

Preliminary Ecological Appraisal

Survey site:

Land Adjacent to Mount Alyn Gatehouse, Croeshowell Hill, Rossett, Wrexham LL12 0AA

Client:

[REDACTED]

Survey date:

29th March 2024

Project:

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

The construction of five dwellings on the existing garden.

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

The site survey was undertaken by Nicholas Smith Ecological Surveyor					
Date of survey	Temperature (°C)	Humidity (%)	Cloud Cover (%)	Wind (km/h)	Rain
29/03/2024	13	68	82	20	None

Ecological Survey Factor	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.
Conclusion, Impact or Recommendations	
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 survey site is centred on National Grid Reference SJ 34803 56797 and has an area of approximately 0.23ha. The site is within a rural location near Rossette town centre. The site is surrounded by a working quarry to the south and agricultural land of mixed arable and pastoral land to the east and north. The quarry has an area of approximately 37ha creating a physical barrier for commuting and foraging protected species. The site is listed as an ancient woodland on Data Map Wales, however a review of Google Earth shows the site was cleared in 2007. Other local priority habitats cannot be identified without data from North Wales Environmental Information Service. Designations within 2km of the site consist of Chwarel Site of Scientific Interest (SSSI) (located ~670m south) and Marford Quarry SSSI (located ~1,000m east). Further designations include Midland Meres and Mosses Ramsar site, located ~2.7km southeast of the site and River Dee and Bala Lake Special Area of Conservation (SAC) located ~5km east of the site. Watercourses near to the site include the river Alyn located ~700m southeast of the site. There are three ponds located within 500m of the site, all located within the quarry south of the site. The ponds have poor connectivity and appear to be isolated as they are separated by large amounts of sand. The geology

	of the site is predominantly sandstone. The overlying soils appear to be acid with interpretation from the species present. <u>Other lowland acid grassland with bare ground – g1d, 510</u> The development site is located within the garden of an existing dwelling. The grassland has a rich diversity of flora with ~10sp/m² and 46 species recorded on site. Communication with the client revealed the site is mowed once a year, sward height recorded at the time of visit consists of ~5cm. Review of aerial imagery and data from Data Map Wales shows the site was previously an ancient woodland, this could reveal the species richness in the grassland. The field is located on a slope providing drainage of the field, this has provided ideal conditions for fungi to exist. A small area of bare ground is located towards the west of the site. Species within the grassland consist of: D: springy turf moss <i>Rhytidiadelphus squarrosus</i> A: red fescue <i>Festuca rubra</i>, white clover <i>Trifolium repens</i>, meadow grass <i>Poa annua</i>, dog violet <i>Viola riviniana</i>, common daisy <i>Bellis perennis</i> F: ragwort <i>Jacobaea vulgaris</i>, yorkshire fog <i>Holcus lanatus</i>, germander speedwell <i>Veronica chamaedrys</i>, mouse-eared chickweed <i>Cerastium fontanum</i>, birds-foot trefoil <i>Lotus corniculatus</i>, field wood rush <i>Luzula campestris</i>, ribwort plantain <i>Plantago lanceolata</i>, red clover <i>Trifolium pratense</i>, common nettle <i>Urtica dioica</i>, snowdrops <i>Galanthus</i> sp., wavy bittercress <i>Cardamine flexuosa</i> O: cuckoo pint <i>Arum maculatum</i>, cleavers <i>Galium aparine</i>, lesser celandine <i>Ficaria verna</i>, primrose <i>Primula vulgaris</i>, meadow buttercup <i>Ranunculus acris</i>, water forget-me-not <i>Myosotis scorpioides</i>, yarrow <i>Achillea millefolium</i>, perforate St. Johns wort <i>Hypericum perforatum</i>, groundsel <i>Senecio vulgaris</i>, knapweed <i>Centaurea nigra</i>, rosehip <i>Rosa canina</i>, red campion <i>Silene dioica</i>, broad-leaved dock <i>Rumex obtusifolius</i>, curly dock <i>Rumex crispus</i>, common vetch <i>Vicia sativa</i>, bush vetch <i>Vicia sepium</i>, rough hawkbit <i>Leontodon hispidus</i>, garlic mustard <i>Alliaria petiolata</i>,
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	R: ground elder <i>Aegopodium podagraria</i>, foxglove <i>Digitalis purpurea</i>, scentless mayweed <i>Tripleurospermum inodorum</i>, evening primrose <i>Oenothera biennis</i>, common fleabane <i>Pulicaria dysenterica</i>, kidney vetch <i>Anthyllis vulneraria</i>, wild strawberry <i>Fragaria vesca</i>, hedge bedstraw <i>Galium mollugo</i>, wild carrot <i>Daucus carota</i>, bristly ox-tongue <i>Helminthotheca echioides</i> Scattered tree species consist of a single semi mature and two young sycamores <i>Acer pseudoplatanus</i> in good condition. A singular planted rhododendron is located to the east of the site near the northeastern wall. <u>Native hedgerow – h2a</u> A hedgerow is located on the northern boundary of the garden. This hedgerow is listed as a Habitat of Principle Importance under Environment (Wales) Act (2016) Section 7. The hedgerow is approximately 100m in length and 1m in height. Species within the hedgerow consist of dominant holly <i>Ilex aquifolium</i> with species richness increasing further west of the hedgerow consisting of abundant common ivy <i>Hedera helix</i>, frequent bramble <i>Rubus fruticosus</i>, hawthorn <i>Crataegus monogyna</i>, wild cherry <i>Prunus avium</i>, occasional broom <i>Cytisus scoparius</i> and goat willow <i>Salix caprea</i>. Gaps between the ground and base of canopy are 0.5m. There are many gaps between the holly leaving the hedgerow sparse. A second hedgerow is located southeast of the site, species within the hedgerow consist of frequent hawthorn <i>Crataegus monogyna</i>, common ivy <i>Hedera helix</i>, rare yew <i>Taxus baccata</i> and buddleia <i>Buddleja davidii</i>. Ages within this hedgerow range from young to mature. The hedgerow is approximately 100m in length and 2m in height. Gaps make up ~10% of total length and there are no canopy gaps >5m.
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	<u>Built linear feature (brick wall) – u1e</u> A brick wall is located east of the site bordering the tree line, this wall is listed and is being retained. A second short brick wall is located south of the site, this wall is being demolished and not listed. Ivy-leave toadflax <i>Cymbalaria muralis</i> was recorded on both walls.
<i>Foreseen Impacts</i>	The proposed development will include the removal of ~0.15ha of 0.23ha acid grassland and a section of the hedgerow, which is likely to cause a loss of net biodiversity at the site. The hedgerow located on the northern boundary will be retained and incorporated within the new residential gardens. The survey was carried out in the suboptimal season however a confident assessment of the grassland was made.
<i>Recommendations</i>	The development may be required to demonstrate a minimum 10% biodiversity net gain through use of the Defra Biodiversity Metric as detailed within Schedule 7A of the Town and Country Planning Act 1990 (as inserted by Schedule 14 of the Environment Act 2021). Best practice measures to minimise the possibility of pollution must be implemented during construction.
Locality and Designated Sites	
<i>Summary of Survey Findings</i>	Midland Meres and Mosses Ramsar site located ~2,700m southeast of the site and River Dee and Bala Lake SAC located ~5,000m east. The site is designated as an ancient woodland on data map Wales but was cleared in 2007. The presence of non-statutory sites cannot be identified without data from North Wales Environmental Information Service.

<i>Foreseen Impacts</i>	No direct impacts to any designated sites will occur as a result of the proposed development. However, due to the proximity of the site to Midland Meres and Mosses Ramsar site and the nature of the proposed development could result in increased recreational pressure to nearby areas.
<i>Recommendations</i>	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.
Invasive / Non-native species	
<i>Summary of Survey Findings</i>	A singular rhododendron is located east of the site, this species is listed as a Schedule 9 invasive species.
<i>Foreseen Impacts</i>	Construction could result in the spread of rhododendron.
<i>Recommendations</i>	Rhododendron should be dug up, including roots, and disposed of in line with appropriate controlled waste measures.
Invertebrates	
<i>Summary of Survey Findings</i>	The grassland is species rich and will therefore host many pollinator species. The hedgerow on site may also host some notable species. There is a small section of bare ground which will support a niche habitat for invertebrates.
<i>Foreseen Impacts</i>	Individuals may be killed but it is unlikely to result in the loss of a notable population or assemblage.
<i>Recommendations</i>	None. <u>Enhancement opportunities:</u> • The incorporation of two bee bricks (e.g. Ibstock BeeHabitat or similar alternative brand) into the fabric of the new dwelling would provide sheltering opportunities for pollinators. These should be installed 0.5m above ground level on a south-facing elevation with no obscuring vegetation. • Planting of native trees and shrubs

	The grassland should be retained to provide gardens for the new dwellings and therefore keep the species richness. To keep the species richness, a relaxed mowing regime should be applied, with around two cuts a year.
Bats	
<i>Summary of Survey Findings</i>	All trees were of a young to semi-mature age and in good condition, therefore not providing roosting features for bats. The scattered trees and hedgerows provide foraging and commuting habitat on site. Bats could use the hedgerows surrounding the site for further foraging and commuting. These could also be used by bats dispersing from nearby roosts outside of the site and commuting around the area. European Species Licence's cannot be identified as magic maps does not cover Wales.
<i>Foreseen Impacts</i>	The proposed development may lead to an increase in the amount of current lighting of surrounding habitats which may disturb commuting bats. A single semi-mature sycamore will be removed during construction, the tree was in good condition and therefore will not affect roosting bats. A section of hedgerow will be removed during construction to allow access to the site. This will lead to a reduction of available commuting and foraging habitat. However, the majority of the hedgerow will be retained and therefore there will be little impact on foraging and commuting habitat.
<i>Recommendations</i>	No further surveys are required. 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 <u>Enhancement opportunities:</u> The installation of one bat box per house at the site will provide additional roosting habitat for bats. The bat boxes will be installed on new builds and mature trees. 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	
<i>Summary of Survey Findings</i>	No evidence of nesting birds was found on site during the surveys. The scattered trees and hedgerows on site could offer nesting opportunities for birds. The rural setting of the site offers habitat for overwintering and Schedule 1 species like redwing and barn owls.
<i>Foreseen Impacts</i>	A single semi-mature sycamore and a section of the hedgerow will be removed during construction. The loss of such habitats is likely to be inconsequential to local bird populations owing to their low value and the presence of more extensive habitat locally. However, the proposed development could result in the destruction or the disturbance and subsequent abandonment of active bird nests.
<i>Recommendations</i>	Construction should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the building/tree/vegetation should be undertaken immediately, by qualified ecologist, prior to the commencement of work. All active nests will need to be retained until the young have fledged. <u>Enhancement opportunities:</u>

	• The installation of one bird box per house at the site will provide additional nesting habitat for birds. The bird boxes will be installed on existing dwellings and new builds. General purpose bird boxes should be positioned 3m above ground level where they will be sheltered from prevailing wind, rain, and strong sunlight. Species-specific bird boxes should be installed in line with manufacturers specifications. • The installation of one integrated swift brick per house (e.g. Ibstock Swift Eco Habitat or similar alternative brand) at the site will provide additional nesting habitat for birds in line with the measures outlined in the British Standard " Integral nest boxes. Selection and installation for new developments. Specification" (BS 42021:2022). Swift bricks should be integrated into the fabric of the building during construction. Boxes should be positioned close together (0.6-1.0m between bricks) as swifts prefer to nest gregariously. The boxes should be placed at least 5m above ground level under the eaves of a building, on a north or east elevation, where they will be sheltered from prevailing wind, rain and strong sunlight. To be suitable for swifts, the bricks require an open aspect with no trees or large shrubs potentially obstructing the birds' flight path up to 5m from the brick. Swift bricks are a universal nest brick for small bird species, including red-listed species such as common swift, house sparrow, house martin, and starling.
Reptiles	
<i>Summary of Survey Findings</i>	The site provides foraging, commuting and shelter opportunities for reptiles in the form of grassland and hedgerows. The site has connectivity a quarry south of the site which could support reptiles such as grass snakes and adders. The acid grassland may support low numbers of reptiles and the presence cannot be discounted.
<i>Foreseen Impacts</i>	Commuting reptiles may be injured or killed during construction activities.
<i>Recommendations</i>	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>Enhancement opportunities:</u> • Log piles placed around hedgerows • Installation of compost heaps
Amphibians	
<i>Summary of Survey Findings</i>	There are three ponds located within 500m of the site, all located within the quarry south of the site. The site is well connected to the quarry through the tree line on the southern border. The site offers foraging, commuting and shelter habitat to amphibians in the form of grassland, hedgerows and refugia. The site is located within a rural area and therefore the presence of great crested newts and common amphibians cannot be discounted.
<i>Foreseen Impacts</i>	Commuting great crested newts and amphibians may be injured or killed during construction activities.

<i>Recommendations</i>	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. • Vegetation will be maintained at a short sward (5cm) to discourage amphibians. • 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 advice must be sought from a suitably qualified ecologist.
Badger	

<i>Summary of Survey Findings</i>	No evidence indicating the presence of badgers was recorded and there are no badger setts on or within 20m of the site boundary. The site is located in a rural setting with connectivity to agricultural fields surrounding the site. Therefore, the presence of commuting badgers cannot be discounted from the site.
<i>Foreseen Impacts</i>	Grassland will be removed during construction. The loss of such habitat 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 transient badgers, if present.
<i>Recommendations</i>	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 advice must be sought from a suitably qualified ecologist.
Riparian animals	
<i>Summary of Survey Findings</i>	There is no riparian habitat on or nearby to the site. Therefore, it is unlikely for riparian mammals to be present on site.
<i>Foreseen Impacts</i>	None.
<i>Recommendations</i>	None.
Hazel dormouse	

<i>Summary of Survey Findings</i>	Dormice typically utilise a three-dimensional habitat structure as to commute between feeding and breeding sites whilst avoiding predation; hedgerows within both the north site and south site support this habitat structure. Furthermore, for isolated habitats in the UK, research indicates that dormice require 20ha of woodland habitat to support a viable population (Bright <i>et al.</i> 1994). The site is not connected to this optimal habitat. However, the presence of hazel dormice on site cannot be discounted.
<i>Foreseen Impacts</i>	A section of the hedgerow will be removed during construction. The loss of such habitats is likely to be inconsequential to local dormouse 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 dormice, if present.
<i>Recommendations</i>	A precautionary working method will be implemented during construction, including the following measures: • Site clearance will be undertaken outside of the dormouse hibernation season (November to March) insofar as is possible. • Heras fencing will be erected around the working area to prevent encroachment into retained habitats where dormice could be present. • In the unlikely event that a dormouse or evidence of dormouse is identified, works must cease and advice must be sought from a suitably qualified ecologist.
Other e.g. hedgehog	
<i>Summary of Survey Findings</i>	The site offers commuting, foraging and shelter habitat for hedgehogs in the form of grassland and hedgerows. The presence of hedgehogs on site cannot be discounted.
<i>Foreseen Impacts</i>	Construction activities could result in the death or injury of commuting hedgehogs, if present.
<i>Recommendations</i>	Similar to the badgers, a precautionary working method will be implemented during construction, including the following measures:

	• Site clearance will be undertaken outside of the hedgehog hibernation season (November to March) insofar as is possible. • A staged approach will be adopted for vegetation clearance, whereby the vegetation will be strimmed to 30cm and left overnight to allow any hedgehogs 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 hedgehogs from the working area. • 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>Enhancement opportunities:</u> • Fence gaps to be installed between residential gardens to allow connectivity
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Appendix 1: Survey/Habitat map



Appendix 2: Location map





Appendix 4: Photos



Photo 1: Looking northeast across the site with the holly hedgerow bordering the north of the site.



Photo 2: Looking west across the site at the acid grassland and scattered trees.



Photo 3: A photo showing the refugia in the middle of the site and the brick wall in the background.



Photo 4: A photo showing the semi-mature sycamore tree.

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