Jessica Sibley BSc (Hons) MSc
Consultant Ecologist
Email: jessicasibley@arbtech.co.uk
Arbtech Consulting Ltd
arbtech.co.uk

Preliminary Ecological Appraisal and Roost Assessment

Survey site:

916 Halifax Road, Cleckheaton, Kirklees, BD19 6LR

Client:

Barnes Homes

Survey date:

20th November 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.

Project:

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

"The erection of 11 (no.) dwellings." [Unsubmitted]

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.**

Site Location and Context
The survey site is centred on National Grid Reference: SE 17131 24724 and has an area of approximately ~0.402ha. The site comprises grassland, shrubs, bare ground with gravel beds, developed land with two ornamental ponds, native and non-native hedgerow, a line of trees, scattered trees, two small outbuildings, and built linear boundary features in Cleckheaton, Kirklees. The underlying geology of the site is mudstone, siltstone, and sandstone (Pennine Lower Coal Measures Formation), overlain by slowly permeable seasonally wet acid loamy and clayey soils of low fertility. Typical habitats of this soil type include wet pastures and woodlands. Adjacent to the south of the site is Halifax Road, adjacent to the north is grassland, adjacent to the east are dwellings with associated gardens and small drives, and adjacent to the west is grassland. MAGIC habitat designations within 2km include patches of: 'Priority Deciduous Woodland' (closest ~0.16km northwest), 'Priority Traditional Orchard' (~0.53km northeast), 'Open Mosaic Habitat' (~1.27km east), and 'Ancient Replanted Woodland' (~1.81km south). The closest watercourse to the site is Oldfield Beck located ~0.41km northeast of the site boundary. The wider landscape comprises small, scattered settlement with dwellings, gardens, and infrastructure, with rural/greenspace extending beyond the site including grassland, pockets of woodland, linear hedgerows and treelines, scattered trees, as well as small watercourses and scattered ponds. The centre of Cleckheaton lies east of the site.
Survey Details
The site survey was undertaken by Jessica Sibley BSc (Hons) MSc, Consultant Ecologist and accredited agent on a Class 2 Natural England bat licence to undertake level 1 activities (licence details can be provided on request).

Date of survey	Temperature (°C)	Humidity (%)	Cloud Cover (%)	Wind (km/h)	Rain
22/11/2024	3	64	<5	19	None

Executive Summary

Biodiversity Net Gain (BNG):

- A BNG assessment will be required for the site.

Invasive non-native species:

- Common rhododendron and cotoneaster should be removed from site, prior to the works.

Bats:

- A separate GLTA should be undertaken for the treeline trees if any are due to be pruned/felled.
- A low-impact lighting strategy should be adopted for foraging and commuting bats.

Other European Protected Species (EPS):

Other recommendations within this report include precautionary working methods for nesting birds, reptiles, amphibians, badgers, and hedgehogs (please refer to the relevant sections).

Full report follows.

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 desk study.

The PEA survey was completed outside of the optimal botanical survey period (April to October) limiting the identification of ground flora communities which might not yet be present for full assessment. However, given the habitat types present on-site, minor omissions on this basis are unlikely to alter the characterisation of the site, and therefore it is not considered to be a significant limitation.

A biological records data search has not been undertaken. However, given the location of the site, the nature of the habitats present and the assessed suitability of the site for protected or notable species, it is not anticipated that the purchase of biological records data will add any significant weight or alter the conclusions and recommendations outlined in this report.

Ecological Survey Factor **Conclusion, Impact or Recommendations**	**Detailed using desk study and site survey (carried out under reasonable 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, PRA map in appendix 2, location plan 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 **(***UKHab codes used)* **Primary codes:** • Artificial unvegetated, unsealed surface [u1c] • Modified grassland [g4] • Native hedgerow [h2a]	The site contains native hedgerow which is listed as a habitat of principal importance under Section 41 of the Natural Environment and Rural Communities (NERC) Act (2006). The site also contains grassland, scattered trees, a treeline, and hedgerow which 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. **The site is primarily private vegetated garden [828]. The composition of habitats within the private vegetated garden, can be found below and within the habitat map (in appendix 1).** **<u>Artificial unvegetated, unsealed surface [u1c] with bare ground [510] and a gravel bed [310]</u>** South of the site is an area of bare ground with a gravel bed. **<u>Modified grassland [g4]</u>** The majority of the site is species-poor (i.e., ~4-6 species per m^2) modified grassland. Grass cover across the habitat is >75%. The sward height of the grassland is ~5cm. Species include: **D:** Perennial rye-grass *Lolium perenne*.

• Non-native ornamental hedgerow [h2b] • Other developed land [u1b6] • Built linear features [u1e] **Secondary codes:** • Vegetated garden [828] • Bare ground [510] • Gravel bed [310] • Ornamental pond [46] • Scattered trees [32] • Line of trees [33] • Introduced shrub [847]	**F:** White clover *Trifolium repens*. **O:** Red fescue *Festuca rubra*, creeping buttercup *Ranunculus repens*, daisy *Bellis perennis*, dandelion *Taraxacum officinale agg*., chickweed *Stellaria media*, greater plantain *Plantago major*, self-heal *Prunella vulgaris*, and bittercress *Cardamine sp*. **R:** Hoary willowherb *Epilobium parviflorum*, lady's mantle *Alchemilla sp*., shepherds purse *Capsella bursa-pastoris*, nettle *Urtica dioica*, and creeping thistle *Cirsium arvense*. Grassland – condition indication: Sward height across the habitat parcel is homogenously short at ~5cm, without microclimates for vertebrates and invertebrates. Scrub accounts for <20% of the total grassland area (i.e., no scrub recorded). There are places with less vegetation with physical damage evident (<5%). Cover of bare ground is between 1-10%, including localised areas. No bracken *Pteridium aquilinum*, was recorded across the grassland parcel. Cotoneaster which is suspected to be one of those which is invasive non-native under Schedule 9 of the Wildlife and Countryside Act, (1981), was recorded across the parcel. **<u>Native hedgerow [h2a]</u>** Along the south boundary of the site is native hedgerow, with >80% canopy cover of UK native/archaeophyte woody species. This habitat is a habitat of 'principal importance', under Section 41 of the NERC (Natural Environment and Rural Communities) Act, 2006. The hedgerow is abundant with hawthorn *Crataegus monogyna* and blackthorn *Prunus spinosa*, with occasional nettle, bramble Rubus *fruticosus agg*., and ivy *Hedera helix*. It is bordered by bare ground and a gravel bed. Hedgerow – condition indication: The hedgerow is >1.5m tall and >1m wide. The gap between the base of the canopy and the ground of the hedgerows is >0.5m along >90% of its length. Gaps make up >10% of total length and no gap is >5m. <1m width of undisturbed ground with perennial

• Fence [612] • Mortared wall [853] • Dry stone wall [114]	herbaceous vegetation is present for >90% of the length (the hedgerow is bordered by bare ground). Plant species indicative of nutrient enrichment of soils dominate <20% cover of the area of undisturbed ground. No non-native invasive plant species as listed under Schedule 9 of the Wildlife and Countryside Act (1981), were recorded along the hedgerow. The hedgerow is gappy and hard pruned which may be due to damaging management. **Non-native ornamental hedgerow [h2b]** Along a section of the east site boundary is ornamental hedgerow dominant with Leyland cypress *Cupressus × leylandii*, with occasional cherry laurel *Prunus laurocerasus*, hoary willowherb, nettle, and bramble. **Other developed land [u1b6] with ornamental ponds [46]** Within the site boundary are two artificial ornamental ponds, with a low water level (i.e., <30m), and dense with algae. The ponds have developed sealed bases and developed sealed steep sides. The ponds are considered in relation to Great Crested Newts (GCN), later in this report. **Built linear features [u1e] including fencing [612] mortared wall [853] and dry-stone wall [114]** Built boundary features are present along the east and south site boundaries. **Scattered trees [32]** There are two scattered trees within the site. T1 is a sycamore *Acer pseudoplatanus* tree with an approximate Diameter at Breast Height (DBH) of ~8.9cm. T2 is a *Prunus sp.*, tree with an approximate DBH of ~6.1cm. The trees are all young and 'small' trees in the metric.

	Individual trees – condition indication: <70% of the trees within the block are native species. <50% of trees within the block are mature. There is no evidence of an adverse impact on tree health by human activities, and no current pruning regime. No natural ecological niches were recorded (i.e., knotholes, cavities, ivy), associated with the trees. 1/2 of the trees over sail shrub vegetation beneath (i.e., >20%), with the other bordered by bare ground. **Lines of trees [33]** A treeline borders the north and west boundaries of the site. The treeline has frequent sycamore, sour cherry, with occasional *Leyland cypress*, and hawthorn. The understorey is bordered by grassland, with occasional bramble, nettle, rose *Rosa sp.*, and hoary willowherb. Treeline 1 – condition indication: <70% or the trees are native species. The tree canopy is continuous with gaps in canopy cover making up <10% and with no gap >5m wide. No natural ecological niches were recorded (i.e., hollows, ivy, loose bark). There is an undisturbed naturally vegetated strip of >6m along both sides of the treeline. The majority of the trees (i.e., >95%) appear to be in healthy condition. **Introduced shrub [847]** Along the centre of the site is a patch of introduced shrub. The patch is frequent with cherry laurel and *Hydrangea sp.*, with occasional Japanese spindle *Euonymus japonicus*, Japanese skimmia *Skimmia japonica*, *Camellia sp.*, also with common rhododendron *Rhododendron ponticum*, and *Cotoneaster sp*.

Foreseen Impacts	The native hedgerow is a habitat of 'principal importance' but will mostly likely be retained. The other habitats on-site are widespread and not notable. <0.274ha modified grassland <0.049ha shrub will be lost, as part of the proposed works. This could result in a loss of biodiversity at the site.
Recommendations	**A Biodiversity Net Gain (BNG):** The Environment Act (2021) requires all developments (excluding exemptions) to deliver a 10% net gain in biodiversity. This is mandatory for larger developments and came into force for smaller developments on 2nd April 2024. **Therefore, the planning application must be accompanied by a landscaping/habitat creation and enhancement strategy, biodiversity net gain calculations, and a habitat management and monitoring plan to ensure the proposed development delivers a 10% net gain.** 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). Best practice measures to minimise the possibility of pollution affecting adjacent habitats must be implemented during construction. **A Construction Environment Management Plan (CEMP) may be required for this.**
Locality and Designated Sites	
Summary of Survey Findings	**<u>On-site designations:</u>** The site is not subject to any statutory designation. **<u>Statutory designated sites (within 2km):</u>** There are no known statutory sites within 2km of the site. The site does not lie within any Site of Special Scientific Interest (SSSI) 'risk impact zones'.

	Non-statutory designated sites: The presence of non-statutory designated sites within 2km of the site cannot be established without data from West Yorkshire Ecology (WYE).
Foreseen Impacts	**On-site designations:** N/A **Statutory and non-statutory designated sites:** No direct impacts foreseen, given the small scale of the proposed development and distance of the proposed development from statutory designated sites.
Recommendations	**On-site designations:** None required. **Statutory and non-statutory designated sites:** None required.
Invasive / Non-native species	
Summary of Survey Findings	Common rhododendron and *Cotoneaster sp*. were identified on-site. Common rhododendron is listed as an invasive, non-native species under Schedule 9 of the Wildlife and Countryside Act (1981), and many cotoneasters are also listed.
Foreseen Impacts	Construction could result in the spread of common rhododendron and cotoneaster.
Recommendations	**Rhododendron present on site will be sensitively removed prior to the commencement of works to prevent the spread of a non-native, invasive species listed on Schedule 9 of the WCA (see Appendix 4). The Rhododendron will be removed using hand tools only. The most effective method of removal is through hand pulling, which results in minimal soil disturbance.**

	Hand pulling young shrubs will typically result in the full removal of the shrub and associated root network, which will prevent the re-establishment. Mature shrubs are likely to have a deeper and more established root network unlikely to be removed in full by hand pulling alone. Where there are mature shrubs, removal should be aided using hand tools to expose the root network in full so the entire shrub and associated roots can be removed. Development works will not commence until rhododendron has been successfully removed from the site Any plants present on Schedule 9 of the Wildlife and Countryside Act 1981 are prohibited from release into the wild due to their capacity to cause ecological, environmental, or socio-economic harm. Where Schedule 9 species are grown in private gardens, larger scale gardens, estates, and amenity areas reasonable measures will be taken to confine them to the cultivated area so as to prevent their spreading to the wider environment and beyond the landowner's control. As such, not preventing the spread of cotoneaster currently present on-site, into the wild (i.e. surrounding areas), could constitute an offence. **As such it is recommended that the cotoneaster be dug up, including roots, and disposed of in line with appropriate controlled waste measures, or controlled during construction works to prevent the spread off-site.**
Invertebrates	
Summary of Survey Findings	The habitats present on-site, including lawns, ornamental shrubs, hedgerow and trees, 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.
Foreseen Impacts	None foreseen.
Recommendations	No further surveys. **<u>Suggested biodiversity enhancements:</u>**

<table>
<tr><td></td><td>The incorporation of bee bricks (e.g. Ibstock BeeHabitat or similar alternative brand) into the fabric of the new buildings would provide sheltering opportunities for pollinators. These should be installed 0.5m above ground level on a south-facing elevation 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.</td></tr>
<tr><td colspan="2">Bats</td></tr>
<tr><td>Summary of Survey Findings</td><td>
<u>European Protected Species Licence (EPSL) data:</u>
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 roost sites in close proximity to the licensed site. There are two EPSLs within a 2km radius of the site as detailed below:
<table>
<tr><th>EPSL reference</th><th>Bat species affected</th><th>Distance from site</th><th>Impacts allowed by licence</th></tr>
<tr><td>2016-20721-EPS-MIT</td><td>Common pipistrelle</td><td>~1.08km northeast</td><td>Destruction of a resting place</td></tr>
<tr><td>EPSM2012-4277</td><td>Common pipistrelle</td><td>~1.13km northeast</td><td>Destruction of a resting place</td></tr>
</table>
There are no Special Areas of Conservation (SACs) designated for bats within 10km of the site.

<u>Foraging and commuting habitat:</u>
Habitats recorded on site are assessed to provide foraging and commuting opportunities for bats in the form of species-poor semi-improved grassland, a treeline, and hedgerow. These habitats are likely to provide micro-climatic conditions that support invertebrates that will in turn provide foraging opportunities for local bat populations, of low value. The vegetated wider</td></tr>
</table>

	landscape comprises grassland, ponds, linear features including treelines and hedgerow, as well as wooded areas of high value for local foraging and commuting bats. **Roosting habitat:** Buildings and trees to be impacted by the proposed development are assessed for their suitability to support roosting bats below. There are a total of two buildings on-site: two small outbuildings (B1 and B2). Both will likely be removed as part of the proposed works. The scattered trees were also subject to a roost inspection. No evidence of roosting bats was identified along or within B1 or B2, or along any of the surveyed trees on-site.
B1 - description	
Summary B1 is a small wooden panel-built structure with no roof. No suitable roost sites or evidence of bats were recorded along the built structure. As a result, B1 has **negligible roost value**.	
B2 - description	***Photographs***

Summary

B2 is a small, rendered outbuilding with a flat roof clad in asbestos. No evidence of roosting bats or suitable roost features were recorded along the building. As a result, B2 has **negligible roost value**.

T1 description	*Photographs*
Summary T1:T5 were inspected for suitable roost features, and all found to have **NONE** (i.e., no roosting features), value. The trees may be removed to facilitate the proposed works.	 

Foreseen Impacts	**Roosting habitat:** **B1 and B2:** Bats are very unlikely to be roosting within these buildings and as such, there are not anticipated to be any impacts on bats as a result of their removal. **T1 and T2:** These trees may be felled to facilitate the development. No features were identified along these trees and as such there are unlikely to be any impacts to bats as a result of their removal. **Foraging and commuting habitat:** The proposed development will result in the loss of <0.274ha grassland but given the presence of more extensive areas of foraging and commuting habitat in the locality, this is likely to be inconsequential for bats. The proposed development may lead to an increase in the amount of current lighting of surrounding habitats and without mitigation this may disturb commuting bats.
Recommendations	**Roosting habitat:** **B1, B2, T1, and T2: 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.** **Treeline trees: The trees within the north and west boundary treeline were not subject to a roost inspection given the high number, but they are anticipated to be retained. In the event of the removal of any treeline trees, a separate Ground Level Tree Assessment (GLTA) should be undertaken, after an Arboricultural Impact Assessment (AIA), which details definitive tree loss and retention.**

	Foraging and commuting habitat: No further surveys are required. **A low impact lighting strategy will be adopted for the site during post-development which outlines the areas of the site that will be retained as dark corridors. Parameters can be found on the Bat Conservation Trust website: https://www.bats.org.uk/our-work/buildings-planning-and-development/lighting-2** **Suggested biodiversity enhancements:** The installation of an integrated bat box along each new dwelling will provide additional roosting habitat for bats. 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's nests were identified within the vegetation/buildings on-site; however, the trees and buildings offer nesting opportunities and nest-building resources for birds. No habitat for schedule 1 birds was observed. **Barn owls:** The site does not appear to provide any suitable nesting sites for barn owls. **Overwintering birds:** Due to the extent and type of the habitats recorded, the site is not considered suitable to support a significant assemblage of protected and/or notable birds.

Foreseen Impacts	**Nesting birds:** Nesting birds may be injured or killed as a result of the proposed development as some trees may be removed and works to the buildings are anticipated as part of the proposed works. **Barn owls:** None foreseen. **Overwintering birds:** None foreseen.
Recommendations	**Nesting birds:** **Any tree/building/shrub removal should be undertaken outside the period 1st March to 31st August.** If this timeframe cannot be avoided, a close inspection of the trees/buildings/shrubs 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. **Barn owls:** None required. **Overwintering birds:** None required. **Suggested biodiversity enhancements:** The installation of a minimum of one bird box per new dwelling will provide additional nesting habitat for birds e.g.

	▪ Vivara Pro WoodStone Swift Nest Box ▪ House Sparrow Terrace FSC Nest Box ▪ Manthorpe Swift Brick ▪ Swallow Nest Bowl (Or a similar alternative brand). 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:** A review of the MAGIC database returned no granted EPSL records for protected reptiles within 2km of the site. **Habitat suitability:** The site contains some terrestrial habitats suitable for reptiles for basking, foraging, commuting, and refuge (i.e., grassland, hedgerow, and refugia (brash/rubble)). The grassland to be impacted is maintained to a relatively short sward (i.e., ~5cm) across the site, suiting reptiles for only transient periods. However, the site connects well to nearby grassland, woodland, treelines, and hedgerow networks to the north, which is considered good for reptile migration, and therefore reptile presence across the site cannot be discounted.
Foreseen Impacts	Although a small area of suitable habitat (i.e., <0.274ha grassland) will likely removed as part of the development, there is a low risk that a low number of reptiles could be present in the vicinity of the works given the short sward. These could be injured or killed without mitigation.

	The site does not form a connective pathway or stepping stone between areas of suitable reptile habitat in the wider landscape and the development is unlikely to lead to reptile habitat fragmentation.
Recommendations	**A precautionary working method will be implemented for widespread reptiles during construction,** including the following measures: • The grassland will be maintained at a short sward (5cm) to discourage reptiles from the working area. • Any rubble and brash piles will be dismantled by hand and stored on pallets until removal from the site. • 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. **In the unlikely event that a reptile is identified, works must cease, and advice must be sought from a suitably qualified ecologist.** **<u>Suggested biodiversity enhancements:</u>** 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	**<u>EPSL data:</u>** A review of the MAGIC database returned no granted EPSL records for GCN within 2km of the site and no District Level Licencing (DLL) historic survey data (2017 – 2019) are present within 2km of the site. However, four positive class survey licence returns are present northwest of the site with the closest ~820m northwest. A major road lies between these survey licence returns and the site (i.e., the M62), which may act as a significant barrier to dispersal.

Aquatic habitat suitability (including ponds within 500m):

GCN exist in metapopulations and are known to utilise ponds and their connecting terrestrial habitat during their life cycle; GCN are typically found within terrestrial habitats up to 500m from breeding ponds (Langton et al. 2001).

Two ornamental sealed surface ponds lie within the site (P1 and P2). These ponds and the closest off-site pond (P3) are subject to a Habitat Suitability Index (HSI), below. A review of the MAGIC.gov.uk database indicates the presence of three ponds within 500m of the site. P3 is located ~82m east of the site, P4 is located ~390m west of the site, P5 is located ~437m northeast of the site. There do not appear to be any significant barriers between P3 and P5 and the site which would cause a significant barrier to dispersal.

A pond map showing approximate pond locations is provided in Appendix 2.

There are two man-made ponds present on-site (P1 and P2). The water levels of the ponds are low at <30cm, and the ponds are abundant with algae. The ponds both have drop down steep sides similar to a swimming pool, which would trap amphibians within the ponds and prevent entering/emerging. As a result of the HSI, P1 and P2 have been assessed to provide **Poor** suitability to support GCN. The off-site pond (P3) is assessed to provide **below average** suitability to support GCN. The scores for each HSI parameter can be viewed in the table below:

HSI Index	HSI Index Parameter P1	HSI Score P1 (on-site pond)	HSI Index Parameter P2	HSI Score P2 (on-site pond)	HSI Index Parameter P3	HSI Score P3 (off-site pond)
1 – Location	Zone A	1.00	Zone A	1.00	Zone A	1.00

	2 – Pond Area	~100m^2	0.20	~35m^2	0.05	~35m^2	0.10
	3 – Pond Drying	Never dries	0.90	Never dries	0.90	Never dries	0.90
	4 – Water Quality	Bad	0.01	Bad	0.01	Poor	0.33
	5 – Shade	0%	1.00	50%	1.00	0%	1.00
	6 – Waterfowl	Absent	1.00	Absent	1.00	Minor	0.67
	7 – Fish	Absent	1.00	Absent	1.00	Possible	0.67
	8 – waterbody count in wider landscape within 1000m with suitable terrestrial connectivity	4	0.65	4	0.65	4	0.65
	9 – Terrestrial Habitat	Poor	0.33	Poor	0.33	Poor	0.33
	10 – Macrophytes	0%	0.30	0%	0.30	10%	0.40
	TOTAL	-	**0.40**	-	**0.35**	-	**0.51**
	CATEGORY	-	**Poor**	-	**Poor**	-	**Below average**

Terrestrial habitat suitability:

The site contains grassland, hedgerow, and refugia (brash/rubble) which provide good terrestrial opportunities for GCN and other more common amphibians for commuting, foraging, and refuge. However, the on-site grassland and grassland in surrounding areas is retained to a short sward, suiting amphibians for only transient periods when commuting.

Foreseen Impacts	When georeferencing the proposed development plans over scaled mapping of the site, it is noted that the development area is likely to result in the loss or significant disturbance of <0.274ha of grassland. However, given the 'poor' HSI scores of the on-site ponds with vertical manmade sides, and a lack of macrophytes, and the 'below average' HSI score of the off-site pond within 100m, with suboptimal surrounding habitat, it is considered that GCN are only likely to be present within the on-site grassland for transient periods. The refuge habitat (i.e., hedgerow) will also likely be retained. Thus, impacts on GCN as part of the proposed development are considered to be acceptably low.
Recommendations	Owing to the nature of the proposed development and the low potential for impacts to GCN, further surveys are considered to be disproportionate. **A precautionary working method will be implemented for common amphibians during construction**, including the following measures: • The grassland will be maintained at a short sward (5cm) to discourage amphibians from the working area. • Any rubble and brash piles will be dismantled by hand and stored on pallets until removal from the site. • 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. **In the unlikely event that an amphibian is identified, works must cease, and advice must be sought from a suitably qualified ecologist.** **<u>Suggested biodiversity enhancements:</u>** The site could be enhanced for amphibians post-development through creation of amphibian hibernacula using rubble and logs from site clearance. Information on how to construct a hibernaculum can be found here: https://www.wiltshirewildlife.org/hibernaculum

Badger	
Summary of Survey Findings	No badger setts were recorded on-site or suspected within a 30m radius of the site. However, the site contains suitable foraging habitat.
Foreseen Impacts	None foreseen.
Recommendations	**Basic precautionary mitigation during works is recommended**: • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape. • The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill onto habitats which badgers 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 a badger sett is identified within 30m of the works area, works must cease, and advice must be sought from a suitably qualified ecologist.** **<u>Suggested biodiversity enhancements:</u>** The site could be enhanced for badgers by planting bramble and damson *Prunus domestica subsp. insititia*, as well as planting fruit-bearing trees to increase foraging opportunities for badgers.
Riparian animals	
Summary of Survey Findings	**<u>EPSL data:</u>** A review of the MAGIC database returned no granted EPSL records for otters or water voles within 2km of the site. **<u>Habitat suitability:</u>**

	There are no water courses on or connected to the site. There are also no riparian habitats present on site or within an influencing distance.
Foreseen Impacts	No impacts are anticipated on riparian animals as a result of the proposed development.
Recommendations	None required.
Hazel dormouse	
Summary of Survey Findings	**EPSL data:** A review of the MAGIC database returned no granted EPSL records for hazel dormice within 2km of the site. **Habitat suitability** The site lies outside of the known current range for hazel dormice and there are no suitable habitats within the development area. As such it is considered unlikely that hazel dormice are present at the site.
Foreseen Impacts	No impacts are anticipated on hazel dormice as a result of the proposed development.
Recommendations	None required.
Other e.g. hedgehog	
Summary of Survey Findings	The grassland, shrub, and hedgerow on-site provide foraging and refuge opportunities for hedgehogs.
Foreseen Impacts	<0.274 grassland and <0.049ha shrub will be removed during construction. The loss of such habitats is likely to be inconsequential to local hedgehog populations owing to the presence of more extensive habitat locally. However, construction activities may result in the death or injury of hedgehogs, if present.
Recommendations	**Similar to the badgers, a precautionary working method will be implemented during construction, including the following measures:** • Any excavations will be covered overnight, or a ramp will be installed to enable any trapped animals to escape.

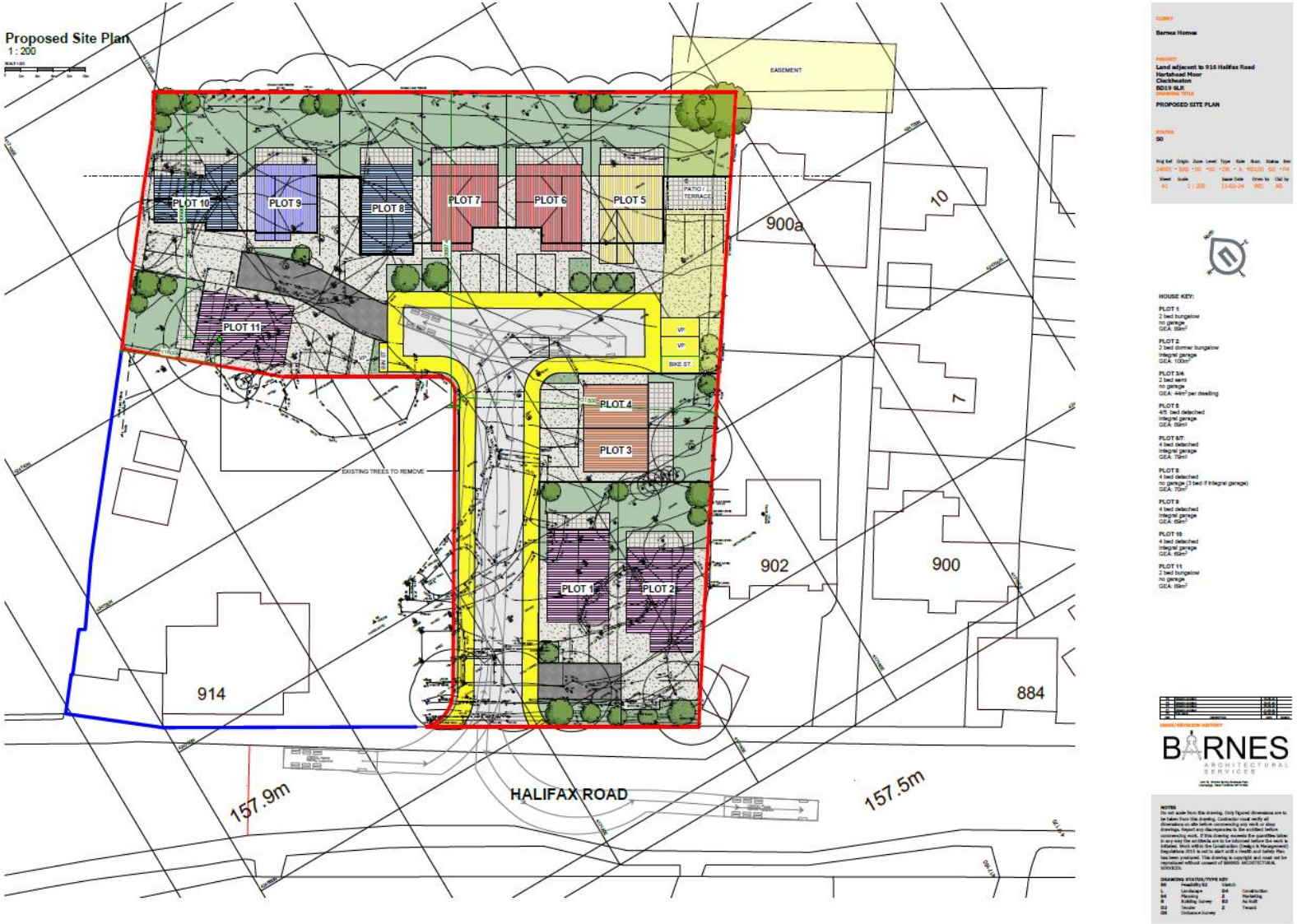
	• The use of night-time lighting will be avoided, or sensitive lighting design will be implemented to avoid light spill on to retained habitats which hedgehogs could use. • Any chemicals or pollutants used or created by the development should be stored and disposed of correctly according to COSHH regulations. **If any hedgehogs are found in the working area these should be allowed to disperse of their own accord or, if at immediate risk, should be moved by hand to a sheltered, vegetated area away from disturbance.** **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. ▪ Installation of gaps under boundary fencing to enable hedgehogs to move freely through the site.

Appendix 1: Survey map

Appendix 2: Pond Map

Appendix 3: Location map

Appendix 4: Proposed plan



Appendix 5: Habitat Photos

Artificial unvegetated, unsealed surface	
Photograph	**Description**
	**Figure 1:** Gravel bed and bare ground south of site– facing north.
Modified grassland	
Photograph	**Description**
	**Figure 2:** On-site grassland – facing west.

Introduced shrubs	
Photograph	**Description**
	**Figure 3:** Introduced shrubs within the site.
Line of trees	
Photograph	**Description**
	**Figure 4:** On-site treeline along the north boundary.

Native hedgerow	
Photograph	**Description**
	**Figure 5:** Native hedgerow along the south boundary.
Non-native hedgerow	
Photograph	**Description**
	**Figure 6:** Leyland cypress hedgerow along the east boundary.

Ornamental ponds	
Photograph	**Description**
 	**Figures 7, 8, and 9:** The two on-site ponds (P1 and P2), and the off-site pond within 100m (P3), respectively.

Invasive non-native species	
Photograph	**Description**
	**Figures 10 and 11:** On-site rhododendron and cotoneaster.

Limitations and Copyright

Legal

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

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

Version control			
Status	**Issue**	**Name**	**Date**
Draft	0.1	Jessica Sibley BSc (Hons) MSc, Consultant Ecologist	22/11/2024
Final	1.0	Jessica Sibley BSc (Hons) MSc, Consultant Ecologist	25/11/2024
Updated	2.0	Jessica Sibley BSc (Hons) MSc, Consultant Ecologist	26/11/2024
Updated	3.0	Jessica Sibley BSc (Hons) MSc, Consultant Ecologist	12/12/2024