Preliminary Ecological Appraisal and Preliminary Roost Assessment

Woodmancote Parish Hall and School Cottage, Brighton Road, Woodmancote, West Sussex BN5 9SR

Anita Eastwood

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Industry Guidelines and Standards

This report has been written with due consideration to:

- Chartered Institute of Ecology and Environmental Management (2017). Guidelines for Preliminary Ecological Appraisal. 2nd edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2018). Guidelines for Ecological Impact Assessment in the UK and Ireland: Terrestrial, Freshwater, Coastal and Marine. Version 1.1. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2017). Guidelines on Ecological Report Writing. Chartered Institute of Ecology and Environmental Management, Winchester.
- Chartered Institute of Ecology and Environmental Management (2020). Guidelines for Accessing, Using and Sharing Biodiversity Data in the UK. 2nd Edition. Chartered Institute of Ecology and Environmental Management, Winchester.
- British Standard 42020 (2013). Biodiversity – Code of Practice for Planning and Development.
- British Standard 8683:2021 (2021). Process for Designing and Implementing Biodiversity Net Gain.

Proportionality

> The work involved in preparing and implementing all ecological surveys, impact assessments and measures for avoidance, mitigation, compensation and enhancement should be proportionate to the predicted degree of risk to biodiversity and to the nature and scale of the proposed development. Consequently, the decision-maker should only request supporting information and conservation measures that are relevant, necessary and material to the application in question. Similarly, the decision-maker and their consultees should ensure that any comments and advice made over an application are also proportionate.
>
> The desk studies and field surveys undertaken to provide a Preliminary Ecological Appraisal (PEA) might in some cases be all that is necessary.
>
> (BS 42020, 2013)

Executive Summary

Arbtech Consulting Limited was instructed by Anita Eastwood to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) at Woodmancote Parish Hall and School Cottage, Brighton Road, Woodmancote, West Sussex BN5 9SR (hereafter referred to as "the site"). The survey was required to inform a planning application for alterations to the existing cottage and parish hall, through the partial demolition and extension of the property, and the demolition and rebuild of the detached garage building (hereafter referred to as "the proposed development").

The following is work you will need to commission to obtain planning permission and to comply with legislation. Further information, along with opportunities for biodiversity enhancement, are outlined in Table 7 of this report.

Feature	***Foreseen impacts***	***Recommendations*** *Measures required to adhere to guidance, legislation and planning policies.*
Designated sites	No direct impacts to any statutory sites will occur as a result of the proposed development. However, due to the possible presence of non-statutory designations in the vicinity, indirect effects such as pollution or tree damage could occur during construction, if present. The impacts cannot be fully assessed without the biological data from SBRC.	Best practice measures to minimise the possibility of pollution and tree damage must be implemented during construction.
Habitats and flora	No direct impacts to any notable habitats will occur as a result of the proposed development. However, due to the proximity of the site to P1 and the adjacent woodland, indirect effects such as pollution or tree damage could occur during construction, as the proposed garage building is in proximity to mature trees on the eastern boundary.. The proposed development will result in the loss of ~2m of non-native hedgerow. This is likely to have minimal impact on biodiversity. An Ecological Mitigation Plan (EMP) is being carried out by Arbtech.	Best practice measures to minimise the possibility of pollution and tree damage must be implemented during construction. The Local Planning Authority (LPA) may request a Arboricultural Assessment to determine impacts on trees. The recommendations within the EMP must be adhered to.
Roosting bats (B1)	The proposed development will result in the renovation of the entire building, including the demolition and rebuild of ground floor extensions, the removal of LS1 to convert into a vaulted ceiling, and repairs to the roof coverings. This could result in destruction of crevice dwelling bat roost features and could cause disturbance, death or injury to bats.	Three bat emergence and re-entry surveys are required during the active bat season (optimal May to August, suboptimal September) to characterise the roosts present. At least two of the surveys should be completed during the optimal survey period mid-May to August inclusive.

	The development could also block access points, modify and disturb the BLE hibernation roost identified in LS2 through repairs to the roof, and could cause disturbance, death or injury to bats.	One of these surveys can be a dawn re-entry survey or infra-red cameras should be used as an aid. Surveys should be a minimum of two weeks apart. Four surveyors are required to provide full coverage of the building. An EPSL application to Natural England will be required. A Material Changes Check will be required within three months of the EPSL submission, if no survey work has been undertaken within that period. If bat droppings were found during the PRA, a sample will need to be sent off for DNA analysis to confirm the bat species present, to inform the EPSL application. In addition, bat hibernation surveys are required which will comprise one survey visit between December and February, to further characterise the hibernation roosts present within B1. The surveys will comprise an inspection of building B1. The inspections will be complemented by the deployment of two static detector at the site, one in LS2 and the other on the ground floor of the cottage (western extent of the building. **Surveys are likely to be required before planning permission can be granted.**
Foraging and commuting bats	The proposed development will result in the loss of small areas of ~2m of hedgerow to accommodate the new garage building but given their low value and the presence of more extensive areas of foraging and commuting habitat in the locality, this is likely to be inconsequential for bats. P1 will be retained as part of the proposed development. The proposed development will include the use of lighting which could spill on to bat roosting, foraging or commuting habitat and deter bats from using these areas.	A low-impact lighting strategy will be adopted during and post-development.

Amphibians	The proposed development will not result in the loss of any ponds. However, due to the presence of ponds within close proximity of the site, indirect effects such as pollution could occur during construction. Construction activity could also result in the death or injury to amphibians, if present on site. The GCN rapid risk assessment (Natural England, 2020) returned as offence 'highly unlikely' due to the removal of habitat within 100m of P1 being <0.01ha.	A precautionary working method (PWM) will be implemented during construction.
Reptiles	Approximately 2m of hedgerow will be removed during construction. The loss of such habitats is likely to be inconsequential to local reptile populations owing to their low value and the presence of more extensive habitat locally. However, site clearance could result in the death or injury of reptiles, if present.	A PWM will be implemented during construction.
Badgers	No works will be undertaken within 30m of a badger sett. Approximately 2m of hedgerow will be removed during construction. The loss of such habitats is likely to be inconsequential to local badger populations owing to their low value and the presence of more extensive habitat locally. However, construction activities could result in the death or injury of badgers, if present.	A PWM will be implemented during construction.
Hedgehogs	Approximately 2m of hedgerow will be removed during construction. The loss of such habitats is likely to be inconsequential to local hedgehog populations owing to their low value and the presence of more extensive habitat locally. However, construction activities could result in the death or injury of hedgehogs, if present.	A PWM will be implemented during construction.
Nesting birds	Approximately 2m of hedgerow will be removed during construction. The loss of such habitats is likely to be inconsequential to local bird populations owing to their low value and the presence of more extensive habitat locally. However, the proposed development could result in the destruction or the disturbance and subsequent abandonment of active bird nests.	Works should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the vegetation should be undertaken immediately, by qualified ecologist, prior to the commencement of work. All active nests will need to be retained until the young have fledged.

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1.0 Introduction and Context

1.1 Background

Arbtech Consulting Limited was instructed by Anita Eastwood to undertake a Preliminary Ecological Appraisal (PEA) and Preliminary Roost Assessment (PRA) at Woodmancote Parish Hall and School Cottage, Brighton Road, Woodmancote, West Sussex BN5 9SR (hereafter referred to as "the site"). The survey was required to inform a planning application for alterations to the existing cottage and parish hall, through the partial demolition and extension of the property, and the demolition and rebuild of the detached garage building (hereafter referred to as "the proposed development"). A plan showing the proposed development is provided in Appendix 1.

The aim of the PEA was to obtain data on existing ecological conditions, and to conduct a preliminary assessment of the likely significance of ecological impacts on the proposed development. The aim of the PRA was to determine the presence or evaluate the likelihood of the presence of roosting bats, and to gain an understanding of how bats could use the site for roosting, foraging or commuting.

No previous ecology reports have been produced for this site by Arbtech Consulting Ltd or, to the author's knowledge, by any other consultancy.

1.2 Site Context

The site is located at National Grid Reference TQ 23294 14785 and has an area of approximately 0.16ha comprising a main dwelling (two-story cottage) with an attached hall, as well as a detached garage building. The majority of the site is covered by hardstanding on the southeast of the site, which is reserved for vehicle parking. The rear (north and west) garden has been cleared, resulting in an area of bare ground containing perennial vegetation, felled trees and shrubs. There is a pond located in the rear garden, as well as newly planted trees on the north and western boundary. The site is bordered by Brighton Road to the south, with an area of deciduous woodland to the north and east, and an arable field to the west.

A site location plan is provided in Appendix 2.

1.3 Scope of the Report

The PEA element of this report describes the baseline ecological conditions at the site, evaluates habitats within the survey area in the context of the wider environment and describes the suitability of those habitats for notable or protected species. It identifies possible ecological constraints as a result of the proposed development and summarises the requirements for further surveys and mitigation measures to inform subsequent mitigation proposals, achieve planning or other statutory consent and to comply with wildlife legislation.

The PRA element of this report provides a description of all features suitable for roosting, foraging and commuting bats and evaluates those features in the context of the site and wider environment. It further documents any physical evidence collected or recorded during the site survey that establishes the presence of roosting bats. It provides

information on possible constraints to the proposed development as a result of bats and summarises the requirements for any further surveys to inform subsequent mitigation proposals, achieve planning or other statutory consent and to comply with wildlife legislation.

To achieve this, the following steps have been taken:

- A desk study has been carried out.
- A field survey has been undertaken to record baseline information on the site and surrounding area including habitat types and their suitability for notable or protected species, including roosting bats.
- Invasive plant and animal species (such as those listed on Schedule 9 of the Wildlife & Countryside Act) have been identified.
- Potential impacts on features of value, as a result of the proposed development, have been identified.
- Recommendations for further surveys and mitigation have been made.
- Opportunities for the enhancement of the site for biodiversity have been set out.

2.0 Methodology

2.1 Desk Study

The desk study included a review of the magic.gov.uk database for statutory designated sites within a 2km radius of the site. Landscape value and the presence of notable habitats as well as granted European Protected Species Licence (EPSL) and notable species records held on magic.gov.uk database has also been considered where these are within influencing distance of the site.

2.2 Field Survey

The survey was undertaken by Charlie Vaughan-Jones (2022-10651-CL08-GCN & 2022-10755-CL17-BAT) on Thursday 12th January 2023.

Preliminary Ecological Appraisal

An extended habitat survey was undertaken, following the methodology set out in UK Habitat Classification User Manual (UK Habitat Classification Working Group, 2018). All land parcels are described and mapped and, where appropriate, target notes provide supplementary information on habitat conditions, features too small to map to scale, species composition, structure and management. Botanical species lists were compiled with reference to the DAFOR scale (D = Dominant; A = Abundant, F = Frequent, O = Occasional, R = Rare).

During the survey, habitats were assessed for their suitability to support protected species, and field signs indicating their presence recorded. The assessment takes into consideration the findings of the desk study, the habitat conditions on site and in the context of the surrounding landscape, and the ecology of the protected species.

Ponds on and adjacent to the site were assessed for their suitability to support great crested newts using the *Habitat Suitability Index (HSI) Assessment Methodology* (Oldham et al, 2000).

Habitat Suitability Index (HSI) Assessment

Ponds were assessed for their suitability to support GCN using the Habitat Suitability Index (HSI) Assessment Methodology (Oldham et al, 2000).

HSI is a standard measure of calculating the suitability of a pond to support breeding great crested newts, based on an assessment of 10 characteristics (indices), including size, shading, depth and vegetation profile. The assessment generates a number between 0 and 1 for each of the indices which are combined to provide an overall assessment of a pond's suitability to support GCN on a categorical scale (Table 1). The assessment has not been designed for or tested on other waterbodies such as ditches.

Table 1: HSI Suitability Scores

HSI Score	Suitability	Predicted GCN Occupancy of Ponds in each Category
<0.5	Poor	3%
0.5 to 0.59	Below Average	20%
0.6 to 0.69	Average	55%
0.7 to 0.79	Good	79%
>0.8	Excellent	93%

Preliminary Roost Assessment

The PRA focussed on two built structures which will be affected by the proposed development as well as providing an overview of the wider site and the surrounding landscape for bat roosting, foraging and commuting habitat.

For any surveyed buildings:

A non-intrusive visual appraisal was undertaken from the ground, using binoculars to inspect the external features of the buildings for features which bats could use for roosting, including access or egress points and for signs of bat use including droppings, scratch marks, insect remains and urine smear marks. An internal inspection of the buildings was also made, including the living areas and any accessible roof spaces, using a torch and ladders. The surveyor paid particular attention to the floor and flat surfaces, window shutters and frames, lintels above doors and windows, and carried out a detailed search of numerous features within the roof space.

Suitability Assessment

Built structures were categorised according to the likelihood of bats being present and the types of roost that the identified features could support. This is summarised in Table 2 for buildings below. Roost suitability is classified as high, moderate, low and negligible and dictates any further surveys required before works can proceed.

Table 2: Features of a building that are correlated with use by bats

Classification	***Feature of building and its context***
Moderate to high	Buildings or structures with features of particular significance for larger numbers of roosting bats e.g. mines, caves, tunnels, icehouses and cellars. Habitat on site and surrounding landscape of high quality for foraging bats e.g. broadleaved woodland, tree-lined watercourses and grazed parkland. Site is connected with the wider landscape by strong linear features that would be used by commuting bats e.g. river and or stream valleys and hedgerows. Site is proximate to known or likely roosts (based on historical data). Buildings with high suitability could support roosts of high conservation value such as maternity or hibernation roosts.

Low	A small number of possible roost sites or features, used sporadically by individual or small numbers of bats. Potential roost features may be suboptimal for reasons such as shallow depth, poor thermal qualities or upwards orientation with exposure to inclement weather or predators. Habitat suitable for foraging in close proximity, but isolated in the landscape. Or an isolated site not connected by prominent linear features. Few features suitable for roosting, minor foraging or commuting.
Negligible	Unsuitable for use by bats.

2.3 Limitations

It should be noted that whilst every effort has been made to describe the baseline conditions within the survey area, and evaluate these features, this report does not provide a complete characterisation of the site. This assessment provides a preliminary view of the likelihood of protected species being present. This is based on suitability of the habitats on the site and in the wider landscape, the ecology and biology of species as currently understood, and the known distribution of species as recovered during the searches of historical biological records.

A biological records data search has not been undertaken. However, given the location of the site, the nature of the habitats present and the assessed suitability of the site for protected or notable species, it is not anticipated that the purchase of biological records data will add any significant weight or alter the conclusions and recommendations outlined in this report.

The survey was completed outside of the optimal survey period (April to October) limiting the identification of ground flora species.

These limitations have been taken into account during the evaluation of the site and requirement for further surveys and mitigation.

3.0 Results and Evaluation

3.1 Designated Sites

No statutory designated sites were identified within 2km of the site.

The site lies within the impact risk zone for Beeding Hill to New Timber Hill Site of Special Scientific Interest (SSSI). The proposed development is not listed as a possible high risk with regard to this designation.

3.2 Field Survey Results

The results of the field survey are illustrated in Appendix 3. The weather conditions recorded at the time of the survey are shown in Table 3.

Table 3: Weather conditions during the survey

Date: 12/01/2023	
Temperature	8°C
Humidity	81%
Cloud Cover	100%
Wind	38mph
Rain	Light shower

Habitats and Flora

The following habitats are present within and adjacent to the site:

- Bare ground – u1b (73)
- Other hedgerows – h2b
- Young trees - U1b (1172)
- Scattered trees - u1b (11)
- Standing and open water – r1 (19)
- Buildings – ub15
- Developed land; sealed surface – u1b

A description and photographs of each habitat are provided in Table 4.

No protected or non-native invasive plant species (as listed under Schedules 8 or 9 of the Wildlife and Countryside Act 1981) were identified on the site.

Table 4: Description and photographs of habitats within and adjacent to the site

Habitat Type	***Habitat description***	***Photograph***
Bare ground – u1b (73)	The site has been historically cleared of its vegetation across the majority of the site, including the felling of trees. The site now consists of ~0.076ha of bare ground, with sparse perennial regrowth established across the site. The species consist of frequent counts of common ivy, creeping myrtle and cherry laurel shrubs. There are also occasional instances of snow drops, primrose, lesser celandine and sedge *Carex spp.*, (could not be identified to a species level as had been managed to a short level). There are also rarer instances of lords-and-ladies as well as stinking iris. The species amongst the perennial regrowth are characteristic of woodland flora and indicate the site's previous condition and species composition. However, it is not listed as such on the Magic database.	 *Figure 1*

Other hedgerows – h2b	There is a small section of non-native intact hedgerow that extends through the centre of the site from the eastern boundary. The hedgerow is approximately 12m in length, 2m in depth. There is also another section of hedgerow on the southern boundary of the site of the same composition which extends 12m and is ~2m in depth. Both hedgerows cover a collective area of ~0.005ha. The species are dominated by cherry laurel, with occasional recordings of evergreen spindle and cypress *spp.* Brambles and creeping myrtle can be found at the base of the hedgerow, however, the ground flora is sparse.	 *Figure 2*
Scattered trees - u1b (11)	There are four young trees located on the southern boundary of the site. The species consist of hawthorn and copper beech, with an average canopy height of 6m. The trees are in moderate condition.	 *Figure 3*

Young trees - U1b (1172)	A row of young copper beech saplings has been planted along the western boundary of the site. There are approximately 40 saplings that extends ~25m.	 *Figure 4*
Standing and open water – r1 (19)	There is a pond located in the centre of the site which contains a liner at the base, allowing it to hold water throughout the year. The pond is ~4m^2 and 0.5m deep. The pond is filled with brash and leaf litter from the surrounding trees. There is no emergent vegetation in the pond.	 *Figure 5*

Buildings – ub15	There are two buildings on the site, comprising the parish hall and a detached garage building. The area of the site covered by buildings amounts to ~0.022ha.	 *Figure 6*
Developed land; sealed surface – u1b	There is a large area of hardstanding (asphalt) dedicated for parking. There is also a small section of concrete that surrounds the main dwelling on site and provides access around the property. The area covered by hard standing amounts to ~0.054ha.	 *Figure 7*

Fauna

Bats

There are two granted bat EPSL's within 2km of the site, with the closest being ~80m south for the damage of a breeding site and destruction of a resting place of a common pipistrelle, soprano pipistrelle and brown long-eared roost under the licence number 2019-38766-EPS-MIT. The close proximity of the this roost destruction greatly increases the risk of displaced bats finding roosting habitat on site.

The pond in the rear of the garden is excellent for foraging bats, as it will attract an abundance of invertebrates to the area. The woodland surrounding the site to the north and east is also excellent as bats inn the local area can commute across the linear woodland edge. There are also mature hedgerows on the site which will aid dispersal into the wider landscape and are of high value to commuting bats.

The results of the PRA are provided in Table 5. Two long-eared bats were discovered within the western extent of the building in the main cottage. One of the bats was discovered hibernating in the loft compartment, hanging from the roofing felt. The second bat was discovered in the washroom of the ground floor, hung from an area of timber paneling on the ceiling. The second bat appeared to be dead, as its body and ears were unfolded, and it was hanging next to a window with a large amount of daylight penetrating through. **No bat droppings were found on site.**

Table 5: Assessment of the suitability of the site for bats

Feature Ref	***Description***	***Photographs***
B1 (exterior)	B1 (Figure 8) is a two-story building, comprising a cottage (western extent) and parish hall (eastern extent). The building is constructed of brick, which is in moderate condition. The roof is pitched with gabled ends, with more recent single-storey extensions that also have pitched roofs. There are no suitable roosting features across the masonry work on this elevation. The roof is covered with clay tiles, of which many are lifted and create gaps suitable for crevice dwelling bat species to roost beneath, such as a pipistrelle species, (Figure 9). The fascia on the western extent of the elevation has been pulled away from the building by the attached power lines. This creates a gap that is suitable for crevice dwelling bats to roost, as well as creating a roost access point for void dwelling species to enter the void (Figure 10). The windows are constructed of timber on the eastern extent of the building and uPVC on the west. There are no suitable roosting features around the window frames on this elevation. The soffits are constructed of timber and no suitable roosting features were noted on this elevation.	 *Figure 8 - southern elevation of B1*



Figure 9 - lifted roof tiles



Figure 10 - pulled away fascia board

B1 – eastern elevation (Figure 11)

The eastern elevation of B1 also contains numerous lifted roof tiles (Figures 12 & 13) which create gaps suitable for crevice dwelling bats to roost beneath. There is also a small section of hanging tiles that are lifted and create further opportunities for crevice dwelling bats to roost behind (Figure 12).

There are gaps at the soffits of this elevation where the exposed lining does not meet the exterior wall and is suitable for crevice dwelling bats to roost on the wall tops (Figure 14).

The window and door frames are well sealed with no suitable roosting features present.



Figure 11 - eastern elevation of B1



Figure 12 - lifted roof and hanging tiles



Figure 13 - lifted roof tiles on northern extent of eastern elevation



Figure 14 - gaps at the eaves between roof lining and external wall

B1 – northern elevation (Figure 15)

The northern elevation contains numerous lifted tiles across the roof, which are suitable for crevice dwelling bat species to roost behind (Figure 16).

There is also a section of fascia board on the western ground floor extension which is also suitable for crevice dwelling bats to gain access to and roost behind the board (Figure 17).



Figure 15 - northern elevation of B1



Figure 16 - lifted roof tiles with moderate covering of moss

		 *Figure 17 - gap behind fascia on lean-to extension*
	B2 – western elevation (Figure 18) The western elevations' roof contains numerous lifted tiles (Figure 19) which are suitable for crevice dwelling bats to roost beneath. There is cracking present through the mortar joints and where the mortar has spalled creates gaps that are suitable for crevice dwelling bats to roost in (Figure 20). The windows and doors are well sealed with no suitable roosting features present.	 *Figure 18 - western elevation of B1*



Figure 19 - lifted roof tiles



Figure 20 - stepped cracking in mortar joints with spalled mortar

B1 (interior)	B1 – lofts and interior space The building contains two separate loft spaces. Loft space 1 (LS1 – Figure 21) is located above the hall in the eastern extent of the building. The loft is approximately 3m in height by 4m width and 11m in length. It is constructed from a traditional timber frame, including rafters, purlins and a ridge board. The loft is lined with lath and plaster, which is in poor condition and has spalled across many areas of the roof. There is a large gap along the ridge line where light can be seen penetrating the loft (Figure 22). The loft floor is lined with mineral woold insulation, and the joists are exposed. The second loft space, loft space 2 (LS2 – Figure 23), is located in the attic of the cottage on the western extent of the building (where a hibernating BLE was found hanging from the felt lining). The loft is approximately 1.9m in height, 4m width and 8m in length. The loft is constructed of rafters, purlins, collar ties and struts. The roof is lined with bitumen felt and is generally in good condition with no noticeable gaps or tears. The hatch to the loft is open. The floor is lined with mineral wool insulation between the joists and there are stored items within the loft. No daylight penetrated the loft space.	 *Figure 21 - LS1*  *Figure 22 - large amount of light spill along ridge*

The ground floor washroom (Figure 25) was inspected (which is where a dead BLE was discovered) due to the building being unoccupied currently. There is a window that allows a large amount of light to enter the room. The ceiling is lined with timber panelling which has missing boards which are suitable for bats to perch on. The door to the room is open and the remainder of the building is accessible to bats. The now dead BLE likely gained access to the washroom through the open loft hatch in LS2.

All other rooms within the building were inspected, with no further evidence of roosting bats discovered.



Figure 23 - LS2



Figure 24 - ground floor washroom

B1 – evidence of bat

A hibernating BLE was discovered within LS2, hanging from the roofing felt (Figure 25). The remainder of the loft was inspected for any further evidence of roosting bat; none was found.

Another BLE was discovered within the washroom on the ground floor of the building (Figure 26). The bat was hanging in front of a window with a large amount of light entering the room. The bat is believed to be dead, as indicated by its unusual body position (one of the ears was unfolded and the wings partially open, face fully exposed and no signs of movement). No further evidence was discovered in the washroom.

The remainder of the building (internal and external) was also inspected for bat evidence; none was found. There were no droppings present below the position of either bat.



Figure 25 - hibernating BLE hanging from felt lining of LS2



Figure 26 - BLE hanging from timber panelling of washroom

B2 – Exterior	B2 – southern elevation (Figure 26) & northern elevation (Figure 27) B2 is a detached garage building constructed of preformed concrete. The structure of the building is in reasonable condition with no suitable roosting features, such as cracks, that roosting bats could utilise. The garage door is partially open and void dwelling bats could gain access to the interior of the building and roost internally (Figure 26). The northern elevation of the building has a smashed window which is also suitable as a roost entry point (Figure 28). The roof is covered with a corrugated sheet, which does not contain any suitable roosting features and no internal cavity could be used as a roosting location.	 *Figure 27*  *Figure 28*

B2 – Interior	B2 – internal space (Figure 29) The roof of the building is exposed, revealing the steel joists and underside of the corrugated roof. There are stored items within B2, of which no evidence of bats was found across the surfaces. There is a large amount of light spill entering the building through the windows and garage door, which is suboptimal for roosting bats.	 *Figure 29 - interior of B2*

Other Species

There is one granted EPSL record for great crested newts (GCN) ~1.75km southwest of the site (licence number - EPSM2009-1258). There is also one 'absent' GCN pond survey result ~1.85km southwest of the site.

An assessment of the suitability of the site for protected or notable species is provided in Table 6.

Table 6: Assessment of the suitability of the site for protected or notable species

<table>
<tr><th>Species</th><th>Assessment of suitability</th></tr>
<tr><td>Amphibians</td><td>
There are 17 ponds within 500m of the site, with the closest pond (not including the one on site P1) being ~115m northeast. The connectivity of the pond ~115m northeast of the site is good, with deciduous woodland and hedgerows leading directly to the site which is suitable for amphibians to disperse into. P1 was subject to a habitat suitability index (HSI – Table 6a) assessment, returning a score of 0.52 which is 'below average' under the HSI methodology. As such, P1 is suboptimal habitat for GCN, and is suitable for common amphibians.

The conditions on site are suboptimal, due to the terrestrial habitat surrounding P1 being stripped of its vegetation resulting in an area of bare ground. The bare ground offers limited refugia for any amphibians leaving the pond, which reduces its suitability for commuting and foraging. There is a small section of hedgerow on the eastern extent of the site, however, this is semi-isolated as there is no connecting vegetation.
Table 6a: HSI calculation of ponds.
<table>
<tr><th>SI Description</th><th>SI Value P1</th></tr>
<tr><td>Geographic location</td><td>1</td></tr>
<tr><td>Pond Area</td><td>0.05</td></tr>
<tr><td>Pond Permanence</td><td>0.9</td></tr>
<tr><td>Water Quality</td><td>0.33</td></tr>
<tr><td>Shade</td><td>1</td></tr>
<tr><td>Waterfowl Effect</td><td>1</td></tr>
<tr><td>Fish Presence</td><td>1</td></tr>
<tr><td>Pond Density</td><td>0.55</td></tr>
<tr><td>Terrestrial Habitat</td><td>0.67</td></tr>
<tr><td>Macrophyte Cover</td><td>0.3</td></tr>
<tr><td>HSI Score</td><td>0.52</td></tr>
<tr><td>HSI Category</td><td>Below average</td></tr>
</table>
The deciduous woodland to the north of the site is excellent habitat for amphibians as it will provide suitable foraging grounds with sources of prey, as well as opportunity to rest/hibernate among the ground vegetation. Amphibians are likely to disperse in this direction, if present within P1.
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Reptiles	The habitats present are suboptimal for reptiles, due to the site mainly being composed of bare ground and hard standing which offers no refugia opportunity when foraging or commuting. The northern boundary of the site sits adjacent to an area of deciduous woodland, which is good habitat for reptiles, especially along the woodland edge where there is opportunity to bask. P1 is also suitable for riparian species such as grass snakes. The sections of hedgerow and not sufficiently connected to other surrounding vegetation, as such, are suboptimal for commuting and foraging reptiles. There is also limited opportunity for resting or hibernating reptiles on site due to the lack of ground vegetation. The connectivity to the north is excellent, with deciduous woodland connecting directly to the site. There is also an agricultural field to the west which is connected to the wider landscape through continuous hedgerows and coverage from woodland.
Badgers	No evidence of badgers was recorded on site. There is an earth mount on the northeast extent of the site which could be utilised for sett excavation, although no evidence of this was recorded. The site offers limited value for foraging due to the absence of suitable or established vegetation. There is a wire fence that surrounds the site to the north and west, as well as wooden and heras fencing on the remaining boundaries which act as a barrier to the dispersal of badgers and may restrict them from commuting through the site.
Hazel Dormouse	There are no suitable habitats on the site to support a population of dormice. The habitats present are also not suitably connected to the surrounding vegetation to be utilised by dormice commuting through the site. The woodland to the north is suitable to support dormice and is connected to the wider landscape though continuous treelines and hedgerows. However, the presence of dormice on the site itself is unlikely.
Hedgehog	The hedgerows on the east and southwest extent of the site are suitable to support resting, foraging and hibernating hedgehogs. They are however suboptimal due to them being isolated from suitable surrounding vegetation. The connectivity to the site for hedgehogs is poor, due to the presence of urban barriers such as celled wire fencing, solid wooden fences and heras fencing. The road to the south of the site may also act as a deterrent for hedgehogs dispersing from that direction.

Otter and water vole	The site is unsuitable for otters and water vole due to the absence of any permanent or established water courses.
Birds	The hedgerows, scattered trees and buildings on site are suitable for nesting birds. The trees and hedgerows also offer foraging opportunity through the provision of fruits and invertebrates. They will also support birds commuting through the site, albeit sub-optimally due to their disconnected nature. The bare ground across the site will also provide ground invertebrates for birds to forage. The connectivity to the site is excellent, through surrounding deciduous woodland and continuous treelines and hedgerows which will aid the dispersal of birds into the surrounding landscape.
Invertebrates	Pond P1 is good habitat for invertebrates, especially for larval and nymph stages of life among certain species. The hedgerows and trees offer some suitable habitat for invertebrates, however, are not extensive and are isolated from surrounding vegetated habitats. The remainder of the site will support ground invertebrates such as earthworms. The connectivity to the site is excellent, through the surrounding woodland, connecting hedgerows and treelines. However, when on site the opportunity is lacking and certain species such as ground invertebrates will likely be impeded.