

Preliminary Ecological Appraisal and Roost Assessment

Survey site:

Bryn-Yr-Eos, Whitehurst, Chirk, Wrexham, LL14 5AS

Client:

Lisa Wrigley

Survey date:

30th May, 2024

Project:

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

The proposed conversion of commercial building to two dwellings and the construction of an onsite garage.

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
30/05/2024	15	62	10	10	None

Ecological Survey Factor	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.
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 rectangular survey site is centred on National Grid Reference SJ 28677 40312 and has an area of approximately 0.1ha. The site consists of one commercial building and assorted temporary storage outbuildings with associated hardstanding surface and is bordered by a mature treeline to the north and west site boundary. The site is set within a low-density area with a network of treelines leading to larger pockets of woodland and hedge lined agricultural fields. The wider landscape consists of a mosaic of large cereal fields to the west, south and southeast with intermittent pockets of dense woodland, particularly to the east of the site boundary. The Shropshire Union Canal Llangollen Branch runs ~60m to the west of the site, and the River Dee runs ~750m to the northeast. Ty Mawr Country Park is located ~1km to the northwest of the site and Chirk Community Hospital is located ~1.3km to the southwest.

	Biological record data has not yet been obtained for the site; however this data is unlikely to have an impact on the recommendations detailed within this report. <u>On-Site Habitats</u> <u>Artificial Unvegetated Unsealed Surface (u1c)</u> The majority of the site consists of the associated driveway to the building on site. This consists of a gravel driveway with <10% cover of vegetations, with species present dominated by horsetail and herb Robert. There is a flower bed (846) present to the west of the site with a <i>eucalyptus sp.</i> tree, and other species including Common Comfrey (d), Argyle Apple (f), Crossleaf Heath (o), young, self-set sycamore (202) (o), holly (r) and white beam (r). <u>Developed, sealed surface (buildings) [u1b5]</u> There is one permanent building onsite consisting of the commercial building. This building is discussed in further detail within the roosting bats section of the report. There are also temporary outbuildings, consisting of metal corrugated flat roof units, on site currently being utilised for storage. <u>Sparsely Vegetated Urban Land (u1f)</u> There is a section of the driveway to the northern corner of the site that consists of unsealed surface with vegetation covering. Species presents include brambles (d), broadleaved dock (a), forget me nots (f), dandelion (f), horsetail (o) and nettle (o). There are scattered brash, log and rubble piles in this section also.
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	<u>Built linear feature (u1e)</u> The site is surrounded by mixture of wooden fencing and low stone walls. the stone walls to the south of the site have a covering of ivy with the presence of introduced shrubs that are encroaching into the site. <u>Modified grass [g4]</u> There is a small section of modified grassland to the south of the site, this modified grassland is in good condition with no patches of bare ground. The grass is regularly managed and mown (108) to a short grass length of ~10cm. Common species of grass are present such a perennial rye, meadow grass and Yorkshire fog. Other plant species include dandelion (d), daisy (a), creeping buttercup (f) and clover (r). <u>Non-Native Ornamental Hedgerow (H2b)</u> There is a small section of <i>Cypress Sp.</i> hedgerow to the south of the site boundary. This hedgerow is ~3m in length, ~1m wide and ~2m tall. The hedgerow is regularly maintained with a small section of the hedge showing signs of poor condition. <u>Immediate Off-Site Habitats</u> <u>Stream</u> There is a stream that is offsite, immediately adjacent to the northern boundary, separated from site by a wooden and wire fence. The stream is shallow, ~12cm in depth and ~80cm wide. The banks are sparsely vegetated and sit at a ~45°
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	angle. The stream runs to a small culvert that runs beneath the train line. There are scattered trees off site bordering the northern boundary. <u>Railway</u> There is a railway offsite to the west of the site. The railway is bordered either side with mature tree lines. The railway is connected to the site via an overgrown embankment, that is unmanaged and dominated by Common Comfrey and bramble scrub. This scrub is separated from the site via a metal fence. <u>Local notable habitats</u> There are no known local notable habitats near to the site.
<i>Foreseen Impacts</i>	The habitats on site are widespread and not notable. The habitats being impacted include urban habitats such as unsealed unvegetated urban land consisting of the current driveway and an overgrown section to the north of the site boundary. No impact on adjacent or nearby habitats off site is foreseen.
<i>Recommendations</i>	A Green Infrastructure Assessment (GIA) report has been instructed alongside this report to assess impacts to biodiversity on site and to offset any potential loss in biodiversity on the site.
Locality and Designated Sites	
<i>Summary of Survey Findings</i>	<u>Local priority habitats</u> There are several priority habitats located within 2km of the site boundary. These are as follows: ➤ There are several pockets of Traditional Orchards, the closest being ~1km to the east. ➤ There is a patch of Lowland Ferns and Reedbeds located ~1km to the west. ➤ There is a patch of Lowland Dry Acid Grassland located ~1,1km to the southwest.

	<u>Designated sites</u> There are three designated sites located within 2km of the site boundary. These are as follows: ➤ <u>Nant-y-Belan and Prynella Woods (SSSI):</u> This site is located ~1.3km to the northeast of the site boundary. ➤ <u>Chirk Castle and Parkland (SSSI):</u> This site is located ~1.8km to the southwest of the site boundary. As such the site falls within a SSSI Risk Impact Zone. However, the proposed development is not listed as likely to cause significant impact to the designated sites. <u>European designated sites</u> There are seven European designated sites located within 10km of the site boundary. The closest are as follows: ➤ <u>The River Dee and Bala Lake Special Area of Conservation (SAC):</u> The site falls within the designation for the river Dee. At the closest, the river flows ~790m to the northeast. <u>Berwyn South Clwyd Mountains SAC:</u> This site is located ~4.6km to the northwest of the site boundary.
<i>Foreseen Impacts</i>	No impacts are expected due to the small-scale development and the distance from site to the designated sites.
<i>Recommendations</i>	None.
Invasive / Non-native species	
<i>Summary of Survey Findings</i>	No problematic invasive and non-native species recorded on site.
<i>Foreseen Impacts</i>	N/A
<i>Recommendations</i>	No further surveys but remain vigilant.
Invertebrates	

<i>Summary of Survey Findings</i>	No habitat for protected or notable invertebrates is found on site. The immediately surrounding, offsite vegetation and treelines offer habitat to support common species of invertebrates, but onsite habitats offer limited habitat to support invertebrates.
<i>Foreseen Impacts</i>	None foreseen.
<i>Recommendations</i>	No further surveys.
Bats	
<i>Summary of Survey Findings</i>	As MAGIC MAPS does not return EPSL license data, it is recommended that biological records data (BRD) be obtained. <u>Foraging habitat</u> The immediately onsite habitats offer low value for roosting bats with introduced shrubs, well managed modified grassland and a developed driveway to the front of the property. However, the immediately surrounding, offsite habitats, such as the line of trees surrounding the nearby railway to the west of the property and the arable fields to the north, provide high value foraging and commuting habitat for local bat populations. <u>B1</u> The building on site is a two-storey commercial building, partially constructed of brick walls and other sections of stone, with cement tiled roof, and wooden soffits. The northernly section of the building has vaulted ceilings with skylights on the eastern elevation. The older section of the building, constructed of stone and mortar, has a loft space present, but is sealed off and not accessible. The roof on the building is new and has been replaced within recent years.

	The roof is in good, new condition. All tiles are observed to be in place, with no lifted sections or areas of damage. The ridge-tiles are all in place, with no lifted sections or missing mortar. The mortar on the gable ends of the sections of the buildings is in good condition, with no damage or cracks present. The soffits are also in good condition, well-sealed, with no signs of damage that allow internal access for bats or crevices suitable for roosting. The walls are in overall good condition. One section of damage was noted on the northern elevation of the stone construction, however on closer inspection this damage creates a sub-optimal feature, where the crevice appears to be too shallow to offer adequate protection for bats from external factors such as sunlight and wind. Although the loft could not be accessed due to being sealed off, there are no crevices or potential internal access points for bats identified on the remainder of the building, and therefore the building is considered to be negligible for roosting bats.
<i>Foreseen Impacts</i>	The proposals consist of the conversion of the commercial building present to consist of two residential dwellings. Due to the lack of features suitable for roosting bats on the building, bats are very unlikely to be roosting within this building. As such, there are not anticipated to be any impacts on roosting bats as a result of the conversion of this building.
<i>Recommendations</i>	In the unlikely event that a bat or evidence of bats is discovered during the development all work must stop and a bat licensed ecologist contacted for further advice. 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

	The installation of two bat boxes at the site will provide additional roosting habitat for bats. The bat boxes will be installed on B1 post development. 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. The bat boxes will be a specification suitable for crevice dwelling bats such as the Beaumaris Bat Box or a similar alternative brand.
Birds	
<i>Summary of Survey Findings</i>	No evidence of nesting birds was found on site during the surveys, however, birds could utilise the onsite hedgerow to the south of B1 for nesting.
<i>Foreseen Impacts</i>	The hedgerow is expected to be retained during the works. However, if this changes, and the hedgerow is to be removed, this may result in the disturbance and subsequent abandonment of active bird nests if present.
<i>Recommendations</i>	Any 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. The installation of a minimum of two bird boxes on site will provide additional habitat for nesting birds, such as: • Schwegler No 17 Swift Nest Box (buildings) • Schwegler 1SP Sparrow Terrace (buildings)
Reptiles	
<i>Summary of Survey Findings</i>	The habitat present onsite is suboptimal for reptiles due to the urban nature of the site. The majority of the site consists of unsealed, unvegetated driveway, with limited opportunities for protection from predators. The small

	section of lawn to the rear of the property is maintained to a short sward length, which if present, reptiles would only spend short periods of time within. There is a small section of overgrown vegetation to the north of the site, and rubble and brash piles, however due to the other habitats on site being suboptimal, and the presence of suitable reptile immediately surrounding the site, there is a suitably low risk of reptiles onsite.
<i>Foreseen Impacts</i>	Although no areas of suitable habitat are being removed as part of the development and the lack of high value reptile habitat onsite, 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.
<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. • Rubble and brash piles are to be dismantled by hand. • In the unlikely event that a reptile is identified, works must cease and advice 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	
<i>Summary of Survey Findings</i>	Great crested newts were known from licence returns ~1.7km south-west in 2016. There is one historic great crested newt European Protected Species License (EPSL) within 2km, 2017-29807-EPS-MIT-5 located ~1.7km south-west. There are no onsite ponds. The habitats on site are considered to be suboptimal for great crested newts due to the urban environment and the highly managed lawn to the south of B1. The northern corner of the site has a section of overgrown vegetation and brash and rubble piles, but this is considered sub-optimal for great crested newts. The stream that is located offsite, along the northern boundary of the site is considered too shallow to support great crested newts. Amphibians require suitable aquatic habitat in which to breed. There are no local ponds within 500m when consulting OS maps. There is no suitable terrestrial habitat within the interior of the survey site. The thin areas of bramble scrub in the northern and western boundaries provide suboptimal terrestrial amphibian habitat. The interior of the site has negligible habitat value for amphibians. Therefore, protected amphibians are likely to be absent from the interior of the survey site year round.
<i>Foreseen Impacts</i>	None foreseen. However, there is a risk of common amphibian species commuting through site due to the stream located to the north, immediately adjacent to the northern boundary, and the canal located nearby.
<i>Recommendations</i>	Basic precautionary working methods are recommended: • Vegetation will be maintained at a short sward (5cm) to discourage amphibians. • 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 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. - Rubble and brash piles are to be dismantled by hand. - 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 of badgers was found on site or suspected within 30m of the survey boundary. On site habitats lack opportunities for badgers to forage, and the flat urban terrain offers no excavation opportunities. The nearby arable fields, the railway to the west and the surrounding pockets of woodland provide habitat to support foraging and commuting badgers, therefore, there is a risk badgers may commute through site, but likely to only spend short periods of time onsite.
<i>Foreseen Impacts</i>	None foreseen
<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.

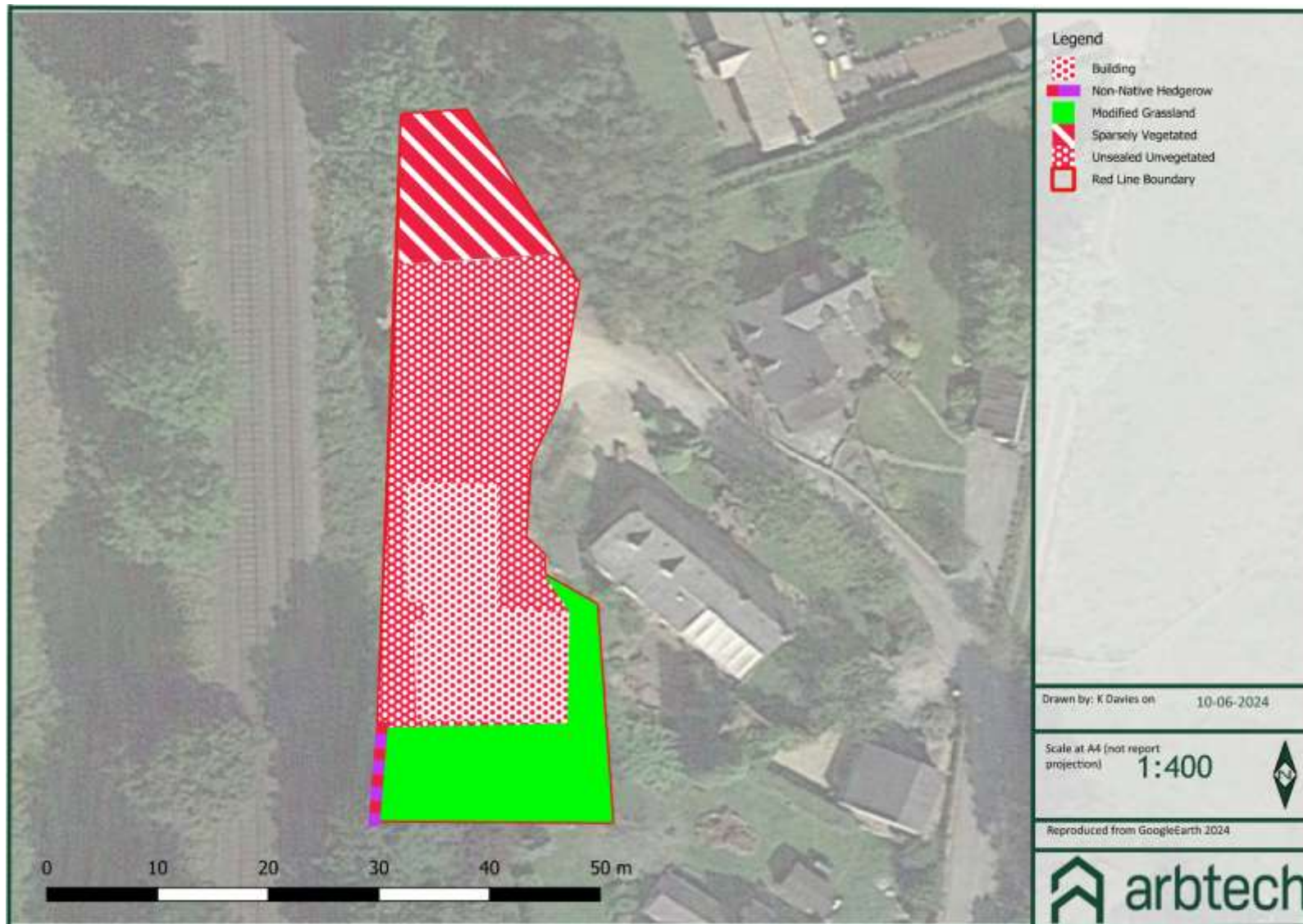
	In the unlikely event that a badger sett is identified within 30m, works must cease and advice must be sought from a suitably qualified ecologist.
Riparian animals	
<i>Summary of Survey Findings</i>	There is a stream offsite, immediately adjacent to the northern boundary. The stream is shallow, with sparsely vegetated banks. There is a lack of shading over the stream and due to the narrow width and shallow depth, it is likely the stream goes through periods of drought during hot weather. The small section accessible before the culvert was assessed and no evidence of water vole was observed, such as holes, foraging evidence or droppings. The stream is considered too shallow and too narrow to support otter foraging or commuting.
<i>Foreseen Impacts</i>	No impacts are anticipated on riparian animals as a result of the proposed development. 5m buffer of the stream is recommended to maintain no impacts of the development on the stream.
<i>Recommendations</i>	N/A
Hazel dormouse	
<i>Summary of Survey Findings</i>	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. There are no dormouse European Protected Species License (EPSL) within 4km.
<i>Foreseen Impacts</i>	No impacts are anticipated on hazel dormice as a result of the proposed development.
<i>Recommendations</i>	None.
Other e.g. hedgehog	
<i>Summary of Survey Findings</i>	The hedgerow onsite and the overgrown section of vegetation to the north of the site provide habitat to support local hedgehog populations.

<i>Foreseen Impacts</i>	The hedgerow is expected to be retained during construction. However, construction activities could result in the death or injury of hedgehogs, if present.
<i>Recommendations</i>	Similar to the badgers, a precautionary working method will be implemented during construction, including the following measures: • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to retained habitats which hedgehogs could use. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. If any hedgehogs are found in the working area these should be allowed to disperse of their own accord or, if at immediate risk, should be moved by hand to a sheltered, vegetated area away from disturbance.

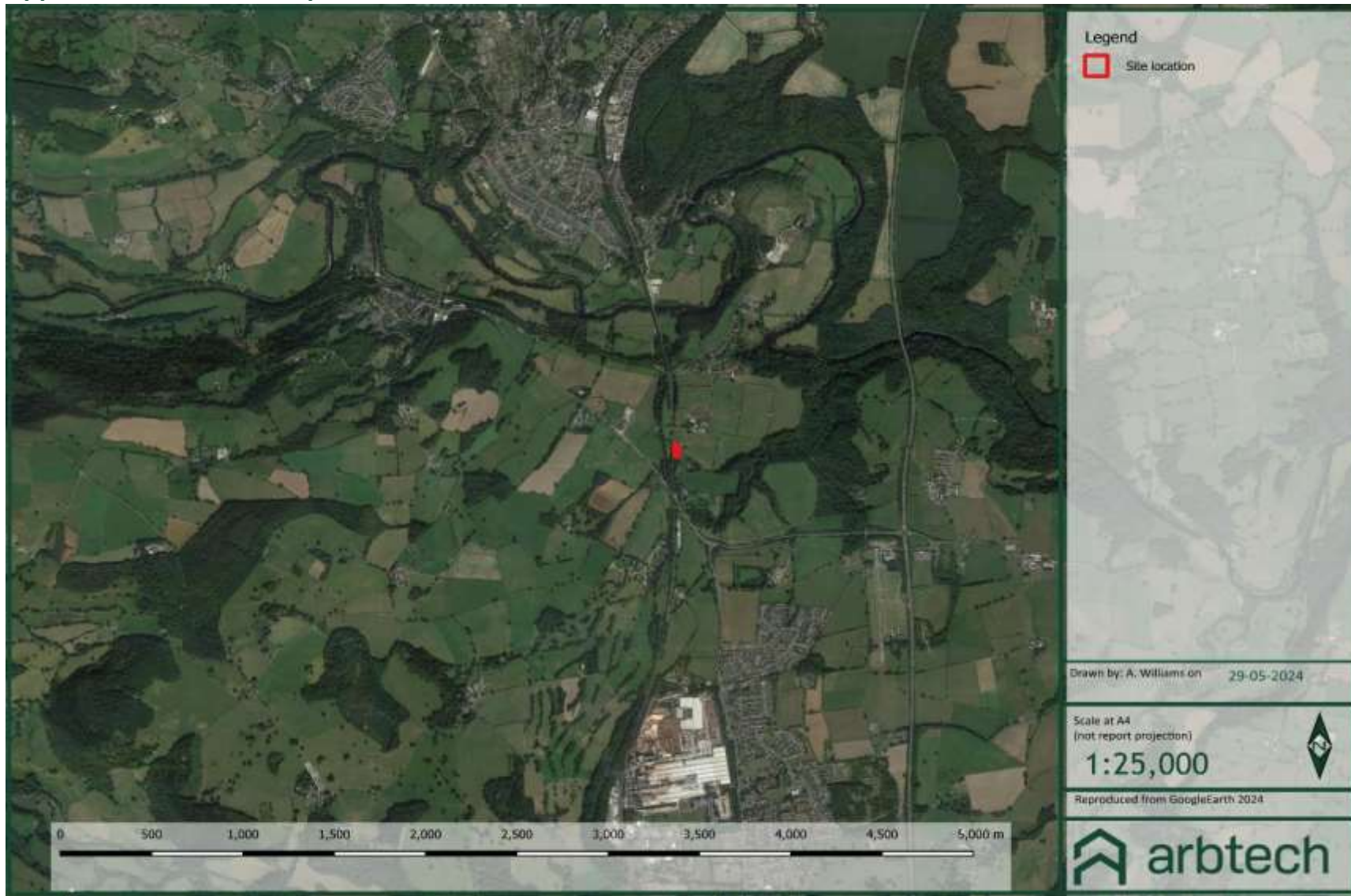
Appendix 1a: PRA map



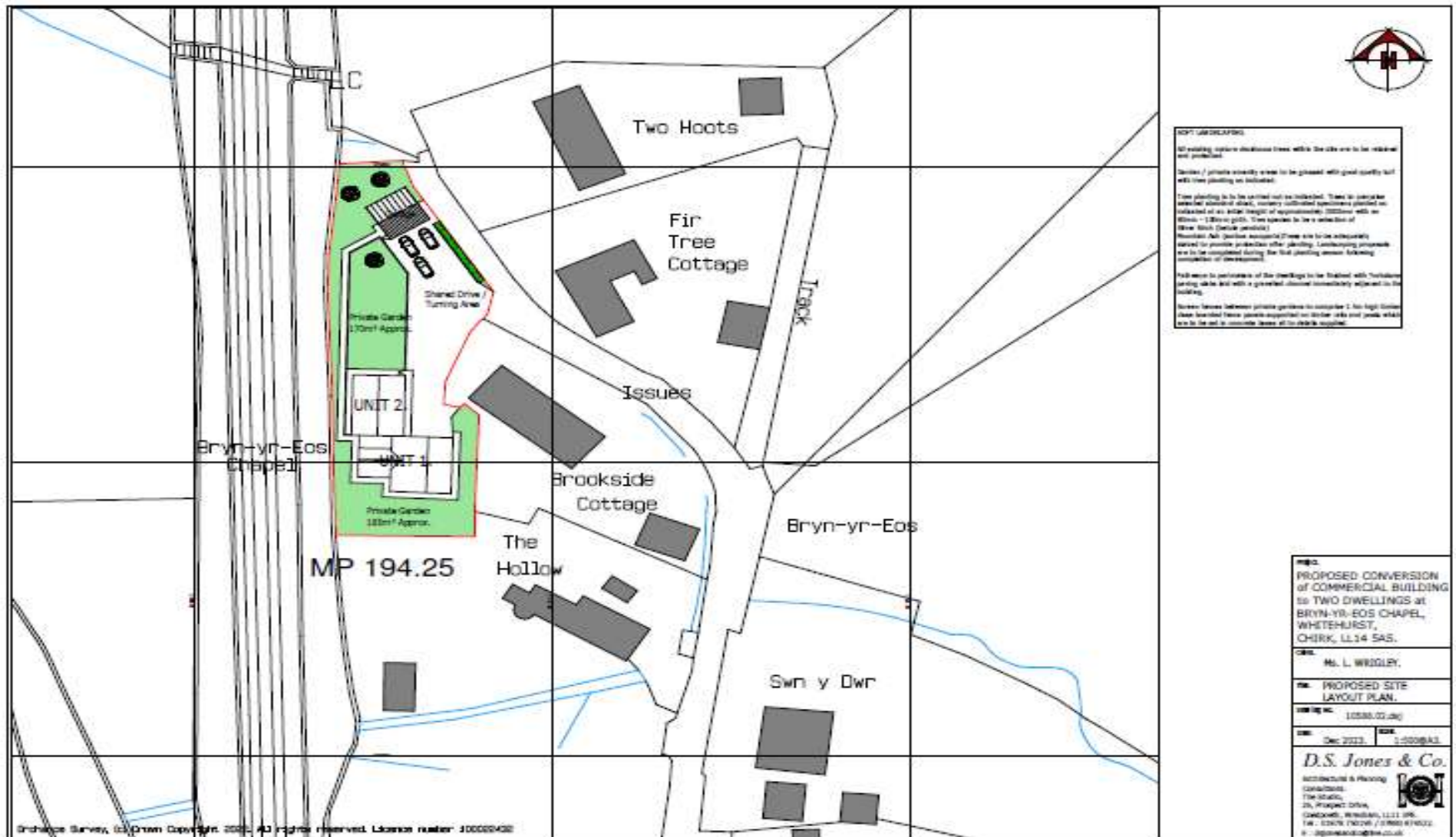
Appendix 1b: Habitat map



Appendix 2: Location map



Appendix 3: Proposed plan



Appendix 4: Photos

Photo	Photo Description
	Overview of B1.
	The interior of B1 where the loft has been sealed off post re-roof.



Example of the soffits in good condition with no damage to provide roosting features.



The western facing elevation of B1.



The southern elevation of B1 and the western facing roof structures of B1.



The southern facing elevation.



Location of suboptimal feature of damaged mortar.



The skylights on the east facing roof structure of B1.



Overview of the northern section of site with the temporary outbuildings visible.



The western section of site with the section of vegetated garden.



The western section of site with the offsite vegetation encroaching on to site, separated by a metal chain link fence.



Example of a log pile on site to the northern boundary.



The railway to the west of the site.



The offsite stream with the culvert below the railway.



the southern section of modified grassland.



The non-native hedgerow within the southern section of site.

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Version control			
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Draft	0.1	Kayleigh Davies, BSc (Hons), MSc, Graduate Ecologist	04/06/2024
Proof	0.2	Mel Reid BSc (Hons) MRes MRSB, Senior Consultant	17/06/2024
Final	1.0	Kayleigh Davies, BSc (Hons), MSc, Graduate Ecologist	20/06/2024