

Tredegar Park Lodge
Tredegar Park
Cardiff Road
Newport
NP10 8TF



An **Ecological Survey**
Report By:



On **Behalf Of:**



September **2023**

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Project Name	Tredegar Park Lodge, Tredegar Park, Cardiff Road, Newport NP10 8TF
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Executive Summary

- 1.1 Two buildings at Tredegar Park in Newport, namely the Lodge and the Park Ranger Office Building are to undergo works. Plans include the renovation of the Lodge into a café. Plans for the Park Ranger Office building are not yet known. To support the proposals, and inform the planning process, Amey Consulting were initially commissioned to undertake a Preliminary Ecological Appraisal at the site in October 2022, recommendations from which include hibernation survey and follow-up activity/emergence observations. Following this initial Preliminary Ecological Appraisal, Just Mammals Limited was commissioned to carry out required follow-up survey for bats and nesting birds.
- 1.2 An update Preliminary Roost Assessment and a hibernation survey were completed by Just Mammals Limited in the winter of 2023. Day time inspection of the buildings found no evidence for the presence of bats, by way of live bats, bat droppings, or insect remains. The Park Ranger Office building was assessed as having negligible suitability for hibernating bats, due to the lack of suitable features for hibernation. Therefore, the hibernation survey focused on the Lodge, given its suitability for hibernating bats. No hibernating bats or evidence to suggest hibernation was found inside the Lodge during either of the survey visits, or as a result of automated survey. As a result, it is concluded that the buildings are not used for hibernation by bats at this time.
- 1.3 Two dusk bat emergence/activity observations were conducted in May and June 2023 to establish with a high degree of certainty if bats are using any part of the buildings for summer roosting, or are likely to be absent. The observations were carried out by a team of experienced, licenced ecologists and observers, using high quality detection equipment, and a night vision aid infra-red video camera. No bats were seen to emerge from either of the buildings. Therefore, the Lodge and Park Ranger Office are assessed to not currently be bat roosts.
- 1.4 Assessment also considered the presence of breeding birds. An historic nest was noted in the brickwork at the western side of the Park Ranger Office. No active nests were found during the survey effort. 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.
- 1.5 In order to comply with current Welsh Planning Policy (Future Wales and PPW11), it will be necessary to provide Net Benefits for Biodiversity, so that the site offers features to support wildlife. General proposals for measures to promote wildlife and nature conservation are contained in this report to be provided within the design plans of the re-developed site.

2 Introduction

- 2.1 Situated at the northern edge of Tredegar Park, to the south-west of Newport, the buildings subject to assessment are located centrally at National Grid Reference (NGR) ST 29229 85969, at an altitude of approximately 11m Above Ordnance Datum. The buildings include Tredegar Park Lodge, a former residential dwelling, and the Park Ranger Office building.
- 2.2 Proposed works include the renovation of the Lodge into a café, which will involve replacement of existing windows and doors and masonry repairs. Plans for the Park Ranger Office are not yet known. To support the proposals, and any future plans, Amey Consulting were initially commissioned to undertake a Preliminary Ecological Appraisal (PEA) at the site in October 2022, recommendations from which include a hibernation survey and follow-up activity/emergence observations at the site. Following the PEA, Just Mammals Limited was commissioned to consider the ecological features of the site, and the actual or potential presence of protected species. An update Preliminary Roost Assessment (PRA) was completed by Just Mammals Limited in January 2023.
- 2.3 It was concluded during the PRA that there was a 'moderate' level of suitability for roosting bats in both buildings. In accordance with this level of suitability, as described by bat survey guidelines (*Collins 2016*), two dusk emergence/activity observations were carried out in 2023. This level of survey data is necessary to comply with the local planning authority (LPA) survey standards, and to provide the level of survey data needed if the development activity subsequently requires a European Protected Species (EPS) licence, issued by Natural Resources Wales (NRW).
- 2.4 Objectives of the survey effort included:

- determining the presence of bat roosts and, if found, the bat species, roost type (maternity, day roost, hibernation etc) and any other relevant details relating to the roost structure and associated access point(s);
- identifying any important bat foraging or commuting habitat in relation to the site;
- determining the presence of nesting birds on site;
- gathering sufficient information to accurately assess whether bats or nesting birds were reasonably likely to be impacted by the proposed work; and
- using the survey findings to recommend appropriate mitigation and enhancement measures for safeguarding ecology on site, and indicate the need (or otherwise) for an EPS licence to be issued for the development activity;
- gather information from the site to determine if further survey effort is required for protected species, such as reptiles or amphibians;
- gather sufficient information to be able to make suitable recommendations for protecting ecology at the site.

2.5 Hibernation survey, as recommended by Amey Consulting, was undertaken by Just Mammals Limited in January and February 2023. This report provides the survey data of the update PRA conducted on both buildings, hibernation survey results, as well as follow-up dusk observations in May and June 2023. Conclusions and appropriate recommendations are presented in light of the data gathered, as well as the survey results.

3 Survey Team Experience

3.1 Leading the survey effort was Phoebe Williams, who is author of this report, assisted by Grace Dooley. The bat activity survey was undertaken by a small team of ecologists and surveyors. Their experience and details of equipment used are shown below.

Table 1: Survey Team Experience

Name	Licences	Experience
Grace Dooley BSc (Hons) MSc ACIEEM Senior Ecologist	Bat (NRW) S091842/1 expiry 10th November 2024	Grace holds an MSc in Conservation and Ecology and has over 8 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 great crested newts in England. She is a Senior Ecologist with Just Mammals Limited and is an Associate Member of the Chartered Institute of Ecology and Environmental Management (ACIEEM).
Phoebe Williams BA (Hons) MSc Ecologist (TE)		Phoebe is a Geography graduate Exeter University, and a former trainee at Gwent Wildlife Trust she has completed a Natural Talent trainee programme, studying Hemiptera at the National Museum of Wales. Practical experience includes survey work for dormice, botany, newts, reptiles, and invertebrates. Phoebe has recently completed an MSc in Wildlife and Conservation Management at the University of South Wales. Phoebe is an Ecologist with Just Mammals Limited
Phil Morgan CEnv, MCIEEM Assistant Principal Ecologist (TE)	Bat (NRW) S091084/1 expiry 8th April 2024	Over 30 years' experience of undertaking building, tree and cave surveys for all bat species. In addition he has undertaken foraging and flight line surveys using heterodyne and other echo location equipment and in 1991 made a significant contribution to a Bristol University run project, which established the methodology used in the National Bat Monitoring Programme. Phil has also undertaken numerous radio tracking exercises on both lesser horseshoe and Daubenton's bats. He holds NRW licence for other protected species including dormice, otter, water vole and great crested newt.
Daniel White LLB MSc QCIEEM Assistant Ecologist (TE)		Following qualification from the University of South Wales with an MSc in Wildlife and Conservation Management in 2021. Daniel has experience of reptile surveys, having previously conducted presence/absence surveys for non-native Aesculapian snakes. In addition to carrying out botanical and river surveys and small mammals trapping, he has undertaken practical land management activities whilst volunteering with Cambrian Wildwood
Nigel Isaksson Senior Survey Assistant (TE)	Bat (NRW) S092876/1 valid to 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.
Vicki Powell BSc (Hons) PhD Survey Assistant (TE)		Vicki has a PhD in the conservation and ecology of an endangered species of bat. She has previously worked as an Ecological Consultant and has assisted with various protected species surveys, including bats, barn owls, great crested newts, badgers, reptiles and nesting birds. Vicki joined Just Mammals Limited in May 2023 to assist with bat surveys.

Xenia Williams BSc (Hons) MSc Survey Assistant (TE)		Xenia completed her BSc in Zoology at Cardiff University in 2017, and went on to study at the University of South Wales to undertake her MSc in Wildlife and Conservation Management. Xenia began her conservation career in 2022 when she joined Forest research as a Technical Analyst. She has great interest in the outdoors, and British wildlife. She started working with Just Mammals Ltd in April 2022 as a survey assistant, completing bat surveys, and helping with a water vole translocation project in the Gwent Levels.
Leigh Porter Survey Assistant (TE)		Leigh's enthusiasm and knowledge of all things wildlife is mainly self-taught. He is particularly interested in mammals and birds and is always looking to develop his knowledge further. Leigh previously volunteered with Vincent Wildlife Trust (VWT) assisting with bat counts of known roosts in Mid Powys. He is keen to improve skills in the environment and conservation sector and so became a survey assistant with Just Mammals in Spring 2023.
Ben Gibson BA (Hons) Survey Assistant (TE)		A graduate of Cambridge University with a degree in Natural Sciences, Ben specialised in Plant Science in his final year studies. Ben is a Survey Assistant with the Just Mammals Limited with fourteen years' experience of undertaking bat surveys flight line observations, and census counts

4 Survey Methodology

- 4.1 Prior to the site visit, a desktop study was undertaken, which involved a standard search area of a 2km radius from the site (using a central grid reference), using the web-based MAGIC database (www.MAGIC.gov.uk). Details of statutory sites, designated for nature conservation were obtained. These included sites with statutory designations of international importance; Special Areas of Conservation (SACs), Special Protected Areas (SPAs), and Ramsar sites, as well as sites of national importance; Sites of Special Scientific Interest (SSSIs), and National Nature Reserves (NNRs).
- 4.2 The South East Wales Biodiversity Records Centre (SEWBReC) was consulted for records of Bats and Roof-nesting birds (BARB). This includes a search for bats within 2km of the site, roof-nesting birds within 150m of the site and SSSIs and SACs (designated for presence of bats) within 10km of the site.
- 4.3 A Preliminary Roost Assessment (PRA) was conducted on the 17th of January 2023. Details of the survey activity, and weather conditions, are provided in Table 3. The PRA was undertaken with the aim of detecting any signs of bat or bird presence. With respect to bats, 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 torch 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 buildings in the surrounding landscape was also assessed at this time.
- 4.4 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, and other surfaces. The roof structure and lofts were inspected for bats or evidence for their presence, including discarded fragments of insects, such as moth wings, which might indicate feeding activity.
- 4.5 Hibernation survey involved two internal inspections of the Lodge building, and inside the loft space looking for any hibernating bats. Inspection of low level cavities on the north side of the building was also carried out with the use of an endoscope. Two inspections were carried out in January and February 2023.
- 4.6 Automated survey was undertaken as part of the hibernation survey. A Song Meter Mini Bat detector was positioned in the Lodge for a period of two weeks in January and again in February 2023. The device was attached to a staircase, in a central ground-floor position within the lodge.
- 4.7 Two dusk observations for bats were conducted in the summer period of 2023. The first dusk observation was undertaken by a team of eight surveyors, and the second observation was undertaken by five surveyors. Additional surveyors were present during the first observation, for training purposes. In order to carry out the observations, the 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*).

- 4.8 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 downloaded to Roland R-05 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.
- 4.9 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.
- 4.10 A night vision aid (NVA) was utilised to complement the emergence data gathered by trained observers. A Sony CX-11 camera, with night shot capability, and with additional output provided by a Nightfox XB5 torch emitting infra-red light, at a wavelength of 850nm, were set up at the rear of the Park Ranger Office, focusing on the southern elevation, to record any emerging bats from the potential access points noted. During the first observation the NVA was set up at the south-west corner of the Park Ranger Office, and during the second observation the NVA was set up at the south-east corner of the Park Ranger Office.
- 4.11 Nesting birds were also considered at the time of assessment, with the surveyor looking for signs of current and historic bird activity, nest remains, evidence of collections of bird dropping, feathers or any other indications of use by birds.

5 Site Description

- 5.1 The site is located at the south-western edge of Newport, and comprises two detached buildings, Tredegar Park Lodge and the Park Ranger Office. The buildings are located to the south of the northern area of Tredegar Park, just north of the A48 Southern Distributors Road.
- 5.2 Once a residential dwelling, the Lodge now stands vacant at the edge of the park. It is a two-storey building, roughly square in shape featuring a pyramid roof that is covered with clay tiles. Security provisions have been made, as the lodge is currently unoccupied. Ground floor level windows have been covered with metal sheeting, and plywood board cover windows at the first floor level. Entrance into the lodge is via a locked metal door on the southern side. A brick chimney stands at the centre of the roof, and two bay windows are positioned at the western end, the roofs of which are in a poor condition. A standard loft hatch is present and accessible above the first floor landing, and was open at the time of the survey. Loft inspection revealed a hessian backed bitumen lining membrane, covered with chicken wire and fibreglass insulation throughout. The space is currently empty and unused.
- 5.3 Adjacent to the lodge, just north-east is the Park Ranger Office. This is a single storey brick building divided into three rooms; an office space, storeroom, and toilet. Two loft hatches are present, one above the office and another above the storeroom. There is no insulation within the loft space, a lining membrane with chicken wire underside is present, like that of the Lodge. The clay tile covered roof is pitched, with hipped sections at the north and north-west ends. Small windows on the northern elevation are covered with metal grids. Dense ivy covers the rear south-east end of the building. Rainwater goods are a mix of metal and plastic, and soffits are timber.
- 5.4 The buildings are situated adjacent to woodland habitat, to the north and south. Through the woodland to the north runs the Ebbw River, which flows east to west. To the west of the site is an area of amenity grassland, the main roads the A48 and M4 are located to the west and south.

6 Survey Constraints

- 6.1 Access to all parts of each building was possible, there were no major constraints to the survey effort.

7 Desktop Study

- 7.1 Sites of nature conservation interest within a 2km radius of the site were identified using the web-based MAGIC database (www.MAGIC.gov.uk). These included sites with statutory designations of international importance; SAC's, SPA's, and Ramsar sites, as well as sites of national importance; SSSI's, and NNR's. Details of Sites Important for Nature Conservation were also noted. Their details are shown below in Table 2.

Table 2: Sites Designated for Nature Conservation

Site and Designation (In Order of Distance)	Distance and Direction to Site	Primary Reasons for Designation
Gwent Levels St Brides SSSI	1.4km to the south	Network of ditches or reens, fen and reed bed habitats and for a number of priority species
Ruperra Castle and Woodlands SSSI	6.3km to the west	Presence of a maternity colony of bats

- 7.2 Given the small scale proposals and distance of the above designated sites from the Lodge and Park Ranger Office building, the assessed impact to the designated sites is considered to be negligible, and are therefore not considered any further in this report.
- 7.3 A record search was commissioned from SEWBRc (unique LERC Reference: 0223-806), providing information on designated sites, and bats and roof nesting birds within 1km. The search returned a total of 14 bird records and 69 bat records, no historic records relate to the survey site itself.
- 7.4 Of the 14 bird records, the closest are swallow (*Hirundo rustica*), blue tit (*Cyanistes caeruleus*) and herring gull (*Larus argentatus*) just over 500m from the site.
- 7.5 Of the 69 bat records, the closest are common pipistrelle (*Pipistrellus pipistrellus*) and Daubenton's bat (*Myotis daubentonii*) just under 200m from the site, both of which were recorded as foraging. Slightly further afield within the 200-500m range from the site species recorded include soprano pipistrelle (*Pipistrellus pygmaeus*) and Noctule (*Nyctalus noctula*). Over 500m from the site species recorded include Nathusius's pipistrelle (*Pipistrellus nathusii*), whiskered bat (*Myotis mystacinus*), and brown long-eared (*Plecotus auritus*).

8 Survey Results

- 8.1 Table 3 below summarises dates, times, and weather conditions, when survey work took place, with wind speeds recorded using the Beaufort scale.

Table 3: Summary of Survey Activity and Weather Conditions

Date	Survey Type	Timing	Weather Conditions
17/01/2023	Daytime internal and external inspection and placement of automated device inside lodge (PW, GD)	10:30 – 12.00 hours Greenwich Mean Time (GMT)	Air temperature: -1°C Cloud cover: 2/8 oktas Wind speed: F1, calm Conditions: Dry
31/01/2023	Removal of automated device from lodge (CH)	10.15 – 10.45 hours GMT	N/A
13/02/2023	Placement of automated device inside lodge (PW)	10.00 – 10.30 hours GMT	N/A
28/02/2023	Daytime hibernation inspection of lodge and removal of automated device (PW)	10.30 – 11.15 hours GMT	Air temperature: 6°C Cloud cover: 7/8 oktas Wind speed: F1, calm Conditions: Dry
15/05/2023	Dusk emergence/activity observation (PW, XW, PM, VP, LP, DW, NI, BG)	20.30 – 22.00 hours British Summer Time (BST) (Sunset 20.57 hours)	Air temperature: 15.2 °C Cloud cover: 1/8 oktas Wind speed: F1, calm Conditions: Dry

19/06/2023	Dusk emergence/activity observation (PW, PC, LP, VP, PM)	20.15 – 21.43 hours BST (Sunset 20.34 hours)	Air temperature: 18.4°C Cloud cover: 2/8 oktas Wind speed: F1, calm Conditions: Dry
Surveyors	Daniel White (DW); Phoebe Williams (PW); Ben Gibson (BG); Phil Morgan (PM); Leigh Porter (LP); Vicki Powell (VP); Nigel Isaksson (NI); Grace Dooley (GD); Carola Hoskins (CH); Xenia Williams (XW); Paula Cervi (PC);		

- 8.3 The PRA was undertaken on the 17th of January 2023. Survey included internal inspection of the loft voids and buildings, followed by an external assessment. No live bats and no evidence to suggest the presence of bats, by way of droppings and/or inspect remains indicative of bat feeding activity were found. Rat (*Rattus sp.*) droppings were found within both loft spaces of the Lodge and Park Ranger Office.
- 8.4 Externally, surveyors recorded several Potential Roost Features (PRFs) associated with both buildings. These are features of the buildings which are often utilised as resting places for bats. PRFs offering moderate opportunities for crevice-roosting bats were noted to include:
- missing ridge tiles on the north-west end of the Lodge;
 - missing roof tiles on the south side of the Lodge;
 - lifted ridge tiles on the Lodge;
 - low level access point inside the Lodge and into cavity wall at the northern end of the Lodge;
 - gap between wall and soffits on the northern end of the Park Ranger Office;
 - missing tile on the northern end of the Park Ranger Office;
 - lifter tiles at rear south-west corner of the Park Ranger Office.
- 8.5 The first hibernation assessment was carried out as part of the PRA on the 17th January 2023. The assessment revealed no suitable features associated with the Park Ranger Office building for hibernating bats. Assessment of the Lodge included an internal inspection of the building and loft, and an endoscopic inspection of low level features at the northern elevation. No live bats or evidence for the presence of bats was found. The cavities inspected at the northern side of the Lodge have no real depth, extending approximately 10cm.
- 8.6 A second hibernation inspection was undertaken on the 28th February 2023, of the Lodge only. This inspection also found no live bats or evidence to suggest the presence of bats.
- 8.7 In accordance with an assessment of moderate potential for bat roosts to be present in the buildings, the PRA was followed by two dusk activity observations, which were carried out a month apart, in the summer period. Results of the dusk observations are summarised below and full details are provided in Tables 4 and 5 in Appendix II.
- 8.8 Both observations were undertaken in suitable conditions, and without any major limitations or constraints. During the first observation, species recorded include common pipistrelle, soprano pipistrelle and noctule. Most activity was noted at the east side of the Lodge, foraging was noted around the canopy to the south of the Park Ranger Office. No emergences were recorded from either building. Light commuting activity across the site was also noted. The southern side of the Lodge was well lit, with spill from the lighting of the adjacent road.
- 8.9 During the second observation species included common pipistrelle, soprano pipistrelle and noctule, no other species were recorded. A similar pattern of bat activity to the first observation was noted, with foraging activity occurring to the south of the Park Ranger Office. Some light commuting activity was observed across the site. No bats were captured by the NVA, as no bats were seen to emerge.
- 8.10 As part of the hibernation assessment, the Song Meter Mini Bat detector was positioned in the Lodge for a period of two weeks in January and again in February 2023. The device was attached to staircase, in a central position within the lodge. No recordings of bats were made.
- 8.11 An historic birds nest was found within a crack in the brickwork of the Park Ranger Office, at the western elevation. No evidence of current or recent bird nesting activity was found associated with both buildings.

9 Discussion and Conclusions

- 9.1 The PRA revealed a moderate level of suitability of both buildings, for roosting bats. Although no live bats, or evidence to suggest the presence of bats by way of droppings and/or feeding remains,

were found, features considered suitable for roosting were noted (See 8.4). Findings did not suggest a high level of conservation significance, given the lack of any evidence for roosting bats. Despite offering moderate suitability for roosting bats, no bats, or evidence of roosting was recorded during the external assessment or subsequent emergence surveys of the Lodge and Park Ranger Office, at Tredegar Park. Survey revealed that the Park Ranger Office building and the Lodge are likely not bat roosts at the current time. The proposed works, as far as currently known, are therefore unlikely to impact roosting bats.

- 9.2 Presence of bats at other times of year was considered, and the Park Ranger Office building is assessed to have negligible potential to be used by hibernating bats. No features, offering cool and constant thermal conditions, were found. Hibernation survey of the Lodge was carried out in January and February 2023, as noted above. No hibernating bats were found. The automated survey also revealed no detection of bats inside the Lodge during the winter survey period during. As a result, it is assessed that the Lodge is not being used for hibernation purposes by bats at this time.
- 9.3 Historic evidence of nesting birds was found at the Park Ranger Office building. 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 Proposed works for the Lodge and Park Ranger Office buildings at Tredegar Park are not reasonably likely to remove/obstruct any roosts or kill/injure bats, since no bats, or evidence of roosting bats was recorded at the site. As a precaution, in the highly unlikely event that any bats, or accumulations of bat droppings are recorded during the works, all work must stop immediately in order to avoid committing an offence (see Appendix V). Advice must be sought from an appointed ecologist or NRW, as a priority.
- 10.2 It is important that any onsite lighting does not deter bats from dispersing across the site and using the surrounding habitat for foraging purposes. It is therefore recommended that any new artificial lighting is avoided where possible. If considered necessary, then any security lighting must be kept to a minimum with luminaires motion-triggered and on a short timer of 15 – 20 seconds. Lighting must not be directed at natural features, such as treelines.
- 10.3 Breeding birds are protected under the provisions of the Wildlife and Countryside Act 1981 (as amended), and in the event that an active bird nest is found, it cannot legally be disturbed or destroyed. Once a nest is established, the birds must be able to have access at all times until the young have fledged and the nest is no longer active. The bird breeding season commences as early as March and continues into August for species which rear a second or third brood. If an active nest is found, it must be retained and protected. A cordon must be established for a safe working zone a suitable distance from the nest, determined by an ecologist, and not until the chicks have fledged can the nest be destroyed.
- 10.4 Building works provide the opportunity to enhance the biodiversity of the site, and to comply with Planning Policy Wales 11 (PPW11). Bird boxes are an effective way of attracting garden species to the site following development. Nest boxes must be installed onto trees on site. For a site of this size, at least three bird boxes are appropriate. Recommended boxes include Vivara Pro Woodstone nest box 32mm and Woodstone Barcelona Open Nest Box. Boxes must be positioned around 4m high, on a north to east elevation to avoid strong sunlight.
- 10.5 Further enhancement features for the site include the provision of at least three bat boxes. These must be positioned to suitable trees on site. Recommended boxes include a Beaumaris Bat Box and a 2F Schwegler Bat Box (or similar). Boxes must be positioned as high as possible (at least 4m above ground), close to hedges and trees lines, away from artificial light sources and on a south, south-east or south-west elevation.

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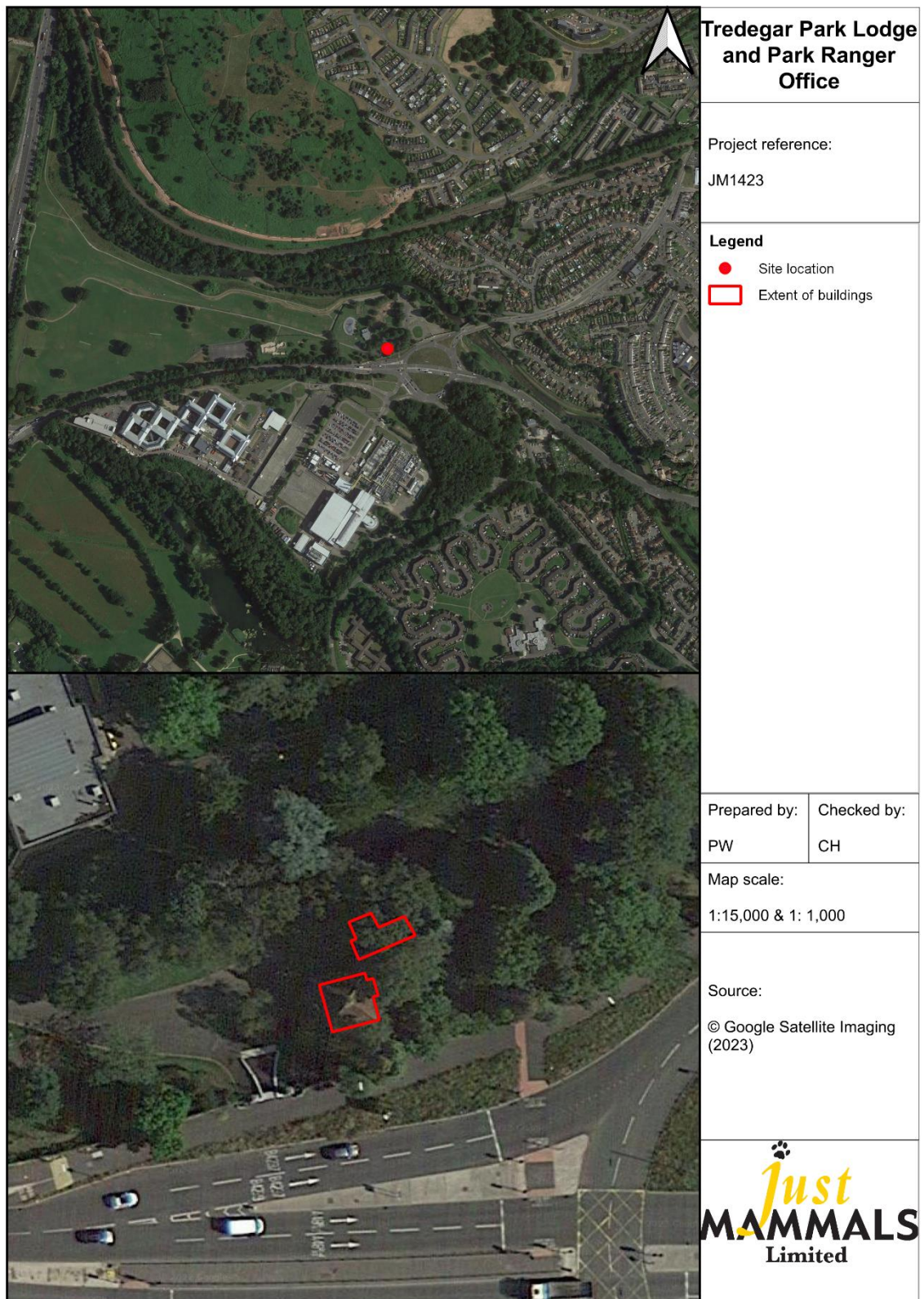
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Appendix I: Site Plan

Figure 1: Site location aerial view



Appendix II: Survey Results

Table 4: Tredegar Park Lodge, Newport – Dusk Observation 15th May 2023

Time (24 Hour Clock)	Species (Common Name)	Recording No.	Observed Activity
21.03 hours	Common pipistrelle	1 NI	Commuting east to west at the south-west corner of the Lodge
21.03 hours	Common pipistrelle	1 PW	Flying around trees to the north-east of the Lodge
21.04 hours	Common pipistrelle	1 BG	Commuting south-west to north-east at the north-east side of the Park Ranger Office
21.04 hours	Common pipistrelle	1 DW	Heard but not seen
21.18 hours	Common pipistrelle	2 NI	Commuting west to east at the south-west corner of the Lodge
21.19 hours	Common pipistrelle & soprano pipistrelle	2 BG	Foraging along the path at the north-east side of the Park Ranger Office
21.19 hours	Common pipistrelle & soprano pipistrelle	2 DW	Heard but not seen
21.19 hours	Common pipistrelle	1 PM	Heard but not seen
21.19 hours	Common pipistrelle	1 VP	Foraging at the north-west corner of the Lodge
21.21 hours	Common pipistrelle	1 XW	Heard but not seen
21.22 hours	Soprano pipistrelle	3 NI	Commuting over the lodge before heading south
21.22 hours	Pipistrelle sp.	PW	Foraging around the trees to the north east, shortly followed by another in from the west
21.22 hours	Soprano pipistrelle	2 XW	Heard but not seen
21.23 hours	Soprano pipistrelle	3 DW	Foraging south of the Park Ranger Office
21.23 hours	Common pipistrelle	4 XW	Heard but not seen
21.24 hours	Common pipistrelle	4 NI	Forging at the south-west corner of the Lodge
21.24 hours	Common pipistrelle	3 XW	Heard but not seen
21.25 hours	Common pipistrelle & noctule x2	2 PM, 2 VP	Foraging at the north-west corner of the Lodge
21.26 hours	Common pipistrelle, noctule (faint) & soprano pipistrelle	3 BG	Commuting east to west at the north-east side of the Park Ranger Office
21.26 hours	Noctule	4 XW	Heard but not seen
21.27 hours	Common pipistrelle	4 DW	Heard but not seen, heard foraging
21.28 hours	Common pipistrelle	5 XW	Heard but not seen
21.29 hours	Common pipistrelle	2 PW	Foraging above the area to the east of the Lodge
21.29 hours	Common pipistrelle	6 XW	Foraging to the east of the Lodge
21.29 hours	Common pipistrelle	7 XW	Heard but not seen
21.30 hours	Common pipistrelle	5 DW	Heard but not seen, heard foraging above the canopy at the southern elevation of the Park Ranger Office
21.30 hours	Common pipistrelle	8 XW	Heard but not seen
21.32 hours	Common pipistrelle	9 XW	Heard but not seen
21.34 hours	Common pipistrelle & noctule	10 XW	Heard but not seen
21.34 hours	Common pipistrelle & noctule	3 PW	Flew over roof of the lodge at the north-east side of the Lodge
21.35 hours	Noctule	4 BG	Commuting south to west at the north-east side of the Rangers Office
21.35 hours	Common pipistrelle & noctule	3 PM	Heard but not seen
21.37 hours	Common pipistrelle & noctule	3 VP	Foraging at the north-west corner of the Lodge
21.37 hours	Common pipistrelle & noctule	11 XW	Heard but not seen
21.38 hours	Common pipistrelle	6 DW	Foraging south of the Park Ranger Office
21.38 hours	Common pipistrelle	12 XW	Heard but not seen
21.39 hours	Common pipistrelle	4 PW	Foraging to the east of the Lodge
21.41 hours	Common pipistrelle	4 PM	Heard but not seen
21.41 hours	Common pipistrelle	7 PW	Foraging to the east of the Lodge
21.43 hours	Common pipistrelle x2	13 XW	Heard but not seen
21.44 hours	Common pipistrelle	5 PW	Foraging to the east of the Lodge
21.47 hours	Common pipistrelle	7 DW	Foraging at the south of the Park Ranger Office
21.47 hours	Common pipistrelle	14 XW	Heard but not seen
21.49 hours	Noctule x2	5 BG	Heard but not seen
21.50 hours	Common pipistrelle	15 XW	Heard but not seen
21.51 hours	Common pipistrelle	16 XW	Heard but not seen
21.52 hours	Common pipistrelle	17 XW	Heard but not seen
21.53 hours	Common pipistrelle	4 VP	Foraging at the north-west corner of the Lodge
21.54 hours	Common pipistrelle	5 PM	Heard but not seen
21.54 hours	Common pipistrelle	18 XW	Heard but not seen

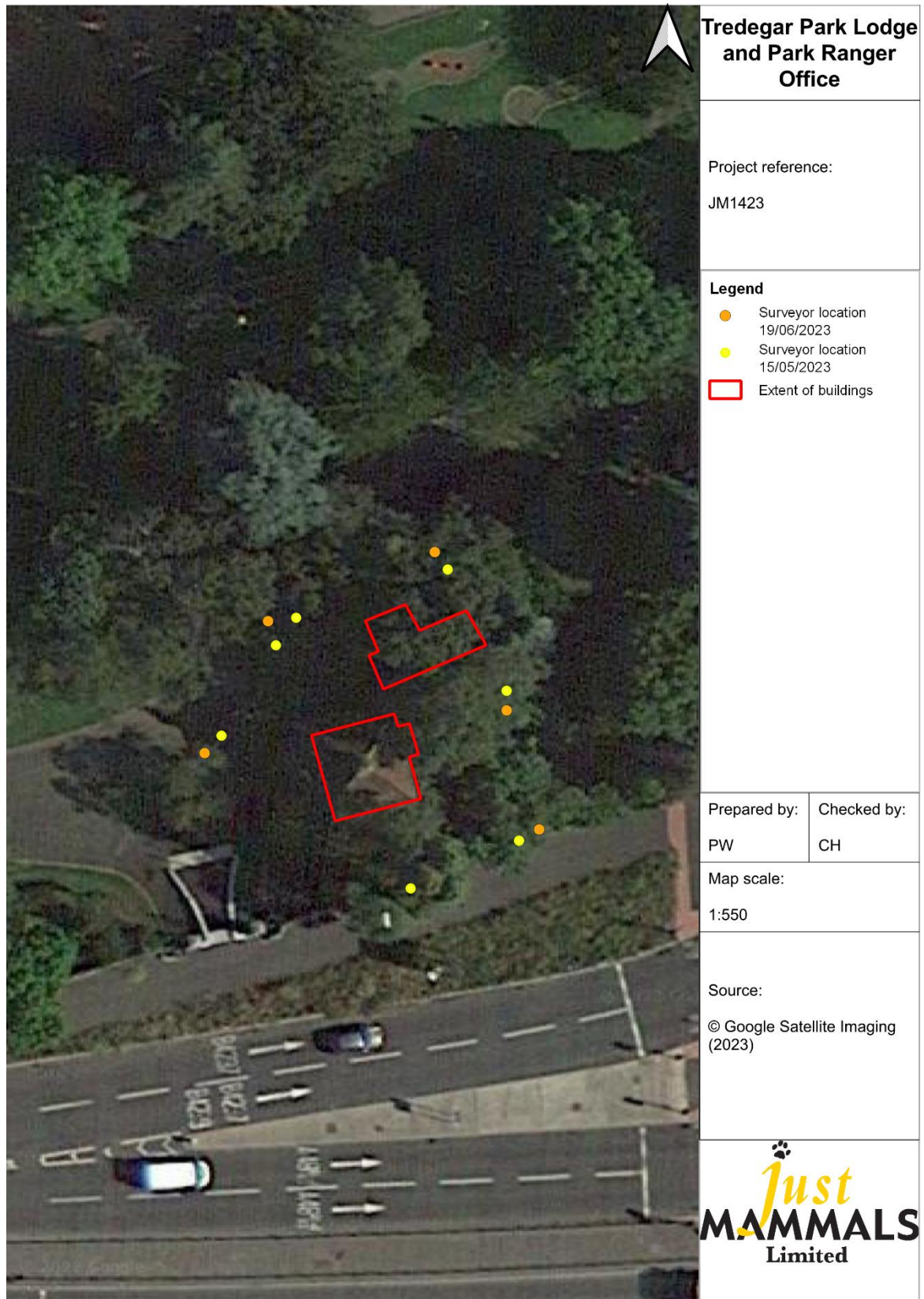
Note: Highlighted records indicate emergence activity

Table 5: Tredegar Park Lodge, Newport – Dusk Observation 19th June 2023

Time (24 Hour Clock)	Species (Common Name)	Recording No.	Observed Activity
21.34 hours	Common pipistrelle	1 LP	Heard but not seen at the north side of the Park Ranger Office Building
21.36 hours	Soprano pipistrelle	1 PM	Heard but not seen at the north-west side of the Park Ranger Office
21.39 hours	Noctule	2 PM	Heard but not seen at the north-west side of the Park Ranger Office
21.51 hours	Common pipistrelle & noctule	1 PW	Flew high over the south-east side of the lodge, from east to west
21.52 hours	Common pipistrelle	1 VP	Commuting east to west over the top of the roof of the lodge
21.53 hours	Common pipistrelle & soprano pipistrelle	2 PW	Commuting at the north side of the lodge
21.55 hours	Soprano pipistrelle & noctule	3 PM	Heard but not seen
21.55 hours	Common pipistrelle	2 VP	Commuting west to south-west across the site
21.56 hours	Common pipistrelle	2 LP	Foraging at the north-east side of the Park Ranger Office
21.56 hours	Common pipistrelle	1 PC	Heard but not seen
21.56 hours	Common pipistrelle	4 PM	Foraging above trees to the north-west of the site
21.56 hours	Noctule	3 PW	Commuting high over the site from east to west
21.58 hours	Common pipistrelle & myotis sp.	3 LP	Foraging at the north-east side of the Park Ranger Office
21.58 hours	Common pipistrelle	2 PC	Heard but not seen south of the Park Ranger Office
21.58 hours	Common pipistrelle	3 PC	Heard but not seen south of the Park Ranger Office
21.59 hours	Common pipistrelle	4 LP	Heard foraging at the north-east side of the Park Ranger Office
22.00 hours	Common pipistrelle	4 PC	Heard but not seen south of the Park Ranger Office
22.01 hours	Common pipistrelle	5 PC	Heard but not seen south of the Park Ranger Office
22.02 hours	Common pipistrelle	6 PC	Heard but not seen south of the Park Ranger Office
22.02 hours	Common pipistrelle x2 & soprano pipistrelle	5 PM	Foraging overheard at the north-west end of the site
22.03 hours	Soprano pipistrelle	7 PC	Heard but not seen south of the Park Ranger Office
22.03 hours	Common pipistrelle	3 VP	Foraging in the trees to the west of the site
22.05 hours	Common pipistrelle	8 PC	Foraging at the south side of the Park Ranger Office
22.06 hours	Common pipistrelle x2	9 PC	Foraging at the south side of the Park Ranger Office
22.07 hours	Common pipistrelle	10 PC	Foraging at the south side of the Park Ranger Office
22.10 hours	Common pipistrelle	11 PC	Foraging at the south side of the Park Ranger Office
22.15 hours	Soprano pipistrelle	12 PC	Foraging at the south side of the Park Ranger Office
22.15 hours	Pipistrelle sp.	PW	Foraging over the vegetation at the south-east side of the lodge
22.26 hours	Noctule	6 PM	Heard but not seen
22.27 hours	Common pipistrelle	7 PM	Heard but not seen
22.28 hours	Common pipistrelle & noctule	13 PC	Foraging at the south side of the Park Ranger Office
22.29 hours	Common pipistrelle	4 VP	Commuting east to west across the site
22.32 hours	Noctule	8 PM	Heard but not seen

Note: Highlighted records indicate emergence activity

Figure 2: Surveyor Positions



Appendix III: Site Photographs

Plate 1: Park Lodge, north-west corner



Plate 2: Park Lodge, south-east corner



Plate 3: Park lodge, western elevation



Plate 4: Access to cavity via missing vent, and access into interior



Plate 5: Loft space of the Park Lodge



Plate 6: Interior of Park Lodge with access from exterior



Plate 7: Interior front room of Park Lodge, with damage above bay window



Plate 8: Park Ranger Office, western elevation



Plate 9: Park Ranger Office northern elevation



Plate 10: PRFs at northern end of Park Ranger Office



Plate 11: Rear southern end of Park Ranger Office



Plate 12: Loft space above Park Ranger Office



Appendix IV: 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, and lesser horseshoe bat, as well as western barbastelle bat (*Barbastella barbastellus*).

Appendix V: 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.

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