Just MAMMALS Limited
Ecological Consultancy

ECOLOGICAL SURVEY REPORT

Blocks B, F and K

Crosskeys
Newport
NP11 7ZA

ON BEHALF OF:

Coleg Gwent

Site Address:	Blocks B, F and K, Crosskeys, Newport NP11 7ZA	
Report Reference	JM11824	
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Report Author	Phoebe Williams	Ecologist
Report Reviewer	Grace Dooley	Principal Ecologist

Directors Grace Dooley (Hons) MSc ACIEEM
Robert Morgan
Phoebe Williams BSc (Hons) MSc ACIEEM

Registered Office 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

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1 Executive Summary

1.1 Plans are in place to demolish Blocks B, F and K at Coleg Gwent Campus, Crosskeys. In order to assess the presence or potential presence of protected species, a Preliminary Roost Assessment was undertaken in June 2024.

1.2 Day time inspection of Block B, F and K found no live bats or evidence for the presence of bats. However, overall, the buildings were assessed as having a moderate level of suitability for roosting bats. The exterior of the buildings provide multiple Potential Roost Features, for crevice roosting bat species. Therefore, two follow-up targeted dusk observations were undertaken in June and August 2024. These observations were needed to establish with a higher degree of certainty if bats are using any part of the building.

1.3 During the dusk observations no bats were seen to emerge from the buildings. Bats were recorded foraging and commuting across the site, the only species recorded included noctule, common pipistrelle and soprano pipistrelle. The proposed works are considered to be unlikely to impact roosting bats, due to no bats having been observed to be roosting at Blocks B, F and K during the 2024 survey effort.

1.4 Assessment also considered the presence of breeding birds. No active nests were found at the time of the survey effort. However, the buildings are suitable for nesting birds. Breeding birds are protected under the provisions of the Wildlife and Countryside Act 1981 (as amended), and in an unlikely 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a nest is established, the birds must be able to have access at all times until the young have fledged and the nest is no longer active.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, and not until the chicks have fledged can the nest be destroyed.

1.5 Enhancements are recommended at the site to reflect the scale of the works proposed and to comply with Planning Policy Wales 12.

2 Introduction

2.1 Blocks B, F and K located at Coleg Gwent, Crosskeys Campus are proposed for demolition. Centred on National Grid Reference (NGR) ST 22308 91693, the site is at an altitude of some 61m Above Ordnance Datum. The buildings are still in use as part of the college site.

2.2 To support the proposals, Just Mammals Limited was commissioned to consider the actual or potential presence of protected species in order to inform the works. A Preliminary Roost Assessment (PRA), or scoping survey of the buildings was completed during a daytime inspection in June 2024, by a licensed ecologist and an assistant. This assessment drew attention to the site's moderate suitability for roosting bats in accordance with current Bat Conservation Trust (BCT) guidelines (Collins 2023). Consequently, two dusk emergence/activity observations were completed in June and August 2024.

2.3 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.

2.4 Previous assessment of the site was undertaken by Acer Ecology Ltd in 2020. Survey included a Preliminary Roost Assessment of the buildings only. No further survey, by way dusk observation survey was carried out at the time. Full details can be found in the report written by Acer Ecology dated 2020.

3 Survey Team

3.1 Lead surveyor was Phoebe Williams, who is also author of this report. The dusk emergence observations were carried out by a small team of ecologists and survey assistants. Table 4 in Appendix II details ecological survey experience of the surveyors.

4 Survey Methodology

4.1 The PRA survey at Blocks, B, F and K was undertaken in June 2024 with the aim of detecting any signs of bat or bird presence. Two dusk emergence / activity surveys were completed in June and August 2024, with use of Night Vision Aids (NVA). Full details of survey methodologies employed are provided in Appendix III.

5 Site Description

5.1 Blocks B, F and K make up part of Coleg Gwent Crosskeys campus, located just off the B4591. Together buildings form an L-shape, each connected via internal walkways. The surrounding area is largely built-up and includes the campus, and adjacent residential properties. Slightly further afield, on the fringe of Crosskeys, woodland expanses are present to the north and south, with Ebbw River approximately 250m to the south-west. These landscape featurs are not particularly well connected to the site, due to roads and buildings at the immediate site boundaries.

5.2 The buildings are two storey, composed of brick and upright timber boarding. The shallow pitched roofs are supported by steel frames, and are covered with a mix of metal sheeting and felt. Roof voids are present above each of the buildings, only two of which were accessible. No lining membrane in present.

6 Survey Constraints

6.1 Internal inspection of the roof voids were limited to the southern end of Block B; the northern section could not be inspected due to the presence of suspended ceilings. Block K loft void was fully inspected, and the void above Block F was not accessible.

6.2 External parts of the buildings could be surveyed from ground-level, although due to the height of the buildings, some sections of the roof were difficult to fully view and assess from the ground.

6.3 These are not considered to be major constraints as sufficient surveyors with NVAs were used as part of the further survey effort to determine use of the buildings by bats.

7 Desktop Study

7.1 A record search was commissioned from South East Wales Biodiversity Records Centre (SEWBReC) (LERC Reference: 0245-136), to ascertain whether protected or priority species had been recorded at or close to the site. Two bat records were made immediately adjacent to the site. This includes a record of an unidentified bat and a single common pipistrelle (*Pipistrellus pipistrellus*) bat commuting around and entering Block T. The search revealed no records of priority species, species of conservation concern, locally important species, nor invasive non-native species at Blocks B, F and K.

7.2 The data set revealed a total of 513 protected and priority species records within 1km of the site. These are briefly summarised below:

- birds – the closest records include starling (*Sturnus vulgaris*) and house sparrows (*Passer domesticus*) 60 m from the site and cuckoo (*Cuculus canorus*) over 160m from the site.
- mammals – included west European hedgehog (*Erinaceus europaeus*), common pipistrelle (*Pipistrellus pipistrellus*), Eurasian badger (*Meles meles*), and Eurasian otter (Lutra lutra) over 340m from the site. Water vole (*Arvicola amphibius*) has been recorded over 460m from the site. Bat records include those mentioned above and Daubenton's (*Myotis daubentonii*), soprano pipistrelle (*Pipistrellus pygmaeus*), Nathusius's pipistrelle (*Pipistrellus nathusii*), whiskered bat (*Myotis mystacinus*), Brandt's (*Myotis brandtii*), and barbastelle (*Barbastella barbastellus*) all recorded over 180m from the site.
- reptiles – all records located at least 220m from the site and includes slow-worm (*Anguis fragilis*), common lizard (*Zootoca vivipara*). Adder (*Vipera berus*) has been recorded over 1km from the site.
- amphibians – records include a single species only of common frog (*Rana temporaria*) just under 200m from the site.

7.3 Sites of nature conservation interest within a 2km radius of Blocks K, F and B, were identified using the web-based MAGIC database (www.MAGIC.gov.uk). These included sites with statutory designations of international importance (Special Areas of Conservation: SACs, Special Protected Areas: SPAs and Ramsar sites) and sites of national importance (Sites of Special Scientific Interest: SSSIs and National Nature Reserves: NNRs). There are two protected sites within the 2km radius, which are summarised in Table 2 below.

Table 1: Sites Designated for Nature Conservation

Site and Designation (In Order of Distance)	Distance and Direction to Site	Primary Reasons for Designation
Coed-y-Darren (SSSI)	1.5km to the north-east	A critical site for understanding the geological evolution of the South Wales basin.
Dan y Graig Quarry, Risca (SSSI)	1.3km to the south east	This locality shows the Oolite Group and Llanelly Formation of the Carboniferous Limestone. It provides the most southerly section of the Llanelly Formation showing fine exposures of peritidal carbonates with algal laminates, evaporites, palaeosols and clay dykes.

7.4 With respect to the SSSIs, given the small-scale development proposals, and distance of the SSSIs identified, there is not likely to be any impacts on these sites from the demolition Block B, F and K.

7.5 Previous assessment of the site included a PRA undertaken by Acer Ecology. This survey revealed no evidence of bats.

8 Survey Results

8.1 Table 2 summarises dates, times and weather conditions when survey work took place, with wind speeds recorded using the Beaufort scale.

Table 2: Summary of Survey Activity and Weather Conditions

Date	Survey Type	Timing	Weather Conditions
05/06/2024	Preliminary Roost Assessment of the buildings (RM, CP)	10.00 – 13:00 hours British Summer Time (BST)	Air temperature: 14°C Cloud cover: 0/8 oktas Wind speed: F2, light breeze Conditions: Dry
18/06/2024	Dusk emergence/activity observation (RM, PW, BG, AT, HM, DW)	21.00 – 23.00 hours BST (Sunset 21.33 hours)	Air temperature: 14°C Cloud cover: 3/8 oktas Wind speed: F1, gentle breeze Conditions: Dry
01/08/2024	Dusk emergence/activity observation (GD, PW, BG, DM, EF, NI)	20.30 – 22.30 hours BST (Sunset 21.01 hours)	Air temperature: 15°C Cloud cover: 8/8 oktas Wind speed: F2, light breeze Conditions: Dry
Surveyors	Phoebe Williams (PW), Daniel White (DW), Ben Gibson (BG), Alice Thorne (AT), Hayley-Anne Morgan (HM), Diane Morgan (DM), Elsa Ferneyhough (EF), Nigel Isaksson (NI), Grace Dooley (GD), Catherine Povey (CP), Robert Morgan (RM).		

8.2 Internal inspection of roof voids that were accessible revealed no live bats and no evidence of bats (by way of droppings and insect remains). However, Potential Roost Features (PRF) were noted across the exterior of the buildings;

- Gaps in louvres at the south-west end of Block B, southern elevation of Block F, the south-eastern and western end of Block K, providing access into roof spaces;
- Gaps beneath lifted/rotten timber panelling at the southern end of Block K and F, and at the eastern end of Block B;
- Gaps between soffits and walls; and
- Gaps in high level brickwork where sections adjoin.

8.3 With respect to identifying potential for bats at other times of year: no low-level crevices were identified on the northern elevations.

8.4 The first dusk emergence/activity observation was undertaken on the 18th of June 2024, with results shown in Table 5. During this observation no bats emerged from the buildings. Commuting and foraging activity was observed across the site. Bats recorded included common pipistrelle and soprano pipistrelle. No other species were recorded. Activity included low levels of foraging to the west of the site, and commuting to the north. The site is currently well lit, with street lighting to the north and security lighting on all elevations.

8.5 A second dusk emergence/activity observation was undertaken on the 1st of August 2024, results are shown in Table 6. No bats emerged from the buildings during this observation. Low levels of

activity were noted during this survey. A single soprano pipistrelle bat was seen foraging at a dark corner to the north of the site, and a noctule (*Nyctalus noctula*) was heard commuting over the site.

8.6 Three NVA were used during the first observation and two were used during the second. The NVA positioned at the south-east end of the site, where Block F connects to Block K was replaced with an observer during the second observation. The NVA did not record any emergences.

8.7 During the dusk observation surveys and the PRA no nesting birds were noted.

9 Discussion and Conclusions

9.1 Despite offering moderate suitability for roosting bats, no bats or evidence of roosting was recorded during the initial visual assessment or subsequent emergence surveys of Blocks B, F and K. The proposed works are therefore unlikely to impact roosting bats. 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). In the unlikely event of bats being found during the works, recommendations are made below.

9.2 When considering the context of the site within the landscape, the habitat beyond the college site provides some good roosting and foraging opportunities for a variety of bat species, due to its proximity to nearby woodland. However, the site itself is currently well lit, given its location within a relatively urban context. There are some darker areas which bats made use of for foraging as noted by the dusk observation survey. Artificial lighting post-development is an important consideration. Recommendations for which are made below.

9.3 Presence of bats at other times of the year was considered; no low-level crevices were identified on the northern elevations, and therefore the building is assessed to have negligible potential to be used by hibernating bats. Works are not considered likely to impact hibernating bats.

9.4 During the survey effort, no nesting birds were noted. However, the buildings have suitable gaps that could be using by nesting birds. 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.

9.5 It will be necessary to provide enhancements for biodiversity to comply with Welsh Planning Policy PPW12. Recommendations are made below.

10 Recommendations

10.1 All bats and their places of rest are fully protected under British legislation. As noted above, no bat roosts were found at Blocks B, F and K, and as a result no impacts on bat roosts are expected.

10.2 In the unlikely event that bats or their signs are encountered during the work, all work must stop immediately in order to avoid committing an offence. Advice must then be sought from Just Mammals Limited, a licensed ecologist, or alternatively from Natural Resources Wales (NRW). 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.

10.3 No issues of habitat fragmentation are identified within the development proposals at this site. Installation of additional lighting is not considered to be likely at the site. However, it is important to note that any on-site lighting that is proposed does not deter bats from roosting, dispersing across the site and using the surrounding habitat for foraging purposes. It is therefore recommended that installation of any artificial lighting as part of the proposed plans is avoided where possible, unless considered critical for maintaining health and safety standards. If it is considered necessary, then it is recommended that any security lighting is kept to a minimum with luminaires motion-triggered and on a short timer of 15-20 seconds. The Institution of Lighting Professionals and Bat Conservation Trust have published 'Bats and Artificial Lighting at Night: Guidance Note 08/23' (ILP, 2023). This document presents many options for bat sensitive lighting and may be used to inform lighting considerations.

10.4 Active bird nests 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. With regard to protection of active nests: the bird breeding season commences as early as March and continues into August for species which rear a second or third brood. If works are to be carried out during the active nesting period, a pre-commencement check must be completed by a suitably qualified ecologist immediately prior to the demolition works. 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, this will be determined by the onsite ecologist, and not until the chicks have fledged can the nest be destroyed. It is best to plan for certain building works where birds might be encountered to avoid the bird nesting season to avoid delays impacting the works schedule.

10.5 Full plans to replace the demolished buildings are currently unknown. Enhancements to support biodiversity must be included at the site, once full plans are known. Recommendations below are not exhaustive, once plans for the site are finalised, a Biodiversity Enhancement Plan must drawn up to outline recommendations to increase biodiversity at the site post development in order to comply with PPW12.

10.6 Additional nesting opportunities must be provided for birds. At least ten swift bricks must be included into any new buildings proposed for the site. These must be installed out of direct sunlight, at least 5m from the ground, and they should not be above windows. Aim to keep nest bricks about 50cm to 100cm apart.

10.7 At least five starling boxes must be installed at the site. These can either be in the form of integrated boxes, or boxes to place onto buildings or trees at the site. Boxes must be positioned at least 3m off the ground and a few boxes must be positioned in a group.

10.8 Hedgerow and tree planting is to be incorporated into the development plans, for which native species must be used (see Table 3 below). At least five species within a single hedgerow must be used. Hedgerows provide food sources for a variety of wildlife, including insects and birds, as well as increasing bird nesting opportunities at the site.

Table 3: Recommended Native Tree and Shrub Species

Common Name	Scientific Name
Crab apple	*Malus sylvestris*
Dogwood	*Cornus sanguinea*
Elder	*Sambucus nigra*
Eared willow	*Salix aurita*
Field maple	*Acer campestre*
Hawthorn	*Crataegus monogyna*
Hazel	*Corylus avellana*
Holly	*Ilex aquifolium*
Rowan	*Sorbus aucuparia*
Silver birch	*Betula pubescens*

10.9 At least three bat boxes, of two different designs must be provided (e.g. 1 x Eco Kent bat box, and 1 x Vincent Pro bat box, or equivalent) on trees within the site boundaries. Bat boxes are to be positioned at least 5m above the ground. Clear flight paths must be created by cutting branches below the boxes, if required. Boxes must be sheltered from strong winds, but can be exposed to sunlight during the day (i.e. positioned on south, south-east or south-west elevations). No lighting must be directed at the boxes.

10.10 If any new buildings are proposed at the site, integrated bat boxes must also be included. The number of boxes will depend on the number of new builds proposed. Integrated bat boxes such as the 1FR Schwegler bat tube must be installed at least 3m above the ground, where it receives some sun during the day.

10.11 Any new buildings at the site must include bee bricks. The number of bricks will depend on the number and size of the new buildings. These must be installed at a southern, sunny elevation at least 1m off the ground, with no upward limit.

10.12 To increase plant diversity at the site wildflower areas are proposed. Wildflower areas will provide foraging opportunities for invertebrates and in turn birds and small mammals that may use the site. The areas designated for wildflower grassland must be seeded with a mix containing a variety of robust flowers and selected grass species. This will require good preparation of the ground (details of such advice can be found at Emorsgate Seeds website or similar). Emorsgate EM3 wildflower seed mix is recommended, with some twenty-five wild plant and grass species.

10.13 Wildflower grassland areas must be allowed to grow naturally in order to create an environment with different levels of vegetation which will help encourage a greater diversity of fauna. Regular mowing to maintain a short sward must be avoided as this does not encourage biodiversity. Following establishment, a maximum of two cuts per year is advocated, a single cut is the preferred option in late-August, followed by a second cut in early spring if required. An early cut may be needed to control dominant grasses, which will otherwise compete and crowd out wildflowers. Cuttings must

be removed and not left in situ, these can then be piled up in a single location on site to create a habitat feature for sheltering wildlife.

10.14 The incorporation of Sustainable Drainage Schemes and waterbodies for wildlife would also increase the biodiversity of the site.

11 Bibliography

Acer Ecology Ltd. (2020). Coleg Gwent Crosskeys Campus: Blocks B, F and K: Preliminary Bat Roost and Nesting Bird Assessment: November 2020, Acer Ecology Ltd. Cardiff

Collins, J. (Ed.) (2023). 'Bat Surveys for Professional Ecologists – Good Practice Guidelines – 4th Edition.' Bat Conservation Trust, London

ILP. (2023). Guidance Note 08/23: Bats and Artificial Lighting at Night. Bat Conservation Trust

Mitchell-Jones, A.J. (2004). 'Bat Mitigation Guidelines'. English Nature, Peterborough

Mitchell-Jones, A.J. (1992). 'Focus on Bats'. English Nature, Peterborough

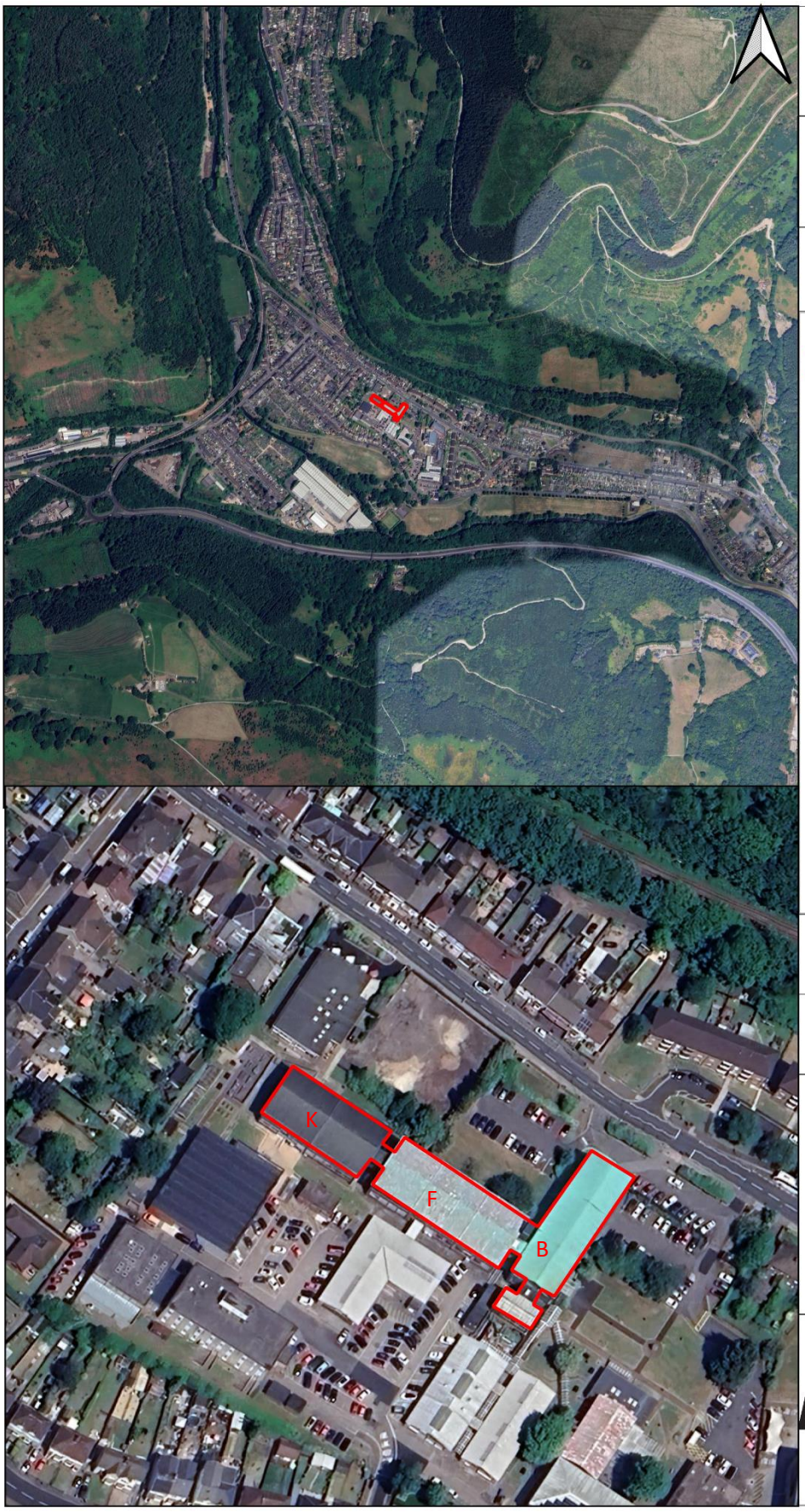
Mitchell-Jones A.J. and McLeish A.P. (2004). 'The Bat Workers Manual – 3rd Edition', English Nature, Peterborough

Ninnes, R. (2015). 'NRW Approach to Bats and Planning', Natural Resources Wales, Bangor

Russ, J. (2021). 'Bat Calls of Britain and Europe: A Guide to Species Identification'. Pelagic Publishing, Exeter

Appendix I Site Plans

Figure 1: Aerial View of the Site



Blocks B, F and K Crosskeys Campus Coleg Gwent

Aerial view of site

Project reference:

JM11824

Legend

Extent of buildings

Prepared by:	Checked by:
PW	GD

Map scale:

1:25000 & 1: 2500

Source:

© Google Satellite Imaging (2024)

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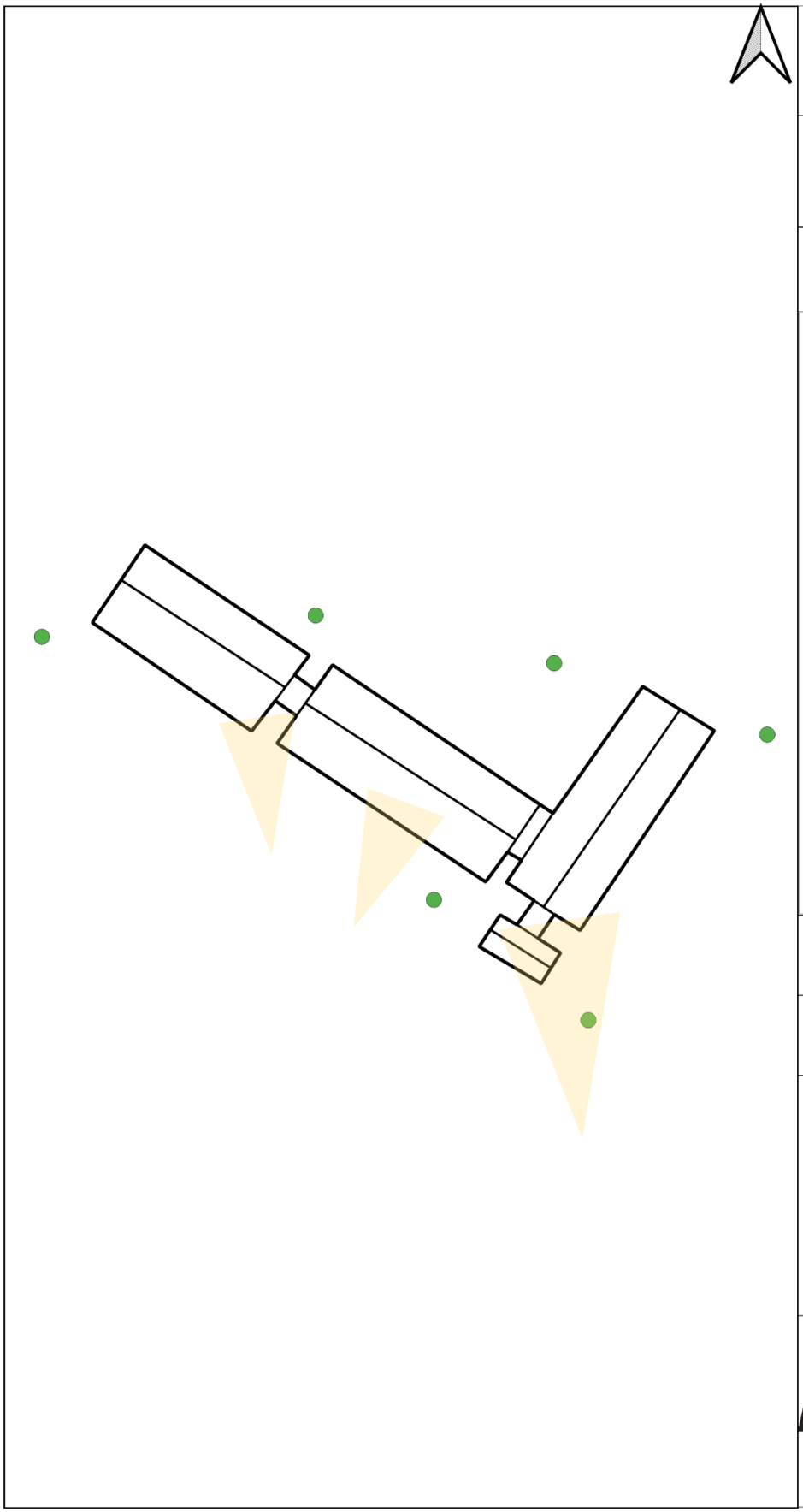
Figure 2: Bat Survey Plan



Appendix II Survey Team Experience

Table 4: Survey Team Experience

Name / Position	Licences	Experience
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.
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). Licenced 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.
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 (ACIEEM). She holds survey licences for bats and great crested newts in Wales.
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 Principal Ecologist with Just Mammals Limited and is an Associate Member of the Chartered Institute of Ecology and Environmental Management (ACIEEM).
Alice Thorne Fromer trainee Ecologist		Alice is currently studying for a BSc (Hons) degree in Natural History at the University of South Wales. She has 2 years previous experience as a subcontracting survey assistant with over 400 hours worked on bat emergence surveys.
Daniel White Assistant 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 assistant 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.
Catherine Povey Trainee Ecologist		After graduating from Swansea University and UCL Catherine worked in medical research and as a practitioner. Since the first year of her degree when she studied Zoology and Botany, she has retained a keen interest in the natural world and has worked with Bannau Brycheiniog National Park on a number of projects including peat conservation. She is employed by Just Mammals Limited as a Trainee Ecologist and has conducted a variety of surveys with the company including dusk bat emergence surveys for commercial projects.
Nigel Isaksson Senior Survey Assistant	Bat (NRW) S092876/1 expiry 31st July 2025	A Senior Survey Assistant with the Just Mammals Limited, with nineteen years' experience undertaking bat surveys, flight line observations, census counts, Nigel holds NRW licences to work with bat and dormice.
Hayley-Anne 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.
Elsa Ferneyhough Student Placement Ecologist		Elsa is currently studying for a degree in Ecology and Environmental Science at the University of Gloucestershire and is completing her placement year as part of her studies with Just Mammals Limited. She is currently gaining experience in all areas of the company and has particular interest in herptiles and their ecology. Her dissertation study will be focussing on how use of reptile refugia varies based on the material it is made from.
Diane Morgan Senior Survey Assistant	S093558/1 expiry 7th February 2026	Considerable experience (over 20 years) of surveying structures for bats and has carried out ringing of Daubenton's bat as part of a multi-year project on the species. She has undertaken monitoring work on several important lesser horseshoe bat roosts and assisted in radio tracking projects on the same species. She holds a City & Guilds Level 2 award for working in Medium Risk Confined Spaces. Prior to her work as a consultant ecologist, Diane was the Director of Brecknock Wildlife Trust and was involved in a wide range of nature conservation work including species and habitat protection and conservation land management. Other areas of interest include otter, dormice, water voles, reptiles, amphibians, fungi and crayfish.

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 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 myotid bats* (Myotis sp.) (*myotid bat is a collective term used where the species could not be specifically identified beyond this broad group). The myotid group encompasses seven species of British bat including Alcathoe'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 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.

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: Southern elevation of Block F

Plate 2: Possible gaps beneath timber boarding on southern side of Block F

Plate 3: Gaps in brickwork at Block F

Plate 4: Southern elevation of Block F

Plate 5: Gaps beneath boarding on southern elevation of block F

Plate 6: North-western elevation of Block K, looking east

Plate 7: Northern elevation of Block K

Plate 8: Gaps beneath lifted flashing

Plate 9: Eastern elevation of Block B

Plate 10: Northern end of Block B

Plate 11: Gaps at the edge of rotten board on the eastern side of Block B

Plate 12: Louvre at the eastern side of Block B, facing south. Gaps in the brickwork

Plate 13: Roof void of Block K

Plate 14: Roof void of Block B

Appendix V Dusk Observation Results

Table 5: Dusk Observation 1th June 2024

Time (24 Hour Clock - hours)	Species (Common Name)	Recording No.	Observed Activity
21.38 hours	Soprano pipistrelle	1 BG	Commuting east to south-west at the eastern corner of the site
21.38 hours	Soprano pipistrelle	1 HM	Commuting at the northern end of Block K
21.44 hours	Common pipistrelle	1 DW	Heard but not seen
21.48 hours	Soprano pipistrelle	1 PW	Flew over Block B to the east
21.48 hours	Pipistrelle sp.	AT	Foraging across the northern car park
22.05 hours	Soprano pipistrelle	2 HM	Heard but not seen
22.11 hours	Common pipistrelle	2 DW	Foraging at the western end of the site
22.13 hours	Common pipistrelle	3 HM	Foraging at the northern end of Block B
22.43 hours	Soprano pipistrelle	2 BG	Heard but not seen

Table 6: Dusk Observation 10th July 2024

Time (24 Hour Clock)	Species (Common Name)	Recording No.	Observed Activity
21.41 hours	Soprano pipistrelle	BG	Heard not seen
21.32 hours	Soprano pipistrelle	DM	Foraging at the northern corner between Block F and B for several minutes arrived from the south and went back south
21.42 hours	Soprano pipistrelle	DM	Foraging at the northern corner between Block F and B, briefly
21.48 hours	Noctule	DM	Heard but not seen
21.50 hours	Soprano pipistrelle	DM	Back foraging in corner between Block F and B, arrived from south and after a few minutes went back south

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 myotid 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.

We confirm that in preparing this document we have exercised reasonable skill and care, taking into account the project objectives, the agreed scope of the work, prevailing site conditions, the degree of manpower and resources allocated to the project, and in compliance with the Chartered Institute of Ecology and Environmental Management's Code of Professional Conduct.

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