guidelines: Bat Surveys for Professional Ecologists: Good Practice Guidelines (BCT, 2023), in which, the general bat roost potential groups are defined (refer to Table 4.2 of the guidelines) and provided in Table 2 below.

Table 2: Suitability of trees for bats

Suitability	Description
NONE	Either no potential roost features or highly unlikely to be any.
FAR	Further Assessment Required to establish if Potential Roost Features are present.
PRF	A tree with at least one Potential Roost Feature.

3.9 Although the British Standard 8596:2015 document groups trees with moderate and high potential, these have been separated below (as per Table 4.1 in The Bat Conversation Trust Guidelines) to allow more specific survey criteria to be applied.

Table 2: Classification and Survey Requirements for Bats in Trees

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey Work / Actions
Confirmed Roost	Evidence of roosting bats in the form of live / dead bats, droppings, urine staining, mammalian fur oil staining, etc.	A Natural England derogation licence application will be required if the tree or roost site is affected by the development or proposed arboricultural works. This will require a combination of aerial assessment by roped access bat workers (where possible, health and safety constraints allowing) and nocturnal survey during appropriate periods (e.g. nocturnal survey - May to August) to inform on the licence.

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey Work / Actions
		Works to tree undertaken under supervision in accordance with the approved good practice method statement provided within the licence. However, where confirmed roost site(s) are not affected by works, work under a precautionary good practice method statement may be possible.
High Potential	A tree with one or more Potential Roosting Features that are obviously suitable for larger numbers of bats on a more regular basis and potentially for longer periods of time due to their size, shelter protection, conditions (height above ground level, light levels, etc) and surrounding habitat. Examples include (but are not limited to); woodpecker holes, larger cavities, hollow trunks, hazard beams, etc.	Aerial assessment by roped access bat workers (if appropriate) and / or nocturnal survey during appropriate period (May to August). Following additional assessments, tree may be upgraded or downgraded based on findings. If roost sites are confirmed and the tree or roost is to be affected by proposals a licence from Natural England will be required. After completion of survey work (and the presence of a bat roost is discounted), a precautionary working method statement may still be appropriate.
Moderate Potential	A tree with Potential Roosting Features which could support one or more potential roost sites due to their size, shelter protection, conditions (height above ground level, light levels, etc) and surrounding habitat but unlikely to support a roost of high conservation status (i.e. larger roost, irrespective of wider conservation status). Examples include (but are not limited to); woodpecker holes, rot cavities, branch socket cavities, etc.	A combination of aerial assessment by roped access bat workers and / or nocturnal survey during appropriate period (May to August). Following additional assessments, tree may be upgraded or downgraded based on findings. After completion of survey work (and the presence of a bat roost is discounted), a precautionary working method statement may still be appropriate. If a roost site/s is confirmed a licence from Natural England will be required.
Low Potential	A tree of sufficient size and age to contain Potential Roosting Features but with none seen from ground or features seen only very limited potential. Examples include (but are not limited to); loose/lifted bark,	No further survey required but a precautionary working method statement may be appropriate.

Classification of Tree	Description of Category and Associated Features (based on Potential Roosting Features listed above)	Likely Further Survey Work / Actions
	shallow splits exposed to elements or upward facing holes.	
Negligible/No potential	Negligible/no habitat features likely to be used by roosting bats	None.

** The Conservation of Habitats & Species Regulations 2010 (as amended) affords protection to "breeding sites" and "resting places" of bats. The EU Commission's Guidance document on the strict protection of animal species of Community interest under the Habitats Directive 92/43/EEC, February 2007 states that these are places "where there is a reasonably high probability that the species concerned will return".*

3.10 In combination with the above, all trees within the site were visually assessed for the existence of large cavities with the potential for use by nesting or roosting barn owl. Additional signs, such as pellets and faecal splashing were also searched for on or around potential perches.

Activity Surveys

3.11 This methodology considers guidance from English Nature (now Natural England)[3] and further guidelines introduced by the Bat Conservation Trust[4], CIEEM [5]and JNCC[6]. The survey effort was determined from recommendations provided in BCT[3] guidance. (see limitations section for note on bat survey guidelines)

Transect Surveys

3.12 The primary objective of the transect surveys was to identify foraging areas, commuting routes and to gain understanding of species utilisation of the site. Applying professional judgement and considering methods outlined in the latest bat guidance at the time of instruction (BCT 2016), it was considered that the total survey area was too large to cover in a single transect. As such the survey area was split into two areas – east and west. Based on the results of the Habitat Suitability Assessment, the transect surveys were undertaken on a monthly basis on the Site from April to October 2023.

3.13 The transect routes were predetermined prior to surveys commencing in order to comprehensively cover all areas of the Site. The east transect included 12 count stops (each three minutes in duration) to identify activity levels around the habitat features of potential value to bats and those that are most likely to be affected by proposals. The starting point of the surveys was rotated between surveys to avoid bias in the route and from coverage when most bats are less likely to be active at the start of the survey (see Figures 2.1, to 2.7).

3.14 The dusk transects commenced prior to sunset and continued for two to three hours after sunset. Each transect was walked at a steady pace and when a bat passed by, the species, behaviour and time were noted and recorded on a site plan. This information provides a general

[3] English Nature (2004) Bat Mitigation Guidelines.
[4] Bat Conservation Trust, 2016. Bat Surveys for Professional Ecologists Good Practice Guidelines 3rd edition.
[5] 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.
[6] JNCC (1999) Bat Workers Manual.

view of the bat activity present on site and identifies the key foraging areas and commuting routes.

3.15 Surveyors used Wildlife Acoustics Inc. Echo Meter Touch® bat detectors in conjunction with Echo Meter Touch® app and Apple Inc. iPad® during the transect surveys to detect bats and aid species identification. Post-survey, bat calls were analysed using Wildlife Acoustics, Inc. Kaleidoscope© software package by taking measurements of the peak frequency, inter-pulse interval, call duration and end frequency. From this, the level of bat activity across the site in relation to the abundance of individual species foraging and commuting along habitats was assessed.

3.16 Transect surveys were undertaken during suitable conditions when the ambient air temperature exceeded 10ºC and the wind was no more than a gentle breeze[7] (Beaufort 3 or 5m/s) and little or no rain. Table 4 below provides the survey timings and weather conditions.

Table 4: Bat Activity Survey Weather Conditions

Transect date	Route	Sunset time	Start temp (◦C)	Wind (Beaufort)	Rain	Cloud cover (%)
17.04.2023	East	20:07	8	3	0	80
25.05.2023	East	21:12	14	2	0	70
15.06.2023	East	21:34	18	2	0	30
06.07.23	East	21:30	19	1	0	40
09.08.23	East	20:44	21	1	0	95
07.09.23	East	19:39	21	3	0	20
17.10.23	East	18.02	12	2	0	40

3.17 Post-survey, bat calls were analysed using Wildlife Acoustics, Inc. Kaleidoscope© software by taking measurements of the peak frequency, inter-pulse interval, call duration and end frequency. This analysis was completed by a suitably experienced ecologist (Analysts are audited internally for quality control purposes and to maintain consistent results). From this, the level of bat activity across the site in relation to the abundance of individual species foraging and commuting along habitats was assessed.

Static Monitoring

3.18 In tandem with the transect surveys, two static units were deployed monthly on the Site from April to October 2023. All statics were deployed for a minimum of five consecutive nights.

3.19 Static passive recording broadband detectors were deployed on Site to supplement the manual transect surveys. In addition, passive recording is recommended in guidance produced by the Bat Conservation Trust (2016)[8]

3.20 Static (passive) monitoring was undertaken using an automated logging system Wildlife Acoustics Inc. Song Meter® SM4Bat FS bat detectors with outputs saved to an internal storage device. Detectors were placed along linear features considered to be of value to bats, such as

[7] Slack, G., and Tinsley, E.(2015) Linking bat surveys with meteorological data: A way to target operational wind farm mitigation. CIEEM, In Practice Issue 87.
[8] Collins, J. (ed.)(2016) Bat Surveys for Professional Ecologists: Good Practice Guidelines (3rd edn). The Bat Conservation Trust, London.

hedgerows, woodlands, watercourses and tree lines; their locations are shown on Figures 2.1 to 2.7.

3.21 Devices were placed in each location for an extended period of time of suitable weather conditions (little no rain/wind and temperatures above 10°C). The conditions over each of the survey periods were representative for the timing of the survey. Detectors were programmed to activate 30 minutes before dusk and record continuously until 30 minutes following sunrise.

3.22 For the purposes of analysis, if the static detector was out for more than five nights the additional nights were only assessed for bat species listed on Annex II of the Habitats Directive[9]. The recorded data were analysed using Kaleidoscope Viewer© (Wildlife Acoustics, Inc) software package to assess the amount of bat activity on Site by recording the number of bat passes.

3.23 Static detectors were deployed during the following periods on the eastern section of the Site:

- 17th to 24th April 2023
- 11th to 17th May 2023
- 15th to 21st June 2023
- 7th to 12th July 2023
- 10th to 15th August 2023
- 20th to 25th September 2023
- 11th to 17th October 2023

3.24 Static detectors were deployed during the following periods on the western section of the Site:

- 18th to 24th April 2023
- 8th to 15th June 2023
- 5th to 12th September 2023

Limitations

3.25 Since the surveys were undertaken, new guidelines[10] were released which updated the methodology and approach to bat activity surveys. It was not considered proportionate or necessary to update the survey work and therefore the survey approach follows the methods from the former.

3.26 In accordance with CIEEM's "Advice Note on the Lifespan of Ecological Reports and Surveys"[11], survey data older than 18 months may require reassessment based on specific ecological factors. Following the 2023 bat surveys, professional ecologists from FPCR have conducted multiple site visits in 2024, most recently in November 2024. These assessments confirmed that the habitat and its management have remained consistent, with no significant changes observed. Consequently, we conclude that the survey data remains valid and reliable for informing the impacts to bats on Site and the proposed mitigation and compensation.

[9] Council Directive 92/43/EEC of 21 May 1992 on the conservation of natural habitats and of wild fauna and flora.

[10] Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines (4thedition). The Bat Conservation Trust, London.

[11] CIEEM (2019). *Advice Note on the Lifespan of Ecological Reports and Surveys.* Chartered Institute of Ecology and Environmental Management, Winchester.

3.27 The bat activity surveys were designed prior to the confirmation of the application boundary as such the extent of the distribution of static bat detectors and transect routes extended across a greater area in the north and omitted habitat south of Brumby Common Lane. The omission of the southern areas is not considered to be a significant constraint as the Site boundary in the southern area includes negligible quality bat foraging and commuting habitat and so the effect of proposals can be reasonably predicted. The inclusion of the wider area will also not be a constraint as the majority of the value of the Site for bats lies at the Site boundaries. This has enabled a more robust assessment of species presence and activity on Site by surveying suitable surrounding habitat at the Site boundary, such as the woodland and tree lines, where bats are most likely to be commuting and foraging. Results will, therefore, be considered in the context of the Site and surrounding habitat.

3.28 During the August transect the route had a slight deviation off-Site around point count 6 due to human error. The rest of the route, however, was followed correctly and it did not affect the species identified or significantly change the bat activity levels. As such, this is not considered to be a constraint.

3.29 Where calls could not be identified to species level, for example due to the lower quality of those recordings or where there are similarities between species echolocation calls (particularly for *Myotis* and *Pipistrellus* genus bats) making a definitive identification difficult, a likely species identification is provided. This based on the features displayed by the calls when analyses using the Kaleidoscope© data analysis software package and considering the geographical location of the site and the habitats present. It was therefore considered that:

- *Pipistrelle* species bats were either common or soprano pipistrelle;
- *Nyctalus* species bats were most likely to be noctule; and
- Given the known species distributions of *Myotid* species locally, *Myotid* species bats were likely to be whiskered/ Brandt's, Natterer's or Daubenton's.

4.0 RESULTS

Desk Study

4.1 Relevant results received from the data search with LERC relating to bats are provided in Table 5 below. These are also spatially represented in Figure 1 of the EcIA (FPCR, 2024). None refer to the Site directly.

Table 5: Summary of Bat Records within 2km

Species	Conservation Status	Total Records within 2km	Date of most recent record	Minimum distance of records from site boundary
Myotis *mystacinus/brandtii* Whiskered/Brandt's bat	WCA Sch5 Regs LBAP	2	2006.	The closest record is located 0.25km east of the Site.

Species	Conservation Status	Total Records within 2km	Date of most recent record	Minimum distance of records from site boundary
Nyctalus noctula Noctule Bat	WCA Sch5 Regs SPI LBAP	2	2012	The closest record is located 80m east of the Site .
Pipistrellus Pipistrelle Bat species	WCA Sch5 Regs LBAP	2	2014.	The closest record is located 0.28km east of the Site.
Pipistrellus pygmaeus Soprano Pipistrelle	WCA Sch5 Regs SPI LBAP	2	2006.	The closest record is located 0.36km south of the Site.
Pipistrellus pipistrellus Common pipistrelle	WCA Sch5 Regs LBAP	5	2016	The closest record is located 80m east of the Site.
Bat – not identified to species level	WCA Sch5 Regs LBAP	8	2014.	The closest record is located 70m east of the Site east boundary.

Status Key: Regs = The Conservation of Habitats and Species Regulations 2010 (as amended). WCA = Wildlife and Countryside Act 1981 (as amended). Sch5 = Schedule 5 of WCA. SPI = Species of Principal Importance, as listed under the Natural Environment and Rural Communities Act (2006), LBAP = Lincolnshire Biodiversity Action Plan.

Habitat Suitability Assessment

4.2 The application Site is largely comprised of intensely managed arable land with modified grassland field margins. There are two areas of other neutral grassland and a field of species-poor modified grassland. The entire Site also includes ditches and hedgerows partitioning the arable fields; three lines of trees and a linear area other broadleaved woodland towards the south western extent of the Site. The landscape beyond the Site is a mixture of woodland, residential and farmland areas. Full habitat descriptions are provided in the EcIA (FPCR 2024).

4.3 The habitat suitability assessment identified that the open areas of arable land which form the majority of the Site, are considered to be of 'low' suitability for bats. Habitats which likely offer higher quality bat habitats include the woodlands, hedgerows, trees and ditches. Cumulatively, these features form a network of potential foraging and commuting corridors. It is, therefore, considered that the Site provides 'moderate' bat suitability.

Ground Level and Aerial Potential Roost Assessment of Trees

4.4 The initial ground-based assessment identified no trees within Site that contained any PRFs. The Site boundary was extended to the east and south of Brumby Common Lane following the completion of the bat surveys. Further Site visits took place in January and November 2024 by suitability qualified ecologists to assess the new habitats affected by the development and found no trees with potential bat roost features. As such, the proposed scheme is unlikely to result in any impacts to roosting bats.

Transect Surveys

4.5 The transect routes, bat locations, and the tabulated results from each survey occasion are provided in Figures 2.1 to 2.7 and in Table 6, below.

April Transect Survey – 17.04.23 (Figure 2.1)

4.6 The first transect survey was conducted at dusk on the 17th of April 2023. The route began just off Brumby Common Lane starting at the western most field of this section of the Site, heading towards point count 1 (PC1). The route goes in an easterly direction following hedgerows, tree lines and ditches associated with the field margins across the Site and covers areas of woodland in the north and in the centre of one of the eastern fields. It finally goes past the buildings on-Site before covering the two fields south of Brumby Common Lane, finishing at point count 12 (PC12).

4.7 The first bat recorded during the survey was a noctule noted to be commuting north over the westernmost field at 20:22, 15 minutes after sunset. There were 20 bat contacts in total, of which nearly 50% were common pipistrelle displaying commuting, foraging and social behaviours, closely followed by noctule bats observed foraging and commuting. The pipistrelle social calls were recorded in the northeastern corner of Site, adjacent to the northern woodland. The majority of the activity recorded within the northern half of the Site.

May Transect Survey – 25.05.23 (Figure 2.2)

4.8 The second transect survey took place at dusk on the 25th of May 2023. It followed the same route as the first survey but was walked in the opposite direction, starting at PC12 and finishing at PC1.

4.9 The first bat recorded during the survey was a common pipistrelle around the southern woodland at 21:24, 12 minutes after sunset. The activity levels were similar to the previous eastern transect but the spread of contacts was more evenly distributed across the Site. Additionally, the transect differed as nearly all of the contacts were from common pipistrelle with only one soprano pipistrelle and myotid bat contact. Of the bats that were visually observed, the behaviours displayed were evenly split between foraging and commuting.

June Transect Survey – 15.06.23 (Figure 2.3)

4.10 The third transect survey on the eastern section was carried out at dusk on 15th of June 2023, following the same route as the first eastern transect.

4.11 The first bat recorded during the survey was a common pipistrelle observed foraging along with another common pipistrelle and a soprano pipistrelle in the northern woodland at 22:17, 43 minutes after sunset. The number of bat contacts during this transect was approximately 50% lower than the previously months with nine in total. A brown long-eared bat was recorded on this transect near one of the central field hedgerows, and two commuting myotid bats were observed in the northeast of Site adjacent to woodlands.

July Transect Survey – 06.07.23 (Figure 2.4)

4.12 The fourth transect survey was carried out at dusk on 6th of July 2023. The route started at PC9, located just to the west of the buildings and south of the off-Site woodland. The route then continued in an anti-clockwise direction with PC10 being the final stopping point.

4.13 The first bat recorded during the survey was a noctule commuting near PC8 at 21:51, 21 minutes after sunset. Approximately 50% of the calls recorded were from commuting and foraging common pipistrelle, of which most of contacts were located just off Brumby Common Lane near the hedgerows and ditches bordering the fields. There was also a small cluster of activity in the northern woodland from myotid bats and a foraging common pipistrelle.

August Transect Survey – 09.08.23 (Figure 2.5)

4.14 The fifth transect survey was carried out at dusk on 9th of August 2023, following the same route as the first transect from PC1 to PC12.

4.15 The first bats recorded during the survey was two common pipistrelles along one of the central field edge hedgerows at 21:26, 42 minutes after sunset. This survey displayed relatively high levels of activity with 26 bat contacts in total. The contacts were fairly evenly distributed across the Site with the exception of the most western field, where the transect started. Common pipistrelle was again the most frequent species recorded accounting for approximately 60% of the bat contacts.

September Transect Survey – 07.09.23 (Figure 2.6)

4.16 The sixth transect survey on the eastern section was carried out at dusk on 15th of June 2023. It followed the same route as the first survey but was again walked in the opposite direction, starting at PC12 and finishing at PC1.

4.17 The first bats recorded during the survey was two myotid bat which were near a hedgerow just off Brumby Common Lane at 19:42, 3 minutes after sunset. This transect had the highest number of bat contacts (35); approximately 60% of the calls were split evenly between common pipistrelle and myotid bats. Contacts from common pipistrelle's were spread across the Site with multiple contacts noted as social calls. The contacts from myotid bats, however, were more concentrated in the eastern half of the transect, often near areas of woodland. The transect also displayed a cluster of calls from noctule and Nyctalus species around the northern woodland.

October Transect Survey – 17.10.23 (Figure 2.7)

4.18 The final transect survey carried out at dusk on 17th of October 2023. The first stopping point on this transect was PC10.

4.19 The first bat recorded during the survey was a soprano pipistrelle heard in the northeastern corner of the Site at 18:44, 42 minutes after sunset. The transect had lower activity levels compared to the eastern September transect, with 13 contacts in total from at least three species: common and soprano pipistrelle and myotid bats. There was low levels and no activity in the western and southern fields, respectively. Most of the activity was seen in the northern and central woodlands from foraging common pipistrelle and myotid bats.

Table 6: Bat Transect Summary of Results

Date	Total Contacts	Species Recorded (No. of Contacts)	Activity Summary
17.04.23	20	Common pipistrelle (9) Noctule (7) Soprano pipistrelle (1) Myotis sp. (2) Nyctalus (1)	Relatively frequent activity levels across the Site, particularly along the northern boundary around the woodland areas. Species foraging predominantly near waterbodies and woodland.
25.05.23	14	Common pipistrelle (12) Soprano pipistrelle (1) Myotis sp. (1)	A fairly even spread of activity across the whole Site with nearly all contacts recorded from common pipistrelle.
15.06.23	9	Common pipistrelle (5) Soprano pipistrelle (1) Myotid sp. (2) Brown long-eared (1)	Decreased level of activity in relation to previous eastern transect surveys. Foraging behaviour most frequently recorded in the northern woodland.
06.07.23	17	Common pipistrelle (9) Noctule (1) Soprano pipistrelle (1) Myotid sp. (6)	Increased activity in relation to the previous transect, which mainly consisted of contacts from common pipistrelle. Activity was concentrated along linear features off Brumby Common Lane and in the northern woodland.
09.08.23	26	Common pipistrelle (15) Noctule (3) Soprano pipistrelle (2) Myotis sp. (4) Brown long-eared (2)	Relatively frequent activity levels across the Site, with the exception of the most western field. Again most contacts were from common pipistrelle.
07.09.23	35	Common pipistrelle (11) Noctule (4) Soprano pipistrelle (4) Myotis sp. (11) Brown long-eared (1) Nyctalus (4)	The highest activity levels out of all the transects on Site. The most frequent contacts were from common pipistrelle and myotid bats. A lot of the activity recorded was in areas that were near woodlands, both on and off-Site.
17.10.23	13	Common pipistrelle (5) Soprano pipistrelle (2) Myotid sp. (6)	Decreased activity levels compared to the September transect. Again activity was more frequent in the northern and central woodlands.

Passive Static Detector Monitoring

4.20 The following paragraphs detail the findings of the automated activity surveys. In this context, the term 'registration' refers to a unique sound file created over the course of a number of seconds. Based on this, numerous 'registrations' does not necessarily refer to multiple bats (unlike the transect activity survey section above where the number of bats can often be visually identified), as one bat can create a number of registrations, for example a bat which is foraging in the area surrounding the microphone for a sustained period of time.

April Survey

4.21 Two static detectors were deployed between the 17th and 24th of April 2023. One of the statics was deployed in the northern woodland (York 3) and the other along the Site boundary adjacent

to a small area of trees off Brumby Common Lane (York 2). All recordings were reviewed, and species identified within the first five nights analysed and presented in Error! Reference source n ot found.7 below.

4.22 The total number of registrations across the whole survey period was 327 for York 2 and 712 for York 3.

4.23 Common pipistrelle was the most frequently occurring species on all static detectors, with both detectors recording peak counts of common pipistrelle on the 19th/20th night with 109 registrations on York 2 and 76 on York 3. Myotid bat species and noctule were the next most common species to be recorded across the statics with the most activity recorded on York 2. There was a significant peak of 111 noctule registrations on the western static on the night of the 22nd/23rd and a peak of 59 myotid species registrations on the 19th/20th night on York 2. Soprano pipistrelle were recorded in much lower numbers.

4.24 Two registrations of Nathusius pipistrelle *Pipistrellus nathusii* were recorded on York 2 on the 19th/20th of April.

Table 7: April Static Detector Survey Results

Static number	Avg. registrations /hour	Total registrations	Most recorded species (% of total registrations)	Other species recorded (% of total registrations)
York 2	13.401	327	Common pipistrelle (49.58%)	Myotid species (29.64%) Noctule (16.57%) Soprano pipistrelle (3.51%) Nyctalus species (0.42%) Nathusius pipistrelle (0.28%)
York 3	6.154	712	Common pipistrelle (72.78%)	Myotid species (14.99%) Noctule (6.42%) Soprano pipistrelle (3.98%) Nyctalus species (1.84%)

<u>May Survey</u>

4.25 Two static detectors were deployed between the 11th and 17th of May 2023. The York 1 static detector was positioned on the eastern Site boundary along the woodland edge next to the buildings. York 5 was deployed along a hedgerow, just north of Brumby Common Lane. All recordings were reviewed, and species identified within the first five nights analysed and presented in Error! Reference source not found.8 below.

4.26 The total number of registrations across the whole survey period was 1260 for the eastern woodland static and 97 for the central static.

4.27 Common pipistrelle was again the most frequently occurring species for both units accounting for 70.1% of the registrations on central static and 82.5% on eastern woodland static. There was a significant peak count of 477 common pipistrelle registrations on the eastern woodland static on the 12th/13th night. All other species were recorded in lower numbers with myotid species being the next most frequently recorded species for both units.

Table 8: May static detector survey results.

Static number	Avg. registrations /hour	Total registrations	Most recorded species (% of total registrations)	Other species recorded (% of total registrations)
York 5	2.018	97	Common pipistrelle (70.1%)	Myotid species (17.53%) Soprano pipistrelle (5.16%) Noctule (5.16%) Pipistrelle species (1.03%) Brown long-eared (1.03%)
York 1	27.621	1260	Common pipistrelle (82.54%)	Myotid species (12.7%) Soprano pipistrelle (2.46%) Noctule (1.75%) Brown long-eared (0.4%) Nyctalus species (0.16%)

June Survey

4.28 Two static detectors were deployed between the 15th and 21st of June 2023 on Site. Detector York 5 was deployed in the northeastern corner of the Site along the woodland edge and York 1 was located on a small tree on the eastern side of the M181/A1077(M) roundabout. All recordings were reviewed, and species identified within the first five nights analysed and presented in Table 9 below.

4.29 The total number of registrations across the whole survey period was 2860 for York 5 and 151 for York 1.

4.30 The most frequently occurring species across both units was common pipistrelle with over 77.6% and 69.5% of the registrations on York 5 and York 1, respectively. The northern woodland edge static had the most activity (York 5) and the highest peak count of common pipistrelle registrations with 662 on the 17th/18th night. York 5 also had the highest activity from myotid bat species with a peak count of 251 also on the 17th/18th night. All other species across the two statics were recorded in lower numbers.

4.31 Registrations of Nathusius pipistrelle were recorded on both statics, 26 across the five nights on York 5 and 2 on the 17th/18th night on York 1.

Table 9: June static detector survey results.

Static number	Avg. registrations /hour	Total registrations	Most recorded species (% of total registrations)	Other species recorded (% of total registrations)
York 5	71.889	2860	Common pipistrelle (77.62%)	Myotid Species (18.53%) Noctule (1.29%) Soprano pipistrelle (1.05%) Nathusius pipistrelle (0.91%) Nyctalus species (0.28%) Pipistrelle species (0.25%) Brown long-eared (0.07%)

Static number	Avg. registrations /hour	Total registrations	Most recorded species (% of total registrations)	Other species recorded (% of total registrations)
York 1	3.795	151	Common pipistrelle (69.54%)	Myotid species (14.57%) Noctule (11.26%) Soprano pipistrelle (3.31%) Nathusius pipistrelle (1.33%)

July Survey

4.32 Two static detectors were deployed between the 7th and 12th of July 2023. York 3 was positioned on the eastern Site boundary along the woodland edge and York 4 on the western edge of a small area of woodland in an arable field. All recordings were reviewed, and species identified within the first five nights analysed and presented in Table 10 below.

4.33 The two statics recorded similar results with the total number of registrations across the whole survey period being 1444 for the eastern boundary static and 1413 for the small woodland static.

4.34 The most frequently occurring species across both units was common pipistrelle with a peak count of 239 on the 10th/11th night on the eastern boundary static and 258 on the 7th/8th night of the small woodland static. Myotid species were the next most common bats to be recorded accounting for 17.27% of registrations on both statics and a peak of 104 on the 7th/8th night on the small woodland static. All other species were recorded in lower numbers.

Table 10: July static detector survey results.

Static number	Avg. registrations /hour	Total registrations	Most recorded species (% of total registrations)	Other species recorded (% of total registrations)
York 3	34.839	1444	Common pipistrelle (65.24%)	Myotid species (17.27%) Noctule (2.34%) Pipistrelle species (1.84%) Soprano pipistrelle (1.06%) Nyctalus species (0.35%) Brown long-eared (0.28%)
York 4	34.226	1413	Common pipistrelle (76.86%)	Myotid Species (17.27%) Noctule (2.34%) Pipistrelle species (1.84%) Soprano pipistrelle (1.06%) Nyctalus species (0.35%) Brown long-eared (0.28%)

August Survey

4.35 Two static detectors were deployed on the Site between the 10th and 15th of August 2023. Detector York 4 was located on the western edge of the northern woodland and York 3 was along the Site boundary adjacent to a small area of trees off Brumby Common Lane. All recordings were reviewed, and species identified within the first five nights analysed and presented in Table 11 below.

4.36 The total number of registrations across the whole survey period was 3780 for the northern woodland static and 507 for the static off Brumby Common Lane.

4.37 The most frequently occurring species across both units was common pipistrelle with a peak count of 668 on the northern woodland static and 69 on the static off Brumby Common Lane. On the northern woodland static myotid bats, soprano pipistrelle and noctule all had a similar constant registration rate across the five nights with a peak count of 164 soprano pipistrelle on the 13th/14th night. Whereas, on the static off Brumby Common Lane soprano pipistrelle was recorded in lower numbers compared to noctule and myotid bats. All other species were recorded in lower numbers.

4.38 Three registrations of Nathusius pipistrelle were recorded on York 3 across two nights – 10th/11th and the 13th/14th.

Table 11: August static detector survey results.

Static number	Avg. registrations/ hour	Total registrations	Most recorded species (% of total registrations)	Other species recorded (% of total registrations)
York 4	74.832	3780	Common pipistrelle (68.49%)	Myotid species (10.98%) Soprano pipistrelle (8.31%) Noctule (6.51%) Nyctalus species(4.29%) Pipistrelle species (1.32%) Nathusius pipistrelle (0.08%) Brown long-eared (0.03%)
York 3	10.083	507	Common pipistrelle (61.14%)	Noctule (17.36%) Myotid species (14.79%) Soprano pipistrelle (5.52%) Brown long-eared (1.18%)

<u>September Survey</u>

4.39 Two static detectors were deployed on the Site between the 20th and 25th September 2023.Detector York 2 was located on the western side of the northern woodland, just above the static deployed in August., and York 3 was deployed on the eastern Site boundary along the woodland edge. All recordings were reviewed, and species identified within the first five nights analysed and presented in Table 12 below.

4.40 The total number of registrations across the whole survey period was 97 for York 2 and 112 for York 3.

4.41 The most frequently occurring species on York 2 was common pipistrelle, with over 50.5% of registrations. On York 3,soprano pipistrelle and myotid bats were the most frequently recorded species, closely followed by common pipistrelle.

4.42 On York 2 all the other species were recorded in lower numbers with noctule and myotid bats being the second most frequent with peak counts of 16. Brown long-eared bat registrations were recorded in much lower numbers on each static.

4.43 Three registrations of Nathusius pipistrelle were recorded on York 2 over the 5 nights and 2 registrations on York 3 (west section) on the 5th/6th night.

Table 12: September static detector survey results.

Static number	Avg. registrations /hour	Total registrations	Most recorded species (% of total registrations)	Other species recorded (% of total registrations)
York 2	1.51	97	Common pipistrelle (50.52%)	Noctule (16.5%) Myotid species (16.5%) Soprano pipistrelle (9.28%) Nathusius pipistrelle (3.09%) Pipistrelle species (3.09%) Brown long-eared (1.03%)
York 3	1.741	112	Soprano Pipistrelle and Myotid Species (33.04%)	Common Pipistrelle (25%) Noctule (6.25%) Brown Long-eared (2.68%)

October Survey

4.44 Two static detectors were deployed on the Site between the 11th and 17th of October 2023. Detector York 4 was located on the western edge of the northern woodland and York 3 was deployed on a line of trees bordering one of the eastern arable fields. All recordings were reviewed, and species identified within the first five nights analysed and presented in Table 13 below.

4.45 The total number of registrations across the whole survey period was 62 for the line of trees statics and 65 for the woodland static.

4.46 The most frequently occurring species on the line of trees static was common pipistrelle with over 80.6% of the registrations and a peak count of 35 on the 11th/12th night. Whereas, on the woodland static the most frequent recordings came from myotid bats with a more constant call rate across the survey period but common pipistrelle had the highest peak count of 18 on the 12th/13th night. All other species were recorded in lower numbers on each static.

Table 13: October static detector survey results.

Static number	Avg. registrations /hour	Total registrations	Most recorded species (% of total registrations)	Other species recorded (% of total registrations)
York 3	0.866	62	Common pipistrelle (80.65%)	Soprano Pipistrelle (11.29%) Myotid Species (4.84%) Pipistrelle Species (3.23%)
York 4	0.908	65	Myotid Species (49.23%)	Common Pipistrelle (32.31%) Soprano Pipistrelle (9.23%) Pipistrelle Species (4.62%) Noctule (3.08%) Brown Long-eared (1.54%)

Static Bat Detector Monitoring Survey Summary

4.47 At least 6 different bat species were recorded utilising the Site, displayed in Table 14, with a total of 13,945 bat registrations in total, across the survey period. By far the most common

species recorded was common pipistrelle, with myotid bats being the second most frequently recorded. Other species recorded much less frequently were noctule, soprano pipistrelle, nathusius pipistrelle and brown long-eared bat.

Table 14: Total static detector results across all surveys.

Species	Total registrations	Percentage of registrations during static monitoring (%)
Common pipistrelle	9119	73.5%
Myotid bat species	1634	13.2%
Noctule	648	5.2%
Soprano pipistrelle	651	5.2%
Nyctalus species	205	1.7%
Pipistrelle species	97	0.8%
Nathusius pipistrelle	36	0.3%
Brown Long-eared	24	0.2%

5.0 DISCUSSION AND RECOMMENDATIONS

5.1 All species of bats and their roosts are listed on the Conservation of Habitats and Species Regulations 2010 (as amended) making it illegal to deliberately disturb any such animal or damage / destroy a breeding site or roosting place of any such animal. Bats are also afforded full legal protection under Schedule 5 of the Wildlife and Countryside Act 1981 (as amended). Under this legislation it is illegal to recklessly or intentionally kill, injure or take a species of bat or recklessly or intentionally damage or obstruct access to or destroy any place of shelter or protection or disturb any animal whilst they are occupying such a place of shelter or protection. Some bat species, including soprano pipistrelle, are species of principal importance under the NERC Act. All bat species recorded during the surveys are listed as species of local importance under the North Lincolnshire Biodiversity Action Plan.

Bat activity

5.2 As would be expected the bat activity surveys have found foraging by solitary or low numbers of generally common and widespread species of bats in association with linear features and woodland habitat. Activity levels over the different months were fairly constant with slightly higher activity, but not significantly, in August and September. The following common species utilise the site: common pipistrelle, soprano pipistrelle, noctule, brown long-eared bat and Myotid species. Nathusius pipistrelle were also recorded on Site; they are considered a rare species in the UK, but have long been considered under-reported and in the numbers observed over the season are not of particular note.

5.3 The other species using the Site comprise a range of common and widespread species of bats. However, this level of usage is not considered to be exceptional. The most frequently used and, therefore, important Site habitat for bats are the hedgerows, trees and waterbodies (for

foraging and potentially roosting within trees). However, it is also not considered that any one feature or area of site is of significantly more importance to bats than others. It was also concluded that the arable fields were considered largely sub optimal for bats.

5.4 The Site is not considered exceptional for bat activity. The highest number of bat contacts recorded during the transects was thirty five. The usage of the site by bats was typical of the habitats that are present, with linear features and ditches being used more frequently for both foraging and commuting by all species with the exception of noctules which as a species are less reliant on linear features.

Overview of the Bat Baseline

5.5 General bat activity is not considered to be exceptional and registrations recorded from species (nathusius pipistrelle) were low. Therefore, the Site is considered to be of no more than Local value for its bat species and this value is restricted to the structured habitats which typically border the application Site.

6.0 IMPACT ASSESSMENT

6.1 It is unlikely that the proposals will result in any impacts to roosting bats, either directly or by impacting commuting routes of significant roosts (maternity).

6.2 The vast majority of woodland, native hedgerow, and tree lines have been either incorporated into the scheme or excluded / avoided. These will be retained, and root protection areas adequately buffered. However, to facilitate the development removal of some trees and hedgerows is proposed which will result in a minor loss of commuting habitat. As such, the proposed development is unlikely to result in significant loss of foraging habitat or associated impacts on any of the bat species. This is not considered to be significant.

6.3 Proposals will increase light levels on Site through the introduction of outside lighting, which would reduce the suitability of retained and created habitats. The reduction in suitability of the on-Site habitats due to lighting is not considered likely to cause a significant effect given the number of bats recorded on Site and the fact that pipistrelles, which dominated activity on Site, are not as light-adverse as other species. However, these features are typically buffered and it is unlikely that impacts from lighting will result in a significant effect

7.0 MITIGATION AND COMPENSATION

7.1 The proposed Site layout includes enhancements which will mitigate the minor losses through increasing the abundance of prey species and providing further linear features for commuting. These enhancements would therefore likely increase the value of on-Site foraging and commuting habitat for bat species. These include planting of native trees, enhancement of waterbodies as well as provision of species rich meadow grassland areas.

7.2 The lighting scheme for the Site is designed to minimise light-spill onto habitats both within and adjacent to it that are suitable for bat foraging and/or commuting. It is recommended that the lighting design strategy is reviewed (and if necessary updated) for any new development proposals as part of future Reserved Matters applications, to ensure there are no negative impacts to wildlife from lighting.

7.3 Lighting strategies should follow the best practice guidance[12] as set out below.

- The avoidance of direct lighting of woodland edge, riparian habitat, scrub, hedgerow, retained trees and structures and proposed areas of habitat creation / landscape planting;
- All luminaires should lack UV elements when manufactured. Metal halide, compact fluorescent sources should not be used;
- LED luminaires should be used where possible due to their sharp cut-off, lower intensity, good colour rendition and dimming capability;
- A warm white spectrum (ideally <2700 Kelvin) should be adopted to reduce the blue light component;
- Light sources should feature peak wavelengths higher than 550nm to avoid the component of light most disturbing to bats;
- Column heights should be carefully considered to minimise light spill and glare visibility;
- Only luminaires with a negligible or zero Upward Light Ratio, and with good optical control, should be considered - See ILP GN01
- Luminaires should always be mounted horizontally, with no light output above 90° and/or no upward tilt; and
- Where appropriate, external security lighting should be set on motion sensors and set to as short a possible a timer as the risk assessment will allow.

7.4 The latest guidance refers to a 'vacuum effect' of prey species, this is where insects such as moths are attracted to artificial lighting away from foraging areas of more light sensitive species[13]. In the case of this Site, the retained woodland cover that surrounds the Site and the new tree planting on Site should provide a good level of screening to minimise these effects.

7.5 With mitigation in place there will be no negative impact on the favourable conservation status of species identified utilising the Site. Impacts following mitigation are therefore considered to be Neutral.

8.0 GENERAL ENHANCEMENTS

8.1 To provide additional biodiversity enhancement, as encouraged in the NPPF, the provision of new potential roost sites would result in a net roosting habitat gain. New bat boxes across the site are recommended these should be integrated into buildings that are close to greenspace and potential foraging habitat.

8.2 There are many bat box products available on the market and these should comprise a combination of crevice and cavity roosting opportunities and also some opportunities for maternity roosts and hibernating bats. Being surface mounted, these should be constructed of a durable material such as wood and concrete mix.

12 Op cit.

13 Institution of Lighting Professionals (2023) Guidance Note 08/23: Bats and Artificial Lighting At Night.

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Site Boundary
Start Point
Finish Point
Point Count (with ref.)
Transect Route
Flight Path
Static York 2
Static York 3

Bat Contacts
Common Pipistrelle
Soprano Pipistrelle
Myotis Species
Nyctalus Species
Noctule

Ref	Time	Species	Behaviour	Passes
1	20:22:34.000	Nn	Commuting	4
2	20:25:36.000	Nn	Commuting	3
3	20:26:36.000	Nn	Foraging	5+
4	20:26:51.000	Nyctalus	Foraging	5+
5	20:38:29.000	Ppi	Commuting	4
6	20:40:46.000	Ppi	Commuting	1
7	20:52:47.000	Nn	Pass	1
8	20:55:20.000	Myotis	Pass	1
9	20:56:21.000	Nn	Pass	1
10	20:58:55.000	Ppi	Pass	3
11	21:05:55.000	Ppi	Pass	1
12	21:06:40.000	Nn	Pass	2
13	21:21:14.000	Ppi	Pass	4
14	21:24:03.000	Nn	Pass	1
15	21:24:18.000	Ppi	Commuting	1
16	21:27:24.000	Ppi	Foraging and Social Calls	5+
17	21:28:58.000	Ppy	Foraging and Social Calls	5+
18	21:31:59.000	Ppi	Pass	1
19	21:58:40.000	Myotis	Pass	1
20	22:16:45.000	Ppi	Pass	1

PC	Time
1	20:11-20:16
2	20:28-20:33
3	20:45-20:50
4	20:57-21:02
5	21:08-21:13
6	21:21-21:26
7	21:33-21:38
8	21:49-21:54
9	21:58-22:03
10	22:08-22:13
11	22:17-22:22
12	22:32-22:37

date
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client
Hargreaves Land Limited

project
Lincolnshire Lakes (North)
Scunthorpe

title
BAT TRANSECT PLAN (17.04.23)

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Site Boundary
Start Point
Finish Point
Point Count (with ref.)
Transect Route
Flight Path

York 1 Static
York 5 Static

Bat Contacts
Common Pipistrelle
Soprano Pipistrelle
Myotis Species

Ref	Time	Species	Behaviour	Passes
1	21:24:51.000	Ppi	Pass	1
2	21:38:12.000	Ppi	Pass	3
3	21:47:05.000	Ppi	Foraging	2
4	21:49:02.000	Myotis	Foraging	4
5	21:58:20.000	Ppi	Commuting	2
6	22:04:12.000	Ppi	Foraging	5+
7	22:07:15.000	Ppy	Foraging	5+
8	22:10:40.000	Ppi	Commuting	1
9	22:26:38.000	Ppi	Pass	4
10	22:31:27.000	Ppi	Commuting	2
11	22:46:11.000	Ppi	Pass	1
12	22:54:49.000	Ppi	Pass	1
13	23:13:43.000	Ppi	Pass	1
14	23:16:11.000	Ppi	Commuting	1

PC	Time
1	23:22-23:25
2	23:13-23:16
3	22:55-22:58
4	22:43-22:46
5	22:31-22:34
6	22:22-22:25
7	22:14-22:17
8	21:57-22:00
9	21:43-21:46
10	21:20-21:23
11	21:28-21:31
12	21:12-21:15

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client
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project
Lincolnshire Lakes (North)
Scunthorpe

title
BAT TRANSECT PLAN (25.05.23)

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0 100 200 m

- Site Boundary
- Start Point
- Finish Point
- Point Count (Ref.)
- Transect Route
- Flight Path
- York 1 Static
- York 5 Static

Bat Contacts

- Common Pipistrelle
- Soprano Pipistrelle
- Brown Long-eared
- Myotis Species

Ref	Time	Species	Behaviour	Passes
1	22:17:21.000	Ppi	Foraging	5+
2	22:17:52.000	Ppy	Foraging	5+
3	22:20:07.000	Ppi	Foraging	5+
4	22:37:37.000	Ppi	Pass	2
5	22:53:58.000	Ppi	Pass	1
6	23:06:56.000	Myotis	Commuting	1
7	23:09:44.000	Ppi	Pass	1
8	23:14:34.000	Myotis	Commuting	3
9	23:34:13.000	BLE	Pass	2

PC	Time
1	21:34-21:37
2	21:44-21:47
3	22:03-22:06
4	22:13-22:16
5	22:22-22:25
6	22:30-22:33
7	22:38-22:41
8	22:53-22:56
9	23:04-23:07
10	23;14-23:17
11	23:22-23:25
12	23:33-23:37

date 16/01/25

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client
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title
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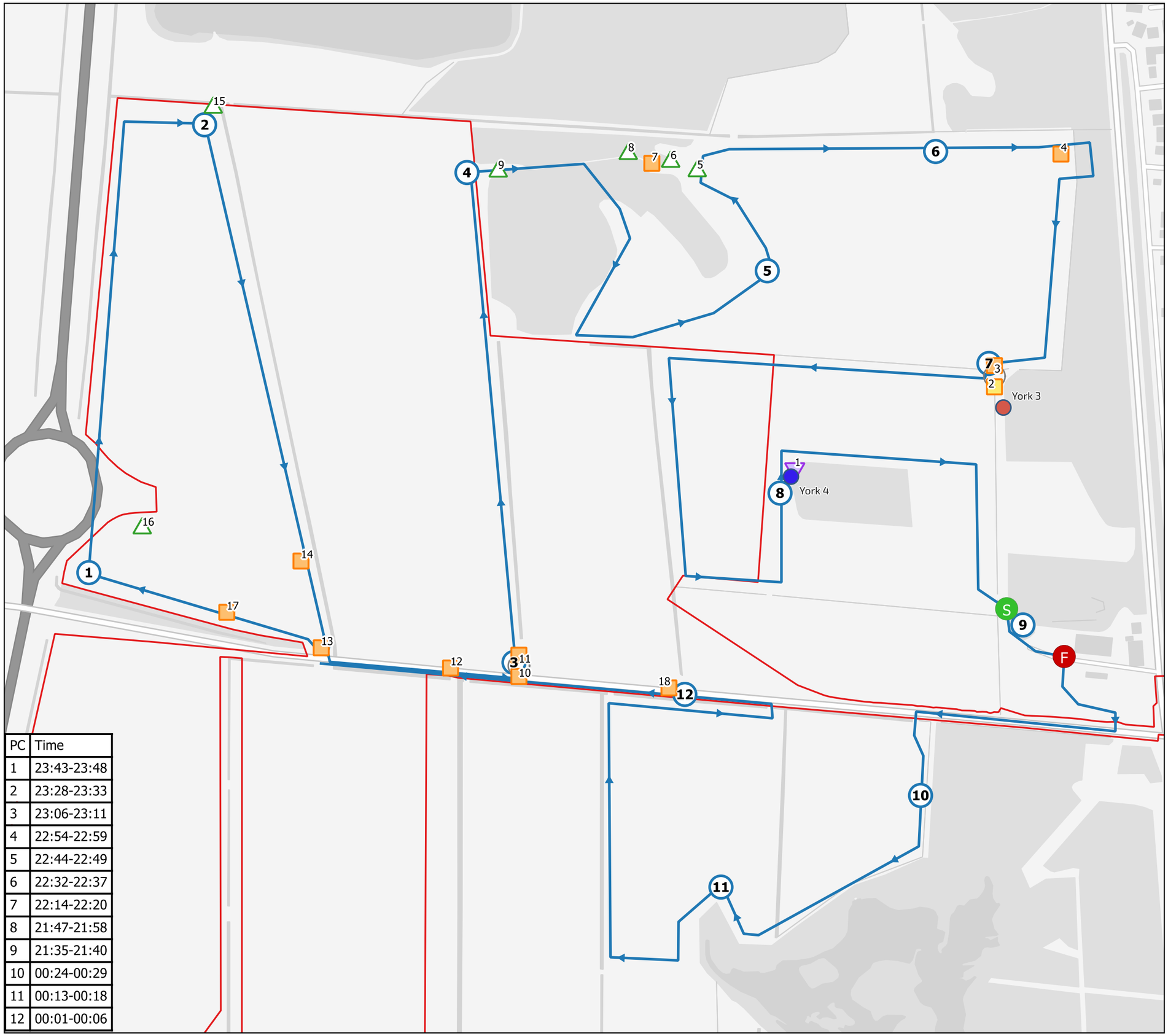


PC	Time
1	23:43-23:48
2	23:28-23:33
3	23:06-23:11
4	22:54-22:59
5	22:44-22:49
6	22:32-22:37
7	22:14-22:20
8	21:47-21:58
9	21:35-21:40
10	00:24-00:29
11	00:13-00:18
12	00:01-00:06

N

0 100 200 m

- Site Boundary
- Start Point
- Finish Point
- Point Count (with ref.)
- Transect Route
- York 3 Static
- York 4 Static

Bat Contacts

- Common Pipistrelle
- Soprano Pipistrelle
- Myotis Species
- Noctule

Ref	Time	Species	Behaviour	Passes
1	21:51:47.000	Nn	Commuting	1
2	22:15:26.000	Ppy	Pass	3
3	22:15:41.000	Ppi	Pass	5+
4	22:30:45.000	Ppi	Pass	1
5	22:41:30.000	Myotis	Pass	1
6	22:51:32.000	Myotis	Pass	1
7	22:51:47.000	Ppi	Foraging	5+
8	22:52:18.000	Myotis	Pass	1
9	22:55:38.000	Myotis	Pass	2
10	23:09:04.000	Ppi	Commuting	1
11	23:09:19.000	Ppi	Pass	2
12	23:12:08.000	Ppi	Commuting	1
13	23:14:40.000	Ppi	Pass	2
14	23:16:57.000	Ppi	Foraging	3
15	23:29:28.000	Myotis	Foraging	2
16	23:48:28.000	Myotis	Pass	1
17	23:49:59.000	Ppi	Pass	1
18	23:57:56.000	Ppi	Commuting	1

date: 16/01/25

drwn/chkd: HK / ET

client: **Hargreaves Land Limited**

project: **Lincolnshire Lakes (North) Scunthorpe**

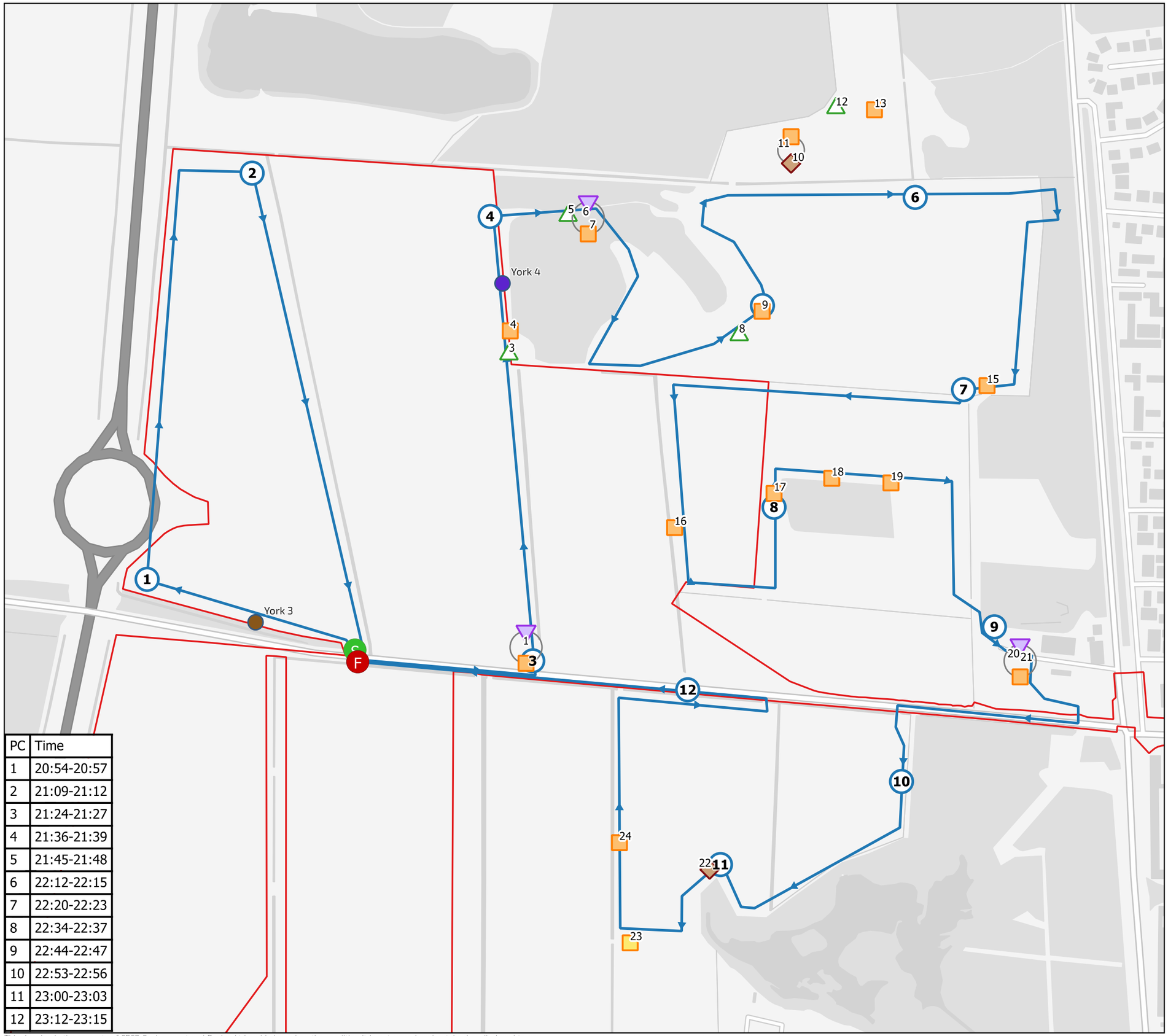
title: **BAT TRANSECT PLAN (06.07.23)**

scale: 1:6,394 @ A3

number: **FIGURE 2.4**

rev: -

FPCR | environment & design



PC	Time
1	20:54-20:57
2	21:09-21:12
3	21:24-21:27
4	21:36-21:39
5	21:45-21:48
6	22:12-22:15
7	22:20-22:23
8	22:34-22:37
9	22:44-22:47
10	22:53-22:56
11	23:00-23:03
12	23:12-23:15

Ref	Time	Species 1	Behaviour	Passes
1	21:26:47	C.pip x 2	Non-visual	5+
2	21:26:47	Noctule	Non-visual	1
3	21:33:56	Myotis	Non-visual	1
4	21:34:11	C.pip	Non-visual	5
5	21:40:58	Myotis	Non-visual	3
6	21:41:13	C.pip	Non-visual	1
7	21:41:29	Noctule	Non-visual	1
8	21:52:42	Myotis	Non-visual	3
9	21:53:28	C.pip	Non-visual	1
10	21:58:33	BLE	Non-visual	1
11	21:59:35	C.pip	Non-visual	4
12	22:02:08	Myotis	Non-visual	2
13	22:02:54	C.pip	Non-visual	1
14	22:14:07	C.pip and S.pip	Non-visual	1
15	22:20:15	C.pip	Non-visual	5+
16	22:30:39	C.pip	Non-visual	1
17	22:34:12	C.pip	Non-visual	5+
18	22:38:46	C.pip	Foraging	3
19	22:40:04	C.pip	Non-visual	2
20	22:45:39	C.pip	Social	2

date: 16/01/25
drwn/chkd: HK / ET

client: **Hargreaves Land Limited**

project: **Lincolnshire Lakes (North)**
Scunthorpe

title: **BAT TRANSECT PLAN (09.08.23)**
scale: 1:7,049 @ A3

number: **FIGURE 2.5**
rev: -

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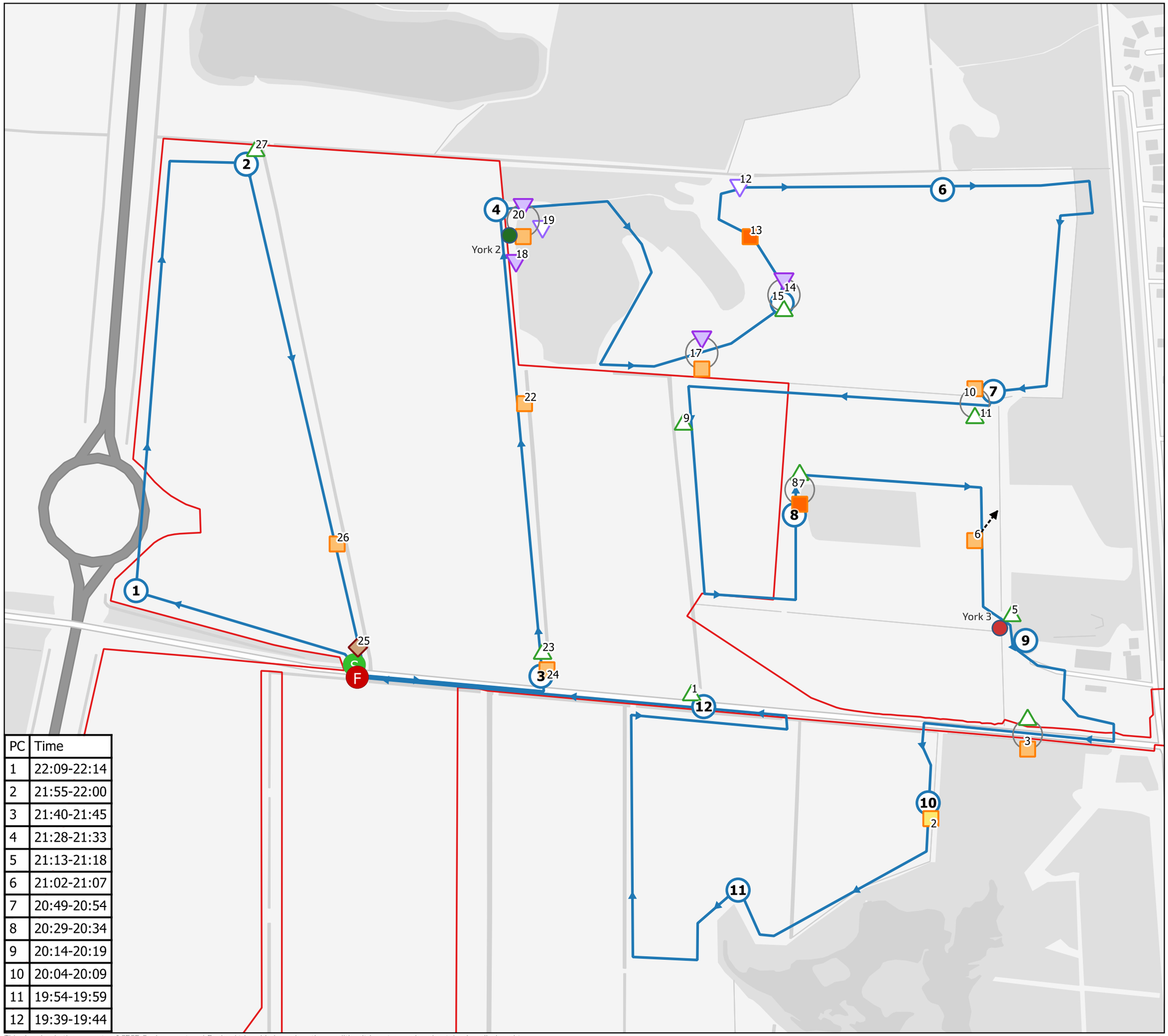

PC	Time
1	22:09-22:14
2	21:55-22:00
3	21:40-21:45
4	21:28-21:33
5	21:13-21:18
6	21:02-21:07
7	20:49-20:54
8	20:29-20:34
9	20:14-20:19
10	20:04-20:09
11	19:54-19:59
12	19:39-19:44

Ref	Time	Species	Behaviour	Passes
1	19:42:43	Myotis x 2	Non-visual	1
2	20:06:23	S.pip	Non-visual	2
3	20:12:15	C.pip	Non-visual	1
4	20:12:15	Myotis	Non-visual	1
5	20:20:38	Myotis	Non-visual	1
6	20:21:24	C.pip	Social	5
7	20:32:07	C.pip and S.pip	Non-visual	5
8	20:33:09	Myotis	Non-visual	2
9	20:42:47	Myotis	Non-visual	1
10	20:49:22	Myotis	Non-visual	5+
11	20:51:54	C.pip and S.pip	Non-visual	6
12	21:09:43	Nyctalus sp. x 2	Non-visual	3
13	21:11:44	C.pip x2 and S.pip	Social	9
14	21:14:17	Myotis	Non-visual	1
15	21:15:36	Noctule	Non-visual	1
16	21:21:13	C.pip	Non-visual	5+
17	21:21:59	Noctule	Non-visual	2
18	21:27:49	Noctule	Non-visual	5+
19	21:28:35	Nyctalus x 2	Non-visual	5+
20	21:29:20	C.pip	Social	3
21	21:30:11	Noctule	Non-visual	4
22	21:36:01	C.pip	Non-visual	1
23	21:40:20	Myotis	Non-visual	1
24	21:40:35	C.pip	Non-visual	2
25	21:48:18	BLE	Non-visual	1
26	21:49:49	C.pip	Non-visual	1
27	21:57:42	Myotis x 2	Non-visual	4

date
16/01/25

drwn/chkd
HK / ET

client
Hargreaves Land Limited

project
Lincolnshire Lakes (North)
Scunthorpe

title
BAT TRANSECT PLAN (07.09.23)

scale
1:6,714 @ A3

number
FIGURE 2.6

rev
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N

0 100 200 m

Site Boundary
Start Point
Finish Point
Point Count (with ref.)
Transect Route
Flight Path
York 3 Static
York 4 Static

Bat Contacts
Common Pipistrelle
Soprano Pipistrelle
Myotis Species

Ref	Time	Species	Behaviour	Passes
1	18:44:23	S.pip	Pass	1
2	19:02:12	Myotis	Pass	1
3	19:08:26	C.pip x 2	Foraging	5+
4	19:13:15	Myotis	Pass	2
5	19:14:01	C.pip	Pass	2
6	19:20:06	Myotis	Pass	1
7	19:40:53	C.pip	Pass	2
8	19:43:56	S.pip	Pass	1
9	19:44:57	Myotis	Pass	1
10	19:56:22	Myotis	Pass	1
11	19:56:52	C.pip	Pass	1
12	19:57:23	Myotis	Foraging	5+

PC	Time
1	18:37-18:40
2	18:46-18:49
3	19:00-19:03
4	19:09-19:12
5	19:18-19:21
6	19:32-19:35
7	19:43-19:46
8	19:56-19:59
9	20:06-20:09
10	18:05-18:08
11	18:13-18:16
12	18:24-18:27

date
16/01/25

drwn/chkd
HK / ET

client
Hargreaves Land Limited

project
Lincolnshire Lakes (North)
Scunthorpe

title
BAT TRANSECT PLAN (17.10.23)

scale
1:7,402 @ A3

number
FIGURE 2.7

rev
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