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Sent: 08 September 2023 10:06
To: Ferreira, Marlene
Subject: Just Mammals Ecology Report
Attachments: JM5623 5 WOODLAND WAY MERTHYR REPORT.pdf

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Dear Mel,

Above is the Ecology report just in. I might add, there is no standing or flowing water within the field. The estate originally had streams flowing down the side of the mountain, but on the instructions of Merthyr Council these streams were piped in metre wide concrete pipes, during construction of the estate. There is no evidence within the Garage, that there have ever been bats inside. I await your comments on the report. Thank you for your help and guidance.
Very best regards,

Lynn

Managing Director



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Field At 5
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An **Ecological Survey**
Report By:



On **Behalf Of:**

Lynn Heritage

June **2023**

Client	Lynn Heritage
Project Name	Field At 5 Woodland Way, Heolgerrig, Merthyr Tydfil CF48 1SQ
Report Title	An Ecological Survey Report
File Reference	JM5623

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1 Executive Summary

- 1.1 The owners of 5 Woodland Way intend to build an additional residence on land adjacent to their home. This will include the demolition of an existing garage, and clearance of the majority of vegetation on the land they intend to develop. To inform the planning process a Preliminary Ecological Appraisal, and Preliminary Roost Assessment, was undertaken on the land, and garage, in May 2023.
- 1.2 The land subject to survey comprises a small area with dense bramble along the western, northern, and eastern edges. The remaining area comprises disturbed ground, with discrete grassland areas, and hedging along the boundaries. The land is assessed as suitable for reptiles, due to the presence of a variation in habitat types, and close proximity to suitable habitat in the wider landscape. Therefore, a reptile survey of the land will be required before any development can proceed – recommendations for which are included in this report.
- 1.3 During the inspection of the garage, no live bats or evidence for the presence of bats was found. However, a small number of Potential Roost Features were noted, and the garage is assessed as having low suitability for roosting bats. A single dusk emergence/activity observation will be required, and specific recommendations on potential outcomes, are considered within this report.
- 1.4 Assessment also considered the presence of breeding birds. Evidence to suggest the presence of nesting birds were observed at the site. 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. Mitigation measures, and 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. As further survey effort is required before any work can commence on the site, recommendations for biodiversity improvements are not specified in this report.

2 Introduction

- 2.1 Situated within a residential area west of the centre of Merthyr Tydfil, at National Grid Reference SO 0331 0599, and an altitude of approximately 260m Above Ordnance Datum (AOD), is the site subject to development proposals.
- 2.2 The owners of 5 Woodland Way wish to build a new dwelling within the small piece of land to the rear of their existing property, and demolish the garage just north-east of the house, to create vehicular access. To support the proposals, and inform the planning process, Just Mammals Limited was commissioned to consider the ecological features of the site, and the actual or potential presence of protected species. A Preliminary Ecological Appraisal (PEA), and Potential Roost Assessment (PRA), of the site was completed during a daytime inspection, in May 2023, by an Ecologist, and an assistant.
- 2.3 A principal 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 birds, but also species such as badger (*Meles meles*), otter (*Lutra lutra*), dormouse (*Muscardinus avellanarius*), and reptiles/amphibians.
- 2.4 This report provides the survey data of the PEA conducted on the field east of 5 Woodland Way, and of the PRA of the garage to be demolished as part of the development works. Further survey recommendations are included in this report.

3 Survey Team Experience

- 3.1 Lead surveyor, and co-author of this report is Phoebe Williams, assisted by Miriam Wearing.

Table 1: Survey Team Experience

Name	Licences	Experience
Phoebe Williams BA (Hons) MSc Ecologist	S092295/1 (great crested newt); expiry February 2025	A Geography graduate from the University of Exeter, 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. She has also carried out practical habitat management work whilst volunteering for Gwent Wildlife Trust. Phoebe has completed an MSc in Wildlife and

		Conservation Management at the University of South Wales. She is an Ecologist with Just Mammals Limited
Miriam Wearing BSc (Hons) Trainee Ecologist		Miriam has completed a BSc in Ecology from Aberystwyth University, within which she completed a dissertation involving a field study summer bat foraging activity. She has also attended a number of short courses to learn about various areas of bat ecology, including the use of a number of different bat detectors. Miriam is undertaking an MSc in Wildlife and Conservation Management at the University of South Wales and is a Trainee Ecologist with Just Mammals Limited

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 A PEA was conducted on the 9th May 2023. Details of the survey activity, and weather conditions, are provided in Table 3. Assessment employed Phase 1 habitat survey methodology. This is a standardised technique for classifying and mapping British habitats. The site and its boundaries were appraised according to the standard methodology detailed in the 'Handbook for Phase 1 Habitat Survey' (JNCC 2010). Where accessible, all areas within the survey area were inspected and assessed for indicators of ecological value, including the presence and/or field signs of any protected or rare habitats and species. The site was examined, recording plant species and features onto a custom-made recording sheet. Habitats and notes were drawn onto a map of the site, and photographs taken. A coloured Phase 1 habitat map was produced (see Appendix II).
- 4.3 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 building 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 open loft 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 Nesting birds were also considered at the time of assessment, with the surveyors 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 land subject to survey is situated at the western edge of Merthyr Tydfil, amongst housing and gardens within a residential area. Just beyond the gardens and housing, to the east and south, are areas of woodland and open grassland, somewhat connected to the site via hedgerow. Nant Cwm-glo flows to the south, approximately 150m away.
- 5.2 Accessed off Woodland Way, the site comprises a garage and field; field to the east and garage to the north-east of the property. The garage is positioned at the eastern end of a driveway, beyond which is the small field proposed for development. Access into the field is limited to walking through tree and shrub vegetation at the rear south-east end of the property. Subsequently, the land is in an unmaintained state. Approximately half of the land is dominated by dense bramble (*Rubus fruticosus*), with the remainder as disturbed ground, and some discrete grassland patches. Field boundaries include hedgerow, trees to the north and east, and fencing to the south.
- 5.2 The garage is a detached, single storey building. It features a pitched roof, along an east to west line, and is covered with clay roof tiles. There is a single roller shutter garage door in the west wall,

with a side access door in the south wall. Walls are concrete block built, with an outer brick covering. Fascia boards are white plastic. The east wall, and north-east corner, are covered with dense vegetation from the adjacent field. The interior of the garage is a vaulted space with no separate loft. The timber frame of the roof and bitumen lining membrane are exposed. The garage is currently used to store large quantities of items, restricting internal access.

6 Survey Constraints

- 6.1 The dense bramble present in the survey area restricts access to the western and northern boundaries of the field. Additionally, items stored in the garage prevented inspection of the interior of the building beyond the area just inside the side access door.

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
Cwm Glo a Glyndyrys SSSI	75m to the south	Extensive areas of marshy grassland, species-rich neutral grassland and acid grassland, and for the association of these habitats with others including woodland and heath
Cwm Taf Fechan Woodlands SSSI	1.7km to the north	Ancient broadleaved woodlands, calcareous grasslands, river habitats, and cliffs

- 7.1 Cwm Glo a Glyndyrys SSSI features multiple important habitats suitable for protected species. The proximity of this habitat to the survey area, increases suitability of the site for some protected species.

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
09/05/2023	Preliminary ecological appraisal (PEA) with daytime internal and external inspection (PW, MW)	10.30 – 12.00 hours British Summer Time (BST)	Air temperature: 13°C Cloud cover: 6/8 oktas Wind speed: F2, gentle breeze Conditions: Showers
Surveyors	Phoebe Williams (PW); Miriam Wearing (MW)		

- 8.2 A PEA was conducted on the field adjacent to 5 Woodland Way, which is the intended site for the new residence. The habitat types are summarised in Table 4 below and a Phase 1 habitat map is provided in Appendix II.

Table 4: Summary of Phase 1 Habitat Notes

Habitat	Phase 1 Classification	Description of Area and Typical Species
Type 1	A2.1 Dense/continuous scrub	Dense bramble covers the northern, western and eastern margins of the field. Few other species make up this scrub habitat, these include; buddleia (<i>Buddleja davidii</i>), creeping thistle (<i>Cirsium arvense</i>) and cleavers (<i>Galium aparine</i>).
Type 2	J1.3 Ephemeral/short perennial	An area of disturbed ground with low growing flora makes up the central part of the site, species include silverweed (<i>Potentilla anserina</i>), creeping buttercup (<i>Ranunculus repens</i>), ragwort (<i>Senecio jacobaea</i>) and coltsfoot (<i>Tussilago farfara</i>). Within this habitat, discrete grass patches are present, comprising Yorkshire fog (<i>Holcus lanatus</i>).
Type 3	J2.3.2 Hedgerow with trees, species poor	A species poor hedge with interspersed trees is present along the east and north boundary. A dry ditch is present at the base of the eastern section of hedge. At the time of the survey the ditch was completely covered with brash. Species present include cypress (<i>Cupressus sp.</i>) and ash (<i>Fraxinus excelsior</i>).
Type 4	J3.6 Building	Single garage with sparse vegetation adjacent, species include horsetail (<i>Equisetum arvense</i>), ivy (<i>Hedera helix</i>), and holly (<i>Ilex aquifolium</i>).
Type 5	J5 Other; hardstanding	The driveway that leads to the house and garage to the west is made up of this habitat type. No species were recorded.

- 8.3 A Phase 1 map showing habitats is displayed in Figure 2 (see Appendix II). Photographs of the site are provided in Appendix III.
- 8.4 Ecological assessment included identification of the potential for protected and priority species to be present on site. Survey included assessment of the garage and its use/suitability for roosting bats. During the assessment no live bats were seen; no bat droppings, and no insect remains indicative of bat feeding activity were noted.
- 8.4 Surveyors recorded a low number of Potential Roost Features associated with the garage. These are features of the building which are often utilised by bats. PRFs offering low opportunities for crevice-roosting bats were noted to include:
- a gap under a raised roof tile at the north-west corner;
 - a gap at the eaves of the north wall, of the west slope of the roof; and
 - gap above the roller shutter door allowing access into the interior.
- 8.5 The site offers habitat suitable for foraging bats. The presence of scrub and grassland habitat will likely attract insects, and therefore offer good foraging habitat.
- 8.6 Bird activity was recorded at the site; a blackbird (*Turdus merula*) was seen entering vegetation at the north-western edge of the field, although a nest was not observed, activity noted during the site visit suggests possible nesting. Additionally, a blackbird egg shell was found near the southern boundary of the field, further indicating a blackbird nest likely within close proximity.
- 8.7 Reptiles require a mosaic of habitats that provide the range of features they need for foraging, sheltering and overwintering purposes. No reptiles were observed during the survey. The site contains a variety of habitat types including scrub for shelter, areas of open, disturbed ground for basking and grassland for foraging.
- 8.8 No evidence for the presence of badger such as setts, worn tracks, footprints, latrines/dung pits or hair was recorded. The wooded areas beyond the site boundaries are likely suitable for this species. The site itself has limited connectivity to suitable habitat in the wider area for badger. Their passage through the site is considered unlikely.
- 8.9 No features suitable for otter are present on site.
- 8.10 Hazel dormice are not only a woodland species, but will make use of connecting hedgerows and scrub; both for dispersal and long-term purposes. The site does not contain any areas of woodland and is not well connected to areas of suitable habitat in the surrounding landscape, and is therefore considered unsuitable for this species.
- 8.11 No amphibians were found during the survey. Amphibians require ponds in which to breed, and good quality terrestrial habitat which provides shelter. There are no ponds on site. There are two ponds within 500m, which are visible from aerial maps; just under 500m to the east and over 300m to the north-east. Neither pond is particularly well connected to the site, due to the presence of surrounding buildings, roads and areas of hardstanding.
- 8.12 No evidence for the presence of hedgehog was noted. The habitat on site, such as scrub provide suitable sheltering habitat for hedgehogs, in addition to the surrounding residential gardens, which likely provide further suitable habitat.

9 Discussion and Conclusions

- 9.1 The owners of 5 Woodland Way wish to develop a small area of land adjacent to their property. Development proposals include the construction of a new dwelling, and the demolition of an existing garage, to create access.
- 9.2 Habitats on site are assessed as suitable for reptiles. Reptiles require a mosaic of habitats to satisfy their needs for foraging, predator avoidance, and temperature regulation. The presence of dense bramble, open ground, and discrete grassland patches, represent suitable habitat for such requirements. Furthermore, the presence of Cwm Glo a Glyndyrys SSSI just south of the site, although not particularly well connected to the site, some connectivity is possible via garden hedgerow and gaps within the field boundaries. As the Wildlife and Countryside Act 1981 (as amended), makes it an offence to injure or kill all common and widespread species of reptile in Britain, suitable preventative measures need to be undertaken prior to development. Thus, a reptile

survey is required prior to the development to determine likely absence/presence. Recommendations are made below.

- 9.3 Habitats on site also have some suitability for amphibians during their terrestrial stage, due to the presence of foraging habitat, and dense areas of vegetation for shelter. However, the lack of standing water on site means there is no habitat to support breeding populations. Although there are two ponds within 500m of the site, neither pond is well connected to the site, due to the presence of buildings and roads, particularly the closest pond to the north. The second pond, just under 500m to the east of the site is surrounded by better quality habitat, including that of Cwm Glo a Glyndyrys SSSI. Furthermore, a reptile survey will likely detect any amphibian species that may be using the site.
- 9.4 The habitats on site are also suitable for west European hedgehogs (*Erinaceus europaeus*), a Section 7 species. There are abundant sheltered areas, as well as open areas, with a variety of plants, therefore invertebrates, providing suitable foraging opportunities. The boundaries of the site comprise fencing and hedgerow, with sufficient gaps for movement of hedgehogs in and out.
- 9.5 Inspection of the garage found no live bats, droppings, or insect remains internally or externally. A small number of PRFs were noted which could be used by crevice-dwelling species, and indicate that the garage has some suitability to be used by roosting bats. Given the low number, and locations of the features noted, the building is assessed to have low suitability for roosting bats. All species of bats in Britain, and their places of rest (roosts) are protected under the provisions of the Wildlife and Countryside Act 1981 (as amended), and the Conservation of Habitats and Species Regulations 2019 (Amendment) (EU Exit). Since the garage is proposed for removal, further survey is required.
- 9.6 Use of the garage for hibernation by bats at other times of the year was also assessed. There are no low level, deep crevices that could be used for bats to hibernate. Hibernation potential is therefore assessed as negligible.
- 9.7 When considering the context of the site within the landscape, the plot is within a residential area of Merthyr Tydfil, with the Cwm Glo a Glyndyrys SSSI under 100m south of the site. The SSSI has habitat suitable for reptiles, amphibians, birds, hedgehogs, and foraging bats. The proximity of suitable habitat is considered to increase the likelihood of the suitability of the site for some protected species. Although not well connected to the site, some connectivity is present.
- 9.8 Whilst during the assessment no active nests were noted, bird activity suggested likely nesting within the vegetation at the north-west corner of the site. Additionally, a blackbird (*Turdus merula*) egg shell was found near the southern boundary, indicating a blackbird nest likely within close proximity. The site provides a large number of nesting opportunities for birds within the bramble, and boundary hedging. All nesting birds, their chicks, eggs and nests whilst in use or are being built are protected under the Wildlife and Countryside Act 1981 (as amended). Suitable provision and safeguarding measures for nesting birds must be considered within the development, with recommendations made below.

10 Recommendations

- 10.1 The owners of the field and garage adjacent to 5 Woodland Way intend to build an additional dwelling, within the eastern section of the field. Proposals also include demolition of the garage. The field and garage were assessed for the presence of protected species, and both were determined to have varying levels of suitability for multiple species.
- 10.2 Reptile presence was not established during the PEA. However, habitats are considered suitable for reptiles and additional survey will be required following recognised methodology described in Froglife Advice Sheet 10. Specific recommendations for the site, such as relocation of any reptiles present, and design of mitigation and compensatory habitat, will then depend on the outcome of those surveys. The prime time of year to conduct reptile surveys is during the months of mid-March/April to June, and the entire month of September. Inspection visits must be conducted during appropriate weather conditions, and at temperatures of 9°C and 18°C.
- 10.3 Habitats on site are also somewhat suitable for amphibians, during their terrestrial phase. No ponds are present on site, and satellite mapping for the surrounding area found two ponds within 500m of the site. However, those ponds are not well connected to the site. If amphibians are using the site, this is expected to be found during the reptile survey.

- 10.4 Due to the low suitability of the garage for roosting bats, a single dusk emergence/activity observation of the building must be undertaken during the active summer period. This survey must be completed in the period between mid-May and the end of August. This is the appropriate level of assessment required to support the needs of the local planning authority. If bat emergence is identified from the garage, a second observation will be required, and an application for a European Protected Species (EPS) licence may be necessary. This licence will be required if the intended building works would result in the destruction, modification, or disturbance of bat roosts. Survey must take place under appropriate conditions, in compliance with national survey guidelines. Survey must be carried out on dry evenings, with relatively low wind speeds and temperatures in excess of 8°C.
- 10.5 Birds were observed at the site, and are likely to be nesting on site within the trees, hedgerow and scrub. All nesting birds, their chicks, eggs and nests whilst in use or are being built are protected under the Wildlife and Countryside Act 1981 (as amended). Vegetation clearance involving trees, scrub or any section of the hedgerow must be scheduled to be undertaken outside of the bird nesting season where possible, which runs from March to August. If any vegetation requires removal within the bird nesting season, these must first be checked by a suitably qualified ecologist. If during any vegetation removal an active nest is discovered, all works within a 2m radius of the nest must be immediately stopped, and not recommenced until all chicks have fledged.
- 10.6 To protect hedgehogs and other mammals, which may pass through the site, any trenches dug forming part of any groundworks during construction must be covered overnight or left with a 45° sloping side to prevent any animal from becoming trapped. Similarly, any unconnected pipes must be capped overnight to prevent any animal from becoming stuck. All new fencing installed around the site must also include gaps to facilitate the movement of mammals through the site.
- 10.7 To comply with Welsh Planning Policy PPW11, it will be necessary to provide a scheme of enhancements to support biodiversity. Further survey will be required on the field and garage, and the plans for the new structure have not been finalised at the time of this report. Therefore specific recommendations of enhancements for the site will be given following additional survey work.

11 References

- Aebischer, N.J., Balmer, D., Brown, A.F., Douse, A., Eaton, M.A., Lindley, P., McCulloch, N., Noble, D.G., Stanbury, A.J., and Win, I. (2021). *'Birds of Conservation Concern 5: The Population Status of Birds in the United Kingdom, Channel Islands and the Isle of Man'*. British Trust for Ornithology, Thetford
- Collins, J. (Ed.) (2016). *'Bat Surveys for Professional Ecologists – Good Practice Guidelines – 3rd Edition.'* Bat Conservation Trust, London
- 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

Appendix I: Site Plan

Figure 1: Site location aerial view



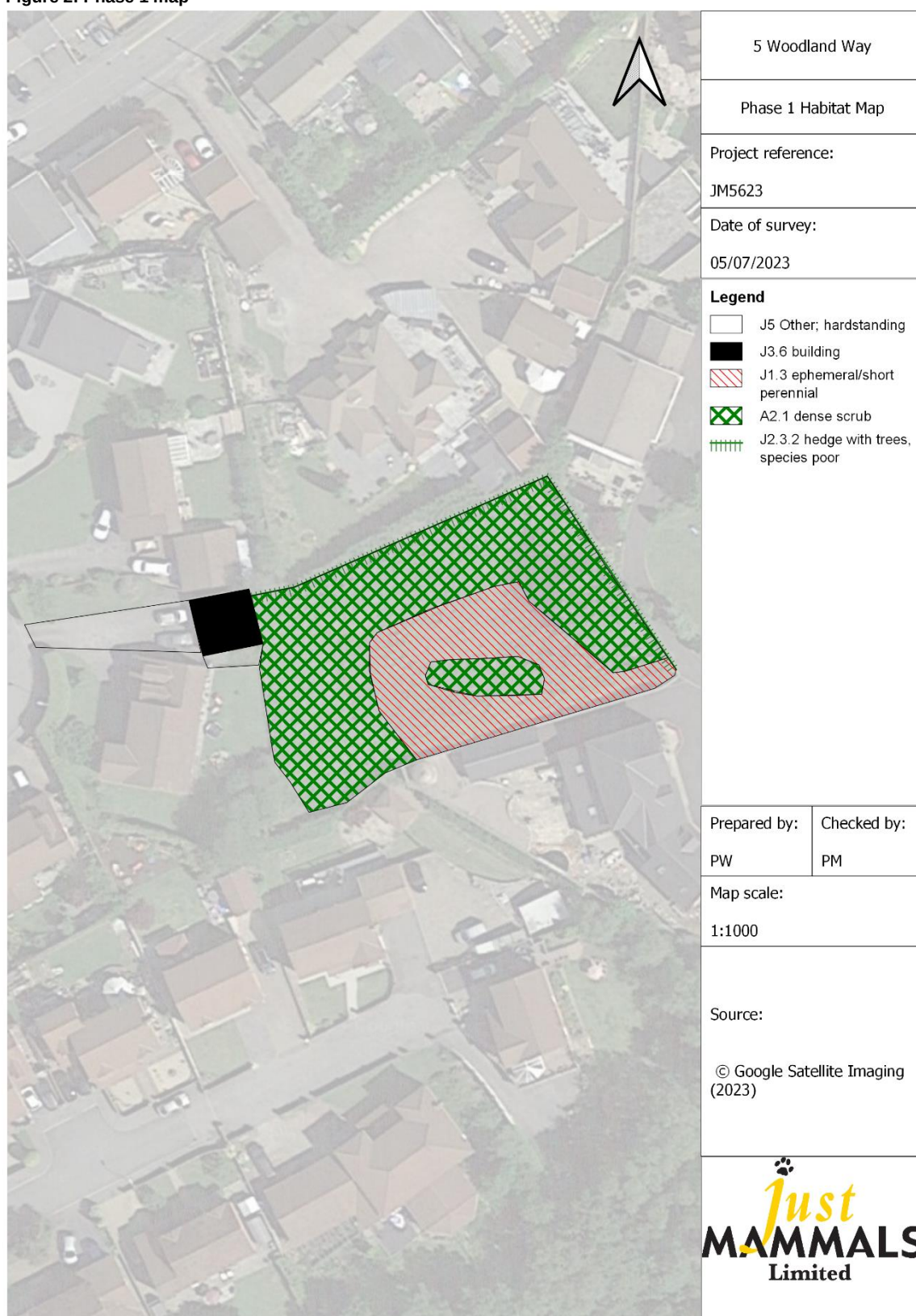
Aerial view of the site	
Site Reference: JM5623	
Map Scale: 1:25,000 & 1:2,400	
Source: © Google Satellite Imaging 2023	

Legend

- Site outline
- Site location

Appendix II: Survey Results

Figure 2: Phase 1 map



Appendix III: Site Photographs

Plate 1: View of field from western boundary



Plate 2: View of field from eastern boundary



Plate 3: Southern boundary area



Plate 4: Northern boundary tree line and bramble



Plate 5: Dense vegetation up to east wall of garage



Plate 6: Slope of field and bramble from north boundary



Plate 7: Gap in fence at east corner



Plate 8: Disturbed ground in eastern area of field



Plate 9: Black bird egg shell at southern boundary



Plate 10: Disturbed ground habitat (Type 2)



Plate 11: Western elevation of garage



Plate 12: South-east corner of garage



Plate 13: Raised roof tile on garage western slope



Plate 14: Gap in mortar at garage northern eaves



Plate 15: West boundary fence and south wall of garage



Plate 16: Internal roof frame of garage



Appendix IV: Species List

Table 5: Species list

Plant Species		JNCC Classification			
Common Name	Scientific Name	1	2	3	4
Sycamore	Acer pseudoplatanus	X			
Garlic mustard	Alliaria petiolata	X			
Meadow foxtail	Alopecurus pratensis		X		
Buddleia	Buddleja davidii	X			
Pendula sedge	Carex pendula		X		
Common knapweed	Centaurea nigra		X		
Creeping Thistle	Cirsium arvense	X			
Hawthorn	Crataegus monogyna		X		
Cypress tree	Cupressus sp			X	
Fireweed	Epilobium angustifolium	X			
Horsetail	Equisetum arvense				X
Wild strawberry	Fragaria vesca		X		
Ash	Fraxinus excelsior			X	
Cleavers	Galium aparine	X			
Herb Robert	Geranium robertianum	X			
Ivy	Hedera helix	X			X
Hogweed	Heracleum sphondylium		X		
Yorkshire-fog	Holcus lanatus		X		
Holly	Ilex aquifolium				X
Soft rush	Juncus effusus		X		
Bird's-foot-trefoil	Lotus corniculatus	X	X		
Dogstooth lichen	Peltigera canina		X		
Greater plantain	Plantago major	X			
Ribwort plantain	Plantago lanceolata		X		
Silverweed	Potentilla anserina	X	X		
Meadow buttercup	Ranunculus acris		X		
Creeping buttercup	Ranunculus repens		X		
Rose	Rosa	X			
Bramble	Rubus fruticosus	X			
Dock	Rumex obtusifolius	X			
Willow	Salix	X	X		
Common ragwort	Senecio jacobaea		X		
Hedge woundwort	Stachys sylvatica	X			
Dandelion	Taraxacum officinale	X	X		
Clover	Trifolium species		X		
Coltsfoot	Tussilago farfara		X		
Gorse	Ulex europaeus	X			
Stinging nettle	Urtica dioica	X			
Germander speedwell	Veronica chamaedrys		X		
Common vetch	Vicia sativa		X		
Fauna					
Peacock butterfly	Inachis io				

Appendix V: Ecology of British Bats

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

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

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

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

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

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

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

Appendix VI: 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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