

Preliminary Ecological Appraisal and Roost Assessment

Survey site:

Hatts Copse Farm, Brook Lane, Botley, Southampton SO30 2ER

Client:

Mr Brinton King

Survey date:

23rd October 2024

Project:

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

Construction of 2 Bedroom bungalow with adjoining garages following demolition of existing annex and outbuildings.

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

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

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

Version control			
Status	Issue	Name	Date
Draft	0.1	Anna Dolby, BSc (Hons), Graduate Ecologist	25/10/2024
Review	0.2	Mel Reid BSc (Hons) MRes MRSB, Senior Consultant	31/10/2024
Final	1.0	Anna Dolby, BSc (Hons), Graduate Ecologist	05/11/2024

The site survey was undertaken by Anna Dolby, BSc (Hons) (Accredited Agent: Natural England Protected Species Licence Numbers: [Bats] (2018-33540-CLS-CLS))					
Date of survey	Temperature (°C)	Humidity (%)	Cloud Cover (%)	Wind (km/h)	Rain
23/10/2024	14	90	100	0	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, pond location map in appendix 3, proposal plan in appendix 4 and photos in appendix 5).	
Botanical species are described with reference to the DAFOR scale (D = Dominant; A = Abundant, F = Frequent, O = Occasional, R = Rare).	
Summary of Survey Findings	Site Context

<i>(UKHab codes used)</i>	The site is located in a rural area of Botley, Hampshire at the National Grid Reference SU 50603 12359 and has an area of approximately 0.09ha, comprising an outbuilding (B1), a gravel driveway and an area of modified grassland. Within the wider ownership boundary to the west is further areas of grassland used for grazing sheep and cattle and amenity use, scattered trees, a small vineyard and two large ponds. Aerial imagery shows the local landscape comprises of grassland interspersed with small parcels of woodland, lines of trees and hedgerows. Water bodies can be found nearby, such as the River Hamble located ~1.3km to the southeast as well as several ponds. Such features are likely enhancing the area for a variety of species, including bats, amphibians and reptiles. A site location plan is provided in appendix 2. <i>On Site Habitats</i> • Buildings (u1b5) • Artificial unvegetated, unsealed surface (u1c) • Modified grassland (g4) <u>Buildings (shown in photos 1-9)</u> There are two single-storey buildings within the site boundary, this includes an annex (B1) and storage shed (B2). <u>Artificial unvegetated, unsealed surface (shown in photo 10)</u> There is an area of gravel surrounding the two buildings on site, this is used for vehicular access. <u>Modified grassland (shown in photo 11)</u>
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	Within the site boundary, there is a small area of amenity grassland, previously used for livestock (i.e. pigs). The grassland was predominantly homogenous, with areas of longer forbs, including broad-leaved dock. It had a poor species richness, with ~4 species per m². Species include: D: Creeping bent <i>Agrostis stolonifera</i> F: Broad-leaved dock <i>Rumex obtusifolius</i>, white clover <i>Trifolium repens</i>, creeping buttercup <i>Ranunculus repens</i>, cocks foot <i>Dactylis glomerata</i>, perennial ryegrass <i>Lolium perenne</i> O: Stinging nettle <i>Urtica dioica</i>, dandelion <i>Taraxacum</i>, bush vetch <i>Vicia sepium</i>, creeping thistle <i>Cirsium arvense</i>, purple top vervain <i>Verbena bonariensis</i>, mouse-eared chickweed <i>Cerastium fontanum</i>. Condition assessment: The habitat passes 5 of 7 criteria, failing criteria A and B. Therefore, the habitat is considered to be in poor condition. <i>The Wider Landscape</i> A patch of lowland mixed deciduous woodland (LMDW) and ancient woodland is present is adjacent to the to the site to the south. Further areas of ancient woodland are located within the wider landscape with the second closest area located ~0.8km to the south. The trees on-site likely have functional connectivity to these patches of woodland, given their proximity to the site and the presence of numerous trees throughout the garden 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 woodpasture and parkland (1.3km east), coastal and floodplain grazing marsh (0.4km north), lowland calcareous grassland (0.5km east), lowland meadows (1km east) and purple moor grass and rush pasture (0.6km west).
<i>Foreseen Impacts</i>	<i>On Site</i>

	A small area of modified grassland will be removed to facilitate the construction of a new dwelling. This is unlikely to cause a significant loss in biodiversity. <i>The Wider Landscape</i> No direct impacts to any notable habitats will occur as a result of the proposed development. However, due to the proximity of the site to ancient LMDW (adjacent to the south), indirect effects (e.g. pollution, dust, litter, surface run off, etc.) could occur during construction.
<i>Recommendations</i>	<i>On Site</i> The development plan includes the loss of modified grassland, which is less than 25m², which is one of the exemptions. Therefore, the site is considered exempt from demonstrating a 10% biodiversity net gain. <i>The Wider Landscape</i> Best practice measures to minimise the possibility of pollution affecting the nearby LMDW must be implemented during construction. A Construction Environment Management Plan (CEMP) may be required for this.
Locality and Designated Sites	
<i>Summary of Survey Findings</i>	<i>On Site</i> The site is not subject to any designation. <i>The Wider Landscape</i> There are 5 statutory sites within 2km of the site, as detailed below: <u>Manor Farm Local Nature Reserve (LNR) ~0.2km south</u> Designated for its abundant wildlife, including roe deer, reptiles, and birds including and skylarks.

	<u>Upper Hamble Estuary and Woods SSSI ~0.8km south</u> Designated for its twelve types of ancient broad-leaved woodland that collectively comprise one of the most ecologically diverse woodland areas in central southern England. The site lies within the impact risk zone for Upper Hamble Estuary and Woods. <u>Solent and Southampton Water Ramsar and Special Protection Area (SPA) ~0.9km east</u> Designated as an SPA for its resident annex II bird species, including Eurasian teal, brent goose, ringed plover and black-tailed godwit. The site is designated as a RAMSAR due to range of habitats including intertidal flats, saline lagoons, shingle beaches, reefs, saltmarsh, and reedbeds, damp woodland, and grazing marsh. <u>Solent Maritime Special Area of Conservation (SAC) ~0.9km east</u> The Solent Maritime SAC is a complex site encompassing a major estuarine system on the south coast of England. The Solent and its inlets are unique in Britain and Europe for their unusual tidal regime, including double tides and long periods of tidal stand at high and low tide. As a result, the Solent Maritime SAC is a unique suite of functionally linked estuaries and dynamic marine and estuarine habitats. <u>Wildern LNR ~1.8km northwest</u> Designated for its wetland habitat featuring a mosaic of ponds, two flooded meadows, woodlands and a valley mire all linked by the streams which flow through the site. Bird species common to the site include various finches, green woodpecker, tree creeper, and rarities being lesser redpoll and brambling.
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	The site lies within the impact risk zone for Upper Hamble Estuary and Woods. The proposed development type is not listed as a possible high risk for this designation. The presence of non-statutory designated sites within 2km of the site cannot be established without data from Hampshire Biodiversity Information Centre (HBIC).
<i>Foreseen Impacts</i>	No impacts to designated sites are anticipated due to the small scale and distance of the proposed development from such sites (where known) as well as the urban location of the site with surrounding physical barriers.
<i>Recommendations</i>	Best practice measures to minimise the possibility of pollution must be implemented during construction.
Invasive / Non-native species	
<i>Summary of Survey Findings</i>	Giant rhubarb <i>Gunnera manicata</i> was found outside the site boundary but within the ownership boundary (see photo 14), this is a schedule 9 invasive species. This species cannot be allowed to spread.
<i>Foreseen Impacts</i>	The invasive species is not set to be removed and is not within the red line boundary.
<i>Recommendations</i>	Giant rhubarb should be removed by a competent invasive species removal contractor and disposed of in line with appropriate controlled waste measures. However, most of the rhododendron is kept in pots and therefore can be maintained without spread.
Invertebrates	
<i>Summary of Survey Findings</i>	The habitats present on-site, including modified grassland, likely provide common invertebrates with opportunities to forage and shelter. The site contains no further notable habitats which may provide niches for specialised or protected invertebrates.
<i>Foreseen Impacts</i>	None foreseen.
<i>Recommendations</i>	No further surveys. <u>Biodiversity Enhancement Opportunities:</u>

	The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for invertebrates: Planting wildflowers suitable for pollinating species		
Bats			
Summary of Survey Findings	Desk Study	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. There are 7 EPSLs within a 2km radius of site as detailed below:	
	Table 1. Bat EPSLs within a 2km radius.		
	EPSL reference	Bat species affected	Distance from site
	EPSM2012-5125	Common pipistrelle	~0.7km northeast
	EPSM2012-4681	Common pipistrelle, soprano pipistrelle, brown long-eared, natterer’s bat.	~0.6km southeast
	2014-2168-EPS-MIT	Common pipistrelle, soprano pipistrelle, brown long-eared, natterer’s bat.	~0.6km southeast
	EPSM2013-6597	Common pipistrelle, soprano pipistrelle	~0.6km southeast
	2017-31423-EPS-MIT	Common pipistrelle, soprano pipistrelle	~1.9km east
	2015-9288-EPS-MIT	Common pipistrelle	~1.9km west

	2019-40805-EPS-MIT	Common pipistrelle, soprano pipistrelle, brown long-eared	~1.9km west	Destruction of a breeding site Destruction of a resting place
	<i>On Site</i> <u>Foraging and commuting bats</u> Habitats on site are assessed to provide foraging and commuting opportunities for bats in the form of modified grassland. This habitat is likely to attract invertebrate prey species. However, due to the general managed nature of habitats on site and presence of more extensive habitats locally (i.e. woodland), the site is not assessed to represent a significant resource for foraging and commuting bats. <u>Buildings</u> There are two buildings within the site boundary, this includes an annex (B1) and a shed (B2). B1: B1 is a single-storey annex comprising red brick and pvc clad walls. It had a gable roof comprising a metal tile effect roofing sheets. B1 does not have a loft space. There are no features present on B1. B2: B2 is a single-storey storage shed comprising wooden clad walls and a metal corrugated gable roof. B2 has one door, however the eastern elevation is permanently open. Although this provides access for bats, it prevents the shed from maintaining a constant temperature and also provides limited protection from abiotic factors (i.e. rain and wind). Internally, B2 has wooden clad walls and roof, with wooden beams across the underside of the roof. It has two small cavity walls along the northern and southern elevations (~1.5m in height), with gaps within the external and internal wooden panels. Bird nests were identified			

	within these gaps. This could also provide access and roosting space for bats. However, no evidence of bats was identified during the survey. Suitability assessment: B1 is assessed to provide negligible suitable for roosting bats, no features were present during the survey. B2 is assessed to provide low suitability for roosting bats, due to the lack of protection from abiotic factors, inconsistent temperature and height of features (~1.5m and below).
<i>Foreseen Impacts</i>	As the proposals include the demolition of B2, any bat roosts within them will be destroyed. This could also result in death or injury of bats. The proposed development may lead to an increase in the amount of current lighting of surrounding habitats. This may disturb commuting bats.
<i>Recommendations</i>	B2 provides low suitability for bat species, due to the lack of protection from abiotic factors, inconsistent temperature and height of the potential features. The crevices and crack found on the building are likely to be caused by weather or wear and tear through age. Evidence of nesting birds was found within the cavity. No evidence of droppings or staining was observed. Therefore, further surveys are considered to be disproportionate, following the Bat Conservation Trust Guidelines, page 53 (2023). Instead, the cavity wall should be inspected immediately prior to commencement of work, by a suitably qualified professional. This should include the use of an endoscope to fully inspect the gaps within cavity walls. If the endoscope cannot view all of the available gaps, however, further survey effort may be required. In the unlikely event that a bat is identified during this inspection, works must cease and a full suite of three surveys must be completed, and a licence acquired before works are able to proceed.

	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 The installation of three integrated bat box/bricks should be incorporated into the new building during construction. These should be suitable for crevice dwelling and, or void dwelling bat species. These should be positioned at least 3-5m above ground level, eave level height is favorable, facing south or southwest with a clear flight path to and from the entrance, away from artificial light.
Birds	
<i>Summary of Survey Findings</i>	Several nests and bird boxes were identified within and on B1. There are also two large bird boxes for birds of prey on mature trees within close proximity to the site.
<i>Foreseen Impacts</i>	The proposed development could result in the destruction or the disturbance and subsequent abandonment of active bird nests.
<i>Recommendations</i>	Any building or vegetation removal should be undertaken outside the period 1st March to 31st August. If this timeframe cannot be avoided, a close inspection of the vegetation should be undertaken immediately, by a qualified ecologist, prior to the commencement of work. All active nests will need to be retained until the young have fledged. Precautions should be taken with machinery and noise levels when working close to any retained nests so as not to disturb any nearby nesting birds during construction works. At least a 3-5m buffer should be created between any machinery and active nests until the young have fledged.

	<u>Biodiversity Enhancement Opportunities:</u> The installation of two bird boxes/bricks on mature trees or integrated into the fabric of the new building will provide additional nesting habitat for birds e.g. Schwegler No 17 Swift Nest Box (buildings), Bark Boxes Blue Tit 25mm (trees), Woodstone Nest Box (buildings or trees), or a similar alternative brand.
Reptiles	
<i>Summary of Survey Findings</i>	Desk Study A review of the MAGIC database returned no granted EPSL records for protected reptiles within 2km of the site. On Site Habitats on site are assessed to provide limited opportunities for basking and commuting reptiles, in the form of grassland. Due to the general managed nature of the grassland, and predominant homogenous sward, there is a lack of refuge opportunities for commuting reptiles. This, therefore, does not provide suitable protection against predation. The Wider Landscape The site has suitable connection to scrub, woodland, arable land and further grassland.
<i>Foreseen Impacts</i>	A small area of modified grassland will be removed to facilitate the construction of a bungalow. Due to the lack of suitable refuge and extensive habitat within the surrounding area, the site is not assessed to support a significant population. However, there is a low risk that a low number of reptiles could be present in the vicinity of the works.
<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>Biodiversity Enhancement Opportunities:</u> The following habitat creation and enhancement opportunities could be incorporated into the proposed development which would be beneficial for reptiles: • Creation of native scrub • Planting native hedgerow • Creation of log piles • Provide longer areas of grassland around the boundaries, with connection to further suitable habitat (i.e. woodland).
Amphibians	
<i>Summary of Survey Findings</i>	<i>Desk Study</i> A review of the MAGIC database returned no granted EPSL records for great crested newts within 2km of the site. Further, no positive class survey licence returns or DLL historic survey data (2017 – 2019) where GCN were observed are present within 2km of the site. <i>On Site</i>

There are no ponds located within the site boundary, however there are two ponds within the ownership boundary (P1 and P2), which were subject to a HSI assessment (see table 2.) A search of the magic database and OS maps returned seven ponds within a 500m radius, which all have connection to the site through grassland and woodland. P1 and P2 (P2 is shown as two ponds on aerial imagery) are approximately ~79m and ~110m west of site. P3 is ~149m south of site. The last four ponds are within a group, all ~472m southwest of the site boundary (P4-P7).

Habitats on site provide limited suitable terrestrial habitat for great crested newts and other common amphibians, in the form of grassland. The grassland, however, is predominantly homogenous lacking suitable refuge habitat for great crested newts. However, the site has suitable connection to the woodland adjacent to the southern site boundary.

Table 2. HSI results for ponds within ownership boundary.

HSI Index	P1	P2
1 – Location	1.0	1.0
2 – Pond Area	0.97	0.925
3 – Pond Drying	0.09	1.0
4 – Water Quality	1.0	0.67
5 – Shade	1.0	0.8
6 – Waterfowl	0.01	0.01
7 – Fish	0	0
8 – waterbody count in wider landscape within 500m with suitable terrestrial connectivity	1.0	1.0
9 – Terrestrial Habitat	1.0	1.0
10 – Macrophytes	0.4	0.4
TOTAL	0.3584	0.3351
CATEGORY	Poor	Poor

Foreseen Impacts

If great crested newts are present within the ponds within 500m of the site, when completing the rapid risk assessment published by Natural England (Natural England 2015), the proposed development produces a **Green risk score**, which states:

	Offence Highly Unlikely. However, in the unlikely event that amphibians are commuting through the site during the works, construction works could impact any amphibians present.
<i>Recommendations</i>	No further surveys are required, however, the precautionary working method for reptiles will provide suitable mitigation in the unlikely event that great crested newts are present on site.
Badger	
<i>Summary of Survey Findings</i>	No badger setts were noted on site or within a 30m radius of the site. Further, no evidence of foraging badgers was noted within the development area. However, the site was considered suitable for badger sett excavation and foraging habitat.
<i>Foreseen Impacts</i>	A small area of grassland will be removed to facilitate the construction of a bungalow, there is a low chance that badgers could be injured or killed during construction.
<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 are no watercourses on or connected to the site. There are also no riparian habitats present on site or within an influencing distance.
<i>Foreseen Impacts</i>	No impacts are anticipated on riparian animals as a result of the proposed development.
<i>Recommendations</i>	No further surveys required.

Hazel dormouse	
<i>Summary of Survey Findings</i>	Desk Study A review of the MAGIC database returned no granted EPSL records for hazel dormice within 2km of the site. On Site The habitats on site provide limited opportunities for commuting and foraging hazel dormice in the form of grassland. Although grassland is considered suitable for hazel dormice, the grassland on site is predominantly homogenous and lacks refuge opportunities. The site, however, does have connection to scrub and woodland.
<i>Foreseen Impacts</i>	No suitable habitats will be removed to facilitate the construction of a bungalow, therefore, no impacts are anticipated as a result of the proposed development.
<i>Recommendations</i>	No further surveys required.
Other e.g. hedgehog	
<i>Summary of Survey Findings</i>	The grassland onsite provides foraging and commuting opportunities for hedgehogs, with woodland habitat nearby.
<i>Foreseen Impacts</i>	A small area of grassland will be removed to facilitate the construction of a bungalow, this could cause the injury or death of hedgehogs without mitigation.
<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.
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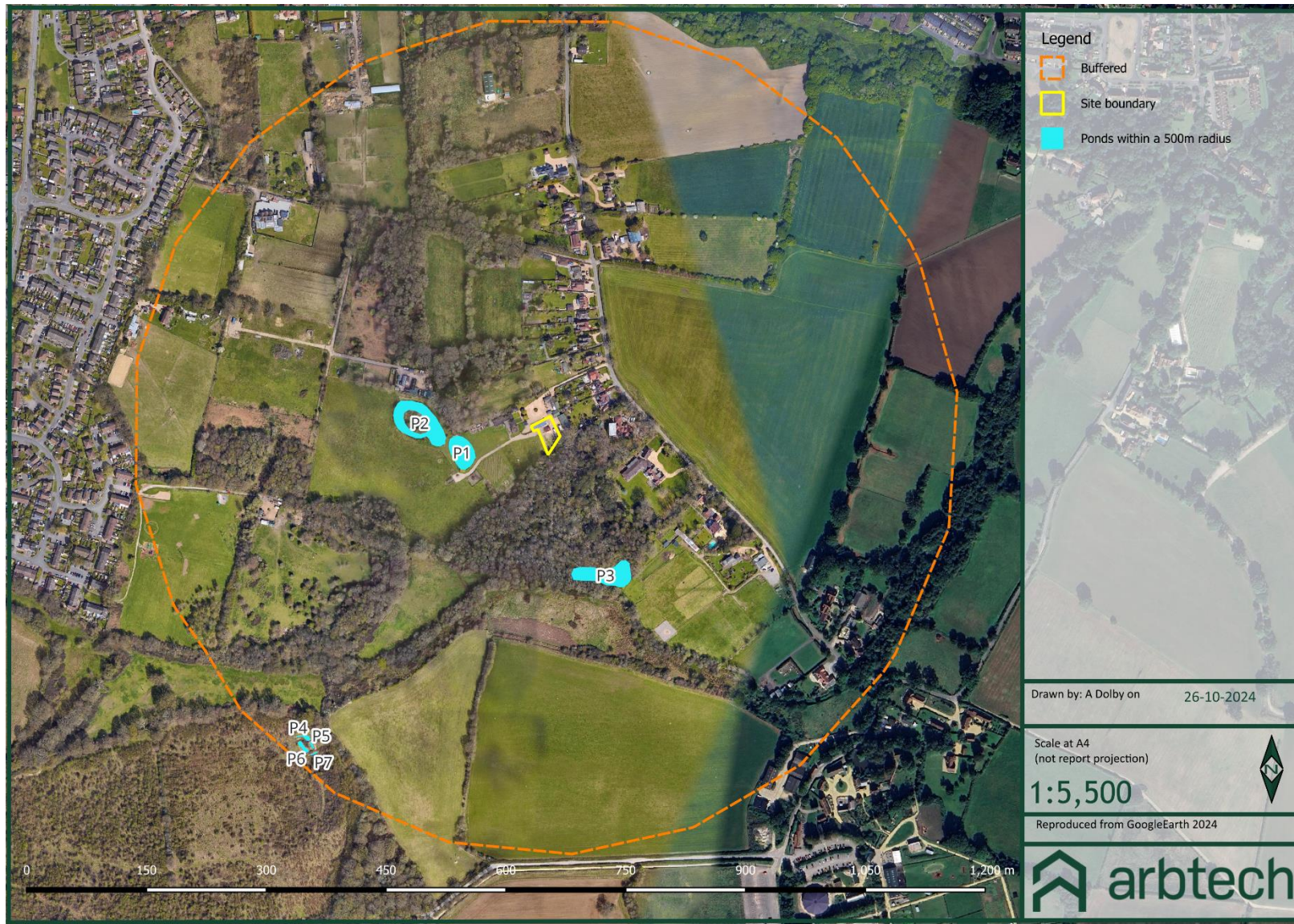
Appendix 1: Survey/Habitat map



Appendix 2: Location map



Appendix 3: Pond location map



Appendix 4: Proposed plan

Appendix 5: Photos

Photo 1: Showing the southern and eastern elevation of B1.



Photo 2: Showing the eastern elevation of B2.



Photo 3: Showing the western elevation of B2.



Photo 4: Showing the southern elevation of B2.



Photo 5: Showing the northern elevation of B2.



Photo 6: Showing a birds nest inside the cavity wall (external view), on the southern elevation of B2.



Photo 7: Showing an internal aspect of B2, with a pigeon nest along the apex.



Photo 8: Showing a bird box within B2.



Photo 9: Showing the cavity wall, which is present along the northern and southern elevations of B2, with small gaps within the wooden panels.



Photo 10: Showing an area of gravel surface.



Photo 11: Showing the area of modified grassland.



Photo 12: Showing P1.



Photo 13: Showing P2.



Photo 14: Showing giant rhubarb found adjacent to P1.



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