

Preliminary Ecological Appraisal and Roost Assessment

Survey site:

Home Farm, Shaw Hill, Shaw, Wiltshire, SN12 8EW

Client:

TJ Professional Builders

Survey date:

22nd August 2024

Project:

This report is prepared to inform a planning application with the Wiltshire Council. The proposal is described as:

‘The erection of 2no. dwellings with associated soft landscaping’.

PEA survey methodology and legislation can be found in the Arbtech Supplement: [PEA Methodology and Legislation - 2024.](#)

PRA survey methodology and legislation can be found in the Arbtech Supplement: [PRA Methodology and Legislation - 2024.](#)

Site Location and Context					
The survey site is centred on National Grid Reference ST 88175 65402 and has an area of approximately 0.33 ha. The site comprises 2 buildings, hardstanding, modified grassland, areas of artificial unsealed surface with ruderal vegetation and artificial unvegetated unsealed surface, bare ground, native hedgerows with trees, ornamental hedgerow and fruiting trees. It is situated in a residential area of the village of Shaw. The wider landscape comprises areas of deciduous woodland, woodpasture and parkland, traditional orchards, agricultural fields and farmlands in all directions as well as semi-urban recreational grounds. The site sits on slowly permeable seasonally wet slightly acid but base-rich loamy and clayey soils. No ponds or watercourses are present on-site, however, South Brook is located 0.514 km north-east, and the closest pond is 0.729 km south-east from the site.					
Survey Details					
The site survey was undertaken by Georgina Rennie BSc (Hons), MSc (Natural England Bat Licence Number 2022-10412-CL17-BAT) Consultant Ecologist.					
Date of survey	Temperature (°C)	Humidity (%)	Cloud Cover (%)	Wind (km/h)	Rain
22/08/2024	18	83	70	21	None
Executive Summary					
Building 1 and Building 2 were assessed as having high roosting habitat value for bats. This is due to the bat evidence found within internal voids of both buildings as well as high volume of potential roosting features for crevice dwelling bats as well as access features for void-dwelling bats. Three bat emergence/re-entry surveys are required on B1 and B2 during the active bat season (May – September) to confirm presence/likely-absence of bats roosting in or on the building. Lighting mitigation may be required based on the outcome of the night-time bat surveys. An EPSL application to Natural England will be required. The EPSL application requires that all surveys have been undertaken within the most recent active bat season and planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission. Five old birds' nests were found in the buildings' internal spaces, and therefore any demolition should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the buildings should be undertaken immediately, by a qualified ecologist, prior to the commencement of work. All active nests will need to be retained until the young have fledged. Precautions should be taken with machinery and noise levels when working close to any retained nests. Habitats recorded on site are assessed to provide suitable foraging, commuting, basking and refuge opportunities for reptiles, badger sett excavation, foraging and commuting habitat for badgers and foraging and commuting opportunities for hedgehogs. Therefore, precautionary working methods for these species will be implemented during construction works (see relevant sections for further details).					
Survey 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 at the time of writing this report. 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, a biological records data search is needed. This report should be updated once the data search has been purchased.

The loft void of Building B1b had unstable loft joists, and therefore couldn't be fully accessed and surveyed.

Ecological Survey Factor Conclusion, Impact or Recommendations	Detailed using desk study and site survey. Any specific limitations noted within relevant section. This table may include further work you will need to commission (if any) to obtain planning permission or comply with legislation for other consent. All clients are expected to read and understand this section, or to contact the lead surveyor for advice.
Habitats and plants (see habitat map in appendix 1, location plan in appendix 2, proposal plan in appendix 3 and photos in appendix 4). Botanical species are described with reference to the DAFOR scale (D = Dominant; A = Abundant, F = Frequent, O = Occasional, R = Rare).	
<i>Summary of Survey Findings</i> <i>(UKHab codes used)</i>	The site contains native hedgerow with trees which is listed as a habitat of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). The site also contains fruiting trees which are of good quality and could be of value to local wildlife populations (as detailed in subsequent sections of this table). Other habitats within the site are common and widespread and have low ecological value. Deciduous woodlands, traditional orchards, and woodpasture and parklands, which are notable habitats are present within 2 km radius of the site. On-site habitats <u>Buildings (u1b5)</u> There are two buildings on-site that will be impacted by the development works - Building 1 (B1) and Building 2 (B2) which comprise four sections (B1a, B1b, B2a, B2b). A third building is found centrally in the site and is to be retained. A full preliminary roost assessment was undertaken of B1-B2, this can be found in the section on bats of this report. Condition assessment N/A. <u>Developed land/sealed surface (u1b)</u> Areas of hardstanding are surrounding the two buildings (Figure 1). Condition assessment N/A.

	<u>Artificial unvegetated, unsealed surface (u1c)</u> Area of artificial unvegetated, unsealed surface comprises the driveway and is adjacent to northern area of modified grassland and north-eastern site boundary (Figure 2). Condition assessment N/A. <u>Artificial unsealed surface with ruderals (u1c-81)</u> Area of artificial unsealed surface with ruderal vegetation is adjacent to the southern elevation of B1 (Figure 3). The species assemblage of the ruderal vegetation includes ribwort plantain <i>Plantago lanceolata</i>, dandelion <i>Taraxacum officinale agg.</i>, white clover <i>Trifolium repens</i>, wood cranesbill <i>Geranium sylvaticum</i>, creeping thistle <i>Cirsium</i>. Condition assessment N/A. <u>Bare ground (u1-510)</u> Area of bare ground is adjacent to the southern and western site boundary along native hedgerow with trees and north-western area of modified grassland (Figure 4). The area of bare ground appears to have been tilled recently, with no vegetation present. The condition assessment is as follows: a) The habitat doesn't have a varied vegetation structure; b) The habitat parcel doesn't contain different plant species; c) No invasive non-native plant species were detected. The habitat's condition is assessed as poor. <u>Modified grassland (g4-510)</u> There are three areas of modified grassland (Figure 5). The first area is adjacent to the eastern elevation of B2, and the species assemblage includes common bent <i>Agrostis capillaris</i> (D), white clover <i>Trifolium repens</i> (A), perennial rye-grass <i>Lolium perenne</i> (O), creeping buttercup <i>Ranunculus repens</i> (O), dandelion <i>Taraxacum officinale agg.</i> (O), ribwort plantain <i>Plantago lanceolata</i> (R), Yorkshire fog <i>Holcus lanatus</i> (R). The condition assessment for this area of the habitat is as follows: a) There are 5 vascular plant species per m2 present; b) The sward height is <7 cm; c) Cover of scrub is less than 20%; d) Physical damage accounts for more than 5% of total area; e) The cover of bare ground is between 1% and 10%; f) The cover of bracken is less than 20%; g) No invasive non-native species were detected on survey. The habitat's condition is assessed as poor. The second area is adjacent to the north-western site boundary and bare ground habitat, and the species assemblage includes common bent <i>Agrostis capillaris</i> (D), white clover <i>Trifolium repens</i> (A), perennial rye-grass <i>Lolium perenne</i> (O), creeping buttercup <i>Ranunculus repens</i> (O), dandelion <i>Taraxacum officinale agg.</i> (O), ribwort plantain <i>Plantago lanceolata</i> (R), Yorkshire fog <i>Holcus lanatus</i> (R), ivy <i>Hedera helix</i> (R). The condition assessment for this area of the habitat is as follows: a) There are 5 vascular plant species per m2 present; b) The sward height is <7 cm; c) Cover of scrub is less than 20%; d) Physical damage accounts for less than 5% of total area; e) The cover of bare ground is less than 1%; f) The cover of bracken is less than 20%; g) no invasive non-native species were detected on survey. The habitat's condition is assessed as poor. The third area is adjacent to the northern site boundary, and the species assemblage includes common bent <i>Agrostis capillaris</i> (D), white clover <i>Trifolium repens</i> (A), perennial rye-grass <i>Lolium perenne</i> (O), creeping buttercup <i>Ranunculus repens</i> (O), dandelion <i>Taraxacum officinale agg.</i> (O), ribwort plantain <i>Plantago lanceolata</i> (R), Yorkshire fog <i>Holcus lanatus</i> (R), ivy <i>Hedera helix</i> (R). The condition assessment for this area of the habitat is as follows: a) There are 5 vascular plant
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	species per m² present; b) The sward height is <7 cm; c) Cover of scrub is less than 20%; d) Physical damage accounts for more than 5% of total area; e) The cover of bare ground is more than 1%; f) The cover of bracken is less than 20%; g) no invasive non-native species were detected on survey. The habitat's condition is assessed as poor. <u>Native hedgerow with trees (h2a-11)</u> Native hedgerow with trees is adjacent to the western, southern (Figure 6) and northern site boundary (Figure 7). The species assemblage of the western hedgerow includes hawthorn <i>Crataegus monogyna</i> (D), hazel <i>Corylus avellana</i> (A), ivy <i>Hedera helix</i> (A), bramble <i>Rubus fruticosus</i> agg. (O), common elder <i>Sambucus nigra</i> (R), common nightshade <i>Solanum nigrum</i> (R). The hedgerow has a good understory vegetation, with species assemblage as follows: common nettle <i>Urtica dioica</i>, dogbane <i>Apocynum cannabinum</i>, Yorkshire fog <i>Holcus lanatus</i>, perennial rye-grass <i>Lolium perenne</i>, creeping buttercup <i>Ranunculus repens</i> and yarrow <i>Achillea millefolium</i>. The species assemblage of the northern hedgerow includes hawthorn <i>Crataegus monogyna</i> (D), ivy <i>Hedera helix</i> (A), hazel <i>Corylus avellana</i> (R), bramble <i>Rubus fruticosus</i> agg. (O). The composition and condition of the understory vegetation is the same as for the first hedgerow. Condition assessment for both areas of native hedgerow with trees is as follows: A1.) The height is >1.5m; A2.) The width is >1.5m; B1.) Gaps between ground and base of canopy are <0.5m for >90% of length; B2.) Gaps make up <10% of total length and no canopy gaps are >5m; C1.) There is >1m width of undisturbed ground; C2.) Species present are indicative of nutrient enrichment of soils; D1.) No invasive non-native species were detected on survey; D2.) >90% of the hedgerow is free of damage caused by human activities; E1.) There is only one age-class of tree present; E2.) At least 95% of hedgerow trees are in healthy condition. The habitat's condition is assessed as good. <u>Scattered trees (g4-32)</u> There are six scattered native small trees within the area of modified grassland adjacent to the northern site boundary (Figure 9). The scattered trees include two young pear trees <i>Pyrus communis</i> (T1, T2) of <7.5 cm diameter at breast height (DBH), one semi-mature apple tree <i>Malus domestica</i> (T3) of 6.9 cm DBH, semi-mature apple tree (T4) of 8.4 cm DBH, young apple tree (T5) of <7.5 cm DBH and pruned mature apple tree (T6) of 6.8 cm DBH. T3, T4 and T6 have good canopy cover which is oversailing understory vegetation and natural ecological niches like surface wounds, peeling bark and moss, and as all trees are fruit bearing trees, they provide abundant foraging opportunities for pollinators. Condition assessment for T4 is as follows: a) The tree is of native species; b) Continuous tree canopy is present; c) The tree is not mature; d) The tree doesn't exhibit adverse impacts on their health by human activities; e) Natural ecological niches for vertebrates and invertebrates are present; f) More than 20% of the canopy area is oversailing vegetation beneath. The condition of T4 is assessed as good. Local notable habitats No local notable habitats are present on-site; however, three notable habitats are present within 2 km radius of the site. Areas of deciduous woodland, traditional orchards, and woodpasture and parkland are present in the wider landscape.
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	The closest area of deciduous woodland is 0.645 km north-west, traditional orchards is 1.070 km south-east, and woodpasture and parkland is 1.7 km south-west from the site. These habitats are classed as priority habitats under Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006.
<i>Foreseen Impacts</i>	On-site habitats The proposed development will result in the loss of 0.02 ha modified grassland habitat, 0.03 ha artificial unsealed surface with ruderals and 0.05 ha bare ground habitat. This is likely to have a minimal impact on biodiversity due to the low ecological value of these habitats. Notable habitats No impacts to any notable habitats are anticipated due to the small scale and distance of the proposed development from such habitats as well as the semi-urban location of the site with surrounding physical barriers (e.g. developments and roads).
<i>Recommendations</i>	On-site habitats Fruiting trees present on-site should be retained and/or replanted where retention is not possible. To compensate for the proposed habitat losses at the site, the following habitat creation and enhancement measures should be explored: • Creation of modified grassland in the area of bare ground. • Enhancement of retained areas of modified grassland via the provision of native wildflowers or wildflower turf. Notable habitats None required. Biodiversity net gain The Environment Act (2021) requires all developments (excluding exemptions) to deliver a 10% net gain in biodiversity. This is mandatory for larger developments and comes into force for smaller developments on 2nd April 2024. Due to the loss of more than 25m² habitat, the development is not exempt from demonstrating a compliant biodiversity net gain, as per current Natural England Guidance: https://www.gov.uk/guidance/biodiversity-net-gain-exempt-developments. Therefore, the planning application must be accompanied by a landscaping/habitat creation and enhancement strategy, biodiversity net gain calculations and a habitat management and monitoring plan to ensure the proposed development delivers a 10% net gain.
Locality and Designated Sites	
<i>Summary of Survey Findings</i>	On-site designations The site is not subject to any designation. Statutory designated sites (within 2 km) No designated sites are present within 2 km radius of the site, however the following three Special Areas of Conservation are located within 25 km radius of the site.

	Two Bath & Bradford on Avon Bats Special Areas of Conservation (SAC) designated for bats, with the closest being 5.477 km north-west and the second being 8.460 km west of the site. Both SAC areas include the hibernation sites associated with 15% of the UK greater horseshoe bat <i>Rhinolophus ferrumequinum</i> population and are selected on the basis of the importance of this exceptionally large overwintering population. Moreover, small numbers of Bechstein's bats <i>Myotis bechsteinii</i> have been recorded hibernating in abandoned mines in these areas, though maternity sites remain unknown. Salisbury Plain SAC is located 14.601 km south-west of the site and the site represents <i>Juniperus communis</i> formations near the southern edge of the habitat's range on chalk in southern England, where it is particularly rare. This site is the best remaining example in the UK of lowland juniper scrub on chalk. The juniper is juxtaposed with extensive semi-natural dry grassland and chalk heath. Moreover, this site hosts the priority habitat type "orchid rich sites". Salisbury Plain in central southern England is believed to be the largest surviving semi-natural dry grassland within the EU and is therefore the most important site for this habitat in the UK. It supports extensive examples of <i>Bromus erectus</i> grassland, which is the most widespread and abundant calcareous grassland found in the UK. It also contains extensive areas of the rare <i>Festuca ovina</i> – <i>Hieracium pilosella</i> – <i>Thymus praecox</i> grassland, and one of the largest examples of <i>Avenula pubescens</i> grassland. Further, the site represents marsh fritillary <i>Euphydryas aurinia</i> in chalk grassland in central southern England and contains a cluster of large sub-populations where the species breeds on dry calcareous grassland. The site extends the range of ecological variability included in the SAC series. Pewsey Downs SAC is located 21.139 km west of the site and hosts the priority habitat type "orchid rich sites". The site is one of three sites selected in the central part of the range for early gentian <i>Gentianella anglica</i>. It holds a very significant population of hundreds of thousands of plants growing in high-quality chalk grassland. Non-statutory designated sites The presence of non-statutory designated sites within 2 km of the site cannot be established without data from the Wiltshire and Swindon Biological Records Centre.
Foreseen Impacts	On-site designations No impacts foreseen. Statutory and non-statutory designated sites No impacts to designated sites are anticipated due to the small scale and distance of the proposed development from such sites as well as the semi-urban location of the site with surrounding physical barriers. The site lies within the impact risk zone for Colerne Park and Monk's Wood Site of Special Scientific Interest (SSSI) and Honeybrook Farm SSSI. The proposed development type is not listed as a possible high risk for these SSSIs.
Recommendations	On-site designations None required.

	Statutory and non-statutory designated sites None required.
Invasive / Non-native species	
<i>Summary of Survey Findings</i>	No problematic invasive and non-native species recorded on site.
<i>Foreseen Impacts</i>	N/A
<i>Recommendations</i>	No further surveys but remain vigilant.
Invertebrates	
<i>Summary of Survey Findings</i>	The habitats present on-site, including modified grassland, native hedgerow with trees, ornamental hedgerow, scattered trees and rudimental vegetation likely provide common invertebrates with opportunities to forage and shelter. The site contains no further notable habitats which may provide niches for specialised or protected invertebrates.
<i>Foreseen Impacts</i>	Area of modified grassland adjacent to B2 and area of artificial unsealed surface with ruderals will be removed during construction. The loss of such habitats is likely to be inconsequential to local invertebrate populations owing to their low value and the presence of more extensive habitat locally and on-site.
<i>Recommendations</i>	No further surveys. Suggested biodiversity enhancements The following habitat retention, creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for invertebrates: Enhancement of retained areas of modified grassland via the provision of native wildflowers or wildflower turf, which would provide foraging and sheltering opportunities for invertebrates.
Bats	
<i>Summary of Survey Findings</i>	EPSL data A search of the magic.gov.uk database for granted European Protected Species Licences (EPSLs) within a 2 km radius of the site has been completed. Displaced bats from licensed sites <2 km away from the survey site will find alternative habitat either within the mitigation measures implemented as part of the licence or will relocate to other known roosts sites in close proximity to the licensed site. There are three EPSL within a 2 km radius of site as detailed below:

	EPSL reference	Bat species affected	Distance from site	Impacts allowed by licence
	2015-14181-EPS-MIT-1	common pipistrelle soprano pipistrelle	1.376 km	Damage of a resting place Destruction of a resting place
	2015-14181-EPS-MIT	common pipistrelle soprano pipistrelle	1.376 km	Damage of a resting place Destruction of a resting place
	2015-16028-EPS-MIT-1	soprano pipistrelle	1.560 km	Destruction of a resting place
	2015-16028-EPS-MIT	soprano pipistrelle	1.560 km	Destruction of a resting place
	EPSM2011-2875	common pipistrelle soprano pipistrelle serotine brown long-eared bat	1.797 km	Destruction of a resting place
There are two Special Areas of Conservation (SAC) designated for bats within 10 km of the site (see relevant information in the statutory designated sites section of this report). Foraging and commuting habitat Habitats recorded on site are assessed to provide foraging and commuting opportunities for bats in the form of species-poor modified grassland, ruderal vegetation, fruiting trees and native hedgerow with trees. These habitats are likely to provide micro-climatic conditions that support invertebrates that will in turn provide foraging opportunities for local bat populations. Most notably, the hedgerows on site are adjacent to agricultural fields adding to the continuity of vegetated linear features present in the wider landscape. Bats are well known to utilise linear features to aid navigation whilst travelling between foraging resources and roost sites. Roosting habitat Buildings to be impacted by the proposed development are assessed for their suitability to support roosting bats below. There are a total of 2 old farm buildings on-site, Building 1 consisting of two sections (B1a, B1b), and Building 2 consisting of two sections (B2a, B2b). B1 and B2 have confirmed roosts, as identified by bat droppings and foraging signs such as discarded moths and butterfly wings seen inside the buildings.				
B1 Building description			Photographs	

Summary

B1 is a three-storey farm building in poor condition, with two sections (B1a, B1b) connected internally by a corridor. The roof is clay and slate tiled and walls consist of timber clad, brickwork and breeze block. All structures contain suitable bat roosting and access features for both crevice and void-dwelling bats. These include crevices and gaps under/in timber boards, eaves, roof tiles, brickwork and window frames. Moreover, there are areas of unrestricted access in the form of entrances without doors. There are three internal voids (B1a, B1b-first and second storey) and one loft void (B1b – third storey) in which evidence (bat droppings and discarded insect wings) of bats using the interior was found. No evidence was found on external walls, however, this couldn't be used to indicate a likely absence of crevice dwelling bats. This is because bats such as pipistrelles can be found roosting behind hanging tiles, soffit and barge or eaves boarding, between roofing felt and roof tiles or in cavity walls, and all internal evidence is trapped within these crevices. Moreover, any external evidence would be quickly weathered away. The building has **high roosting habitat value**.



<i>Feature</i>	<i>Materials</i>	<i>Condition/description/suitability</i>	<i>Photograph(s)</i>
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Walls B1a	Timber cladding, breeze blocks	Condition/description Timber cladding on the southern, northern and western elevations as well as breeze blocks on the northern elevation. The cladding is in poor condition - aged and lifted on all elevations. Suitability/access/evidence of bats Raised external cladding provides crevices under which bats could roost or gain access into the interior.	
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Roof B1a	Clay interlocking tiles, slate tiles.	Condition/description The roof is pitched and gable ended on the western elevation. It is clad in clay interlocking tiles on the southern elevation and slate tiles on the northern elevation. The gable end has timber cladding in poor condition and numerous interlocking tiles and slate tiles are dislodged or missing on all elevations. Suitability/access Crevice dwelling bats could roost in-between lining and tiles on the northern elevation and in crevices created under dislodged tiles. Both crevice and void-dwelling bats could access into the interior through crevices created by missing and raised tiles.	
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Eaves B1a	Closed	Condition/description Gaps between tiles and eaves. Suitability/access These gaps can provide crevices in which bats could roost or gain access into internal void.		
Barge boards/fascia boards B1a	N/A	N/A	N/A	
Window/doors frames and lintels B1a	Timber	Condition/description Timber doors with small gaps along the frame, broken window with metal sheet behind on the southern elevation and opening without barrier on the northern and southern elevation, and well-sealed window on the northern elevation. Suitability/access Small gaps between door frame and doors provide access into internal void. Metal sheet behind the broken window on the southern elevation limits access into internal void, but the unrestricted openings on the southern and northern elevation provide access into the interior.		

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Internal voids B1a	Timber rafters and ridge beam. Open floor to ridge. Mortise and tenon joints. Internal stone wall with large opening below the ridge beam.	Condition/description Internal space measures approx. 10 m long, 4 m wide, floor to ridge height approx. 5 m. The internal timbers appear to be original and in good condition. Humidity of the interior was 80.7%, with mycelium present on walls. Internal stone wall separates area with unrestricted opening and creates darker interior with only small amount of natural light spill from gaps in door frame and eaves. There is slate lining under the slate tiles on the northern elevation, and no lining on the southern elevation. Suitability/access/evidence of bats Low number of bat droppings (~10) and discarded moths and butterfly wings (~5) were found on the floor of the building. Samples of bat droppings were collected for DNA analysis. Some droppings were of bigger size, which is indicative of large bat species. Discarded insect parts indicate bat-feeding activity inside the building. Moreover, high humidity inside the building and low number of droppings would be indicative of a non-maternity roost. The unrestricted	 22/08/2024 14:02:07

		openings into the building, gaps in dislodged tiles and gaps in door frame and eaves provide access into the void. The void is suitable for roof-void dwelling bats, which require gaps from as small as the width of our thumb to access the roost and need timber joists or beams on which to roost.	
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Walls B1b	Brickwork, timber cladding, metal sheets	Condition/description Brickwork with gaps on northern and southern elevation and aged, raised timber cladding on southern and eastern elevation. Wall on the southern elevation has six metal sheets running vertically, and it is assumed the sheets were used to cover an open area which was utilised by animals to access the interior of the second storey and subsequently the loft void. This is supported by the presence of two dead birds in the loft void, which most likely got trapped in the loft void after the opening got boarded up. A brick wall on the south-eastern elevation has numerous gaps in brickwork and lifted timber cladding. Suitability/access These gaps in brickwork and raised cladding create crevices in which bats can roost or use as an access point into the internal void.	
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Roof B1b	Clad in slate tiles and metal roofing sheets	Condition/description The main roof of B1b is hipped and clad in slate tiles, and two adjacent lean-on roofs on the northern elevation have metal roofing sheet and slate tiles clad. Both the main roof and lean-on roof clad in slate tiles have broken, dislodged or missing tiles, revealing gaps, and there is exposed lead flashing on all elevations of the main roof. Suitability/access The numerous gaps in roofs clad in slate tiles create crevices in which bats could roost or gain access into the interior void and loft void.	
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Eaves B1b	Closed	Condition/description Eaves are in poor condition with gaps between tiles and eaves on all elevations. Suitability/access These gaps can provide crevices through which bats could gain access into internal void and loft void.		 22/08/2024 14:34:53	
Barge boards/fascia boards B1b		N/A	N/A		

Windows/door frames and lintels B1b	Stone and timber window frame, timber door frame	Condition/description Windows on the southern elevation are boarded up, with gaps in stone and timber frames, creating natural light spill visible from the interior. Doors on the northern elevation seem to be tight fitting. Suitability/access Gaps in window frames allow access into the interior void and subsequently the loft void.	 
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Internal voids B1b	Timber rafters and ridge beam. Open floor to ridge. Mortise and tenon joints.	Condition/description First storey can be accessed through opening into the corridor between B1a and B1b. The interior was dark with low levels of natural light spill through gaps in window frames and brickwork. Second storey is accessed by a ladder and contains two dark enclosed spaces, running along eastern elevation and western elevation of the building. Both spaces don't have a barrier in their opening, allowing full access. The second storey has some natural light spill through the gaps between timber cladding and metal sheets which were used to board up windows and door. Suitability/access/evidence of bats First storey had a low number (<5) of discarded moths and butterfly wings. A large number of bat droppings (~50) with mixture of colours and discarded moths and butterfly wings (~20) were seen within both two dark enclosed spaces on the second storey. Samples were collected for DNA analysis. There is a mixture of colours which shows different ages of droppings, with darkest droppings indicating more recent activity. Size and shape of droppings indicate a large bat, such as serotine or horseshoe.	
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Loft void B1b	Timber rafters and ridge beam. Open floor to ridge.	Condition/description Loft void is on the third storey of the building, it has timber rafters and ridge beam in good condition, and it is 2 m high and 4 m wide in diameter. The loft roof is not lined, with exposed slate tiles. 2 dead birds, presumably pigeons, 4 pigeon nests and rodent droppings were seen. The loft void couldn't be fully accessed and surveyed due to safety reasons as the loft joists were unstable. Suitability/access/evidence of bats Bats can access the loft void through crevices in slate tiles, eaves and opening leading to the second storey. ~10 bat droppings and discarded moth and butterfly wings were found, however due to safety reasons it was not possible to inspect the whole area of loft void and therefore more evidence of bats might have been missed. Samples were collected for DNA analysis. The loft is suitable for roof-void dwelling bats, which require gaps from as small as the width of our thumb to access the roost and need timber joists or beams on which to roost.	
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B2 Building description			Photographs	
<i>Summary</i> B2 is a one-storey farm building in poor condition, with two sections (B2a, B2b) connected internally by an unrestricted opening. The roof is clay tiled and walls consist of timber clad, brickwork and breeze block. All structures contain suitable bat roosting and access features for crevice and void-dwelling bats. These include crevices and gaps under/in timber boards, eaves, roof tiles, brickwork and barge board. Moreover, there are areas of unrestricted access in form of open area of B2b which leads to the exterior. There are two internal voids. Within the internal void of B2a evidence (bat droppings and discarded insect wings) of bats using the interior was found. No evidence was found on external walls, however, this couldn't be used to indicate a likely absence of crevice dwelling bats. This is because bats such as pipistrelles can be found roosting behind hanging tiles, soffit and barge or eaves boarding, between roofing felt and roof tiles or in cavity walls, and all internal evidence is trapped within these crevices. Moreover, any				

external evidence would be quickly weathered away. The building has high roosting habitat value .			
Feature	Materials	Condition/description/suitability	Photograph(s)
Walls B2a	Timber clad, breeze blocks, brick columns.	Condition/description Aged, lifted and broken timber cladding on the northern, and eastern elevation, creating crevices. Breeze blocks with missing blocks on the western elevation, brick columns with gaps on the northern elevation. Suitability/access Crevices formed under lifted cladding and in brick columns provide roosting habitat for bats and access into the internal void. The interior can also be accessed through a large gap in area of missing breeze blocks.	 

Roof B2a	Clay interlocking tiles	Condition/description The roof is pitched, clad in clay interlocking tiles and gable ended on the northern elevation. The tiles are raised and dislodged on all elevations. The gable end has timber cladding in poor condition, with raised and broken timer boards. Suitability/access Crevices formed under raised and dislodged clay tiles provide roosting habitat for bats and access into the internal void.	
Eaves B2a	Closed	Condition/description Eaves are aged, broken and with gaps on all elevations. Suitability/access Crevices formed between eaves and clay tiles provide roosting habitat for bats and access into the internal void.	N/A

Barge boards/fascia boards B2a	Timber	Condition/description Barge board on the gable end is aged and broken with gaps between the board, cladding and tiles. Suitability/access These gaps provide roosting habitat for bats and access into the internal void.	
Window/doors frames and lintels B2a	Timber	Condition/description Timber frames on the northern elevation are in poor condition – aged and rotten, creating crevices. Suitability/access Crevices formed within timber frames provide roosting habitat for crevice-dwelling bats.	

Internal voids B2a	Timber rafters and ridge beam. Open floor to ridge. Mortise and tenon joints.	Condition/description Internal space measures approx. 11.5 m long, 4.5 m wide, floor to ridge height approx. 5 m. The internal timbers appear to be original with traditional mortise and tenon joints. There is timber lining under clay tiles and some areas with plastic and metal sheets on eastern elevation and no lining on western elevation. Gaps in timber cladding, metal and plastic sheets and roof tiles are present, especially on the northern and western elevation. The void has a large amount of natural light entering the space through gaps in timber cladding, clay tiles, missing breeze blocks, window and opening into B2b. There were four old bird nests on the intersection of timber beams. Suitability/access/evidence of bats Between 20 - 59 bat droppings and ~20 moth and butterfly wings were found on the floor. Samples were collected for DNA analysis. Size and shape of droppings indicate a large bat species. There is a mixture of colours which shows different ages of droppings, with darkest droppings indicating more recent activity. This, along with the volume found eliminates a one-off exploratory visit. High level of natural light internally is indicative of this space not being used as a day or maternity roost, and therefore the void is most likely used as a feeding roost.	
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Walls B2b	Timber clad, brick columns, metal sheets.	Condition/description Aged, lifted and broken timbercladding on the southern, and eastern elevation, creating crevices. Metal sheets on the western elevation, brick columns with gaps on the southern elevation. There is no wall on the southern elevation, creating open area into the exterior. Suitability/access Crevices formed under lifted cladding and in brick columns provide roosting habitat for bats and access into the internal void. The interior can also be accessed through the open area on the southern elevation.	

Roof B2b	Clay interlocking tiles	Condition/description The roof is pitched and clad in clay interlocking tiles. The tiles are raised on all elevations. Suitability/access Crevices formed under raised clay tiles provide roosting habitat for bats and access into the internal void.	
Eaves B2b	Closed	Condition/description Eaves are aged, broken and with gaps on all elevations. Suitability/access/evidence of bats Crevices formed between eaves and clay tiles provide roosting habitat for bats and access into the internal void.	N/A
Barge boards/fascia boards B2b		N/A	N/A
Windows/door frames and lintels B2b		Condition/description Timber frames on the western elevation are in poor condition – aged and rotten, creating crevices. Suitability/access/evidence of bats Crevices formed within timber frames provide roosting habitat for crevice-dwelling bats.	

Internal voids B2b	Timber rafters and ridge beam. Mortise and tenon joints.	Condition/description The internal space is timber framed, timbers appear to be original with traditional mortise and tenon joints. The floor space on the eastern elevation is covered with machinery and other objects. The space on the western elevation is open floor to ridge. Open area on the southern elevation allows high levels of natural light spill. Suitability/access/evidence of bats No evidence was found internally and due to the unrestricted opening to the exterior the internal void is not shielded from day-light and natural elements such as wind and rain. This is indicative of the void not being able to support day-roosting of void-dwelling bats.	N/A
T1-T6 description			Photographs
<i>Summary</i> There are six scattered native small trees within the area of modified grassland adjacent to the northern site boundary. The scattered trees are fruit bearing and include two young pear trees <i>Pyrus communis</i> (T1, T2) (Figure X) of <7.5 cm diameter at breast height (DBH), one semi-mature apple tree <i>Malus domestica</i> (T3) (Figure X) of 6.9 cm DBH, semi-mature apple tree (T4) (Figure X) of 8.4 cm DBH, young apple tree (T5) (Figure X) of <7.5 cm DBH and pruned mature apple tree (T6) (Figure X) of 6.8 cm DBH. No roosting features were identified on the trees during the survey. As such, all six trees are concluded as being PRF -NONE. The trees will be retained.			See Appendix 5
<i>Foreseen Impacts</i>	Roosting habitat [B1+B2] The proposed development will result in the demolition of both buildings. This will result in the destruction of any bat roosts present and could cause disturbance, death or injury to bats. Roosting habitat [Trees]		

	All scattered tree present on-site will be retained as well as no features were identified on the trees, and therefore no impacts to roosting bats are anticipated. Foraging and commuting habitat The proposed development will result in the loss of small areas of modified grassland and ruderal vegetation 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. However, 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. Artificial lighting The proposed development may lead to an increase in the amount of current lighting of surrounding habitats. This may disturb commuting bats. Designated sites for bats No impacts to the Bath & Bradford on Avon Bats SAC designated for bats are anticipated due to the nature of development, its small scale and distance from the proposed development.
<i>Recommendations</i>	Roosting habitat [B1+B2] Three bat emergence/re-entry surveys are required on B1 and B2 during the active bat season (May – September) to confirm presence/likely-absence of bats roosting in or on the building. These survey visits should be completed during the optimal survey period mid-May to August inclusive. The survey visits should be at least three weeks apart. Sub-optimal: early May and September. Would require greater justification of timing e.g., weather conditions, known local bat activity. Six surveyors are required to provide full coverage of the building's elevations to look for emerging/re-entering bats. An infrared camera should also be employed as part of the survey to see where any specific roost locations are located. Lighting mitigation may be required based on the outcome of the night bat surveys. An EPSL application to Natural England will be required. The EPSL application requires that all surveys have been undertaken within the most recent active bat season and planning permission must have been granted and all relevant wildlife-related conditions have been discharged prior to submission. Foraging and commuting habitat No activity surveys are required, however foraging and commuting behaviour will be observed and recorded during the night time of bat emergence surveys. Artificial lighting

	A low impact lighting strategy will be adopted for the site during post-development which outlines the areas of the site that will be retained as dark corridors. Parameters can be found on the Bat Conservation Trust website: https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting- Designated sites for bats None required. Suggested biodiversity enhancements Enhancements are dependent on the outcome of further surveys.
Birds	
<i>Summary of Survey Findings</i>	Buildings Five old bird nests were identified in the buildings' interior (Figure 10), four in B2 and one in B1, all on the intersections of timber beams. Four nests were open-cup type nests of mud composition, which is suggestive of them being swallow nests. One nest was of bigger size than the other three and was made of sticks and twigs, which is suggestive of pigeon nest. Trees and vegetation No bird nests were identified within the vegetation of the native hedgerows with trees and ornamental hedgerow, however these habitats offer nesting opportunities and nest-building resources for birds. Barn owls The site provides suitable nesting sites for barn owls in the form of farm buildings, however, no evidence of nesting barn owls was recorded on-site. Overwintering birds Due to the small size of the site and the extent and type of the habitats recorded, the site not considered suitable to support a significant assemblage of protected and/or notable birds.
<i>Foreseen Impacts</i>	Buildings/trees The proposed development could result in the destruction or the disturbance and subsequent abandonment of active bird nests. Barn owls None foreseen. Overwintering birds None foreseen.

<i>Recommendations</i>	Buildings/trees Any building removal should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the buildings should be undertaken immediately, by a qualified ecologist, prior to the commencement of work. All active nests will need to be retained until the young have fledged. Precautions should be taken with machinery and noise levels when working close to any retained nests within buildings or native hedgerows with trees and ornamental hedgerow so as not to disturb any nearby nesting birds during construction works. At least a 3-5m buffer should be created between any machinery and active nests until the young have fledged. Barn owls None required. Overwintering birds None required. Suggested biodiversity enhancements The installation of a minimum of three bird boxes on created buildings will provide additional nesting habitat for birds (e.g., Schwegler No 17 Swift Nest Box and/or Schwegler 1SP Sparrow Terrace, or a similar alternative brand). Sparrow boxes should be positioned at the eaves of a building.
Reptiles	
<i>Summary of Survey Findings</i>	EPSL data A review of the MAGIC database returned no granted EPSL records for protected reptiles within 2km of the site. Habitat suitability Habitats recorded on site are assessed to provide foraging, commuting, basking and refuge opportunities for reptiles. The native hedgerows and ruderal vegetation of tall sward height adjacent to the eastern elevation of B1b and southern elevation of B1c provide elevated value for reptiles as these habitats provide a suitable structure for refuge, whilst also providing foraging and commuting opportunities. Moreover, the bare ground adjacent to the native hedgerow provides suitable basking opportunities and is located adjacent to the native hedgerow, which is a potential refugium. Areas of modified grassland on-site are considered sub-optimal for reptiles due to the species content and associated management regime, where at the time of the survey the grassland was recorded as being of a short sward height, which results in low levels of suitable prey present in this habitat. However, they do provide some basking and commuting opportunities as they are located adjacent to potential refugia. The site has good connectivity to further suitable reptile habitat in the wider landscape via native hedgerows and field edges. Therefore, the presence of reptiles on-site cannot be discounted. Wider landscape

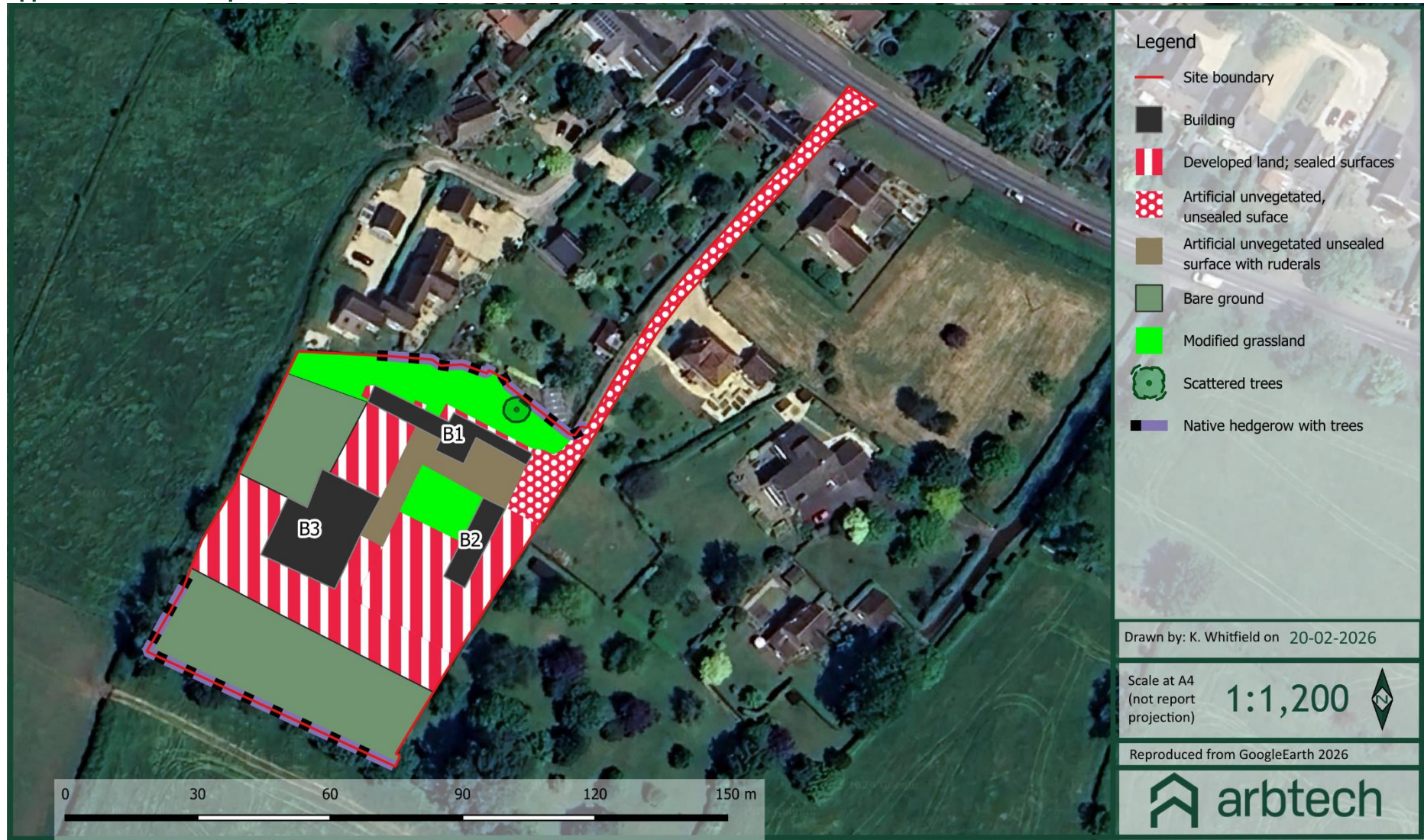
	The adjacent agricultural field boundary habitats to west and south of the site are of elevated ecological value within the wider landscape and may represent important resources for local reptile populations. These adjacent habitats include ditches, hedgerows, and field margins, which provide optimal foraging, commuting, basking, and refuge opportunities for reptiles and are well connected to further suitable habitat in the wider landscape. The presence of reptiles utilising these adjacent habitats cannot be discounted.
<i>Foreseen Impacts</i>	The bare ground, area of modified grassland adjacent to B2 and area of artificial unsealed surface with ruderals 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.
<i>Recommendations</i>	A precautionary working method will be implemented for widespread reptiles during construction, including the following measures: • Vegetation within modified grassland will be maintained at a short sward (5cm) to discourage reptiles. • Site clearance will be undertaken outside of the reptile hibernation season (November to February) insofar as is possible. • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • A staged approach will be adopted for vegetation clearance, whereby the vegetation will be strimmed to 15cm and left overnight to allow any reptiles to disperse. The vegetation can then be cleared to ground level and must be maintained at this level for the duration of construction to deter reptiles from the working area. • Any rubble piles will be dismantled by hand and debris and brash will be stored on pallets or removed from the site to prevent reptiles from utilising these areas. • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. • If any reptiles are found in the working area these should be allowed to disperse of their own accord or, if at immediate risk, should be moved by hand to a sheltered, vegetated area away from disturbance. In the unlikely event that a reptile is identified, works must cease and advice must be sought from a suitably qualified ecologist. Suggested biodiversity enhancements The following habitat creation and enhancement could be incorporated into the proposed development which would be beneficial for amphibians: Creation of reptile hibernacula using rubble and logs from site clearance. Information on how to construct a hibernaculum can be found here: https://www.wiltshirewildlife.org/hibernaculum. Creation of areas of native shrubs which would provide suitable sheltering opportunities.

Amphibians		
Summary of Survey Findings	EPSL and survey data A search of the magic.gov.uk database for granted EPSLs within a 2 km radius of the site has been completed. There are four EPSLs for great crested newts within a 2 km radius of site as detailed below:	
	EPSL reference	Distance from site
	2020-48526-EPS-MIT	1.541 km
	2017-28124-EPS-MIT-2	1.555 km
	2017-28124-EPS-MIT	1.555 km
	2017-28124-EPS-MIT-1	1.555 km
	Impacts allowed by licence Damage of a resting place Destruction of a resting place	
	Damage of a resting place Destruction of a resting place	
	Damage of a resting place Destruction of a resting place	
	Damage of a resting place Destruction of a resting place	
Furthermore, the MAGIC database returned evidence indicating the presence of great crested newts resulting from historic pond surveys undertaken in 2018. These records are located 0.718 km south-west and 0.936 km south-east from the site. Great crested newts exist in metapopulations and are known to utilise ponds and their connecting terrestrial habitat during their life cycle; great crested newts are typically found within terrestrial habitats up to 500m from breeding ponds (Langton <i>et al.</i> 2001). As such, the great crested newt metapopulations known to be present 0.718 km south-west and 0.936 km south-east are not suitably connected to the site.		
Aquatic habitat suitability No ponds are present on site or within 0.5 km of the site.		
Terrestrial habitat suitability The site provides limited suitable terrestrial habitat for amphibians given the lack of optimal habitat (i.e. scrub, rank grassland). The areas of hardstanding and modified grassland offer sub-optimal habitat for terrestrial amphibians. Native hedgerows, which are adjacent to a field edge may offer refuge for these species, however given the semi-urban nature of the surrounding landscape and the lack of suitable water body within 0.5 km from the site it is unlikely that amphibians will migrate onto the site.		
Foreseen Impacts	Given the lack of suitably connected breeding ponds within 0.5 km of the site, the presence of GCN on-site is considered unlikely and therefore impacts to amphibians as a result of the proposed development are deemed to be acceptably low.	
Recommendations	None required.	

	Suggested biodiversity enhancements The following habitat creation and enhancement could be incorporated into the proposed development which would be beneficial for amphibians: • Creation of a pond with gently sloping sides, suitable vegetation cover around the pond's edges and pond vegetation which would offer breeding opportunities. • Enhancement of terrestrial habitat on-site by allowing areas of grassland to develop as meadows which would offer foraging and sheltering opportunities. • Creation of compost heap which would provide sheltering, hibernating and foraging opportunities. • Creation of amphibian hibernacula using rubble and logs from site clearance. Information on how to construct a hibernaculum can be found here: https://www.wiltshirewildlife.org/hibernaculum.
Badger	
<i>Summary of Survey Findings</i>	No badger setts were noted on site or within a 30m radius of the site. Further, no evidence of foraging badgers was noted within the development area. However, the site was considered suitable for badger sett excavation, foraging and commuting habitat given the highly mobile nature of the animal and the presence of bare ground, fruiting trees and the proximity of site to agricultural fields, which are connected by native hedgerows.
<i>Foreseen Impacts</i>	The area of bare ground adjacent to the western site boundary and area of modified grassland adjacent to B2 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. No works will be undertaken within 30m of a badger sett, however possible commuting and foraging routes could be affected by the construction site.

<i>Recommendations</i>	Owing to the nature of the proposed development and the low potential for impacts to badgers, further badger surveys are considered to be disproportionate. A precautionary working method will be implemented during construction, including the following measures: • A pre-commencement inspection of the site will be undertaken for any new badger activity if works do not commence within three months. • Heras fencing will be erected around the working area to prevent encroachment into retained habitats where badger setts could be present. • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to retained habitats which badgers could use. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. In the unlikely event that a badger sett is identified, works must cease and advice must be sought from a suitably qualified ecologist.
Riparian animals	
<i>Summary of Survey Findings</i>	A review of the MAGIC database returned no granted EPSL records for otters or water voles within 2km of the site. There are no water courses on or connected to the site. There are also no riparian habitats present on site or within an influencing distance.
<i>Foreseen Impacts</i>	No impacts are anticipated on riparian animals as a result of the proposed development.
<i>Recommendations</i>	None required.
Hazel dormouse	
<i>Summary of Survey Findings</i>	EPSL data A review of the MAGIC database returned no granted EPSL records for hazel dormice within 2km of the site. Habitat suitability The site lies outside of the known current range for hazel dormice and there are no suitable habitats within the development area. As such it is considered likely that hazel dormice are absent from site.
<i>Foreseen Impacts</i>	No impacts are anticipated on hazel dormice as a result of the proposed development.
<i>Recommendations</i>	None foreseen.
Other e.g. hedgehog	
<i>Summary of Survey Findings</i>	Ruderal vegetation on-site provides limited foraging and commuting opportunities for hedgehogs, however native hedgerows with trees offer suitable foraging and commuting opportunities, with agricultural and vegetated gardens nearby.

	Moreover, fruiting trees on-site supply nesting material in the form of leaves as well as habitat for invertebrates that are food sources for hedgehogs, such as beetles and caterpillars.
<i>Foreseen Impacts</i>	Bare ground habitat 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 and on-site in the form of native hedgerows with trees and fruiting trees. However, the proximity of these habitats and areas of construction activities could result in the death or injury of hedgehogs, if present.
<i>Recommendations</i>	Similar to the badgers, a precautionary working method will be implemented during construction, including the following measures: • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to retained habitats which hedgehogs could use. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. If any hedgehogs are found in the working area these should be allowed to disperse of their own accord or, if at immediate risk, should be moved by hand to a sheltered, vegetated area away from disturbance. Suggested biodiversity enhancements The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for hedgehogs: • Plant species-rich grassland to increase foraging opportunities. • Creation of brash piles or installation of hedgehog houses in shady areas. • Installation of gaps under boundary fencing to enable hedgehogs to move freely through the site.

Appendix 1: Habitat map

Appendix 2: PRA map



Appendix 3: Location map





Appendix 5: Habitat Photos

Developed land; sealed surface	
Photograph	Description
	Figure 1: Area of developed land; sealed surface adjacent to the southern elevation of B1a
Artificial unvegetated, unsealed surface	
Photograph	Description
	Figure 2: Artificial unvegetated, unsealed surface comprising driveway (adjacent to northern area of modified grassland)
Suburban mosaic of developed and natural surface	
Photograph	Description

	Figure 3: Ruderal vegetation adjacent to eastern and southern elevation of B1b
Bare ground	
Photograph	Description
	Figure 4: Bare ground along the western site boundary
Modified grassland	
Photograph	Description

		Figure 5: Area of modified grassland adjacent to western elevation of B2a
Native hedgerow		
Photograph		Description
		Figure 6: Native hedgerow with trees along western site boundary
Native hedgerow		
Photograph		Description

		Figure 7: Native hedgerow with trees along northern site boundary	
Ornamental hedgerow			
Photograph		Description	
		Figure 8: Non-native ornamental hedgerow with trees along eastern site boundary	
Scattered trees			
Photograph		Description	

		Figure 9: Scattered fruiting trees within area of modified grassland, adjacent to northern site boundary	
Bird nests			
Photograph		Description	



Figure 10: Old bird nests in the interior of B1 and B2



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