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Preliminary Ecological Appraisal and Roost Assessment

Survey site:

The Green, Holt Road, Rossett, Wrexham, LL12 0DS

Client:

Apex Architecture and Design Ltd

Survey date:

13th June 2024

Project:

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

"The demolition of the on-site building (B1), and development of 3 dwellings within the site with associated landscaping."

[Unsubmitted]

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.**

The site survey was undertaken by Jessica Sibley BSc (Hons) MSc, Consultant Ecologist (Accredited Agent on Natural Resources Wales Bat Licence Number: S092694/1).					
Date of survey	Temperature (°C)	Humidity (%)	Cloud Cover (%)	Wind (km/h)	Rain
13/06/2024	14	67	60	8	None

Ecological Survey Factor **Conclusion, Impact or Recommendations**	**Detailed using desk study and site survey (carried out under good weather conditions). 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, PRA map in appendix 2, location plan in appendix 3, proposal plans in appendix 4 and photos in appendix 5). **Botanical species are described with reference to the DAFOR scale (D = Dominant; A = Abundant, F = Frequent, O = Occasional, R = Rare).**	
Summary of Survey Findings (*UKHab codes used)* **Primary Codes:** • Modified grassland [g4] • Non-native and ornamental hedgerow [h2b] • Developed land – sealed surface [u1b]	The survey site is centred on National Grid Reference: SJ 36876 57298 and has an area of approximately ~0.20ha. The site comprises a disused worship building, hardstanding, grassland, ornamental hedgerow, a gravel bed, and scattered trees, in Rossett, Wrexham. The underlying geology of the site is Salop Formation (mudstone, sandstone, and conglomerate) with superficial deposits of river terrace sands and gravels, overlain by freely draining slightly acid loamy soils with low fertility. Typical habitats of this type include neutral and acid pastures and deciduous woodlands; with acid communities such as bracken and gorse in the uplands.

• Artificial unvegetated – unsealed surface [u1c] • Built linear features [u1e] • Building [u1b5] **Secondary Codes:** • Hedgerow with trees [11] • Scattered trees [32] • Ruderal/ephemeral vegetation [81] • Young trees – self-set [202] • Gravel bed [310] • Bare ground [510] • Fence [612]	Adjacent to the north of the site is the B5102 road, adjacent to the east is Harwood's Lane, and adjacent to the south and west are dwellings with associated gardens. Within a 4km radius of the site are four 'Priority Ponds and Lakes' (closest ~2.15km north-east). There is also scattered 'Priority Deciduous Woodland' (closest ~1.59km north-east) and 'Priority Traditional Orchards' ~3.58km north-east, designated under MAGIC. The closest watercourse to the site is the River Alyn ~0.25km south-west of the site boundary. The wider landscape comprises the larger settlement of Rossett surrounding the site, with infrastructure, as well as widespread rural areas and natural features beyond the settlement. **Survey Limitations:** • No Biological Records Data (BRD) was available at the time of writing this report and this should be obtained, and the report updated to enable a robust ecological impact assessment to be completed. These limitations have been taken into account during the evaluation of the site and requirement for further surveys and mitigation. **<u>Modified grassland [g4] with ruderal ephemeral vegetation [81] and bare ground [510]</u>** A section of the site is grassland which best represents modified grassland. Species richness within the sward is poor with <8 species visible per m^2. Perennial rye-grass *Lolium perenne* is abundant throughout the sward. Species include: **A:** Perennial rye-grass *Lolium perenne*. **F:** Yorkshire fog *Holcus lanatus*, and cock's-foot *Dactylis glomerata*. **O:** Red fescue *Festuca rubra*, common bent *Agrostis capillaris*, *Poa sp.*, oat grass *Poaceae sp.*, creeping buttercup *Ranunculus repens*, ribwort plantain *Plantago lanceolata*, common dandelion *Taraxacum officinale agg.*, common

	daisy *Bellis perennis*, *Asteraceae sp.*, nettle *Urtica dioica*, field wood-rush *Luzula campestris*, and broad-leaved dock *Rumex obtusifolius*. **R:** Crested dog's-tail *Cynosurus cristatus*, willowherb *Epilobium sp.*, common ragwort *Senecio jacobaea*, forget-me-not *Myosotis sylvatica*, common mallow *Malva sylvestris*, avens *Geum sp., Lamiaceae sp.*, *Boraginaceae sp.*, creeping thistle *Cirsium arvense*, and cleavers *Galium aparine*. Grassland – Condition Indication: Sward height across the habitat parcel is varied and tussocky in small places (i.e., ~10-40cm), creating microclimates for vertebrates and invertebrates. Cover of bare ground is between 1-5%, including localised areas. No bracken *Pteridium aquilinum* was recorded across the habitat parcel. No scrub is associated with the grassland parcel. Cover of creeping buttercup, nettle, and thistle likely accounts of >5% cover. There is an absence of non-native invasive species associated with the habitat parcel (as listed under Schedule 9 of the Wildlife and Countryside Act, 1981). **Scattered tree [32]** One rowan *Sorbus aucuparia* is located to the north-west of the site. The tree is a small, and semi-mature tree with an approximate Diameter at Breast Height (DBH) of ~20cm. Scattered Trees – Condition Indication: The tree is a native species, and it is semi-mature. There is no evidence of an adverse impact on tree health by human activities, and no current pruning regime. No natural ecological niches were recorded associated with the tree. The tree over sails grassland vegetation beneath (i.e., >20%).

	Young trees – self-set [202] Young self-set trees across the site include occasional sycamore *Acer pseudoplatanus* and rare (abundance) blackthorn *Prunus spinosa*. **Non-native and ornamental hedgerow [h2b] with trees [11]** Along the south-west boundary of the site is non-native, ornamental hedgerow comprising of frequent beech *Fagus sylvatica*, rare (abundance) hazel *Corylus avellana,* and holly *Ilex aquifolium* with occasional scattered trees including crack willow *Salix fragilis*, sycamore, and silver birch *Betula pendula*. Understory vegetation includes occasional herb-robert *Geranium robertianium*, ivy *Hedera helix*, nettle, cleavers, willowherb, and broad-leaved dock with rare (abundance) foxglove *Digitalis sp*. **Developed land – sealed surface [u1b]** The south-western area of the site comprises hardstanding (access and parking areas). **Artificial unvegetated – unsealed surface [u1c] with a gravel bed [310]** The south-eastern boundary of the site comprises soil substrate overlain with gravel beds. **Built linear features [u1e] – fence [612]** Heras fencing and a smaller ~1m tall metal chain-link fence are located along the northern and eastern boundaries of the site, and ~3m tall garden fence panels are located along the western boundaries with ivy covering in sections. **Building [u1b5]** There is one building (B1) within the site. This structure is considered in relation to roosting bats, later in this report.

Foreseen Impacts	The habitats on site are widespread and not notable. The boundary hedgerow is expected to be retained based on the proposed plans, although a small area of grassland (i.e., ~0.1ha) and the on-site scattered tree will likely be lost as part of the proposed works.
Recommendations	**A Green Infrastructure Assessment (GIA) is being undertaken for the site.** **BRD should be obtained, and this report updated, accordingly.** Best practice measures to minimise the possibility of pollution affecting adjacent habitats must be implemented during construction. **A Construction Environment Management Plan (CEMP) may be required for this.** Retained trees/hedgerows should be protected in line with the measures outlined in the British Standard "Trees in Relation to Design, Demolition and Construction to Construction - Recommendations" (BS 5837) (2012). To compensate for the proposed habitat losses at the site, the following habitat creation measures should be incorporated: • Planting of additional native shrubs and trees at the site.
Locality and Designated Sites	
Summary of Survey Findings	There are 7 statutory designated sites within a 4km radius of the site: • **Marford Quarry Site of Special Scientific Interest** (**SSSI**) – ~1.41km south-west – (Over 1000 recorded species, a haven for invertebrates). • **Chwarel Singret SSSI** – ~2.57km south-west – (Geological interest).

	• **Midland Meres and Mosses Phase 2** (**Ramsar**) – ~3.11km south-west – (Wide range of habitats supporting nationally important flora and fauna). • **Vicarage Moss SSSI** – ~3.13km south-west – (Wide range of habitats supporting nationally important flora and fauna). • **Afon Dyfrdwy (River Dee) SSSI**– ~3.23km east – (Nationally important river notified for Atlantic salmon, otter, club-tailed dragonfly and fluvial geomorphology). • **River Dee and Bala Lake / Afon Dyfrdwy a Llyn Tegid Special Areas of Conservation** (**SAC**) – ~3.23km east – (Water courses of plain to montane levels with notable plants, fish, and riparian mammals). • **Old Pulford Brook Meadows SSSI** – ~3.33km north-east – (One of the best remaining examples of flood-meadow in Wales, with notable plants, invertebrates, and mammals). The site lies within the impact risk zone for the Afon Dyfrdwy (River Dee) SSSI and the proposed development is not listed as a possible high risk for this designation.
Foreseen Impacts	No impacts foreseen, given the distance of the proposed development from statutory designated sites.
Recommendations	None required.
Invasive / Non-native species	
Summary of Survey Findings	No problematic invasive and non-native species recorded on site.
Foreseen Impacts	N/A
Recommendations	No further surveys but remain vigilant.
Invertebrates	
Summary of Survey Findings	No habitat for protected or notable invertebrates is found on-site.
Foreseen Impacts	None foreseen.

Recommendations	No further surveys. **<u>Suggested biodiversity enhancements:</u>** The site could be further enhanced via the provision of native wildflowers or wildflower turf, and the installation of insect hotels and log piles into new garden areas which would provide foraging and sheltering opportunities for invertebrates.
Bats	
Summary of Survey Findings	A review of the MAGIC database returned two European Protected Species Licences (EPSLs) for bats within a 4km radius of the site. • 2017-32597-EPS-MIT – Brown Long-eared, Common pipistrelle – ~2.85km north-east – Destruction of a resting place. • 2015-7189-EPS-MIT – Brown Long-eared, Common pipistrelle, Natterer's bat, Soprano Pipistrelle – ~2.89km north-east – Damage of a resting place; Destruction of a resting place. **<u>Roosting bats:</u>** **B1 (on-site dwelling):** ➢ <u>*Exterior*</u>: B1 is a single-story pebbledash rendered worship building with a pitched roof clad in cement roof tiles. B1 has UPVC-framed windows and wooden-framed doors. The supporting walls were found to be intact without missing mortar or crevices. The UPVC fixtures along the northern and southern gable roof verges have small gaps along the corners before they interlock. Small gaps are also present behind the wooden cladding along the southern gable. The roof tiles have a few gaps present, with two on the eastern elevation and one on the western elevation. There is a short section of lifted roof tiles along the western elevation. There is gapping between the fascias and the supporting walls along both the eastern and western elevations that do

	not lead deeper into the roof structure. However, nine bat droppings were recorded in five different locations along the eastern and western elevation windowsills, which indicates this feature is likely a bat roost location. Given this feature is relatively shallow, it is likely a roost for transient periods. ➢ *Interior*: There are no accessible loft voids within the building. A section of the roof lining (bitumen) internally is visible within a small storage room, however, the gap that leads to this section of the roof void is too narrow for closer inspection. The majority of the interior ceiling is vaulted, with no visible cracks or crevices. The supporting walls were found to be intact without crevices. The windows are tightly sealed with no gaps. No bat evidence was found internally of B1 (i.e., droppings, urine stains, feeding remains, etc.). ➢ *Suitability Assessment*: B1 is a ***confirmed roost***. There are small gaps along the roof verge UPVC fixtures, gaps between the wooden cladding along the southern elevation, and between the roof tiles which look to be shallow and suboptimal for roosting bats other than for transient periods as they are likely subject to inclement weather and thermal fluctuations. However, the gap between the fascia and the supporting wall and the presence of bat droppings beneath suggests this feature is utilised as a bat roost. **Trees:** ➢ **T01:** The semi-mature rowan on-site was inspected for bat roost features, and none were recorded, resulting in it having ***negligible*** value for roosting bats. **Foraging and commuting bats:** On-site habitats comprise grassland, hedgerow and a scattered tree, which are likely of low value to local foraging and commuting bats. However, this habitat could be used by local foraging and commuting bats, and bats dispersing from nearby roosts.
Foreseen Impacts	**Roosting bats:**

	B1: The proposed development will result in the demolition of B1 (on-site worship building), which will destroy the roost(s) present. **T01:** No impacts are anticipated on roosting bats in the event of the removal of this semi-mature tree, given the lack of suitable roost features. **<u>Foraging and commuting bats:</u>** The proposed development will result in the loss of a small area of grassland (i.e., ~0.1ha) and possibly one semi-mature tree but given the presence of more extensive areas of foraging and commuting habitat in the locality, this is likely to be inconsequential for foraging and commuting bats. The proposed development may lead to an increase in the amount of current lighting of surrounding habitats. This may disturb commuting bats.
Recommendations	**<u>Roosting bats:</u>** **B1: Three bat emergence surveys are required during the active bat season (optimal May to August, suboptimal September) to characterise the roost(s) present.** At least two of the surveys should be completed during the optimal survey period mid-May to August inclusive and surveys should be spread at least three weeks apart. Infra-red cameras should be used as an aid. Four surveyors are required to provide full coverage of the building. An EPSL application to Natural England will be required. The EPSL application requires that 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.

	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. BRD will also need to be obtained to inform the application. **Foraging and commuting bats:** **A low impact lighting strategy will be adopted for the site during and 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-2 **Suggested biodiversity enhancements:** Enhancements are dependent on the outcome of further surveys.
Birds	
Summary of Survey Findings	No evidence of nesting birds was found on-site during the survey; however, birds could use the building, scattered tree and hedge for nesting. No habitat for schedule 1 birds was observed.
Foreseen Impacts	The proposed development could result in the destruction or the disturbance and subsequent abandonment of active bird nests.
Recommendations	**Any building or vegetation removal 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 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 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. **<u>Suggested biodiversity enhancements:</u>** A bird box along each new dwelling or along retained/planted trees could be incorporated into the plans: • Vivara Pro WoodStone Swift Nest Box (buildings) • House Sparrow Terrace FSC Nest Box (buildings) • Manthorpe Swift Brick (buildings) • Swallow Nest Bowl (buildings) • Vivara Pro Seville 32mm WoodStone Nest Box (trees) • Vivara Pro Barcelona WoodStone Open Nest Box (trees) (Or a similar alternative brand).
Reptiles	
Summary of Survey Findings	The majority of grassland across the site has a short sward (i.e., ~10cm), with only a small tussocky patch (i.e., ~40cm). This provides some opportunities for reptiles across the site for transient periods. However, the site is isolated within an urban area and disconnected from any further suitable reptile habitat, reducing the likelihood of reptile presence across the site with the exception of for transient periods. The presence of reptiles cannot be wholly discounted, albeit unlikely given the built-up surroundings and disconnectedness of the site.
Foreseen Impacts	Although some grassland (i.e., ~0.1ha) is being removed as part of the development, there is a low risk that a low number of reptiles could be present in the vicinity of the works. These could be injured or killed without mitigation.

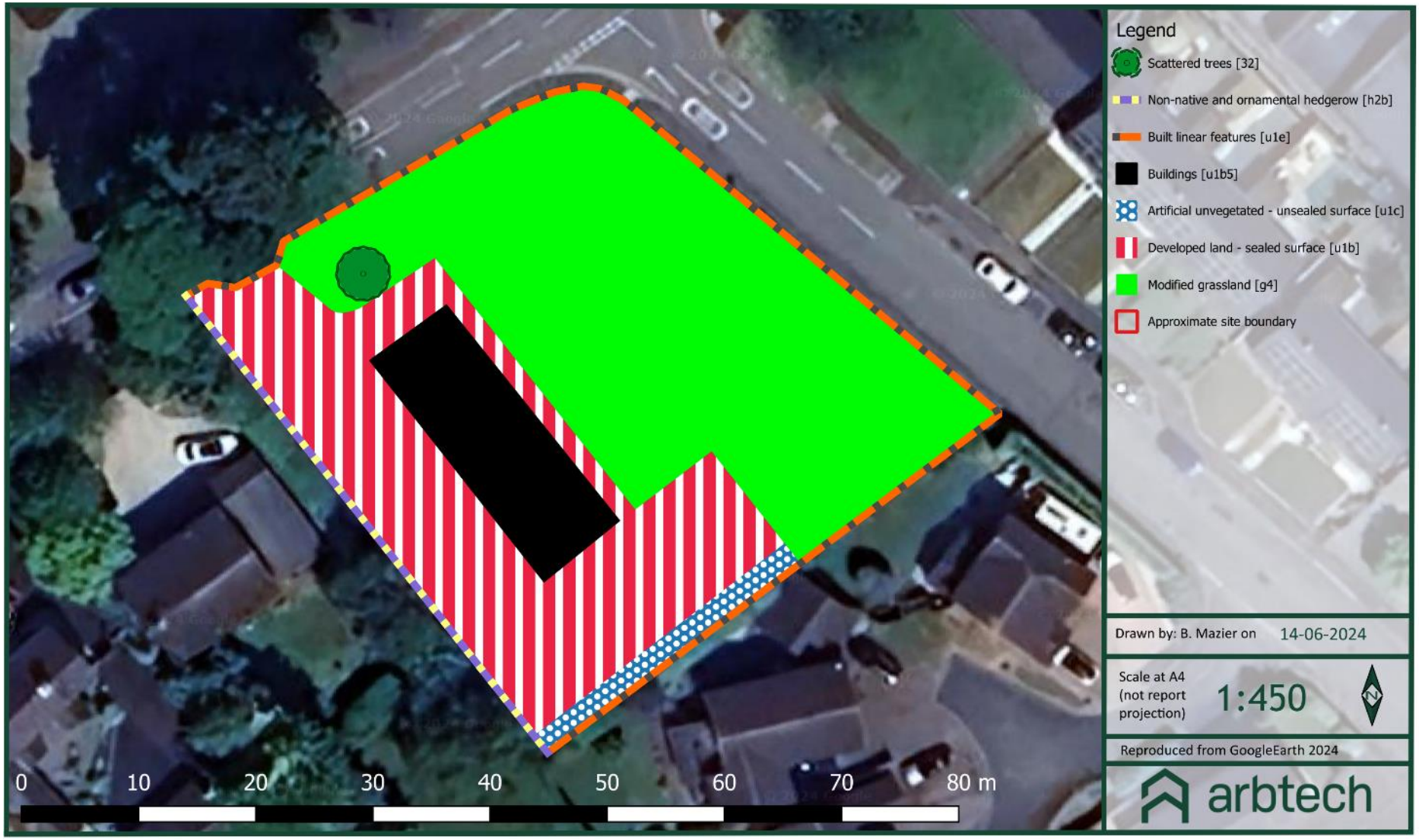
Recommendations	**A precautionary working method will be implemented for widespread reptiles during construction**, including the following measures: • Vegetation will be maintained at a short sward (5cm) to discourage reptiles. • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • Best practice pollution prevention measures will be implemented to minimise impacts to nearby habitats. • 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.** **<u>Suggested biodiversity enhancements:</u>** The site could be enhanced for reptiles post development with the inclusion of log piles and compost heaps in garden areas.
Amphibians	
Summary of Survey Findings	There are no ponds within the site, and a review of aerial imagery highlights there are no ponds within a 500m radius of the site. The site contains grassland and hedgerow which provides good terrestrial opportunities for GCN and other more common amphibians for foraging and refuge. However, the grassland is retained to a short sward, suiting amphibians for only transient periods. Furthermore, the presence of GCN within the site is unlikely, based on the lack of suitable

	connecting ponds to the site (i.e., possible GCN breeding ponds). Given that GCN exist in metapopulations that utilise multiple terrestrially connected ponds within 500m, an absence of connecting ponds is likely to indicate an absence of GCN from the site, which significantly reduces the likelihood of GCN occurrence on-site during their terrestrial phase. There is a higher likelihood of common amphibian occurrence, as amphibians such as common toads have better mobility compared to newts and can travel further distances (including over suboptimal habitat).
Foreseen Impacts	Although an area (~0.1ha) of suitable habitat is being removed as part of the development, there is a low risk that GCN could be present in the vicinity of the works, given the lack of connected ponds. However, more common amphibians may be impacted.
Recommendations	No further surveys are required. **However, the precautionary working method adopted for reptiles, will also benefit common amphibians.** **<u>Suggested biodiversity enhancements</u>** The site could be enhanced for amphibians post-development through 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	
Summary of Survey Findings	No evidence of badgers was found on-site or is suspected within 30m of the survey boundary.
Foreseen Impacts	None foreseen.
Recommendations	**Basic precautionary mitigation during works is recommended**: • 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 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 within 30m, works must cease and advice must be sought from a suitably qualified ecologist.** **<u>Suggested biodiversity enhancements:</u>** The site could be enhanced for badgers by planting bramble *Rubus fruticosus* and damson *Prunus domestica subsp. insititia*, as well as planting fruit-bearing trees to increase foraging opportunities for badgers.
Riparian animals	
Summary of Survey Findings	There are no watercourses on or connected to the site.
Foreseen Impacts	No impacts are anticipated on riparian animals as a result of the proposed development.
Recommendations	N/A
Hazel dormouse	
Summary of Survey Findings	A review of the MAGIC database returned no granted EPSL records for hazel dormice within 4km of the site. The site lies within of the known geographic range for hazel dormouse (either natural or reintroduced). Furthermore, the site does not comprise the habitat required to support hazel dormouse (i.e., woodland, connected hedgerow networks). Hazel dormouse presence across the site is unlikely.
Foreseen Impacts	No impacts are anticipated on hazel dormice as a result of the proposed development.
Recommendations	None.

Other e.g. hedgehog	
Summary of Survey Findings	The grassland and hedgerow on-site provide some foraging and refuge opportunities for hedgehogs.
Foreseen Impacts	~0.1ha grassland will be removed during construction. The loss of such habitats is likely to be inconsequential to local hedgehog populations owing to the presence of more extensive habitat locally. However, construction activities could result in the death or injury of hedgehogs, if present.
Recommendations	**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.** **<u>Suggested biodiversity enhancements:</u>** The site could be enhanced for hedgehogs post-development with the inclusion of hedgehog houses and fence gaps.

Appendix 1: Habitat map



Appendix 2: PRA map



Appendix 3: Location map



Appendix 4: Proposed plan



Appendix 5: Photos



Photo 1 – north and west elevation of B1.



Photo 2 – south and east elevation of B1.



Photo 3 – interior.



Photo 4 – internal windows.



Photo 5 – utilities room.



Photo 6 – gaps along UPVC roof verge fixtures.



Photo 7 – gap between fascia and supporting wall.



Photo 8 – gap between fascia and supporting wall.

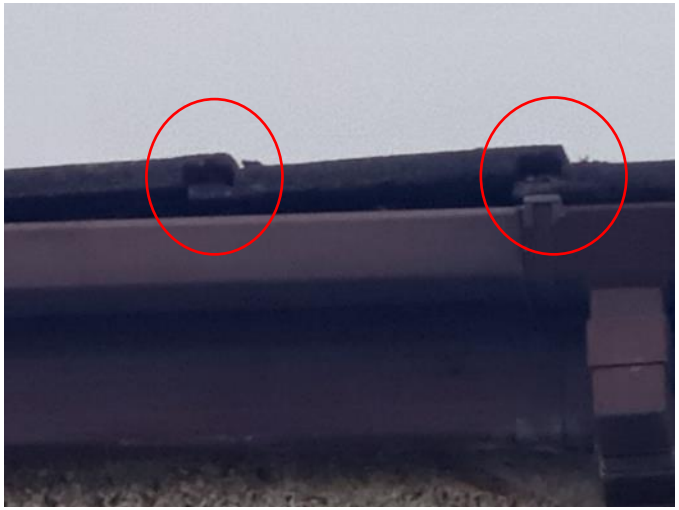


Photo 9 – gap between tiles on the eastern elevation.



Photo 10 – lifted tiles along the western elevation.



Photo 11 – bat droppings along external windowsill.



Photo 12 – on-site grassland.



Photo 13 – grassland with bare ground and linear feature.



Photo 14 – non-native, ornamental hedgerow.



Photo 15 – scattered rowan tree.

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