Kayleigh Davies BSc (Hons) MSc,
Graduate Ecologist
Email: kayleighdavies@arbtech.co.uk
Arbtech Consulting Ltd
arbtech.co.uk

Preliminary Ecological Appraisal and Roost Assessment

Survey site:

Plum Tree Farm, Is-y-Coed, Wrexham, LL13 9RN

Client:

Robert Eccleston

Survey date:

01/05/2024

Project:

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

Demolishing on site barn and construction of two residential dwellings.

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 Kayleigh Davies BSc, MSc, (Accredited Agent on Natural Resources Wales Licence: S092694/1.)					
Date of survey	Temperature (°C)	Humidity (%)	Cloud Cover (%)	Wind (km/h)	Rain
01/05/2024	15	65	10	10	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, location plan in appendix 2, photos in appendix 3 and proposal plan 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)*	The rectangular survey site is centred on National Grid Reference SJ 39830 50305 and has an area of approximately 0.95ha. The site is a smallholding with buildings, hard standing, grassland, partly bordered by native hedges with a stream on the western boundary. This survey focused on one of the outbuildings on site that is subject to the proposed development and is referred to as B1. The survey focused on the area within the red line boundary, but also assessed the ownership boundary. The site is set within a low-density area surrounded by large arable fields with a network of hedges and scattered trees. The site sits on the B5130 and is less than 500m east of a large industrial estate which sits on the edge of Wrexham and has several small areas of open water. There is a stream ~65m west of the building to be developed and a public park or garden 35m south. The River Clywedog is ~1500m southwest of the development site at its closest point. <u>Developed Land, Sealed Surface (u1b)</u>

	The driveway into the property consists of developed land sealed surface, with the presence of <5% vegetation, dominated by daisy and thistle. <u>Other Neutral Grassland (g3c)</u> The majority of the site consists of other neutral grassland. This grassland is unmanaged, with an average grass length of ~20cm. The grasses present are common species including, meadow grass (d) meadow foxtail (f), and tall fescue (o). Other species present include dead nettle (d), common nettle (d), meadow buttercup (a), forget me not (a), cow parsley (a), dock (f), red fescue (f), cleavers (f), ribwort plantain (o), sow thistle (o) and clover (o). <u>Native Hedgerow (h2a)</u> A hawthorn hedgerow is present on the northern boundary of the site, the western boundary separating the stream from the field and the garden and the southern section of the site that separates the field from the associated garden of the residential dwelling. The hawthorn hedgerow is in good condition, ~2m in height and ~1m in width. There is occasional willow and ivy within sections of the hedgerow. <u>Sparsely Vegetated Urban Land (u1f)</u> There is a section of the site that consists of sparsely vegetated ground that forms the chicken coop on site. The plant species present on this section include, common nettle (d), meadow grass (d), creeping buttercup (o), thistle (f), dandelion (f) and dock (r). <u>Bramble scrub (h3d)</u>

	There is a section of bramble scrub on site, near to thew southern hedgerow that separates the urban garden and the field. This scrub is situated near to the ditch on site and covers the majority of this section. The bramble scrub is dense and does not allow access. <u>Other Standing Water – stream (r1g)</u> There is an off-site stream that runs along the western boundary of the site. This stream is shallow and is ~20cm deep. There is very limited submerged vegetation and ~80% shade coverage due to the surrounding hedgerow and trees. The banks are steep and have limited vegetation cover. The hedgerow that surrounds the stream is thick and obscures the majority of the stream. The stream is likely functions as drainage for the nearby agricultural field and likely often dries in periods of hot weather. <u>Developed, sealed surface (buildings) [u1b5]</u> There are two permanent buildings on site, designated as B1 and B2 as well as three of undesignated structures including a small timber shed, a small outbuilding to the west of the residential dwelling and a chicken coop annex attached to B1. B1 is a large agricultural building (barn) with a gabled corrugated metal roof, brick walls and wooden bargeboards. The walls are constructed of brick, with wooden doors and wooden window frames. There is a small metal storage unit to the north of the building. There are three internal voids within the property. The barn has an annex that is being used as a chicken coop. This building has a tiled roof and wooden walls. The annex has a lower height apex than the remainder of B1.

	B2 is a metal constructed shed outbuilding utilised for storage. B3 is a wooden outbuilding situated in the garden of the residential dwellings that will also be unaffected by the works. B4 is a residential building constructed of brick walls, and a cement tile roof, that will not be impacted by the proposed development. <u>Built Up Areas and Gardens (U1)</u> The residential building (B2) and associated urban gardens to the east and west of the building consists of a lawn which is regularly maintained with short grass length of ~10cm. There are scattered oak trees to the west of the garden and hawthorn hedgerows. There are several flower beds and introduced shrubs. The urban gardens will not be impacted with the proposed development. <u>Local notable habitats</u> There are several sections of broadleaved woodland within 2km of the site boundaries. The closest record of this notable habitat is 450m to the southwest of the site boundary. This habitat is separated from the site with residential gardens and farmland in between the site and the habitats. No notable habitats are located directly on site.
Foreseen Impacts	There are currently no proposed plans for the site, therefore impacts can not be accurately assessed. This section needs to be updated once plans are received to accurately depict the impacts. The proposed plans include the demolition of the building on site and the erection of two new build residential dwellings and associated gardens. Therefore, the grassland, scrub and hedgerows on site are likely to be removed for the proposed development. These habitats are common habitats, but this may cause a decline in biodiversity on site.

Recommendations	Due to the lack of proposed plans for the site, the area of impacted habitat is not clear. The removal of the hedgerows, grassland and scrub on site may lead to a loss in biodiversity. To mitigate for the proposed losses of habitats on site, the following habitat creation should be included within the proposed development: • Planting of native trees • Hedgerows should be retained where possible, or native species hedgerow planting on site to replace sections lost • Planting of native pollinator plants • Wildlife pond creation
Locality and Designated Sites	
Summary of Survey Findings	~1700m west is the Afon Dyfrdwy/River Dee Site of Special Scientific Interest, with the River Dee Special Area of Conservation ~2100m west. The site is described as *"Afon Dyfrdwy (River Dee) is of special interest for its fluvial geomorphology, Carboniferous geology, range of river habitat types, saltmarsh transition habitats. The features for which the SSSI is notified, in particular migratory fish, depend upon the whole river ecosystem. Salmon, otter, club-tailed dragonfly, and fluvial geomorphology are of special interest."*
Foreseen Impacts	The proposed development is not listed as a risk for the SSSI. Due to the distance of the site from the SSSI, there are no foreseen impacts of the development on the designated site.
Recommendations	None.
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. Habitat creation for invertebrates should be incorporated into the proposed developments where applicable. Such as native pollinator plants, bee bricks incorporated into the new residential dwellings, wildlife pond creation.
Bats	
Summary of Survey Findings	There is high value foraging habitat on site for foraging bats. The grassland, hedgerows, scattered trees and the stream on site all will provide foraging habitat to support foraging bats. Furthermore, the surrounding habitat consists of arable land and urban gardens, with scattered trees and hedgerows, which will also support foraging and commuting bats. Biological Record Data has not been obtained for the site. Once obtained, this will be incorporated into the report. There were no specific limitations in regard to the bat roost assessment. <u>B1 – exterior</u> B1 is a single storey, brick building, with wooden bargeboards and a metal corrugated roof. The building is in overall good condition. The brick walls are sealed, with no cracks or crevices noted on any of the elevations. The wooden bargeboards are also in good condition with only minor cosmetic damage present. There are no gaps below the wooden boards, and they lie flush to the walls. The roof, due to the metal construction, has no roosting features present, and the metal construction does not allow for thermal regulation suitable for roosting bats. There are gaps along the eaves of the building, where the metal roof sits on the brick walls of the building. These gaps allow internal access into the building for bats. The chicken coop to the west of B1 consists of a tiled roof which is in good

	condition, with no lifted tiles or crevices suitable for roosting bats. The coop is open, with high levels of sunlight entering the space and other external elements, making the interior sub optimal for roosting bats. The metal lean to on the northern elevation of B1 is also considered sub optimal for roosting bats due to the lack of roosting features present and the metal construction of the building not allowing for thermoregulation for bats. there is ivy present on the northwestern corner of B1. The ivy is thin, and the walls can be viewed beneath the ivy and therefore is not considered a roosting feature. <u>B1 – interior</u> There are three interior voids within B1. These interior voids consist of exposed brick walls, wooden beams and metal roof. The windows within the voids allow in high levels of sunlight into the space. There are points of internal access for bats within the eaves of the building, and sunlight is visible entering these gaps. There is also minor damage to the walls in sections internally, and therefore, this might lead to further gaps and crevices suitable for roosting crevice dwelling bats. B1 has **low** suitability for roosting bats due to the low numbers of roosting features on the building, consisting of access points along the eaves of the building. B2 is a metal garage, which is open on the eastern elevation. The interior consists of exposed metal roof and walls with shallow timber beams. The open elevation on the eastern section allows in high levels exterior elements that will likely deter bats from utilising this space. Furthermore, the metal construction of the building does not allow for thermal regulation for bats.

	B2 is considered **negligible** for roosting bats. The remaining buildings on site will not be impacted by the proposed development. The scattered trees located to the west of the urban garden were not assessed for bat roosting potential during the survey due to the garden not being impacted by the proposed development. Therefore, these trees are to be retained, to the ecologist's knowledge.
Foreseen Impacts	The proposals include the demolition of B1, therefore any bat roosts if present within the building will be destroyed, and any bats, if present, injured or killed. The proposed development will lead to an increase in the amount of lighting on surrounding habitats. This may disturb commuting bats.
Recommendations	B1 has low habitat value for roosting bats due to the limited roosting features present, and the low number of access points to the internal of the building. One bat emergence/re-entry survey is required on B1 during the active bat season (May – September) to confirm presence/likely-absence of bats roosting in or on the building. The survey visit should be completed during the optimal survey period mid-May to August inclusive. Sub-optimal: early May and September. Would require greater justification of timing e.g., weather conditions, known local bat activity.

	Three 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 on every elevation 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 survey(s). If any bat roosts are confirmed from this survey schedule, a bat license 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. 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 Enhancements are dependent on the outcome of further surveys
Birds	
Summary of Survey Findings	No evidence of nesting birds was found within the building during the surveys; however, birds were observed actively entering and exiting a section of the hedgerow on site and bird calls could be heard, suggestive of nesting behaviour. Furthermore, the scattered shrubs and scrub and other sections of hedgerow allow habitat for nesting birds.

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.
Reptiles	
Summary of Survey Findings	The small section of unmanaged grassland on site, the bramble scrub and hedgerow all provide habitat for reptiles. The scattered rubble and brash piles on site also allow habitat to support local reptile populations. The site is further connected to high value reptile habitat such as arable land with hedgerow boundaries to the west of the site.
Foreseen Impacts	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 advise must be sought from a suitably qualified ecologist. The site could be enhanced for reptiles post development with the inclusion of log piles and a compost heap.
Amphibians	
Summary of Survey Findings	The onsite habitats consist of a small section of unmanaged grassland, bramble scrub and hedgerows. Amphibians require suitable aquatic habitat in which to breed. There are no ponds on site. There is one pond within 250m of the site boundaries. This pond is located ~250m to the southwest of the site. The pond is connected to site with arable land. There is limited suitable terrestrial habitat within the interior of the survey site. The thin areas of bramble scrub on site provide suboptimal terrestrial amphibian habitat. The interior of the site has negligible habitat value for amphibians. Therefore, there is a low risk of great crested newts on site, however there is still a small risk. Common amphibian species are likely to utilise the stream to the west of the site and therefore, may utilise the site for commuting.
Foreseen Impacts	Plans are not currently available on site; therefore the impacts cannot be fully assessed. The grassland and the scrub are not extensive and therefore, the removal will not cause a large decline in habitat for amphibians due to the extensive, high value habitat surrounding the site.

Recommendations	Owing to the nature of the proposed development and the low potential for impacts to great crested newts, further surveys are considered to be disproportionate. A precautionary working method will be implemented for common amphibians during construction, including the following measures: • Site clearance will be undertaken outside of the amphibian hibernation season (November to February) insofar as is possible. • A toolbox talk will be given to contractors regarding the possible presence of amphibians, including great crested newt, at the site. • Heras fencing will be erected around the working area to prevent encroachment towards aquatic habitats where amphibians could be present. • 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. • 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 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. Native hedgerow, brash piles and wildlife pond creation will allow habitat creation for amphibians post development.
Badger	
Summary of Survey Findings	No evidence of badgers was found on site such as badger hairs, tracks, setts or latrines. There is a mammal path and a push through in the hedgerow that was identified within the urban garden of the residential dwelling. [redacted] The scrub onsite does not allow the ditch to the south of the red line boundary to be fully assessed. However, no mammal paths were observed going into the bramble scrub. There is access to the nearby arable land to the west of the site.
Foreseen Impacts	[redacted]
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. South and west boundaries.

	• 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 advise must be sought from a suitably qualified ecologist.
Riparian animals	
Summary of Survey Findings	The ditch just off site, to the west of the site boundary has a depth of ~15cm, with high levels of shade due to the surrounded hedgerows. The banks are unvegetated and steep. The stream could not be fully assessed due to the dense hedgerow and brambles. Due to the drainage function of the stream, the stream is likely to regularly dry. The ditch is also not connected to further water ways. Therefore there is a suitably low risk of water voles within this stream. The stream is considered to not be suitable for otters due to the small size of the stream, the regularly drying of the stream and the lack of connectivity to further high value riparian habitats.
Foreseen Impacts	No impacts are anticipated on riparian animals as a result of the proposed development.
Recommendations	None.
Hazel dormouse	
Summary of Survey Findings	Although connected to a deciduous woodland to the south-west, there is no suitable dormouse habitat on the site itself and the local habitats are heavily fragmented and not connected to core habitats for the species. The site is also outside of the known geographical locations of this species.
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 hedgerows, unmanaged grassland and scrub all provide high value habitat for foraging hedgehogs. It is likely the hedgehogs are utilising the site.
Foreseen Impacts	The scrub will be retained during construction. 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. The inclusion of log piles on site, native hedgerows and shrub planting will also provide habitat for hedgehogs post development. Fencing used within the development should include hedgehog access points to allow access for this species.

Appendix 1a: Habitat map



Appendix 1a: PRA Map


Legend
B2
Surveyors
Internal Access Points in the Eaves
Storage Lean To
Chicken Coop
Ridge-line
B1
Site Boundary
Site Ownership
Drawn by: K Davies on 15-05-2024
Scale at A4 (not report projection) 1:200
Reproduced from GoogleEarth 2024
arbtech
0 5 10 15 20 25 m

Appendix 2: Location map



Appendix 3: Proposed plan

Proposed plans are not yet in place for the site and this report needs to be updated once obtained.

Appendix 4: Photos

Photo	Photo Description
	Overview of B1.
	The southern elevation of B1.

	Example of an access point into B1.
	The chicken coop on the western elevation of the B1.

	The internal void of B1.
	The median void of B1.

	The western boundary.
	An example of one of the brash piles on site.

	The native hedgerow on site.
	The urban garden.

	The mammal push through within the hedgerow between the section of grassland and the urban garden.
	The stream off site to the west of the site boundary.

	The other neutral grassland on site.
	The developed land, sealed surface.

	Overview of B2.

Limitations and Copyright

Legal

Arbtech Consulting Limited has prepared this report for the sole use of the above-named client or their agents in accordance with our General Terms and Conditions, under which our services are performed. It is expressly stated that no other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by us. This report may not be relied upon by any other party without the prior and express written agreement of Arbtech Consulting Limited. The conclusions and recommendations contained in this report are based upon information provided by third parties. Information obtained from third parties has not been independently verified by Arbtech Consulting Limited.

© This report is the copyright of Arbtech Consulting Limited. Any unauthorised reproduction or usage by any person other than the addressee is strictly prohibited.

Version control			
Status	**Issue**	**Name**	**Date**
Draft	0.1	Kayleigh Davies, BSc (Hons), MSc, Graduate Ecologist	18/05/2024
Proof	0.2	Mel Reid BSc (Hons) MRes MRSB, Senior Consultant	23/05/2024
Final	1.0	Kayleigh Davies, BSc (Hons), MSc, Graduate Ecologist	27/05/2024