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Preliminary Ecological Appraisal and Roost Assessment

Survey site:

Crispin Lodge, Mold Road, Stansty, Wrexham LL11 4YF

Client:

Mary McAleavy

Survey date:

6th December 2024

Project:

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

Demolition of existing dwelling and erection of replacement dwelling.

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 survey results and recommendations contained within this report are valid for 18 months. An updated site visit may be required if the report is to be used any longer than 18 months after completion.

Site Location and Context

The survey site is centred on National Grid Reference SD 71170 12878 and has an area of approximately 0.1ha.

The site comprises one disused dwelling (B1), associated outbuildings (B2 & B3), grassland, mixed scrub, woodland and scattered trees.
It is situated on the outskirts of the city of Wrexham ~1.6km northeast of the city centre. The immediate landscape comprises of adjacent woodland with a network of hedge lined arable fields to the north, east and west and built-up commercial development to the south. The woodland and hedgerows act as liner landscape elements and connect the site to the wider landscape which facilitates dispersal for a variety of species, including bats, amphibians and reptiles.

Survey Details

The site survey was undertaken by Kayleigh Davies BSc, MSc Graduate Ecologist (Accredited on Natural Resources Wales Bat Licence Number: details available on request and holder of Natural Resources Wales GCN level 1 license – details on request)

Date of survey	Temperature (°C)	Humidity (%)	Cloud Cover (%)	Wind (km/h)	Rain
06/12/2024	9	67	100	9.6	Light rain

Executive Summary

A Ground Level Tree Assessment will be required for trees within the mixed woodland to the south of the site if they are to be impacted by the proposed development to assess the impacts to roosting bats.
Three bat emergence/re-entry surveys are required on B1 during the active bat season (May – September) to confirm presence/likely-absence of bats roosting in or on the building.
Two bat emergence/re-entry surveys are required on B2 during the active bat season (May – September) to confirm presence/likely-absence of bats roosting in or on the building.
One bat emergence/re-entry surveys are required on B3 during the active bat season (May – September) to confirm presence/likely-absence of bats roosting in or on the building.

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, and the ecology and biology of species as currently understood.
A biological records data search has not been undertaken. However, given the location of the site, the nature of the habitats presents 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 PEA survey was completed outside of the optimal survey period (April to October) limiting the identification of ground flora species; however, an adequate judgement could be made from the vegetation visible.
Internal access into the loft void of B1 was not granted during the survey due to health and safety of the building. As a result of this evidence of roosting bats may have been missed. Additionally, B3 was covered in dense ivy thus roosting features on this structure may have been missed. This has been taken into consideration when determining further survey and mitigation requirements.

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, 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).**	
Summary of Survey Findings **(***UKHab codes used)*	**On-site habitat descriptions** **u1b5** – Buildings There are three buildings on site. B1, is the main disused dwelling situated at the site centre and is a two-storey rendered structure with a slate roof and wooden bargeboards at the eaves (Fig.1). The roof structure is gabled with two gable extensions on the northern elevation. There are windows on the second storey with missing glass panes and an absence of wooden boards. B2 is a single storey stone built structure with a slate tiled slanted roof (Fig.2). B3 is a metal constructed outbuilding used for storage (Fig.3). **u1f** – Sparsely vegetated urban land To the east of B1 is a parcel of sparsely vegetated land over concrete substrate (Fig.4). Vegetation covered ~20% of the total area. Species present include nettle (D), common ivy (A) and bramble (F). **g3c** – Other neutral grassland The majority of the site including surrounding B1 and the west and northwest of B2 is other neutral grassland (Fig.5). The grassland was assessed as ruderal and appeared to be unmanaged which has allowed vegetation to take over the hardstanding concrete substrate below. Sward heigh measured ~8-30cm with areas of bare ground present. Species present include nettle (D), ivy (A), creeping buttercup (A), male fern (F), ribwort plantain (F), thistle (O), dandelion (O), white clover (R). **w1h** – Other woodland – mixed To the south of the site is a planted mixed woodland (Fig.6). Species present include sycamore (D), elm (F), ash (O), damson (O), cherry (O), Sawara cypress (R). This woodland is in good condition with a mixed age class of trees present. The ground cover largely consists of bare ground with common species such as ivy (D), nettle (A), dandelion (F), daisy (O) and fern (R). The woodland is overgrown due to a lack of management with scattered self-set saplings and thin bramble scrub in sections. **h3h** – Mixed scrub Scattered across the site are habitats of dense mixed scrub (Fig.7). Species present include bramble (D), nettle (A), thistle (F), ribwort plantain (O), ivy (R).

	w- 32- Scattered trees There are small, scattered sycamore trees situated to the northern site boundary (Fig.8). All trees had ivy present at the trunk. There are also two large mature trees present on the northern boundary of the site. These trees are in good condition with ivy present on one of the tree trunks obscuring view. **Local notable habitats** The presence of local notable habitats within 2km of the site boundary cannot be established without obtaining biological records data from North Wales Environmental Information Service. However, the site is surrounded by woodland which may experience indirect effects such as run off pollution (i.e. dust).
Foreseen Impacts	**On-site habitats** The proposed development will result in the loss of 75m^2 of other neutral grassland. This could result in a net loss in biodiversity at the site. **Notable habitats** Impacts to local notable habitats cannot be assessed without obtaining biological records data from North Wales Environmental Information Service.
Recommendations	**On-site habitats** Retained trees 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). **Notable habitats** Best practice measures to minimise the possibility of pollution affecting the nearby woodland must be implemented during construction. A Construction Environment Management Plan (CEMP) may be required for this. **Green Infrastructure Assessment** Planning Policy Wales (2024) requires all developments within Wales to conduct a Green Infrastructure Assessment to deliver Net Biodiversity Benefit and maintain biodiversity during development. Therefore, a Green Infrastructure Statement may be requested at the discretion of the LPA to detail how the site is maintaining biodiversity and include recommendations to further enhance the site biodiversity.
Locality and Designated Sites	
Summary of Survey Findings	**On-site designations** The site is not subject to any designation. **Statutory designated sites (within 2km)** There is 1 statutory sites within 2km of the site, as detailed below: - **Gatewen Marsh Site of Special Scientific Interest (SSSI)** - ~290m southwest - *The marsh is unusual in containing substantial stands of Great Reedmace Typha latifolia in shallow water with Brooklime Veronica beccabunga, Water Plantain Alisma plantagoaguatica*

	and Bottle Sedge Carex strata. The fringes of these areas support stands of Common Spike-rush Eleocharis palustris with Water Mint Mentha aguatica, Gipsy-wort Lycopus europaeus, Narrow-leaved Water-parsnip Berula erecta and Lesser Spearwort Ranunculus flammula. Further north are stands of Great Pond-sedge Carex riparia and Burreed Sparganium erectum with Reed-grass Phalaris arundinacea on the fringes and Broadleaved Pondweed Potamogeton natans in open channels. Willows Salix spp. are establishing in part of the site and the area adjacent to the colliery spoil banks is dominated by Great Hairy Willow-herb Epilobium hirsutum suggesting past disturbance. The site lies within the impact risk zone for Gatewen Marsh SSSI. **Non-statutory designated sites** The presence of non-statutory designated sites within 2km of the site cannot be established without data from North Wales Environmental Information Service.
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 (where known) as well as the urban location of the site with surrounding physical barriers. The site lies within the impact risk zone for Gatewen Marsh SSSI. The proposed development type is not listed as a possible high risk for this designation.
Recommendations	**On-site designations** None required. **Statutory and non-statutory designated sites** 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	The habitats present on-site, including grassland, scattered scrub and scattered trees, 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.

Foreseen Impacts	75m^2 of other neutral grassland 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.
Recommendations	No further surveys. **Suggested biodiversity enhancements** The incorporation of bee bricks (e.g. Ibstock BeeHabitat or similar alternative brand) into the fabric of the new buildings would provide sheltering opportunities for pollinators. These should be installed 0.5m above ground level on a south-facing elevation with no obscuring vegetation. The site could be further enhanced via the provision of native wildflowers or wildflower turf, which would provide foraging opportunities for invertebrates.
Bats	
Summary of Survey Findings	**EPSL data** The number of EPSLs and bat records within 2km radius of the site is unknown due to the lack of biological record data obtained. There are no Special Areas of Conservation designated for bats within 10km of the site. **Foraging and commuting habitat** Habitats recorded on site are assessed to provide foraging and commuting opportunities for bats in the form of species-poor grassland, scattered scrub, and woodland. 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 woodland and scattered trees on site extend beyond the site 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 3 buildings on site; the main dwelling (B1), and two outbuildings (B2 & B3). No evidence of roosting bats was identified on or within the buildings. **Roosting bats – trees** Only the scattered young within the northern section of the site is expected to be impacted by the works. These trees were assessed to be negligible for roosting bats due to their young age and lack of roosting features present. T1 and T2, the two large sycamore trees on the northern boundary on site are expected to be retained during the works, along with trees within the southern mixed woodland.
B1 Building description	***Photographs***

Summary

B1 is a disused two-storey dwelling situated at the site centre with a slate roof and wooden bargeboards at the eaves. The roof structure is gabled with two gable extensions on the northern elevation. There are windows on the second storey with missing glass panes and an absence of wooden boards. The walls are rendered with occasional exposed stonework to the northern elevation. There are three chimneys present on the roof structure.
The building has **high habitat value**.



Feature	***Materials***	***Condition/description/suitability***	***Photograph(s)***
Walls	Brick-built and rendered	The rendering of B1 appeared to be in good condition with no areas of damage suitable to support crevice dwelling bats.	

Roof	Slate Mortar	There were several slipped or missing slate tiles on the northern and southern roof elevations of the building, which created gaps suitable to enable access into the internal for void dwelling species in addition to supporting roosting crevice dwelling species beneath the tiles. Sections of mortar to the ends of the roof structure have sections of damage that allow internal access for bats below the roof structure. The most notable section is on the western gable end of the main building structure with a large section of missing mortar which would allow internal access for crevice dwelling bats.	
Barge boards/fascia boards	Wooden bargeboards	There is a gap between the brickwork and the wooden bargeboard on the northern elevation which could support crevice dwelling species. Additionally, there was a linear gap beneath the soffits on the northern elevation which would allow ingress into the interior for roosting bats.	

			
Window/doors frames and lintels	N/A	On the gable end at the northern elevation there is a window with missing windowpane and no boarding enabling access into the interior for roosting bats. Furthermore, there is missing glass to the southern elevation of B1 which also allows internal access within the property for bats.	

Internal voids	Timber rafters and ridge beam. Permeable membrane	Access into the internal loft void was not permitted during the survey. Therefore, evidence of roosting bats including live animals, droppings, staining and foraging remains may have been missed. From the ground level it was assessed that there is tearing to the permeable membrane lining. There was also a high volume of cobwebs evident indicating the void has not been recently utilised by flying bats. Furthermore, the loft hatches for all loft voids are damaged or missing, therefore, along with the damaged windows, allows internal access for void dwelling bats within the building.	
B2 Building description			***Photographs***
Summary B2 is a stone built single storey outhouse situated at the northeast of B1. The roof of B2 is a gable structure with slate tiles and wooden soffit boards. The northeastern roof structure of B2 is missing. The lean to the west of the building has a metal corrugated roof and stone walls with open elevations to the south and north. The door to B2 on the western elevation is permanently open allowing ingress for roosting void bats into the internal. The building has **moderate habitat value**.			

Feature	*Materials*	*Condition/description/suitability*	*Photograph(s)*
Walls	Stone built	The mortar at the walls of B2 appeared in good condition with no areas of damage creating gaps suitable to support roosting bats.	
Roof	Slate	The roof structure of B2 has several missing and slipped tiles which could be suitable ingress points for void dwelling species. Additionally, crevice dwelling species could roost between the gaps in the tiles.	

Window/doors frames and lintels	Timber	The door to B2 on the western elevation is permanently open allowing access into the interior for roosting bats.	

Internal voids	Timber rafters,	A section of the roof of B2 is collapsed exposing the internal space to the elements. As a result of this, the internal conditions of B2 were the same as the external conditions. The main section of the building is plastered with wooden beams. The open access via the door and the damaged roof structure to the north of B2 allow internal access to within this void for void dwelling bat species. The lean-to section to the west of B2 is open on both north and southern elevations which allow in high levels of external elements with wind and rain, with little protection. Therefore the interior is suboptimal for void dwelling bats.	 

B3 Building description			***Photographs***
Summary B3 is a small outbuilding situated to the northeastern site boundary. B3 is pebble dashed on the southern elevation and constructed of metal on all other elevations with a metal corrugating roof. There are wooden soffits on the western elevation which appeared to be in good condition with no gaps or damage which would enable access into the interior for roosting bats. The doors on the eastern elevation are permanently open enabling access into the interior however this exposes the internal space to weather conditions and daylight and reduces the habitat suitability for roosting bats. The building has **low habitat value**.			
Feature	***Materials***	***Condition/description/suitability***	***Photograph(s)***

Walls	Pebble dash	The walls are all well sealed and provide no crevice's suitable for roosting bats.	
Roof	Corrugated metal sheeting	The roof is comprised of metal corrugated sheeting which has low habitat value for roosting bats due to their inability to thermoregulate against metal materials.	

Barge boards/fascia boards	Wooden	The wooden soffit boards on the eastern elevation appeared in good condition with no apparent gaps or damage suitable to allow ingress for roosting bats.	
Internal voids	Structured with metal sheeting and poles	The internal void of B3 is permanently open to external elements due to a damaged door on the western elevation. Therefore, the internal recordings match the temperature and humidity of the external. There is limited protection internally from external factors and due to the metal construction limited thermoregulating properties for bats.	

Foreseen Impacts	**Roosting habitat [Buildings]** The proposed development will result in the demolition of the buildings. This could result in the destruction of any bat roosts present and could cause disturbance, death or injury to bats. **Roosting habitat [Trees]** As the proposal involves the felling of onsite trees within the northern other neutral grassland, no impacts are anticipated due to this as these trees are young and deemed negligible for roosting bats due to the lack of features present. If plans change and T1 and T2 or any trees within the southern woodland are to be impacted, bat roosts, if present, may be damaged or destroyed if not mitigated for. **Foraging and commuting habitat** The proposed development will result in the loss of small areas of other neutral grassland but given the 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. **Artificial lighting** The proposed development may lead to an increase in the amount of current lighting of surrounding habitats or the retained building without mitigation. This may disturb commuting bats.
Recommendations	**Roosting habitat [Buildings]** <u>B1</u> Three bat emergence/re-entry surveys are required on B1 during the active bat season (May – September) to confirm presence/likely-absence of bats roosting in or on the building. Four surveyors equipped with infrared cameras are required to provide full coverage of the building's elevations to look for emerging/re-entering bats <u>B2</u> Two bat emergence/re-entry surveys are required on B2 during the active bat season (May – September) to confirm presence/likely-absence of bats roosting in or on the building. Two surveyors equipped with infrared cameras are required to provide full coverage of the building's elevations to look for emerging/re-entering bats <u>B3</u> One bat emergence/re-entry surveys are required on B3 during the active bat season (May – September) to confirm presence/likely-absence of bats roosting in or on the building. One surveyor equipped with an infrared camera is required to provide full coverage of the building's elevations to look for emerging/re-entering bats 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. Lighting mitigation may be required based on the outcome of the night bat survey(s).

	If any bat roosts are confirmed from this survey schedule, a bat licence would be required to demolish the buildings as it would involve the destruction of roosts. This is applied for with the help of a class 2 licensed bat ecologist after planning permission is granted, but before commencement of works. **Roosting habitat [Trees]** No further surveys for the removal of the young, scattered trees within the northern section of site. If plans change and T1, T2 or any trees within the mixed woodland to the south are to be impacted, a Ground Level Tree Assessment will be required. A GLTA is a ground level survey of all trees to assess their suitability for roosting bats. If any suitable roosting features are identified on these trees, then a close-up inspection of any features that could be used by roosting bats will be undertaken to determine the presence or likely absence of roosting bats. This may require a qualified climbing team or a Mobile Elevated Work Platform (MEWP) to access the features. **Foraging and commuting habitat** No further surveys are required. **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-2 **Suggested biodiversity enhancements** The installation of three bat boxes at the site will provide additional roosting habitat for bats. The bat boxes will be incorporated into the fabric of the new dwelling. They will be suitable for pipistrelles (which have been identified locally through EPSL data). Suitable bat boxes include Habibat Bat Box, Ibstock Enclosed Bat Box or similar alternative brand. Bat boxes should be positioned 3-5m above ground level facing in a south or south-westerly direction with a clear flight path to and from the entrance, away from artificial light.
Birds	
Summary of Survey Findings	**Buildings** No evidence of nesting birds was identified on or within any of the buildings surveys, however all buildings are considered suitable for nesting. **Trees and vegetation** No bird nests were identified within the scrub or woodland on-site, however they both habitats offer nesting opportunities and nest-building resources for birds. **Barn owls** The site does not appear to provide any suitable nesting sites for barn owls.

	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.
Foreseen Impacts	**Buildings/trees** The proposed development could result in the destruction or the disturbance and subsequent abandonment of active bird nests if present during works. **Barn owls** None foreseen. **Overwintering birds** None foreseen.
Recommendations	**Buildings/trees** 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. **Barn owls** None required. **Overwintering birds** None required. **Suggested biodiversity enhancements** The installation of a minimum of three bird boxes on mature trees around the site boundaries or on newly constructed buildings will provide additional nesting habitat for birds e.g. Schwegler No 17 Swift Nest Box (buildings) Schwegler 1SP Sparrow Terrace (buildings) Schwegler 1B Nest Boxes (trees) Schwegler 2H Robin Boxes (trees) Woodstone Nest Box (buildings or trees) Or a similar alternative brand.

	Tree boxes should be positioned approximately 3m above ground level where they will be sheltered from prevailing wind, rain and strong sunlight. Small-hole boxes are best placed approximately 1-3m above ground on an area of the tree trunk where foliage will not obscure the entrance hole. Swift and sparrow boxes should be positioned at the eaves of a building and can be incorporated into the fabric of the building during construction.
Reptiles	
Summary of Survey Findings	**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 woodland and scrub provide elevated value for reptiles as these habitats provide a suitable structure for refuge, whilst also providing foraging and commuting opportunities. The site has good connectivity to further suitable reptile habitat in the wider landscape via woodland and tree and hedge lined agricultural fields. The presence of reptiles on site cannot be discounted, albeit likely limited to low numbers within woodland and peripheral scrub.
Foreseen Impacts	$75m^2$ of other neutral grassland 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.
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 advise must be sought from a suitably qualified ecologist. **Suggested biodiversity enhancements** The site could be enhanced for reptiles post-development with the inclusion of log piles (created from felled materials) and planting of areas of native shrubs, to provide sheltering opportunities.
Amphibians	
Summary of Survey Findings	**EPSL and survey data** Records of amphibians within 2km of the site could not be ascertain due to the lack of biological record data provided.

	Aquatic habitat suitability (including ponds within 500m) Great crested newts (GCN) 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 et al. 2001). There are no ponds on the site, but a review of aerial imagery (MAGIC and OS Maps) indicates the presence of a singular pond within 500m; the pond (P1) is located ~400m south of the site and is situated on the far side of the Mold Road Interchange roundabout and regularly managed agricultural fields. These landscape features are likely to represent a significant barrier to dispersal due to heavy traffic flow and regular disturbance, eliminating connectivity to the site for great crested newts. **Terrestrial habitat suitability** Areas of scrub, rank grassland and the woodland on site may provide foraging and sheltering opportunities for amphibians. With hibernation opportunities present within the woodland.
Foreseen Impacts	Due to no ponds being located on site and the distance from the nearest pond, with significant dispersal barriers between P1 and site, the risk of great crested newts on site is acceptably low. However, there is a risk of common amphibians commuting through site.
Recommendations	Owing to the nature of the proposed development and the low potential for impacts to amphibians, further surveys are considered to be disproportionate. A precautionary working method will be implemented for common amphibians during construction, including the following measures: • A staged approach will be adopted for vegetation clearance, whereby the vegetation will be strimmed to 15cm and left overnight to allow any amphibians 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 amphibians 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 amphibians from utilising these areas. • Best practice pollution prevention measures will be implemented to minimise impacts to nearby aquatic habitats that amphibians 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 common amphibians 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 great crested newt is identified, works must cease and advise must be sought from a suitably qualified ecologist. **Suggested biodiversity enhancements** 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

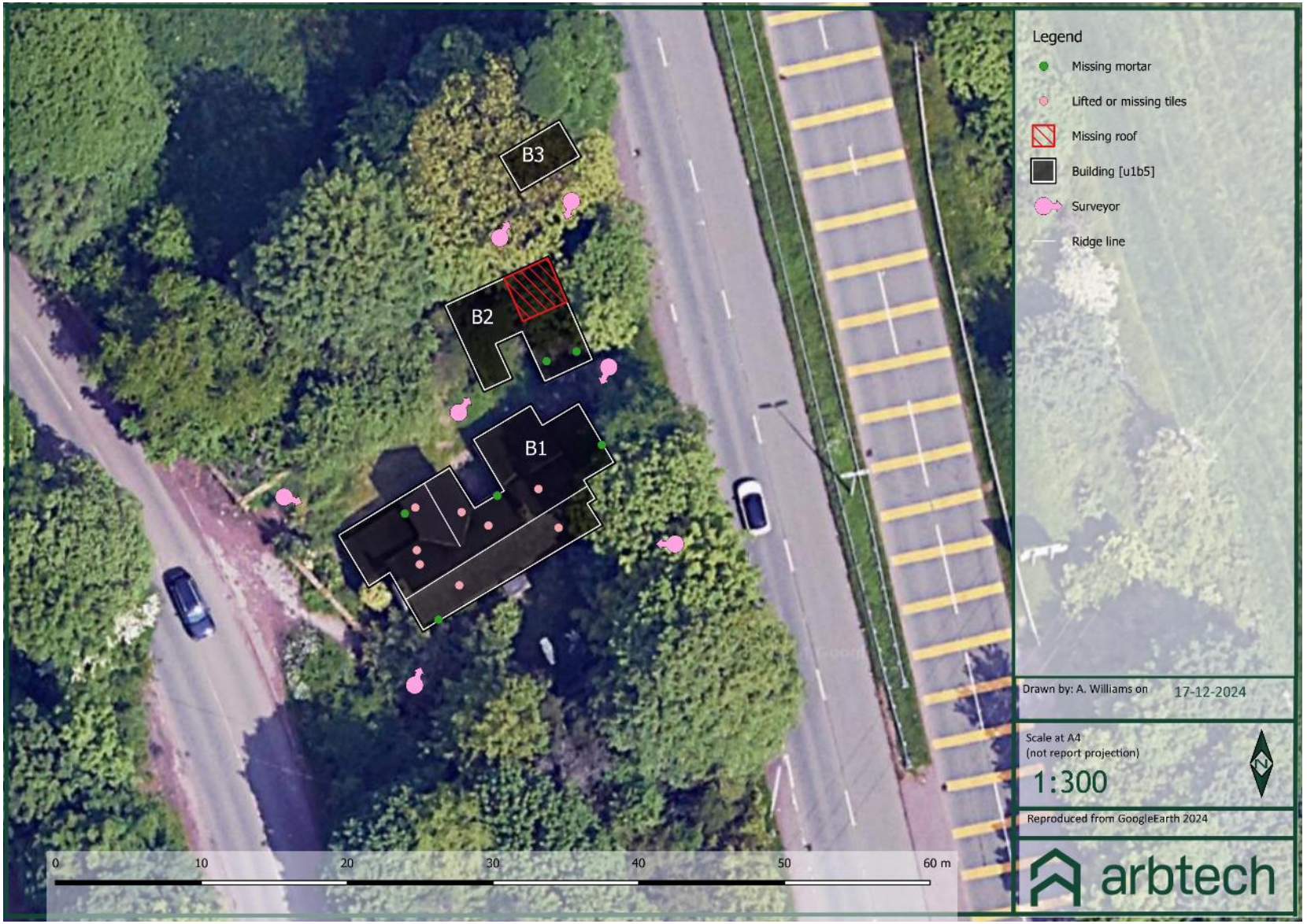
Badger	
Summary of Survey Findings	No badger setts were noted on site or within a 30m radius of the site. Further, no evidence of foraging badgers was noted within the development area. However, the site was considered suitable for badger sett excavation and foraging habitat.
Foreseen Impacts	No works will be undertaken within 30m of a badger sett. Grassland 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.
Recommendations	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 toolbox talk will be given to contractors regarding the possible presence of badgers at the site. • A pre-commencement inspection of the site will be undertaken for any new badger activity if works do not commence within three months. • 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 advise must be sought from a suitably qualified ecologist. **Suggested biodiversity enhancements** Planting fruit bearing trees and species-rich grassland to increase foraging opportunities for badgers.
Riparian animals	
Summary of Survey Findings	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.
Foreseen Impacts	No impacts are anticipated on riparian animals as a result of the proposed development.
Recommendations	None required.
Hazel dormouse	
Summary of Survey Findings	**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 know 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.
Foreseen Impacts	No impacts are anticipated on hazel dormice as a result of the proposed development.
Recommendations	None foreseen.
Other e.g. hedgehog	
Summary of Survey Findings	The mixed scrub and woodland onsite provides foraging and commuting opportunities for hedgehogs, with woodland habitat nearby.
Foreseen Impacts	75m^2 of grassland 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.
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. **Suggested biodiversity enhancements** The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for hedgehogs: • Planting fruit bearing trees and 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 1a: Habitat map



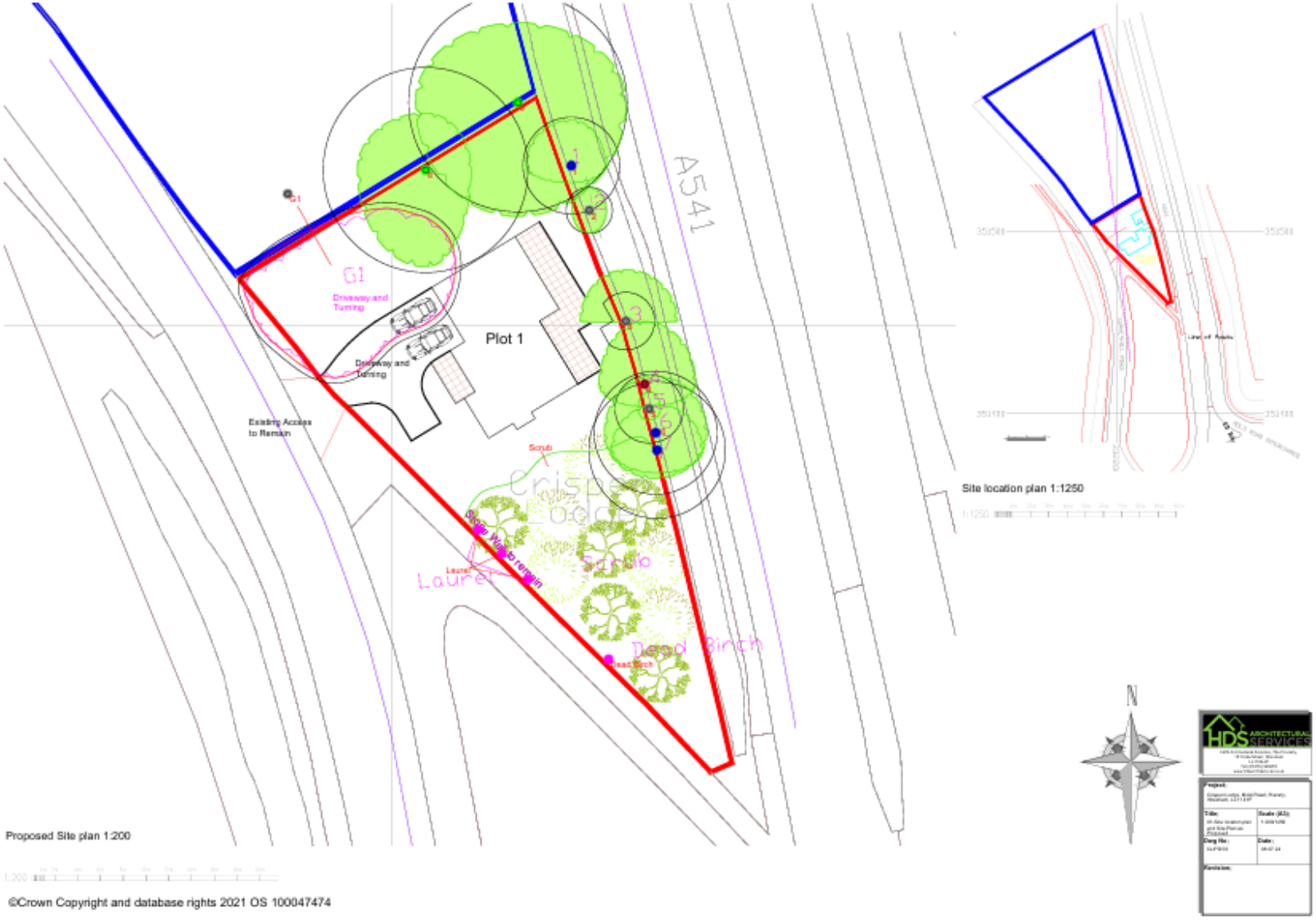
Appendix 1b: PRA map



Appendix 2: Location map



Appendix 3: Proposed plan



Appendix 4: Habitat Photos

Buildings	
Photograph	**Description**
	Figure 1: Main dwelling (B1) on site
	Figure 2: B2

	Figure 3: B3
Sparsely vegetated land	
Photograph	**Description**
	Figure 4: Sparsely vegetated land on site
Other neutral grassland	

Photograph	Description
	Figure 5: An example of the other neutral grassland on site
Other mixed woodland	
Photograph	**Description**
	Figure 6: An example of the woodland on site
Mixed scrub	
Photograph	**Description**

	Figure 7: An example of the mixed scrub present on site
Scattered trees	
Photograph	**Description**
	Figure 8: An example of the scattered trees on site

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