Katie Whitfield BSc (Hons) MSc
Graduate Ecologist
Email: katiewhitfield@arbtech.co.uk
Arbtech Consulting Ltd
arbtech.co.uk

Preliminary Ecological Appraisal

Survey site:

Land at Lower Wych, Malpas, Cheshire, SY14 7JX

Client:

Philip Handley

Survey date:

31st July 2025

Project:

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

'Erection of a bungalow with associated parking area'

PEA survey methodology and legislation can be found in the Arbtech Supplement: **PEA 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.

This report contains sensitive information that is unsuitable for release to the public. A redacted version of this report can be provided upon request.

Site Location and Context

The survey site is centred on National Grid Reference SJ 47870 43929 and has an area of approximately 2.18ha.

The site comprises lowland mixed deciduous woodland, other neutral grassland, bramble scrub, a pond, scattered trees and native hedgerows. It is situated within a rural area in the town of Lower Wych, Malpas. The scattered trees and woodland on site extend further into the local landscape, with lowland mixed deciduous woodland and ancient woodland connected to the site to the east and west. Agricultural fields are found in all directions with Lower Lanes Farm ~0.1km east and Wych Brook ~0.37km north. The wider landscape comprises more extensive agricultural fields, along with Malpas town centre to the north and Wych brook extending further to the east and west.

Survey Details

The site survey was undertaken by Katie Whitfield BSc (Hons) MSc, Graduate Ecologist

Date of survey	Temperature (°C)	Humidity (%)	Cloud Cover (%)	Wind (mps)	Rain
31/07/2025	18	80	100	9	None

Executive Summary

- A Green Infrastructure Statement will be required to deliver net biodiversity benefit on site.
- A CEMP may be required to minimise the possibility of pollution affecting the on site pond and lowland mixed deciduous woodland as well as the ancient woodland directly adjacent to the site. Further a CEMP may be required for Doley Wood and Meadows.
- eDNA surveys are required on P1, P2 and P5 to confirm presence or absence of GCN.
- Precautionary working methods will be required for birds, amphibians, reptiles, otters, water voles, hazel dormice, badgers, hedgehogs and rabbits. This includes works being outside of dormouse hibernation season (November to March) as well as a toolbox talk for the possible presence of reptiles, amphibians, badgers and hazel dormice.
- A low impact lighting strategy will be adopted for the site post-development to minimize disturbance to commuting bats.
- Enhancements are outlined in the relevant tables below

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, the ecology and biology of species as currently understood, and the known distribution of species as recovered during the searches of historical biological records.

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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, pond map in appendix 3, badger map in appendix 4, proposal plan in appendix 5 and photos in appendix 6). **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 site contains lowland mixed deciduous woodland and native hedgerows which are listed as habitats of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). The site also contains scattered trees which are of good quality and could be of value to local wildlife populations (as detailed in subsequent sections of this table). Other habitats within the site are common and widespread and have low ecological value. Further notable habitats are present within 2km. **On-site habitat descriptions** **u1e** – Built linear features Barbed wire fencing surrounds the pond found to the south of the site. The pond is still accessible for smaller terrestrial species. Condition assessment N/A. **g3c, 32** – Other neutral grassland [Scattered trees 32] Other neutral grassland is present to the south and along the eastern boundary of the site. The habitat parcel is unmanaged, with tall swards >30 cm covering ~60% of the area, swards between 10–30 cm covering ~20%, and swards < 7 cm covering ~20%. The species assemblage includes **dominant** Yorkshire fog (*Holcus lanatus*), **abundant** cocksfoot (*Dactylis glomerata*), creeping thistle (*Cirsium arvense*), and perennial ryegrass (*Lolium perenne*); **frequent** common couch (*Elymus repens*), common sorrel (*Rumex acetosa*), broad-leaved dock (*Rumex obtusifolius*), meadow buttercup (*Ranunculus acris*), and timothy grass (*Phleum pratense*); **occasional** white clover (*Trifolium repens*), wood avens (*Geum urbanum*), bramble (*Rubus* spp.), common nettle (*Urtica dioica*), common hogweed (*Heracleum sphondylium*), and creeping bent (*Agrostis stolonifera*). A. There is not a consistently high proportion of characteristic indicator species. B. Sward height is varied. C. Cover of bare ground is <5%.

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D. Cover of bracken is <20% and cover of scrub is <5%.
E. Species indicative of suboptimal condition accounts for ~10% of area. No invasive non-native plant species observed.
F. There are ~7-8 species per m2.
Habitat condition assessed as **POOR**.

32 - Scattered trees

There are 16no. trees found within other neutral grassland on site. This includes a mature oak (*Quercus robur*) of Diameter at Breast Height (DBH) of >60 cm (T1), a mature oak of DBH >60 cm (T2), a mature common hawthorn (*Crataegus monogyna*) of DBH between 7.5 cm and 29.9 cm (T3), 8 no. semi-mature common hawthorn of DBH between 7.5 cm and 29.9 cm (T4–T11), a mature oak of DBH >60 cm (T12), a mature oak of DBH >60 cm (T13), a mature oak of DBH >60 cm (T14), and two semi-mature oaks of DBH between 7.5 cm and 29.9 cm (T15–T16). Condition assessment is as follows:

Condition Assessment (assessed using the 'Individual Trees' habitat type condition assessment sheet):
A. The tree is a native species.
B. Predominately continuous tree canopy, with gaps in canopy cover making up <10% of total area and no individual gap >5m wide; individual trees automatically pass this criterion.
C. The tree is considered mature.
D. There is little or no evidence of adverse anthropogenic impact on tree health so that trees retain >75% of expected canopy for their age range and height.
E. Natural ecological niches for vertebrates and invertebrates are present.
F. More than 20% of the tree canopy area is oversailing vegetation beneath.

Tree ID	T1	T2	T3	T4	T5	T6	T7	T8	T9	T10	T11	T12	T13	T14	T15	T16
A	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
B	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
C	✓	✓	✓									✓	✓	✓		
D	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
E	✓	✓	✓									✓	✓	✓	✓	✓
F	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓
Condition	**Good**	**Good**	**Good**	**Mod***	**Mod**	**Mod**	**Mod**	**Mod**	**Mod**	**Mod**	**Mod**	**Good**	**Good**	**Good**	**Good**	**Good**

**Mod – Moderate*

w1f – Lowland mixed deciduous woodland

A large parcel of lowland mixed deciduous woodland is found to the north and to the western side of the site. Species assemblages within the canopy layer comprises **dominant** common sycamore (*Acer pseudoplatanus*), **abundant** common oak, **frequent** common hazel (*Corylus avellana*), **occasional** common hawthorn, and **rare** silver birch (*Betula pendula*), with ~50% having a Diameter at

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	Breast Height (DBH) >60cm, ~30% of DBH between 30cm and 59.9cm and ~20% of DBH between 7.5cm and 29.9cm. The majority of the trees are mature (~60%) with ~20% semi-matures and ~20% young. There does not appear to be any disease present as most as most of the trees appear healthy with no visible crown dieback. The understorey layer includes herb robert (*Geranium robertianum*), opposite-leaved golden saxifrage (*Chrysosplenium oppositifolium*), swan's-neck thyme-moss (*Mnium hornum*), dog's mercury (*Mercurialis perennis*), giant horsetail (*Equisetum telmateia*), spreading woodfern (*Dryopteris dilatata*), scaly male fern (*Dryopteris affinis*), common lady fern (*Athyrium filix-femina*), wood avens (*Geum urbanum*), common nettle (*Urtica dioica*), bramble (*Rubus* spp.), common ivy (*Hedera helix*), common hogweed (*Heracleum sphondylium*), and enchanter's nightshade (*Circaea lutetiana*).There are areas of temporary open space within with ~30% of the woodland being open due to the distance between trees allowing natural tree regeneration which is evident from the presence of young trees interspersed within. Areas of deadwood are also found within, in the form of fallen deadwood, large dead branches, and stumps. Condition assessment is as follows: A. There are three age-classes present. **3 points** B. No significant browsing damage evident. **3 points** C. No invasive species present. **3 points** D. >5 native tree/shrub species. **3 points** E. 50-80% of trees and shrubs are native. **2 points** F. 21% to 40% of woodland has areas of temporary open space. **2 points** G. Seedings, sapling and young trees are all present. **3 points** H. Tree mortality is <10%. **3 points** I. Recognisable woodland NVC plant community. **2 points** J. >3 storeys across woodland. **3 points** K. No veteran trees present. **1 point** L. 25-50% of survey plots have deadwood. **2 points** M. No nutrient enrichment or damaged ground evident. **3 points** Habitat condition assessed as **GOOD (34 points)** Mix of freely draining slightly acid loamy soils and slowly permeable seasonaly wet slightly acid but base rich loamy and clayey soils. **h2a** – Native Hedgerow Native hedgerow is found along the southern and eastern boundary, with species assemblage including dominant common hawthorn, abundant blackthorn and occasional bramble sp. The hedgerows have a height and width of ~1.5m and are relatively dense, albeit one sparser section on the eastern boundary. There is some evidence of nutrient enrichment of the soils beneath the hedges in the form of occasional common nettles. Condition assessment is as follows

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	A1. >1.5m average height. A2. >1.5m average width. B1. Gaps between ground and base of canopy are <0.5m for >90% of length. B2. Gaps make up <10% of total length. C1. >1m width of undisturbed ground on one side of hedgerow. C2. Plants indicative of nutrient enrichment dominate <20% of undisturbed ground. D1. >90% of hedgerow is free of invasive non-native plant species. D2. >90% of hedgerow is free of damage caused by human activities. Habitat condition assessed as **GOOD**. **h3d** – Bramble scrub A pocket of bramble scrub is found to the west of the site, dominated by bramble sp., which are of dense composition. Condition assessment N/A. **r1g** – Other standing water (ponds) A pond is found to the south of the site. The surrounding species composition includes dominant compact rush, frequent marsh willowherb, clustered dock, meadow buttercup and meadow pea. The pond is not artificially connected to a water source and as such likely dries during the year. Algae covers the water surface entirely. Condition assessment is as follows: A. The pond is high in turbidity. B. Semi-natural habitat does no completely surround the pond due to a road to the south. C. The entirety of the ponds water surface is covered in filamentous algae. D. The pond is not artificially connected to other water bodies. E. Pond water levels naturally fluctuate throughout the year. F. There is an absence of listed non-native plant and animal species. G. The pond is not artificially stocked with fish. H. Emergent, submerged or floating plants cover ~30% of pond. I. The pond surface is shaded by ~30% via adjacent trees. Habitat condition assessed as **POOR.** **Local notable habitats** Patches of lowland mixed deciduous woodland (LMDW) are present is close proximity to the site. The closest is located ~036km to the north, with a second patch of LMDW ~0.45km to the north. The woodland and trees on-site provide direct connectivity to these areas of woodland given their proximity to the site and the presence of numerous trees throughout the local landscape. LMDW is classed as a priority habitat under Section 41 of the Natural Environment and Rural Communities (NERC) Act, 2006. Further priority habitats are present within 2km of the site, including ancient woodland ~0.4km north, with a second patch ~0.6km

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	northeast, lowland meadows ~0.6km northeast with a second patch ~0.6km northwest, lowland fens ~0.9km east and traditional orchards ~1.5km northwest with a second patch ~1.9km west. ***Records of notable habitats within 2km of the site have been obtained from COFNOD:*** Ancient woodland is found directly adjacent to the west of the site with further patches ~0.5km west. Further priority habitats are present within 2km of the site, including traditional orchards ~0.3km west, with a second patch ~0.5km southeast and purple moor grass and rush pastures ~0.9km east, with a second patch ~1km southeast.
Foreseen Impacts	**On-site habitats** The proposed development will result in the loss of other neutral grassland. This could result in a net loss in biodiversity at the site. No direct impacts to notable habitats will occur as a result of the proposed development, however due to LMDW and a pond found on site indirect effects (e.g. pollution, dust, litter, surface run off, etc.) could occur during construction. **Notable habitats** No direct impacts to notable habitats will occur as a result of the proposed development, however due to ancient woodland found directly adjacent to the site, indirect effects (e.g. pollution, dust, litter, surface run off, etc.) could occur during construction.
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). To compensate for the proposed habitat losses at the site, the following habitat creation measures should be incorporated: • Reseeding with species-rich grassland via appropriate seed mixes. • Planting of native trees, shrubs and hedges. Best practice measures to minimise the possibility of pollution affecting the onsite LMDW and pond must be implemented during construction. A Construction Environment Management Plan (CEMP) may be required for this. **Notable habitats** Best practice measures to minimise the possibility of pollution affecting the adjacent ancient woodland must be implemented during construction. A Construction Environment Management Plan (CEMP) may be required for this. **Biodiversity net gain** Planning Policy Wales (2024) requires all developments within Wales to conduct a Green Infrastructure Statement to deliver Net Biodiversity Benefit and maintain biodiversity during development. Therefore, the planning application must be accompanied by a Green Infrastructure Statement to detail how the site is maintaining biodiversity and include recommendations to further enhance the site biodiversity.
Locality and Designated Sites	

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Summary of Survey Findings	**On-site designations obtained from COFNOD:** **There is one local wildlife site (LWS) found on site:** • Doley Wood and Meadows ○ Woodland, marsh and semi-improved grassland habitats along the Wych Brook. The wood has a canopy consisting of mainly pedunculate oak, ash and sycamore with alder and willow in the wetter areas. Below this is a varied understorey with hazel, hawthorn and holly prominent. A diverse ground flora is found throughout the woodland. Dry slopes have frequent dog's mercury, yellow archangel and wood millet, whilst wetter ground supports areas of great horsetail, great willowherb and opposite-leaved golden saxifrage. The grassland is fairly diverse, especially in the damper areas. Yorkshire fog, red fescue and crested dogstail are predominant, but many herb species are common within the sward, e.g. betony, pignut, tormentil, devil's-bit scabious and meadowsweet. **Statutory designated sites (within 2km)** There are two statutory sites within 2km of the site, as detailed below: • Taylor's Rough & Wellmeadow Wood, Site of Special Scientific Interest (SSSI) located ~1.45km northeast • Well Rough and Long Plantation (SSSI) located ~1.7km west **Biological records data from COFNOD returned the following local wildlife sites within 2km of the site:** • Lower Wych Meadows located ~0.5km east ○ A series of semi-improved grasslands with some areas of marsh along the Wych Brook. Lesser pond sedge, marsh horsetail and rushes dominate the marshy areas. The dryer slopes are less diverse. Yorkshire fog, red fescue and crested dog'stail are abundant species, whilst others present include devil's-bit scabious, betony and bird's-foot trefoil. • Black Wood, Kidruffin Wood and The Gelli located ~0.55km west ○ Large area of broad-leaved woodland, coniferous plantation and semi-improved grassland along the Wych Brook and its tributaries. The woodland is mainly dominated by ash sycamore and pedunculate oak with some alder and field maple. Hazel is the major understorey tree. The ground flora is well developed with much yellow archangel, wood anenome and wild garlic, with pendulous sedge and opposite-leaved golden saxifrage in the damper areas. The surrounding pastures are semi-improved and vary in diversity. Grasses such as yorkshire fog and crested dogstail are dominant. Herb species present include meadow vetchling,creeping jenny, jointed rush, marsh ragwort, toad rush and black knapweed. • Iscoyd Brook located ~1km southeast ○ A long series of diverse semi-natural habitats along the Iscoyd Brook, a tributary of the Wych Brook. The majority of the site is semi-improved grassland and marshes. The dry slopes are dominated by grasses such as sweet vernal grass, yorkshire fog, crested dogstail and rough meadow-grass. Other species found in these swards include

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	tormentil, betony, devil's-bit scabious and spring sedge. The marshes are dominated by lesser pond sedge, rushes, marsh horsetail and meadowsweet. Also present here are ragged robin, marsh marigold, common spotted orchid and bog pimpernell. There are three woods within this site. They have all suffered disturbance from planting of various mixes. Canopy species include beech, pedunculate oak, sycamore and conifers. The ground flora is well developed is some areas with some cover by ancient woodland species, e.g. bluebell, wild garlic, wood-sorrel and wood anenome.
Foreseen Impacts	**On-site designations** No direct impacts to any designated sites will occur as a result of the proposed development. However, due to Doley Wood and Meadows found on site, in close proximity to the proposed works, indirect effects such as pollution or tree damage could occur during construction. **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.
Recommendations	**On-site designations** Best practice measures to minimise the possibility of pollution affecting the onsite Doley Wood and Meadows (LWS) must be implemented during construction. A Construction Environment Management Plan (CEMP) may be required for this. **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 lowland mixed deciduous woodland, other neutral grassland, scattered trees, a pond, native hedgerows and bramble scrub, likely provide common invertebrates with opportunities to forage and shelter. The pond and woodland may provide niches for specialised or protected invertebrates.
Foreseen Impacts	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 building would provide sheltering opportunities for pollinators. These should be installed 0.5m above ground level on a south-facing elevation

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	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. Invertebrate hotels could be installed adjacent to the proposed wildflowers to increase habitat suitability.
Bats	
Summary of Survey Findings	**EPSL data and local records** A search of the magic.gov.uk database for granted EPSLs within a 2km radius of the site has been completed. Displaced bats from licensed sites <2km away from the survey site will find alternative habitat either within the mitigation measures implemented as part of the licence or will relocate to other known roosts sites in close proximity to the licensed site. No EPSLs are present within England. **The following data on bats within 2km of the site was obtained from COFNOD:** • Common pipistrelle ~1.1km southwest Historical field records of brown long eared bats are found ~0.5km north and ~0.7km northeast. Further a historical common pipistrelle maternity roost is found ~1.6km southeast. **Foraging and commuting habitat** Habitats recorded on site are assessed to provide foraging and commuting opportunities for bats in the form of lowland mixed deciduous woodland (LMDW), other neutral grassland, scattered trees, a pond, hedgerows and bramble scrub. 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 on site is mature and extends 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. As such bats are likely to commute and forage through the site. **Roosting habitat** All scattered trees were assessed for their suitability to support roosting bats. Roosting features comprised of a crevice within T1, tear wounds on T12 and T13 and a crevice within T14 all features were too high to inspect from ground level, and as such the depth of the features could not be determined. Therefore, the features would require further investigation (i.e. **FAR**) to determine their suitability for roosting bats.
Foreseen Impacts	**Roosting habitat [Trees]** T1-T16 will be retained and therefore no impacts to roosting bats are anticipated. **Foraging and commuting habitat** The proposed development will result in the loss of small areas of other neutral grassland but given their 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.

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	Artificial lighting The proposed development may lead to an increase in the amount of current lighting of surrounding habitats without mitigation. This may disturb commuting bats.
Recommendations	**Roosting habitat [Trees]** None required. **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 **Suggested biodiversity enhancements** The installation of two 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. 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	**Nesting birds** No bird nests were identified within the lowland mixed deciduous woodland (LMDW), hedgerows or scattered trees on-site, however they all offer nesting opportunities and nest-building resources for birds. Further numerous birds were seen and heard within the vegetation on site, making it likely these habitat features are used for nesting. **The following data on birds within 2km of the site was obtained from COFNOD:** • Three nestling barn owls ~0.25km west. • Seven nesting barn owls ~0.55km southwest • One nestling barn owl within a barn owl box ~0.6km northwest • One record of a wren ~0.55km northeast

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	• Six records of spotted flycatcher ~0.55km southwest • One record of moorhen ~1.4km southwest • One record of bittern ~1.6km west • One record of chaffinch ~1.8km southeast **Barn owls** The woodland found on site, as well as ancient woodland directly adjacent to the west of site, provide nesting opportunities for barn owls, which is further confirmed through biological records data noting three younglings to ~0.25km west of the site within this woodland. **Overwintering birds** The woodland found on site extends further into the local landscape and likely provides suitable refuge and foraging opportunities for overwintering birds.
Foreseen Impacts	**Nesting birds** The proposed development could result in the disturbance and subsequent abandonment of active bird nests. **Barn owls** Small areas of other neutral grassland will be removed during construction. The loss of such habitats will be inconsequential to barn owls as no suitable nesting/breeding/foraging habitat is to be removed. Construction activities could lead to disturbance and subsequent abandonment of active birds nests within the LMDW and ancient woodland in the local vicinity of the works. **Overwintering birds** Small areas of other neutral grassland will be removed during construction. The loss of such habitats will be inconsequential to overwintering birds as no suitable nesting/breeding/foraging/overwintering habitat is to be removed. Construction activities could lead to disturbance and subsequent abandonment of active birds nests within the LMDW and ancient woodland in the local vicinity of the works.
Recommendations	**Nesting birds** 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** Precautions should be taken with machinery and noise levels as outlined above. **Overwintering birds** Precautions should be taken with machinery and noise levels as outlined above.

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	Suggested biodiversity enhancements The installation of a minimum of two bird boxes on mature trees around the site boundaries or on the proposed building 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 and local records** A review of the MAGIC database returned no granted EPSL records for protected reptiles within 2km of the site. Further no records of reptiles was retrieved through data from COFNOD. **Habitat suitability** Habitats recorded on site are assessed to provide foraging, commuting, basking and refuge opportunities for reptiles. The woodland, scrub, hedgerow and scattered trees 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 to the north which extends further to the east and west and riparian vegetation associated with Wych Brook ~0.37km north. Further the woodland and scrub provides hibernation opportunities for reptiles. It is considered likely that reptiles will utilise the site.
Foreseen Impacts	Small areas 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: • A suitably qualified ecologist will be present on site to act as an ecological clerk of works (ECoW) to take pre-commencement checks and supervise the clearance of other neutral grassland. • A tool box talk will be carried out by the ECoW to highlight the possible presence of reptiles. • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape.

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- 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 and planting of areas of native shrubs, to provide sheltering opportunities.

Amphibians

Summary of Survey Findings

EPSL and local records

A review of the MAGIC database returned two granted EPSL records for great crested newts within 2km of the site, detailed below:

EPSL reference	Distance from site	Impacts allowed by license
EPSM2013-5721	~1.9km west	Destruction of resting place.
2015-11435-EPS-MIT	~1.9km west	Destruction of resting place.

No positive class survey licence return or DLL historic survey data (2017 – 2019) were present within 2km of the site.

The following data of amphibians within 2km of the site was obtained from COFOD:

- 150 records of common frog ~0.7km northeast

Historical records of great crested newts are found ~1.5km, ~1.6km and ~1.8km northwest as well as ~1.8km west.

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 is one pond present on site (P1). Pond P1 is a naturalpond, with water levels naturally fluctuating throughout the year. The pond measures approximately 11m x 20m and subsequently covers an approximate area of 220m^2. The banks are slightly sloped and densely vegetated with unmanaged grassland species with the addition of dense areas of compact rush, marsh willowherb, meadow pea, and clustered dock. The water was turbid at the time of survey, and completely covered by filamentous algae. No

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waterfowl or fish were viewed using the pond during the survey. As a result of the HSI, P1 has been assessed to provide **Excellent** suitability to support great crested newts. The scores for each HSI parameter can be viewed in the table below:

HSI Index	HSI Index Parameter	HSI Score
1 – Location	Zone A	1.0
2 – Pond Area	220m²	0.2
3 – Pond Drying	Never dries	0.9
4 – Water Quality	Moderate	0.67
5 – Shade	30%	1.0
6 – Waterfowl	Absent	1.0
7 – Fish	Absent	1.0
8 – waterbody count in wider landscape within 500m with suitable terrestrial connectivity	8	1.0
9 – Terrestrial Habitat	Good	1.0
10 – Macrophytes	100%	0.8
TOTAL	-	**0.79**
CATEGORY	-	**Excellent**

In addition to the pond located on site, a review of the Magic.gov.uk database and aerial imagery indicates that there is a further twelve ponds located within 500m of the site, located 0.095km west (P2), 0.33km west (P3), 0.29km north (P4), 0.06km southeast (P5), 0.35km east (P6), 0.32km east (P7), 0.19km southeast (P8), 0.17km south (P9), 0.22km south (P10), 0.3km south (P11), 0.28km south (P12) and 0.39km southwest (P13). All twelve ponds have connectivity to the site via features such as woodland, treelines, and hedgerows, albeit one country road between the site and P3 and P5-P13. However, these roads do not have heavy traffic flow or high kerbs, and as such are not deemed significant barriers to dispersal. Therefore, it cannot be discounted that amphibians will migrate onto site from these ponds in the local landscape.

A pond map showing approximate pond locations is provided in Appendix 3.

Terrestrial habitat suitability

Habitats recorded on site are assessed for their potential to offer foraging, commuting, breeding, and refuge opportunities for amphibians. The woodland, scrub, hedgerow, and scattered trees provide elevated value for amphibians, as these habitats offer suitable cover and moisture for refuge, while also supporting foraging and movement across the site. The site is well-connected to additional suitable amphibian habitat in the wider landscape via woodland to the north, which extends further to the east and west, as well as riparian vegetation associated with Wych Brook approximately 0.37 km north. Additionally, the woodland and scrub may provide hibernation opportunities for amphibians. It is considered likely that amphibians will make use of the site.

Foreseen Impacts

The proposed works will result in the temporary loss of areas of other neutral grassland, which will be reinstated following construction. Approximately 20m² of this habitat will be permanently lost due to piled foundations. While the majority of the other

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	neutral grassland loss is temporary, there will still be a loss of suitable habitat between the on-site pond and optimal hibernation sites within the on-site woodland during the proposed works. In addition, the proposals include a building raised above ground level, which is likely to reduce the quality of any retained or reinstated grassland beneath it. This habitat will not be maintained in the same condition post-construction, leading to a loss of suitable commuting and refuge opportunities. The temporary loss of grassland during construction also carries a risk of injury or mortality to great crested newts (GCN) if present on site.
Recommendations	Environmental DNA (eDNA) surveys will be required of any ponds within 100m of the site (where accessible) to determine the presence or absence of great crested newts (i.e., P1, P2 and P5). This will comprise collecting water samples and sending them off for laboratory analysis and such surveys must be undertaken between mid-April and June, in accordance with current survey guidelines (Biggs et al, 2014). The surveys are likely to be required before planning permission can be granted. **Suggested biodiversity enhancements** The site could be enhanced for amphibians post-development through creation of amphibian hibernacula using rubble and logs. Information on how to construct a hibernaculum can be found here: https://www.wiltshirewildlife.org/hibernaculum

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[redacted]

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. **The following data on otters was returned from COFNOD:** • One record of otter spraints ~0.85km northeast Historical record ~0.5km north, ~0.85km northeast, 1.8km east, ~1.5km south and ~1.9km southwest. **Otters** The Wych brook located ~0.37km north provides optimal opportunities for otters due to its connectivity to a wider range of resources suitable to support a viable population. Further, the several ponds within the local landscape offer further habitat opportunities. The site itself recorded no otter holts on or within 30m of the works, however it cannot be discounted that otters may be present for transient periods whilst foraging and commuting, particularly due to the direct connectivity to the site through woodland. **Water voles**

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	The brook likely provides suboptimal habitat for water voles due to fast water flow. However, there a several ponds within the local vicinity which offer connectivity to the site. The pond on site does not have steep earthy banks which would provide suitable burrow creation, however there are some foraging options upon the grassland banks and as such their presence cannot be wholly ruled out, albeit no evidence indicating their presence was recorded.
Foreseen Impacts	**Otters** The proposed development will not result in the loss of any riparian habitats and no works will be undertaken within 8m of the watercourse (as per Environment Agency regulations). However, construction activities could result in the death or injury of otters, if present. **Water voles** No works will be undertaken within 5m of the top of the banks of the watercourse. However, construction activites could result in the death or injury of water voles, if present.
Recommendations	**Otters** Owing to the nature of the proposed development and the low potential for impacts to otter, further otter surveys are considered to be disproportionate. 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 the watercourse and any retained habitats which otters could use. • Best practice pollution prevention measures will be implemented to minimise impacts to the watercourse and any retained habitats that otters 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 an otter holt or den is identified, works must cease and advise must be sought from a suitably qualified ecologist. **Water voles** Owing to the nature of the proposed development and the low potential for impacts to water voles, further water vole surveys are considered to be disproportionate. A precautionary working method will be implemented during construction, including the following measures: • Heras fencing will be erected around the working area to prevent encroachment within 5m of the on site pond. • 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 the watercourse and any retained habitats which water voles could use. • Best practice pollution prevention measures will be implemented to minimise impacts to the watercourse and any retained habitats that water vole could use.

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	• 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 water voles or evidence of water voles is identified, works must cease and advise must be sought from a suitably qualified ecologist. **Suggested biodiversity enhancements** • Planting species rich grassland close to the watercourse to increase foraging opportunities for water voles. • Planting native trees and shrubs close to the watercourse to increase opportunities for shelter for otters.
Hazel dormouse	
Summary of Survey Findings	**EPSL data and local records** A review of the MAGIC database returned no granted EPSL records for hazel dormice within 2km of the site. **The following data on hazel dormouse within 2km of the site was obtained from COFNOD:** Historical records are found within Doley wood ~0.3km north, 0.4km north, 0.5km northwest, 0.5km northeast, 0.7km northeast and 0.85km northeast. **Habitat suitability** The woodland found on site, extends further to the east and west within the local landscape, providing suitable foraging, commuting and nest building opportunities for dormice and in turn having suitable features to support a viable population. As such it cannot be discounted that hazel dormice may utilise the site.
Foreseen Impacts	Other neutral grassland 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.
Recommendations	Owing to the nature of the proposed development, further dormouse surveys are considered to be disproportionate. 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. • A toolbox talk will be given to contractors regarding the possible presence of dormice at the site. • 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 advise must be sought from a suitably qualified ecologist.
Other e.g. hedgehog, rabbit	

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Summary of Survey Findings	**The following data of hedgehogs within 2km of the site was obtained from COFNOD:** • One record ~0.35km southwest • One record ~1.3km southwest The lowland mixed deciduous woodland, other neutral grassland, bramble scrub, scattered trees, and hedgerows provide suitable refuge, commuting and foraging opportunities for hedgehogs. The site also provides good connectivity to suitable habitat in the local landscape through the woodland which extends further to the east and west. The rural location of the site reduces disturbance caused by artificial lighting. As such it is likely that hedgehogs utilise the site. The site also provides optimal refuge, foraging and commuting opportunities for rabbits, with suitable connectivity into the wider landscape via woodland.
Foreseen Impacts	Other neutral grassland will be removed during construction. The loss of such habitats is likely to be inconsequential to local hedgehog and rabbit 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 and rabbits, 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. **Rabbits** A precautionary working method will be implemented during prior to any construction works or excavation work on the site, including the following measures: • Any area of warren that must be removed to facilitate the development must be evacuated and closed prior to works as supervised by a specialist pest controller. As the aim is to avoid injury and entombment rather than to control the population, this will be undertaken using non-lethal means. • This will be undertaken at a time of year when kits are least likely to be present, such as winter, however it must be noted that rabbits may breed all year round. • To ensure all reasonable efforts have been taken to avoid the entombment/suffering of dependant young, destruction of any warren will take place using initially shovels in the intent of flushing out any remaining mobile rabbits or locating any abandoned dependant litters, which will be humanely despatched by the pest controller. • The warren will be immediately destroyed via ripping by digger bucket to prevent re-occupation.

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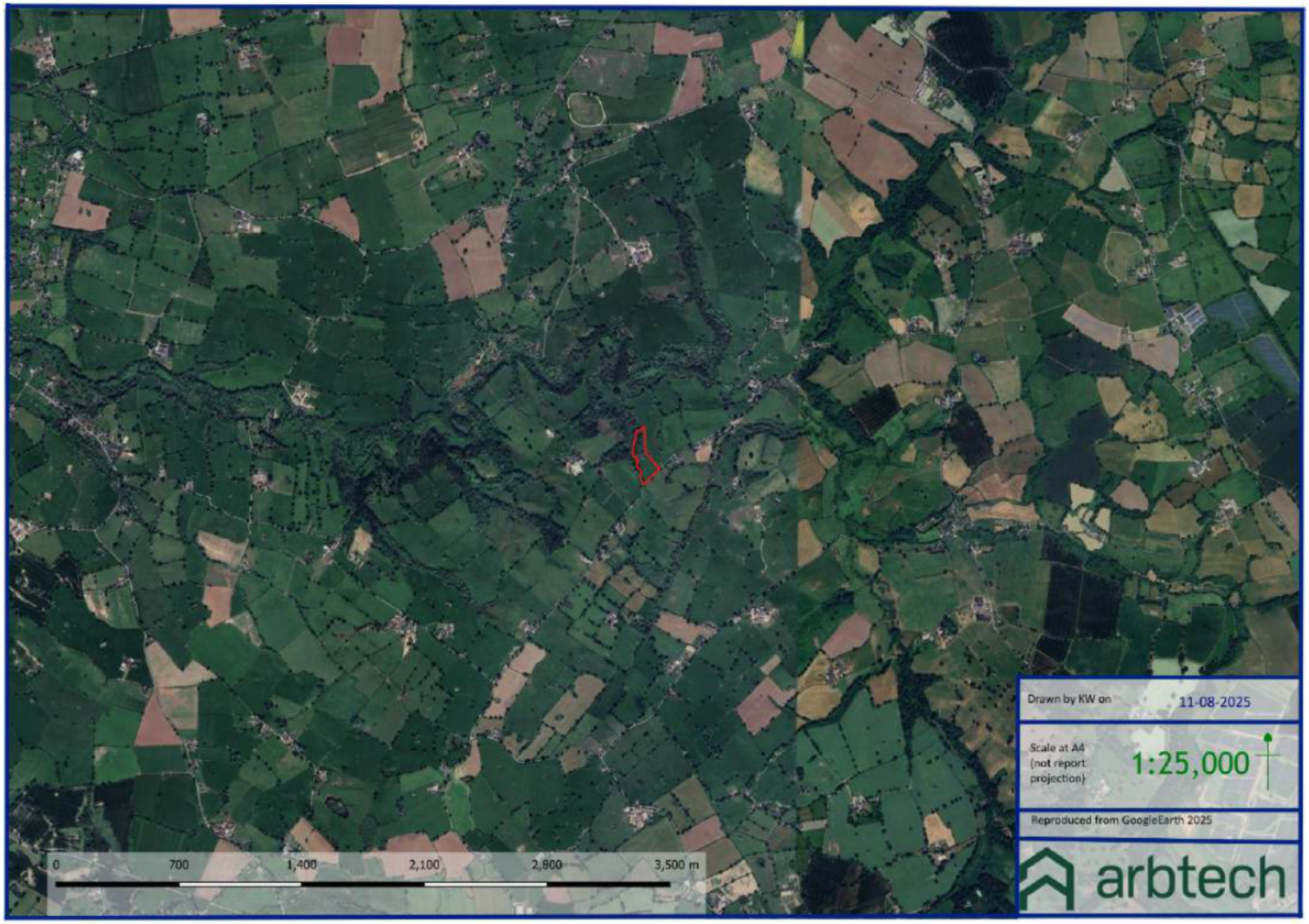
	• Should an evening elapse between evacuation and ripping out, the process must be repeated as rabbits may return. **Suggested biodiversity enhancements** The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for hedgehogs: • Planting fruit bearing trees and species-rich grassland to increase foraging opportunities. • Creation of brash piles or installation of hedgehog houses in shady areas.

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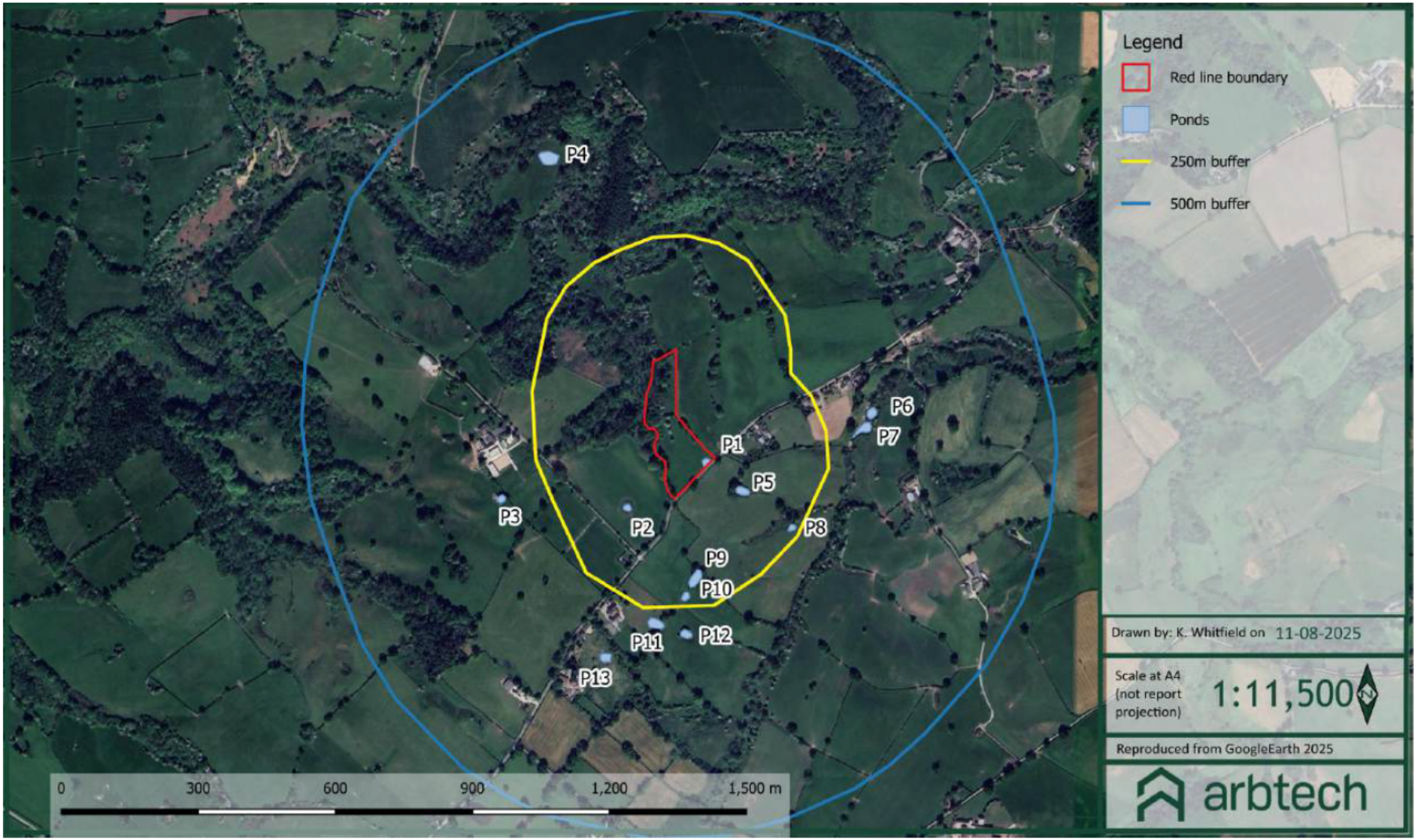
Appendix 1: Survey/Habitat map

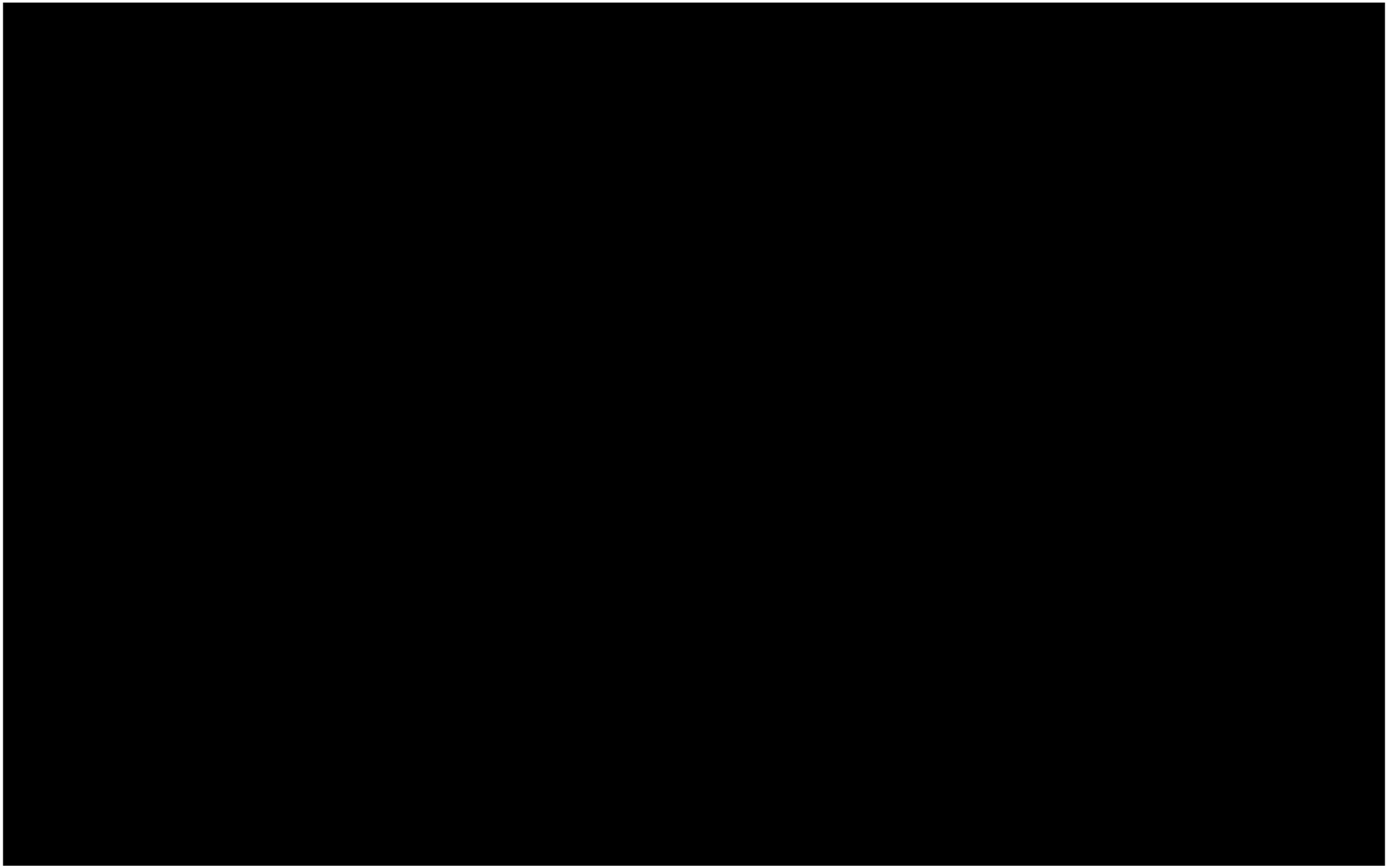


Appendix 2: Location map



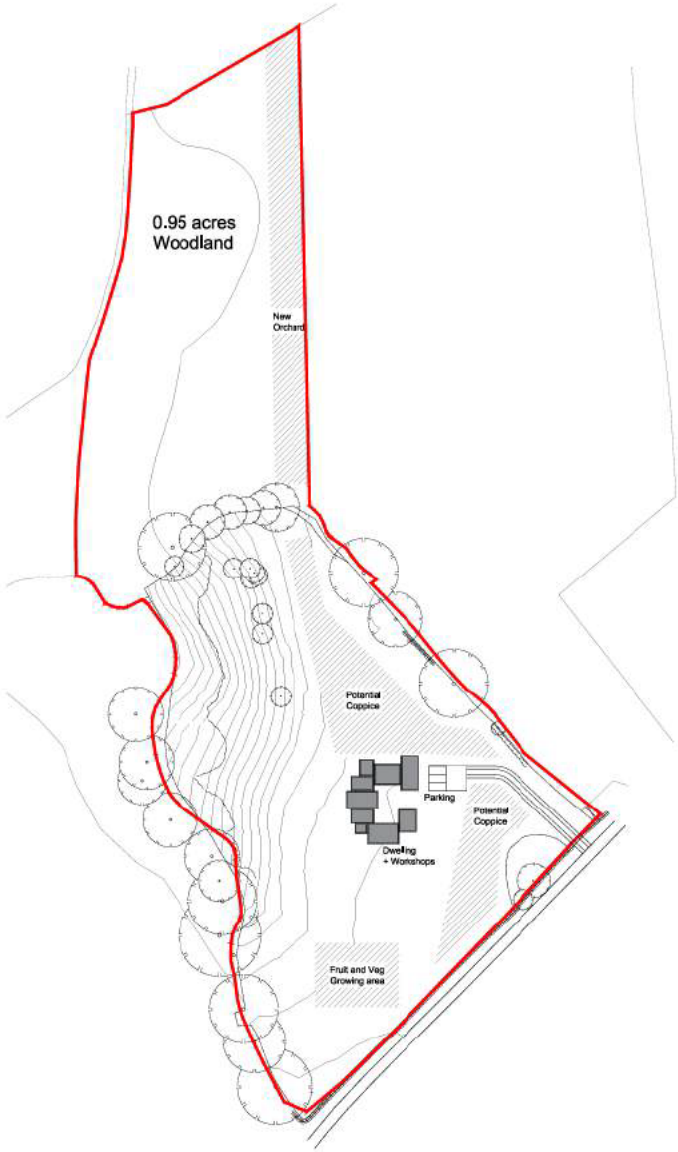
Appendix 3: Pond map





Preliminary Ecological Appraisal

Appendix 5: Proposed plan



Appendix 6: Habitat Photos

Other neutral grassland	
Photograph	**Description**
	Figure 1: Other neutral grassland to the south of site.
Lowland mixed deciduous woodland	
Photograph	**Description**

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	Figure 2: Woodland to the north of site.
Bramble scrub	
Photograph	**Description**

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	Figure 3: Dense scrub to the west of site.
Scattered trees	
Photograph	**Description**

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	Figure 4: Scattered hawthorn trees (T4 – T11).
Native hedgerow	
Photograph	**Description**

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	Figure 5: Hawthorn hedgerow along eastern boundary.
Pond	
Photograph	**Description**

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	Figure 6: Pond to south of site.
Mammal holes	
Photograph	**Description**





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Version control			
Status	**Issue**	**Name**	**Date**
Draft	0.1	Katie Whitfield BSc (Hons) MSc, Graduate Ecologist	11/08/2025
Proof	0.2	Elen Griffin BSc (Hons), MRSB, Consultant Ecologist	13/08/2025
Final	1.0	Katie Whitfield BSc (Hons) MSc, Graduate Ecologist	13/08/2025
BRD inputted	2.0	Katie Whitfield BSc (Hons) MSc, Graduate Ecologist	28/08/2025

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