

Updated Bat Roost Characterisation Surveys

Royd Moor Farm, Royd Moor Road
Thurlstone, Sheffield, South Yorkshire
Report Reference: BG22.227
September 2024



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Contents

Document Control	3
Revision Details	3
1 Summary.....	7
2 Introduction.....	9
3 Methodology	10
3.1 Presence / likely absence and Roost characterisation surveys	10
3.2 Hibernation surveys	10
3.3 Surveyors.....	11
3.4 Survey Conditions	11
3.5 Limitations.....	11
3.6 Report Lifespan	12
4 Site Context.....	13
4.1 Site Description	13
4.2 Zone of Influence	13
5 Results	15
5.2 Bat Dusk Emergence Survey – 12/06/2024	15
5.3 Bat Dusk Emergence Survey – 03/07/2024	19
5.4 Bat Dusk Emergence Survey – 24/07/2024	21
5.5 Hibernation Survey Results	24
6 Evaluation	25
7 Recommendations.....	26
Appendix 1. General References.....	29
Appendix 2. Legislation and Guidance Sources.....	30

Appendix 3. Relevant Ecology and Legislation.....	31
Appendix 4. Proposed Plans.....	32
Appendix 5. Recommended Mitigation and Compensation Habitat	33
Appendix 6. Hibernation Survey Data Logger Output.....	35

FiguresFigure 1: OS Map of the project site and surrounding area, the redline depicts the application site, bat surveys pertained to Buildings 3, 4 and 26 (Marked in black), all other buildings were assessed to hold 'Negligible' suitability to support roosting bats.	14
Figure 2: Access point of common pipistrelle from Building 3.	16
Figure 2: Common pipistrelle recorded foraging within Building 4 prior to emergence via Building 3.	17
Figure 3: Summary of Bat Activity during the survey undertaken 12/06/2024	18
Figure 4: Summary of Bat Activity during the survey undertaken 03/07/2024.	20
Figure 5: Bat recorded roosting between timber and sheet roof of Building 4, before emerging, given the extent of the building and survey efforts the entire of the buildings was considered to be the roost.	24

TablesTable 1: Weather conditions recorded during survey.	15
Table 2: Summary of Bat activity on dusk emergence survey 12/06/2024.	15
Table 4: Weather conditions recorded during survey.	19
Table 5: Summary of Bat activity on dusk emergence survey 03/07/2024.	19
Table 6: Weather conditions recorded during survey.	21
Table 7: Summary of Bat activity on dusk emergence survey 24/07/2024	21
Table 8: Recommendations for mitigation and compensation under an EPS Licence.....	26

1 Summary

- 1.1.1 Brindle and Green Ltd were commissioned by L'Arche Developments on behalf of Kingsman Homes to undertake an updated suite of bat roost characterisation and hibernation surveys on Building 3 and Building 4, and presence/likely absence surveys on Building 26 (Figure 1) at Royd Moor Farm, Royd Moor Road, Thurlstone, Sheffield, South Yorkshire. The surveys were undertaken between June 2024 and July 2024.
- 1.1.2 A Preliminary Ecological Appraisal (PEA) was undertaken in August 2022 by Brindle and Green Ltd (BG22.227, January 2023) which concluded that Building 1 (hereafter referred to as Building 3 and Building 4 to correspond with clients building plans) offered 'Moderate' suitability to support roosting bats as well as suitability to support hibernating bats. The PEA concluded that Building 13 (hereafter referred to as Building 26) offered 'Low' suitability to support roosting bats. No evidence of roosting bats was identified in either of these buildings during the preliminary appraisal. The report (BG22.227 Royd Moor Farm, Thurlstone PRELIMINARY ECOLOGICAL APPRAISAL Report – FINAL) should be reviewed in conjunction with this report. All other buildings on site were assessed to hold 'Negligible' suitability to support roosting bats.
- 1.1.3 A suite of bat surveys has previously been conducted by Brindle and Green and report subsequently produced (BG22.227 Royd Moor Farm, Thurlstone – BAT CHARACTERISATION REPORT – FINAL). It should be noted that no evidence of hibernating bats was recorded during the 2023 hibernation survey. This report provides an update to previous survey work.
- 1.1.4 The site is the subject of a planning application for site clearance and demolition of the existing buildings to facilitate the development of up to eight residential dwellings. Design proposals for the site are presented in Appendix 4 of this report.
- 1.1.5 Buildings 3 and 4 were subjected to three dusk emergence surveys on 12/06/2024, 03/07/2024, and 24/07/2024. Building B26 was subject to a single dusk emergence survey on 12/06/2024.
- 1.1.6 The surveys identified the following roosts within Building 3 and 4 and confirmed a likely absence of bats within and Building 26.
- Roost 1 – Common Pipistrelle day roost (max. 3 bats) within the interior of Building 3 and 4, recorded flying out of the open doorway on the northern elevation.

- Roost 2 – Brown Long eared day roost (max. 1 bat) within the interior of Building 3 and 4, recorded flying out of the open doorway on the northern elevation. – not recorded during 2024 update survey however will be required to be licenced
- 1.1.7 Bat activity across the surveys was varied, with moderate levels of activity recorded during the first survey, low levels on the second, and high levels on the final survey. Activity was largely dominated by Common Pipistrelle (*Pipistrellus pipistrellus*), with less than ten passes of noctule (*Nyctalus noctula*), brown long-eared (*Plecotus auritus*), and *Myotis* sp bats. Bats were regularly recorded foraging around the eastern and southern elevation of Buildings 3 and 4.
- 1.1.8 A summary of recommendations set out to ensure the client works within the law and that any impacts to protected species are minimised is included below:
- 1.1.9 The proposed development will involve the destruction of two day roosts: one used by Common Pipistrelle (max 3 bats) and one by Brown long eared (max 3 bats).
- 1.1.10 As such, a **Natural England European Protected Species (EPS) Development Licence (EPSDL) must be secured in order to continue with development works concerning Building 3 and 4 due to the connectivity between the buildings.** For a licence to be approved by Natural England, it must be demonstrated that the proposals will minimise any potential impacts upon roosting bats, and that the favourable conservation status of bat species is met. A recommended mitigation plan has been devised and outlined within Chapter 6 of the report.
- 1.1.11 Bats are highly mobile and can change roost sites throughout the year and from season to season. If the development does not begin within twelve months of this initial survey it will be necessary to conduct a re-survey to determine if bats are roosting within the buildings on site. It should be noted given the age of the current survey data update surveys will be required in the most recent bat survey season to inform the bat licence.

2 Introduction

- 2.1.1 Brindle & Green were commissioned by L'Arche Developments on behalf of Kingsman Homes to undertake a suite of update bat roost characterisation surveys on Building 3 and Building 4 and presence/likely absence surveys on Building 26 (Figure 1) at Royd Moor Farm, Royd Moor Road, Thurlstone, Sheffield, South Yorkshire. Grid Ref: SE 22135 04084.
- 2.1.2 The purpose of the surveys was to characterise the roosts within Building 3 and Building 4 which were identified during the initial survey effort in 2023 (BG22.227 Royd Moor Farm, Thurlstone PRELIMINARY ECOLOGICAL APPRAISAL Report – FINAL), and determine presence / likely absence of roosting bats within Building 26. The preliminary ecological appraisal BG22.227 (January 2023) should be reviewed in conjunction with this report. This report summarises the findings of updated survey work conducted in 2024, with reference to previous survey work included where appropriate.
- 2.1.3 The red line boundary is approximately 1.1 ha in extent and is dominated by a series of agricultural buildings and associated hard standing as well as areas of semi-improved grassland with dry walls forming the sites boundaries. The site is located approximately 1km west of the rural village of Thurlstone and is bordered by extensive agricultural land with Royd Moor Road running along the northern boundary.
- 2.1.4 The site is the subject of a full planning application for site clearance to facilitate the development of eight residential dwellings. Design plans are presented within Appendix 4.
- 2.1.5 The legislation relevant to bats within the United Kingdom is summarised within Appendix 2 and Appendix 3.
- 2.1.6 Results and recommendations contained within this report have been prepared by an experienced ecologist and are therefore the view of Brindle & Green Limited. The survey is based on information provided by our client, the development proposals, and the results of our survey of the site. This report pertains to this information only.

3 Methodology

3.1 Presence / likely absence and Roost characterisation surveys

- 3.1.1 Buildings 3 and 4 were subjected to three dusk emergence surveys on 12/06/2024, 03/07/2024, and 24/07/2024, Building 26 was subject to a single dusk emergence survey on 12/06/2024 to confidently assess presence or likely absence of bats within the roosting features identified by Brindle and Green Ltd (BG22.227, January 2023).
- 3.1.2 Bat surveys were conducted according to methodologies outlined within Natural England's Bat Mitigation Guidelines (Reason, and Wray 2023) and the Bat Conservation Trust Good Practice Guidelines (Colins, 2023). The surveys began 15 minutes before sunset and lasted for up to 2 hours following sunset. Where methodology has deviated from good practice, it has been recorded and justified within the limitations section of the report.
- 3.1.3 On the survey, surveyors operated an Echo Meter Touch detector connected to an iPad. Where possible, species were identified using information from visual and audio cues, all sonograms were recorded on to the iPad and were analysed using Analook software to confirm species identification.
- 3.1.4 All bat passes, including time and species, were recorded on to field maps, noting direction of flight and emergence. Where possible, the number of individuals observed and behaviour of the bat was also recorded, including foraging, commuting and social calling behaviours.
- 3.1.5 In addition, Nightfox Whiskered Night Vision Aids (NVAs) were utilised during each survey visit, and Song Meter Mini's were placed within B3 during two surveys (12/06/2024 and 03/07/2024).

3.2 Hibernation surveys

- 3.2.1 Bat hibernation surveys were carried out following the guidelines outlined within Natural England's Bat Mitigation Guidelines (Mitchell-Jones, 2004) and the Bat Conservation Trust Good Practice Guidelines (Collins, 2016).
- 3.2.2 Buildings 3 and 4 on site was subjected to two detailed inspections during the winter months (02/01/2023 and 08/02/2023) to look for and identify hibernating bats or other evidence of bat occupation. This involved two surveyors carrying out close and systematic inspection of all cracks, crevices and voids using torches, mirrors and endoscopes. A data logger was deployed

on the initial visit to record temperature and humidity to ascertain if the building holds constant climatic conditions suitable for hibernation, this data can be found in Appendix 6 of this report.

3.3 Surveyors

3.3.1 The emergence surveys were carried out by Byron Humphries BSc (Hons), ACIEEM, Senior Ecologist; Marc Redmond BSc (Hons), Consultant Ecologist; Lucy Talbot BSc (Hons), Assistant Ecologist; Jenna Churchill BSc (Hons), Assistant Ecologist; Zoe Millward, Seasonal Surveyor; and Becky Wilson, Seasonal Surveyor.

3.3.2 The hibernation surveys were carried out by Ellen Marshall BSc (Hons) MRes Natural England Bat Licence Class 1 (2017-28407-CLS-CLS), Head of Ecology and Lucinda Sweet PhD, MCIEEM, Natural England Bat Licence Class 2 (2019-39122-CLS-CLS), Great Crested Newt licence (2016-22852-CLS-CLS), Director.

3.4 Survey Conditions

3.4.1 The surveys were undertaken in weather conditions considered conducive to bat activity. The weather conditions for each survey are summarised within Section 5: Results.

3.5 Limitations

3.5.1 It should be noted that whilst every effort has been made to provide a comprehensive description of the site, no investigation could ensure the complete characterisation and prediction of the natural environment. The protected and notable species assessment provides a preliminary view of the likelihood of these species occurring on site, based upon the suitability of the habitats and known distribution of the species in the local area.

3.5.2 During the survey conducted on 12/06/2024, temperatures dropped to around 5.1°C approximately 50 minutes after sunset, and then dropped to approximately 4.4°C around 1 hour 30 minutes after sunset, at which point the survey was concluded. As static detectors were deployed within the buildings prior to the survey to obtain supplementary data, it is considered likely that if any bats that were present within the structure but did not emerge due to the low temperatures, they would have been detected on the deployed statics.

3.5.3 The second survey on 03/07/2024 was undertaken during windy conditions, activity was considerable less when compared to the other two surveys however based on the survey

efforts of the building so fair it is not considered to limit the overall conclusions and characterisation of the roost types found to be present.

- 3.5.4 When surveying Building 26, the only potential access points were recorded at the southern elevation. As such, surveyors only focused on this area. This is not expected to have impact the survey results, however, as no other access points were identified.
- 3.5.5 The hibernation surveys were undertaken in line with Natural England's Bat Mitigation Guidelines (Mitchell-Jones, 2004) and the Bat Conservation Trust Good Practice Guidelines (Collins, 2016) which was prior the release of Natural England's Bat Mitigation Guidelines (Reason, and Wray 2023) and the Bat Conservation Trust Good Practice Guidelines (Colins, 2023). It is not considered to overall limit the survey findings.

3.6 Report Lifespan

- 3.6.1 Given the transient nature of the subject we would consider the survey results contained to be accurate for 12 months from the survey date. If this enters into a new bat activity season additional surveys will be required to inform a licence from Natural England.

4 Site Context

4.1 Site Description

- 4.1.1 The application site can be found at SE 22135 04084, accessed off Royd Moor Road which borders the north of the site. The site is dominated by agricultural buildings, their associated hardstanding and boundary features with an area of semi-improved grassland to the south. The site is located 1km west of the rural village of Thurlstone, South Yorkshire. The areas surrounding the site are dominated by extensive arable and pastoral land supporting mainly dry-stone walls with occasional hedgerows and trees. Beyond Royd Moor Road, is Royd Moor Reservoir, approximately 500m north of the site, supporting associated woodland, however no direct linear connectivity was noted between the site and this habitat.

4.2 Zone of Influence

- 4.2.1 The zone of Influence is used to describe the geographic extent of potential impacts of a proposed development in relation to the target species, in this case bats. Due to the scale and nature of the proposals, it is not considered that the impacts of the proposed works would extend beyond the scheme footprint and its immediate surroundings.



Figure 1: OS Map of the project site and surrounding area, the redline depicts the application site, bat surveys pertained to Buildings 3, 4 and 26 (Marked in black), all other buildings were assessed to hold 'Negligible' suitability to support roosting bats.

5 Results

5.1.1 A summary of bat activity per survey is provided in the tables below. Raw data sheets are available upon request from the head office. A diagrammatic representation of the bat activity recorded during surveys can be seen within **Error! Reference source not found.** - 4.

5.2 Bat Dusk Emergence Survey – 12/06/2024

5.2.1 Survey effort was focused on determining the presence of bats within Buildings 3, 4 and 26 and establishing the location of access / egress points if bats were present. Assessments of how bats were using the area of vegetation and open space adjacent to the survey building were also undertaken.

Table 1: Weather conditions recorded during survey.

Sunset Time: 21:36	Cloud Cover: 4/8	Wind Speed: BF1
Start Time: 21:21	Start Temp: 9°C	Start Humidity: 65%
Finish Time: 23:06	End Temp: 4°C	End Humidity: 64%

Table 2: Summary of Bat activity on dusk emergence survey 12/06/2024.

Time Period	Summary of bat activity recorded
21:21 – 21:51	A single CP was HNS at P1.
21:52 – 22:00	At 21:52 a single CP was HNS at P1. At 21:58 a CP was heard at P2 as it commuted south past P3. At 22:00, CPs were HNS at 'k'IP2, P3 and P4.
22:01 – 22:31	At 22:04 a CP was seen commuting south from P3, and then heard foraging close to P1, but was not seen. At 22:05, what is assumed to have been the same CP was seen foraging between B3/B4 and B26. At 22:06 a single NP was seen commuting from north to south past P2. At 22:08 a single CP was seen commuting west from P3. At 22:09 a CP was HNS from P3. At 22:10 a CP was heard foraging to the south of B3/B4. At 22:12 a CP was seen emerging from Roost 1 – via access above a door at the northern aspect of B3 and then flew north (Error! Reference source not found.). At 22:17 a second CP was seen emerging from Roost 1 through the same point as above from B3 and then flew north. At 22:17 a single CP was HNS from P1. At 22:18 a single CP was seen commuting northwest from P1. At 22:23 a single NOC was HNS to the east of P2. At 22:26 a third CP emerged from Roost 1 through the same point as above from B3 and then flew north-east.
22:31 – 23:01	At 22:34 a NP was HNS from P2.

Time Period	Summary of bat activity recorded
	At 22:35 a CP was HNS from P3. At 22:39 a CP was HNS from P2. At 22:42 a CP was heard to the east of P2 but not seen. 22:52 a CP was HNS at P2.
23:01 – 23:06	No activity was recorded during this period.

Key: P# - Position number, Noc – Common noctule, CP – Common Pipistrelle, NP – Nathusius' Pipistrelle, HNS – Heard not Seen, N – North, S – South, E – East, W -West

- 5.2.2 Three common pipistrelles were recorded emerging from Building 3 and 4 via the gate on the northern boundary of Building 3 which formed an open elevation (Figure 2). During the survey, the internal night vision aid recorded the presence of bats foraging briefly within building 4 in the field of view (focused at the apex of building 4) immediately prior to their emergence (Figure 3)



Figure 2: Access point of common pipistrelle from Building 3.



Figure 3: Common pipistrelle recorded foraging within Building 4 prior to emergence via Building 3.

- 5.2.3 Bat activity was considered to be moderate pertaining to over ten passes of common pipistrelle. Foraging activity of common pipistrelle was regularly recorded to the south of Buildings 3 and 4. Single passes attributed to nathusius' pipistrelle and common noctule were also recorded.

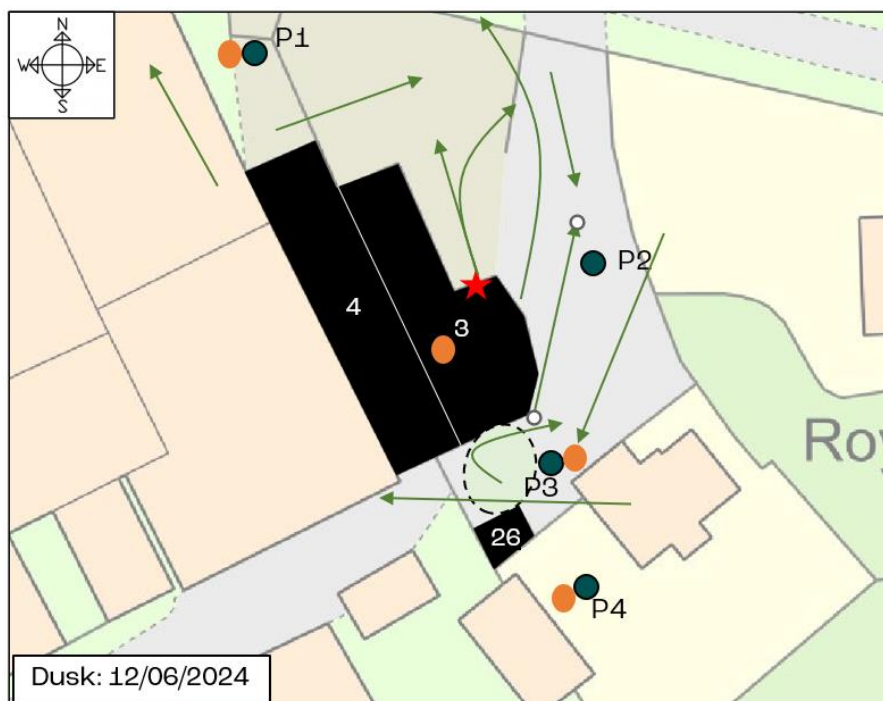


Figure 4: Summary of Bat Activity during the survey undertaken 12/06/2024

Key			
	Surveyor Location		Commuting Lines
	Roost Emergence point Roost 1		NVA Position
			Notable Foraging areas

5.3 Bat Dusk Emergence Survey – 03/07/2024

- 5.3.1 Survey effort was focused on characterising the roost type identified during the previous survey and establishing the location of any additional access / egress points. Assessments of how bats were using the area of vegetation and open space adjacent to the survey building were also undertaken.

Table 3: Weather conditions recorded during survey.

Sunset Time: 21:36	Cloud Cover: 2/8	Wind Speed: BF5
Start Time: 21:12	Start Temp: 13°C	Start Humidity: 83%
Finish Time: 23:16	End Temp: 11°C	End Humidity: 82%

Table 4: Summary of Bat activity on dusk emergence survey 03/07/2024.

Time Period	Summary of bat activity recorded
21:12 – 22:14	No activity recorded during this period.
22:15 – 22:45	At 22:15 a CP was seen commuting NE over B3/B4 from P1. Between 22:28 and 22:35 a single CP was regularly HNS from P2. At 22:35 a single CP was seen commuting to the east of the building, confirmed at P1 and P3. At 22:36 a single CP was HNS from P2.
22:46 – 23:16	During this period, a single BLE was HNS from P2.

Key: P# - Position number, CP – Common pipistrelle BLE – Brown Long-eared HNS-heard not seen, N- North S – South E – East W - West

- 5.3.2 No bats were recorded emerging / re-entering the surveyed structures on this occasion. Bat activity was considered to be low pertaining to less than ten passes of common pipistrelle, and a single brown long-eared bat. Foraging activity of common pipistrelle was recorded to the east of Buildings 3 and 4.

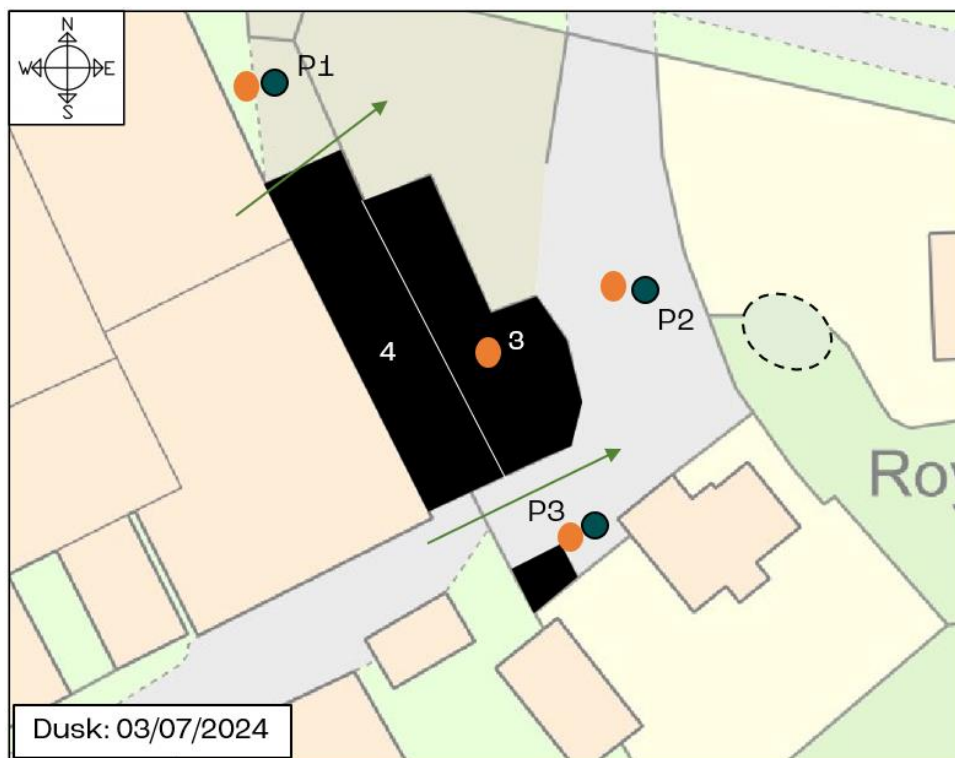


Figure 5: Summary of Bat Activity during the survey undertaken 03/07/2024.

Key			
	Surveyor Location		Commuting Lines
	NVA Position		Notable Foraging areas

5.4 Bat Dusk Emergence Survey – 24/07/2024

5.4.1 Survey effort continued to be focused on characterising the roost identified within Building 3 during the first survey visit. Assessments of how bats were using the area of vegetation and open space adjacent to the survey building were also undertaken.

Table 5: Weather conditions recorded during survey.

Sunset Time: 21:15	Cloud Cover: 6/8	Wind Speed: BF2
Start Time: 21:00	Start Temp: 15°C	Start Humidity: 81%
Finish Time: 22:45	End Temp: 14°C	End Humidity: 80%

Table 6: Summary of Bat activity on dusk emergence survey 24/07/2024

Time Period	Summary of bat activity recorded
21:00 – 21:07	No activity recorded during this period
21:08 – 21:38	At 21:08 a NP was HNS from P1. At 21:18 a bat was recorded on the internal NVA foraging within B4, the bat did not emerge from the building as such no echo location was recorded to confirm species. it was considered likely to be CP and have emerged from Roost 1 based on flight speed and size. At 21:24 and again at 21:25 a CP was HNS from P3.
21:39 – 21:54	At 21:41 a CP was HNS from P2 At 21:42 a CP was recorded flying into doorway at the northern elevation of B3, it is assumed to forage within the building based on activity recorded within the building previously. At 21:43 a CP was seen commuting north from P2. At 21:46 a bat was recorded flying within B4 via the internal NVA, based on the size and flight patter it was considered likely to be CP, likely the same bat recorded at 21:42. At 21:49 a CP was seen commuting from W to E from P3. At 21:51 a CP emerged via the open door on N elevation of B3 (Figure 2), seen from P1 and then shortly afterwards seen commuting E to W from P3, its likely this will have been a bat that was previously foraging within the building that is roosting within Roost 1. . At 21:54 a CP was seen commuting from E to W from P3.
21:55 - 22:10	At 21:56 a CP was HNS then shortly afterwards what a CP was seen commuting from S to N at P3. At 21:58 a CP was HNS at P2. At 22:01 a CP was HNS at P2, and a NOC was HNS from P2 and P3. At 22:03 a CP was HNS at P3. At 22:05 two CP were HNS from P3 Also at 22:05 a BLE was recorded commuting S- N along the E elevation of B3.

Time Period	Summary of bat activity recorded
	At 22:07 three CP were HNS from P2. At 22:08 a CP was HNS foraging and then seen commuting S to N from P3. At 22:09 a CP was seen commuting SE to NW from P1. At 22:10 a CP was HNS from P3.
22:11 – 22:45	At 22:11 two CPs were recorded regularly foraging around the east of B3 from P3, for around 10 minutes. At 22:16 a MYO was recorded commuting E to W from P3. At 22:18 a MYO was recorded again from P1 and P3 but not seen. At 22:20 a CP HNS from P3. At 22:21 a MYO was HNS from P3. At 22:24 a MYO was HNS from P3. At 22:32 a NOC was HNS from P3, P2 and P1. At 22:38 a CP was HNS from P1. At 22:37 and 22:38 a bat was recorded on the internal camera foraging within B4, based on size and flight speed it was likely to be CP. At 22:44 a CP was HNS from P3.

Key: P# - Position number, Noc – Common noctule, CP – Common Pipistrelle, MYO – Myotis, NP – Nathusius' Pipistrelle, BLE – Brown Long-eared, HNS – Heard not Seen, N – North, S – South, E – East, W -West

- 5.4.2 One common pipistrelle was recorded emerging from Building 3 and 4 (roost 1) over the gate on the northern elevation of Building 3 then commuting north. A common pipistrelle was recorded entering the buildings during the survey, however based on review of the night vision footage it was considered to be using the interior of the building for foraging during the survey. Based on a review of the data collected there were up to two bats foraging within the buildings with at least one confirmed to be roosting within roost 1.
- 5.4.3 Activity was considered to be high pertaining to regular passes from a range of species. While the majority of activity was attributed to common pipistrelle, unidentified *Myotis* species, common noctule and nathusius' pipistrelle were also recorded.

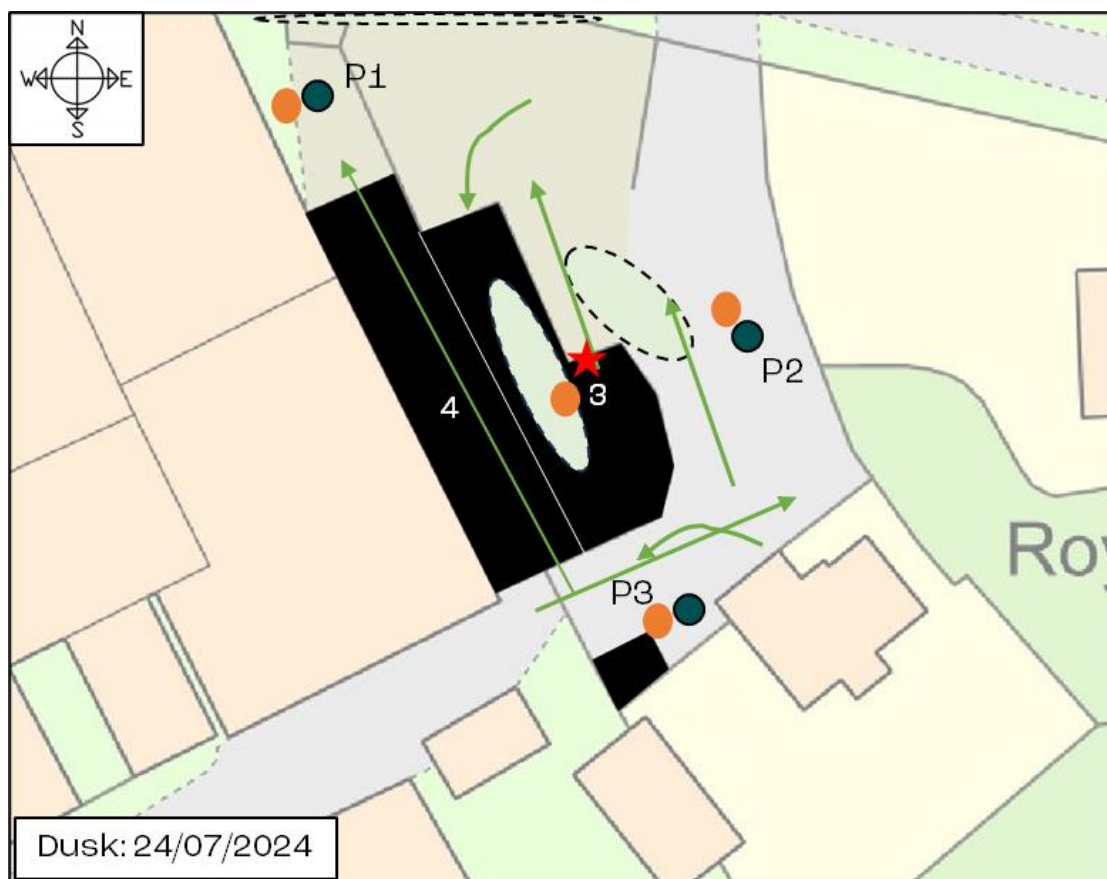


Figure: Summary of Bat Activity during the survey undertaken 24/07/2024.

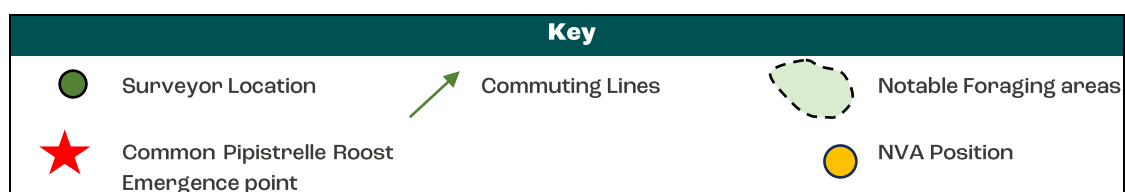




Figure 6: Bat recorded roosting between timber and sheet roof of Building 4, before emerging, given the extent of the building and survey efforts the entire of the buildings was considered to be the roost.

5.5 Hibernation Survey Results

- 5.5.1 Buildings 3 and 4 were assessed to hold hibernation suitability during the preliminary assessment of the site due to the presence of gaps within the buildings internal structure which may lead to deeper cavities and crevices. Detailed inspection with an endoscope during 20/01/2023 and 08/02/2023 found no evidence of hibernating bats within the features identified. The crevices where bats could access were considered to be generally shallow, reducing the likelihood of use by hibernating bats. The datalogger revealed that the lower floor was able to hold suitable climatic conditions for hibernation, with average temperature being recorded as 3.3°C and 93.6% humidity (Appendix 6), however an absence of bats was confirmed over the winter period.

6 Evaluation

6.1.1 The suite of surveys confirmed the following roosts:

- Roost 1 – Common pipistrelle day roost (max 3 bats) within the interior of Building 3 and 4, recorded flying out of the open doorway on the northern elevation.
- Roost 2 – Brown long eared day roost (max 1 bat) within the interior of Building 3 and 4, – not recorded during 2024 update survey however will be required to be licenced.

6.1.2 The access point for the roosts was confirmed to be the open gate on the northern elevation of Building 3 however based on a review of the night vision footage the overall buildings have been classified as the roost.

6.1.3 No evidence of roosting bats was found within Building 26 and no evidence of hibernating bats was recorded during the 2023 survey.

6.1.4 Due to the confirmed presence of two day roosts for a common species (common pipistrelle) and locally distributed species (brown long-eared), which is considered nationally common, a Natural England EPS development licence is required to proceed with the development works.

6.1.5 The development proposals will see the demolition of buildings 3 and 4 to facilitate the development and as such the impact will see the loss of two day roosts of common species of low conservation significance.

6.1.6 The common pipistrelle roost is considered to be of low conservation significance due to being a low number of bats of low conservation status using the roost intermittently. The brown long-eared roost is considered a locally distributed species however is nationally common as such considered to be of low conservation status.

6.1.7 Of the bat species recorded it is considered the common pipistrelle is locally common in the county and brown long-eared bats are locally distributed within the county, providing local level importance to roosting bats (Wray *et al*, 2010).

6.1.8 Foraging activity was considered to be generally low, with regular activity of common pipistrelle foraging to the east and south of Buildings 3 and 4 with intermittent (<10) passes of noctule, *Myotis* sp, brown long-eared, and nathusius' pipistrelle.

7 Recommendations

- 7.1.1 The proposed development will involve the destruction of a day roost for three common pipistrelles and a day roost for one brown Long-eared bat within Buildings 3 and 4 at Royd Moor Farm, Thurlstone, South Yorkshire. A **Natural England European Protected Species (EPS) licence must be secured** in order to continue with development works. Timing of works is required to be considered due to the suitability for hibernating bats as such demolition works cannot be undertaken during the bat hibernation period (November – February).
- 7.1.2 In order for a European Protected Species Licence to be approved by Natural England it must be demonstrated that proposals will minimise any potential impacts upon roosting bats and that the favourable conservation status of bat species is met. To ensure this is the case a mitigation plan is outlined in Table 7 with a plan depiction recommended locations for mitigation and compensation within Appendix 6.
- 7.1.3 Bats are highly mobile and can change roost sites throughout the year and from season to season. If the demolition of the site does not begin within twelve months of this initial survey it will be necessary to conduct a re-survey to determine if the characteristics of the roosts on site have changed.

Table 7: Recommendations for mitigation and compensation under an EPS Licence

Roosting Bats	
Recommendations	Timing
Natural England Licence & Method Statement: Prior to the submission of a licence application to Natural England update survey works will be required in the most recent bat survey season. A licence from Natural England is to be applied for. This will include a method statement produced by a suitable qualified ecologist. The recommendations below outline suggested mitigation work to be included within the method statement. These works can take place at any time outside the hibernation period, however, should ideally take place during the transitional period when bats are likely to be in their lowest numbers. 1. Installation of mitigation bat boxes	Prior to works commencing. (Application can take 30 – 45 days to process once submitted)

Roosting Bats	
Recommendations	Timing
Install 2 x tree mounted bat boxes (1 x greenwood ecostyrocete twin crevice bat box and 1 x greenwoods ecostyrocete hollow bat box, or similar approved) on a nearby tree within ownership. The boxes have been selected as they are suitable for the target species, common pipistrelle and brown long eared. The boxes will be positioned at a height of at least 4 metres with an unobstructed flight path. Any bats found during the following exclusion and/or soft stripping works to be transferred to these boxes by hand.	Pre-development works.
2. Undertake a scoping survey Prior to demolition works commencing which is to be outside the hibernation period, the building should be subjected to pre-works survey (comprising a dusk emergence / dawn re-entry survey the evening / morning before) to confirm the presence / absence of bats and determine the likelihood of bats being uncovered during the soft stripping works. The results of this survey will gauge the extent and timing of the works that can be undertaken.	Pre-development works.
3. Toolbox talk Contractors employed to undertake the demolition works outside the hibernation period will be briefed by the Named Ecologist on the ecology and type of bats present, and what to do when a bat is identified.	Pre-development works
4. Capture exercise during soft stripping of roofing features outside the hibernation period Bat roosting features will be inspected in detail by the ecologist and either permanently blocked if the ecologist is confident bats are absent from the feature or install one-way excluders on features with deeper crevices. One-way excluders are to remain in situ for a period of at least five days. Then the features can be permanently blocked by the ecologist ahead of demolition works. Once all bat roosting features have been blocked, checked and structures made unsuitable for roosting bats the buildings can be declared free of bats and demolition works can proceed. Mitigation bat boxes to remain in place during this period, and after development is complete.	During works
5. Compensatory features Permanent compensatory bat roosting habitat to be integrated into the external fabric of the proposed dwellings in proximity to	Bat mitigation / compensation features are to be installed during construction works, but access points will be

Roosting Bats	
Recommendations	Timing
the access point being lost for both common pipistrelle and brown long eared. Compensatory habitat must be suitable to for the target species and free from disturbance from external lighting secured by planning condition. Recommended boxes are 1 x soffit box (suitable for brown long eared) and 1 x vivara pro build in bat box or similar approved. 6. Post Construction Monitoring Due to the low conservation significance, no compulsory monitoring will be required.	restricted until construction has been completed.

Appendix 1. General References

Bat Conservation Trust (2014) Artificial lighting and wildlife Interim Guidance: Recommendations to help minimise the impact artificial lighting. Bat Conservation Trust, London.

Bell, S. McGillivray, D. (2006) Environmental Law. 6th ed. Oxford University Press.

Butterfly Conservation trust (2014) Nectar Plants, http://mothscount.org/text/64/nectar_plants.html

CIEEM (2017) Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.

Collins, J. (ed.) (2023) Bat Surveys for Professional Ecologists: Good Practice Guidelines, (4th edition). Bat Conservation Trust, London. ISBN-978-1-7395126-0-6

Mitchell-Jones A.J. Bat Mitigation Guidelines 2004. English Nature.

Mitchell-Jones A.J. McLeish, A.P. (2004) Bat Workers Manual (3rd Edition). Joint Nature Conservation Committee.

Wray S. Wells D. Long E. Mitchell-Jones T (2010) Valuing Bats in Ecological Impact Assessment. CIEEM In Practice December 2010.

Appendix 2. Legislation and Guidance Sources

Articles of British wildlife and countryside legislation, policy guidance and both Local and National Biodiversity Action Plans (BAPs) are referred to. The articles of legislation are:

- The Wildlife and Countryside Act 1981 (as amended)
- The Conservation of Habitats and Species Regulations 2017 (as amended)
- Department for Communities and Local Government. National Planning Policy Framework. (2023)
- EC Council Directive on the Conservation of Wild Birds 79/409/EEC
- The Protection of Badgers Act 1992
- The Natural Environment and Rural Communities Act 2006 (Including National and Local Biodiversity Action Plan (LBAP / HPI))
- Hedgerow Regulations 1997
- The Environment Act 2021

Appendix 3. Relevant Ecology and Legislation

(Please note that this is for information purposes only. Clients should seek further legal advice where necessary).

There are 17 species of bats that occur in Britain. Dramatic declines in population numbers initiated the introduction of European and UK legislative protection. British bats and their roosts are fully protected under Schedule 5 of the Wildlife & Countryside Act 1981 (as amended). Additional protection is offered under The Conservation of Habitats and Species Regulations 2017 (as amended). Buildings and structures which offer roosting potential to bats can be impacted by development and this can result in disturbance to potential roost sites. Bats occupy different roost sites during the year depending on species-specific summer roost and hibernation roost requirements. Bats usually re-use the same roosts, therefore the legal opinion is that the roost is protected whether or not the bats are present at the time.

In the case of development work, activities involving the capture, disturbance and/or relocation of bats are subject to a licence from Natural England. Such licences are only granted:

“For the purpose of preserving public health or public safety or other imperative reasons of overriding public interest including those of a social or economic nature and beneficial consequences of primary importance for the environment, to allow people to carry out activities which would otherwise be illegal.”

Under The Conservation of Habitats and Species Regulations 2017 (as amended), licences can only be issued if Natural England are satisfied that:

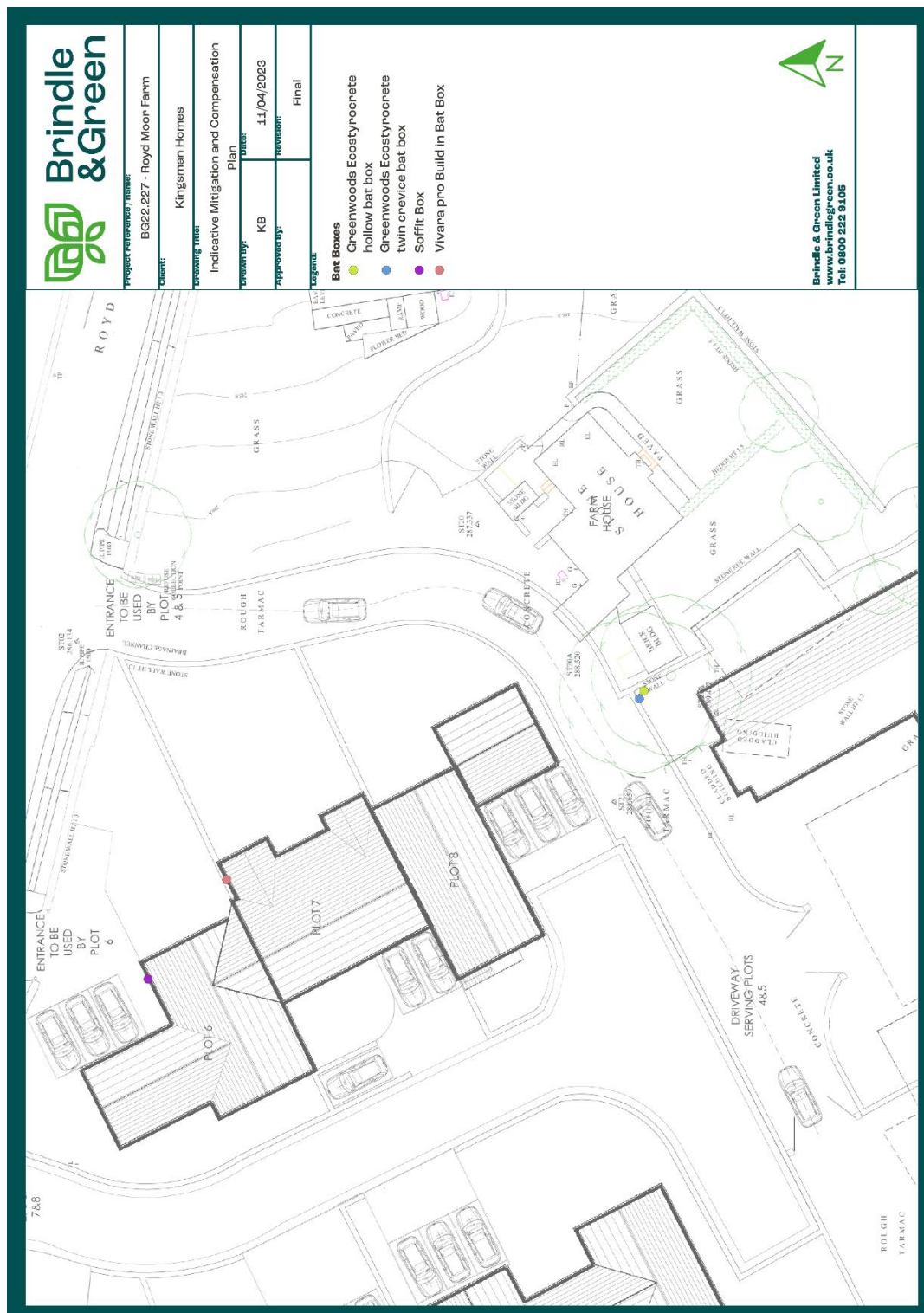
- there is no satisfactory alternative; and
- the action authorised will not be detrimental to the maintenance of the population of the species at a favourable conservation status in their natural range.

Undertaking work to a bat roost without following appropriate recommendations from Natural England and/or DEFRA could lead to prosecution resulting in imprisonment, fines and confiscation of vehicles/equipment used.

Appendix 4. Proposed Plans



Appendix 5. Recommended Mitigation and Compensation Habitat



Appendix 6. Hibernation Survey Data Logger Output

Data Report

File created on: 08-02-2023 13:40:58

Device Information

Device Model: RC-51H
Serial Number: EL2209002216
Mode Code: TLCFFA08B
Probe Type: Temperature & Humidity(internal)
Firmware Version: V2.2

Trip Description

Trip Number: 0000001
Trip Description: Temperature recording.

Mark Event

N/A

Config. info

Start Model: Press Button
Start Delay: 0m
Time Zone: UTC +00:00
Logging Interval: 15m
Cyclic Record: Disable
Stop Mode: Press Button + Use Software

Alarm Threshold	Alarm Delay	Alarm Type	Over-limit Duration	Over-limit Times	Alarm Status
No Alarm					

Summary

Maximum: 18.1°C / 97.7%RH
Minimum: 0.4°C / 45.8%RH
Average: 3.3°C / 93.6%RH
MKT: 3.6°C
First Alarm(Te): N/A
Start Time: 17-01-2023 11:39:54
Stop Time: 08-02-2023 13:24:54 (Use Software)
Logging Duration: 22d 1h 45m
Data Points: 2120
First Alarm(Hu): N/A

