

BAT SURVEY REPORT

Cefn Isaf Flats

Cefn Coed y Cymmer
Merthyr Tydfil
CF48 2RH

ON BEHALF OF:

Merthyr Valleys Homes



Site Address:	Cefn Isaf Flats, Cefn Coed y Cymmer, Merthyr Tydfil CF48 2RH	
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Report Author	Phoebe Williams	Ecologist
Report Reviewer	Grace Dooley	Principal Ecologist



Directors	Grace Dooley BSc (Hons) MSc ACIEEM Robert Morgan
Registered Office	Phoebe Williams BA (Hons) MSc ACIEEM Suite 131 -136, Plas y Ffynnon, Cambrian Way, Brecon LD3 7TG
Website	www.justmammals.co.uk
E-mail	phoebe@justmammals.co.uk
Telephone	01874 623616
Registered in	Wales
Registration Number	13099914
VAT No.	821 6376 35

Contents

1	Executive Summary	1
2	Introduction	1
3	Survey Team	2
4	Survey Methodology	2
5	Site Description	2
6	Survey Constraints	3
7	Desktop Study	3
8	Survey Results	3
9	Discussion and Conclusions	4
10	Recommendations	6
11	Bibliography	7
Appendix I	Site Plans	9
Appendix II	Survey Team Experience	12
Appendix III	Survey Methodologies	13
Appendix IV	Site Photographs	14
Appendix V	Dusk Observation Results	15
Appendix VI	Mitigation	17
Appendix VII	Ecology of British Bats	19
Appendix VIII	Relevant Legislation	20
Appendix IX	EPS Licensing	21

Figures

Figure 1:	Aerial View of the Site	9
Figure 2:	Bat Survey Plan	10
Figure 3:	Bat Survey Flight Line Plan	11
Figure 4:	Screenshot from NVA at eastern end of southern side of Upper building	16
Figure 5:	Screenshot from NVA from western end of southern side of Upper building	16
Figure 6:	Screenshot from NVA at the south-eastern corner of the Lower building	17
Figure 5:	Plywood panel enhancement feature	18
Figure 6:	Baffle enhancement feature	18
Figure 7:	Cathedine Night Roost Design (© Vincent Wildlife Trust)	18

Tables

Table 1:	Summary of Survey Activity and Weather Conditions	3
Table 2:	Assessment of Importance	5
Table 3:	Survey Team Experience	12
Table 4:	Cefn Isaf Flats, Cefn Coed y Cymmer - Dusk Observation 22 nd Aug 2024	15
Table 5:	Cefn Isaf Flats, Cefn Coed y Cymmer Dusk Observation 11 th Sept 2024	15
Table 6:	Passive monitoring device 28 th Aug – 30 th Aug 2024 and 12 th Sept – 19 th Sept 2024	15

Plates

Plate 1:	Western side of the Upper Building	14
Plate 2:	Southern elevation of the Lower Building	14
Plate 3:	Missing blocks at the top of storerooms on the southern side of the Upper Building	14
Plate 4:	Central section, looking east	14
Plate 5:	Lesser horseshoe droppings inside open storeroom (see Plate 6)	14
Plate 6:	Storeroom with opening at southern side of the Upper Building	14
Plate 7:	South-east side of Lower Building, bat exit points 2024	14
Plate 8:	Bat exit points at the top of the roller shutter door	14

1 Executive Summary

- 1.1 Plans are being prepared to demolish Cefn Isaf Flats, in Cefn Coed y Cymmer, Merthyr Tydfil. In order to inform the planning process, a Preliminary Roost Assessment was carried out in May 2021, to determine if legally protected species were likely to be affected by the development. The primary focus for that appraisal was the presence, or potential presence of bats, and nesting birds.
- 1.2 Dusk bat emergence/activity observations were conducted in June, July, and August 2021. A refresher bat survey which involved a single dusk observation on each of the buildings (Upper and Lower), was undertaken in August 2022. Details of which are outlined in the previous report for the site. In summary, survey undertaken in June 2021 revealed the presence of a single common pipistrelle bat, which emerged from the stairway on the southern elevation of the Lower building. It was considered likely that the bat emerged from one of two holes in the brickwork within the stairway area, likely using the exposed cavity wall to roost. During the refresher survey in August 2022, the possible emergence of two pipistrelle bats was noted at the southern elevation of the Upper building, from a gap in a blocked doorway of a storeroom, via a missing concrete block. It is likely that bats were using crevices inside the storeroom area. No other roosts were noted.
- 1.3 Further update survey was undertaken in 2024, by way of two dusk observations in August and September. Further survey was undertaken on both the Upper and Lower buildings. Immediately prior to the first observation in August, a small scattering of lesser horseshoe bat droppings was found inside one of the storerooms at the southern side of the Upper building, which was not previously accessible to view. A passive monitoring device was later positioned into this storeroom and confirmed the presence of a lesser horseshoe bat night roost. No recordings of lesser horseshoe bats were made at or around sunrise or sunset during the monitoring period. No lesser horseshoe bats were seen to emerge from the storerooms during the dusk observations, and no live bats were seen within these spaces during daytime assessment. As such, no evidence was found to suggest lesser horseshoe bats are using the site for day roosting. Evidence found points to night roosting by a small number of this species of bat.
- 1.4 During the second dusk observation in September 2024 two soprano pipistrelles were seen to emerge from the southern elevation of the Lower building, from the top of the roller shutter door, leading to a storeroom area. Bats are using the internal storeroom area to roost.
- 1.5 Bats are fully protected in British legislation, as well as their places of rest, known as roosts. The proposed demolition of Cefn Isaf Flats will result in the disturbance and destruction of a common pipistrelle, and possible soprano pipistrelle daytime bat roosts, for a small number of bats. The demolition will also result in the loss of a lesser horseshoe night roost, used by a small number of bats on an infrequent basis. A thorough assessment has been completed and no additional survey effort is recommended. However, in addition to planning/demolition consent, it will also be necessary to apply to Natural Resources Wales for a European Protected Species licence, and to obtain the licence prior to any works to demolish the flats. A Scheme of Mitigation is proposed in this report, suitable and appropriate for the bat roosts identified. Further and more precise mitigation details will be providing in the Method Statement that will be required as part of the licence application process.
- 1.6 The assessment also considered the presence of breeding birds; no active or historic nests were recorded during the survey effort. However, opportunities within the buildings for nesting birds was noted. Breeding birds are protected under the provisions of the Wildlife and Countryside Act 1981 (as amended), and active bird nests cannot legally be disturbed or destroyed. General advice on the legal protection afforded to breeding birds is provided in this report.
- 1.7 In order to comply with current Welsh planning policy (PPW12), it will be necessary to provide enhancements for biodiversity so that the site offers features to support wildlife, some recommendations are included in this report. Further proposals for measures to promote wildlife and nature conservation are outlined in a separate Biodiversity Enhancement Plan (Just Mammals, 2024).

2 Introduction

- 2.1 Cefn Isaf Flats are situated in the community of Cefn Coed y Cymmer, on the northern edge of Merthyr Tydfil. The flats are divided into two sections, the Upper north, and the Lower south, both of which are connected via external raised walkways, which extend between the sections. The flats are sited on a land that slopes to the south. The site is centred on National Grid Reference SO 03259 07698, and it stands at an altitude of *circa* 210m Above Ordnance Datum.

- 2.2 Proposals include the demolition of the flats, and redevelopment of the site with the construction of new, fit for purpose flats. To support the development plans, Just Mammals Limited was commissioned to consider the actual or potential presence of protected species. A Preliminary Roost Assessment (PRA), or scoping survey of the building was completed during a daytime inspection in May 2021, by a licenced ecologist and an assistant. Dusk bat emergence/activity observations were later conducted in June, July and August 2021. Following this initial survey Just Mammals Limited were commissioned to undertake a refresher survey at the site in August 2022, which included an external assessment and a single dusk observation of the Lower and Upper buildings.
- 2.3 Further update survey was undertaken in August and September 2024, details of which are included in this report. Full details of previous survey effort can be found in separate reports by Just Mammals (2021 and 2022).
- 2.4 The main objective of this report is to identify any development impacts that may arise in relation to the presence of legally protected species – namely bats and nesting birds. Therefore, the assessment was undertaken in order to:
- consider the presence of bats or potential roosts;
 - determine the presence of nesting birds;
 - assess whether bats or nesting birds are likely to be impacted by the proposed works;
 - gather sufficient information to be able to make appropriate recommendations, and;
 - use survey findings to recommend appropriate mitigation measures for safeguarding ecology on site.

3 Survey Team

- 3.1 Lead surveyor was Phoebe Williams, and author of this report. The dusk emergence observations were carried out by a small team of ecologists and survey assistants. Table 3 in Appendix II details ecological survey experience of the surveyors.

4 Survey Methodology

- 4.1 The PRA of Cefn Isaf Flats, was undertaken in May 2021 with the aim of detecting any signs of bat or bird presence. Two dusk emergence / activity surveys were completed in June, July and August 2021, and again a single survey in August 2022. Most recent survey to update survey data was undertaken in August and September 2024, by way of two dusk observation surveys, and a period of passive monitoring.
- 4.2 An AudioMoth was positioned inside the open storeroom in the location of the noted lesser horseshoe bat droppings on the 28th of August 2024. After two nights, on the 30th of August this device was replaced with the more robust, purpose-built Song Meter Mini Acoustic Recorder. The Song Meter was collected from the site on the 11th of September 2024 after twelve nights. Upon data download it was noted that the Song Meter captured no data as a result of a technical failure. An AudioMoth was re-positioned at the site on the 12th of September 2024 for a further seven nights.
- 4.3 In order to assist with survey effort, three Night Vision Aids (NVA) were used in 2024 during both surveys. Full details of survey methodologies employed are provided in Appendix III.

5 Site Description

- 5.1 Cefn Isaf Flats are situated in the community of Cefn Coed y Cymmer, on the north-west edge of Merthyr Tydfil, some 1.9km from the town centre. The flats are surrounded by residential properties to the north, east and west, while an area of woodland stretches to the south. The Afon Taf Fawr runs through the woodland, some 120m to the south, and beyond this is the A470 trunk road.
- 5.2 Situated on ground which slopes to the south, the flats are divided into two sections, the Upper section to the north, and the Lower section to the south, both of which are connected via external raised concrete walkways. Beneath these walkways, at the centre of the complex, a grassy corridor stretches from east to west.
- 5.3 Cefn Isaf Flats are multiple storey, mostly brick built, and flat roofed. Most walls are exposed brick, with some panelling present across the upper parts. The two sections of the structure are somewhat different in shape and arrangement, with the Lower Building featuring a tiered, glass fronted, elevation. The Upper Building has an external elevated level on the southern aspect, below which are storage units, most of which have been sealed with concrete blocks. The most recent site visit revealed a previously blocked up storeroom that has been opened up, allowing for internal

inspection. The inspected storeroom is small in size, roughly 3x4m, a simple rectangular space with rubble and timber scattered across the floor. Small single garage units are built into the south side of the Lower Building, most of which feature roller shutter doors. Window frames are uPVC, rainwater goods are metal. A series of external concrete steps provide access into the flats, these entrance points are dotted across both sections.

6 Survey Constraints

- 6.1 The interior of Cefn Isaf Flats could not be inspected for Health and Safety reasons, and blocked up doorways of storerooms at the southern elevations could not be entered for inspection due to restricted access. However, during the most recent assessment one of the previously blocked up storeroom doorways has been opened up, making internal inspection of this space possible.
- 6.2 NVAs were positioned with a view of the access points at the southern end of the Upper building that could not be fully inspected, but could be accessed by bats (by way of a single missing concrete block). The access points were used to peer inside for an internal inspection, although this was limited. This was not considered a major constraint as full thorough survey has been undertaken at the site.
- 6.3 After two nights of passive monitoring the AudioMoth was replaced with the Song Meter Mini and set to record for a further eleven nights. The Song Meter Mini faced a technical fault and did not work during its period inside the storeroom. This was not noted until the device was collected on the 11th of September 2024 and data were downloaded. The AudioMoth device was repositioned at the site on the 12th of September 2024 for a further seven nights. This was not considered to be a major constraint as a minimum of three nights is recommended by Bat Conservation Survey Guidelines on Passive Acoustic Surveys (2024).

7 Desktop Study

- 7.1 Details of a desktop study is provided in the previous Preliminary Ecological Appraisal report, written by Just Mammals in 2023. Records of note that relate to this report include the presence of a lesser horseshoe (*Rhinolophus hipposideros*) roost within a cave some around 300m from the Cefn Isaf Flats, where abundance in 2010 was noted to be around 21 individuals.

8 Survey Results

- 8.1 Table 1 below summarises dates, times and weather conditions when survey work took place, with wind speeds recorded using the Beaufort scale.

Table 1: Summary of Survey Activity and Weather Conditions

Date	Survey Type	Timing	Weather Conditions
22/08/2024	Dusk emergence/activity observation (PW, DW, GD, BG, MA, LP)	19.50 – 21.50 hours BST (Sunset 20.21 hours)	Air temperature: 17°C Cloud cover: 8/8 oktas Wind speed: F3, gentle breeze Conditions: Damp
11/09/2024	Dusk emergence/activity observation (RM, DW, NI, HM, MA, LP)	18.50 – 21.10 hours BST (Sunset 19.36 hours)	Air temperature: 10.6°C Cloud cover: 0/8 oktas Wind speed: F2, moderate breeze Conditions: Dry
Surveyors	Robert Morgan (RM), Phoebe Williams (PW), Ben Gibson (BG), Nigel Isaksson (NI), Megan Abram (MA), Daniel White (DW), Leigh Porter (LP), Grace Dooley (GD), Hayley Morgan (HM).		

- 8.2 No loft was inspected and the interior of the flats could not be inspected for Health and Safety reasons. Potential Roost Features (PRF) are detailed in the previous report for the site.
- 8.3 A previously blocked up doorway of one of the storerooms at the southern elevation of the Upper building has been opened up, and as a result internal inspection of this storeroom was possible during the most recent survey in 2024. Inspection revealed no live bats, however, a small scattering of lesser horseshoe droppings (*circa* 100) towards the back of the storeroom was found.
- 8.4 An AudioMoth was positioned inside the open storeroom in the location of the noted droppings on the 28th of August 2024. After two nights, on the 30th of August this device was replaced with the more robust, purpose-built Song Meter SM4 Acoustic Recorder. The Song Meter was collected from the site on the 11th of September 2024 after twelve nights. Upon data download it was noted that the Song Meter captured no data as a result of a technical failure. The AudioMoth was re-positioned at the site on the 12th of September 2024 for a further seven nights. The AudioMoth made a total of twenty-eight recordings over the nine nights. The passive monitoring device recorded lesser horseshoe bats during the late evening (after sunset) and in early hours of the morning (prior to

- sunrise). No recordings were captured at or close to sunrise or sunset. A total of eight recordings of lesser horseshoe bat were captured across the nine nights of successful monitoring. Lesser horseshoe bats were not recorded every night/morning of the monitoring period. Full results are shown in Table 6 Appendix V. Recordings were also made of common pipistrelle (*Pipistrellus pipistrellus*), brown long-eared (*Plecotus auritus*) and Myotis sp. Sonogram analysis revealed that these calls were faint.
- 8.5 Storerooms that could not be fully entered were assessed by way of a visual assessment from the exterior. Ladders and a powerful torch were used to peer into the storerooms via missing concrete blocks at the top of the wall. This was undertaken prior to the dusk observation survey on the 11th of September 2024, and on additional visits to replace passive monitoring devices. No live bats were seen inside these spaces. No obvious concentration of droppings were noted.
 - 8.6 Previous survey results for the site are fully outlined in the previous survey reports. In summary, survey undertaken in June 2021 revealed the presence of a single common pipistrelle bat, which emerged from the stairway on the southern elevation of the lower building. It was considered likely that the bat emerged from one of two holes in the brickwork within the stairway area, likely using the exposed cavity wall to roost. During the refresher survey in August 2022, the possible emergence of two pipistrelle bats was noted at the southern elevation of the Upper building, from a gap in a blocked doorway of a storeroom, via a missing concrete block. It is likely that bats were using crevices inside the storeroom area.
 - 8.7 The first refresher dusk emergence/activity observation was undertaken on the 22nd of August 2024, with results shown in Table 4 in Appendix V. During this observation no bats emerged from Cefn Isaf Flats. Lesser horseshoe, Natterer's (*Myotis nattereri*) and brown long-eared bats were recorded at the site. The trees to the south of the site were used by commuting and foraging bats. Activity levels across the site were low, the more well-lit areas to the north and west were used occasionally by commuting bats. The dark central section was used by a low number of lesser horseshoe bats to commute through the site.
 - 8.8 A second dusk emergence/activity observation was undertaken on the 11th of September 2024, results are shown in Table 5 in Appendix V. During this observation two soprano pipistrelle bats were seen to emerge from the top of the roller shutter door at the southern side of the Lower building (see Appendix IV; Plate 8). A single bat dropping was also noted associated with this feature, on the roller shutter, just beneath the access point. No other emergences were recorded during this observation. Bats were recorded foraging at the southern end of the site, and a single pass was noted through the centre of the site, between the flats. Species recorded during this observation were soprano pipistrelle, common pipistrelle and brown long-eared bat. No lesser horseshoe bats were recorded.
 - 8.9 During the dusk observations three NVAs were set up at the darker areas of the site focusing on notable PRFs. Two NVAs were positioned at the central section covering the access points into the storerooms. The third camera was positioned at the south-east corner of the site covering the stairway area. All other aspects of the site that featured Potential Roost Features were well lit by street lighting and as such, visibility was considered to be sufficient to be watched by surveyors without the need of NVAs. No emergences were recorded by the NVAs.
 - 8.10 No recent or active bird nesting evidence was noted at the site during the dusk observation surveys.

9 Discussion and Conclusions

- 9.1 Cefn Isaf Flats is a bat roost. Previous assessment revealed the presence of a single common pipistrelle bat and two unidentified pipistrelle bats. Bats were not seen to be using these same features during the 2024 survey effort, nevertheless these are still considered to be roosts and could be used at any time.
- 9.2 Most recent assessment revealed the presence of a soprano pipistrelle bat roost. Two bats were seen to emerge from the top of the roller shutter door on the southern elevation of the Lower building, during the second observation. Bats are likely using the space within the storeroom to roost, as no crevice was noted directly associated with the top of the roller shutter door. The roost is a daytime summer roost used on an occasional basis.
- 9.3 Prior to the first refresher dusk observation survey undertaken on the 22nd of August 2024, changes to the site were noted by way of an opening in one of the storerooms, which allowed for internal access. Internal assessment of the storeroom revealed the presence of a small collection of lesser horseshoe bat droppings. No live bats or feeding remains were noted. It was initially thought that

passive monitoring at the site was not possible due to no accessible spaces, however, on discovery on the open storeroom plans were made to install a device at the site.

- 9.4 The passive monitoring device recorded lesser horseshoe bats during the late evening and early hours of the morning. No lesser horseshoe bats were detected close to or at sunset or sunrise. The storeroom space is somewhat light, limiting its suitability as a day roost. The other storerooms that are well concealed with possible bat entrance points by way of a single missing concrete block, are considered to be more suitable for day roosting. However, no evidence was found to suggest lesser horseshoe bats are using these spaces to day roost during the dusk observation surveys or daytime assessments from the exterior. The record search revealed the presence of a lesser horseshoe bat roost within a cave around 300m from the Cefn Isaf Flats, where abundance in 2010 was noted to be around 21 individuals. It is considered likely that a small number of individual bats are using Cefn Isaf Flats as a 'pit-stop' during foraging periods. The flats are therefore considered to be a night roost for lesser horseshoe bats. Lesser horseshoe bats passing through the area are using Cefn Isaf flats as a rest or shelter during the night on an occasional basis, due to the lack of consistent passive monitoring recordings, and small number of droppings found. No evidence was found to suggest this species are using any part of the building as a day roost.
- 9.5 Possible presence of bats at other times of year outside of the summer period was considered. Across both buildings the cavity wall has been exposed in various places by holes in the brickwork. Therefore, the buildings contain features that hibernating bats can utilise as cavity walls offer the cool and stable temperatures required for hibernation. Without additional investigation, such winter usage cannot be dismissed. This situation is common to many buildings which are proposed for demolition as a thorough inspection is not possible until the building is being taken down. Due to the presence of a low number of common pipistrelle and soprano pipistrelle summer day roosts, used infrequently, and the presence of a lesser horseshoe night roost used by a small number of bats and the unknown use of the flats for hibernating bats, a spring/summer timetable for demolition is recommended.
- 9.6 Assessment of the importance of the receptors present, as outlined in the Bat Mitigation Guidelines (Reason & Wray, 2023) resulted in the following outcome:

Table 2: Assessment of Importance

Receptor	Number of bats	Roost type	Geographical location	Rarity category	Assessed level of importance
Soprano pipistrelle	2	Non-breeding day roost	South-west England and S Wales	Widespread	Site
Common pipistrelle	1	Non-breeding day roost	South-west England and S Wales	Widespread	Site
Soprano pipistrelle/common pipistrelle (pipistrelle species unidentified)	2	Non-breeding day roost	South-west England and S Wales	Widespread	Site
Lesser horseshoe	Likely 1 or 2	Night roost	South-west England and S Wales	Rarer or restricted distribution	Site

- 9.7 As the importance of the ecological receptors as outlined in Table 2 does not exceed 'Site' level, it is not considered that they qualify as 'Important Ecological Features' (IEF). Reason & Wray (2023) indicate that a rudimentary threshold of 'District' importance may be used to distinguish between receptor and IEF. No impact assessment is required for those receptors not identified as IEF, and therefore, no such assessment is conducted.
- 9.8 Similarly, as the development is not considered to be of a large scale, the assessment of the importance of the bat assemblage was not considered to be pertinent. No evidence was found to suggest the presence of a maternity roost, due to the small number of bats using the buildings and no large accumulations of droppings being noted. The rarer/ restricted distribution species of lesser horseshoe bat was noted to be using the site as a night roost only, likely by a small number of animals.
- 9.9 All UK bats are protected by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019 and the Wildlife and Countryside Act 1981 (as amended). The proposed works will, in the absence of mitigation, result in the permanent loss / destruction of bat roosts. Works also risk the injury or killing of individual bats. As the Cefn Isaf Flats supports bat roosts, securing a licence from Natural Resources Wales (NRW) to derogate from the legislation will be necessary to facilitate the works.

- 9.10 Under the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019, an EPS licence can only be issued if NRW are satisfied that:
- there are imperative reasons of overriding public interest including those of a social or economic nature;
 - 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.
- 9.11 Artificial light can negatively impact bat behaviour, particularly species that are sensitive to light. Lesser horseshoe bats are light adverse, a dark zone must be created and maintain so that this species can continue to commute across the site and use the site as a night roost. Recommendations are made below.
- 9.12 No activity that would indicate that birds were nesting in the building was seen during the survey effort. Nevertheless, all nesting birds are protected under the provisions of the Wildlife and Countryside Act 1981 (as amended), and active bird nests cannot legally be disturbed or destroyed. Precautionary measures are therefore recommended to avoid such impacts.

10 Recommendations

- 10.1 All bats and their places of rest are fully protected under British legislation. Cefn Isaf Flats supports roosting bats: a low number of soprano pipistrelles, common pipistrelle, and a night roost for lesser horseshoe bats. Proposed plans will result in the destruction to bat roosts.
- 10.2 Mitigation of the anticipated destruction of the roost must be provided. In summary, the suggested scheme of mitigation will be to create new roosting locations for bats within the fabric of the new buildings proposed at the site. Pipistrelles are crevice-roosting species, and their replacement roosting locations are relatively simple to recreate on account of their roosting habits. A lesser horseshoe night roost will also need to be provided at the site. Enhancement of the roosting provision will be provided, resulting in a net gain for roosting bats post-development.
- 10.3 An application for an EPS licence can only be made once planning consent is granted (if required). The EPS licence application must be accompanied by a detailed scheme of mitigation.
- 10.4 The scheme of mitigation and enhancement for the proposed development must include:

Mitigation

- Two bat boxes to be erected as temporary roosting provision for the duration of the development. Due to the absence of onsite trees, this is recommended to be two pole mounted bat boxes, such as the Eco Rocket Bat Box (or similar agreed).
- Provision of two integrated bat boxes must be provided within the new builds, such as Ibstock Enclosed Bat Boxes (or similar agreed) for pipistrelle bats.
- For lesser horseshoe bats a built structure must be included at the site. This will need to be in place prior to the demolition of the Upper building, or if this is not possible, a temporary Cathedine Night Roost structure (see Appendix VI; Figure 7) will need to be positioned at the site prior to the commencement of development works. This will ensure lesser horseshoe bats are not left without a place to roost. This structure designed by the Vincent Wildlife Trust was field-tested and proved effective, with usage occurring in a matter of weeks.
 - The permanent bat roost structure will need to be weatherproof and about 1m wide x 2m deep and 2.5m high. The structure must be constructed of rendered brickwork, with a pitched roof that comprises a timber frame, covered with a 1f Bitumen lining membrane and a waterproofing layer (either slate tiles or roofing felt), the timber frame below will provide perching opportunities for bats. A ceiling must be created, with a loft hatch opening providing entry into the loft space. Entry into the structure must be provided by a 50cm x 50cm opening. This will allow for internal inspection, and for internal access by bats. A locked gate must be in place to prevent human access.
- Further specification and full details of mitigation provisions will be included in the Method Statement required as part of the EPS licence application process.

Enhancement

- Provision of the pole mounted bat boxes as above will provide long term enhancements for the site.

- Enhancements must be made to the built bat roost structure mentioned above, such as the provision of a timber panel attached to the roof rafters, creating a crevice space for bats and the securing of a triangular plywood baffle to the loft space to control or trap warm air, create different temperature zones and control cold air from the entrance way.
 - Full specification of these enhancement features associated with the permanent bat roost structure will be provided within the EPS licence application method statement.
- 10.5 Good quality mitigation measures can be rendered ineffective if artificial lighting is introduced to areas of the building where bats are roosting, or where the entry/exit points are located. It will be necessary to prepare a sensitive lighting strategy in conjunction with a suitably experienced and competent lighting professional. Focus will need to be on keeping the new roosting locations dark, avoiding any light spill on proposed mitigation features and maintain a dark zone to ensure continued commuting through the site. There are several approaches available for reducing light levels in ecologically sensitive locations. These include appropriate luminaire restrictions, the use of motion-triggered lighting, creation of dark buffer zones, vegetation screening, glazing treatment, cowl fittings, and timing restrictions. Such approaches are outlined in the recently published and freely downloadable 'Bats and Artificial Lighting in the UK: Guidance Note 08/23' by the Institution of Lighting Professionals and Bat Conservation Trust (2023). It is essential that no artificial lighting falls where bat mitigation/enhancement access points will be created, or bat boxes are positioned. Lights fitted high on walls which spread a wide and intense pool of light and remain turned on for long periods or even the whole night are not acceptable.
- 10.6 A demolition timetable of the buildings is recommended avoiding the winter period as this will minimise the risk of disturbing or harming bats which may be using the cavity walls for hibernation. Consequently, it is likely that the buildings will be removed during the active nesting season for birds. As a result, a nesting bird check must be carried out by a suitably qualified ecologist prior to the demolition of the buildings. The check must be carried out within 24 hours prior to the demolition occurring. If nesting birds are noted, all works must stop and the disturbance buffer and mitigation measures will be determined with regard to the bird species found, by a suitably qualified and experienced ecologist. In the event of a Schedule 1 bird (named on Schedule 1 of the Wildlife and Countryside Act 1981 [as amended]) then appropriate survey will be recommended and an appropriate licence sought.
- 10.7 Enhancements proposed for the site are outlined in the Preliminary Ecological Appraisal Report (Revision 1) and the Biodiversity Enhancement Plan for the site.
- 10.8 Building developments often result in the installation of other fitments and fittings, some of which can be harmful to bats. It is essential that no satellite dishes, guttering, vents, lights or air conditioning units are located within close proximity of the bat mitigation and enhancement arrangements.
- 10.9 Bats can be encountered unexpectedly during building work, and if this occurs, it is important to stop activity in the vicinity of the bat(s). It is possible that a bat will be in a torpid state and unable to fly off for several minutes or even up to 20 minutes. Advice must be sought from a licensed ecologist, or if this is not possible, then from Natural Resources Wales. To proceed without taking advice would be an offence under the provisions of the Wildlife and Countryside Act 1981 (as amended).
- 10.10 As mentioned above a designated dark corridor must be retained/ created at the site, to ensure light sensitive species can continue to use the site for commuting purposes. During the bat surveys carried out at the site, a small number of lesser horseshoe bats were seen using the dark central section of the site to commute across the landscape and towards the woodland to the south. As such, a suitable lighting plan with a designated dark zone must be incorporated into the plans and proposals. This area is recommended at the eastern end of the site, where no pathways are proposed. The dark zone must continue from the eastern end of the site and down to the south into the woodland. The lighting plan must be drawn up with reference to Bats and Artificial Lighting in the UK: Guidance Note 08/23. Consideration to internal lighting and how this limits light spill must be included. No external lighting must be provided in this area of the site.

11 Bibliography

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Appendix I Site Plans

Figure 1:Aerial View of the Site

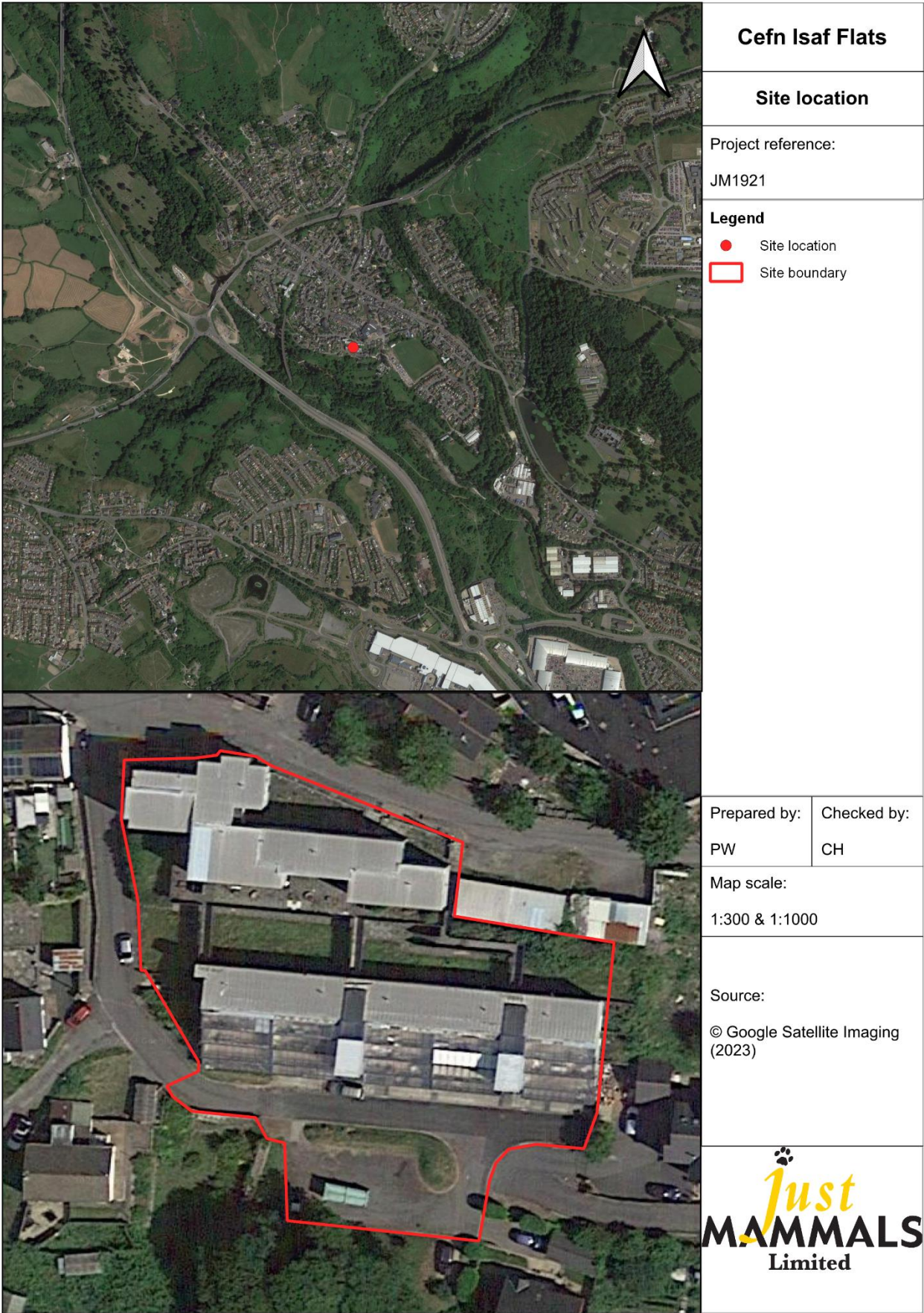


Figure 2:Bat Survey Plan

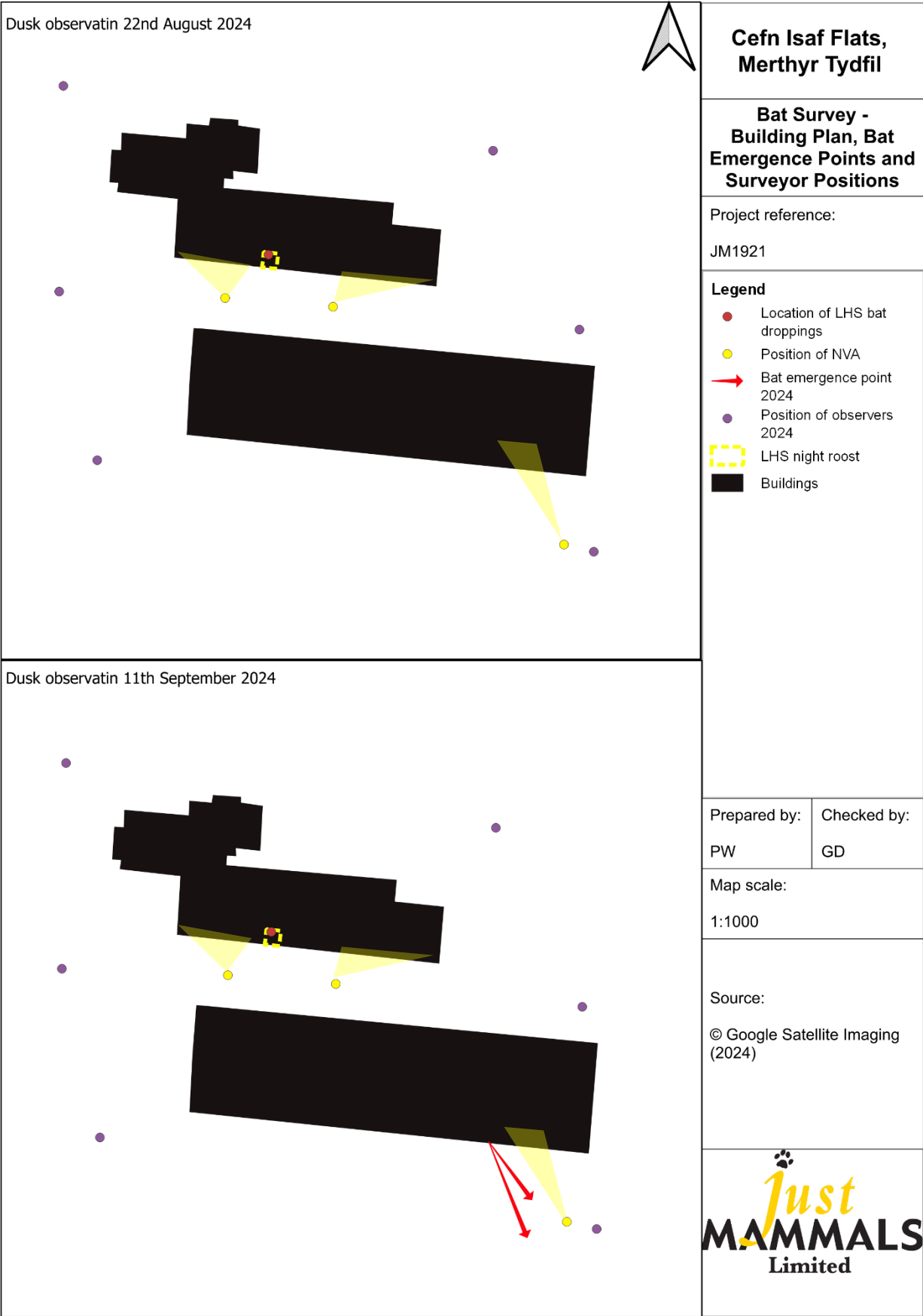
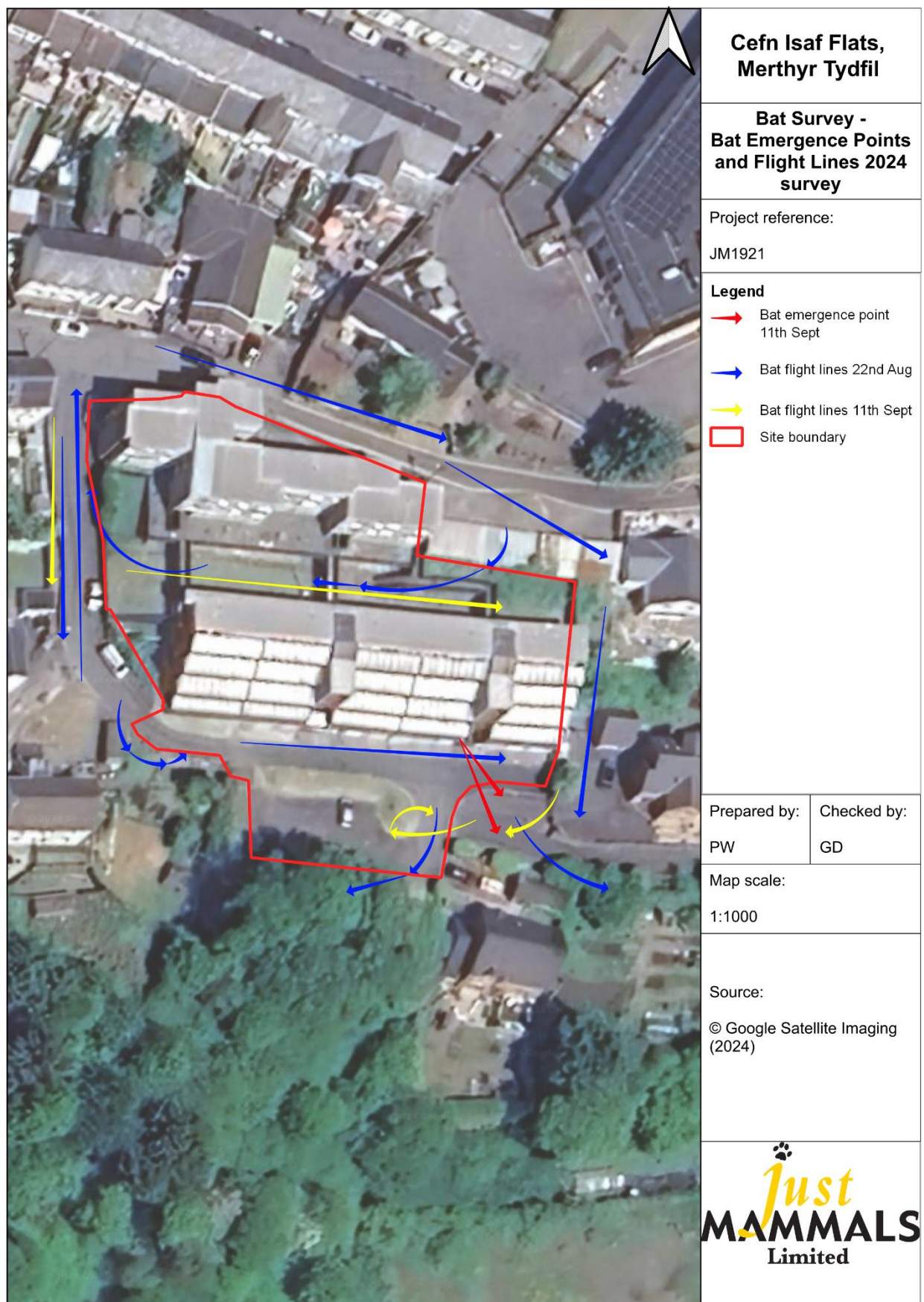


Figure 3: Bat Survey Flight Line Plan



Appendix II Survey Team Experience

Table 3: Survey Team Experience

Name / Position	Licences	Experience
Robert Morgan Ecologist	Bat (NRW) S093965/1: expiry 9th May 2026	Over nineteen years' experience with bats (NRW licence holder), carrying out roost surveys, emergence surveys, radio tracking of lesser horseshoes and monitoring of important sites. Rob has expertise in respect of dormice with over 30 years' experience monitoring dormouse boxes at a Local Nature Reserve and surveying for dormice at various other sites (NRW licence holder). Licensed to disturb barn owls listed under Schedule 1 of the Wildlife and Countryside Act 1981 (as amended) with seven years' experience surveying for this species (NRW licence holder). He has experience surveying for otters, water voles, reptiles, amphibians, birds and marsh fritillary butterflies.
Daniel White Ecologist		Following qualification from the University of South Wales with an MSc in Wildlife and Conservation Management in 2021, Daniel joined Just Mammals Limited and is currently employed as an ecologist. He has experience carrying out bat surveys, botanical surveys and surveys for reptiles, in addition to undertaking practical land management activities whilst volunteering with the Cambrian Wildwood.
Hayley Morgan Survey Assistant		Hayley-Anne Morgan has been an avid lover of nature since childhood, she was fascinated by nature books and spent many hours looking through them. She loves frogs and toads, and recently Hayley took a one-day Bat ecology course which has led to a renewed curiosity in the natural world. Hayley began surveying with Just Mammals in the summer of 2023 and is keen to learn more.
Phoebe Williams Ecologist	Bat (NRW) S093946/1 expiry 9th April 2026	Phoebe holds an MSc in Wildlife and Conservation Management and has over five years' experience with ecological surveys for bats, great crested newts, badgers, reptiles and botany. Phoebe is currently employed as an Ecologist with Just Mammals Limited and is an Associate Member of the Chartered Institute of Ecology and Environmental Management (ACIEM). She holds survey licences for bats and great crested newts in Wales.
Megan Abram Survey Assistant		A graduate from Plymouth University where she studied Animal Behaviour and Welfare: a postgraduate study followed at Cardiff University to examine raptor reintroductions to Wales. She has completed a 3 month placement with North Wales Wildlife Trust and also a 3 month placement at Cikananga Wildlife Rescue Centre. Megan has participated in paid and voluntary work with a variety of nature conservation and ecological consultancy organisations gaining useful experience of native habitat and species protection. She is currently employed as a survey assistant with Just Mammals Limited.
Grace Dooley Principal Ecologist	Bat (NRW) S091842/2 expiry 10th November 2024	Grace holds an MSc in Conservation and Ecology and has over ten years' practical experience with ecological surveys and impact assessments for bats, great crested newts, badgers, birds, reptiles and botanical communities for projects ranging in size from small-scale householder development projects to large, multi-faceted Developments of National Significance (DNS). Grace holds survey licences for bats and great crested newts in Wales and England. She is a Senior Ecologist with Just Mammals Limited and is an Associate Member of the Chartered Institute of Ecology and Environmental Management (ACIEM).
Ben Gibson Survey Assistant		A graduate of Cambridge University in 2011 with a degree in Natural Sciences, he specialised in Plant Science in his final year studies. Surveyor with ten years' experience of undertaking bat surveys, flight line observations, census counts.
Nigel Isaksson Senior Survey Assistant	Bat (NRW) S092876/1 expiry 31st July 2025	A Senior Survey Assistant with the Just Mammals Limited, with eighteen years' experience undertaking bat surveys, flight line observations, census counts, Nigel holds NRW licences to work with bat and dormice.

Appendix III Survey Methodologies

With respect to bats, all outer surfaces of the building were examined from the ground seeking signs of use, including bat faeces (droppings) on walls, ledges, doors and sills. Urine staining on paintwork and window glass, or staining on the surfaces of exposed timbers caused by oil from bat fur were also searched for. A high-powered lamp and binoculars were used to examine Potential Roost Features (PRFs), and any gaps or crevices in the structure were inspected as closely as possible. The context of the building within the surrounding landscape was also assessed at this time.

Internal survey sought the presence of bats or the remains of dead bats (including dead juvenile bats and babies), which might indicate the presence of a maternity roost, and other roosting signs (e.g. droppings), on floors, ledges, walls, stored items, and other surfaces. The roof structure and loft void were inspected for live bats or evidence for their presence, including discarded fragments of insects such as moth wings.

Low-level gaps, cracks and crevices, particularly on north-facing elevations were also sought and inspected, to consider the potential for presence of hibernating bats.

The presence of nesting birds was also considered at the time of assessment. Surveyors recorded any signs of historic and current bird activity including nest-building, feeding at nest sites and any indirect evidence such as nest remains, bird droppings, and feathers.

Survey effort to identify the presence of roosting bats was designed with reference to the Bat Conservation Trusts (BCT) Bat Survey Good Practice Guidelines (Collins 2023), specifically targeting the level of suitability for day roosting bats. If presence had been confirmed, this type of survey also allowed surveyors to count the number of roosting bats, identify species and determine the roost location and key access points.

Surveyors (see Table 3) were positioned at strategic vantage points to obtain maximum coverage of the building during the observation. Surveyors recorded bat activity, particularly focussed their attention on whether bats emerged from the eastern end of the house, whilst documenting the time, bat species and behaviour. Sunset times were established on site using a hand-held geo positioning system (GPS), and observers were able to communicate with each other using walkie talkie radio sets.

Surveyors were equipped with Pettersson D-240X machines. These devices are particularly sensitive and excellent at separating species which employ the middle range frequencies for foraging (45 – 55 kHz). They are therefore very good at identifying the different pipistrelle species (*Pipistrellus* sp.), and the different myotis bats* (*Myotis* sp.) (*myotis bat is a collective term used where the species could not be specifically identified beyond this broad group). The myotis group encompasses seven species of British bat including Alcathe's (*Myotis alcathoe*); Bechstein's (*M. bechsteinii*); Brandt's (*M. brandtii*); Daubenton's (*M. daubentonii*); greater mouse-eared (*M. myotis*); Natterer's (*M. nattereri*); and whiskered bat (*M. mystacinus*).

The Pettersson D-240X machine can be used in heterodyne or time expansion modes and for the purposes of this survey, only the time expansion facility was used. The received signals were then recorded to Roland R0-5, recording devices for later analysis. The time expansion method is similar to making a high-speed tape recording of a bat's ultrasonic call and then playing it back at a slower speed. Digital technology is used to make the recording and slow it down for play back. Since the signal is stretched out in time, it is possible to hear details of the sound not audible with other types of detector.

Time expansion is also the only technique which preserves all characteristics of the original signal, which makes time expanded signals ideal for sound analysis. In addition to the simple echo-location calls which can be used for commuting, enabling the bat to find its way about, bats will also produce feeding 'buzzes' when foraging. These buzzes occur when the bat closes in on its prey and are a consequence of the Doppler Effect, which results in a feeding 'buzz' as the reflected signal shortens when the animal approaches its prey. Such buzzes are used to assess the importance of an area for foraging. The recorded echo-location calls are then interpreted using BatSound sound analysis software. By use of the software it is possible to separate the different species by analysis of the sonograms produced.

A night vision aid (NVA) was utilised in order to complement the emergence data gathered by trained observers. A digital video camera with night-shot / infrared capability, along with ancillary infrared illumination coupled with a full-spectrum Audiomoth bat detector was set up at strategic locations. Please refer to the survey plans in the appendices for further information on where the equipment was deployed.

Appendix IV Site Photographs

Plate 1: Western side of the Upper Building



Plate 2: Southern elevation of the Lower Building



Plate 3: Missing blocks at the top of storerooms on the southern side of the Upper Building



Plate 4: Central section, looking east



Plate 5: Lesser horseshoe droppings inside open storeroom (see Plate 6)



Plate 6: Storeroom with opening at southern side of the Upper Building



Plate 7: South-east side of Lower Building, bat exit points 2024



Plate 8: Bat exit points at the top of the roller shutter door



Appendix V Dusk Observation Results

Table 4: Cefn Isaf Flats, Cefn Coed y Cymmer - Dusk Observation 22nd Aug 2024

Time (24 Hour Clock - hours)	Species (Common Name)	Recording No.	Observed Activity
20.24 hours	Common pipistrelle	1 LP	Commuting southwest at the southern end of the site
20.26 hours	Common pipistrelle	1 DW	Commuting north-west and south-east between the observer and the Upper building
20.36 hours	Soprano pipistrelle	2 DW	Commuting north-west and south-east between the observer and the Upper building
20.36 hours	Common pipistrelle	1 MA	Commuting around from the west side of the building
20.37 hours	Soprano pipistrelle	1 PW	Flew around from the Upper building across the east side and through the centre of the site, off to the west
20.41 hours	Common pipistrelle	1 GD	Commuting north to south along western side of the site
20.42 hours	Soprano pipistrelle	2 GD	Flew around from the eastern side of the Upper building, around to the north-west corner, through central section
20.42 hours	Common pipistrelle	1 BG	Flew around from the eastern side of the Upper building, around to the north-east corner
20.47 hours	Soprano pipistrelle	2 LP	Foraging at the southern end of the site
20.48 hours	Common pipistrelle	2 BG	Foraging west to east at the northern end of the site
20.48 hours	Soprano pipistrelle	3 LP	Foraging at the southern end of the site
20.49 hours	Soprano pipistrelle	4 LP	Foraging at the southern end of the flats
20.55 hours	Common pipistrelle	2 MA	Heard but not seen
20.56 hours	Soprano pipistrelle	5 LP	Foraging at the southern end of the site
20.59 hours	Lesser horseshoe	2 PW	Faint, heard but not seen, fly by
20.59 hours	Common pipistrelle	3 GD	Heard but not seen
21.00 hours	Myotis sp.	3 MA	Heard but not seen
21.01 hours	Common pipistrelle	3 BG	Foraging east to west at the northern end of the site
21.05 hours	Common pipistrelle	3 DW	Foraging along the trees to the north of the building
21.05 hours	Natterer's bat	6 LP	Foraging around trees to the south of the site
21.06 hours	Lesser horseshoe	3 PW	Flying in the central section of the site
21.06 hours	Myotis sp.	4 GD	Heard but not seen
21.37 hours	Soprano pipistrelle	7 LP	Foraging at the southern end of the site
21.40 hours	Common pipistrelle	4 MA	Heard not seen
21.44 hours	Common pipistrelle	5 MA	Foraging near streetlights at the south-west corner of the site
21.45 hours	Common pipistrelle	5 GD	Heard but not seen
21.47 hours	Common pipistrelle	4 BG	Heard but not seen
21.49 hours	Lesser horseshoe	8 LP	Commuting at the southern end of the site

Table 5: Cefn Isaf Flats, Cefn Coed y Cymmer Dusk Observation 11th Sept 2024

Time (24 Hour Clock)	Species (Common Name)	Recording No.	Observed Activity
19.50 hours	Soprano pipistrelle x2	1 LP	Both emerged from at the top of the roller shutter door at the southern elevation of the Lower building, heading north
19.52 hours	Soprano pipistrelle	1 MA	Heard but not seen at the south-west corner of the site
20.08 hours	Soprano pipistrelle	2 LP	Foraging south to north at the southern end of the site
20.28 hours	Common pipistrelle	1 DW	Heard but not seen at the north-east corner of the site
20.28 hours	Common pipistrelle	1 RM, 1 HM	Commuting across the site between the two buildings heading east to west
20.32 hours	Soprano pipistrelle	2 DW	Heard but not seen at the north-east corner of the site
20.32 hours	Soprano pipistrelle & brown long-eared	3 LP	Foraging at the southern end of the site
20.45 hours	Common pipistrelle	4 LP	Foraging at the southern end of the site
20.58 hours	Brown long-eared	2 HM	Heard but not seen at the north-eastern end of the site

Table 6: Passive monitoring device 28th Aug – 30th Aug 2024 and 12th Sept – 19th Sept 2024

Date	Time (24 Hour Clock)	Species (Common Name)
28/08/2024	20.57 hours	Common pipistrelle (faint pass)
29/08/2024	00.39 hours	Lesser horseshoe
	01.13 hours	Lesser horseshoe
	03.10 hours	Lesser horseshoe
	03.19 hours	Lesser horseshoe
	23.00 hours	Common pipistrelle (faint pass)
	23.14 hours	Lesser horseshoe
30/08/2024	01.32 hours	Brown long-eared (faint pass)
	02.31 hours	Lesser horseshoe
12/09/2024	20.07 hours	Common pipistrelle (faint pass)
13/09/2024	19.55 hours	Common pipistrelle (faint pass)
14/09/2024	No recordings	
15/09/2024	20.02 hours	Common pipistrelle

16/09/2024	20.00 hours	Common pipistrelle
17/09/2024	04.15 hours	Myotis sp. (faint pass)
	19.59 hours	Common pipistrelle (faint pass)
	20.03 hours	Common pipistrelle (faint pass)
	20.07 hours	Common pipistrelle (faint pass)
18/09/2024	19.52 hours	Common pipistrelle & social call (faint pass)
	19.53 hours	Common pipistrelle (faint pass)
	19.54 hours	Common pipistrelle (faint pass)
	19.55 hours	Common pipistrelle & social call (faint pass)
	19.56 hours	Common pipistrelle (faint pass)
	20.01 hours	Common pipistrelle (faint pass)
	20.03 hours	Common pipistrelle (faint pass)
	20.11 hours	Myotis sp. (faint pass)
19/09/2024	02.18 hours	Common pipistrelle ((faint pass)
	02.48 hours	Lesser horseshoe x2
	05.39 hours	Lesser horseshoe

Figure 4: Screenshot from NVA at eastern end of southern side of Upper building



Figure 5: Screenshot from NVA from western end of southern side of Upper building



Figure 6: Screenshot from NVA at the south-eastern corner of the Lower building



Mitigation

Figure 7: Plywood panel enhancement feature



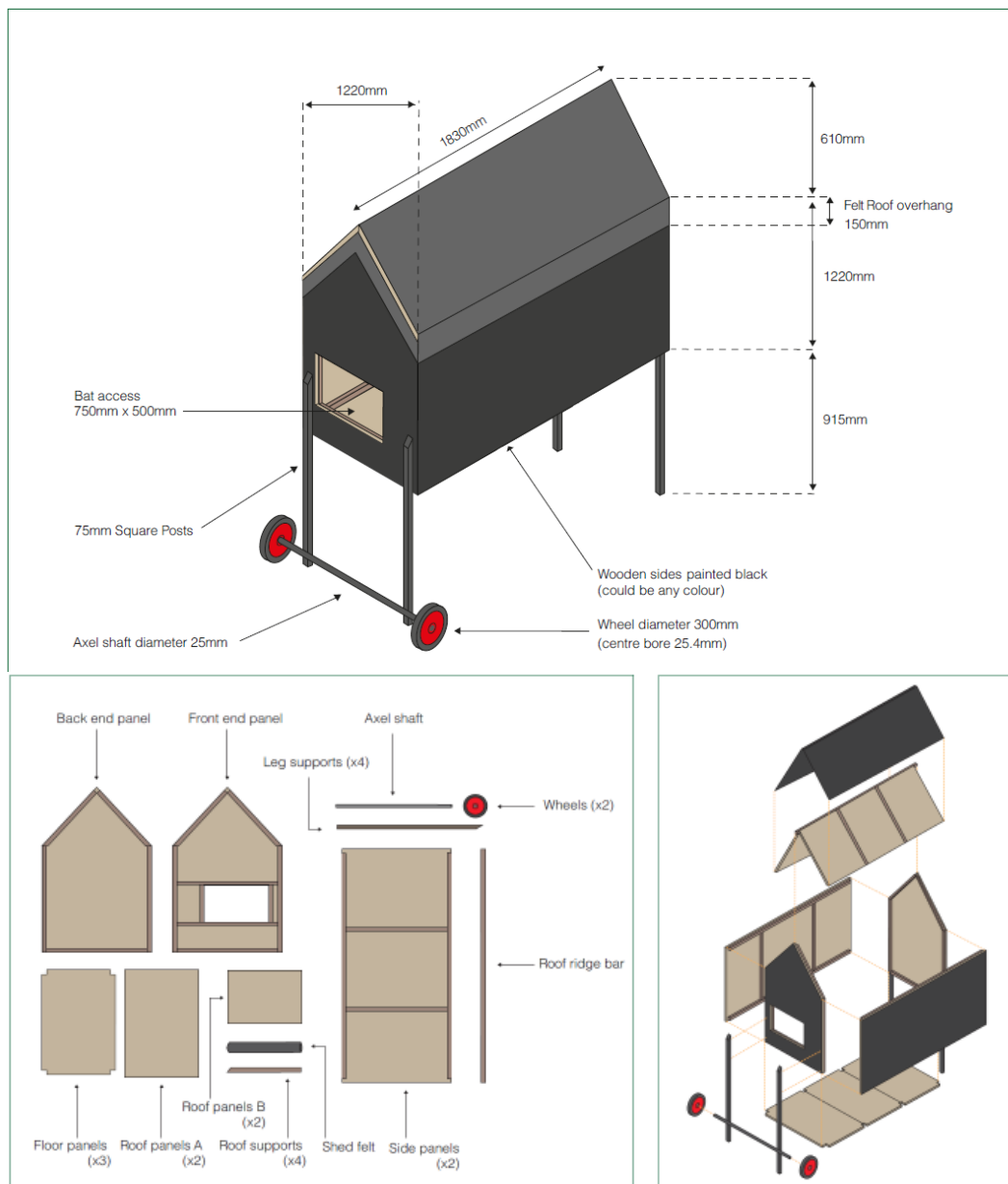
Figure 8: Baffle enhancement feature



Figure 9: Cathedine Night Roost Design (© Vincent Wildlife Trust)

Cathedine Night Roost Design

the Vincent Wildlife Trust



Appendix VI Ecology of British Bats

There are at least 18 species of bats breeding in Britain. Most of them are regarded as threatened due to a variety of factors including habitat loss, intolerance and disturbance/damage or loss of roosts. Of these species a number regularly use buildings at certain times of year in order to find safe secure roost sites. Often several different species can use a building over the course of the year, and not all species are present at the same time, making assessment of their presence complex.

Bats are highly mobile flying mammals, which in Britain, feed entirely on insects. They have evolved over seventy million years and have developed sophisticated mechanisms to allow them to effectively 'see' in the dark by using sound waves. This system is called echo-location which enables them to track and hunt down small moving insects whilst in flight, rather like radar does in a modern military fighter aircraft. It is possible to record this sound, and because each species of bat echo-locates in a different way, determine what the species is without actually handling the animal which made the call.

In winter, when their prey is scarce, British bats hibernate or enter torpor, in cool parts of caves, buildings (cavity walls), and tree cavities. They may wake occasionally and will feed if evening temperatures are greater than 7°C, when flying insects can be active. Generally however, activity during cold winters is very limited and bats only become fully active in spring, with late March and early April being a critical time for animals desperately trying to save energy whilst gaining weight. Disturbance during these months can therefore be more devastating to bats than at other times of year.

By late spring female bats will gather together in maternity roosts in order to give birth and rear their single baby in June. Such maternity roosts are often near to important foraging areas in order to save energy as flight requires vast energy resources. Flight routes to and from such roosts can therefore also be important and some bats are extremely light averse preferring dark locations without street or security lamps which can force them to take complex routes to reach foraging areas. Such lighting can also badly degrade foraging areas where they occur close to buildings and hedgerows and tree lines can be particularly important areas for bat foraging to take place particularly when close to the roost building.

Whilst females form maternity colonies, usually in warmer roofs or trees, male bats tend to seek out cooler sites which may not be so close to the foraging areas. Males are often solitary and do not exhibit the social behaviour that marks out females during the birthing period. Non-breeding females will also roost in this way, when they have no need to spend energy on raising a single baby.

Several British bat species are known to rely heavily on buildings to roost. Of these species, the most likely are the soprano pipistrelle bat and the common pipistrelle. Other bat species regularly found in buildings are the brown long-eared bat; Natterer's bat; Brandt's bats and whiskered bat. Pipistrelle species and the small myotis or mouse-eared species (Brandt's, whiskered etc) often favour locations at the ridge or around the exterior shell of the structure. Brown long-eared and Natterer's tend to prefer living within the roof area of a building – large lofts being popular.

Other species that are known to use the internal areas of built structures such as barns include the two horseshoe species, the greater horseshoe bat (*Rhinolophus ferrumequinum*), and lesser horseshoe bat, as well as western barbastelle bat (*Barbastella barbastellus*).

Appendix VII Relevant Legislation

Bats

All species of bat in Britain, and their places of rest are protected under the provisions of the Wildlife and Countryside Act 1981 (WCA), Section 9(1), 9(4)(a) and 9(4)(b) as amended by Schedule 12 of the Countryside and Rights of Way Act 2000. Further protection is afforded by the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019. In relation to structures used by bats for shelter or protection (i.e. roosts), this legislation makes it an offence to either intentionally or recklessly damage, destroy or obstruct access to any site used by bats, whether bats are present at the time or not, or to intentionally or recklessly disturb bats within a roost.

Infringements under this legislation include building demolition, removal of hollow trees, blocking, filling or installing grills over old mines or tunnels, building alteration or maintenance work, re-pointing of stone walls, getting rid of unwanted bat colonies, re-roofing, remedial timber treatment, re-wiring or plumbing in roofs, treatment of wasps, bees or cluster flies (Mitchell-Jones, 1992; Childs, 2001). Greater horseshoe bat, lesser horseshoe bat, Bechstein's bat, greater mouse eared bat and barbastelle are included in Annex II of the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019 and hence require special protection.

Maximum penalties for committing offences relating to bats or their roosts can amount to imprisonment for a term not exceeding six months or to fines of up to Level 5 on the standard scale under the Criminal Justice Act 1982/1991 (i.e. £5000 in April 2001) per roost or bat disturbed or killed, or to both. Bodies corporate and their directors/secretaries are liable for offences under the 2017 Regulations and the WCA. Additionally, where such an offence results in the offender benefitting in a monetary form from the illegal action, confiscation or civil recovery of the proceeds can occur under the Proceeds of Crime Act 2002.

It is sensible to assess as soon as possible if bats are present at potential sites for development – preferable before the land is acquired. In some cases the period required for adequate survey work may span more than one calendar year. If a development, including demolition or change of use, is likely to impact on bats and their roosts then a licence will usually be required. Adequate survey results are a necessary input to any licence application.

The law with respect to dwellings and other structures is applied equally. Where disturbance is deemed likely to have a significant effect on bats to survive, breed and rear their young or will affect the local distribution and abundance of the species, a European Protected Species licence issued by Natural Resources Wales. A licence application must demonstrate that the development will not be detrimental to the maintenance and conservation status of the species concerned.

This explanation must be regarded only as a guide to the law. For further details, reference must be made to the Wildlife and Countryside Act 1981 (as amended), the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019, and the Countryside and Rights of Way Act 2000.

Wild birds

All wild birds, their eggs and nests are protected by The Wildlife and Countryside Act 1981 (as amended). It is an offence, with certain exceptions, to:

- intentionally kill, injure or take any wild bird;
- intentionally take, damage or destroy the nest of any wild bird while it is in use or being built;
- intentionally take or destroy the egg of any wild bird;
- sell wild birds or put them on display for sale;
- use traps or similar items to kill, injure or take wild birds; and
- intentionally or recklessly disturb any wild bird listed on Schedule 1 while it is nest building, or at a nest containing eggs or young, or disturb the dependent young of such a bird.

Penalties that can be imposed for criminal offences in respect of a single bird, nest or egg contrary to the Wildlife and Countryside Act 1981 (as amended) is an unlimited fine, up to six months imprisonment or both. In exceptional cases NRW and Natural England issues licences for specific purposes, so that legitimate work may be undertaken without breaking the law.

Appendix VIII EPS Licensing

Under the Conservation of Habitats and Species Regulations (Amendment) (EU Exit) 2019 a licence can only be issued if Natural Resources Wales are satisfied that:

- there are imperative reasons of overriding public interest including those of a social or economic nature;
- 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.

Natural Resources Wales will require a copy of the full planning consent, as well as an explanation of why there is a need to carry out the proposed work and what alternative solutions have been considered (e.g. other sites) and why they have been discounted. The alternative of retaining the roost within the development must be considered. The last point will depend on the possibility of implementing appropriate mitigation and on assurances that it can be and will be carried out and maintained and the results monitored. Natural Resources Wales aim to process applications within 30 working days, but in practice licences often take longer depending on the number of applications being processed at any one time.

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Clients include government departments, local and regional authorities, development agencies, commercial and industrial enterprises as well as statutory nature conservation organisations, wildlife trusts and other charitable bodies.

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***Natural* Problem Solvers**
Just Mammals Limited, Suite 131-136, Plas y Ffynnon, Cambrian Way,
Brecon LD3 7HP Tel: 01874 623616